

Data Validation Package

**September 2009
Groundwater and Surface Water
Sampling at the
Shiprock, New Mexico, Disposal Site**

November 2009



**U.S. DEPARTMENT OF
ENERGY**

Legacy
Management

This page intentionally left blank

Contents

Sampling Event Summary	1
Shiprock, New Mexico, Disposal Site Sample Monitoring Locations	9
Data Assessment Summary	11
Water Sampling Field Activities Verification Checklist	13
Laboratory Performance Assessment, Floodplain Locations	15
Laboratory Performance Assessment, Terrace Locations	25
Sampling Quality Control Assessment	35
Certification	45

Attachment 1—Assessment of Anomalous Data

Potential Outliers Report

Attachment 2—Data Presentation

Groundwater Quality Data Floodplain Locations
Groundwater Quality Data Terrace Locations
Surface Water Quality Data Floodplain Locations
Surface Water Quality Data Terrace Locations
Equipment Blank Data
Static Water Level Data Floodplain Locations
Static Water Level Data Terrace Locations
Time-Concentration Graphs Floodplain Groundwater Locations
Time-Concentration Graphs Terrace Groundwater Locations

Attachment 3—Sampling and Analysis Work Order

Attachment 4—Trip Report

This page intentionally left blank

Sampling Event Summary

Site: Shiprock, New Mexico, Disposal Site

Sampling Period: September 14-17, 2009

Groundwater and surface water sampling and analysis are performed semiannually at the Shiprock Disposal Site as specified in the *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* and the *Environmental Procedures Catalog*. 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 ^a	Site Code	Location	Concentration
Nitrate + Nitrite as Nitrogen	10	SHP01	0608	170
			0610	400
			0614	570
			0615	150
			0618	340
			0735	570
			0854	120
			1008	170
			1009	17
			1089	21
			1104	31
			1105	300
			1111	12
			1112	540
			1113	96
			1114	65
			1115	190
			1116	650
			1126	110
			1133	430
			1140	320
			1141	33
Selenium	0.01	SHP01	0610	0.045
			0614	0.093
			0615	0.23
			0618	0.18
			0622	0.23
			0630	0.015
			0734	0.016

Table 1 (continued). Shiprock Locations that Exceed Standards

Analyte	Standard ^a	Site Code	Location	Concentration
Uranium	0.044	SHP01	0735	0.07
			0792	0.15
			0793	0.15
			0798	0.059
			0854	0.028
			1008	0.021
			1009	0.33
			1089	0.024
			1104	0.023
			1105	0.16
			1111	0.58
			1112	0.49
			1113	0.016
			1115	0.043
			1116	0.015
			1126	0.032
			1133	0.043
			1140	0.17
			1141	0.26
			0608	0.78
Uranium	0.044	SHP01	0610	1.4
			0612	0.1
			0614	1.8
			0615	1.2
			0618	2.5
			0619	0.22
			0622	0.2
			0623	0.066
			0625	0.06
			0735	0.26
			0792	2.4
			0793	0.88
			0798	2.1
			0854	1.8
			0855	0.068
			0856	0.064
			0857	0.18
			1008	3.1
			1009	0.43
Nitrate + Nitrite as Nitrogen	10	SHP02	1089	1.1
			1104	1.2
			1105	2.1
			1111	0.87
			1112	1.9
			1113	0.78
			1114	0.46
			1115	0.51
			1116	1.3
			1126	0.2
			1133	1.3
			1140	1.7
			1141	0.98
			0602	15
			0603	2100
			0604	1200
			0727	180
			0728	180
			0731	150
			0812	1400
			0813	2300
			0814	910
			0815	660
			0816	43

Table 1 (continued). Shiprock Locations that Exceed Standards

Analyte	Standard ^a	Site Code	Location	Concentration
			0817	510
			0818	860
			0819	11
			0822	12
			0824	84
			0826	60
			0827	18
			0828	130
			0830	130
			0833	370
			0835	91
			0836	14
			0838	110
			0841	680
			0843	21
			0844	740
			0846	58
			1007	590
			1049	530
			1059	350
			1068	340
			1070	730
			1071	1100
			1073	1500
			1074	1400
			1078	640
			1079	71
			1091	1100
			1092	2400
			1093R	2700
			1095	1800
			1096	630
			DM7	260
Selenium	0.01	SHP02	0603	0.083
			0604	0.27
			0731	0.014
			0812	5.5
			0813	0.045
			0814	2
			0815	0.042
			0816	0.03
			0818	1.9
			0819	0.01
			0827	0.015
			0828	0.13
			0830	0.031
			0833	0.29
			0835	0.29
			0836	0.13
			0837	0.17
			0838	0.42
			0841	3.1
			0843	0.24
			0844	1.7
			0846	0.36
			0848	0.045
			1007	0.085
			1049	1.1
			1068	0.023
			1070	2.6
			1071	2.3
			1073	2.2

Table 1 (continued). Shiprock Locations that Exceed Standards

Analyte	Standard ^a	Site Code	Location	Concentration
Uranium	0.044	SHP02	1074	0.27
			1078	2.9
			1079	0.31
			1091	0.95
			1092	0.25
			1093R	0.52
			1095	0.21
			1096	2.4
			1120	0.058
			1122	0.097
			DM7	0.027
			0602	0.68
			0604	0.096
			0725	0.083
			0727	0.23
			0728	0.27
			0731	0.044
			0812	0.14
			0813	0.13
			0814	0.096
			0815	0.37
			0817	6.7
			0818	0.097
			0819	1.2
			0820	0.093
			0822	0.082
			0824	0.15
			0825	0.048
			0826	3.5
			0827	1.1
			0828	0.58
			0833	0.23
			0835	0.08
			0837	0.045
			0841	0.14
			0844	0.2
			1007	2.4
			1049	0.18
			1059	0.067
			1068	0.81
			1070	0.1
			1071	0.14
			1073	0.066
			1074	2
			1078	0.15
			1091	0.14
			1093R	0.14
			1095	0.051
			1096	0.12
			1120	0.048
			1122	0.052
			DM7	0.045

^a Standards are listed in 40 CFR 192.02 Table 1 to Subpart A; units are in milligrams per liter.

Floodplain river location analyte concentrations 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, benchmark values were not exceeded for the river locations adjacent to or downstream from the site with the exception of the manganese values at locations 0899 and 1205. Both filtered and unfiltered samples were submitted from the river locations to determine

the impact of filtering on the analytical results. A comparison of the of the results is shown in Table 3.

Table 2. Floodplain River Locations (Filtered Samples)

Location	Ammonia as N	Manganese	Nitrate+Nitrite as N	Selenium	Strontium	Sulfate	Uranium
Benchmark	0.1	0.0396	1.1	0.0019	1.2	220	0.056
0501	ND ^a	0.0074	0.63	0.00054	0.77	120	0.0017
0897	ND	0.0072	0.74	0.00081	0.72	130	0.0022
0899	ND	0.054	0.48	0.00057	0.79	130	0.002
0940	ND	0.0046	0.46	0.00061	0.78	130	0.0012
0956	ND	0.0062	0.44	0.00057	0.77	130	0.0018
0965	ND	0.0098	0.46	0.00058	0.78	120	0.0022
1203	ND	0.020	0.62	0.00069	0.73	130	0.0018
1205	ND	0.040	0.85	0.00082	0.65	130	0.0025

^aND = Not Detected. Units are in milligrams per liter.

Table 3. Floodplain River Locations, Filtered and Unfiltered Samples

Location	Analyte	Result, Filtered	Result Unfiltered	RPD ^a
0501	CALCIUM	56	90	46.6
	CHLORIDE	12	12	0.0
	MAGNESIUM	8.7	21	82.8
	MANGANESE	0.0074	0.73	196.0
	NITRATE/NITRITE AS N	0.63	0.61	3.2
	POTASSIUM	2.9	9.0	102.5
	SELENIUM	0.00054	0.00064	16.9
	SODIUM	36	39	8.0
	STRONTIUM	0.77	1.1	35.3
	SULFATE	120	130	8.0
	URANIUM	0.0017	0.0046	92.1
0897	CALCIUM	50	120	82.4
	CHLORIDE	11	11	0.0
	MAGNESIUM	6	21	111.1
	MANGANESE	0.0072	1.6	198.2
	NITRATE/NITRITE AS N	0.74	0.68	8.5
	POTASSIUM	3	7.8	86.2
	SELENIUM	0.00081	0.00076	6.4
	SODIUM	46	53	14.1
	STRONTIUM	0.72	1.7	81.0
	SULFATE	130	130	0.0
	URANIUM	0.0022	0.0075	109.3
0898	CALCIUM	46	160	110.7
	CHLORIDE	11	11	0.0
	MAGNESIUM	5.1	25	132.2
	MANGANESE	0.02	2.5	196.8
	NITRATE/NITRITE AS N	0.83	0.84	1.2

Table 3 (continued). Floodplain River Locations, Filtered and Unfiltered

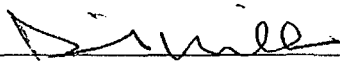
Location	Analyte	Result, Filtered	Result Unfiltered	RPD ^a
	POTASSIUM	3.6	9.4	89.2
	SELENIUM	0.00082	0.00072	13.0
	SODIUM	54	62	13.8
	STRONTIUM	0.68	2.2	105.6
	SULFATE	130	130	0.0
	URANIUM	0.0025	0.0087	110.7
0899	CALCIUM	59	64	8.1
	CHLORIDE	13	13	0.0
	MAGNESIUM	9.0	9.8	8.5
	MANGANESE	0.054	0.080	38.8
	NITRATE/NITRITE AS N	0.48	0.51	6.1
	POTASSIUM	2.6	2.8	7.4
	SELENIUM	0.00057	0.00054	5.4
	SODIUM	35	36	2.8
	STRONTIUM	0.79	0.83	4.9
	SULFATE	130	130	0.0
	URANIUM	0.002	0.0023	14.0
0940	CALCIUM	59	69	15.6
	CHLORIDE	14	14	0.0
	MAGNESIUM	9	12	28.6
	MANGANESE	0.0046	0.18	190.0
	NITRATE/NITRITE AS N	0.46	0.36	24.4
	POTASSIUM	2.4	4.0	50.0
	SELENIUM	0.00061	0.00048	23.9
	SODIUM	34	36	5.7
	STRONTIUM	0.78	0.89	13.2
	SULFATE	130	130	0.0
	URANIUM	0.0012	0.0024	66.7
0956	CALCIUM	59	77	26.5
	CHLORIDE	12	12	0.0
	MAGNESIUM	9.3	16	53.0
	MANGANESE	0.0062	0.5	195.1
	NITRATE/NITRITE AS N	0.44	0.37	17.3
	POTASSIUM	2.3	5.5	82.1
	SELENIUM	0.00057	0.00049	15.1
	SODIUM	32	34	6.1
	STRONTIUM	0.77	0.98	24.0
	SULFATE	130	120	8.0
	URANIUM	0.0018	0.0036	66.7
0965	CALCIUM	61	65	6.3
	CHLORIDE	12	12	0.0
	MAGNESIUM	9.4	12	24.3
	MANGANESE	0.0098	0.17	178.2
	NITRATE/NITRITE AS N	0.46	0.46	0.0
	POTASSIUM	2.6	3.9	40.0
	SELENIUM	0.00058	0.00056	3.5
	SODIUM	34	34	0.0

Table 3 (continued). Floodplain River Locations, Filtered and Unfiltered

Location	Analyte	Result, Filtered	Result Unfiltered	RPD ^a
	STRONTIUM	0.78	0.86	9.8
	SULFATE	120	130	8.0
	URANIUM	0.0022	0.0028	24.0
1203	CALCIUM	56	76	30.3
	CHLORIDE	12	12	0.0
	MAGNESIUM	8.5	19	76.4
	MANGANESE	0.02	0.47	183.7
	NITRATE/NITRITE AS N	0.62	0.55	12.0
	POTASSIUM	2.6	12	128.8
	SELENIUM	0.00069	0.00076	9.7
	SODIUM	35	38	8.2
	STRONTIUM	0.73	0.92	23.0
	SULFATE	130	130	0.0
	URANIUM	0.0018	0.0035	64.2
1205	CALCIUM	46	180	118.6
	CHLORIDE	11	11	0.0
	MAGNESIUM	5.3	45	157.9
	MANGANESE	0.04	3.3	195.2
	NITRATE/NITRITE AS N	0.85	0.77	9.9
	POTASSIUM	3.9	23	142.0
	SELENIUM	0.00082	0.00085	3.6
	SODIUM	53	69	26.2
	STRONTIUM	0.65	2.4	114.8
	SULFATE	130	140	7.4
	URANIUM	0.0025	0.016	145.9

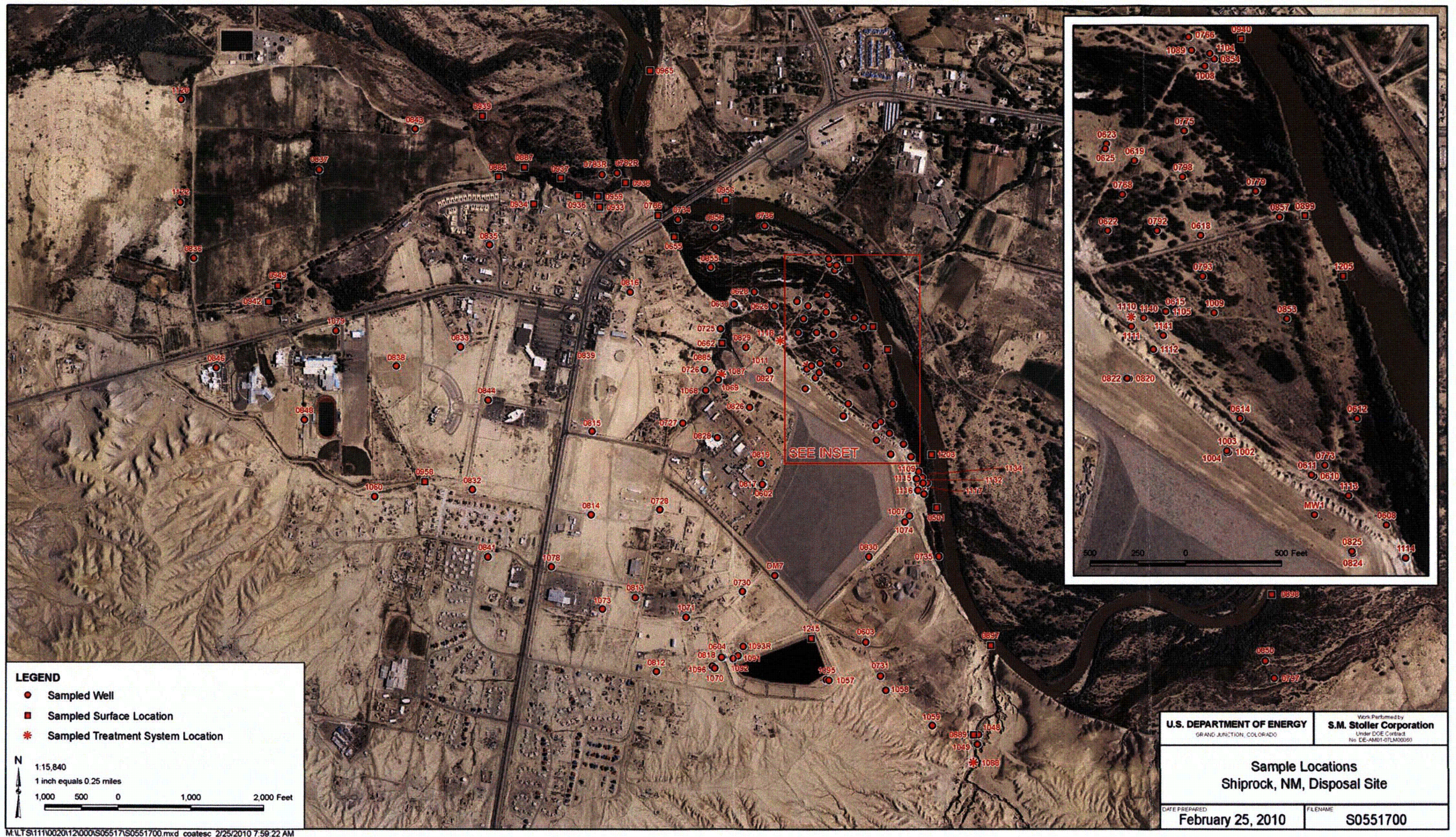
^aRPD = Relative Percent Difference. Units are in milligrams per liter.

Sample filtration did not impact the anion results significantly. However, the metals results for unfiltered samples are much higher than the filtered sample results.


 David Miller
 Site Lead, S.M. Stoller

2/26/10
 Date

This page intentionally left blank



Shiprock, New Mexico, Disposal Site Sample Monitoring Locations

This page intentionally left blank

Data Assessment Summary

This page intentionally left blank

Water Sampling Field Activities Verification Checklist

Project	Shiprock, New Mexico	Date(s) of Water Sampling	September 14-17, 2009
Date(s) of Verification	November 9, 2009	Name of Verifier	Steve Donovan

	Response (Yes, No, NA)	Comments
1. Is the SAP the primary document directing field procedures?	Yes	
List other documents, SOPs, instructions.		Work Order Letter dated August 20, 2009. SHP01 locations 1126, 1127, 1131, 1133, 1109-B, and 1109-D were added after issuance of the Work Order Letter.
2. Were the sampling locations specified in the planning documents sampled?	No	Fourteen surface water locations and 20 wells were dry and not sampled. Well SHP01 0736 was not sampled, but not listed in the Trip Report as such. Location SHP02 0889 was sampled, but listed in the Trip Report as not sampled. Locations 0610 and 0611 were incorrectly listed under SHP02 and should only appear under SHP01.
3. Was a pre-trip calibration conducted as specified in the above-named documents?	Yes	Pre-trip calibration was performed on September 11, 2009.
4. Was an operational check of the field equipment conducted daily?	Yes	
Did the operational checks meet criteria?	Yes	
5. Were the number and types (alkalinity, temperature, specific conductance, pH, turbidity, DO, ORP) of field measurements taken as specified?	Yes	
6. Was the category of the well documented?	Yes	
7. Were the following conditions met when purging a Category I well:		
Was one pump/tubing volume purged prior to sampling?	Yes	
Did the water level stabilize prior to sampling?	Yes	
Did pH, specific conductance, and turbidity measurements stabilize prior to sampling?	No	The pH and specific conductance for well 0728 and the pH for well 0817 did not meet the stability criteria.
Was the flow rate less than 500 mL/min?	Yes	
If a portable pump was used, was there a 4-hour delay between pump installation and sampling?	NA	

Water Sampling Field Activities Verification Checklist (continued)

	Response (Yes, No, NA)	Comments
8. Were the following conditions met when purging a Category II well:		
Was the flow rate less than 500 mL/min?	Yes	
Was one pump/tubing volume removed prior to sampling?	Yes	
9. Were duplicates taken at a frequency of one per 20 samples?	Yes	Seven duplicate samples were collected.
10. Were equipment blanks taken at a frequency of one per 20 samples that were collected with nondedicated equipment?	Yes	One equipment blank was collected.
11. Were trip blanks prepared and included with each shipment of VOC samples?	NA	
12. Were QC samples assigned a fictitious site identification number?	Yes	
Was the true identity of the samples recorded on the Quality Assurance Sample Log or in the Field Data Collection System (FDCS) report?	Yes	
13. Were samples collected in the containers specified?	Yes	
14. Were samples filtered and preserved as specified?	Yes	
15. Were the number and types of samples collected as specified?	Yes	Due to the limited volume of water, only metals samples were collected from wells 0734, 1120, and 1122.
16. Were chain of custody records completed and was sample custody maintained?	Yes	
17. Are field data sheets signed and dated by both team members (hardcopies) or are dates present for the "Date Signed" fields (FDCS)?	Yes	
18. Was all other pertinent information documented on the field data sheets?	Yes	
19. Was the presence or absence of ice in the cooler documented at every sample location?	Yes	
20. Were water levels measured at the locations specified in the planning documents?	Yes	

Laboratory Performance Assessment, Floodplain Locations

General Information

Report Number (RIN): 09092562
Sample Event: September 14-17, 2009
Site(s): Shiprock Disposal Site (Floodplain), New Mexico
Laboratory: ALS Laboratory Group, Fort Collins, Colorado
Work Order No.: 0909250
Analysis: Metals and Wet Chemistry
Validator: Steve Donovan
Review Date: November 5, 2009

This validation was performed according to the *Environmental Procedures Catalog* (LMS/PRO/S04325, continually updated), "Standard Practice for Validation of Laboratory Data," GT-9(P). The procedure was applied at Level 3, Data Validation. See attached Data Validation Worksheets for supporting documentation on the data review and validation. All analyses were successfully completed. The samples were prepared and analyzed using accepted procedures based on methods specified by line item code, which are listed in Table 4.

Table 4. Analytes and Methods

Analyte	Line Item Code	Prep Method	Analytical Method
Ammonia as N	WCH-A-005	EPA 350.1	EPA 350.1
Calcium, Magnesium, Manganese, Potassium, Sodium, Strontium	LMM-01	SW-846 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 5. Refer to the attached validation worksheets and the sections below for an explanation of the data qualifiers applied.

Sample Shipping/Receiving

ALS Laboratory Group in Fort Collins, Colorado, received 74 water samples on September 24, 2009, 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 with the following exceptions. Only page one of the COC form had a relinquishment signature. One of the bottles for sample HKR 361, an equipment blank, was incorrectly labeled as HKQ 691. The error was corrected during sample log-in. The receiving documentation included copies for the shipping labels listing the air waybill numbers.

Table 5. Data Qualifier Summary

Sample Number	Location	Analyte	Flag	Reason
All	All	Potassium	J	Serial dilution failure
All	All	Sodium	J	Serial dilution failure
0909250-1	0501	Manganese	U	Less than 5 times the method blank
0909250-21	0792	Ammonia as N	J	Matrix spike failure
0909250-32	0897	Manganese	U	Less than 5 times the method blank
0909250-37	0940	Manganese	U	Less than 5 times the method blank
0909250-40	0956	Manganese	U	Less than 5 times the method blank
0909250-41	0965	Chloride	J	Matrix spike failure
0909250-41	0965	Sulfate	J	Matrix spike failure
0909250-72	Equipment Blank	Manganese	U	Less than 5 times the calibration blank
0909250-72	Equipment Blank	Selenium	U	Less than 5 times the calibration blank
0909250-72	Equipment Blank	Uranium	U	Less than 5 times the calibration blank

Preservation and Holding Times

The sample shipments were received intact with the temperatures inside the iced coolers between 0.8 °C and 2.0 °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 acidified aliquots for samples 0792 and 0940 were received with a pH 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 and of producing a linear curve. Compliance requirements for continuing calibration checks are established to ensure that the instrument continues to be capable of producing acceptable qualitative and quantitative data. All laboratory instrument calibrations were performed correctly in accordance with the cited methods.

Method MCAWW 350.1

Calibration was performed for ammonia as N on September 30, 2009, using six calibration standards. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the method detection limit (MDL). Initial and continuing calibration verification checks were made at the required frequency resulting in 13 verification checks. All calibration checks met the acceptance criteria.

Method MCAWW 353.2

Calibration was performed for nitrate + nitrite as N on October 5, 2009, using seven calibration standards. The calibration curve correlation coefficient values were greater than 0.995 and the

absolute values of the intercepts were less than 3 times the MDL. Initial and continuing calibration verification checks were made at the required frequency resulting in 11 verification checks. All calibration checks met the acceptance criteria.

Method SW-846 6010B

Five calibrations for calcium, magnesium, manganese, potassium, sodium, and strontium were performed on October 9 and October 14, 2009, using single point calibrations. Calibration and laboratory spike standards were prepared from independent sources. Initial and continuing calibration verification checks were made at the required frequency resulting in 29 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

Calibrations were performed for selenium between October 12 and October 15, 2009, and for uranium between October 8 and October 20, 2009, using seven calibration standards. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the MDL. Calibration and laboratory spike standards were prepared from independent sources. Initial and continuing calibration verification checks were made at the required frequency resulting in 17 verification checks for selenium and 25 checks for uranium. 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 September 29, 2009, 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. Calibration and laboratory spike standards were prepared from independent sources. Initial and continuing calibration verification checks were made at the required frequency resulting in 18 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. 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. In cases where a blank concentration exceeds the MDL, the associated sample results are qualified with a "U" flag (not detected) when the sample result is greater than the MDL but less than 5 times the blank concentration. All initial and continuing calibration blank results associated with the samples were below the PQL with the following exceptions.

The two nitrate + nitrite as N calibration blanks analyzed on October 5, 2009, had results that

were greater than the PQL. The associated sample results were greater than 10 times the blank concentrations.

One sulfate calibration blank analyzed on September 30, 2009, and one analyzed on October 2, 2009, had results that were greater than the PQL. The associated sample results were greater than 10 times the blank concentrations.

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

ICP ICS 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 (MS) Analysis

MS and matrix spike duplicate (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 ammonia as N, chloride, and sulfate 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

The laboratory replicate sample results demonstrate acceptable laboratory precision. The relative percent difference values for the laboratory replicate sample and MSD sample results for all analytes were less than 20 percent, indicating 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 100 times the PQL for ICP-MS or greater than 50 times the PQL for ICP. All evaluated serial dilution data were acceptable with the following exceptions.

The sodium serial dilution results failed to meet the acceptance criteria for three out of four analyses. The potassium serial dilution results failed to meet the acceptance criteria for one analysis. The sample results for these analytes are qualified with a "J" flag as estimated values.

Detection Limits/Dilutions

Samples were diluted in a consistent and acceptable manner when required. The samples were diluted prior to analysis of uranium 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 original EDD file arrived on October 26, 2009. 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. The original EDD file had the filtration status incorrect for sample 0619 and an incorrect location ID for sample 0783R. A revised EDD was requested on October 26, 2009, and received on November 5, 2009.

SAMPLE MANAGEMENT SYSTEM

General Data Validation Report

RIN: 09092562 Lab Code: PAR Validator: Steve Donovan Validation Date: 11/5/2009
Project: Shiprock Analysis Type: ☒ Metals ☒ General Chem ☐ Rad ☐ Organics
of Samples: 74 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 2 duplicates evaluated.

SAMPLE MANAGEMENT SYSTEM

Page 1 of 2

Metals Data Validation Worksheet

RIN: 09092562

Lab Code: PAR

Date Due: 10/22/2009

Matrix: Water

Site Code: SHP

Date Completed: 10/27/2009

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	10/09/2009			OK	OK	OK	OK	OK	94.0	92.0	106.0	4.0	105.0	4.0	95.0
CALCIUM	10/14/2009			OK	OK	OK	OK	OK	104.0	106.0	111.0	2.0	101.0	5.0	96.0
CALCIUM	10/14/2009							OK	100.0	106.0	98.0	3.0	105.0	2.0	99.0
CALCIUM	10/14/2009							OK	105.0	95.0	92.0	1.0	102.0	1.0	104.0
MAGNESIUM	10/09/2009			OK	OK	OK	OK	OK	95.0	98.0	102.0	3.0	107.0	2.0	95.0
MAGNESIUM	10/14/2009			OK	OK	OK	OK	OK	102.0	100.0	102.0	1.0	103.0	3.0	96.0
MAGNESIUM	10/14/2009							OK	99.0	100.0	97.0	3.0	107.0	2.0	99.0
MAGNESIUM	10/14/2009							OK	103.0	98.0	96.0	1.0	104.0	1.0	102.0
MANGANESE	10/09/2009			OK	OK	OK	OK	OK	93.0	88.0	95.0	3.0	96.0	1.0	96.0
MANGANESE	10/14/2009			OK	OK	OK	OK	OK	98.0	92.0	95.0	2.0	92.0		97.0
MANGANESE	10/14/2009							OK	93.0	95.0	93.0	2.0	96.0		100.0
MANGANESE	10/14/2009							OK	96.0	92.0	91.0	1.0	92.0	1.0	101.0
POTASSIUM	10/09/2009			OK	OK	OK	OK	OK	102.0	102.0	103.0	0.0		34.0	98.0
POTASSIUM	10/14/2009			OK	OK	OK	OK	OK	88.0	93.0	93.0	0.0			99.0
POTASSIUM	10/14/2009							OK	87.0	98.0	97.0	1.0			100.0
POTASSIUM	10/14/2009							OK	88.0	96.0	94.0	2.0			101.0
SELENIUM	10/12/2009	0.0000	1.0000	OK	OK	OK	OK	OK	91.0	92.0	92.0	0.0	96.0		120.0
SELENIUM	10/15/2009	0.0000	1.0000	OK	OK	OK	OK	OK	91.0	88.0	86.0	3.0	93.0		87.0

SAMPLE MANAGEMENT SYSTEM
Metals Data Validation Worksheet

Page 2 of 2

RIN: 09092562 Lab Code: PAR Date Due: 10/22/2009
 Matrix: Water Site Code: SHP Date Completed: 10/27/2009

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	10/15/2009							OK	94.0	89.0	88.0	1.0			
SELENIUM	10/15/2009							OK	89.0	90.0	90.0	0.0			
SODIUM	10/09/2009			OK	OK	OK	OK	OK	98.0	98.0	99.0	1.0		13.0	100.0
SODIUM	10/14/2009			OK	OK	OK	OK	OK	90.0	98.0	98.0	0.0		7.0	102.0
SODIUM	10/14/2009							OK	89.0	99.0	96.0	1.0		11.0	102.0
SODIUM	10/14/2009							OK	91.0	96.0	92.0	2.0		11.0	100.0
STRONTIUM	10/09/2009			OK	OK	OK	OK	OK	95.0	95.0	100.0	1.0	101.0	0.0	96.0
STRONTIUM	10/14/2009			OK	OK	OK	OK	OK	98.0	96.0	97.0	0.0	100.0	1.0	101.0
STRONTIUM	10/14/2009							OK	97.0	99.0	95.0	1.0	101.0	2.0	99.0
STRONTIUM	10/14/2009							OK	98.0	92.0	88.0	2.0	98.0	2.0	102.0
URANIUM	10/08/2009	0.0000	1.0000	OK	OK	OK	OK	OK	105.0	109.0	111.0	1.0	105.0	1.0	98.0
URANIUM	10/14/2009	0.0000	1.0000	OK	OK	OK	OK	OK	113.0	114.0	113.0	0.0	110.0	2.0	106.0
URANIUM	10/14/2009							OK	109.0	115.0	115.0	0.0	103.0	6.0	105.0
URANIUM	10/20/2009	0.0000	1.0000	OK	OK	OK	OK	OK	107.0	109.0	106.0	2.0		1.0	

SAMPLE MANAGEMENT SYSTEM

Wet Chemistry Data Validation Worksheet

RIN: 09092562

Lab Code: PAR

Date Due: 10/22/2009

Matrix: Water

Site Code: SHP

Date Completed: 10/27/2009

Analyte	Date Analyzed	CALIBRATION							Method	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int	R^2	ICV	CCV	ICB	CCB	Blank						
AMMONIA AS N	09/30/2009	0.000	1.0000	OK	OK	OK	OK	OK	OK	96.00	90.0	91.0	1.00	
AMMONIA AS N	09/30/2009							OK	OK	101.00	95.0	92.0	3.00	
AMMONIA AS N	09/30/2009							OK	OK	100.00	58.0	58.0	0	
AMMONIA AS N	09/30/2009							OK	OK	99.00				
CHLORIDE	09/30/2009	0.000	1.0000	OK	OK	OK	OK	OK	OK	95.00	98.0	99.0	1.00	
CHLORIDE	09/30/2009							OK	OK	93.00	98.0	97.0	1.00	
CHLORIDE	09/30/2009									100.0				
CHLORIDE	10/01/2009				OK		OK	OK	OK	96.00	98.0	117.0	12.00	
CHLORIDE	10/01/2009									101.0	97.0	1.00		
CHLORIDE	10/01/2009									95.0				
CHLORIDE	10/01/2009									98.0				
CHLORIDE	10/02/2009				OK		OK	OK	OK	95.00	92.0			
NITRATE/NITRITE AS N	10/05/2009	0.000	1.0000	OK	OK	OK	OK	OK	OK	100.00	93.0	100.0	3.00	
NITRATE/NITRITE AS N	10/05/2009							OK	OK	107.00	102.0	102.0	0	
NITRATE/NITRITE AS N	10/05/2009							OK	OK	102.00	110.0	110.0	0	
NITRATE/NITRITE AS N	10/05/2009							OK	OK	106.00				

SAMPLE MANAGEMENT SYSTEM

Wet Chemistry Data Validation Worksheet

RIN: 09092562 Lab Code: PAR Date Due: 10/22/2009
 Matrix: Water Site Code: SHP Date Completed: 10/27/2009

Analyte	Date Analyzed	CALIBRATION							Method	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R ²	ICV	CCV	ICB	CCB	Blank						
SULFATE	09/30/2009	0.000	1.0000	OK	OK	OK	OK	OK	98.00	106.0	105.0	1.00		
SULFATE	09/30/2009							OK	97.00					
SULFATE	10/01/2009				OK		OK	OK	95.00	94.0	178.0	31.00		
SULFATE	10/01/2009									102.0	102.0	0		
SULFATE	10/01/2009									95.0				
SULFATE	10/01/2009									101.0				
SULFATE	10/02/2009				OK		OK	OK	98.00					

Laboratory Performance Assessment, Terrace Locations

General Information

Report Number (RIN): 09092565
Sample Event: September 14-17, 2009
Site(s): Shiprock Disposal Site (Terrace), New Mexico
Laboratory: ALS Laboratory Group, Fort Collins, Colorado
Work Order No.: 0909269
Analysis: Metals and Wet Chemistry
Validator: Steve Donovan
Review Date: November 6, 2009

This validation was performed according to the *Environmental Procedures Catalog* (LMS/PRO/S04325, continually updated), "Standard Practice for Validation of Laboratory Data," GT-9(P). 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 6.

Table 6. 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 7. Refer to the attached validation worksheets and the sections below for an explanation of the data qualifiers applied.

Sample Shipping/Receiving

ALS Laboratory Group in Fort Collins, Colorado, received 65 water samples on September 24, 2009, 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 with the following exception. Only page one of the COC form had a relinquishment signature. The receiving documentation included copies for the shipping labels listing the air waybill numbers.

Table 7. Data Qualifier Summary

Sample Number	Location	Analyte	Flag	Reason
0909269-4	0662	Potassium	J	Matrix spike failure
0909269-5	0725	Potassium	J	Matrix spike failure
0909269-5	0725	Sodium	J	Serial dilution failure
0909269-21	0825	Sulfate	J	Matrix spike failure
0909269-22	0826	Potassium	J	Poor duplicate precision
0909269-27	0835	Manganese	J	Negative method blank result
0909269-31	0841	Ammonia as N	J	Matrix spike failure
0909269-31	0841	Potassium	J	Poor duplicate precision
0909269-48	1079	Selenium	J	Serial dilution failure
0909269-54	1095	Potassium	J	Serial dilution failure
0909269-61	0841 duplicate	Ammonia as N	J	Matrix spike failure
0909250-72	Equipment Blank	Manganese	U	Less than 5 times the calibration blank
0909250-72	Equipment Blank	Selenium	U	Less than 5 times the calibration blank
0909250-72	Equipment Blank	Uranium	U	Less than 5 times the calibration blank

Preservation and Holding Times

The sample shipments were received intact with the temperatures inside the iced coolers between 0.4 °C and 2.0 °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 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 and of producing a linear curve. Compliance requirements for continuing calibration checks are established to ensure that the instrument continues to be capable of producing acceptable qualitative and quantitative data. All laboratory instrument calibrations were performed correctly in accordance with the cited methods.

Method MCAWW 350.1

Calibration was performed for ammonia as N on October 1, 2009, using six calibration standards. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the MDL. Initial and continuing calibration verification checks were made at the required frequency resulting in 14 verification checks. All calibration checks met the acceptance criteria.

Method MCAWW 353.2

Calibration was performed for nitrate + nitrite as N on October 6, 2009, using seven calibration standards. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the MDL. Initial and continuing calibration verification checks were made at the required frequency resulting in 11 verification checks. All calibration checks met the acceptance criteria.

Method SW-846 6010B

Five calibrations for calcium, magnesium, manganese, potassium, sodium, and strontium were performed on October 12 and October 19, 2009, using single point calibrations. Calibration and laboratory spike standards were prepared from independent sources. Initial and continuing calibration verification checks were made at the required frequency resulting in 26 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

Calibrations were performed for selenium between October 12 and October 22, 2009, and for uranium between October 8 and October 21, 2009, using seven calibration standards. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the MDL. Calibration and laboratory spike standards were prepared from independent sources. Initial and continuing calibration verification checks were made at the required frequency resulting in 18 verification checks for selenium and 33 checks for uranium. 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. All results were within the acceptance range with the exception of selenium analyzed on October 22, 2009. All associated sample selenium results were greater than 5 times the MDL. 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 September 29 and October 6, 2009, 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. Calibration and laboratory spike standards were prepared from independent sources. Initial and continuing calibration verification checks were made at the required frequency resulting in 17 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. Many magnesium, manganese, and strontium calibration blanks were negative and the absolute values were greater than the MDL but less than the PQL. Associated sample results that are greater than the MDL but less than 5 times the MDL are qualified with a "J" flag as estimated values. In cases where a blank concentration exceeds the MDL, the

associated sample results are qualified with a "U" flag (not detected) when the sample result is greater than the MDL but less than 5 times the blank concentration. All initial and continuing calibration blank results associated with the samples were below the PQL with the following exceptions.

Five chloride calibration blanks had results that were greater than the PQL. The associated samples were re-analyzed with acceptable results.

One nitrate + nitrite as N calibration blanks analyzed on October 6, 2009, had a result that was greater than the PQL. The associated sample results were greater than 10 times the blank concentrations.

Two sulfate method blanks and seven calibration blanks had results that were greater than the PQL. The associated samples were re-analyzed with acceptable results.

ICP ICS Analysis

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

MS 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 ammonia as N, potassium, and sulfate MS/MSD recoveries for one or more samples did not meet the acceptance criteria. The associated sample results are qualified with a "J" flag as estimated values.

Laboratory Replicate Analysis

The laboratory replicate sample results demonstrate acceptable laboratory precision. The relative percent difference values for the laboratory replicate sample and MSD sample results for all analytes were less than 20 percent, indicating 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 100 times the PQL for ICP-MS or greater than 50 times the PQL for ICP. All evaluated serial dilution data were acceptable with the following exceptions.

The potassium, selenium, and sodium serial dilution results for one sample each did not meet the acceptance criteria. The associated sample results are qualified with a "J" flag as estimated values.

Detection Limits/Dilutions

Samples were diluted in a consistent and acceptable manner when required. The samples were diluted prior to analysis of uranium 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.

EDD File

The EDD file arrived on November 6, 2009. 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: 09092565 Lab Code: PAR Validator: Sleve Donovan Validation Date: 1/4/2010
Project: Shiprock Monitoring Analysis Type: ☒ Metals ☒ General Chem ☐ Rad ☐ Organics
of Samples: 65 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

Page 1 of 2

Metals Data Validation Worksheet

RIN: 09092565

Lab Code: PAR

Date Due: 10/22/2009

Matrix: Water

Site Code: SHP

Date Completed: 10/30/2009

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	10/12/2009			OK	OK	OK	OK			107.0	114.0	4.0	102.0	5.0	102.0
CALCIUM	10/19/2009			OK	OK	OK	OK	OK	97.0	109.0	102.0	1.0	107.0	2.0	99.0
CALCIUM	10/19/2009							OK	99.0	68.0	70.0	0.0	108.0	6.0	101.0
CALCIUM	10/19/2009							OK	95.0	78.0	62.0	1.0	109.0	2.0	101.0
MAGNESIUM	10/12/2009			OK	OK	OK	OK			109.0	117.0	6.0	106.0	7.0	101.0
MAGNESIUM	10/19/2009			OK	OK	OK	OK	OK	99.0	98.0	97.0	0.0	110.0	0.0	99.0
MAGNESIUM	10/19/2009							OK	99.0	63.0	53.0	0.0	110.0	3.0	101.0
MAGNESIUM	10/19/2009							OK	95.0	90.0	86.0	1.0	109.0	6.0	99.0
MANGANESE	10/12/2009			OK	OK	OK	OK			93.0	91.0	2.0	89.0		94.0
MANGANESE	10/19/2009			OK	OK	OK	OK	OK	100.0	98.0	97.0	0.0	97.0	1.0	102.0
MANGANESE	10/19/2009							OK	98.0	-13.0	-27.0	0.0	97.0	1.0	105.0
MANGANESE	10/19/2009							OK	96.0	40.0	43.0	1.0	94.0	3.0	102.0
POTASSIUM	10/12/2009			OK	OK	OK	OK			120.0	127.0	5.0			104.0
POTASSIUM	10/19/2009			OK	OK	OK	OK	OK	88.0	121.0	122.0	1.0		34.0	99.0
POTASSIUM	10/19/2009							OK	88.0	107.0	102.0	1.0			100.0
POTASSIUM	10/19/2009							OK	85.0	97.0	97.0	0.0			98.0
SELENIUM	10/12/2009	0.0000	1.0000	OK	OK	OK	OK	OK	91.0	106.0	109.0	2.0	96.0	3.0	120.0
SELENIUM	10/22/2009	0.0000	1.0000	OK	OK	OK	OK	OK	91.0	-42.0	-54.0	0.0	97.0	13.0	66.0

SAMPLE MANAGEMENT SYSTEM

Page 2 of 2

Metals Data Validation Worksheet

RIN: 09092565 Lab Code: PAR Date Due: 10/22/2009
 Matrix: Water Site Code: SHP Date Completed: 10/30/2009

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	10/22/2009							OK	91.0	999.0	999.0	0.0		4.0	
SELENIUM	10/22/2009							OK	95.0	96.0	95.0	0.0			
SODIUM	10/12/2009			OK	OK	OK	OK			109.0	110.0	0.0		4.0	108.0
SODIUM	10/19/2009			OK	OK	OK	OK	OK	92.0	100.0	68.0	1.0		13.0	102.0
SODIUM	10/19/2009							OK	91.0	95.0	39.0	2.0		8.0	103.0
SODIUM	10/19/2009							OK	88.0	120.0	119.0	0.0		10.0	101.0
STRONTIUM	10/12/2009			OK	OK	OK	OK			79.0	68.0	2.0	100.0	2.0	99.0
STRONTIUM	10/19/2009			OK	OK	OK	OK	OK	97.0	66.0	68.0	0.0	99.0	1.0	93.0
STRONTIUM	10/19/2009							OK	97.0	100.0	90.0	1.0	100.0	2.0	95.0
STRONTIUM	10/19/2009							OK	95.0	80.0	75.0	0.0	99.0	1.0	94.0
URANIUM	10/08/2009	0.0000	1.0000	OK	OK	OK	OK	OK		113.0	113.0	1.0	105.0	1.0	98.0
URANIUM	10/20/2009	0.0000	1.0000	OK	OK	OK	OK	OK	105.0	97.0	98.0	0.0	103.0	2.0	105.0
URANIUM	10/20/2009							OK	104.0	116.0	116.0	0.0	109.0	6.0	112.0
URANIUM	10/20/2009							OK	112.0	106.0	104.0	1.0		10.0	

SAMPLE MANAGEMENT SYSTEM

Wet Chemistry Data Validation Worksheet

RIN: 09092565 Lab Code: PAR Date Due: 10/22/2009
 Matrix: Water Site Code: SHP Date Completed: 10/30/2009

Analyte	Date Analyzed	CALIBRATION						Method	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R^2	ICV	CCV	ICB	CCB						
AMMONIA AS N	10/01/2009	0.000	0.9999	OK	OK	OK	OK	OK	103.00	82.0	78.0	1.00	
AMMONIA AS N	10/01/2009							OK	103.00	71.0	72.0	1.00	
AMMONIA AS N	10/01/2009							OK	106.00				
AMMONIA AS N	10/01/2009							OK	107.00				
CHLORIDE	10/02/2009	0.000	1.0000	OK	OK	OK	OK	OK	98.00	95.0	91.0	2.00	
CHLORIDE	10/02/2009								96.00				
CHLORIDE	10/03/2009				OK		OK	OK		84.0			
CHLORIDE	10/05/2009	0.000	1.0000	OK	OK	OK	OK	OK	101.00	102.0	101.0	1.00	
CHLORIDE	10/06/2009				OK		OK	OK	100.00	99.0	98.0	1.00	
CHLORIDE	10/06/2009									97.0			
NITRATE/NITRITE AS N	10/06/2009	0.000	0.9999	OK	OK	OK	OK	OK	103.00				
NITRATE/NITRITE AS N	10/06/2009							OK	102.00				
NITRATE/NITRITE AS N	10/06/2009							OK	102.00				
NITRATE/NITRITE AS N	10/06/2009							OK	102.00				
SULFATE	10/02/2009	0.000	1.0000	OK	OK	OK	OK	OK	100.00	98.0	101.0	0	
SULFATE	10/02/2009								98.00	103.0	123.0	4.00	

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

RIN: 09092565

Lab Code: PAR

Date Due: 10/22/2009

Matrix: Water

Site Code: SHP

Date Completed: 10/30/2009

Analyte	Date Analyzed	CALIBRATION							Method	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int	R^2	ICV	CCV	ICB	CCB	Blank						
SULFATE	10/02/2009										113.0			
SULFATE	10/03/2009				OK		OK	OK			97.0			
SULFATE	10/05/2009	0.000	1.0000	OK	OK	OK	OK	OK		103.00	100.0	98.0	1.00	
SULFATE	10/06/2009				OK		OK	OK		101.00	86.0	90.0	0	
SULFATE	10/06/2009										90.0			

Sampling Quality Control Assessment

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

Sampling Protocol

Sample results for monitor 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 wells 0734 and 0797; and terrace wells 0604, 0727, 0819, 0820, 0824, 0825, 0827, 1058, 1059, 1068, 1074, and DM7 were classified as Category II.
- Floodplain wells 0610 and 1116; and terrace wells 0812, 0814, 0822, 0846, 1007, 1073, 1120, 1122, and MW1 were classified as Category III.
- The pH and specific conductance stability criteria were not met for well 0728.
- The pH stability criteria were not met for well 0817.

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 0850 had a turbidity value greater than ten NTUs. The sample from this location was filtered.

Terrace surface locations 0662, 0889, 0949, and 1215, and groundwater locations 0728 and 1049 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, magnesium, and nitrate + nitrite as N were detected in this blank. The associated sample concentrations for these analytes were greater than 5 times the blank concentration.

Field Duplicate Assessment

Field duplicate samples are collected and analyzed as an indication of overall precision of the measurement process. The precision observed includes both field and laboratory precision and has more variability than laboratory duplicates, which measure only laboratory performance. Duplicate samples were collected from floodplain locations 1009 and 1132, and terrace locations 0603, 0731, 0813, 0826, and 0841. All duplicate results met the U.S. Environmental Protection Agency recommended laboratory duplicate criteria of less than 20 relative percent difference (RPD) for results that are greater than 5 times the PQL demonstrating acceptable precision with the exception of potassium for samples 0826 and 0841. The potassium results for these samples are qualified with a "J" flag as estimated values.

SAMPLE MANAGEMENT SYSTEM

Page 1 of 5

Validation Report: Equipment/Trip Blanks

RIN: 09092562

Lab Code: PAR

Project: Shiprock Monitoring

Validation Date: 1/4/2010

Blank Data

Blank Type	Lab Sample ID	Lab Method	Analyte Name	Result	Qualifier	MDL	Units
Equipment Blank	0909250-72	SW6010	CALCIUM	120	B	2.1	UG/L

Sample ID	Sample Ticket	Location	Result	Dilution Factor	Lab Qualifier	Validation Qualifier
0909250-1	HKQ 674	0501	56000	1		
0909250-2	HKQ 690	0501	90000	1		
0909250-31	HKQ 660	0897	120000	1		
0909250-32	HKQ 711	0897	50000	1		
0909250-33	HKQ 661	0898	160000	1		
0909250-34	HKQ 712	0898	46000	1		
0909250-35	HKQ 714	0899	64000	1		
0909250-36	HKQ 757	0899	59000	1		
0909250-37	HKQ 662	0940	59000	1		
0909250-38	HKQ 715	0940	69000	1		
0909250-39	HKQ 663	0956	77000	1		
0909250-40	HKQ 718	0956	59000	1		
0909250-41	HKQ 665	0965	65000	1		
0909250-42	HKQ 719	0965	61000	1		
0909250-62	HKQ 666	1203	56000	1		
0909250-63	HKQ 721	1203	76000	1		
0909250-64	HKQ 644	1205	46000	1		
0909250-65	HKQ 667	1205	180000	1		

Blank Data

Blank Type	Lab Sample ID	Lab Method	Analyte Name	Result	Qualifier	MDL	Units
Equipment Blank	0909250-72	SW6010	MAGNESIUM	22	B	6.6	UG/L

Sample ID	Sample Ticket	Location	Result	Dilution Factor	Lab Qualifier	Validation Qualifier
0909250-1	HKQ 674	0501	8700	1		
0909250-2	HKQ 690	0501	21000	1		
0909250-31	HKQ 660	0897	21000	1		
0909250-32	HKQ 711	0897	6000	1		
0909250-33	HKQ 661	0898	25000	1		
0909250-34	HKQ 712	0898	5100	1		
0909250-35	HKQ 714	0899	9800	1		
0909250-36	HKQ 757	0899	9000	1		

SAMPLE MANAGEMENT SYSTEM

Validation Report: Equipment/Trip Blanks

Page 2 of 5

RIN: 09092562 Lab Code: PAR Project: Shiprock Monitoring Validation Date: 1/4/2010

Blank Data

Blank Type	Lab Sample ID	Lab Method	Analyte Name	Result	Qualifier	MDL	Units
Equipment Blank	0909250-72		MAGNESIUM				

Sample ID	Sample Ticket	Location	Result	Dilution Factor	Lab Qualifier	Validation Qualifier
0909250-37	HKQ 662	0940	9000	1		
0909250-38	HKQ 715	0940	12000	1		
0909250-39	HKQ 663	0956	16000	1		
0909250-40	HKQ 718	0956	9300	1		
0909250-41	HKQ 665	0965	12000	1		
0909250-42	HKQ 719	0965	9400	1		
0909250-62	HKQ 666	1203	8500	1		
0909250-63	HKQ 721	1203	19000	1		
0909250-64	HKQ 644	1205	5300	1		
0909250-65	HKQ 667	1205	45000	1		

Blank Data

Blank Type	Lab Sample ID	Lab Method	Analyte Name	Result	Qualifier	MDL	Units
Equipment Blank	0909250-72	SW6010	MANGANESE	1	B	0.1	UG/L

Sample ID	Sample Ticket	Location	Result	Dilution Factor	Lab Qualifier	Validation Qualifier
0909250-1	HKQ 674	0501	7.4	1		
0909250-2	HKQ 690	0501	730	1		
0909250-31	HKQ 660	0897	1600	1		
0909250-32	HKQ 711	0897	7.2	1	E	
0909250-33	HKQ 661	0898	2500	1		
0909250-34	HKQ 712	0898	20	1		
0909250-35	HKQ 714	0899	80	1		
0909250-36	HKQ 757	0899	54	1		
0909250-37	HKQ 662	0940	4.6	1	B	
0909250-38	HKQ 715	0940	180	1		
0909250-39	HKQ 663	0956	500	1		
0909250-40	HKQ 718	0956	6.2	1		
0909250-41	HKQ 665	0965	170	1		
0909250-42	HKQ 719	0965	9.8	1	E	
0909250-62	HKQ 666	1203	20	1		
0909250-63	HKQ 721	1203	470	1		

SAMPLE MANAGEMENT SYSTEM

Page 3 of 5

Validation Report: Equipment/Trip Blanks

RIN: 09092562

Lab Code: PAR

Project: Shiprock Monitoring

Validation Date: 1/4/2010

Blank Data

Blank Type	Lab Sample ID	Lab Method	Analyte Name	Result	Qualifier	MDL	Units
Equipment Blank	0909250-72		MANGANESE				

Sample ID	Sample Ticket	Location	Result	Dilution Factor	Lab Qualifier	Validation Qualifier
0909250-64	HKQ 644	1205	40	1		
0909250-65	HKQ 667	1205	3300	1		

Blank Data

Blank Type	Lab Sample ID	Lab Method	Analyte Name	Result	Qualifier	MDL	Units
Equipment Blank	0909250-72	SW6020	SELENIUM	0.044	B	0.032	UG/L

Sample ID	Sample Ticket	Location	Result	Dilution Factor	Lab Qualifier	Validation Qualifier
0909250-1	HKQ 674	0501	0.54	1		
0909250-2	HKQ 690	0501	0.64	1		
0909250-31	HKQ 660	0897	0.76	1		
0909250-32	HKQ 711	0897	0.81	1		
0909250-33	HKQ 661	0898	0.72	1		
0909250-34	HKQ 712	0898	0.82	1		
0909250-35	HKQ 714	0899	0.54	1		
0909250-36	HKQ 757	0899	0.57	1		
0909250-37	HKQ 662	0940	0.61	1		
0909250-38	HKQ 715	0940	0.48	1		
0909250-39	HKQ 663	0956	0.49	1		
0909250-40	HKQ 718	0956	0.57	1		
0909250-41	HKQ 665	0965	0.56	1		
0909250-42	HKQ 719	0965	0.58	1		
0909250-62	HKQ 666	1203	0.69	1		
0909250-63	HKQ 721	1203	0.76	1		
0909250-64	HKQ 644	1205	0.82	1		
0909250-65	HKQ 667	1205	0.85	1		

SAMPLE MANAGEMENT SYSTEM

Validation Report: Equipment/Trip Blanks

Page 4 of 5

RIN: 09092562 Lab Code: PAR Project: Shiprock Monitoring Validation Date: 1/4/2010

Blank Data

Blank Type	Lab Sample ID	Lab Method	Analyte Name	Result	Qualifier	MDL	Units
Equipment Blank	0909250-72	SW6020	URANIUM	0.017	B	0.0017	UG/L

Sample ID	Sample Ticket	Location	Result	Dilution Factor	Lab Qualifier	Validation Qualifier
0909250-1	HKQ 674	0501	1.7	10		
0909250-2	HKQ 690	0501	4.6	10		
0909250-31	HKQ 660	0897	7.5	10		
0909250-32	HKQ 711	0897	2.2	10		
0909250-33	HKQ 661	0898	8.7	10		
0909250-34	HKQ 712	0898	2.5	10		
0909250-35	HKQ 714	0899	2.3	10		
0909250-36	HKQ 757	0899	2	10		
0909250-37	HKQ 662	0940	1.2	10		
0909250-38	HKQ 715	0940	2.4	10		
0909250-39	HKQ 663	0956	3.6	10		
0909250-40	HKQ 718	0956	1.8	10		
0909250-41	HKQ 665	0965	2.8	10		
0909250-42	HKQ 719	0965	2.2	10		
0909250-62	HKQ 666	1203	1.8	10		
0909250-63	HKQ 721	1203	3.5	10		
0909250-64	HKQ 644	1205	2.5	10		
0909250-65	HKQ 667	1205	16	10		

Blank Data

Blank Type	Lab Sample ID	Lab Method	Analyte Name	Result	Qualifier	MDL	Units
Equipment Blank	0909250-72	EPA353.2	NITRATE/NITRITE AS N	0.016		0.01	MG/L

Sample ID	Sample Ticket	Location	Result	Dilution Factor	Lab Qualifier	Validation Qualifier
0909250-1	HKQ 674	0501	0.63	1		
0909250-2	HKQ 690	0501	0.61	1		
0909250-31	HKQ 660	0897	0.68	1		
0909250-32	HKQ 711	0897	0.74	1		
0909250-33	HKQ 661	0898	0.84	1		
0909250-34	HKQ 712	0898	0.83	1		
0909250-35	HKQ 714	0899	0.51	1		
0909250-36	HKQ 757	0899	0.48	1		

SAMPLE MANAGEMENT SYSTEM

Validation Report: Equipment/Trip Blanks

Page 5 of 5

RIN: 09092562 Lab Code: PAR Project: Shiprock Monitoring Validation Date: 1/4/2010

Blank Data

Blank Type	Lab Sample ID	Lab Method	Analyte Name	Result	Qualifier	MDL	Units
Equipment Blank	0909250-72		NITRATE/NITRITE AS N				

Sample ID	Sample Ticket	Location	Result	Dilution Factor	Lab Qualifier	Validation Qualifier
0909250-37	HKQ 662	0940	0.46	1		
0909250-38	HKQ 715	0940	0.36	1		
0909250-39	HKQ 663	0956	0.37	1		
0909250-40	HKQ 718	0956	0.44	1		
0909250-41	HKQ 665	0965	0.46	1		
0909250-42	HKQ 719	0965	0.46	1		
0909250-62	HKQ 666	1203	0.62	1		
0909250-63	HKQ 721	1203	0.55	1		
0909250-64	HKQ 644	1205	0.85	1		
0909250-65	HKQ 667	1205	0.77	1		

SAMPLE MANAGEMENT SYSTEM

Validation Report: Field Duplicates

Page 1 of 1

RIN: 09092562 Lab Code: PAR Project: Shiprock Validation Date: 11/5/2009

Duplicate: 2604

Sample: 1132

Analyte	Sample			Duplicate			RPD	RER	Units
	Result	Flag	Error	Result	Flag	Error			
AMMONIA AS N	0.9			0.9			0		MG/L
CALCIUM	45000			44000			2.25		UG/L
CHLORIDE	8.8			8.9			1.13		MG/L
MAGNESIUM	14000			14000			0		UG/L
MANGANESE	300			290			3.39		UG/L
NITRATE/NITRITE AS N	0.01	U		0.01	U				MG/L
POTASSIUM	2200			2000			9.52		UG/L
SELENIUM	0.44			0.41			7.06		UG/L
SODIUM	31000			30000	E		3.28		UG/L
STRONTIUM	560			540			3.64		UG/L
SULFATE	110			110			0		MG/L
URANIUM	13			12			8.00		UG/L

Duplicate: 2729

Sample: 1009

Analyte	Sample			Duplicate			RPD	RER	Units
	Result	Flag	Error	Result	Flag	Error			
AMMONIA AS N	16			16			0		MG/L
CALCIUM	490000			490000			2.06		UG/L
CHLORIDE	69			72			4.26		MG/L
MAGNESIUM	340000			340000			0		UG/L
MANGANESE	370			390			5.26		UG/L
NITRATE/NITRITE AS N	17			15			12.50		MG/L
POTASSIUM	31000			30000			3.28		UG/L
SELENIUM	340			330			2.99		UG/L
SODIUM	380000			380000			0		UG/L
STRONTIUM	5300			5100			3.85		UG/L
SULFATE	3300			3300			0		MG/L
URANIUM	430			380			12.35		UG/L

SAMPLE MANAGEMENT SYSTEM

Validation Report: Field Duplicates

Page 1 of 3

RIN: 09092565 Lab Code: PAR Project: Shiprock Validation Date: 11/6/2009

Duplicate: 2810

Sample: 0813

Analyte	Sample			Duplicate			RPD	RER	Units
	Result	Flag	Error	Result	Flag	Error			
AMMONIA AS N	59			58			1.71		MG/L
CALCIUM	600000			650000			8.00		UG/L
CHLORIDE	700			750			6.90		MG/L
MAGNESIUM	3300000			3300000			0		UG/L
MANGANESE	560			650			14.88		UG/L
NITRATE/NITRITE AS N	2300			2500			8.33		MG/L
POTASSIUM	130000			110000			16.67		UG/L
SELENIUM	45			44			2.25		UG/L
SODIUM	2400000			2600000			8.00		UG/L
STRONTIUM	18000			20000			10.53		UG/L
SULFATE	11000			11000			0		MG/L
URANIUM	130			130			0		UG/L

Duplicate: 2811

Sample: 0826

Analyte	Sample			Duplicate			RPD	RER	Units
	Result	Flag	Error	Result	Flag	Error			
AMMONIA AS N	110			110			0		MG/L
CALCIUM	400000			430000			7.23		UG/L
CHLORIDE	540			610			12.17		MG/L
MAGNESIUM	2900000			2700000			7.14		UG/L
MANGANESE	2900			2900			0		UG/L
NITRATE/NITRITE AS N	49			60			20.18		MG/L
POTASSIUM	150000			120000			22.22		UG/L
SELENIUM	3.9			3.2			19.72		UG/L
SODIUM	2100000			2100000			0		UG/L
STRONTIUM	13000			13000			0		UG/L
SULFATE	15000			15000			0		MG/L
URANIUM	3700			3500			5.56		UG/L

Duplicate: 2812

Sample: 0841

Analyte	Sample			Duplicate			RPD	RER	Units
	Result	Flag	Error	Result	Flag	Error			
AMMONIA AS N	0.1	U		0.1	UN				MG/L
CALCIUM	400000			440000			9.52		UG/L
CHLORIDE	990			1000			1.01		MG/L
MAGNESIUM	900000			970000			7.49		UG/L
MANGANESE	93			110	B		16.75		UG/L
NITRATE/NITRITE AS N	690			680			1.46		MG/L

SAMPLE MANAGEMENT SYSTEM

Validation Report: Field Duplicates

Page 2 of 3

RIN: 09092565 Lab Code: PAR Project: Shiprock Validation Date: 11/6/2009

Duplicate: 2812

Sample: 0841

Analyte	Sample			Duplicate			RPD	RER	Units
	Result	Flag	Error	Result	Flag	Error			
POTASSIUM	74000			59000			22.56		UG/L
SELENIUM	3100			3100			0		UG/L
SODIUM	5500000			5700000			3.57		UG/L
STRONTIUM	9300			10000			7.25		UG/L
SULFATE	15000			16000			6.45		MG/L
URANIUM	150			140			6.90		UG/L

Duplicate: 2813

Sample: 0603

Analyte	Sample			Duplicate			RPD	RER	Units
	Result	Flag	Error	Result	Flag	Error			
AMMONIA AS N	870			910			4.49		MG/L
CALCIUM	930000			930000			0		UG/L
CHLORIDE	160			190					MG/L
MAGNESIUM	640000			640000			0		UG/L
MANGANESE	55000			56000			1.80		UG/L
NITRATE/NITRITE AS N	1800			2100			15.38		MG/L
POTASSIUM	120000			100000			18.18		UG/L
SELENIUM	83			83			0		UG/L
SODIUM	630000			650000			3.13		UG/L
STRONTIUM	4600			4700			2.15		UG/L
SULFATE	2600			2900			10.91		MG/L
URANIUM	6.8			6.9			1.46		UG/L

Duplicate: 2814

Sample: 0731

Analyte	Sample			Duplicate			RPD	RER	Units
	Result	Flag	Error	Result	Flag	Error			
AMMONIA AS N	27			30			10.53		MG/L
CALCIUM	460000			460000			0		UG/L
CHLORIDE	200			220			9.52		MG/L
MAGNESIUM	540000			520000			3.77		UG/L
MANGANESE	200			200			0		UG/L
NITRATE/NITRITE AS N	150			160			6.45		MG/L
POTASSIUM	41000			40000			2.47		UG/L
SELENIUM	15			14			6.90		UG/L
SODIUM	1000000			1000000			0		UG/L
STRONTIUM	8900			8800			1.13		UG/L
SULFATE	4800			5100			6.06		MG/L

SAMPLE MANAGEMENT SYSTEM
Validation Report: Field Duplicates

Page 3 of 3

RIN: 09092565 Lab Code: PAR Project: Shiprock Validation Date: 11/6/2009

Duplicate: 2814

Sample: 0731

Analyte	Sample			Duplicate			RPD	RER	Units
	Result	Flag	Error	Result	Flag	Error			
URANIUM	41			44			7.06		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
Steve Donovan

2-26-2010
Date

Data Validation Lead:

Steve Donovan
Steve Donovan

2-26-2010
Date

This page intentionally left blank.

Attachment 1
Assessment of Anomalous Data

This page intentionally left blank

Potential Outliers Report

This page intentionally left blank

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 SEEPPro 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 for separately for filtered and unfiltered samples.

The data identified as potentially anomalous data 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: 09092562

Report Date: 2/24/2010

Site Code	Location Code	Sample ID	Sample Date	Analyte	Result	Current Qualifiers		Result	Historical Maximum Qualifiers		Result	Historical Minimum Qualifiers		Number of Data Points		Statistical Outlier
						Lab	Data		Lab	Data		Lab	Data	N	N Below Detect	
SHP01	0734	0001	09/17/2009	Calcium	87		FQ	502			116			22	0	No
SHP01	0734	0001	09/17/2009	Magnesium	96		FQ	928		F	150		FQ	21	0	No
SHP01	0734	0001	09/17/2009	Potassium	4.1	B	FQJ	37	EN	JFQ	8.1		FQ	20	0	No
SHP01	0734	0001	09/17/2009	Sodium	480		FQJ	3430		F	500		FQ	22	0	No
SHP01	0734	0001	09/17/2009	Strontium	2.9		FQ	13.5		F	3.2			22	0	No
SHP01	0734	0001	09/17/2009	Uranium	0.018		FQ	0.528		L	0.061		Q	23	0	Yes
SHP01	0850	0001	09/16/2009	Calcium	16		F	290		F	39.5		F	22	0	No
SHP01	0850	0001	09/16/2009	Chloride	260		F	221		F	41.2		F	22	0	Yes
SHP01	0850	0001	09/16/2009	Magnesium	3.3	B	F	55		F	8.64		F	22	0	No
SHP01	0850	0001	09/16/2009	Potassium	0.46	U	FJ	9.9		F	2.52		F	22	0	No
SHP01	0850	0001	09/16/2009	Sodium	150		FJ	1350		F	270		F	22	0	Yes
SHP01	0850	0001	09/16/2009	Strontium	0.25		F	3.7		F	0.614		F	22	0	No
SHP01	0850	0001	09/16/2009	Sulfate	4600		F	3200		F	610		F	22	0	Yes
SHP01	0850	0001	09/16/2009	Uranium	0.0046		F	0.071		F	0.0069		F	22	0	No
SHP01	1205	0001	09/16/2009	Magnesium	5.3			15			7.8			20	0	No
SHP01	1205	0001	09/16/2009	Manganese	0.04			0.0325			0.00099	B		21	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data for Filtered Samples

Laboratory: ALS Laboratory Group

RIN: 09092565

Report Date: 2/24/2010

Site Code	Location Code	Sample ID	Sample Date	Analyte	Result	Current		Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
						Qualifiers		Qualifiers			Qualifiers			N	N Below Detect	
						Lab	Data	Result	Lab	Data	Result	Lab	Data			
SHP02	0604	0001	09/16/2009	Magnesium	1600		FQ	1320		L	972		L	6	0	No
SHP02	0604	0001	09/16/2009	Potassium	59		FQ	49.6	E	JL	27.9		L	6	0	No
SHP02	0604	0001	09/16/2009	Sulfate	11000		FQ	10213			1.59		L	12	0	No
SHP02	0604	0001	09/16/2009	Uranium	0.096		FQ	0.0807		L	0.00016	B	UL	11	1	No
SHP02	0812	0001	09/16/2009	Chloride	2500		FQ	2400		FQ	2160		L	10	0	No
SHP02	0812	0001	09/16/2009	Magnesium	2300		FQ	2280			2050		L	9	0	No
SHP02	0812	0001	09/16/2009	Sodium	5100		FQ	6360		L	5400		FQ	9	0	No
SHP02	0814	0001	09/16/2009	Calcium	420		FQ	476			430		FQ	6	0	No
SHP02	0814	0001	09/16/2009	Magnesium	2100		FQ	2530		L	2200		FQ	6	0	No
SHP02	0814	0001	09/16/2009	Manganese	1.2		FQ	1.52			1.25		L	7	0	No
SHP02	0814	0001	09/16/2009	Selenium	2		FQ	3.3		L	2.1		FQ	7	0	No
SHP02	0814	0001	09/16/2009	Uranium	0.096		FQ	0.281			0.12		FQ	9	0	No
SHP02	0820	0001	09/15/2009	Manganese	0.9		FQ	0.65		FQ	0.161		L	5	0	No
SHP02	0824	0001	09/16/2009	Calcium	190		FQ	359		L	252		L	5	0	No
SHP02	0824	0001	09/16/2009	Chloride	6900		FQ	6510		L	3230		L	5	0	No
SHP02	0824	0001	09/16/2009	Magnesium	85		FQ	158		L	97.1		L	5	0	No
SHP02	0846	0001	09/17/2009	Nitrate + Nitrite as Nitrogen	58		FQ	56		FQ	15		F	12	0	No
SHP02	0846	0001	09/17/2009	Potassium	5	B	FQ	12		F	6.15		F	22	0	No
SHP02	0889	0001	09/16/2009	Ammonia Total as N	1.8			0.1	U	J	0.1	U	J	8	8	Yes
SHP02	0889	0001	09/16/2009	Manganese	0.37			0.123			0.0007	B		21	6	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: 09092562

Report Date: 2/24/2010

Site Code	Location Code	Sample ID	Sample Date	Analyte	Result	Current Qualifiers		Result	Historical Maximum Qualifiers		Result	Historical Minimum Qualifiers		Number of Data Points		Statistical Outlier
						Lab	Data		Lab	Data		Lab	Data	N	N Below Detect	
SHP01	0614	N001	09/16/2009	Ammonia Total as N	65		F	37		F	18			7	0	Yes
SHP01	0614	N001	09/16/2009	Sodium	1900		FJ	3600			1980			8	0	No
SHP01	0614	N001	09/16/2009	Sulfate	9700		F	15000		F	10000		F	8	0	No
SHP01	0615	N001	09/16/2009	Calcium	550		F	540		F	297			11	0	No
SHP01	0630	N001	09/17/2009	Calcium	160		F	401			170		F	5	0	No
SHP01	0630	N001	09/17/2009	Chloride	65		F	199			67		F	5	0	No
SHP01	0630	N001	09/17/2009	Sodium	830		FJ	1440			840		F	5	0	No
SHP01	1110	N001	09/16/2009	Chloride	300			510			330			5	0	No
SHP01	1110	N001	09/16/2009	Sodium	1600		J	3100			1800			5	0	No
SHP01	1111	N001	09/16/2009	Uranium	0.87		F	1.588			0.91		F	5	0	No
SHP01	1113	N001	09/15/2009	Ammonia Total as N	98		F	6			0.21		F	5	0	No
SHP01	1113	N001	09/15/2009	Calcium	390		F	473			420		F	5	0	No
SHP01	1113	N001	09/15/2009	Chloride	120		F	533			190		F	5	0	No
SHP01	1113	N001	09/15/2009	Magnesium	490		F	2500			920		F	5	0	No
SHP01	1113	N001	09/15/2009	Potassium	77		FJ	239			130		F	5	0	No
SHP01	1113	N001	09/15/2009	Sodium	630		FJ	4100			1100		F	5	0	No
SHP01	1113	N001	09/15/2009	Sulfate	4100		F	13595			5400		F	5	0	No
SHP01	1113	N001	09/15/2009	Uranium	0.78		F	1.7962			1.1		F	5	0	No

Data Validation Outliers Report - No Field Parameters
Comparison: All Historical Data for Unfiltered Samples
 Laboratory: ALS Laboratory Group
 RIN: 09092562
 Report Date: 2/24/2010

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	1117	N001	09/14/2009	Chloride	7		F	16			9			7	0	No
SHP01	1117	N001	09/14/2009	Magnesium	7.8		F	29			11		F	7	0	No
SHP01	1117	N001	09/14/2009	Potassium	1.5		FJ	3.7			1.8		F	7	0	No
SHP01	1117	N001	09/14/2009	Sodium	27		FJ	950			32		F	7	0	No
SHP01	1117	N001	09/14/2009	Sulfate	87		F	200			106			7	0	No
SHP01	1117	N001	09/14/2009	Uranium	0.0047		F	0.0203			0.0054		F	7	0	No

Data Validation Outliers Report - No Field Parameters
Comparison: All Historical Data for Unfiltered Samples

Laboratory: ALS Laboratory Group

RIN: 09092565

Report Date: 2/24/2010

Site Code	Location Code	Sample ID	Sample Date	Analyte	Result	Current Qualifiers		Result	Historical Maximum Qualifiers		Result	Historical Minimum Qualifiers		Number of Data Points		Statistical Outlier
						Lab	Data		Lab	Data		Lab	Data	N	N Below Detect	
SHP02	0725	N001	09/16/2009	Selenium	0.0025		F	0.078			0.0063		F	5	0	No
SHP02	0726	N001	09/14/2009	Selenium	0.0018		F	0.013		F	0.0028		F	5	2	No
SHP02	0731	N001	09/15/2009	Selenium	0.015		F	0.192			0.02		F	5	0	No
SHP02	0731	N002	09/15/2009	Selenium	0.014		F	0.192			0.02		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.

Attachment 2

Data Presentation

This page intentionally left blank

Groundwater Quality Data Floodplain Locations

This page intentionally left blank

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

REPORT DATE: 11/13/2009

Location: 0608 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	09/15/2009	N001	10	-	15	130		F	#	10	
Calcium	mg/L	09/15/2009	N001	10	-	15	290		F	#	0.011	
Chloride	mg/L	09/15/2009	N001	10	-	15	140		F	#	20	
Magnesium	mg/L	09/15/2009	N001	10	-	15	530		F	#	0.033	
Manganese	mg/L	09/15/2009	N001	10	-	15	2.7		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	10	-	15	170		F	#	1	
Oxidation Reduction Potential	mV	09/15/2009	N001	10	-	15	71.9		F	#		
pH	s.u.	09/15/2009	N001	10	-	15	6.95		F	#		
Potassium	mg/L	09/15/2009	N001	10	-	15	76		FJ	#	0.46	
Selenium	mg/L	09/15/2009	N001	10	-	15	0.005		F	#	0.000032	
Sodium	mg/L	09/15/2009	N001	10	-	15	900		FJ	#	0.022	
Specific Conductance	umhos/cm	09/15/2009	N001	10	-	15	7756		F	#		
Strontium	mg/L	09/15/2009	N001	10	-	15	5.8		F	#	0.00027	
Sulfate	mg/L	09/15/2009	N001	10	-	15	4500		F	#	50	
Temperature	C	09/15/2009	N001	10	-	15	21.9		F	#		
Turbidity	NTU	09/15/2009	N001	10	-	15	6.7		F	#		
Uranium	mg/L	09/15/2009	N001	10	-	15	0.78		F	#	0.000035	

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

REPORT DATE: 11/13/2009

Location: 0610 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	09/15/2009	N001	4 - 9	6.7		FQ	#	0.5	
Calcium	mg/L	09/15/2009	N001	4 - 9	440		FQ	#	0.011	
Chloride	mg/L	09/15/2009	N001	4 - 9	230		FQ	#	20	
Magnesium	mg/L	09/15/2009	N001	4 - 9	1200		FQ	#	0.033	
Manganese	mg/L	09/15/2009	N001	4 - 9	0.55		FQ	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	4 - 9	400		FQ	#	5	
Oxidation Reduction Potential	mV	09/15/2009	N001	4 - 9	112		FQ	#		
pH	s.u.	09/15/2009	N001	4 - 9	7.24		FQ	#		
Potassium	mg/L	09/15/2009	N001	4 - 9	130		FQJ	#	0.46	
Selenium	mg/L	09/15/2009	N001	4 - 9	0.045		FQ	#	0.00016	
Sodium	mg/L	09/15/2009	N001	4 - 9	1300		FQJ	#	0.044	
Specific Conductance	umhos /cm	09/15/2009	N001	4 - 9	11499		FQ	#		
Strontium	mg/L	09/15/2009	N001	4 - 9	7.9		FQ	#	0.00027	
Sulfate	mg/L	09/15/2009	N001	4 - 9	7300		FQ	#	50	
Temperature	C	09/15/2009	N001	4 - 9	26.09		FQ	#		
Turbidity	NTU	09/15/2009	N001	4 - 9	2.81		FQ	#		
Uranium	mg/L	09/15/2009	N001	4 - 9	1.4		FQ	#	0.000035	

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

REPORT DATE: 11/13/2009

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	09/15/2009	N001	9.5	-	14.5	1.6		F	#	0.1	
Calcium	mg/L	09/15/2009	N001	9.5	-	14.5	170		F	#	0.011	
Chloride	mg/L	09/15/2009	N001	9.5	-	14.5	560		F	#	20	
Magnesium	mg/L	09/15/2009	N001	9.5	-	14.5	89		F	#	0.033	
Manganese	mg/L	09/15/2009	N001	9.5	-	14.5	0.067		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	9.5	-	14.5	0.66		F	#	0.01	
Oxidation Reduction Potential	mV	09/15/2009	N001	9.5	-	14.5	54.8		F	#		
pH	s.u.	09/15/2009	N001	9.5	-	14.5	7.14		F	#		
Potassium	mg/L	09/15/2009	N001	9.5	-	14.5	18		FJ	#	0.46	
Selenium	mg/L	09/15/2009	N001	9.5	-	14.5	0.00061		F	#	0.000032	
Sodium	mg/L	09/15/2009	N001	9.5	-	14.5	2200		FJ	#	0.22	
Specific Conductance	umhos /cm	09/15/2009	N001	9.5	-	14.5	10796		F	#		
Strontium	mg/L	09/15/2009	N001	9.5	-	14.5	7.7		F	#	0.00027	
Sulfate	mg/L	09/15/2009	N001	9.5	-	14.5	5700		F	#	50	
Temperature	C	09/15/2009	N001	9.5	-	14.5	23.62		F	#		
Turbidity	NTU	09/15/2009	N001	9.5	-	14.5	1.41		F	#		
Uranium	mg/L	09/15/2009	N001	9.5	-	14.5	0.0067		F	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/16/2009	N001	5	-	10	0.39		F	#	0.1	
Calcium	mg/L	09/16/2009	N001	5	-	10	85		F	#	0.0021	
Chloride	mg/L	09/16/2009	N001	5	-	10	18		F	#	2	
Magnesium	mg/L	09/16/2009	N001	5	-	10	35		F	#	0.0066	
Manganese	mg/L	09/16/2009	N001	5	-	10	0.49		F	#	0.0001	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	N001	5	-	10	0.021		F	#	0.01	
Oxidation Reduction Potential	mV	09/16/2009	N001	5	-	10	19.4		F	#		
pH	s.u.	09/16/2009	N001	5	-	10	6.98		F	#		
Potassium	mg/L	09/16/2009	N001	5	-	10	4		FJ	#	0.092	
Selenium	mg/L	09/16/2009	N001	5	-	10	0.00049		F	#	0.000032	
Sodium	mg/L	09/16/2009	N001	5	-	10	100		FJ	#	0.0044	
Specific Conductance	umhos /cm	09/16/2009	N001	5	-	10	1076		F	#		
Strontium	mg/L	09/16/2009	N001	5	-	10	1		F	#	0.000055	
Sulfate	mg/L	09/16/2009	N001	5	-	10	350		F	#	5	
Temperature	C	09/16/2009	N001	5	-	10	18.78		F	#		
Turbidity	NTU	09/16/2009	N001	5	-	10	1.44		F	#		
Uranium	mg/L	09/16/2009	N001	5	-	10	0.1		F	#	0.0000017	

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

REPORT DATE: 11/13/2009

Location: 0614 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	09/16/2009	N001	10	-	15	65		F	#	10	
Calcium	mg/L	09/16/2009	N001	10	-	15	430		F	#	0.021	
Chloride	mg/L	09/16/2009	N001	10	-	15	360		F	#	40	
Magnesium	mg/L	09/16/2009	N001	10	-	15	1800		F	#	0.066	
Manganese	mg/L	09/16/2009	N001	10	-	15	4.2		F	#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	N001	10	-	15	570		F	#	5	
Oxidation Reduction Potential	mV	09/16/2009	N001	10	-	15	92.6		F	#		
pH	s.u.	09/16/2009	N001	10	-	15	6.92		F	#		
Potassium	mg/L	09/16/2009	N001	10	-	15	140		FJ	#	0.92	
Selenium	mg/L	09/16/2009	N001	10	-	15	0.093		F	#	0.00032	
Sodium	mg/L	09/16/2009	N001	10	-	15	1900		FJ	#	0.044	
Specific Conductance	umhos/cm	09/16/2009	N001	10	-	15	15950		F	#		
Strontium	mg/L	09/16/2009	N001	10	-	15	11		F	#	0.00055	
Sulfate	mg/L	09/16/2009	N001	10	-	15	9700		F	#	100	
Temperature	C	09/16/2009	N001	10	-	15	18.5		F	#		
Turbidity	NTU	09/16/2009	N001	10	-	15	4.68		F	#		
Uranium	mg/L	09/16/2009	N001	10	-	15	1.8		F	#	0.000087	

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

REPORT DATE: 11/13/2009

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	09/16/2009	N001	4.5	-	9.5	8.2		F	#	0.5	
Calcium	mg/L	09/16/2009	N001	4.5	-	9.5	550		F	#	0.011	
Chloride	mg/L	09/16/2009	N001	4.5	-	9.5	180		F	#	20	
Magnesium	mg/L	09/16/2009	N001	4.5	-	9.5	980		F	#	0.033	
Manganese	mg/L	09/16/2009	N001	4.5	-	9.5	1.9		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	N001	4.5	-	9.5	150		F	#	1	
Oxidation Reduction Potential	mV	09/16/2009	N001	4.5	-	9.5	100.1		F	#		
pH	s.u.	09/16/2009	N001	4.5	-	9.5	6.77		F	#		
Potassium	mg/L	09/16/2009	N001	4.5	-	9.5	110		FJ	#	0.46	
Selenium	mg/L	09/16/2009	N001	4.5	-	9.5	0.23		F	#	0.0016	
Sodium	mg/L	09/16/2009	N001	4.5	-	9.5	1100		FJ	#	0.022	
Specific Conductance	umhos /cm	09/16/2009	N001	4.5	-	9.5	10051		F	#		
Strontium	mg/L	09/16/2009	N001	4.5	-	9.5	8.1		F	#	0.00027	
Sulfate	mg/L	09/16/2009	N001	4.5	-	9.5	6900		F	#	50	
Temperature	C	09/16/2009	N001	4.5	-	9.5	24.9		F	#		
Turbidity	NTU	09/16/2009	N001	4.5	-	9.5	5.35		F	#		
Uranium	mg/L	09/16/2009	N001	4.5	-	9.5	1.2		F	#	0.000087	

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

REPORT DATE: 11/13/2009

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	09/17/2009	N001	11	-	16	46		F	#	10	
Calcium	mg/L	09/17/2009	N001	11	-	16	460		F	#	0.021	
Chloride	mg/L	09/17/2009	N001	11	-	16	630		F	#	40	
Magnesium	mg/L	09/17/2009	N001	11	-	16	2000		F	#	0.066	
Manganese	mg/L	09/17/2009	N001	11	-	16	10		F	#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	11	-	16	340		F	#	2	
Oxidation Reduction Potential	mV	09/17/2009	N001	11	-	16	83.5		F	#		
pH	s.u.	09/17/2009	N001	11	-	16	6.82		F	#		
Potassium	mg/L	09/17/2009	N001	11	-	16	120		FJ	#	0.92	
Selenium	mg/L	09/17/2009	N001	11	-	16	0.18		F	#	0.0016	
Sodium	mg/L	09/17/2009	N001	11	-	16	2900		FJ	#	0.22	
Specific Conductance	umhos /cm	09/17/2009	N001	11	-	16	21442		F	#		
Strontium	mg/L	09/17/2009	N001	11	-	16	11		F	#	0.00055	
Sulfate	mg/L	09/17/2009	N001	11	-	16	14000		F	#	100	
Temperature	C	09/17/2009	N001	11	-	16	19.77		F	#		
Turbidity	NTU	09/17/2009	N001	11	-	16	2.22		F	#		
Uranium	mg/L	09/17/2009	N001	11	-	16	2.5		F	#	0.000087	

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

REPORT DATE: 11/13/2009

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	09/17/2009	N001	8	-	13	0.35		F	#	0.1	
Calcium	mg/L	09/17/2009	N001	8	-	13	250		F	#	0.011	
Chloride	mg/L	09/17/2009	N001	8	-	13	100		F	#	20	
Magnesium	mg/L	09/17/2009	N001	8	-	13	180		F	#	0.033	
Manganese	mg/L	09/17/2009	N001	8	-	13	1.8		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	8	-	13	0.017		F	#	0.01	
Oxidation Reduction Potential	mV	09/17/2009	N001	8	-	13	-19.6		F	#		
pH	s.u.	09/17/2009	N001	8	-	13	7.13		F	#		
Potassium	mg/L	09/17/2009	N001	8	-	13	34		FJ	#	0.46	
Selenium	mg/L	09/17/2009	N001	8	-	13	0.00068		F	#	0.000032	
Sodium	mg/L	09/17/2009	N001	8	-	13	1200		FJ	#	0.022	
Specific Conductance	umhos /cm	09/17/2009	N001	8	-	13	6594		F	#		
Strontium	mg/L	09/17/2009	N001	8	-	13	6.1		F	#	0.00027	
Sulfate	mg/L	09/17/2009	N001	8	-	13	3800		F	#	50	
Temperature	C	09/17/2009	N001	8	-	13	19.16		F	#		
Turbidity	NTU	09/17/2009	N001	8	-	13	2.12		F	#		
Uranium	mg/L	09/17/2009	N001	8	-	13	0.22		F	#	0.000017	

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

REPORT DATE: 11/13/2009

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	09/17/2009	N001	5	-	10	0.1	U	F	#	0.1	
Calcium	mg/L	09/17/2009	N001	5	-	10	240		F	#	0.011	
Chloride	mg/L	09/17/2009	N001	5	-	10	110		F	#	20	
Magnesium	mg/L	09/17/2009	N001	5	-	10	190		F	#	0.033	
Manganese	mg/L	09/17/2009	N001	5	-	10	0.67		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	5	-	10	0.014		F	#	0.01	
Oxidation Reduction Potential	mV	09/17/2009	N001	5	-	10	41.3		F	#		
pH	s.u.	09/17/2009	N001	5	-	10	7.21		F	#		
Potassium	mg/L	09/17/2009	N001	5	-	10	32		FJ	#	0.46	
Selenium	mg/L	09/17/2009	N001	5	-	10	0.23		F	#	0.0016	
Sodium	mg/L	09/17/2009	N001	5	-	10	1200		FJ	#	0.022	
Specific Conductance	umhos/cm	09/17/2009	N001	5	-	10	6650		F	#		
Strontium	mg/L	09/17/2009	N001	5	-	10	6.9		F	#	0.00027	
Sulfate	mg/L	09/17/2009	N001	5	-	10	3700		F	#	50	
Temperature	C	09/17/2009	N001	5	-	10	19.67		F	#		
Turbidity	NTU	09/17/2009	N001	5	-	10	2.59		F	#		
Uranium	mg/L	09/17/2009	N001	5	-	10	0.2		F	#	0.000017	

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

REPORT DATE: 11/13/2009

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	09/17/2009	N001	10	-	15	0.1	U	F	#	0.1	
Calcium	mg/L	09/17/2009	N001	10	-	15	230		F	#	0.011	
Chloride	mg/L	09/17/2009	N001	10	-	15	76		F	#	20	
Magnesium	mg/L	09/17/2009	N001	10	-	15	58		F	#	0.033	
Manganese	mg/L	09/17/2009	N001	10	-	15	1.6		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	10	-	15	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/17/2009	N001	10	-	15	65.2		F	#		
pH	s.u.	09/17/2009	N001	10	-	15	7.16		F	#		
Potassium	mg/L	09/17/2009	N001	10	-	15	16		FJ	#	0.46	
Selenium	mg/L	09/17/2009	N001	10	-	15	0.0019		F	#	0.000032	
Sodium	mg/L	09/17/2009	N001	10	-	15	940		FJ	#	0.022	
Specific Conductance	umhos/cm	09/17/2009	N001	10	-	15	5143		F	#		
Strontium	mg/L	09/17/2009	N001	10	-	15	9		F	#	0.00027	
Sulfate	mg/L	09/17/2009	N001	10	-	15	2700		F	#	50	
Temperature	C	09/17/2009	N001	10	-	15	19.04		F	#		
Turbidity	NTU	09/17/2009	N001	10	-	15	2.02		F	#		
Uranium	mg/L	09/17/2009	N001	10	-	15	0.066		F	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/17/2009	N001	4.5	-	9.5	0.1	U	F	#	0.1	
Calcium	mg/L	09/17/2009	N001	4.5	-	9.5	230		F	#	0.011	
Chloride	mg/L	09/17/2009	N001	4.5	-	9.5	71		F	#	20	
Magnesium	mg/L	09/17/2009	N001	4.5	-	9.5	53		F	#	0.033	
Manganese	mg/L	09/17/2009	N001	4.5	-	9.5	4.4		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	4.5	-	9.5	0.022		F	#	0.01	
Oxidation Reduction Potential	mV	09/17/2009	N001	4.5	-	9.5	68.1		F	#		
pH	s.u.	09/17/2009	N001	4.5	-	9.5	7.15		F	#		
Potassium	mg/L	09/17/2009	N001	4.5	-	9.5	15		FJ	#	0.46	
Selenium	mg/L	09/17/2009	N001	4.5	-	9.5	0.0018		F	#	0.000032	
Sodium	mg/L	09/17/2009	N001	4.5	-	9.5	990		FJ	#	0.022	
Specific Conductance	umhos /cm	09/17/2009	N001	4.5	-	9.5	5152		F	#		
Strontium	mg/L	09/17/2009	N001	4.5	-	9.5	9.6		F	#	0.00027	
Sulfate	mg/L	09/17/2009	N001	4.5	-	9.5	2700		F	#	50	
Temperature	C	09/17/2009	N001	4.5	-	9.5	21.54		F	#		
Turbidity	NTU	09/17/2009	N001	4.5	-	9.5	5.21		F	#		
Uranium	mg/L	09/17/2009	N001	4.5	-	9.5	0.06		F	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/17/2009	N001	9.5 - 14.5	0.1	U	F	#	0.1	
Calcium	mg/L	09/17/2009	N001	9.5 - 14.5	220		F	#	0.011	
Chloride	mg/L	09/17/2009	N001	9.5 - 14.5	72		F	#	20	
Magnesium	mg/L	09/17/2009	N001	9.5 - 14.5	42		F	#	0.033	
Manganese	mg/L	09/17/2009	N001	9.5 - 14.5	4.9		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	9.5 - 14.5	0.017		F	#	0.01	
Oxidation Reduction Potential	mV	09/17/2009	N001	9.5 - 14.5	1.3		F	#		
pH	s.u.	09/17/2009	N001	9.5 - 14.5	7.19		F	#		
Potassium	mg/L	09/17/2009	N001	9.5 - 14.5	12		FJ	#	0.46	
Selenium	mg/L	09/17/2009	N001	9.5 - 14.5	0.0011		F	#	0.000032	
Sodium	mg/L	09/17/2009	N001	9.5 - 14.5	980		FJ	#	0.022	
Specific Conductance	umhos/cm	09/17/2009	N001	9.5 - 14.5	5100		F	#		
Strontium	mg/L	09/17/2009	N001	9.5 - 14.5	11		F	#	0.00027	
Sulfate	mg/L	09/17/2009	N001	9.5 - 14.5	2700		F	#	50	
Temperature	C	09/17/2009	N001	9.5 - 14.5	19.59		F	#		
Turbidity	NTU	09/17/2009	N001	9.5 - 14.5	5.98		F	#		
Uranium	mg/L	09/17/2009	N001	9.5 - 14.5	0.039		F	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/17/2009	N001	6	- 10	0.1	U	F	#	0.1	
Calcium	mg/L	09/17/2009	N001	6	- 10	250		F	#	0.011	
Chloride	mg/L	09/17/2009	N001	6	- 10	93		F	#	20	
Magnesium	mg/L	09/17/2009	N001	6	- 10	48		F	#	0.033	
Manganese	mg/L	09/17/2009	N001	6	- 10	4.8		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	6	- 10	0.014		F	#	0.01	
Oxidation Reduction Potential	mV	09/17/2009	N001	6	- 10	-35.8		F	#		
pH	s.u.	09/17/2009	N001	6	- 10	7.26		F	#		
Potassium	mg/L	09/17/2009	N001	6	- 10	14		FJ	#	0.46	
Selenium	mg/L	09/17/2009	N001	6	- 10	0.0011		F	#	0.000032	
Sodium	mg/L	09/17/2009	N001	6	- 10	1100		FJ	#	0.022	
Specific Conductance	umhos /cm	09/17/2009	N001	6	- 10	5954		F	#		
Strontium	mg/L	09/17/2009	N001	6	- 10	17		F	#	0.00027	
Sulfate	mg/L	09/17/2009	N001	6	- 10	3300		F	#	50	
Temperature	C	09/17/2009	N001	6	- 10	17.82		F	#		
Turbidity	NTU	09/17/2009	N001	6	- 10	8.16		F	#		
Uranium	mg/L	09/17/2009	N001	6	- 10	0.039		F	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/17/2009	N001	5	-	10	0.1	U	F	#	0.1	
Calcium	mg/L	09/17/2009	N001	5	-	10	160		F	#	0.011	
Chloride	mg/L	09/17/2009	N001	5	-	10	65		F	#	10	
Magnesium	mg/L	09/17/2009	N001	5	-	10	28		F	#	0.033	
Manganese	mg/L	09/17/2009	N001	5	-	10	3.2		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	5	-	10	0.48		F	#	0.01	
Oxidation Reduction Potential	mV	09/17/2009	N001	5	-	10	-80.1		F	#		
pH	s.u.	09/17/2009	N001	5	-	10	7.57		F	#		
Potassium	mg/L	09/17/2009	N001	5	-	10	10		FJ	#	0.46	
Selenium	mg/L	09/17/2009	N001	5	-	10	0.015		F	#	0.000032	
Sodium	mg/L	09/17/2009	N001	5	-	10	830		FJ	#	0.022	
Specific Conductance	umhos/cm	09/17/2009	N001	5	-	10	4917		F	#		
Strontium	mg/L	09/17/2009	N001	5	-	10	11		F	#	0.00027	
Sulfate	mg/L	09/17/2009	N001	5	-	10	2300		F	#	25	
Temperature	C	09/17/2009	N001	5	-	10	19.93		F	#		
Turbidity	NTU	09/17/2009	N001	5	-	10	5.8		F	#		
Uranium	mg/L	09/17/2009	N001	5	-	10	0.031		F	#	0.0000017	

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

REPORT DATE: 11/13/2009

Location: 0734 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Calcium	mg/L	09/17/2009	0001	2	-	4	87		FQ	#	0.011	
Magnesium	mg/L	09/17/2009	0001	2	-	4	96		FQ	#	0.033	
Manganese	mg/L	09/17/2009	0001	2	-	4	1.3		FQ	#	0.00052	
Oxidation Reduction Potential	mV	09/17/2009	N001	2	-	4	-14.2		FQ	#		
pH	s.u.	09/17/2009	N001	2	-	4	6.53		FQ	#		
Potassium	mg/L	09/17/2009	0001	2	-	4	4.1	B	FQJ	#	0.46	
Selenium	mg/L	09/17/2009	0001	2	-	4	0.016		FQ	#	0.000032	
Sodium	mg/L	09/17/2009	0001	2	-	4	480		FQJ	#	0.022	
Specific Conductance	umhos /cm	09/17/2009	N001	2	-	4	5313		FQ	#		
Strontium	mg/L	09/17/2009	0001	2	-	4	2.9		FQ	#	0.00027	
Temperature	C	09/17/2009	N001	2	-	4	21.23		FQ	#		
Turbidity	NTU	09/17/2009	N001	2	-	4	13.1		FQ	#		
Uranium	mg/L	09/17/2009	0001	2	-	4	0.018		FQ	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/15/2009	N001	3	-	8	22		F	#	2	
Calcium	mg/L	09/15/2009	N001	3	-	8	380		F	#	0.021	
Chloride	mg/L	09/15/2009	N001	3	-	8	500		F	#	20	
Magnesium	mg/L	09/15/2009	N001	3	-	8	1000		F	#	0.066	
Manganese	mg/L	09/15/2009	N001	3	-	8	2.8		F	#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	3	-	8	570		F	#	5	
Oxidation Reduction Potential	mV	09/15/2009	N001	3	-	8	99.2		F	#		
pH	s.u.	09/15/2009	N001	3	-	8	7.07		F	#		
Potassium	mg/L	09/15/2009	N001	3	-	8	59		FJ	#	0.92	
Selenium	mg/L	09/15/2009	N001	3	-	8	0.07		F	#	0.00016	
Sodium	mg/L	09/15/2009	N001	3	-	8	2500		FJ	#	0.22	
Specific Conductance	umhos /cm	09/15/2009	N001	3	-	8	15618		F	#		
Strontium	mg/L	09/15/2009	N001	3	-	8	10		F	#	0.00055	
Sulfate	mg/L	09/15/2009	N001	3	-	8	9000		F	#	50	
Temperature	C	09/15/2009	N001	3	-	8	20.28		F	#		
Turbidity	NTU	09/15/2009	N001	3	-	8	4.33		F	#		
Uranium	mg/L	09/15/2009	N001	3	-	8	0.26		F	#	0.000017	

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

REPORT DATE: 11/13/2009

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	09/17/2009	N001	4.71 - 9.46	0.1	U	F	#	0.1	
Calcium	mg/L	09/17/2009	N001	4.71 - 9.46	98		F	#	0.0021	
Chloride	mg/L	09/17/2009	N001	4.71 - 9.46	23		F	#	4	
Magnesium	mg/L	09/17/2009	N001	4.71 - 9.46	39		F	#	0.0066	
Manganese	mg/L	09/17/2009	N001	4.71 - 9.46	2.2		F	#	0.0001	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	4.71 - 9.46	0.032		F	#	0.01	
Oxidation Reduction Potential	mV	09/17/2009	N001	4.71 - 9.46	-140		F	#		
pH	s.u.	09/17/2009	N001	4.71 - 9.46	7.47		F	#		
Potassium	mg/L	09/17/2009	N001	4.71 - 9.46	5.1		FJ	#	0.092	
Selenium	mg/L	09/17/2009	N001	4.71 - 9.46	0.00035		F	#	0.000032	
Sodium	mg/L	09/17/2009	N001	4.71 - 9.46	170		FJ	#	0.0044	
Specific Conductance	umhos/cm	09/17/2009	N001	4.71 - 9.46	1650		F	#		
Strontium	mg/L	09/17/2009	N001	4.71 - 9.46	1.3		F	#	0.000055	
Sulfate	mg/L	09/17/2009	N001	4.71 - 9.46	630		F	#	10	
Temperature	C	09/17/2009	N001	4.71 - 9.46	18.43		F	#		
Turbidity	NTU	09/17/2009	N001	4.71 - 9.46	5.34		F	#		
Uranium	mg/L	09/17/2009	N001	4.71 - 9.46	0.0097		F	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/17/2009	N001	4.375 - 9.375	0.1	U	F	#	0.1	
Calcium	mg/L	09/17/2009	N001	4.375 - 9.375	87		F	#	0.0021	
Chloride	mg/L	09/17/2009	N001	4.375 - 9.375	20		F	#	2	
Magnesium	mg/L	09/17/2009	N001	4.375 - 9.375	32		F	#	0.0066	
Manganese	mg/L	09/17/2009	N001	4.375 - 9.375	0.95		F	#	0.0001	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	4.375 - 9.375	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/17/2009	N001	4.375 - 9.375	-54.3		F	#		
pH	s.u.	09/17/2009	N001	4.375 - 9.375	7.47		F	#		
Potassium	mg/L	09/17/2009	N001	4.375 - 9.375	4.1		FJ	#	0.092	
Selenium	mg/L	09/17/2009	N001	4.375 - 9.375	0.00036		F	#	0.000032	
Sodium	mg/L	09/17/2009	N001	4.375 - 9.375	100		FJ	#	0.0044	
Specific Conductance	umhos /cm	09/17/2009	N001	4.375 - 9.375	1253		F	#		
Strontium	mg/L	09/17/2009	N001	4.375 - 9.375	1.1		F	#	0.000055	
Sulfate	mg/L	09/17/2009	N001	4.375 - 9.375	410		F	#	5	
Temperature	C	09/17/2009	N001	4.375 - 9.375	25.3		F	#		
Turbidity	NTU	09/17/2009	N001	4.375 - 9.375	2.22		F	#		
Uranium	mg/L	09/17/2009	N001	4.375 - 9.375	0.0073		F	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/17/2009	N001	6	-	8	0.1	UN	FJ	#	0.1	
Calcium	mg/L	09/17/2009	N001	6	-	8	460		F	#	0.021	
Chloride	mg/L	09/17/2009	N001	6	-	8	480		F	#	40	
Magnesium	mg/L	09/17/2009	N001	6	-	8	1200		F	#	0.066	
Manganese	mg/L	09/17/2009	N001	6	-	8	4		F	#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	6	-	8	0.024		F	#	0.01	
Oxidation Reduction Potential	mV	09/17/2009	N001	6	-	8	-27		F	#		
pH	s.u.	09/17/2009	N001	6	-	8	7.39		F	#		
Potassium	mg/L	09/17/2009	N001	6	-	8	170		FJ	#	0.92	
Selenium	mg/L	09/17/2009	N001	6	-	8	0.15		F	#	0.00032	
Sodium	mg/L	09/17/2009	N001	6	-	8	6000		FJ	#	0.44	
Specific Conductance	umhos/cm	09/17/2009	N001	6	-	8	23705		F	#		
Strontium	mg/L	09/17/2009	N001	6	-	8	19		F	#	0.00055	
Sulfate	mg/L	09/17/2009	N001	6	-	8	18000		F	#	100	
Temperature	C	09/17/2009	N001	6	-	8	20.16		F	#		
Turbidity	NTU	09/17/2009	N001	6	-	8	3.53		F	#		
Uranium	mg/L	09/17/2009	N001	6	-	8	2.4		F	#	0.00017	

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

REPORT DATE: 11/13/2009

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	09/16/2009	N001	5.2	-	7.2	4.5		F	#	0.1	
Calcium	mg/L	09/16/2009	N001	5.2	-	7.2	250		F	#	0.011	
Chloride	mg/L	09/16/2009	N001	5.2	-	7.2	82		F	#	20	
Magnesium	mg/L	09/16/2009	N001	5.2	-	7.2	440		F	#	0.033	
Manganese	mg/L	09/16/2009	N001	5.2	-	7.2	0.14		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	N001	5.2	-	7.2	7.5		F	#	0.1	
Oxidation Reduction Potential	mV	09/16/2009	N001	5.2	-	7.2	57.4		F	#		
pH	s.u.	09/16/2009	N001	5.2	-	7.2	7.14		F	#		
Potassium	mg/L	09/16/2009	N001	5.2	-	7.2	45		FJ	#	0.46	
Selenium	mg/L	09/16/2009	N001	5.2	-	7.2	0.15		F	#	0.00032	
Sodium	mg/L	09/16/2009	N001	5.2	-	7.2	560		FJ	#	0.022	
Specific Conductance	umhos /cm	09/16/2009	N001	5.2	-	7.2	5049		F	#		
Strontium	mg/L	09/16/2009	N001	5.2	-	7.2	4		F	#	0.00027	
Sulfate	mg/L	09/16/2009	N001	5.2	-	7.2	3000		F	#	50	
Temperature	C	09/16/2009	N001	5.2	-	7.2	20.94		F	#		
Turbidity	NTU	09/16/2009	N001	5.2	-	7.2	2.06		F	#		
Uranium	mg/L	09/16/2009	N001	5.2	-	7.2	0.88		F	#	0.000035	

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

REPORT DATE: 11/13/2009

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	09/16/2009	N001	7.3	- 9.3	0.1	U	FQ	#	0.1	
Calcium	mg/L	09/16/2009	N001	7.3	- 9.3	510		FQ	#	0.11	
Chloride	mg/L	09/16/2009	N001	7.3	- 9.3	17		FQ	#	2	
Magnesium	mg/L	09/16/2009	N001	7.3	- 9.3	110		FQ	#	0.0066	
Manganese	mg/L	09/16/2009	N001	7.3	- 9.3	1.5		FQ	#	0.0001	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	N001	7.3	- 9.3	0.059		FQ	#	0.01	
Oxidation Reduction Potential	mV	09/16/2009	N001	7.3	- 9.3	131.3		FQ	#		
pH	s.u.	09/16/2009	N001	7.3	- 9.3	7.28		FQ	#		
Potassium	mg/L	09/16/2009	N001	7.3	- 9.3	14		FQJ	#	0.092	
Selenium	mg/L	09/16/2009	N001	7.3	- 9.3	0.00068		FQ	#	0.000032	
Sodium	mg/L	09/16/2009	N001	7.3	- 9.3	1300		FQJ	#	0.22	
Specific Conductance	umhos/cm	09/16/2009	N001	7.3	- 9.3	8822		FQ	#		
Strontium	mg/L	09/16/2009	N001	7.3	- 9.3	7.9		FQ	#	0.000055	
Sulfate	mg/L	09/16/2009	N001	7.3	- 9.3	240		FQ	#	5	
Temperature	C	09/16/2009	N001	7.3	- 9.3	20.5		FQ	#		
Turbidity	NTU	09/16/2009	N001	7.3	- 9.3	6.5		FQ	#		
Uranium	mg/L	09/16/2009	N001	7.3	- 9.3	0.036		FQ	#	0.0000017	

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

REPORT DATE: 11/13/2009

Location: 0798 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	09/17/2009	N001	7.1	-	9.1	1.5		F	#	0.1	
Calcium	mg/L	09/17/2009	N001	7.1	-	9.1	470		F	#	0.021	
Chloride	mg/L	09/17/2009	N001	7.1	-	9.1	490		F	#	40	
Magnesium	mg/L	09/17/2009	N001	7.1	-	9.1	1300		F	#	0.066	
Manganese	mg/L	09/17/2009	N001	7.1	-	9.1	4.3		F	#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	7.1	-	9.1	1.4		F	#	0.01	
Oxidation Reduction Potential	mV	09/17/2009	N001	7.1	-	9.1	32.4		F	#		
pH	s.u.	09/17/2009	N001	7.1	-	9.1	7.17		F	#		
Potassium	mg/L	09/17/2009	N001	7.1	-	9.1	120		FJ	#	0.92	
Selenium	mg/L	09/17/2009	N001	7.1	-	9.1	0.059		F	#	0.00016	
Sodium	mg/L	09/17/2009	N001	7.1	-	9.1	3600		FJ	#	0.44	
Specific Conductance	umhos /cm	09/17/2009	N001	7.1	-	9.1	19907		F	#		
Strontium	mg/L	09/17/2009	N001	7.1	-	9.1	13		F	#	0.00055	
Sulfate	mg/L	09/17/2009	N001	7.1	-	9.1	15000		F	#	100	
Temperature	C	09/17/2009	N001	7.1	-	9.1	19.7		F	#		
Turbidity	NTU	09/17/2009	N001	7.1	-	9.1	2		F	#		
Uranium	mg/L	09/17/2009	N001	7.1	-	9.1	2.1		F	#	0.000035	

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

REPORT DATE: 11/13/2009

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	09/16/2009	0001	5.6	-	15.4	0.1	U	F	#	0.1	
Calcium	mg/L	09/16/2009	0001	5.6	-	15.4	16		F	#	0.011	
Chloride	mg/L	09/16/2009	0001	5.6	-	15.4	260		F	#	20	
Magnesium	mg/L	09/16/2009	0001	5.6	-	15.4	3.3	B	F	#	0.033	
Manganese	mg/L	09/16/2009	0001	5.6	-	15.4	0.096		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	0001	5.6	-	15.4	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/16/2009	N001	5.6	-	15.4	113		F	#		
pH	s.u.	09/16/2009	N001	5.6	-	15.4	7.81		F	#		
Potassium	mg/L	09/16/2009	0001	5.6	-	15.4	0.46	U	FJ	#	0.46	
Selenium	mg/L	09/16/2009	0001	5.6	-	15.4	0.00036		F	#	0.000032	
Sodium	mg/L	09/16/2009	0001	5.6	-	15.4	150		FJ	#	0.022	
Specific Conductance	umhos /cm	09/16/2009	N001	5.6	-	15.4	995		F	#		
Strontium	mg/L	09/16/2009	0001	5.6	-	15.4	0.25		F	#	0.00027	
Sulfate	mg/L	09/16/2009	0001	5.6	-	15.4	4600		F	#	50	
Temperature	C	09/16/2009	N001	5.6	-	15.4	17.66		F	#		
Turbidity	NTU	09/16/2009	N001	5.6	-	15.4	13.3		F	#		
Uranium	mg/L	09/16/2009	0001	5.6	-	15.4	0.0046		F	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/16/2009	N001	10	-	15	12		F	#	0.5	
Calcium	mg/L	09/16/2009	N001	10	-	15	96		F	#	0.0021	
Chloride	mg/L	09/16/2009	N001	10	-	15	17		F	#	2	
Magnesium	mg/L	09/16/2009	N001	10	-	15	29		F	#	0.0066	
Manganese	mg/L	09/16/2009	N001	10	-	15	0.41		F	#	0.0001	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	N001	10	-	15	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/16/2009	N001	10	-	15	-42		F	#		
pH	s.u.	09/16/2009	N001	10	-	15	7.41		F	#		
Potassium	mg/L	09/16/2009	N001	10	-	15	9.9		FJ	#	0.092	
Selenium	mg/L	09/16/2009	N001	10	-	15	0.00028		F	#	0.000032	
Sodium	mg/L	09/16/2009	N001	10	-	15	68		FJ	#	0.0044	
Specific Conductance	umhos /cm	09/16/2009	N001	10	-	15	1012		F	#		
Strontium	mg/L	09/16/2009	N001	10	-	15	1.1		F	#	0.000055	
Sulfate	mg/L	09/16/2009	N001	10	-	15	360		F	#	5	
Temperature	C	09/16/2009	N001	10	-	15	22.77		F	#		
Turbidity	NTU	09/16/2009	N001	10	-	15	1.13		F	#		
Uranium	mg/L	09/16/2009	N001	10	-	15	0.04		F	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/17/2009	N001	9.05	- 11.55	3.5		F	#	0.1	
Calcium	mg/L	09/17/2009	N001	9.05	- 11.55	380		F	#	0.011	
Chloride	mg/L	09/17/2009	N001	9.05	- 11.55	410		F	#	20	
Magnesium	mg/L	09/17/2009	N001	9.05	- 11.55	1200		F	#	0.033	
Manganese	mg/L	09/17/2009	N001	9.05	- 11.55	2.5		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	9.05	- 11.55	120		F	#	1	
Oxidation Reduction Potential	mV	09/17/2009	N001	9.05	- 11.55	85.4		F	#		
pH	s.u.	09/17/2009	N001	9.05	- 11.55	7.12		F	#		
Potassium	mg/L	09/17/2009	N001	9.05	- 11.55	100		FJ	#	0.46	
Selenium	mg/L	09/17/2009	N001	9.05	- 11.55	0.028		F	#	0.000064	
Sodium	mg/L	09/17/2009	N001	9.05	- 11.55	1900		FJ	#	0.44	
Specific Conductance	umhos /cm	09/17/2009	N001	9.05	- 11.55	13315		F	#		
Strontium	mg/L	09/17/2009	N001	9.05	- 11.55	8.1		F	#	0.00027	
Sulfate	mg/L	09/17/2009	N001	9.05	- 11.55	9300		F	#	50	
Temperature	C	09/17/2009	N001	9.05	- 11.55	22.39		F	#		
Turbidity	NTU	09/17/2009	N001	9.05	- 11.55	8.24		F	#		
Uranium	mg/L	09/17/2009	N001	9.05	- 11.55	1.8		F	#	0.000035	

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

REPORT DATE: 11/13/2009

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	09/17/2009	N001	4.9	-	14.9	0.1	U	F	#	0.1	
Calcium	mg/L	09/17/2009	N001	4.9	-	14.9	220		F	#	0.011	
Chloride	mg/L	09/17/2009	N001	4.9	-	14.9	76		F	#	10	
Magnesium	mg/L	09/17/2009	N001	4.9	-	14.9	53		F	#	0.033	
Manganese	mg/L	09/17/2009	N001	4.9	-	14.9	1		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	4.9	-	14.9	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/17/2009	N001	4.9	-	14.9	109.2		F	#		
pH	s.u.	09/17/2009	N001	4.9	-	14.9	7.53		F	#		
Potassium	mg/L	09/17/2009	N001	4.9	-	14.9	12		FJ	#	0.46	
Selenium	mg/L	09/17/2009	N001	4.9	-	14.9	0.0025		F	#	0.000032	
Sodium	mg/L	09/17/2009	N001	4.9	-	14.9	940		FJ	#	0.022	
Specific Conductance	umhos/cm	09/17/2009	N001	4.9	-	14.9	5397		F	#		
Strontium	mg/L	09/17/2009	N001	4.9	-	14.9	6.6		F	#	0.00027	
Sulfate	mg/L	09/17/2009	N001	4.9	-	14.9	2900		F	#	25	
Temperature	C	09/17/2009	N001	4.9	-	14.9	15.4		F	#		
Turbidity	NTU	09/17/2009	N001	4.9	-	14.9	3.5		F	#		
Uranium	mg/L	09/17/2009	N001	4.9	-	14.9	0.068		F	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/17/2009	N001	18.8	-	23.8	0.1	U	F	#	0.1	
Calcium	mg/L	09/17/2009	N001	18.8	-	23.8	210		F	#	0.011	
Chloride	mg/L	09/17/2009	N001	18.8	-	23.8	70		F	#	10	
Magnesium	mg/L	09/17/2009	N001	18.8	-	23.8	54		F	#	0.033	
Manganese	mg/L	09/17/2009	N001	18.8	-	23.8	0.99		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	18.8	-	23.8	0.015		F	#	0.01	
Oxidation Reduction Potential	mV	09/17/2009	N001	18.8	-	23.8	6		F	#		
pH	s.u.	09/17/2009	N001	18.8	-	23.8	7.64		F	#		
Potassium	mg/L	09/17/2009	N001	18.8	-	23.8	14		FJ	#	0.46	
Selenium	mg/L	09/17/2009	N001	18.8	-	23.8	0.00043		F	#	0.000032	
Sodium	mg/L	09/17/2009	N001	18.8	-	23.8	900		FJ	#	0.022	
Specific Conductance	umhos /cm	09/17/2009	N001	18.8	-	23.8	4892		F	#		
Strontium	mg/L	09/17/2009	N001	18.8	-	23.8	5.7		F	#	0.00027	
Sulfate	mg/L	09/17/2009	N001	18.8	-	23.8	2700		F	#	25	
Temperature	C	09/17/2009	N001	18.8	-	23.8	15.1		F	#		
Turbidity	NTU	09/17/2009	N001	18.8	-	23.8	2.28		F	#		
Uranium	mg/L	09/17/2009	N001	18.8	-	23.8	0.064		F	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/17/2009	N001	13.2	- 18.2	4.9		F	#	0.1	
Calcium	mg/L	09/17/2009	N001	13.2	- 18.2	88		F	#	0.0021	
Chloride	mg/L	09/17/2009	N001	13.2	- 18.2	23		F	#	4	
Magnesium	mg/L	09/17/2009	N001	13.2	- 18.2	60		F	#	0.0066	
Manganese	mg/L	09/17/2009	N001	13.2	- 18.2	0.8		F	#	0.0001	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	13.2	- 18.2	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/17/2009	N001	13.2	- 18.2	-40.9		F	#		
pH	s.u.	09/17/2009	N001	13.2	- 18.2	7.31		F	#		
Potassium	mg/L	09/17/2009	N001	13.2	- 18.2	12		FJ	#	0.092	
Selenium	mg/L	09/17/2009	N001	13.2	- 18.2	0.00033		F	#	0.000032	
Sodium	mg/L	09/17/2009	N001	13.2	- 18.2	170		FJ	#	0.0044	
Specific Conductance	umhos /cm	09/17/2009	N001	13.2	- 18.2	1714		F	#		
Strontium	mg/L	09/17/2009	N001	13.2	- 18.2	1.1		F	#	0.000055	
Sulfate	mg/L	09/17/2009	N001	13.2	- 18.2	620		F	#	10	
Temperature	C	09/17/2009	N001	13.2	- 18.2	18.41		F	#		
Turbidity	NTU	09/17/2009	N001	13.2	- 18.2	0.8		F	#		
Uranium	mg/L	09/17/2009	N001	13.2	- 18.2	0.18		F	#	0.0000035	

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

REPORT DATE: 11/13/2009

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	09/17/2009	N001	6.9	- 16.9	16		F	#	0.5	
Calcium	mg/L	09/17/2009	N001	6.9	- 16.9	410		F	#	0.021	
Chloride	mg/L	09/17/2009	N001	6.9	- 16.9	890		F	#	40	
Magnesium	mg/L	09/17/2009	N001	6.9	- 16.9	2300		F	#	0.066	
Manganese	mg/L	09/17/2009	N001	6.9	- 16.9	8.2		F	#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	6.9	- 16.9	170		F	#	1	
Oxidation Reduction Potential	mV	09/17/2009	N001	6.9	- 16.9	69.8		F	#		
pH	s.u.	09/17/2009	N001	6.9	- 16.9	6.93		F	#		
Potassium	mg/L	09/17/2009	N001	6.9	- 16.9	140		FJ	#	0.92	
Selenium	mg/L	09/17/2009	N001	6.9	- 16.9	0.021		F	#	0.000064	
Sodium	mg/L	09/17/2009	N001	6.9	- 16.9	3400		FJ	#	0.44	
Specific Conductance	umhos /cm	09/17/2009	N001	6.9	- 16.9	22275		F	#		
Strontium	mg/L	09/17/2009	N001	6.9	- 16.9	12		F	#	0.00055	
Sulfate	mg/L	09/17/2009	N001	6.9	- 16.9	18000		F	#	100	
Temperature	C	09/17/2009	N001	6.9	- 16.9	19.9		F	#		
Turbidity	NTU	09/17/2009	N001	6.9	- 16.9	1.23		F	#		
Uranium	mg/L	09/17/2009	N001	6.9	- 16.9	3.1		F	#	0.00017	

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

REPORT DATE: 11/13/2009

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	09/16/2009	N001	7.4 - 17.4	16		F	#	0.5	
Ammonia Total as N	mg/L	09/16/2009	N002	7.4 - 17.4	16		F	#	1	
Calcium	mg/L	09/16/2009	N001	7.4 - 17.4	480		F	#	0.011	
Calcium	mg/L	09/16/2009	N002	7.4 - 17.4	490		F	#	0.011	
Chloride	mg/L	09/16/2009	N001	7.4 - 17.4	69		F	#	10	
Chloride	mg/L	09/16/2009	N002	7.4 - 17.4	72		F	#	10	
Magnesium	mg/L	09/16/2009	N001	7.4 - 17.4	340		F	#	0.033	
Magnesium	mg/L	09/16/2009	N002	7.4 - 17.4	340		F	#	0.033	
Manganese	mg/L	09/16/2009	N001	7.4 - 17.4	0.37		F	#	0.00052	
Manganese	mg/L	09/16/2009	N002	7.4 - 17.4	0.39		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	N001	7.4 - 17.4	17		F	#	0.1	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	N002	7.4 - 17.4	15		F	#	0.1	
Oxidation Reduction Potential	mV	09/16/2009	N001	7.4 - 17.4	87.6		F	#		
pH	s.u.	09/16/2009	N001	7.4 - 17.4	6.88		F	#		
Potassium	mg/L	09/16/2009	N001	7.4 - 17.4	31		FJ	#	0.46	
Potassium	mg/L	09/16/2009	N002	7.4 - 17.4	30		FJ	#	0.46	
Selenium	mg/L	09/16/2009	N001	7.4 - 17.4	0.34		F	#	0.0016	

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

REPORT DATE: 11/13/2009

Location: 1009 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Qualifiers Lab Data QA	Detection Limit	Uncertainty
Selenium	mg/L	09/16/2009	N002	7.4 - 17.4	0.33	F #	0.0016	
Sodium	mg/L	09/16/2009	N001	7.4 - 17.4	380	FJ #	0.022	
Sodium	mg/L	09/16/2009	N002	7.4 - 17.4	380	FJ #	0.022	
Specific Conductance	umhos/cm	09/16/2009	N001	7.4 - 17.4	5036	F #		
Strontium	mg/L	09/16/2009	N001	7.4 - 17.4	5.3	F #	0.00027	
Strontium	mg/L	09/16/2009	N002	7.4 - 17.4	5.1	F #	0.00027	
Sulfate	mg/L	09/16/2009	N001	7.4 - 17.4	3300	F #	25	
Sulfate	mg/L	09/16/2009	N002	7.4 - 17.4	3300	F #	25	
Temperature	C	09/16/2009	N001	7.4 - 17.4	22.11	F #		
Turbidity	NTU	09/16/2009	N001	7.4 - 17.4	0.98	F #		
Uranium	mg/L	09/16/2009	N001	7.4 - 17.4	0.43	F #	0.000017	
Uranium	mg/L	09/16/2009	N002	7.4 - 17.4	0.38	F #	0.0000087	

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

REPORT DATE: 11/13/2009

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	09/17/2009	N001	4.8	-	14.8	0.78			#	0.1	
Calcium	mg/L	09/17/2009	N001	4.8	-	14.8	370			#	0.011	
Chloride	mg/L	09/17/2009	N001	4.8	-	14.8	250			#	20	
Magnesium	mg/L	09/17/2009	N001	4.8	-	14.8	660			#	0.033	
Manganese	mg/L	09/17/2009	N001	4.8	-	14.8	1.5			#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	4.8	-	14.8	21			#	0.2	
Oxidation Reduction Potential	mV	09/17/2009	N001	4.8	-	14.8	13			#		
pH	s.u.	09/17/2009	N001	4.8	-	14.8	7.44			#		
Potassium	mg/L	09/17/2009	N001	4.8	-	14.8	74		J	#	0.46	
Selenium	mg/L	09/17/2009	N001	4.8	-	14.8	0.024			#	0.00016	
Sodium	mg/L	09/17/2009	N001	4.8	-	14.8	1800		J	#	0.44	
Specific Conductance	umhos/cm	09/17/2009	N001	4.8	-	14.8	11467			#		
Strontium	mg/L	09/17/2009	N001	4.8	-	14.8	6.8			#	0.00027	
Sulfate	mg/L	09/17/2009	N001	4.8	-	14.8	7800			#	50	
Temperature	C	09/17/2009	N001	4.8	-	14.8	22.52			#		
Turbidity	NTU	09/17/2009	N001	4.8	-	14.8	1.37			#		
Uranium	mg/L	09/17/2009	N001	4.8	-	14.8	1.1			#	0.000035	

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

REPORT DATE: 11/13/2009

Location: 1104 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/17/2009	N001	-	0.81			#	0.1	
Calcium	mg/L	09/17/2009	N001	-	400			#	0.011	
Chloride	mg/L	09/17/2009	N001	-	290			#	20	
Magnesium	mg/L	09/17/2009	N001	-	740			#	0.033	
Manganese	mg/L	09/17/2009	N001	-	1.7			#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	-	31			#	0.2	
Oxidation Reduction Potential	mV	09/17/2009	N001	-	-4.6			#		
pH	s.u.	09/17/2009	N001	-	7.66			#		
Potassium	mg/L	09/17/2009	N001	-	78		J	#	0.46	
Selenium	mg/L	09/17/2009	N001	-	0.023			#	0.00016	
Sodium	mg/L	09/17/2009	N001	-	1700		J	#	0.44	
Specific Conductance	umhos /cm	09/17/2009	N001	-	11785			#		
Strontium	mg/L	09/17/2009	N001	-	7.2			#	0.00027	
Sulfate	mg/L	09/17/2009	N001	-	7900			#	50	
Temperature	C	09/17/2009	N001	-	22.65			#		
Turbidity	NTU	09/17/2009	N001	-	9.5			#		
Uranium	mg/L	09/17/2009	N001	-	1.2			#	0.000035	

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

REPORT DATE: 11/13/2009

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	09/16/2009	N001	4.5 - 14.5	3.1		F	#	0.1	
Calcium	mg/L	09/16/2009	N001	4.5 - 14.5	560		F	#	0.011	
Chloride	mg/L	09/16/2009	N001	4.5 - 14.5	350		F	#	20	
Magnesium	mg/L	09/16/2009	N001	4.5 - 14.5	1500		F	#	0.033	
Manganese	mg/L	09/16/2009	N001	4.5 - 14.5	2.5		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	N001	4.5 - 14.5	300		F	#	2	
Oxidation Reduction Potential	mV	09/16/2009	N001	4.5 - 14.5	120		F	#		
pH	s.u.	09/16/2009	N001	4.5 - 14.5	6.86		F	#		
Potassium	mg/L	09/16/2009	N001	4.5 - 14.5	140		FJ	#	0.46	
Selenium	mg/L	09/16/2009	N001	4.5 - 14.5	0.16		F	#	0.0016	
Sodium	mg/L	09/16/2009	N001	4.5 - 14.5	1700		FJ	#	0.44	
Specific Conductance	umhos /cm	09/16/2009	N001	4.5 - 14.5	15322		F	#		
Strontium	mg/L	09/16/2009	N001	4.5 - 14.5	11		F	#	0.00027	
Sulfate	mg/L	09/16/2009	N001	4.5 - 14.5	10000		F	#	50	
Temperature	C	09/16/2009	N001	4.5 - 14.5	22.45		F	#		
Turbidity	NTU	09/16/2009	N001	4.5 - 14.5	2.67		F	#		
Uranium	mg/L	09/16/2009	N001	4.5 - 14.5	2.1		F	#	0.00017	

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

REPORT DATE: 1/4/2010

Location: 1109 TREATMENT SYSTEM

Parameter	Units	Sample Date	ID	Depth Range (Ft.BLS)	Result	Qualifiers Lab	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/15/2009	N001	0 - 0	15		#	0.5	
Calcium	mg/L	09/15/2009	N001	0 - 0	210		#	0.011	
Chloride	mg/L	09/15/2009	N001	0 - 0	98		#	10	
Magnesium	mg/L	09/15/2009	N001	0 - 0	310		#	0.033	
Manganese	mg/L	09/15/2009	N001	0 - 0	0.9		#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	0 - 0	130		#	1	
Oxidation Reduction Potential	mV	09/15/2009	N001	0 - 0	11.7		#		
pH	s.u.	09/15/2009	N001	0 - 0	7.19		#		
Potassium	mg/L	09/15/2009	N001	0 - 0	18	J	#	0.46	
Selenium	mg/L	09/15/2009	N001	0 - 0	0.054		#	0.00016	
Sodium	mg/L	09/15/2009	N001	0 - 0	400	J	#	0.022	
Specific Conductance	umhos /cm	09/15/2009	N001	0 - 0	4287		#		
Strontium	mg/L	09/15/2009	N001	0 - 0	2.7		#	0.00027	
Sulfate	mg/L	09/15/2009	N001	0 - 0	2100		#	25	
Temperature	C	09/15/2009	N001	0 - 0	21.84		#		
Turbidity	NTU	09/15/2009	N001	0 - 0	2.66		#		
Uranium	mg/L	09/15/2009	N001	0 - 0	0.32		#	0.000017	

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

REPORT DATE: 1/4/2010

Location: 1109-B TREATMENT SYSTEM

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/17/2009	N001	0 - 0	2.9			#	0.1	
Calcium	mg/L	09/17/2009	N001	0 - 0	67			#	0.0021	
Chloride	mg/L	09/17/2009	N001	0 - 0	35			#	4	
Magnesium	mg/L	09/17/2009	N001	0 - 0	64			#	0.0066	
Manganese	mg/L	09/17/2009	N001	0 - 0	0.16			#	0.0001	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	0 - 0	25			#	0.2	
Oxidation Reduction Potential	mV	09/17/2009	N001	0 - 0	101.9			#		
pH	s.u.	09/17/2009	N001	0 - 0	7.42			#		
Potassium	mg/L	09/17/2009	N001	0 - 0	5.3		J	#	0.092	
Selenium	mg/L	09/17/2009	N001	0 - 0	0.022			#	0.000064	
Sodium	mg/L	09/17/2009	N001	0 - 0	110		J	#	0.0044	
Specific Conductance	umhos/cm	09/17/2009	N001	0 - 0	1310			#		
Strontium	mg/L	09/17/2009	N001	0 - 0	0.85			#	0.000055	
Sulfate	mg/L	09/17/2009	N001	0 - 0	520			#	10	
Temperature	C	09/17/2009	N001	0 - 0	20.83			#		
Turbidity	NTU	09/17/2009	N001	0 - 0	1.94			#		
Uranium	mg/L	09/17/2009	N001	0 - 0	0.056			#	0.0000017	

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

REPORT DATE: 1/4/2010

Location: 1109-D TREATMENT SYSTEM

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/17/2009	N001	0	-	0	140			#	10	
Calcium	mg/L	09/17/2009	N001	0	-	0	480			#	0.021	
Chloride	mg/L	09/17/2009	N001	0	-	0	620			#	20	
Magnesium	mg/L	09/17/2009	N001	0	-	0	2000			#	0.066	
Manganese	mg/L	09/17/2009	N001	0	-	0	5.2			#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	0	-	0	820			#	10	
Oxidation Reduction Potential	mV	09/17/2009	N001	0	-	0	126			#		
pH	s.u.	09/17/2009	N001	0	-	0	7.22			#		
Potassium	mg/L	09/17/2009	N001	0	-	0	90		J	#	0.92	
Selenium	mg/L	09/17/2009	N001	0	-	0	0.014			#	0.00016	
Sodium	mg/L	09/17/2009	N001	0	-	0	2600		J	#	0.22	
Specific Conductance	umhos/cm	09/17/2009	N001	0	-	0	20578			#		
Strontium	mg/L	09/17/2009	N001	0	-	0	9.7			#	0.00055	
Sulfate	mg/L	09/17/2009	N001	0	-	0	12000			#	100	
Temperature	C	09/17/2009	N001	0	-	0	20.15			#		
Turbidity	NTU	09/17/2009	N001	0	-	0	4.04			#		
Uranium	mg/L	09/17/2009	N001	0	-	0	1.8			#	0.000087	

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

REPORT DATE: 1/4/2010

Location: 1110 TREATMENT SYSTEM

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/16/2009	N001	0	-	0	4.6			#	0.1	
Calcium	mg/L	09/16/2009	N001	0	-	0	430			#	0.011	
Chloride	mg/L	09/16/2009	N001	0	-	0	300			#	20	
Magnesium	mg/L	09/16/2009	N001	0	-	0	1000			#	0.033	
Manganese	mg/L	09/16/2009	N001	0	-	0	1.3			#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	N001	0	-	0	130			#	1	
Oxidation Reduction Potential	mV	09/16/2009	N001	0	-	0	47.7			#		
pH	s.u.	09/16/2009	N001	0	-	0	7.39			#		
Potassium	mg/L	09/16/2009	N001	0	-	0	92		J	#	0.46	
Selenium	mg/L	09/16/2009	N001	0	-	0	0.39			#	0.0016	
Sodium	mg/L	09/16/2009	N001	0	-	0	1600		J	#	0.44	
Specific Conductance	umhos/cm	09/16/2009	N001	0	-	0	11801			#		
Strontium	mg/L	09/16/2009	N001	0	-	0	9.4			#	0.00027	
Sulfate	mg/L	09/16/2009	N001	0	-	0	8000			#	50	
Temperature	C	09/16/2009	N001	0	-	0	24.24			#		
Turbidity	NTU	09/16/2009	N001	0	-	0	4.24			#		
Uranium	mg/L	09/16/2009	N001	0	-	0	1.3			#	0.000035	

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

REPORT DATE: 11/13/2009

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	09/16/2009	N001	7	- 12	0.1		F	#	0.1	
Calcium	mg/L	09/16/2009	N001	7	- 12	430		F	#	0.011	
Chloride	mg/L	09/16/2009	N001	7	- 12	400		F	#	20	
Magnesium	mg/L	09/16/2009	N001	7	- 12	1000		F	#	0.033	
Manganese	mg/L	09/16/2009	N001	7	- 12	0.82		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	N001	7	- 12	12		F	#	0.1	
Oxidation Reduction Potential	mV	09/16/2009	N001	7	- 12	95		F	#		
pH	s.u.	09/16/2009	N001	7	- 12	6.85		F	#		
Potassium	mg/L	09/16/2009	N001	7	- 12	74		FJ	#	0.46	
Selenium	mg/L	09/16/2009	N001	7	- 12	0.58		F	#	0.0016	
Sodium	mg/L	09/16/2009	N001	7	- 12	2000		FJ	#	0.44	
Specific Conductance	umhos/cm	09/16/2009	N001	7	- 12	12787		F	#		
Strontium	mg/L	09/16/2009	N001	7	- 12	11		F	#	0.00027	
Sulfate	mg/L	09/16/2009	N001	7	- 12	9000		F	#	50	
Temperature	C	09/16/2009	N001	7	- 12	22.52		F	#		
Turbidity	NTU	09/16/2009	N001	7	- 12	1.47		F	#		
Uranium	mg/L	09/16/2009	N001	7	- 12	0.87		F	#	0.000035	

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

REPORT DATE: 11/13/2009

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	09/16/2009	N001	7	-	12	44		F	#	5	
Calcium	mg/L	09/16/2009	N001	7	-	12	480		F	#	0.011	
Chloride	mg/L	09/16/2009	N001	7	-	12	430		F	#	20	
Magnesium	mg/L	09/16/2009	N001	7	-	12	2000		F	#	0.033	
Manganese	mg/L	09/16/2009	N001	7	-	12	3.7		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	N001	7	-	12	540		F	#	5	
Oxidation Reduction Potential	mV	09/16/2009	N001	7	-	12	96.6		F	#		
pH	s.u.	09/16/2009	N001	7	-	12	6.84		F	#		
Potassium	mg/L	09/16/2009	N001	7	-	12	170		FJ	#	0.46	
Selenium	mg/L	09/16/2009	N001	7	-	12	0.49		F	#	0.0016	
Sodium	mg/L	09/16/2009	N001	7	-	12	1900		FJ	#	0.44	
Specific Conductance	umhos /cm	09/16/2009	N001	7	-	12	16508		F	#		
Strontium	mg/L	09/16/2009	N001	7	-	12	11		F	#	0.00027	
Sulfate	mg/L	09/16/2009	N001	7	-	12	11000		F	#	100	
Temperature	C	09/16/2009	N001	7	-	12	22.11		F	#		
Turbidity	NTU	09/16/2009	N001	7	-	12	2.98		F	#		
Uranium	mg/L	09/16/2009	N001	7	-	12	1.9		F	#	0.00017	

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

REPORT DATE: 11/13/2009

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	09/15/2009	N001	7	-	12	98		F	#	5	
Calcium	mg/L	09/15/2009	N001	7	-	12	390		F	#	0.011	
Chloride	mg/L	09/15/2009	N001	7	-	12	120		F	#	20	
Magnesium	mg/L	09/15/2009	N001	7	-	12	490		F	#	0.033	
Manganese	mg/L	09/15/2009	N001	7	-	12	2.4		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	7	-	12	96		F	#	0.5	
Oxidation Reduction Potential	mV	09/15/2009	N001	7	-	12	110.5		F	#		
pH	s.u.	09/15/2009	N001	7	-	12	6.92		F	#		
Potassium	mg/L	09/15/2009	N001	7	-	12	77		FJ	#	0.46	
Selenium	mg/L	09/15/2009	N001	7	-	12	0.016		F	#	0.000032	
Sodium	mg/L	09/15/2009	N001	7	-	12	630		FJ	#	0.022	
Specific Conductance	umhos /cm	09/15/2009	N001	7	-	12	6963		F	#		
Strontium	mg/L	09/15/2009	N001	7	-	12	4.7		F	#	0.00027	
Sulfate	mg/L	09/15/2009	N001	7	-	12	4100		F	#	50	
Temperature	C	09/15/2009	N001	7	-	12	22.2		F	#		
Turbidity	NTU	09/15/2009	N001	7	-	12	5		F	#		
Uranium	mg/L	09/15/2009	N001	7	-	12	0.78		F	#	0.000035	

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

REPORT DATE: 11/13/2009

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	09/15/2009	N001	7	-	12	130		F	#	5	
Calcium	mg/L	09/15/2009	N001	7	-	12	180		F	#	0.011	
Chloride	mg/L	09/15/2009	N001	7	-	12	110		F	#	10	
Magnesium	mg/L	09/15/2009	N001	7	-	12	320		F	#	0.033	
Manganese	mg/L	09/15/2009	N001	7	-	12	2.1		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	7	-	12	65		F	#	0.5	
Oxidation Reduction Potential	mV	09/15/2009	N001	7	-	12	58.8		F	#		
pH	s.u.	09/15/2009	N001	7	-	12	7.06		F	#		
Potassium	mg/L	09/15/2009	N001	7	-	12	57		FJ	#	0.46	
Selenium	mg/L	09/15/2009	N001	7	-	12	0.0098		F	#	0.000032	
Sodium	mg/L	09/15/2009	N001	7	-	12	430		FJ	#	0.022	
Specific Conductance	umhos/cm	09/15/2009	N001	7	-	12	5217		F	#		
Strontium	mg/L	09/15/2009	N001	7	-	12	3.2		F	#	0.00027	
Sulfate	mg/L	09/15/2009	N001	7	-	12	2400		F	#	25	
Temperature	C	09/15/2009	N001	7	-	12	22.31		F	#		
Turbidity	NTU	09/15/2009	N001	7	-	12	6.31		F	#		
Uranium	mg/L	09/15/2009	N001	7	-	12	0.46		F	#	0.000017	

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

REPORT DATE: 11/13/2009

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	09/15/2009	N001	7	-	12	110		F	#	5	
Calcium	mg/L	09/15/2009	N001	7	-	12	220		F	#	0.011	
Chloride	mg/L	09/15/2009	N001	7	-	12	130		F	#	20	
Magnesium	mg/L	09/15/2009	N001	7	-	12	470		F	#	0.033	
Manganese	mg/L	09/15/2009	N001	7	-	12	1.4		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	7	-	12	190		F	#	1	
Oxidation Reduction Potential	mV	09/15/2009	N001	7	-	12	57.8		F	#		
pH	s.u.	09/15/2009	N001	7	-	12	6.98		F	#		
Potassium	mg/L	09/15/2009	N001	7	-	12	58		FJ	#	0.46	
Selenium	mg/L	09/15/2009	N001	7	-	12	0.043		F	#	0.00016	
Sodium	mg/L	09/15/2009	N001	7	-	12	580		FJ	#	0.022	
Specific Conductance	umhos/cm	09/15/2009	N001	7	-	12	6147		F	#		
Strontium	mg/L	09/15/2009	N001	7	-	12	3.7		F	#	0.00027	
Sulfate	mg/L	09/15/2009	N001	7	-	12	3000		F	#	50	
Temperature	C	09/15/2009	N001	7	-	12	21.7		F	#		
Turbidity	NTU	09/15/2009	N001	7	-	12	2.36		F	#		
Uranium	mg/L	09/15/2009	N001	7	-	12	0.51		F	#	0.000017	

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

REPORT DATE: 11/13/2009

Location: 1116 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/15/2009	0001	7	-	12	320		FQ	#	10	
Calcium	mg/L	09/15/2009	0001	7	-	12	500		FQ	#	0.011	
Chloride	mg/L	09/15/2009	0001	7	-	12	340		FQ	#	20	
Magnesium	mg/L	09/15/2009	0001	7	-	12	1400		FQ	#	0.033	
Manganese	mg/L	09/15/2009	0001	7	-	12	3.9		FQ	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	0001	7	-	12	650		FQ	#	5	
Oxidation Reduction Potential	mV	09/15/2009	N001	7	-	12	220.1		FQ	#		
pH	s.u.	09/15/2009	N001	7	-	12	6.68		FQ	#		
Potassium	mg/L	09/15/2009	0001	7	-	12	170		FQJ	#	0.46	
Selenium	mg/L	09/15/2009	0001	7	-	12	0.015		FQ	#	0.000032	
Sodium	mg/L	09/15/2009	0001	7	-	12	1300		FQJ	#	0.44	
Specific Conductance	umhos /cm	09/15/2009	N001	7	-	12	14227		FQ	#		
Strontium	mg/L	09/15/2009	0001	7	-	12	8.6		FQ	#	0.00027	
Sulfate	mg/L	09/15/2009	0001	7	-	12	8200		FQ	#	50	
Temperature	C	09/15/2009	N001	7	-	12	20.44		FQ	#		
Turbidity	NTU	09/15/2009	N001	7	-	12	63.5		FQ	#		
Uranium	mg/L	09/15/2009	0001	7	-	12	1.3		FQ	#	0.000035	

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

REPORT DATE: 11/13/2009

Location: 1117 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/14/2009	N001	7	-	12	0.1	U	F	#	0.1	
Calcium	mg/L	09/14/2009	N001	7	-	12	48		F	#	0.0021	
Chloride	mg/L	09/14/2009	N001	7	-	12	7		F	#	1	
Magnesium	mg/L	09/14/2009	N001	7	-	12	7.8		F	#	0.0066	
Manganese	mg/L	09/14/2009	N001	7	-	12	0.87		F	#	0.0001	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2009	N001	7	-	12	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/14/2009	N001	7	-	12	183.7		F	#		
pH	s.u.	09/14/2009	N001	7	-	12	7.47		F	#		
Potassium	mg/L	09/14/2009	N001	7	-	12	1.5		FJ	#	0.092	
Selenium	mg/L	09/14/2009	N001	7	-	12	0.00047		F	#	0.000032	
Sodium	mg/L	09/14/2009	N001	7	-	12	27		FJ	#	0.0044	
Specific Conductance	umhos /cm	09/14/2009	N001	7	-	12	408		F	#		
Strontium	mg/L	09/14/2009	N001	7	-	12	0.49		F	#	0.000055	
Sulfate	mg/L	09/14/2009	N001	7	-	12	87		F	#	2.5	
Temperature	C	09/14/2009	N001	7	-	12	20.41		F	#		
Turbidity	NTU	09/14/2009	N001	7	-	12	5.12		F	#		
Uranium	mg/L	09/14/2009	N001	7	-	12	0.0047		F	#	0.0000017	

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

REPORT DATE: 11/13/2009

Location: 1126 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/17/2009	N001	7.51	- 12.51	6.4		F	#	0.5	
Calcium	mg/L	09/17/2009	N001	7.51	- 12.51	220		F	#	0.011	
Chloride	mg/L	09/17/2009	N001	7.51	- 12.51	72		F	#	10	
Magnesium	mg/L	09/17/2009	N001	7.51	- 12.51	230		F	#	0.033	
Manganese	mg/L	09/17/2009	N001	7.51	- 12.51	0.23		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	7.51	- 12.51	110		F	#	1	
Oxidation Reduction Potential	mV	09/17/2009	N001	7.51	- 12.51	45.2		F	#		
pH	s.u.	09/17/2009	N001	7.51	- 12.51	7.13		F	#		
Potassium	mg/L	09/17/2009	N001	7.51	- 12.51	13		FJ	#	0.46	
Selenium	mg/L	09/17/2009	N001	7.51	- 12.51	0.032		F	#	0.000064	
Sodium	mg/L	09/17/2009	N001	7.51	- 12.51	320		FJ	#	0.022	
Specific Conductance	umhos /cm	09/17/2009	N001	7.51	- 12.51	3462		F	#		
Strontium	mg/L	09/17/2009	N001	7.51	- 12.51	2.5		F	#	0.00027	
Sulfate	mg/L	09/17/2009	N001	7.51	- 12.51	1600		F	#	25	
Temperature	C	09/17/2009	N001	7.51	- 12.51	20.38		F	#		
Turbidity	NTU	09/17/2009	N001	7.51	- 12.51	1.58		F	#		
Uranium	mg/L	09/17/2009	N001	7.51	- 12.51	0.2		F	#	0.0000087	

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

REPORT DATE: 11/13/2009

Location: 1127 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/17/2009	N001	9.11 - 14.11	0.14		F	#	0.1	
Calcium	mg/L	09/17/2009	N001	9.11 - 14.11	46		F	#	0.0021	
Chloride	mg/L	09/17/2009	N001	9.11 - 14.11	6.7		F	#	1	
Magnesium	mg/L	09/17/2009	N001	9.11 - 14.11	8.6		F	#	0.0066	
Manganese	mg/L	09/17/2009	N001	9.11 - 14.11	0.14		F	#	0.0001	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	9.11 - 14.11	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/17/2009	N001	9.11 - 14.11	-59.6		F	#		
pH	s.u.	09/17/2009	N001	9.11 - 14.11	7.71		F	#		
Potassium	mg/L	09/17/2009	N001	9.11 - 14.11	1.5		FJ	#	0.092	
Selenium	mg/L	09/17/2009	N001	9.11 - 14.11	0.0014		F	#	0.000032	
Sodium	mg/L	09/17/2009	N001	9.11 - 14.11	28		FJ	#	0.0044	
Specific Conductance	umhos /cm	09/17/2009	N001	9.11 - 14.11	419		F	#		
Strontium	mg/L	09/17/2009	N001	9.11 - 14.11	0.49		F	#	0.000055	
Sulfate	mg/L	09/17/2009	N001	9.11 - 14.11	93		F	#	2.5	
Temperature	C	09/17/2009	N001	9.11 - 14.11	19.71		F	#		
Turbidity	NTU	09/17/2009	N001	9.11 - 14.11	1.65		F	#		
Uranium	mg/L	09/17/2009	N001	9.11 - 14.11	0.0068		F	#	0.0000017	

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

REPORT DATE: 11/13/2009

Location: 1131 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	09/17/2009	N001	5.25 - 10.25	0.28		F	#	0.1	
Calcium	mg/L	09/17/2009	N001	5.25 - 10.25	49		F	#	0.0021	
Chloride	mg/L	09/17/2009	N001	5.25 - 10.25	6.6		F	#	1	
Magnesium	mg/L	09/17/2009	N001	5.25 - 10.25	9		F	#	0.0066	
Manganese	mg/L	09/17/2009	N001	5.25 - 10.25	1		F	#	0.0001	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	5.25 - 10.25	0.023		F	#	0.01	
Oxidation Reduction Potential	mV	09/17/2009	N001	5.25 - 10.25	-62.3		F	#		
pH	s.u.	09/17/2009	N001	5.25 - 10.25	7.87		F	#		
Potassium	mg/L	09/17/2009	N001	5.25 - 10.25	1.5		FJ	#	0.092	
Selenium	mg/L	09/17/2009	N001	5.25 - 10.25	0.00023		F	#	0.000032	
Sodium	mg/L	09/17/2009	N001	5.25 - 10.25	21		FJ	#	0.0044	
Specific Conductance	umhos/cm	09/17/2009	N001	5.25 - 10.25	419		F	#		
Strontium	mg/L	09/17/2009	N001	5.25 - 10.25	0.54		F	#	0.000055	
Sulfate	mg/L	09/17/2009	N001	5.25 - 10.25	75		F	#	2.5	
Temperature	C	09/17/2009	N001	5.25 - 10.25	16.38		F	#		
Turbidity	NTU	09/17/2009	N001	5.25 - 10.25	6.71		F	#		
Uranium	mg/L	09/17/2009	N001	5.25 - 10.25	0.0046		F	#	0.0000017	

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

REPORT DATE: 11/13/2009

Location: 1132 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft:BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/15/2009	N001	6.07	- 11.07	0.9		F	#	0.1	
Ammonia Total as N	mg/L	09/15/2009	N002	6.07	- 11.07	0.9		F	#	0.1	
Calcium	mg/L	09/15/2009	N001	6.07	- 11.07	45		F	#	0.0021	
Calcium	mg/L	09/15/2009	N002	6.07	- 11.07	44		F	#	0.0021	
Chloride	mg/L	09/15/2009	N001	6.07	- 11.07	8.8		F	#	1	
Chloride	mg/L	09/15/2009	N002	6.07	- 11.07	8.9		F	#	1	
Magnesium	mg/L	09/15/2009	N001	6.07	- 11.07	14		F	#	0.0066	
Magnesium	mg/L	09/15/2009	N002	6.07	- 11.07	14		F	#	0.0066	
Manganese	mg/L	09/15/2009	N001	6.07	- 11.07	0.3		F	#	0.0001	
Manganese	mg/L	09/15/2009	N002	6.07	- 11.07	0.29		F	#	0.0001	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	6.07	- 11.07	0.01	U	F	#	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N002	6.07	- 11.07	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	09/15/2009	N001	6.07	- 11.07	-45.7		F	#		
pH	s.u.	09/15/2009	N001	6.07	- 11.07	7.7		F	#		
Potassium	mg/L	09/15/2009	N001	6.07	- 11.07	2.2		FJ	#	0.092	
Potassium	mg/L	09/15/2009	N002	6.07	- 11.07	2		FJ	#	0.092	
Selenium	mg/L	09/15/2009	N001	6.07	- 11.07	0.00044		F	#	0.000032	

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

REPORT DATE: 11/13/2009

Location: 1132 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Selenium	mg/L	09/15/2009	N002	6.07 - 11.07	0.00041		F	#	0.000032	
Sodium	mg/L	09/15/2009	N001	6.07 - 11.07	31		FJ	#	0.0044	
Sodium	mg/L	09/15/2009	N002	6.07 - 11.07	30	E	FJ	#	0.0044	
Specific Conductance	umhos/cm	09/15/2009	N001	6.07 - 11.07	484		F	#		
Strontium	mg/L	09/15/2009	N001	6.07 - 11.07	0.56		F	#	0.000055	
Strontium	mg/L	09/15/2009	N002	6.07 - 11.07	0.54		F	#	0.000055	
Sulfate	mg/L	09/15/2009	N001	6.07 - 11.07	110		F	#	2.5	
Sulfate	mg/L	09/15/2009	N002	6.07 - 11.07	110		F	#	2.5	
Temperature	C	09/15/2009	N001	6.07 - 11.07	21.14		F	#		
Turbidity	NTU	09/15/2009	N001	6.07 - 11.07	1.53		F	#		
Uranium	mg/L	09/15/2009	N001	6.07 - 11.07	0.013		F	#	0.0000017	
Uranium	mg/L	09/15/2009	N002	6.07 - 11.07	0.012		F	#	0.0000017	

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

REPORT DATE: 11/13/2009

Location: 1133 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Data QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/17/2009	N001	6.24 - 11.24	160	F	#	10	
Calcium	mg/L	09/17/2009	N001	6.24 - 11.24	440	F	#	0.011	
Chloride	mg/L	09/17/2009	N001	6.24 - 11.24	250	F	#	20	
Magnesium	mg/L	09/17/2009	N001	6.24 - 11.24	1200	F	#	0.033	
Manganese	mg/L	09/17/2009	N001	6.24 - 11.24	2.5	F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	6.24 - 11.24	430	F	#	5	
Oxidation Reduction Potential	mV	09/17/2009	N001	6.24 - 11.24	71.1	F	#		
pH	s.u.	09/17/2009	N001	6.24 - 11.24	6.77	F	#		
Potassium	mg/L	09/17/2009	N001	6.24 - 11.24	96	FJ	#	0.46	
Selenium	mg/L	09/17/2009	N001	6.24 - 11.24	0.043	F	#	0.00016	
Sodium	mg/L	09/17/2009	N001	6.24 - 11.24	1300	FJ	#	0.22	
Specific Conductance	umhos /cm	09/17/2009	N001	6.24 - 11.24	11691	F	#		
Strontium	mg/L	09/17/2009	N001	6.24 - 11.24	6.9	F	#	0.00027	
Sulfate	mg/L	09/17/2009	N001	6.24 - 11.24	7000	F	#	50	
Temperature	C	09/17/2009	N001	6.24 - 11.24	21.16	F	#		
Turbidity	NTU	09/17/2009	N001	6.24 - 11.24	1.91	F	#		
Uranium	mg/L	09/17/2009	N001	6.24 - 11.24	1.3	F	#	0.000035	

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

REPORT DATE: 11/13/2009

Location: 1134 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	09/15/2009	N001	8.16 - 13.16	1.1		F	#	0.1	
Calcium	mg/L	09/15/2009	N001	8.16 - 13.16	140		F	#	0.0021	
Chloride	mg/L	09/15/2009	N001	8.16 - 13.16	21		F	#	2	
Magnesium	mg/L	09/15/2009	N001	8.16 - 13.16	32		F	#	0.0066	
Manganese	mg/L	09/15/2009	N001	8.16 - 13.16	0.63		F	#	0.0001	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	8.16 - 13.16	3.4		F	#	0.05	
Oxidation Reduction Potential	mV	09/15/2009	N001	8.16 - 13.16	9.5		F	#		
pH	s.u.	09/15/2009	N001	8.16 - 13.16	7.37		F	#		
Potassium	mg/L	09/15/2009	N001	8.16 - 13.16	4.2		FJ	#	0.092	
Selenium	mg/L	09/15/2009	N001	8.16 - 13.16	0.0064		F	#	0.000032	
Sodium	mg/L	09/15/2009	N001	8.16 - 13.16	78		FJ	#	0.0044	
Specific Conductance	umhos/cm	09/15/2009	N001	8.16 - 13.16	1103		F	#		
Strontium	mg/L	09/15/2009	N001	8.16 - 13.16	1.5		F	#	0.000055	
Sulfate	mg/L	09/15/2009	N001	8.16 - 13.16	410		F	#	5	
Temperature	C	09/15/2009	N001	8.16 - 13.16	17.48		F	#		
Turbidity	NTU	09/15/2009	N001	8.16 - 13.16	1.08		F	#		
Uranium	mg/L	09/15/2009	N001	8.16 - 13.16	0.02		F	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/16/2009	N001	7.6	-	12.6	25		F	#	2	
Calcium	mg/L	09/16/2009	N001	7.6	-	12.6	510		F	#	0.011	
Chloride	mg/L	09/16/2009	N001	7.6	-	12.6	320		F	#	20	
Magnesium	mg/L	09/16/2009	N001	7.6	-	12.6	1400		F	#	0.033	
Manganese	mg/L	09/16/2009	N001	7.6	-	12.6	3.6		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	N001	7.6	-	12.6	320		F	#	2	
Oxidation Reduction Potential	mV	09/16/2009	N001	7.6	-	12.6	53.7		F	#		
pH	s.u.	09/16/2009	N001	7.6	-	12.6	6.85		F	#		
Potassium	mg/L	09/16/2009	N001	7.6	-	12.6	120		FJ	#	0.46	
Selenium	mg/L	09/16/2009	N001	7.6	-	12.6	0.17		F	#	0.0016	
Sodium	mg/L	09/16/2009	N001	7.6	-	12.6	1500		FJ	#	0.44	
Specific Conductance	umhos /cm	09/16/2009	N001	7.6	-	12.6	13160		F	#		
Strontium	mg/L	09/16/2009	N001	7.6	-	12.6	9		F	#	0.00027	
Sulfate	mg/L	09/16/2009	N001	7.6	-	12.6	8900		F	#	50	
Temperature	C	09/16/2009	N001	7.6	-	12.6	23		F	#		
Turbidity	NTU	09/16/2009	N001	7.6	-	12.6	1.52		F	#		
Uranium	mg/L	09/16/2009	N001	7.6	-	12.6	1.7		F	#	0.000035	

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

REPORT DATE: 11/13/2009

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	09/16/2009	N001	5.6	-	10.6	13		F	#	1	
Calcium	mg/L	09/16/2009	N001	5.6	-	10.6	450		F	#	0.011	
Chloride	mg/L	09/16/2009	N001	5.6	-	10.6	96		F	#	20	
Magnesium	mg/L	09/16/2009	N001	5.6	-	10.6	620		F	#	0.033	
Manganese	mg/L	09/16/2009	N001	5.6	-	10.6	2		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	N001	5.6	-	10.6	33		F	#	0.2	
Oxidation Reduction Potential	mV	09/16/2009	N001	5.6	-	10.6	89.9		F	#		
pH	s.u.	09/16/2009	N001	5.6	-	10.6	6.99		F	#		
Potassium	mg/L	09/16/2009	N001	5.6	-	10.6	68		FJ	#	0.46	
Selenium	mg/L	09/16/2009	N001	5.6	-	10.6	0.26		F	#	0.00064	
Sodium	mg/L	09/16/2009	N001	5.6	-	10.6	610		FJ	#	0.022	
Specific Conductance	umhos/cm	09/16/2009	N001	5.6	-	10.6	6749		F	#		
Strontium	mg/L	09/16/2009	N001	5.6	-	10.6	5.8		F	#	0.00027	
Sulfate	mg/L	09/16/2009	N001	5.6	-	10.6	4800		F	#	50	
Temperature	C	09/16/2009	N001	5.6	-	10.6	21.57		F	#		
Turbidity	NTU	09/16/2009	N001	5.6	-	10.6	9.47		F	#		
Uranium	mg/L	09/16/2009	N001	5.6	-	10.6	0.98		F	#	0.000035	

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.

This page intentionally left blank

Groundwater Quality Data Terrace Locations

This page intentionally left blank

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

REPORT DATE: 11/13/2009

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	09/15/2009	N001	27	-	47	330		F	#	10	
Calcium	mg/L	09/15/2009	N001	27	-	47	420		F	#	0.021	
Chloride	mg/L	09/15/2009	N001	27	-	47	1000		F	#	40	
Magnesium	mg/L	09/15/2009	N001	27	-	47	2500		F	#	0.066	
Manganese	mg/L	09/15/2009	N001	27	-	47	1.8		F	#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	27	-	47	15		F	#	0.2	
Oxidation Reduction Potential	mV	09/15/2009	N001	27	-	47	112.6		F	#		
pH	s.u.	09/15/2009	N001	27	-	47	6.39		F	#		
Potassium	mg/L	09/15/2009	N001	27	-	47	200		F	#	0.92	
Selenium	mg/L	09/15/2009	N001	27	-	47	0.0071		F	#	0.000064	
Sodium	mg/L	09/15/2009	N001	27	-	47	3100		F	#	0.44	
Specific Conductance	umhos/cm	09/15/2009	N001	27	-	47	25041		F	#		
Strontium	mg/L	09/15/2009	N001	27	-	47	12		F	#	0.00055	
Sulfate	mg/L	09/15/2009	N001	27	-	47	16000		F	#	100	
Temperature	C	09/15/2009	N001	27	-	47	22.69		F	#		
Turbidity	NTU	09/15/2009	N001	27	-	47	3.9		F	#		
Uranium	mg/L	09/15/2009	N001	27	-	47	0.68		F	#	0.000017	

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

REPORT DATE: 11/13/2009

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	09/15/2009	N001	25.9 - 35.9	870		F	#	20	
Ammonia Total as N	mg/L	09/15/2009	N002	25.9 - 35.9	910		F	#	50	
Calcium	mg/L	09/15/2009	N001	25.9 - 35.9	930		F	#	0.021	
Calcium	mg/L	09/15/2009	N002	25.9 - 35.9	930		F	#	0.053	
Chloride	mg/L	09/15/2009	N001	25.9 - 35.9	160		F	#	40	
Chloride	mg/L	09/15/2009	N002	25.9 - 35.9	190		F	#	10	
Magnesium	mg/L	09/15/2009	N001	25.9 - 35.9	640		F	#	0.066	
Magnesium	mg/L	09/15/2009	N002	25.9 - 35.9	640		F	#	0.16	
Manganese	mg/L	09/15/2009	N001	25.9 - 35.9	55		F	#	0.001	
Manganese	mg/L	09/15/2009	N002	25.9 - 35.9	56		F	#	0.0026	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	25.9 - 35.9	1800		F	#	10	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N002	25.9 - 35.9	2100		F	#	20	
Oxidation Reduction Potential	mV	09/15/2009	N001	25.9 - 35.9	246.7		F	#		
pH	s.u.	09/15/2009	N001	25.9 - 35.9	6.17		F	#		
Potassium	mg/L	09/15/2009	N001	25.9 - 35.9	120		F	#	0.92	
Potassium	mg/L	09/15/2009	N002	25.9 - 35.9	100		F	#	2.3	
Selenium	mg/L	09/15/2009	N001	25.9 - 35.9	0.083		F	#	0.00032	

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

REPORT DATE: 11/13/2009

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
Selenium	mg/L	09/15/2009	N002	25.9	-	35.9	0.083		F	#	0.00016	
Sodium	mg/L	09/15/2009	N001	25.9	-	35.9	630		F	#	0.044	
Sodium	mg/L	09/15/2009	N002	25.9	-	35.9	650		F	#	0.11	
Specific Conductance	umhos /cm	09/15/2009	N001	25.9	-	35.9	16744		F	#		
Strontium	mg/L	09/15/2009	N001	25.9	-	35.9	4.6		F	#	0.00055	
Strontium	mg/L	09/15/2009	N002	25.9	-	35.9	4.7		F	#	0.0014	
Sulfate	mg/L	09/15/2009	N001	25.9	-	35.9	2600		F	#	100	
Sulfate	mg/L	09/15/2009	N002	25.9	-	35.9	2900		F	#	100	
Temperature	C	09/15/2009	N001	25.9	-	35.9	20.03		F	#		
Turbidity	NTU	09/15/2009	N001	25.9	-	35.9	3.52		F	#		
Uranium	mg/L	09/15/2009	N001	25.9	-	35.9	0.0068		F	#	0.0000017	
Uranium	mg/L	09/15/2009	N002	25.9	-	35.9	0.0069		F	#	0.0000087	

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

REPORT DATE: 11/13/2009

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	09/16/2009	0001	62.7	-	72.7	0.28		FQ	#	0.1	
Calcium	mg/L	09/16/2009	0001	62.7	-	72.7	510		FQ	#	0.021	
Chloride	mg/L	09/16/2009	0001	62.7	-	72.7	2500		FQ	#	40	
Magnesium	mg/L	09/16/2009	0001	62.7	-	72.7	1600		FQ	#	0.066	
Manganese	mg/L	09/16/2009	0001	62.7	-	72.7	0.61		FQ	#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	0001	62.7	-	72.7	1200		FQ	#	10	
Oxidation Reduction Potential	mV	09/16/2009	N001	62.7	-	72.7	55.5		FQ	#		
pH	s.u.	09/16/2009	N001	62.7	-	72.7	7.21		FQ	#		
Potassium	mg/L	09/16/2009	0001	62.7	-	72.7	59		FQ	#	0.92	
Selenium	mg/L	09/16/2009	0001	62.7	-	72.7	0.27		FQ	#	0.0016	
Sodium	mg/L	09/16/2009	0001	62.7	-	72.7	4000		FQ	#	0.44	
Specific Conductance	umhos/cm	09/16/2009	N001	62.7	-	72.7	27788		FQ	#		
Strontium	mg/L	09/16/2009	0001	62.7	-	72.7	18		FQ	#	0.00055	
Sulfate	mg/L	09/16/2009	0001	62.7	-	72.7	11000		FQ	#	100	
Temperature	C	09/16/2009	N001	62.7	-	72.7	18.8		FQ	#		
Turbidity	NTU	09/16/2009	N001	62.7	-	72.7	83.5		FQ	#		
Uranium	mg/L	09/16/2009	0001	62.7	-	72.7	0.096		FQ	#	0.0000087	

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

REPORT DATE: 11/13/2009

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	09/16/2009	N001	7.5	-	17.5	0.1	U	F	#	0.1	
Calcium	mg/L	09/16/2009	N001	7.5	-	17.5	300		F	#	0.011	
Chloride	mg/L	09/16/2009	N001	7.5	-	17.5	88		F	#	20	
Magnesium	mg/L	09/16/2009	N001	7.5	-	17.5	110		F	#	0.033	
Manganese	mg/L	09/16/2009	N001	7.5	-	17.5	0.44		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	N001	7.5	-	17.5	0.37		F	#	0.01	
Oxidation Reduction Potential	mV	09/16/2009	N001	7.5	-	17.5	5.7		F	#		
pH	s.u.	09/16/2009	N001	7.5	-	17.5	6.77		F	#		
Potassium	mg/L	09/16/2009	N001	7.5	-	17.5	13	N	FJ	#	0.46	
Selenium	mg/L	09/16/2009	N001	7.5	-	17.5	0.0025		F	#	0.000032	
Sodium	mg/L	09/16/2009	N001	7.5	-	17.5	1100	E	FJ	#	0.022	
Specific Conductance	umhos /cm	09/16/2009	N001	7.5	-	17.5	6637		F	#		
Strontium	mg/L	09/16/2009	N001	7.5	-	17.5	12		F	#	0.00027	
Sulfate	mg/L	09/16/2009	N001	7.5	-	17.5	3300		F	#	50	
Temperature	C	09/16/2009	N001	7.5	-	17.5	19.38		F	#		
Turbidity	NTU	09/16/2009	N001	7.5	-	17.5	3.43		F	#		
Uranium	mg/L	09/16/2009	N001	7.5	-	17.5	0.083		F	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/14/2009	N001	27.2	-	37.2	1.4		F	#	0.1	
Calcium	mg/L	09/14/2009	N001	27.2	-	37.2	200		F	#	0.011	
Chloride	mg/L	09/14/2009	N001	27.2	-	37.2	320		F	#	20	
Magnesium	mg/L	09/14/2009	N001	27.2	-	37.2	190		F	#	0.033	
Manganese	mg/L	09/14/2009	N001	27.2	-	37.2	0.38		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2009	N001	27.2	-	37.2	8.2		F	#	0.2	
Oxidation Reduction Potential	mV	09/14/2009	N001	27.2	-	37.2	168.1		F	#		
pH	s.u.	09/14/2009	N001	27.2	-	37.2	7.21		F	#		
Potassium	mg/L	09/14/2009	N001	27.2	-	37.2	27		F	#	0.46	
Selenium	mg/L	09/14/2009	N001	27.2	-	37.2	0.0018		F	#	0.000032	
Sodium	mg/L	09/14/2009	N001	27.2	-	37.2	1800		F	#	0.44	
Specific Conductance	umhos /cm	09/14/2009	N001	27.2	-	37.2	9914		F	#		
Strontium	mg/L	09/14/2009	N001	27.2	-	37.2	6.3		F	#	0.00027	
Sulfate	mg/L	09/14/2009	N001	27.2	-	37.2	6100		F	#	50	
Temperature	C	09/14/2009	N001	27.2	-	37.2	18.25		F	#		
Turbidity	NTU	09/14/2009	N001	27.2	-	37.2	2.41		F	#		
Uranium	mg/L	09/14/2009	N001	27.2	-	37.2	0.023		F	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/16/2009	N001	6.7	-	16.7	0.13		FQ	#	0.1	
Calcium	mg/L	09/16/2009	N001	6.7	-	16.7	400		FQ	#	0.021	
Chloride	mg/L	09/16/2009	N001	6.7	-	16.7	420		FQ	#	20	
Magnesium	mg/L	09/16/2009	N001	6.7	-	16.7	1600		FQ	#	0.066	
Manganese	mg/L	09/16/2009	N001	6.7	-	16.7	1.1		FQ	#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	N001	6.7	-	16.7	180		FQ	#	1	
Oxidation Reduction Potential	mV	09/16/2009	N001	6.7	-	16.7	192.6		FQ	#		
pH	s.u.	09/16/2009	N001	6.7	-	16.7	6.58		FQ	#		
Potassium	mg/L	09/16/2009	N001	6.7	-	16.7	68		FQ	#	0.92	
Selenium	mg/L	09/16/2009	N001	6.7	-	16.7	0.0024		FQ	#	0.000032	
Sodium	mg/L	09/16/2009	N001	6.7	-	16.7	2500		FQ	#	0.044	
Specific Conductance	umhos /cm	09/16/2009	N001	6.7	-	16.7	16995		FQ	#		
Strontium	mg/L	09/16/2009	N001	6.7	-	16.7	12		FQ	#	0.00055	
Sulfate	mg/L	09/16/2009	N001	6.7	-	16.7	12000		FQ	#	100	
Temperature	C	09/16/2009	N001	6.7	-	16.7	24.39		FQ	#		
Turbidity	NTU	09/16/2009	N001	6.7	-	16.7	6.24		FQ	#		
Uranium	mg/L	09/16/2009	N001	6.7	-	16.7	0.23		FQ	#	0.000017	

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

REPORT DATE: 11/13/2009

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	09/16/2009	0001	17	-	27	100		F	#	20	
Calcium	mg/L	09/16/2009	0001	17	-	27	500		F	#	0.011	
Chloride	mg/L	09/16/2009	0001	17	-	27	58		F	#	20	
Magnesium	mg/L	09/16/2009	0001	17	-	27	650		F	#	0.033	
Manganese	mg/L	09/16/2009	0001	17	-	27	1		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	0001	17	-	27	180		F	#	1	
Oxidation Reduction Potential	mV	09/16/2009	N001	17	-	27	197.6		F	#		
pH	s.u.	09/16/2009	N001	17	-	27	7.12		F	#		
Potassium	mg/L	09/16/2009	0001	17	-	27	72		F	#	0.46	
Selenium	mg/L	09/16/2009	0001	17	-	27	0.0054		F	#	0.000032	
Sodium	mg/L	09/16/2009	0001	17	-	27	520		F	#	0.022	
Specific Conductance	umhos/cm	09/16/2009	N001	17	-	27	6810		F	#		
Strontium	mg/L	09/16/2009	0001	17	-	27	6.3		F	#	0.00027	
Sulfate	mg/L	09/16/2009	0001	17	-	27	4500		F	#	50	
Temperature	C	09/16/2009	N001	17	-	27	17.05		F	#		
Turbidity	NTU	09/16/2009	N001	17	-	27	19.4		F	#		
Uranium	mg/L	09/16/2009	0001	17	-	27	0.27		F	#	0.000017	

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

REPORT DATE: 11/13/2009

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	09/15/2009	N001	17	-	27	27		F	#	1	
Ammonia Total as N	mg/L	09/15/2009	N002	17	-	27	30		F	#	2	
Calcium	mg/L	09/15/2009	N001	17	-	27	460		F	#	0.011	
Calcium	mg/L	09/15/2009	N002	17	-	27	460		F	#	0.011	
Chloride	mg/L	09/15/2009	N001	17	-	27	200		F	#	20	
Chloride	mg/L	09/15/2009	N002	17	-	27	220		F	#	10	
Magnesium	mg/L	09/15/2009	N001	17	-	27	540		F	#	0.033	
Magnesium	mg/L	09/15/2009	N002	17	-	27	520		F	#	0.033	
Manganese	mg/L	09/15/2009	N001	17	-	27	0.2		F	#	0.00052	
Manganese	mg/L	09/15/2009	N002	17	-	27	0.2		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	17	-	27	150		F	#	1	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N002	17	-	27	160		F	#	1	
Oxidation Reduction Potential	mV	09/15/2009	N001	17	-	27	360.7		F	#		
pH	s.u.	09/15/2009	N001	17	-	27	6.88		F	#		
Potassium	mg/L	09/15/2009	N001	17	-	27	41		F	#	0.46	
Potassium	mg/L	09/15/2009	N002	17	-	27	40		F	#	0.46	
Selenium	mg/L	09/15/2009	N001	17	-	27	0.015		F	#	0.000032	

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

REPORT DATE: 11/13/2009

Location: 0731 WELL SE of Disposal Cell

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Selenium	mg/L	09/15/2009	N002	17	-	27	0.014		F	#	0.000032	
Sodium	mg/L	09/15/2009	N001	17	-	27	1000		F	#	0.022	
Sodium	mg/L	09/15/2009	N002	17	-	27	1000		F	#	0.022	
Specific Conductance	umhos /cm	09/15/2009	N001	17	-	27	8387		F	#		
Strontium	mg/L	09/15/2009	N001	17	-	27	8.9		F	#	0.00027	
Strontium	mg/L	09/15/2009	N002	17	-	27	8.8		F	#	0.00027	
Sulfate	mg/L	09/15/2009	N001	17	-	27	4800		F	#	50	
Sulfate	mg/L	09/15/2009	N002	17	-	27	5100		F	#	50	
Temperature	C	09/15/2009	N001	17	-	27	17.72		F	#		
Turbidity	NTU	09/15/2009	N001	17	-	27	4.49		F	#		
Uranium	mg/L	09/15/2009	N001	17	-	27	0.041		F	#	0.0000017	
Uranium	mg/L	09/15/2009	N002	17	-	27	0.044		F	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/16/2009	0001	51.3 - 61.3	0.1	U	FQ	#	0.1	
Calcium	mg/L	09/16/2009	0001	51.3 - 61.3	460		FQ	#	0.021	
Chloride	mg/L	09/16/2009	0001	51.3 - 61.3	2500		FQ	#	40	
Magnesium	mg/L	09/16/2009	0001	51.3 - 61.3	2300		FQ	#	0.066	
Manganese	mg/L	09/16/2009	0001	51.3 - 61.3	0.18		FQ	#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	0001	51.3 - 61.3	1400		FQ	#	10	
Oxidation Reduction Potential	mV	09/16/2009	N001	51.3 - 61.3	198.5		FQ	#		
pH	s.u.	09/16/2009	N001	51.3 - 61.3	7.09		FQ	#		
Potassium	mg/L	09/16/2009	0001	51.3 - 61.3	90		FQ	#	0.92	
Selenium	mg/L	09/16/2009	0001	51.3 - 61.3	5.5		FQ	#	0.032	
Sodium	mg/L	09/16/2009	0001	51.3 - 61.3	5100		FQ	#	0.44	
Specific Conductance	umhos /cm	09/16/2009	N001	51.3 - 61.3	31219		FQ	#		
Strontium	mg/L	09/16/2009	0001	51.3 - 61.3	14		FQ	#	0.00055	
Sulfate	mg/L	09/16/2009	0001	51.3 - 61.3	16000		FQ	#	100	
Temperature	C	09/16/2009	N001	51.3 - 61.3	16.93		FQ	#		
Turbidity	NTU	09/16/2009	N001	51.3 - 61.3	51.4		FQ	#		
Uranium	mg/L	09/16/2009	0001	51.3 - 61.3	0.14		FQ	#	0.0000087	

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

REPORT DATE: 11/13/2009

Location: 0813 WELL W of radon cover borrow pit

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/15/2009	N001	40.8	-	50.8	59		F	#	5	
Ammonia Total as N	mg/L	09/15/2009	N002	40.8	-	50.8	58		F	#	2	
Calcium	mg/L	09/15/2009	N001	40.8	-	50.8	600		F	#	0.021	
Calcium	mg/L	09/15/2009	N002	40.8	-	50.8	650		F	#	0.053	
Chloride	mg/L	09/15/2009	N001	40.8	-	50.8	700		F	#	40	
Chloride	mg/L	09/15/2009	N002	40.8	-	50.8	750		F	#	40	
Magnesium	mg/L	09/15/2009	N001	40.8	-	50.8	3300		F	#	0.066	
Magnesium	mg/L	09/15/2009	N002	40.8	-	50.8	3300		F	#	0.16	
Manganese	mg/L	09/15/2009	N001	40.8	-	50.8	0.56		F	#	0.001	
Manganese	mg/L	09/15/2009	N002	40.8	-	50.8	0.65		F	#	0.0026	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	40.8	-	50.8	2300		F	#	20	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N002	40.8	-	50.8	2500		F	#	20	
Oxidation Reduction Potential	mV	09/15/2009	N001	40.8	-	50.8	88.1		F	#		
pH	s.u.	09/15/2009	N001	40.8	-	50.8	6.44		F	#		
Potassium	mg/L	09/15/2009	N001	40.8	-	50.8	130		F	#	0.92	
Potassium	mg/L	09/15/2009	N002	40.8	-	50.8	110		F	#	2.3	
Selenium	mg/L	09/15/2009	N001	40.8	-	50.8	0.045		F	#	0.00016	

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

REPORT DATE: 11/13/2009

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
Selenium	mg/L	09/15/2009	N002	40.8	-	50.8	0.044		F	#	0.00016	
Sodium	mg/L	09/15/2009	N001	40.8	-	50.8	2400		F	#	0.44	
Sodium	mg/L	09/15/2009	N002	40.8	-	50.8	2600		F	#	0.11	
Specific Conductance	umhos /cm	09/15/2009	N001	40.8	-	50.8	27952		F	#		
Strontium	mg/L	09/15/2009	N001	40.8	-	50.8	18		F	#	0.00055	
Strontium	mg/L	09/15/2009	N002	40.8	-	50.8	20		F	#	0.0014	
Sulfate	mg/L	09/15/2009	N001	40.8	-	50.8	11000		F	#	100	
Sulfate	mg/L	09/15/2009	N002	40.8	-	50.8	11000		F	#	100	
Temperature	C	09/15/2009	N001	40.8	-	50.8	16.73		F	#		
Turbidity	NTU	09/15/2009	N001	40.8	-	50.8	1.36		F	#		
Uranium	mg/L	09/15/2009	N001	40.8	-	50.8	0.13		F	#	0.0000087	
Uranium	mg/L	09/15/2009	N002	40.8	-	50.8	0.13		F	#	0.0000087	

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

REPORT DATE: 11/13/2009

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	09/16/2009	0001	23.8	-	33.8	67		FQ	#	5	
Calcium	mg/L	09/16/2009	0001	23.8	-	33.8	420		FQ	#	0.021	
Chloride	mg/L	09/16/2009	0001	23.8	-	33.8	1000		FQ	#	40	
Magnesium	mg/L	09/16/2009	0001	23.8	-	33.8	2100		FQ	#	0.066	
Manganese	mg/L	09/16/2009	0001	23.8	-	33.8	1.2		FQ	#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	0001	23.8	-	33.8	910		FQ	#	5	
Oxidation Reduction Potential	mV	09/16/2009	N001	23.8	-	33.8	210.9		FQ	#		
pH	s.u.	09/16/2009	N001	23.8	-	33.8	6.88		FQ	#		
Potassium	mg/L	09/16/2009	0001	23.8	-	33.8	120		FQ	#	0.92	
Selenium	mg/L	09/16/2009	0001	23.8	-	33.8	2		FQ	#	0.016	
Sodium	mg/L	09/16/2009	0001	23.8	-	33.8	3000		FQ	#	0.44	
Specific Conductance	umhos /cm	09/16/2009	N001	23.8	-	33.8	22838		FQ	#		
Strontium	mg/L	09/16/2009	0001	23.8	-	33.8	12		FQ	#	0.00055	
Sulfate	mg/L	09/16/2009	0001	23.8	-	33.8	13000		FQ	#	100	
Temperature	C	09/16/2009	N001	23.8	-	33.8	17.72		FQ	#		
Turbidity	NTU	09/16/2009	N001	23.8	-	33.8	87.6		FQ	#		
Uranium	mg/L	09/16/2009	0001	23.8	-	33.8	0.096		FQ	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/16/2009	N001	22.3	-	32.3	0.1	U	F	#	0.1	
Calcium	mg/L	09/16/2009	N001	22.3	-	32.3	420		F	#	0.021	
Chloride	mg/L	09/16/2009	N001	22.3	-	32.3	580		F	#	40	
Magnesium	mg/L	09/16/2009	N001	22.3	-	32.3	2600		F	#	0.066	
Manganese	mg/L	09/16/2009	N001	22.3	-	32.3	1.4		F	#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	N001	22.3	-	32.3	660		F	#	5	
Oxidation Reduction Potential	mV	09/16/2009	N001	22.3	-	32.3	185.1		F	#		
pH	s.u.	09/16/2009	N001	22.3	-	32.3	6.54		F	#		
Potassium	mg/L	09/16/2009	N001	22.3	-	32.3	92		F	#	0.92	
Selenium	mg/L	09/16/2009	N001	22.3	-	32.3	0.042		F	#	0.00016	
Sodium	mg/L	09/16/2009	N001	22.3	-	32.3	2800		F	#	0.44	
Specific Conductance	umhos /cm	09/16/2009	N001	22.3	-	32.3	21826		F	#		
Strontium	mg/L	09/16/2009	N001	22.3	-	32.3	13		F	#	0.00055	
Sulfate	mg/L	09/16/2009	N001	22.3	-	32.3	15000		F	#	100	
Temperature	C	09/16/2009	N001	22.3	-	32.3	20		F	#		
Turbidity	NTU	09/16/2009	N001	22.3	-	32.3	4.83		F	#		
Uranium	mg/L	09/16/2009	N001	22.3	-	32.3	0.37		F	#	0.000035	

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

REPORT DATE: 11/13/2009

Location: 0816 WELL N of artesian well 648

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/16/2009	N001	20.1	- 25.1	0.11		F	#	0.1	
Calcium	mg/L	09/16/2009	N001	20.1	- 25.1	180		F	#	0.011	
Chloride	mg/L	09/16/2009	N001	20.1	- 25.1	79		F	#	20	
Magnesium	mg/L	09/16/2009	N001	20.1	- 25.1	270		F	#	0.033	
Manganese	mg/L	09/16/2009	N001	20.1	- 25.1	0.00052	U	F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	N001	20.1	- 25.1	43		F	#	0.5	
Oxidation Reduction Potential	mV	09/16/2009	N001	20.1	- 25.1	154.9		F	#		
pH	s.u.	09/16/2009	N001	20.1	- 25.1	7.64		F	#		
Potassium	mg/L	09/16/2009	N001	20.1	- 25.1	13		F	#	0.46	
Selenium	mg/L	09/16/2009	N001	20.1	- 25.1	0.03		F	#	0.00016	
Sodium	mg/L	09/16/2009	N001	20.1	- 25.1	710		F	#	0.022	
Specific Conductance	umhos /cm	09/16/2009	N001	20.1	- 25.1	5210		F	#		
Strontium	mg/L	09/16/2009	N001	20.1	- 25.1	4		F	#	0.00027	
Sulfate	mg/L	09/16/2009	N001	20.1	- 25.1	2700		F	#	50	
Temperature	C	09/16/2009	N001	20.1	- 25.1	18.71		F	#		
Turbidity	NTU	09/16/2009	N001	20.1	- 25.1	9.47		F	#		
Uranium	mg/L	09/16/2009	N001	20.1	- 25.1	0.029		F	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/15/2009	N001	21.6 - 31.62	960		F	#	20	
Calcium	mg/L	09/15/2009	N001	21.6 - 31.62	430		F	#	0.021	
Chloride	mg/L	09/15/2009	N001	21.6 - 31.62	460		F	#	40	
Magnesium	mg/L	09/15/2009	N001	21.6 - 31.62	1800		F	#	0.066	
Manganese	mg/L	09/15/2009	N001	21.6 - 31.62	2.1		F	#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	21.6 - 31.62	510		F	#	5	
Oxidation Reduction Potential	mV	09/15/2009	N001	21.6 - 31.62	93.1		F	#		
pH	s.u.	09/15/2009	N001	21.6 - 31.62	6.9		F	#		
Potassium	mg/L	09/15/2009	N001	21.6 - 31.62	230		F	#	0.92	
Selenium	mg/L	09/15/2009	N001	21.6 - 31.62	0.003		F	#	0.000064	
Sodium	mg/L	09/15/2009	N001	21.6 - 31.62	1500		F	#	0.044	
Specific Conductance	umhos /cm	09/15/2009	N001	21.6 - 31.62	20853		F	#		
Strontium	mg/L	09/15/2009	N001	21.6 - 31.62	11		F	#	0.00055	
Sulfate	mg/L	09/15/2009	N001	21.6 - 31.62	11000		F	#	100	
Temperature	C	09/15/2009	N001	21.6 - 31.62	19.28		F	#		
Turbidity	NTU	09/15/2009	N001	21.6 - 31.62	2.97		F	#		
Uranium	mg/L	09/15/2009	N001	21.6 - 31.62	6.7		F	#	0.00017	

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

REPORT DATE: 11/13/2009

Location: 0818 WELL Just W of radon cover borrow pit

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/14/2009	N001	52 - 61.5	90			#	20	
Calcium	mg/L	09/14/2009	N001	52 - 61.5	440			#	0.021	
Chloride	mg/L	09/14/2009	N001	52 - 61.5	970			#	40	
Magnesium	mg/L	09/14/2009	N001	52 - 61.5	1900			#	0.066	
Manganese	mg/L	09/14/2009	N001	52 - 61.5	0.56			#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2009	N001	52 - 61.5	860			#	5	
Oxidation Reduction Potential	mV	09/14/2009	N001	52 - 61.5	265.5			#		
pH	s.u.	09/14/2009	N001	52 - 61.5	6.34			#		
Potassium	mg/L	09/14/2009	N001	52 - 61.5	90			#	0.92	
Selenium	mg/L	09/14/2009	N001	52 - 61.5	1.9			#	0.0064	
Sodium	mg/L	09/14/2009	N001	52 - 61.5	2900			#	0.44	
Specific Conductance	umhos /cm	09/14/2009	N001	52 - 61.5	21510			#		
Strontium	mg/L	09/14/2009	N001	52 - 61.5	12			#	0.00055	
Sulfate	mg/L	09/14/2009	N001	52 - 61.5	12000			#	100	
Temperature	C	09/14/2009	N001	52 - 61.5	17.57			#		
Turbidity	NTU	09/14/2009	N001	52 - 61.5	3.06			#		
Uranium	mg/L	09/14/2009	N001	52 - 61.5	0.097			#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/15/2009	N001	15.67	- 25.67	2.5		FQ	#	0.1	
Calcium	mg/L	09/15/2009	N001	15.67	- 25.67	410		FQ	#	0.021	
Chloride	mg/L	09/15/2009	N001	15.67	- 25.67	730		FQ	#	40	
Magnesium	mg/L	09/15/2009	N001	15.67	- 25.67	1600		FQ	#	0.066	
Manganese	mg/L	09/15/2009	N001	15.67	- 25.67	1.4		FQ	#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	15.67	- 25.67	11		FQ	#	0.2	
Oxidation Reduction Potential	mV	09/15/2009	N001	15.67	- 25.67	67.2		FQ	#		
pH	s.u.	09/15/2009	N001	15.67	- 25.67	6.41		FQ	#		
Potassium	mg/L	09/15/2009	N001	15.67	- 25.67	200		FQ	#	0.92	
Selenium	mg/L	09/15/2009	N001	15.67	- 25.67	0.01		FQ	#	0.000064	
Sodium	mg/L	09/15/2009	N001	15.67	- 25.67	2300		FQ	#	0.44	
Specific Conductance	umhos /cm	09/15/2009	N001	15.67	- 25.67	21879		FQ	#		
Strontium	mg/L	09/15/2009	N001	15.67	- 25.67	9.6		FQ	#	0.00055	
Sulfate	mg/L	09/15/2009	N001	15.67	- 25.67	13000		FQ	#	100	
Temperature	C	09/15/2009	N001	15.67	- 25.67	21.56		FQ	#		
Turbidity	NTU	09/15/2009	N001	15.67	- 25.67	5.86		FQ	#		
Uranium	mg/L	09/15/2009	N001	15.67	- 25.67	1.2		FQ	#	0.000035	

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

REPORT DATE: 11/13/2009

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	09/15/2009	0001	149	-	151.5	1.5		FQ	#	0.1	
Calcium	mg/L	09/15/2009	0001	149	-	151.5	200		FQ	#	0.021	
Chloride	mg/L	09/15/2009	0001	149	-	151.5	8500		FQ	#	100	
Magnesium	mg/L	09/15/2009	0001	149	-	151.5	94		FQ	#	0.066	
Manganese	mg/L	09/15/2009	0001	149	-	151.5	0.9		FQ	#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	0001	149	-	151.5	0.12		FQ	#	0.01	
Oxidation Reduction Potential	mV	09/15/2009	N001	149	-	151.5	-60.9		FQ	#		
pH	s.u.	09/15/2009	N001	149	-	151.5	7.46		FQ	#		
Potassium	mg/L	09/15/2009	0001	149	-	151.5	31		FQ	#	0.92	
Selenium	mg/L	09/15/2009	0001	149	-	151.5	0.0025		FQ	#	0.000032	
Sodium	mg/L	09/15/2009	0001	149	-	151.5	5700		FQ	#	0.44	
Specific Conductance	umhos /cm	09/15/2009	N001	149	-	151.5	29619		FQ	#		
Strontium	mg/L	09/15/2009	0001	149	-	151.5	20		FQ	#	0.00055	
Sulfate	mg/L	09/15/2009	0001	149	-	151.5	5000		FQ	#	100	
Temperature	C	09/15/2009	N001	149	-	151.5	17.51		FQ	#		
Turbidity	NTU	09/15/2009	N001	149	-	151.5	21.1		FQ	#		
Uranium	mg/L	09/15/2009	0001	149	-	151.5	0.093		FQ	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/15/2009	N001	199	-	201.5	2.6		FQ	#	0.1	
Calcium	mg/L	09/15/2009	N001	199	-	201.5	170		FQ	#	0.021	
Chloride	mg/L	09/15/2009	N001	199	-	201.5	6200		FQ	#	100	
Magnesium	mg/L	09/15/2009	N001	199	-	201.5	77		FQ	#	0.066	
Manganese	mg/L	09/15/2009	N001	199	-	201.5	0.44		FQ	#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	199	-	201.5	12		FQ	#	0.2	
Oxidation Reduction Potential	mV	09/15/2009	N001	199	-	201.5	130.1		FQ	#		
pH	s.u.	09/15/2009	N001	199	-	201.5	7.78		FQ	#		
Potassium	mg/L	09/15/2009	N001	199	-	201.5	72		FQ	#	0.92	
Selenium	mg/L	09/15/2009	N001	199	-	201.5	0.00094		FQ	#	0.000032	
Sodium	mg/L	09/15/2009	N001	199	-	201.5	5100		FQ	#	0.44	
Specific Conductance	umhos /cm	09/15/2009	N001	199	-	201.5	24901		FQ	#		
Strontium	mg/L	09/15/2009	N001	199	-	201.5	17		FQ	#	0.00055	
Sulfate	mg/L	09/15/2009	N001	199	-	201.5	5800		FQ	#	100	
Temperature	C	09/15/2009	N001	199	-	201.5	18.32		FQ	#		
Turbidity	NTU	09/15/2009	N001	199	-	201.5	7.23		FQ	#		
Uranium	mg/L	09/15/2009	N001	199	-	201.5	0.082		FQ	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/16/2009	0001	198.5	-	201	13		FQ	#	1	
Calcium	mg/L	09/16/2009	0001	198.5	-	201	190		FQ	#	0.021	
Chloride	mg/L	09/16/2009	0001	198.5	-	201	6900		FQ	#	100	
Magnesium	mg/L	09/16/2009	0001	198.5	-	201	85		FQ	#	0.066	
Manganese	mg/L	09/16/2009	0001	198.5	-	201	0.5		FQ	#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	0001	198.5	-	201	84		FQ	#	0.5	
Oxidation Reduction Potential	mV	09/16/2009	N001	198.5	-	201	-6.9		FQ	#		
pH	s.u.	09/16/2009	N001	198.5	-	201	7.21		FQ	#		
Potassium	mg/L	09/16/2009	0001	198.5	-	201	98		FQ	#	0.92	
Selenium	mg/L	09/16/2009	0001	198.5	-	201	0.0022		FQ	#	0.000032	
Sodium	mg/L	09/16/2009	0001	198.5	-	201	5000		FQ	#	0.44	
Specific Conductance	umhos/cm	09/16/2009	N001	198.5	-	201	25063		FQ	#		
Strontium	mg/L	09/16/2009	0001	198.5	-	201	19		FQ	#	0.00055	
Sulfate	mg/L	09/16/2009	0001	198.5	-	201	5700		FQ	#	100	
Temperature	C	09/16/2009	N001	198.5	-	201	19.52		FQ	#		
Turbidity	NTU	09/16/2009	N001	198.5	-	201	62.6		FQ	#		
Uranium	mg/L	09/16/2009	0001	198.5	-	201	0.15		FQ	#	0.0000087	

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

REPORT DATE: 11/13/2009

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	09/16/2009	N001	147.79 - 150.23	7.8		FQ	#	0.5	
Calcium	mg/L	09/16/2009	N001	147.79 - 150.23	220		FQ	#	0.021	
Chloride	mg/L	09/16/2009	N001	147.79 - 150.23	8200		FQ	#	100	
Magnesium	mg/L	09/16/2009	N001	147.79 - 150.23	79		FQ	#	0.066	
Manganese	mg/L	09/16/2009	N001	147.79 - 150.23	0.84		FQ	#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	N001	147.79 - 150.23	1.9		FQ	#	0.01	
Oxidation Reduction Potential	mV	09/16/2009	N001	147.79 - 150.23	103.8		FQ	#		
pH	s.u.	09/16/2009	N001	147.79 - 150.23	7.19		FQ	#		
Potassium	mg/L	09/16/2009	N001	147.79 - 150.23	44		FQ	#	0.92	
Selenium	mg/L	09/16/2009	N001	147.79 - 150.23	0.00083		FQ	#	0.000032	
Sodium	mg/L	09/16/2009	N001	147.79 - 150.23	6000		FQ	#	0.44	
Specific Conductance	umhos /cm	09/16/2009	N001	147.79 - 150.23	27650		FQ	#		
Strontium	mg/L	09/16/2009	N001	147.79 - 150.23	22		FQ	#	0.00055	
Sulfate	mg/L	09/16/2009	N001	147.79 - 150.23	6400	N	FQJ	#	100	
Temperature	C	09/16/2009	N001	147.79 - 150.23	20.01		FQ	#		
Turbidity	NTU	09/16/2009	N001	147.79 - 150.23	9.49		FQ	#		
Uranium	mg/L	09/16/2009	N001	147.79 - 150.23	0.048		FQ	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/15/2009	N001	10	-	20	110		F	#	20	
Ammonia Total as N	mg/L	09/15/2009	N002	10	-	20	110		F	#	5	
Calcium	mg/L	09/15/2009	N001	10	-	20	400		F	#	0.021	
Calcium	mg/L	09/15/2009	N002	10	-	20	430		F	#	0.053	
Chloride	mg/L	09/15/2009	N001	10	-	20	540		F	#	40	
Chloride	mg/L	09/15/2009	N002	10	-	20	610		F	#	40	
Magnesium	mg/L	09/15/2009	N001	10	-	20	2900		F	#	0.066	
Magnesium	mg/L	09/15/2009	N002	10	-	20	2700		F	#	0.16	
Manganese	mg/L	09/15/2009	N001	10	-	20	2.9		F	#	0.001	
Manganese	mg/L	09/15/2009	N002	10	-	20	2.9		F	#	0.0026	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	10	-	20	49		F	#	0.5	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N002	10	-	20	60		F	#	0.5	
Oxidation Reduction Potential	mV	09/15/2009	N001	10	-	20	80.3		F	#		
pH	s.u.	09/15/2009	N001	10	-	20	6.47		F	#		
Potassium	mg/L	09/15/2009	N001	10	-	20	150		FJ	#	0.92	
Potassium	mg/L	09/15/2009	N002	10	-	20	120		F	#	2.3	
Selenium	mg/L	09/15/2009	N001	10	-	20	0.0039		F	#	0.000032	

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

REPORT DATE: 11/13/2009

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
Selenium	mg/L	09/15/2009	N002	10	-	20	0.0032		F	#	0.00016	
Sodium	mg/L	09/15/2009	N001	10	-	20	2100		F	#	0.044	
Sodium	mg/L	09/15/2009	N002	10	-	20	2100		F	#	0.11	
Specific Conductance	umhos/cm	09/15/2009	N001	10	-	20	20722		F	#		
Strontium	mg/L	09/15/2009	N001	10	-	20	13		F	#	0.00055	
Strontium	mg/L	09/15/2009	N002	10	-	20	13		F	#	0.0014	
Sulfate	mg/L	09/15/2009	N001	10	-	20	15000		F	#	100	
Sulfate	mg/L	09/15/2009	N002	10	-	20	15000		F	#	100	
Temperature	C	09/15/2009	N001	10	-	20	21.2		F	#		
Turbidity	NTU	09/15/2009	N001	10	-	20	3.64		F	#		
Uranium	mg/L	09/15/2009	N001	10	-	20	3.7		F	#	0.00017	
Uranium	mg/L	09/15/2009	N002	10	-	20	3.5		F	#	0.000087	

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

REPORT DATE: 11/13/2009

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	09/16/2009	N001	19.9 - 29.9	22		FQ	#	1	
Calcium	mg/L	09/16/2009	N001	19.9 - 29.9	420		FQ	#	0.021	
Chloride	mg/L	09/16/2009	N001	19.9 - 29.9	510		FQ	#	40	
Magnesium	mg/L	09/16/2009	N001	19.9 - 29.9	1700		FQ	#	0.066	
Manganese	mg/L	09/16/2009	N001	19.9 - 29.9	1.2		FQ	#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	N001	19.9 - 29.9	18		FQ	#	0.2	
Oxidation Reduction Potential	mV	09/16/2009	N001	19.9 - 29.9	108.9		FQ	#		
pH	s.u.	09/16/2009	N001	19.9 - 29.9	6.49		FQ	#		
Potassium	mg/L	09/16/2009	N001	19.9 - 29.9	78		FQ	#	0.92	
Selenium	mg/L	09/16/2009	N001	19.9 - 29.9	0.015		FQ	#	0.000032	
Sodium	mg/L	09/16/2009	N001	19.9 - 29.9	2300		FQ	#	0.044	
Specific Conductance	umhos /cm	09/16/2009	N001	19.9 - 29.9	17538		FQ	#		
Strontium	mg/L	09/16/2009	N001	19.9 - 29.9	11		FQ	#	0.00055	
Sulfate	mg/L	09/16/2009	N001	19.9 - 29.9	11000		FQ	#	100	
Temperature	C	09/16/2009	N001	19.9 - 29.9	19.65		FQ	#		
Turbidity	NTU	09/16/2009	N001	19.9 - 29.9	6.43		FQ	#		
Uranium	mg/L	09/16/2009	N001	19.9 - 29.9	1.1		FQ	#	0.000035	

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

REPORT DATE: 11/13/2009

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	09/17/2009	N001	5.3	-	15.3	0.1	U	F	#	0.1	
Calcium	mg/L	09/17/2009	N001	5.3	-	15.3	470		F	#	0.011	
Chloride	mg/L	09/17/2009	N001	5.3	-	15.3	280		F	#	20	
Magnesium	mg/L	09/17/2009	N001	5.3	-	15.3	290		F	#	0.033	
Manganese	mg/L	09/17/2009	N001	5.3	-	15.3	0.00052	U	F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	5.3	-	15.3	130		F	#	1	
Oxidation Reduction Potential	mV	09/17/2009	N001	5.3	-	15.3	198.2		F	#		
pH	s.u.	09/17/2009	N001	5.3	-	15.3	6.94		F	#		
Potassium	mg/L	09/17/2009	N001	5.3	-	15.3	15		F	#	0.46	
Selenium	mg/L	09/17/2009	N001	5.3	-	15.3	0.13		F	#	0.00064	
Sodium	mg/L	09/17/2009	N001	5.3	-	15.3	500		F	#	0.022	
Specific Conductance	umhos /cm	09/17/2009	N001	5.3	-	15.3	5856		F	#		
Strontium	mg/L	09/17/2009	N001	5.3	-	15.3	6.5		F	#	0.00027	
Sulfate	mg/L	09/17/2009	N001	5.3	-	15.3	2300		F	#	50	
Temperature	C	09/17/2009	N001	5.3	-	15.3	18.27		F	#		
Turbidity	NTU	09/17/2009	N001	5.3	-	15.3	1.44		F	#		
Uranium	mg/L	09/17/2009	N001	5.3	-	15.3	0.58		F	#	0.000017	

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

REPORT DATE: 11/13/2009

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
Ammonia Total as N	mg/L	09/16/2009	N001	7.7	-	17.7	-1.1		F	#	0.1	
Calcium	mg/L	09/16/2009	N001	7.7	-	17.7	650		F	#	0.011	
Chloride	mg/L	09/16/2009	N001	7.7	-	17.7	66		F	#	10	
Magnesium	mg/L	09/16/2009	N001	7.7	-	17.7	64		F	#	0.033	
Manganese	mg/L	09/16/2009	N001	7.7	-	17.7	6.1		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	N001	7.7	-	17.7	130		F	#	1	
Oxidation Reduction Potential	mV	09/16/2009	N001	7.7	-	17.7	246.7		F	#		
pH	s.u.	09/16/2009	N001	7.7	-	17.7	3.36		F	#		
Potassium	mg/L	09/16/2009	N001	7.7	-	17.7	4	B	F	#	0.46	
Selenium	mg/L	09/16/2009	N001	7.7	-	17.7	0.031	E	F	#	0.00016	
Sodium	mg/L	09/16/2009	N001	7.7	-	17.7	160		F	#	0.022	
Specific Conductance	umhos /cm	09/16/2009	N001	7.7	-	17.7	3858		F	#		
Strontium	mg/L	09/16/2009	N001	7.7	-	17.7	0.44		F	#	0.00027	
Sulfate	mg/L	09/16/2009	N001	7.7	-	17.7	1700		F	#	25	
Temperature	C	09/16/2009	N001	7.7	-	17.7	22.36		F	#		
Turbidity	NTU	09/16/2009	N001	7.7	-	17.7	2.14		F	#		
Uranium	mg/L	09/16/2009	N001	7.7	-	17.7	0.014		F	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/17/2009	N001	24.9 - 34.9	0.1	U	F	#	0.1	
Calcium	mg/L	09/17/2009	N001	24.9 - 34.9	420		F	#	0.011	
Chloride	mg/L	09/17/2009	N001	24.9 - 34.9	480		F	#	20	
Magnesium	mg/L	09/17/2009	N001	24.9 - 34.9	1200		F	#	0.033	
Manganese	mg/L	09/17/2009	N001	24.9 - 34.9	0.043		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	24.9 - 34.9	370		F	#	2	
Oxidation Reduction Potential	mV	09/17/2009	N001	24.9 - 34.9	163.7		F	#		
pH	s.u.	09/17/2009	N001	24.9 - 34.9	7.15		F	#		
Potassium	mg/L	09/17/2009	N001	24.9 - 34.9	36		F	#	0.46	
Selenium	mg/L	09/17/2009	N001	24.9 - 34.9	0.29		F	#	0.0016	
Sodium	mg/L	09/17/2009	N001	24.9 - 34.9	1500		F	#	0.44	
Specific Conductance	umhos /cm	09/17/2009	N001	24.9 - 34.9	13125		F	#		
Strontium	mg/L	09/17/2009	N001	24.9 - 34.9	8.9		F	#	0.00027	
Sulfate	mg/L	09/17/2009	N001	24.9 - 34.9	7700		F	#	50	
Temperature	C	09/17/2009	N001	24.9 - 34.9	16.59		F	#		
Turbidity	NTU	09/17/2009	N001	24.9 - 34.9	9.28		F	#		
Uranium	mg/L	09/17/2009	N001	24.9 - 34.9	0.23		F	#	0.000017	

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

REPORT DATE: 11/13/2009

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/17/2009	N001	21.9	-	31.9	0.1	U	F	#	0.1	
Calcium	mg/L	09/17/2009	N001	21.9	-	31.9	450		F	#	0.011	
Chloride	mg/L	09/17/2009	N001	21.9	-	31.9	200		F	#	20	
Magnesium	mg/L	09/17/2009	N001	21.9	-	31.9	420		F	#	0.033	
Manganese	mg/L	09/17/2009	N001	21.9	-	31.9	0.0011	B	FJ	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	21.9	-	31.9	91		F	#	0.5	
Oxidation Reduction Potential	mV	09/17/2009	N001	21.9	-	31.9	196.6		F	#		
pH	s.u.	09/17/2009	N001	21.9	-	31.9	7.2		F	#		
Potassium	mg/L	09/17/2009	N001	21.9	-	31.9	12		F	#	0.46	
Selenium	mg/L	09/17/2009	N001	21.9	-	31.9	0.29		F	#	0.0016	
Sodium	mg/L	09/17/2009	N001	21.9	-	31.9	820		F	#	0.022	
Specific Conductance	umhos /cm	09/17/2009	N001	21.9	-	31.9	6963		F	#		
Strontium	mg/L	09/17/2009	N001	21.9	-	31.9	5.6		F	#	0.00027	
Sulfate	mg/L	09/17/2009	N001	21.9	-	31.9	3800		F	#	50	
Temperature	C	09/17/2009	N001	21.9	-	31.9	19.07		F	#		
Turbidity	NTU	09/17/2009	N001	21.9	-	31.9	7.19		F	#		
Uranium	mg/L	09/17/2009	N001	21.9	-	31.9	0.08		F	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/17/2009	N001	26.8 - 36.8	0.1	U	F	#	0.1	
Calcium	mg/L	09/17/2009	N001	26.8 - 36.8	480		F	#	0.011	
Chloride	mg/L	09/17/2009	N001	26.8 - 36.8	35		F	#	10	
Magnesium	mg/L	09/17/2009	N001	26.8 - 36.8	240		F	#	0.033	
Manganese	mg/L	09/17/2009	N001	26.8 - 36.8	7.2		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	26.8 - 36.8	14		F	#	0.1	
Oxidation Reduction Potential	mV	09/17/2009	N001	26.8 - 36.8	99.6		F	#		
pH	s.u.	09/17/2009	N001	26.8 - 36.8	7.07		F	#		
Potassium	mg/L	09/17/2009	N001	26.8 - 36.8	3.2	B	F	#	0.46	
Selenium	mg/L	09/17/2009	N001	26.8 - 36.8	0.13		F	#	0.00064	
Sodium	mg/L	09/17/2009	N001	26.8 - 36.8	320		F	#	0.022	
Specific Conductance	umhos/cm	09/17/2009	N001	26.8 - 36.8	4469		F	#		
Strontium	mg/L	09/17/2009	N001	26.8 - 36.8	6.1		F	#	0.00027	
Sulfate	mg/L	09/17/2009	N001	26.8 - 36.8	2600		F	#	25	
Temperature	C	09/17/2009	N001	26.8 - 36.8	15.94		F	#		
Turbidity	NTU	09/17/2009	N001	26.8 - 36.8	5.42		F	#		
Uranium	mg/L	09/17/2009	N001	26.8 - 36.8	0.041		F	#	0.0000017	

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

REPORT DATE: 11/13/2009

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/17/2009	N001	17	-	27.1	0.1	U	F	#	0.1	
Calcium	mg/L	09/17/2009	N001	17	-	27.1	560		F	#	0.011	
Chloride	mg/L	09/17/2009	N001	17	-	27.1	56		F	#	10	
Magnesium	mg/L	09/17/2009	N001	17	-	27.1	210		F	#	0.033	
Manganese	mg/L	09/17/2009	N001	17	-	27.1	4.9		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	17	-	27.1	8.1		F	#	0.1	
Oxidation Reduction Potential	mV	09/17/2009	N001	17	-	27.1	-134.4		F	#		
pH	s.u.	09/17/2009	N001	17	-	27.1	6.97		F	#		
Potassium	mg/L	09/17/2009	N001	17	-	27.1	6.5		F	#	0.46	
Selenium	mg/L	09/17/2009	N001	17	-	27.1	0.17		F	#	0.00064	
Sodium	mg/L	09/17/2009	N001	17	-	27.1	300		F	#	0.022	
Specific Conductance	umhos /cm	09/17/2009	N001	17	-	27.1	4107		F	#		
Strontium	mg/L	09/17/2009	N001	17	-	27.1	5.9		F	#	0.00027	
Sulfate	mg/L	09/17/2009	N001	17	-	27.1	2300		F	#	25	
Temperature	C	09/17/2009	N001	17	-	27.1	16.18		F	#		
Turbidity	NTU	09/17/2009	N001	17	-	27.1	8.67		F	#		
Uranium	mg/L	09/17/2009	N001	17	-	27.1	0.045		F	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/15/2009	N001	21.9	-	31.9	0.1	U	F	#	0.1	
Calcium	mg/L	09/15/2009	N001	21.9	-	31.9	700		F	#	0.011	
Chloride	mg/L	09/15/2009	N001	21.9	-	31.9	170		F	#	10	
Magnesium	mg/L	09/15/2009	N001	21.9	-	31.9	250		F	#	0.033	
Manganese	mg/L	09/15/2009	N001	21.9	-	31.9	0.016	B	F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	21.9	-	31.9	110		F	#	1	
Oxidation Reduction Potential	mV	09/15/2009	N001	21.9	-	31.9	38.3		F	#		
pH	s.u.	09/15/2009	N001	21.9	-	31.9	6.91		F	#		
Potassium	mg/L	09/15/2009	N001	21.9	-	31.9	9.7		F	#	0.46	
Selenium	mg/L	09/15/2009	N001	21.9	-	31.9	0.42		F	#	0.0016	
Sodium	mg/L	09/15/2009	N001	21.9	-	31.9	480		F	#	0.022	
Specific Conductance	umhos /cm	09/15/2009	N001	21.9	-	31.9	5981		F	#		
Strontium	mg/L	09/15/2009	N001	21.9	-	31.9	7.7		F	#	0.00027	
Sulfate	mg/L	09/15/2009	N001	21.9	-	31.9	3000		F	#	25	
Temperature	C	09/15/2009	N001	21.9	-	31.9	17.23		F	#		
Turbidity	NTU	09/15/2009	N001	21.9	-	31.9	0.65		F	#		
Uranium	mg/L	09/15/2009	N001	21.9	-	31.9	0.043		F	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/15/2009	N001	42	-	52	0.1	U	FJ	#	0.1	
Ammonia Total as N	mg/L	09/15/2009	N002	42	-	52	0.1	UN	FJ	#	0.1	
Calcium	mg/L	09/15/2009	N001	42	-	52	400		F	#	0.021	
Calcium	mg/L	09/15/2009	N002	42	-	52	440		F	#	0.053	
Chloride	mg/L	09/15/2009	N001	42	-	52	990		F	#	40	
Chloride	mg/L	09/15/2009	N002	42	-	52	1000		F	#	40	
Magnesium	mg/L	09/15/2009	N001	42	-	52	900		F	#	0.066	
Magnesium	mg/L	09/15/2009	N002	42	-	52	970		F	#	0.16	
Manganese	mg/L	09/15/2009	N001	42	-	52	0.093		F	#	0.001	
Manganese	mg/L	09/15/2009	N002	42	-	52	0.11	B	F	#	0.0026	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	42	-	52	690		F	#	5	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N002	42	-	52	680		F	#	5	
Oxidation Reduction Potential	mV	09/15/2009	N001	42	-	52	28.1		F	#		
pH	s.u.	09/15/2009	N001	42	-	52	7.18		F	#		
Potassium	mg/L	09/15/2009	N001	42	-	52	74		FJ	#	0.92	
Potassium	mg/L	09/15/2009	N002	42	-	52	59		F	#	2.3	
Selenium	mg/L	09/15/2009	N001	42	-	52	3.1		F	#	0.016	

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

REPORT DATE: 11/13/2009

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
Selenium	mg/L	09/15/2009	N002	42	-	52	3.1		F	#	0.0064	
Sodium	mg/L	09/15/2009	N001	42	-	52	5500		F	#	0.44	
Sodium	mg/L	09/15/2009	N002	42	-	52	5700		F	#	0.44	
Specific Conductance	umhos /cm	09/15/2009	N001	42	-	52	28491		F	#		
Strontium	mg/L	09/15/2009	N001	42	-	52	9.3		F	#	0.00055	
Strontium	mg/L	09/15/2009	N002	42	-	52	10		F	#	0.0014	
Sulfate	mg/L	09/15/2009	N001	42	-	52	15000		F	#	100	
Sulfate	mg/L	09/15/2009	N002	42	-	52	16000		F	#	100	
Temperature	C	09/15/2009	N001	42	-	52	17.06		F	#		
Turbidity	NTU	09/15/2009	N001	42	-	52	3.48		F	#		
Uranium	mg/L	09/15/2009	N001	42	-	52	0.15		F	#	0.0000087	
Uranium	mg/L	09/15/2009	N002	42	-	52	0.14		F	#	0.0000087	

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

REPORT DATE: 11/13/2009

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	09/17/2009	N001	11.9 - 21.9	0.1	U	F	#	0.1	
Calcium	mg/L	09/17/2009	N001	11.9 - 21.9	410		F	#	0.011	
Chloride	mg/L	09/17/2009	N001	11.9 - 21.9	53		F	#	10	
Magnesium	mg/L	09/17/2009	N001	11.9 - 21.9	140		F	#	0.033	
Manganese	mg/L	09/17/2009	N001	11.9 - 21.9	3		F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	11.9 - 21.9	21		F	#	0.2	
Oxidation Reduction Potential	mV	09/17/2009	N001	11.9 - 21.9	155.2		F	#		
pH	s.u.	09/17/2009	N001	11.9 - 21.9	7.11		F	#		
Potassium	mg/L	09/17/2009	N001	11.9 - 21.9	7.7		F	#	0.46	
Selenium	mg/L	09/17/2009	N001	11.9 - 21.9	0.24		F	#	0.00064	
Sodium	mg/L	09/17/2009	N001	11.9 - 21.9	270		F	#	0.022	
Specific Conductance	umhos/cm	09/17/2009	N001	11.9 - 21.9	3502		F	#		
Strontium	mg/L	09/17/2009	N001	11.9 - 21.9	4.8		F	#	0.00027	
Sulfate	mg/L	09/17/2009	N001	11.9 - 21.9	1900		F	#	25	
Temperature	C	09/17/2009	N001	11.9 - 21.9	16.64		F	#		
Turbidity	NTU	09/17/2009	N001	11.9 - 21.9	4.74		F	#		
Uranium	mg/L	09/17/2009	N001	11.9 - 21.9	0.029		F	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/17/2009	N001	28.91	- 38.91	0.31		F	#	0.1	
Calcium	mg/L	09/17/2009	N001	28.91	- 38.91	500		F	#	0.011	
Chloride	mg/L	09/17/2009	N001	28.91	- 38.91	820		F	#	40	
Magnesium	mg/L	09/17/2009	N001	28.91	- 38.91	1800		F	#	0.033	
Manganese	mg/L	09/17/2009	N001	28.91	- 38.91	0.013	B	F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	28.91	- 38.91	740		F	#	5	
Oxidation Reduction Potential	mV	09/17/2009	N001	28.91	- 38.91	202		F	#		
pH	s.u.	09/17/2009	N001	28.91	- 38.91	7.55		F	#		
Potassium	mg/L	09/17/2009	N001	28.91	- 38.91	57		F	#	0.46	
Selenium	mg/L	09/17/2009	N001	28.91	- 38.91	1.7		F	#	0.0064	
Sodium	mg/L	09/17/2009	N001	28.91	- 38.91	2000		F	#	0.44	
Specific Conductance	umhos /cm	09/17/2009	N001	28.91	- 38.91	17285		F	#		
Strontium	mg/L	09/17/2009	N001	28.91	- 38.91	12		F	#	0.00027	
Sulfate	mg/L	09/17/2009	N001	28.91	- 38.91	9400		F	#	100	
Temperature	C	09/17/2009	N001	28.91	- 38.91	17.16		F	#		
Turbidity	NTU	09/17/2009	N001	28.91	- 38.91	8.35		F	#		
Uranium	mg/L	09/17/2009	N001	28.91	- 38.91	0.2		F	#	0.000017	

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

REPORT DATE: 11/13/2009

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	09/17/2009	0001	17.9 - 27.9	0.1	U	FQ	#	0.1	
Calcium	mg/L	09/17/2009	0001	17.9 - 27.9	570		FQ	#	0.011	
Chloride	mg/L	09/17/2009	0001	17.9 - 27.9	60		FQ	#	10	
Magnesium	mg/L	09/17/2009	0001	17.9 - 27.9	190		FQ	#	0.033	
Manganese	mg/L	09/17/2009	0001	17.9 - 27.9	0.003	B	FQ	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	0001	17.9 - 27.9	58		FQ	#	0.5	
Oxidation Reduction Potential	mV	09/17/2009	N001	17.9 - 27.9	177		FQ	#		
pH	s.u.	09/17/2009	N001	17.9 - 27.9	7.24		FQ	#		
Potassium	mg/L	09/17/2009	0001	17.9 - 27.9	5	B	FQ	#	0.46	
Selenium	mg/L	09/17/2009	0001	17.9 - 27.9	0.36		FQ	#	0.0016	
Sodium	mg/L	09/17/2009	0001	17.9 - 27.9	260		FQ	#	0.022	
Specific Conductance	umhos /cm	09/17/2009	N001	17.9 - 27.9	3975		FQ	#		
Strontium	mg/L	09/17/2009	0001	17.9 - 27.9	5.1		FQ	#	0.00027	
Sulfate	mg/L	09/17/2009	0001	17.9 - 27.9	2200		FQ	#	25	
Temperature	C	09/17/2009	N001	17.9 - 27.9	17.21		FQ	#		
Turbidity	NTU	09/17/2009	N001	17.9 - 27.9	1000		FQ	#		
Uranium	mg/L	09/17/2009	0001	17.9 - 27.9	0.036		FQ	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/15/2009	N001	45 - 142.58	2.8		F	#	0.1	
Calcium	mg/L	09/15/2009	N001	45 - 142.58	360		F	#	0.021	
Chloride	mg/L	09/15/2009	N001	45 - 142.58	1000		F	#	40	
Magnesium	mg/L	09/15/2009	N001	45 - 142.58	520		F	#	0.066	
Manganese	mg/L	09/15/2009	N001	45 - 142.58	2.9		F	#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	45 - 142.58	0.034		F	#	0.01	
Oxidation Reduction Potential	mV	09/15/2009	N001	45 - 142.58	-24.3		F	#		
pH	s.u.	09/15/2009	N001	45 - 142.58	6.62		F	#		
Potassium	mg/L	09/15/2009	N001	45 - 142.58	37		F	#	0.92	
Selenium	mg/L	09/15/2009	N001	45 - 142.58	0.045		F	#	0.00016	
Sodium	mg/L	09/15/2009	N001	45 - 142.58	5900		F	#	0.44	
Specific Conductance	umhos/cm	09/15/2009	N001	45 - 142.58	27112		F	#		
Strontium	mg/L	09/15/2009	N001	45 - 142.58	18		F	#	0.00055	
Sulfate	mg/L	09/15/2009	N001	45 - 142.58	16000		F	#	100	
Temperature	C	09/15/2009	N001	45 - 142.58	17.08		F	#		
Turbidity	NTU	09/15/2009	N001	45 - 142.58	9.28		F	#		
Uranium	mg/L	09/15/2009	N001	45 - 142.58	0.026		F	#	0.0000017	

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

REPORT DATE: 11/13/2009

Location: 1007 WELL

Parameter	Units	Date	Sample ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/15/2009	N001	36.8	-	46.3	18		FQ	#	0.5	
Calcium	mg/L	09/15/2009	N001	36.8	-	46.3	470		FQ	#	0.021	
Chloride	mg/L	09/15/2009	N001	36.8	-	46.3	560		FQ	#	40	
Magnesium	mg/L	09/15/2009	N001	36.8	-	46.3	2600		FQ	#	0.066	
Manganese	mg/L	09/15/2009	N001	36.8	-	46.3	1.7		FQ	#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	36.8	-	46.3	590		FQ	#	5	
Oxidation Reduction Potential	mV	09/15/2009	N001	36.8	-	46.3	145.8		FQ	#		
pH	s.u.	09/15/2009	N001	36.8	-	46.3	6.16		FQ	#		
Potassium	mg/L	09/15/2009	N001	36.8	-	46.3	130		FQ	#	0.92	
Selenium	mg/L	09/15/2009	N001	36.8	-	46.3	0.085		FQ	#	0.00032	
Sodium	mg/L	09/15/2009	N001	36.8	-	46.3	2400		FQ	#	0.44	
Specific Conductance	umhos/cm	09/15/2009	N001	36.8	-	46.3	19840		FQ	#		
Strontium	mg/L	09/15/2009	N001	36.8	-	46.3	13		FQ	#	0.00055	
Sulfate	mg/L	09/15/2009	N001	36.8	-	46.3	13000		FQ	#	100	
Temperature	C	09/15/2009	N001	36.8	-	46.3	18.35		FQ	#		
Turbidity	NTU	09/15/2009	N001	36.8	-	46.3	7.42		FQ	#		
Uranium	mg/L	09/15/2009	N001	36.8	-	46.3	2.4		FQ	#	0.000087	

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

REPORT DATE: 11/13/2009

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	09/16/2009	0001	4.3	-	9.3	0.1	U	F	#	0.1	
Calcium	mg/L	09/16/2009	0001	4.3	-	9.3	410		F	#	0.021	
Chloride	mg/L	09/16/2009	0001	4.3	-	9.3	1600		F	#	40	
Magnesium	mg/L	09/16/2009	0001	4.3	-	9.3	1400		F	#	0.066	
Manganese	mg/L	09/16/2009	0001	4.3	-	9.3	0.0011	B	F	#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	0001	4.3	-	9.3	530		F	#	5	
Oxidation Reduction Potential	mV	09/16/2009	N001	4.3	-	9.3	182.8		F	#		
pH	s.u.	09/16/2009	N001	4.3	-	9.3	7.45		F	#		
Potassium	mg/L	09/16/2009	0001	4.3	-	9.3	50		F	#	0.92	
Selenium	mg/L	09/16/2009	0001	4.3	-	9.3	1.1		F	#	0.0032	
Sodium	mg/L	09/16/2009	0001	4.3	-	9.3	5700		F	#	0.44	
Specific Conductance	umhos /cm	09/16/2009	N001	4.3	-	9.3	28679		F	#		
Strontium	mg/L	09/16/2009	0001	4.3	-	9.3	10		F	#	0.00055	
Sulfate	mg/L	09/16/2009	0001	4.3	-	9.3	18000		F	#	100	
Temperature	C	09/16/2009	N001	4.3	-	9.3	16.81		F	#		
Turbidity	NTU	09/16/2009	N001	4.3	-	9.3	25.6		F	#		
Uranium	mg/L	09/16/2009	0001	4.3	-	9.3	0.18		F	#	0.0000087	

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

REPORT DATE: 11/13/2009

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	09/15/2009	N001	41.7	- 51.2	2.8		FQ	#	0.1	
Calcium	mg/L	09/15/2009	N001	41.7	- 51.2	270		FQ	#	0.011	
Chloride	mg/L	09/15/2009	N001	41.7	- 51.2	1200	N	FQ	#	20	
Magnesium	mg/L	09/15/2009	N001	41.7	- 51.2	160		FQ	#	0.033	
Manganese	mg/L	09/15/2009	N001	41.7	- 51.2	0.23		FQ	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	41.7	- 51.2	0.017		FQ	#	0.01	
Oxidation Reduction Potential	mV	09/15/2009	N001	41.7	- 51.2	-25.7		FQ	#		
pH	s.u.	09/15/2009	N001	41.7	- 51.2	7.08		FQ	#		
Potassium	mg/L	09/15/2009	N001	41.7	- 51.2	17		FQ	#	0.46	
Selenium	mg/L	09/15/2009	N001	41.7	- 51.2	0.00054		FQ	#	0.000032	
Sodium	mg/L	09/15/2009	N001	41.7	- 51.2	2300		FQ	#	0.44	
Specific Conductance	umhos /cm	09/15/2009	N001	41.7	- 51.2	12304		FQ	#		
Strontium	mg/L	09/15/2009	N001	41.7	- 51.2	11		FQ	#	0.00027	
Sulfate	mg/L	09/15/2009	N001	41.7	- 51.2	5500		FQ	#	50	
Temperature	C	09/15/2009	N001	41.7	- 51.2	17.23		FQ	#		
Turbidity	NTU	09/15/2009	N001	41.7	- 51.2	7.54		FQ	#		
Uranium	mg/L	09/15/2009	N001	41.7	- 51.2	0.0089		FQ	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/15/2009	N001	39.5 - 49	3.5		FQ	#	0.1	
Calcium	mg/L	09/15/2009	N001	39.5 - 49	350		FQ	#	0.021	
Chloride	mg/L	09/15/2009	N001	39.5 - 49	720		FQ	#	40	
Magnesium	mg/L	09/15/2009	N001	39.5 - 49	450		FQ	#	0.066	
Manganese	mg/L	09/15/2009	N001	39.5 - 49	0.12		FQ	#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	39.5 - 49	350		FQ	#	2	
Oxidation Reduction Potential	mV	09/15/2009	N001	39.5 - 49	143.6		FQ	#		
pH	s.u.	09/15/2009	N001	39.5 - 49	7.03		FQ	#		
Potassium	mg/L	09/15/2009	N001	39.5 - 49	26		FQ	#	0.92	
Selenium	mg/L	09/15/2009	N001	39.5 - 49	0.0075		FQ	#	0.000032	
Sodium	mg/L	09/15/2009	N001	39.5 - 49	3400		FQ	#	0.44	
Specific Conductance	umhos /cm	09/15/2009	N001	39.5 - 49	17147		FQ	#		
Strontium	mg/L	09/15/2009	N001	39.5 - 49	18		FQ	#	0.00055	
Sulfate	mg/L	09/15/2009	N001	39.5 - 49	9600		FQ	#	100	
Temperature	C	09/15/2009	N001	39.5 - 49	16.85		FQ	#		
Turbidity	NTU	09/15/2009	N001	39.5 - 49	6.07		FQ	#		
Uranium	mg/L	09/15/2009	N001	39.5 - 49	0.067		FQ	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/16/2009	0001	6.95 - 8.95	120		FQ	#	5	
Calcium	mg/L	09/16/2009	0001	6.95 - 8.95	500		FQ	#	0.021	
Chloride	mg/L	09/16/2009	0001	6.95 - 8.95	330		FQ	#	20	
Magnesium	mg/L	09/16/2009	0001	6.95 - 8.95	1200		FQ	#	0.066	
Manganese	mg/L	09/16/2009	0001	6.95 - 8.95	1.4		FQ	#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	0001	6.95 - 8.95	340		FQ	#	2	
Oxidation Reduction Potential	mV	09/16/2009	N001	6.95 - 8.95	202.3		FQ	#		
pH	s.u.	09/16/2009	N001	6.95 - 8.95	6.95		FQ	#		
Potassium	mg/L	09/16/2009	0001	6.95 - 8.95	92		FQ	#	0.92	
Selenium	mg/L	09/16/2009	0001	6.95 - 8.95	0.023		FQ	#	0.00016	
Sodium	mg/L	09/16/2009	0001	6.95 - 8.95	1100		FQ	#	0.044	
Specific Conductance	umhos /cm	09/16/2009	N001	6.95 - 8.95	12845		FQ	#		
Strontium	mg/L	09/16/2009	0001	6.95 - 8.95	11		FQ	#	0.00055	
Sulfate	mg/L	09/16/2009	0001	6.95 - 8.95	8000		FQ	#	50	
Temperature	C	09/16/2009	N001	6.95 - 8.95	26.97		FQ	#		
Turbidity	NTU	09/16/2009	N001	6.95 - 8.95	652		FQ	#		
Uranium	mg/L	09/16/2009	0001	6.95 - 8.95	0.81		FQ	#	0.000035	

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

REPORT DATE: 11/13/2009

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	09/14/2009	N001	52.5	-	62	8			#	0.5	
Calcium	mg/L	09/14/2009	N001	52.5	-	62	390			#	0.021	
Chloride	mg/L	09/14/2009	N001	52.5	-	62	1400			#	40	
Magnesium	mg/L	09/14/2009	N001	52.5	-	62	1200			#	0.066	
Manganese	mg/L	09/14/2009	N001	52.5	-	62	0.29			#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2009	N001	52.5	-	62	730			#	5	
Oxidation Reduction Potential	mV	09/14/2009	N001	52.5	-	62	256.3			#		
pH	s.u.	09/14/2009	N001	52.5	-	62	7.24			#		
Potassium	mg/L	09/14/2009	N001	52.5	-	62	79			#	0.92	
Selenium	mg/L	09/14/2009	N001	52.5	-	62	2.6			#	0.016	
Sodium	mg/L	09/14/2009	N001	52.5	-	62	5500			#	0.44	
Specific Conductance	umhos /cm	09/14/2009	N001	52.5	-	62	25475			#		
Strontium	mg/L	09/14/2009	N001	52.5	-	62	10			#	0.00055	
Sulfate	mg/L	09/14/2009	N001	52.5	-	62	16000			#	100	
Temperature	C	09/14/2009	N001	52.5	-	62	19.79			#		
Turbidity	NTU	09/14/2009	N001	52.5	-	62	9.03			#		
Uranium	mg/L	09/14/2009	N001	52.5	-	62	0.1			#	0.0000087	

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

REPORT DATE: 11/13/2009

Location: 1071 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft.BLS)	Result	Qualifiers Lab	Data QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/15/2009	N001	36.5 - 46	80		#	5	
Calcium	mg/L	09/15/2009	N001	36.5 - 46	1100		#	0.021	
Chloride	mg/L	09/15/2009	N001	36.5 - 46	1200		#	40	
Magnesium	mg/L	09/15/2009	N001	36.5 - 46	710		#	0.066	
Manganese	mg/L	09/15/2009	N001	36.5 - 46	48		#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	36.5 - 46	1100		#	10	
Oxidation Reduction Potential	mV	09/15/2009	N001	36.5 - 46	118.2		#		
pH	s.u.	09/15/2009	N001	36.5 - 46	6.82		#		
Potassium	mg/L	09/15/2009	N001	36.5 - 46	99		#	0.92	
Selenium	mg/L	09/15/2009	N001	36.5 - 46	2.3		#	0.016	
Sodium	mg/L	09/15/2009	N001	36.5 - 46	3000		#	0.44	
Specific Conductance	umhos /cm	09/15/2009	N001	36.5 - 46	18788		#		
Strontium	mg/L	09/15/2009	N001	36.5 - 46	6.3		#	0.00055	
Sulfate	mg/L	09/15/2009	N001	36.5 - 46	6100		#	100	
Temperature	C	09/15/2009	N001	36.5 - 46	20.27		#		
Turbidity	NTU	09/15/2009	N001	36.5 - 46	5.22		#		
Uranium	mg/L	09/15/2009	N001	36.5 - 46	0.14		#	0.0000087	

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

REPORT DATE: 11/13/2009

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	09/15/2009	0001	40.5	-	50	140		FQ	#	10	
Calcium	mg/L	09/15/2009	0001	40.5	-	50	560		FQ	#	0.021	
Chloride	mg/L	09/15/2009	0001	40.5	-	50	1100		FQ	#	40	
Magnesium	mg/L	09/15/2009	0001	40.5	-	50	1800		FQ	#	0.066	
Manganese	mg/L	09/15/2009	0001	40.5	-	50	1.2		FQ	#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	0001	40.5	-	50	1500		FQ	#	10	
Oxidation Reduction Potential	mV	09/15/2009	N001	40.5	-	50	32.8		FQ	#		
pH	s.u.	09/15/2009	N001	40.5	-	50	6.89		FQ	#		
Potassium	mg/L	09/15/2009	0001	40.5	-	50	130		FQ	#	0.92	
Selenium	mg/L	09/15/2009	0001	40.5	-	50	2.2		FQ	#	0.0064	
Sodium	mg/L	09/15/2009	0001	40.5	-	50	2400		FQ	#	0.44	
Specific Conductance	umhos /cm	09/15/2009	N001	40.5	-	50	22706		FQ	#		
Strontium	mg/L	09/15/2009	0001	40.5	-	50	11		FQ	#	0.00055	
Sulfate	mg/L	09/15/2009	0001	40.5	-	50	9000		FQ	#	100	
Temperature	C	09/15/2009	N001	40.5	-	50	18.04		FQ	#		
Turbidity	NTU	09/15/2009	N001	40.5	-	50	20		FQ	#		
Uranium	mg/L	09/15/2009	0001	40.5	-	50	0.066		FQ	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/15/2009	N001	27 - 36.5	7.5		FQ	#	0.5	
Calcium	mg/L	09/15/2009	N001	27 - 36.5	600		FQ	#	0.021	
Chloride	mg/L	09/15/2009	N001	27 - 36.5	1000		FQ	#	40	
Magnesium	mg/L	09/15/2009	N001	27 - 36.5	2500		FQ	#	0.066	
Manganese	mg/L	09/15/2009	N001	27 - 36.5	2.1		FQ	#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	27 - 36.5	1400		FQ	#	10	
Oxidation Reduction Potential	mV	09/15/2009	N001	27 - 36.5	158.3		FQ	#		
pH	s.u.	09/15/2009	N001	27 - 36.5	6.79		FQ	#		
Potassium	mg/L	09/15/2009	N001	27 - 36.5	57		FQ	#	0.92	
Selenium	mg/L	09/15/2009	N001	27 - 36.5	0.27		FQ	#	0.00064	
Sodium	mg/L	09/15/2009	N001	27 - 36.5	2400		FQ	#	0.044	
Specific Conductance	umhos/cm	09/15/2009	N001	27 - 36.5	20535		FQ	#		
Strontium	mg/L	09/15/2009	N001	27 - 36.5	12		FQ	#	0.00055	
Sulfate	mg/L	09/15/2009	N001	27 - 36.5	8700		FQ	#	100	
Temperature	C	09/15/2009	N001	27 - 36.5	21.37		FQ	#		
Turbidity	NTU	09/15/2009	N001	27 - 36.5	4.08		FQ	#		
Uranium	mg/L	09/15/2009	N001	27 - 36.5	2		FQ	#	0.000087	

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

REPORT DATE: 11/13/2009

Location: 1078 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Qualifiers Lab Data QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/14/2009	N001	35.5 - 45	2.9	#	0.1	
Calcium	mg/L	09/14/2009	N001	35.5 - 45	410	#	0.021	
Chloride	mg/L	09/14/2009	N001	35.5 - 45	1200	#	40	
Magnesium	mg/L	09/14/2009	N001	35.5 - 45	1200	#	0.066	
Manganese	mg/L	09/14/2009	N001	35.5 - 45	0.13	#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2009	N001	35.5 - 45	640	#	5	
Oxidation Reduction Potential	mV	09/14/2009	N001	35.5 - 45	243.5	#		
pH	s.u.	09/14/2009	N001	35.5 - 45	8.3	#		
Potassium	mg/L	09/14/2009	N001	35.5 - 45	68	#	0.92	
Selenium	mg/L	09/14/2009	N001	35.5 - 45	2.9	#	0.016	
Sodium	mg/L	09/14/2009	N001	35.5 - 45	4700	#	0.44	
Specific Conductance	umhos /cm	09/14/2009	N001	35.5 - 45	24429	#		
Strontium	mg/L	09/14/2009	N001	35.5 - 45	11	#	0.00055	
Sulfate	mg/L	09/14/2009	N001	35.5 - 45	15000	#	100	
Temperature	C	09/14/2009	N001	35.5 - 45	18.23	#		
Turbidity	NTU	09/14/2009	N001	35.5 - 45	8.63	#		
Uranium	mg/L	09/14/2009	N001	35.5 - 45	0.15	#	0.0000087	

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

REPORT DATE: 11/13/2009

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	09/15/2009	N001	10.5	-	20	0.1	U	F	#	0.1	
Calcium	mg/L	09/15/2009	N001	10.5	-	20	580		F	#	0.011	
Chloride	mg/L	09/15/2009	N001	10.5	-	20	98		F	#	4	
Magnesium	mg/L	09/15/2009	N001	10.5	-	20	130		F	#	0.033	
Manganese	mg/L	09/15/2009	N001	10.5	-	20	0.00052	U	F	#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	10.5	-	20	71		F	#	0.5	
Oxidation Reduction Potential	mV	09/15/2009	N001	10.5	-	20	48.5		F	#		
pH	s.u.	09/15/2009	N001	10.5	-	20	6.72		F	#		
Potassium	mg/L	09/15/2009	N001	10.5	-	20	5.1		F	#	0.46	
Selenium	mg/L	09/15/2009	N001	10.5	-	20	0.31	E	FJ	#	0.0016	
Sodium	mg/L	09/15/2009	N001	10.5	-	20	260		F	#	0.022	
Specific Conductance	umhos/cm	09/15/2009	N001	10.5	-	20	4256		F	#		
Strontium	mg/L	09/15/2009	N001	10.5	-	20	5.7		F	#	0.00027	
Sulfate	mg/L	09/15/2009	N001	10.5	-	20	2100		F	#	25	
Temperature	C	09/15/2009	N001	10.5	-	20	17.64		F	#		
Turbidity	NTU	09/15/2009	N001	10.5	-	20	0.78		F	#		
Uranium	mg/L	09/15/2009	N001	10.5	-	20	0.03		F	#	0.0000017	

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

REPORT DATE: 1/4/2010

Location: 1087 TREATMENT SYSTEM Sump from interceptor trenches in 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	09/16/2009	N001	0	-	0	260			#	10	
Calcium	mg/L	09/16/2009	N001	0	-	0	480			#	0.011	
Chloride	mg/L	09/16/2009	N001	0	-	0	380			#	20	
Magnesium	mg/L	09/16/2009	N001	0	-	0	1800			#	0.033	
Manganese	mg/L	09/16/2009	N001	0	-	0	1.5			#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	N001	0	-	0	440			#	5	
Oxidation Reduction Potential	mV	09/16/2009	N001	0	-	0	207.9			#		
pH	s.u.	09/16/2009	N001	0	-	0	6.85			#		
Potassium	mg/L	09/16/2009	N001	0	-	0	170			#	0.46	
Selenium	mg/L	09/16/2009	N001	0	-	0	0.03			#	0.00016	
Sodium	mg/L	09/16/2009	N001	0	-	0	1300			#	0.44	
Specific Conductance	umhos /cm	09/16/2009	N001	0	-	0	15493			#		
Strontium	mg/L	09/16/2009	N001	0	-	0	10			#	0.00027	
Sulfate	mg/L	09/16/2009	N001	0	-	0	9900			#	100	
Temperature	C	09/16/2009	N001	0	-	0	27.11			#		
Turbidity	NTU	09/16/2009	N001	0	-	0	7.14			#		
Uranium	mg/L	09/16/2009	N001	0	-	0	0.76			#	0.000017	

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

REPORT DATE: 1/4/2010

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

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/14/2009	N001	0 - 0	0.1	U		#	0.1	
Calcium	mg/L	09/14/2009	N001	0 - 0	430			#	0.021	
Chloride	mg/L	09/14/2009	N001	0 - 0	1900			#	100	
Magnesium	mg/L	09/14/2009	N001	0 - 0	1700			#	0.066	
Manganese	mg/L	09/14/2009	N001	0 - 0	0.026	B		#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2009	N001	0 - 0	720			#	5	
Oxidation Reduction Potential	mV	09/14/2009	N001	0 - 0	283.3			#		
pH	s.u.	09/14/2009	N001	0 - 0	7.52			#		
Potassium	mg/L	09/14/2009	N001	0 - 0	86			#	0.92	
Selenium	mg/L	09/14/2009	N001	0 - 0	1.7			#	0.0064	
Sodium	mg/L	09/14/2009	N001	0 - 0	7800			#	0.44	
Specific Conductance	umhos /cm	09/14/2009	N001	0 - 0	36753			#		
Strontium	mg/L	09/14/2009	N001	0 - 0	10			#	0.00055	
Sulfate	mg/L	09/14/2009	N001	0 - 0	26000			#	250	
Temperature	C	09/14/2009	N001	0 - 0	23.03			#		
Turbidity	NTU	09/14/2009	N001	0 - 0	8.1			#		
Uranium	mg/L	09/14/2009	N001	0 - 0	0.23			#	0.0000087	

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

REPORT DATE: 11/13/2009

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	09/15/2009	N001	33	-	43	0.63			#	0.1	
Calcium	mg/L	09/15/2009	N001	33	-	43	460			#	0.021	
Chloride	mg/L	09/15/2009	N001	33	-	43	1400			#	40	
Magnesium	mg/L	09/15/2009	N001	33	-	43	2500			#	0.066	
Manganese	mg/L	09/15/2009	N001	33	-	43	1.3			#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	33	-	43	1100			#	10	
Oxidation Reduction Potential	mV	09/15/2009	N001	33	-	43	194.7			#		
pH	s.u.	09/15/2009	N001	33	-	43	6.76			#		
Potassium	mg/L	09/15/2009	N001	33	-	43	80			#	0.92	
Selenium	mg/L	09/15/2009	N001	33	-	43	0.95			#	0.0064	
Sodium	mg/L	09/15/2009	N001	33	-	43	3900			#	0.44	
Specific Conductance	umhos /cm	09/15/2009	N001	33	-	43	25270			#		
Strontium	mg/L	09/15/2009	N001	33	-	43	14			#	0.00055	
Sulfate	mg/L	09/15/2009	N001	33	-	43	15000			#	100	
Temperature	C	09/15/2009	N001	33	-	43	21.9			#		
Turbidity	NTU	09/15/2009	N001	33	-	43	4.11			#		
Uranium	mg/L	09/15/2009	N001	33	-	43	0.14			#	0.0000087	

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

REPORT DATE: 11/13/2009

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	09/15/2009	N001	33	-	43	180			#	10	
Calcium	mg/L	09/15/2009	N001	33	-	43	720			#	0.021	
Chloride	mg/L	09/15/2009	N001	33	-	43	850			#	40	
Magnesium	mg/L	09/15/2009	N001	33	-	43	1600			#	0.066	
Manganese	mg/L	09/15/2009	N001	33	-	43	14			#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	33	-	43	2400			#	20	
Oxidation Reduction Potential	mV	09/15/2009	N001	33	-	43	237.1			#		
pH	s.u.	09/15/2009	N001	33	-	43	6.83			#		
Potassium	mg/L	09/15/2009	N001	33	-	43	130			#	0.92	
Selenium	mg/L	09/15/2009	N001	33	-	43	0.25			#	0.00064	
Sodium	mg/L	09/15/2009	N001	33	-	43	2300			#	0.44	
Specific Conductance	umhos/cm	09/15/2009	N001	33	-	43	22578			#		
Strontium	mg/L	09/15/2009	N001	33	-	43	12			#	0.00055	
Sulfate	mg/L	09/15/2009	N001	33	-	43	6400			#	100	
Temperature	C	09/15/2009	N001	33	-	43	22.15			#		
Turbidity	NTU	09/15/2009	N001	33	-	43	8.64			#		
Uranium	mg/L	09/15/2009	N001	33	-	43	0.041			#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/14/2009	N001	34	-	38	790			#	20	
Calcium	mg/L	09/14/2009	N001	34	-	38	940			#	0.021	
Chloride	mg/L	09/14/2009	N001	34	-	38	660			#	40	
Magnesium	mg/L	09/14/2009	N001	34	-	38	1800			#	0.066	
Manganese	mg/L	09/14/2009	N001	34	-	38	40			#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2009	N001	34	-	38	2700			#	20	
Oxidation Reduction Potential	mV	09/14/2009	N001	34	-	38	311.4			#		
pH	s.u.	09/14/2009	N001	34	-	38	5.83			#		
Potassium	mg/L	09/14/2009	N001	34	-	38	200			#	0.92	
Selenium	mg/L	09/14/2009	N001	34	-	38	0.52			#	0.0016	
Sodium	mg/L	09/14/2009	N001	34	-	38	1700			#	0.044	
Specific Conductance	umhos/cm	09/14/2009	N001	34	-	38	24046			#		
Strontium	mg/L	09/14/2009	N001	34	-	38	11			#	0.00055	
Sulfate	mg/L	09/14/2009	N001	34	-	38	5800			#	100	
Temperature	C	09/14/2009	N001	34	-	38	23.34			#		
Turbidity	NTU	09/14/2009	N001	34	-	38	2.9			#		
Uranium	mg/L	09/14/2009	N001	34	-	38	0.14			#	0.0000087	

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

REPORT DATE: 11/13/2009

Location: 1095 WELL

Parameter	Units	Date	Sample ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/14/2009	N001	39	-	49	670			#	20	
Calcium	mg/L	09/14/2009	N001	39	-	49	750			#	0.021	
Chloride	mg/L	09/14/2009	N001	39	-	49	350			#	20	
Magnesium	mg/L	09/14/2009	N001	39	-	49	1300			#	0.066	
Manganese	mg/L	09/14/2009	N001	39	-	49	31			#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2009	N001	39	-	49	1800			#	20	
Oxidation Reduction Potential	mV	09/14/2009	N001	39	-	49	280			#		
pH	s.u.	09/14/2009	N001	39	-	49	6.08			#		
Potassium	mg/L	09/14/2009	N001	39	-	49	150	E		#	0.92	
Selenium	mg/L	09/14/2009	N001	39	-	49	0.21			#	0.00064	
Sodium	mg/L	09/14/2009	N001	39	-	49	1100			#	0.044	
Specific Conductance	umhos/cm	09/14/2009	N001	39	-	49	17923			#		
Strontium	mg/L	09/14/2009	N001	39	-	49	8			#	0.00055	
Sulfate	mg/L	09/14/2009	N001	39	-	49	5500			#	100	
Temperature	C	09/14/2009	N001	39	-	49	17.89			#		
Turbidity	NTU	09/14/2009	N001	39	-	49	2.02			#		
Uranium	mg/L	09/14/2009	N001	39	-	49	0.051			#	0.0000017	

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

REPORT DATE: 11/13/2009

Location: 1096 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/14/2009	N001	57.5	-	66.5	15			#	1	
Calcium	mg/L	09/14/2009	N001	57.5	-	66.5	410			#	0.021	
Chloride	mg/L	09/14/2009	N001	57.5	-	66.5	1000			#	40	
Magnesium	mg/L	09/14/2009	N001	57.5	-	66.5	1200			#	0.066	
Manganese	mg/L	09/14/2009	N001	57.5	-	66.5	0.21			#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/14/2009	N001	57.5	-	66.5	630			#	5	
Oxidation Reduction Potential	mV	09/14/2009	N001	57.5	-	66.5	251			#		
pH	s.u.	09/14/2009	N001	57.5	-	66.5	7.57			#		
Potassium	mg/L	09/14/2009	N001	57.5	-	66.5	73		J	#	0.92	
Selenium	mg/L	09/14/2009	N001	57.5	-	66.5	2.4			#	0.0064	
Sodium	mg/L	09/14/2009	N001	57.5	-	66.5	5400			#	0.44	
Specific Conductance	umhos /cm	09/14/2009	N001	57.5	-	66.5	23899			#		
Strontium	mg/L	09/14/2009	N001	57.5	-	66.5	10			#	0.00055	
Sulfate	mg/L	09/14/2009	N001	57.5	-	66.5	14000			#	100	
Temperature	C	09/14/2009	N001	57.5	-	66.5	16.45			#		
Turbidity	NTU	09/14/2009	N001	57.5	-	66.5	2.08			#		
Uranium	mg/L	09/14/2009	N001	57.5	-	66.5	0.12			#	0.0000087	

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

REPORT DATE: 11/13/2009

Location: 1120 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Calcium	mg/L	09/17/2009	0001	17.5 - 22.5	490		FQ	#	0.0021	
Magnesium	mg/L	09/17/2009	0001	17.5 - 22.5	220		FQ	#	0.0066	
Manganese	mg/L	09/17/2009	0001	17.5 - 22.5	0.0073		FQ	#	0.0001	
Oxidation Reduction Potential	.mV	09/17/2009	N001	17.5 - 22.5	195.8		FQ	#		
pH	s.u.	09/17/2009	N001	17.5 - 22.5	7.35		FQ	#		
Potassium	mg/L	09/17/2009	0001	17.5 - 22.5	7.8		FQ	#	0.092	
Selenium	mg/L	09/17/2009	0001	17.5 - 22.5	0.058		FQ	#	0.00016	
Sodium	mg/L	09/17/2009	0001	17.5 - 22.5	330		FQ	#	0.22	
Specific Conductance	umhos /cm	09/17/2009	N001	17.5 - 22.5	3486		FQ	#		
Strontium	mg/L	09/17/2009	0001	17.5 - 22.5	5.3		FQ	#	0.000055	
Temperature	C	09/17/2009	N001	17.5 - 22.5	16.08		FQ	#		
Turbidity	NTU	09/17/2009	N001	17.5 - 22.5	40.8		FQ	#		
Uranium	mg/L	09/17/2009	0001	17.5 - 22.5	0.048		FQ	#	0.0000017	

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

REPORT DATE: 11/13/2009

Location: 1122 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Data QA	Detection Limit	Uncertainty
Calcium	mg/L	09/17/2009	0001	17.5 - 22.5	450		FQ #	0.11	
Magnesium	mg/L	09/17/2009	0001	17.5 - 22.5	240		FQ #	0.0066	
Manganese	mg/L	09/17/2009	0001	17.5 - 22.5	0.0097		FQ #	0.0001	
Oxidation Reduction Potential	mV	09/17/2009	N001	17.5 - 22.5	196.6		FQ #		
pH	s.u.	09/17/2009	N001	17.5 - 22.5	7.23		FQ #		
Potassium	mg/L	09/17/2009	0001	17.5 - 22.5	8.6		FQ #	0.092	
Selenium	mg/L	09/17/2009	0001	17.5 - 22.5	0.097		FQ #	0.00032	
Sodium	mg/L	09/17/2009	0001	17.5 - 22.5	240		FQ #	0.22	
Specific Conductance	umhos /cm	09/17/2009	N001	17.5 - 22.5	3903		FQ #		
Strontium	mg/L	09/17/2009	0001	17.5 - 22.5	5.6		FQ #	0.000055	
Temperature	C	09/17/2009	N001	17.5 - 22.5	16.45		FQ #		
Turbidity	NTU	09/17/2009	N001	17.5 - 22.5	199		FQ #		
Uranium	mg/L	09/17/2009	0001	17.5 - 22.5	0.052		FQ #	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/15/2009	0001	38	-	53	0.12		FQ	#	0.1	
Calcium	mg/L	09/15/2009	0001	38	-	53	390		FQ	#	0.021	
Chloride	mg/L	09/15/2009	0001	38	-	53	1600		FQ	#	40	
Magnesium	mg/L	09/15/2009	0001	38	-	53	320		FQ	#	0.066	
Manganese	mg/L	09/15/2009	0001	38	-	53	0.073		FQ	#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	0001	38	-	53	260		FQ	#	2	
Oxidation Reduction Potential	mV	09/15/2009	N001	38	-	53	168		FQ	#		
pH	s.u.	09/15/2009	N001	38	-	53	7.21		FQ	#		
Potassium	mg/L	09/15/2009	0001	38	-	53	27		FQ	#	0.92	
Selenium	mg/L	09/15/2009	0001	38	-	53	0.027		FQ	#	0.00016	
Sodium	mg/L	09/15/2009	0001	38	-	53	3600		FQ	#	0.44	
Specific Conductance	umhos /cm	09/15/2009	N001	38	-	53	19235		FQ	#		
Strontium	mg/L	09/15/2009	0001	38	-	53	16		FQ	#	0.00055	
Sulfate	mg/L	09/15/2009	0001	38	-	53	10000		FQ	#	100	
Temperature	C	09/15/2009	N001	38	-	53	20.7		FQ	#		
Turbidity	NTU	09/15/2009	N001	38	-	53	12.9		FQ	#		
Uranium	mg/L	09/15/2009	0001	38	-	53	0.045		FQ	#	0.0000017	

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

REPORT DATE: 11/13/2009

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	09/15/2009	0001	-	0.9		FQ	#	0.1	
Calcium	mg/L	09/15/2009	0001	-	65		FQ	#	0.021	
Chloride	mg/L	09/15/2009	0001	-	4400		FQ	#	100	
Magnesium	mg/L	09/15/2009	0001	-	33		FQ	#	0.066	
Manganese	mg/L	09/15/2009	0001	-	0.067		FQ	#	0.001	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	0001	-	0.092		FQ	#	0.01	
Oxidation Reduction Potential	mV	09/15/2009	N001	-	117.4		FQ	#		
pH	s.u.	09/15/2009	N001	-	7.52		FQ	#		
Potassium	mg/L	09/15/2009	0001	-	17		FQ	#	0.92	
Selenium	mg/L	09/15/2009	0001	-	0.001		FQ	#	0.00016	
Sodium	mg/L	09/15/2009	0001	-	3400		FQ	#	0.44	
Specific Conductance	umhos /cm	09/15/2009	N001	-	17559		FQ	#		
Strontium	mg/L	09/15/2009	0001	-	7.4		FQ	#	0.00055	
Sulfate	mg/L	09/15/2009	0001	-	2100		FQ	#	100	
Temperature	C	09/15/2009	N001	-	17.27		FQ	#		
Turbidity	NTU	09/15/2009	N001	-	32.8		FQ	#		
Uranium	mg/L	09/15/2009	0001	-	0.00041		FQ	#	0.0000017	

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

LAB QUALIFIERS:

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

DATA QUALIFIERS:

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

QA QUALIFIER:

- # Validated according to quality assurance guidelines.

**Surface Water Quality Data
Floodplain Locations**

This page intentionally left blank

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

REPORT DATE: 2/24/2010

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	09/15/2009	0001	0.1	U		#	0.1	
Calcium	mg/L	09/15/2009	0001	56			#	0.0021	
Chloride	mg/L	09/15/2009	0001	12			#	1	
Magnesium	mg/L	09/15/2009	0001	8.7			#	0.0066	
Manganese	mg/L	09/15/2009	0001	0.0074		U	#	0.0001	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	0001	0.63			#	0.01	
Potassium	mg/L	09/15/2009	0001	2.9		J	#	0.092	
Selenium	mg/L	09/15/2009	0001	0.00054			#	0.000032	
Sodium	mg/L	09/15/2009	0001	36		J	#	0.0044	
Strontium	mg/L	09/15/2009	0001	0.77			#	0.000055	
Sulfate	mg/L	09/15/2009	0001	120			#	2.5	
Uranium	mg/L	09/15/2009	0001	0.0017			#	0.0000017	
Ammonia Total as N	mg/L	09/15/2009	N001	0.1	U		#	0.1	
Calcium	mg/L	09/15/2009	N001	90			#	0.0021	
Chloride	mg/L	09/15/2009	N001	12			#	1	
Magnesium	mg/L	09/15/2009	N001	21			#	0.0066	
Manganese	mg/L	09/15/2009	N001	0.73			#	0.0001	

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

REPORT DATE: 2/24/2010

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

Parameter	Units	Sample Date	Sample ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	0.61			#	0.01	
Oxidation Reduction Potential	mV	09/15/2009	N001	40.5			#		
pH	s.u.	09/15/2009	N001	8.15			#		
Potassium	mg/L	09/15/2009	N001	9	E	J	#	0.092	
Selenium	mg/L	09/15/2009	N001	0.00064			#	0.000032	
Sodium	mg/L	09/15/2009	N001	39	E	J	#	0.0044	
Specific Conductance	umhos/cm	09/15/2009	N001	793			#		
Strontium	mg/L	09/15/2009	N001	1.1			#	0.000055	
Sulfate	mg/L	09/15/2009	N001	130			#	2.5	
Temperature	C	09/15/2009	N001	24.88			#		
Turbidity	NTU	09/15/2009	N001	1000	>		#		
Uranium	mg/L	09/15/2009	N001	0.0046			#	0.0000017	

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

REPORT DATE: 2/24/2010

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	09/16/2009	0001	0.1	U		#	0.1	
Calcium	mg/L	09/16/2009	0001	50			#	0.0021	
Chloride	mg/L	09/16/2009	0001	11			#	1	
Magnesium	mg/L	09/16/2009	0001	6			#	0.0066	
Manganese	mg/L	09/16/2009	0001	0.0072	E	U	#	0.0001	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	0001	0.74			#	0.01	
Potassium	mg/L	09/16/2009	0001	3.1		J	#	0.092	
Selenium	mg/L	09/16/2009	0001	0.00081			#	0.000032	
Sodium	mg/L	09/16/2009	0001	46		J	#	0.0044	
Strontium	mg/L	09/16/2009	0001	0.72			#	0.000055	
Sulfate	mg/L	09/16/2009	0001	130			#	2.5	
Uranium	mg/L	09/16/2009	0001	0.0022			#	0.0000017	
Ammonia Total as N	mg/L	09/16/2009	N001	0.1	U		#	0.1	
Calcium	mg/L	09/16/2009	N001	120			#	0.0021	
Chloride	mg/L	09/16/2009	N001	11			#	1	
Magnesium	mg/L	09/16/2009	N001	21			#	0.0066	
Manganese	mg/L	09/16/2009	N001	1.6			#	0.0001	

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

REPORT DATE: 2/24/2010

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

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Data QA	Detection Limit	Uncertainty
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	N001	0.68		#	0.01	
Oxidation Reduction Potential	mV	09/16/2009	N001	178.3		#		
pH	s.u.	09/16/2009	N001	8.41		#		
Potassium	mg/L	09/16/2009	N001	7.8	J	#	0.092	
Selenium	mg/L	09/16/2009	N001	0.00076		#	0.000032	
Sodium	mg/L	09/16/2009	N001	53	J	#	0.0044	
Specific Conductance	umhos/cm	09/16/2009	N001	627		#		
Strontium	mg/L	09/16/2009	N001	1.7		#	0.000055	
Sulfate	mg/L	09/16/2009	N001	130		#	2.5	
Temperature	C	09/16/2009	N001	21.7		#		
Turbidity	NTU	09/16/2009	N001	1000		#		
Uranium	mg/L	09/16/2009	N001	0.0075		#	0.0000017	

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

REPORT DATE: 2/24/2010

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		
Ammonia Total as N	mg/L	09/16/2009	0001	0.1	U	#	0.1	
Calcium	mg/L	09/16/2009	0001	46		#	0.0021	
Chloride	mg/L	09/16/2009	0001	11		#	1	
Magnesium	mg/L	09/16/2009	0001	5.1		#	0.0066	
Manganese	mg/L	09/16/2009	0001	0.02		#	0.0001	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	0001	0.83		#	0.01	
Potassium	mg/L	09/16/2009	0001	3.6		J #	0.092	
Selenium	mg/L	09/16/2009	0001	0.00082		#	0.000032	
Sodium	mg/L	09/16/2009	0001	54		J #	0.0044	
Strontium	mg/L	09/16/2009	0001	0.68		#	0.000055	
Sulfate	mg/L	09/16/2009	0001	130		#	2.5	
Uranium	mg/L	09/16/2009	0001	0.0025		#	0.0000017	
Ammonia Total as N	mg/L	09/16/2009	N001	0.1	U	#	0.1	
Calcium	mg/L	09/16/2009	N001	160		#	0.0021	
Chloride	mg/L	09/16/2009	N001	11		#	1	
Magnesium	mg/L	09/16/2009	N001	25		#	0.0066	
Manganese	mg/L	09/16/2009	N001	2.5		#	0.0001	

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

REPORT DATE: 2/24/2010

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	09/16/2009	N001	0.84		#	0.01	
Oxidation Reduction Potential	mV	09/16/2009	N001	194.3		#		
pH	s.u.	09/16/2009	N001	8.13		#		
Potassium	mg/L	09/16/2009	N001	9.4	J	#	0.092	
Selenium	mg/L	09/16/2009	N001	0.00072		#	0.000032	
Sodium	mg/L	09/16/2009	N001	62	J	#	0.0044	
Specific Conductance	umhos/cm	09/16/2009	N001	617		#		
Strontium	mg/L	09/16/2009	N001	2.2		#	0.000055	
Sulfate	mg/L	09/16/2009	N001	130		#	2.5	
Temperature	C	09/16/2009	N001	17.23		#		
Turbidity	NTU	09/16/2009	N001	1000	>	#		
Uranium	mg/L	09/16/2009	N001	0.0087		#	0.0000017	

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

REPORT DATE: 2/24/2010

Location: 0899 SURFACE LOCATION

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/17/2009	0001	0.1	U		#	0.1	
Calcium	mg/L	09/17/2009	0001	59			#	0.0021	
Chloride	mg/L	09/17/2009	0001	13			#	1	
Magnesium	mg/L	09/17/2009	0001	9			#	0.0066	
Manganese	mg/L	09/17/2009	0001	0.054			#	0.0001	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	0001	0.48			#	0.01	
Potassium	mg/L	09/17/2009	0001	2.6		J	#	0.092	
Selenium	mg/L	09/17/2009	0001	0.00057			#	0.000032	
Sodium	mg/L	09/17/2009	0001	35		J	#	0.0044	
Strontium	mg/L	09/17/2009	0001	0.79			#	0.000055	
Sulfate	mg/L	09/17/2009	0001	130			#	2.5	
Uranium	mg/L	09/17/2009	0001	0.002			#	0.0000017	
Ammonia Total as N	mg/L	09/17/2009	N001	0.1	U		#	0.1	
Calcium	mg/L	09/17/2009	N001	64			#	0.0021	
Chloride	mg/L	09/17/2009	N001	13			#	1	
Magnesium	mg/L	09/17/2009	N001	9.8			#	0.0066	
Manganese	mg/L	09/17/2009	N001	0.08			#	0.0001	

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

REPORT DATE: 2/24/2010

Location: 0899 SURFACE LOCATION

Parameter	Units	Sample Date	ID	Result	Qualifiers Lab Data	QA	Detection Limit	Uncertainty
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	0.51		#	0.01	
Oxidation Reduction Potential	mV	09/17/2009	N001	-27.1		#		
pH	s.u.	09/17/2009	N001	8.03		#		
Potassium	mg/L	09/17/2009	N001	2.8	J	#	0.092	
Selenium	mg/L	09/17/2009	N001	0.00054		#	0.000032	
Sodium	mg/L	09/17/2009	N001	36	J	#	0.0044	
Specific Conductance	umhos/cm	09/17/2009	N001	575		#		
Strontium	mg/L	09/17/2009	N001	0.83		#	0.000055	
Sulfate	mg/L	09/17/2009	N001	130		#	2.5	
Temperature	C	09/17/2009	N001	17.82		#		
Turbidity	NTU	09/17/2009	N001	1000	>	#		
Uranium	mg/L	09/17/2009	N001	0.0023		#	0.0000017	

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

REPORT DATE: 2/24/2010

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

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/17/2009	0001	0.1	U		#	0.1	
Calcium	mg/L	09/17/2009	0001	59			#	0.0021	
Chloride	mg/L	09/17/2009	0001	14			#	1	
Magnesium	mg/L	09/17/2009	0001	9			#	0.0066	
Manganese	mg/L	09/17/2009	0001	0.0046	B	U	#	0.0001	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	0001	0.46			#	0.01	
Potassium	mg/L	09/17/2009	0001	2.4		J	#	0.092	
Selenium	mg/L	09/17/2009	0001	0.00061			#	0.000032	
Sodium	mg/L	09/17/2009	0001	34		J	#	0.0044	
Strontium	mg/L	09/17/2009	0001	0.78			#	0.000055	
Sulfate	mg/L	09/17/2009	0001	130			#	2.5	
Uranium	mg/L	09/17/2009	0001	0.0012			#	0.0000017	
Ammonia Total as N	mg/L	09/17/2009	N001	0.1	U		#	0.1	
Calcium	mg/L	09/17/2009	N001	69			#	0.0021	
Chloride	mg/L	09/17/2009	N001	14			#	1	
Magnesium	mg/L	09/17/2009	N001	12			#	0.0066	
Manganese	mg/L	09/17/2009	N001	0.18			#	0.0001	

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

REPORT DATE: 2/24/2010

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
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	0.36			#	0.01	
Oxidation Reduction Potential	mV	09/17/2009	N001	-2.5			#		
pH	s.u.	09/17/2009	N001	8.5			#		
Potassium	mg/L	09/17/2009	N001	4		J	#	0.092	
Selenium	mg/L	09/17/2009	N001	0.00048			#	0.000032	
Sodium	mg/L	09/17/2009	N001	36		J	#	0.0044	
Specific Conductance	umhos/cm	09/17/2009	N001	703			#		
Strontium	mg/L	09/17/2009	N001	0.89			#	0.000055	
Sulfate	mg/L	09/17/2009	N001	130			#	2.5	
Temperature	C	09/17/2009	N001	20.16			#		
Turbidity	NTU	09/17/2009	N001	1000	>		#		
Uranium	mg/L	09/17/2009	N001	0.0024			#	0.0000017	

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

REPORT DATE: 2/24/2010

Location: 0956 SURFACE LOCATION

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/17/2009	0001	0.1	U		#	0.1	
Calcium	mg/L	09/17/2009	0001	59			#	0.0021	
Chloride	mg/L	09/17/2009	0001	12			#	1	
Magnesium	mg/L	09/17/2009	0001	9.3			#	0.0066	
Manganese	mg/L	09/17/2009	0001	0.0062		U	#	0.0001	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	0001	0.44			#	0.01	
Potassium	mg/L	09/17/2009	0001	2.3		J	#	0.092	
Selenium	mg/L	09/17/2009	0001	0.00057			#	0.000032	
Sodium	mg/L	09/17/2009	0001	32		J	#	0.0044	
Strontium	mg/L	09/17/2009	0001	0.77			#	0.000055	
Sulfate	mg/L	09/17/2009	0001	130			#	2.5	
Uranium	mg/L	09/17/2009	0001	0.0018			#	0.0000017	
Ammonia Total as N	mg/L	09/17/2009	N001	0.1	U		#	0.1	
Calcium	mg/L	09/17/2009	N001	77			#	0.0021	
Chloride	mg/L	09/17/2009	N001	12			#	1	
Magnesium	mg/L	09/17/2009	N001	16			#	0.0066	
Manganese	mg/L	09/17/2009	N001	0.5			#	0.0001	

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

REPORT DATE: 2/24/2010

Location: 0956 SURFACE LOCATION

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	0.37			#	0.01	
Oxidation Reduction Potential	mV	09/17/2009	N001	-52.5			#		
pH	s.u.	09/17/2009	N001	8.41			#		
Potassium	mg/L	09/17/2009	N001	5.5		J	#	0.092	
Selenium	mg/L	09/17/2009	N001	0.00049			#	0.000032	
Sodium	mg/L	09/17/2009	N001	34		J	#	0.0044	
Specific Conductance	umhos/cm	09/17/2009	N001	552			#		
Strontium	mg/L	09/17/2009	N001	0.98			#	0.000055	
Sulfate	mg/L	09/17/2009	N001	120			#	2.5	
Temperature	C	09/17/2009	N001	20.85			#		
Turbidity	NTU	09/17/2009	N001	1000	>		#		
Uranium	mg/L	09/17/2009	N001	0.0036			#	0.0000017	

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

REPORT DATE: 2/24/2010

Location: 0965 SURFACE LOCATION

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/17/2009	0001	0.1	U		#	0.1	
Calcium	mg/L	09/17/2009	0001	61			#	0.0021	
Chloride	mg/L	09/17/2009	0001	12			#	1	
Magnesium	mg/L	09/17/2009	0001	9.4			#	0.0066	
Manganese	mg/L	09/17/2009	0001	0.0098	E		#	0.0001	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	0001	0.46			#	0.01	
Potassium	mg/L	09/17/2009	0001	2.6		J	#	0.092	
Selenium	mg/L	09/17/2009	0001	0.00058			#	0.000032	
Sodium	mg/L	09/17/2009	0001	34	E	J	#	0.0044	
Strontium	mg/L	09/17/2009	0001	0.78			#	0.000055	
Sulfate	mg/L	09/17/2009	0001	120			#	2.5	
Uranium	mg/L	09/17/2009	0001	0.0022			#	0.0000017	
Ammonia Total as N	mg/L	09/17/2009	N001	0.1	U		#	0.1	
Calcium	mg/L	09/17/2009	N001	65			#	0.0021	
Chloride	mg/L	09/17/2009	N001	12	N	J	#	1	
Magnesium	mg/L	09/17/2009	N001	12			#	0.0066	
Manganese	mg/L	09/17/2009	N001	0.17			#	0.0001	

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

REPORT DATE: 2/24/2010

Location: 0965 SURFACE LOCATION

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	N001	0.46			#	0.01	
Oxidation Reduction Potential	mV	09/17/2009	N001	-40.4			#		
pH	s.u.	09/17/2009	N001	8.28			#		
Potassium	mg/L	09/17/2009	N001	3.9		J	#	0.092	
Selenium	mg/L	09/17/2009	N001	0.00056			#	0.000032	
Sodium	mg/L	09/17/2009	N001	34		J	#	0.0044	
Specific Conductance	umhos/cm	09/17/2009	N001	560			#		
Strontium	mg/L	09/17/2009	N001	0.86			#	0.000055	
Sulfate	mg/L	09/17/2009	N001	130	N	J	#	2.5	
Temperature	C	09/17/2009	N001	20.25			#		
Turbidity	NTU	09/17/2009	N001	1000	>		#		
Uranium	mg/L	09/17/2009	N001	0.0028			#	0.0000017	

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

REPORT DATE: 2/24/2010

Location: 1203 SURFACE LOCATION

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/15/2009	0001	0.1	U		#	0.1	
Calcium	mg/L	09/15/2009	0001	56			#	0.0021	
Chloride	mg/L	09/15/2009	0001	12			#	1	
Magnesium	mg/L	09/15/2009	0001	8.5			#	0.0066	
Manganese	mg/L	09/15/2009	0001	0.02			#	0.0001	
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	0001	0.62			#	0.01	
Potassium	mg/L	09/15/2009	0001	2.6		J	#	0.092	
Selenium	mg/L	09/15/2009	0001	0.00069			#	0.000032	
Sodium	mg/L	09/15/2009	0001	35		J	#	0.0044	
Strontium	mg/L	09/15/2009	0001	0.73			#	0.000055	
Sulfate	mg/L	09/15/2009	0001	130			#	2.5	
Uranium	mg/L	09/15/2009	0001	0.0018			#	0.0000017	
Ammonia Total as N	mg/L	09/15/2009	N001	0.1	U		#	0.1	
Calcium	mg/L	09/15/2009	N001	76			#	0.0021	
Chloride	mg/L	09/15/2009	N001	12			#	1	
Magnesium	mg/L	09/15/2009	N001	19			#	0.0066	
Manganese	mg/L	09/15/2009	N001	0.47			#	0.0001	

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

REPORT DATE: 2/24/2010

Location: 1203 SURFACE LOCATION

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Nitrate + Nitrite as Nitrogen	mg/L	09/15/2009	N001	0.55			#	0.01	
Oxidation Reduction Potential	mV	09/15/2009	N001	43.9			#		
pH	s.u.	09/15/2009	N001	8.27			#		
Potassium	mg/L	09/15/2009	N001	12		J	#	0.092	
Selenium	mg/L	09/15/2009	N001	0.00076			#	0.000032	
Sodium	mg/L	09/15/2009	N001	38		J	#	0.0044	
Specific Conductance	umhos/cm	09/15/2009	N001	515			#		
Strontium	mg/L	09/15/2009	N001	0.92			#	0.000055	
Sulfate	mg/L	09/15/2009	N001	130			#	2.5	
Temperature	C	09/15/2009	N001	23.65			#		
Turbidity	NTU	09/15/2009	N001	1000	>		#		
Uranium	mg/L	09/15/2009	N001	0.0035			#	0.0000017	

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

REPORT DATE: 2/24/2010

Location: 1205 SURFACE LOCATION

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/16/2009	0001	0.1	U		#	0.1	
Calcium	mg/L	09/16/2009	0001	46			#	0.0021	
Chloride	mg/L	09/16/2009	0001	11			#	1	
Magnesium	mg/L	09/16/2009	0001	5.3			#	0.0066	
Manganese	mg/L	09/16/2009	0001	0.04			#	0.0001	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	0001	0.85			#	0.01	
Potassium	mg/L	09/16/2009	0001	3.9		J	#	0.092	
Selenium	mg/L	09/16/2009	0001	0.00082			#	0.000032	
Sodium	mg/L	09/16/2009	0001	53		J	#	0.0044	
Strontium	mg/L	09/16/2009	0001	0.65			#	0.000055	
Sulfate	mg/L	09/16/2009	0001	130			#	2.5	
Uranium	mg/L	09/16/2009	0001	0.0025			#	0.0000017	
Ammonia Total as N	mg/L	09/16/2009	N001	0.1	U		#	0.1	
Calcium	mg/L	09/16/2009	N001	180			#	0.0021	
Chloride	mg/L	09/16/2009	N001	11			#	1	
Magnesium	mg/L	09/16/2009	N001	45			#	0.0066	
Manganese	mg/L	09/16/2009	N001	3.3			#	0.0001	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	N001	0.77			#	0.01	
Oxidation Reduction Potential	mV	09/16/2009	N001	-9			#		
pH	s.u.	09/16/2009	N001	8.27			#		
Potassium	mg/L	09/16/2009	N001	23		J	#	0.092	
Selenium	mg/L	09/16/2009	N001	0.00085			#	0.000032	
Sodium	mg/L	09/16/2009	N001	69		J	#	0.0044	
Specific Conductance	umhos/cm	09/16/2009	N001	525			#		
Strontium	mg/L	09/16/2009	N001	2.4			#	0.000055	

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

REPORT DATE: 2/24/2010

Location: 1205 SURFACE LOCATION

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Sulfate	mg/L	09/16/2009	N001	140			#	2.5	
Temperature	C	09/16/2009	N001	17.2			#		
Turbidity	NTU	09/16/2009	N001	1000	>		#		
Uranium	mg/L	09/16/2009	N001	0.016			#	0.0000017	

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**

This page intentionally left blank

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

REPORT DATE: 2/24/2010

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

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/17/2009	0001	0.1	U		#	0.1	
Calcium	mg/L	09/17/2009	0001	110			#	0.011	
Chloride	mg/L	09/17/2009	0001	54			#	10	
Magnesium	mg/L	09/17/2009	0001	14			#	0.033	
Manganese	mg/L	09/17/2009	0001	0.017	B		#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	0001	0.27			#	0.01	
Potassium	mg/L	09/17/2009	0001	7.7	N	J	#	0.46	
Selenium	mg/L	09/17/2009	0001	0.00024			#	0.000032	
Sodium	mg/L	09/17/2009	0001	680			#	0.022	
Strontium	mg/L	09/17/2009	0001	12			#	0.00027	
Sulfate	mg/L	09/17/2009	0001	2000			#	25	
Uranium	mg/L	09/17/2009	0001	0.00012			#	0.0000017	
Oxidation Reduction Potential	mV	09/17/2009	N001	124.4			#		
pH	s.u.	09/17/2009	N001	8.49			#		
Specific Conductance	umhos/cm	09/17/2009	N001	3953			#		
Temperature	C	09/17/2009	N001	24.45			#		
Turbidity	NTU	09/17/2009	N001	46.6			#		

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

REPORT DATE: 2/24/2010

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

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/16/2009	0001	1.8			#	0.1	
Calcium	mg/L	09/16/2009	0001	500			#	0.11	
Chloride	mg/L	09/16/2009	0001	2200			#	200	
Magnesium	mg/L	09/16/2009	0001	2400			#	0.33	
Manganese	mg/L	09/16/2009	0001	0.37			#	0.0052	
Nitrate + Nitrite as Nitrogen	mg/L	09/16/2009	0001	830			#	5	
Potassium	mg/L	09/16/2009	0001	87			#	4.6	
Selenium	mg/L	09/16/2009	0001	2.2			#	0.016	
Sodium	mg/L	09/16/2009	0001	11000			#	0.44	
Strontium	mg/L	09/16/2009	0001	12			#	0.0027	
Sulfate	mg/L	09/16/2009	0001	36000			#	500	
Uranium	mg/L	09/16/2009	0001	0.25			#	0.0000087	
Oxidation Reduction Potential	mV	09/16/2009	N001	154			#		
pH	s.u.	09/16/2009	N001	8.16			#		
Specific Conductance	umhos/cm	09/16/2009	N001	47810			#		
Temperature	C	09/16/2009	N001	20.4			#		
Turbidity	NTU	09/16/2009	N001	27.4			#		

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

REPORT DATE: 2/24/2010

Location: 0949 SURFACE LOCATION

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/17/2009	0001	0.1	U		#	0.1	
Calcium	mg/L	09/17/2009	0001	550			#	0.011	
Chloride	mg/L	09/17/2009	0001	83			#	10	
Magnesium	mg/L	09/17/2009	0001	210			#	0.033	
Manganese	mg/L	09/17/2009	0001	0.0056	B		#	0.00052	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	0001	52			#	0.5	
Potassium	mg/L	09/17/2009	0001	8.9			#	0.46	
Selenium	mg/L	09/17/2009	0001	0.38			#	0.0064	
Sodium	mg/L	09/17/2009	0001	450			#	0.022	
Strontium	mg/L	09/17/2009	0001	6			#	0.00027	
Sulfate	mg/L	09/17/2009	0001	2700			#	25	
Uranium	mg/L	09/17/2009	0001	0.038			#	0.0000017	
Oxidation Reduction Potential	mV	09/17/2009	N001	214.1			#		
pH	s.u.	09/17/2009	N001	7.93			#		
Specific Conductance	umhos/cm	09/17/2009	N001	4817			#		
Temperature	C	09/17/2009	N001	17.95			#		
Turbidity	NTU	09/17/2009	N001	27.6			#		

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

REPORT DATE: 2/24/2010

Location: 1215 SURFACE LOCATION Evaporation Pond

Parameter	Units	Sample Date	ID	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Ammonia Total as N	mg/L	09/17/2009	0001	25			#	2	
Calcium	mg/L	09/17/2009	0001	630			#	0.11	
Chloride	mg/L	09/17/2009	0001	2400			#	100	
Magnesium	mg/L	09/17/2009	0001	6600			#	0.33	
Manganese	mg/L	09/17/2009	0001	0.096	B		#	0.0052	
Nitrate + Nitrite as Nitrogen	mg/L	09/17/2009	0001	1800			#	10	
Potassium	mg/L	09/17/2009	0001	530			#	4.6	
Selenium	mg/L	09/17/2009	0001	2.1			#	0.016	
Sodium	mg/L	09/17/2009	0001	8800			#	0.44	
Strontium	mg/L	09/17/2009	0001	14			#	0.0027	
Sulfate	mg/L	09/17/2009	0001	44000			#	250	
Uranium	mg/L	09/17/2009	0001	3.9			#	0.00035	
Oxidation Reduction Potential	mV	09/17/2009	N001	181.9			#		
pH	s.u.	09/17/2009	N001	8.39			#		
Specific Conductance	umhos/cm	09/17/2009	N001	52389			#		
Temperature	C	09/17/2009	N001	23.75			#		
Turbidity	NTU	09/17/2009	N001	14.8			#		

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.

This page intentionally left blank

Equipment Blank Data

This page intentionally left blank

BLANKS REPORT

LAB: PARAGON (Fort Collins, CO)

RIN: 09092562

Report Date: 11/13/2009

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	09/17/2009	N001	mg/L	0.1	U	0.1		E
Calcium	SHP01	0999	09/17/2009	N001	mg/L	0.12	B	0.0021		E
Chloride	SHP01	0999	09/17/2009	N001	mg/L	0.2	U	0.2		E
Magnesium	SHP01	0999	09/17/2009	N001	mg/L	0.022	B	0.0066		E
Manganese	SHP01	0999	09/17/2009	N001	mg/L	0.001	B U	0.0001		E
Nitrate + Nitrite as Nitrogen	SHP01	0999	09/17/2009	N001	mg/L	0.016		0.01		E
Potassium	SHP01	0999	09/17/2009	N001	mg/L	0.092	U J	0.092		E
Selenium	SHP01	0999	09/17/2009	N001	mg/L	0.000044	B U	0.000032		E
Sodium	SHP01	0999	09/17/2009	N001	mg/L	0.0044	U J	0.0044		E
Strontium	SHP01	0999	09/17/2009	N001	mg/L	0.000055	U	0.000055		E
Sulfate	SHP01	0999	09/17/2009	N001	mg/L	0.5	U	0.5		E
Uranium	SHP01	0999	09/17/2009	N001	mg/L	0.000017	B U	0.000017		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**

This page intentionally left blank

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	09/15/2009	12:44:37	7.3	4886.05	
0610	4895.7	09/15/2009	17:08:13	10.81	4884.89	
0611	4895.62	09/15/2009	17:30:44	11.15	4884.47	
0612	4893.35	09/16/2009	08:56:38	8.47	4884.88	
0614	4892.79	09/16/2009	10:26:16	9.28	4883.51	
0615	4892.23	09/16/2009	11:59:18	9.21	4883.02	
0616		09/15/2009				D
0618	4891.51	09/17/2009	11:20:02	8.9	4882.61	
0619	4892.19	09/17/2009	11:06:13	9.84	4882.35	
0622	4890.06	09/17/2009	09:29:44	7.06	4883	
0623	4891.19	09/17/2009	10:15:51	8.75	4882.44	
0625	4891.23	09/17/2009	10:37:13	8.65	4882.58	
0626	4891.4	09/17/2009	16:24:06	8.42	4882.98	
0628	4889.87	09/17/2009	15:49:57	6.91	4882.96	
0629	4887.49	09/15/2009		4.60	4882.89	
0630	4887.62	09/17/2009	16:25:18	4.7	4882.92	
0734	4886.55	09/17/2009	16:10:37	7.2	4879.35	
0735	4895.85	09/15/2009	14:43:54	7.38	4888.47	
0736	4887.99					D
0766	4892.55	09/17/2009	15:08:00			D
0768	4892.33	09/17/2009	09:44:00			D
0773	4894.87	09/15/2009	17:40:00			D
0775	4892.2	09/17/2009	11:42:00			D
0779	4893.9					D
0782R		09/17/2009	15:05:30	7.93		*
0783R		09/17/2009	14:45:42	8.29		*
0792	4891.52	09/17/2009	09:02:10	9.01	4882.51	
0793	4891.05	09/16/2009	17:07:09	8.38	4882.67	
0797	4908.04	09/16/2009	12:00:12	10.6	4897.44	
0798	4891.55	09/17/2009	11:28:28	9.4	4882.15	
0850	4907.51	09/16/2009	11:30:00	10.22	4897.29	

Location Code	Top of Casing Elevation (Ft)	Measurement Date	Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
0853	4891.41	09/16/2009	16:31:49	8.49	4882.92	
0854	4890.09	09/17/2009	14:53:09	9.4	4880.69	
0855	4888.18	09/17/2009	15:45:30	7.82	4880.36	
0856	4887.57	09/17/2009	16:30:41	7.96	4879.61	
0857	4894.02	09/17/2009	11:55:08	11.15	4882.87	
1008	4890.8	09/17/2009	12:14:09	9.78	4881.02	
1009	4892.1	09/16/2009	15:53:46	9.36	4882.74	
1010	4892.32	09/16/2009		9.64	4882.68	
1089	4891.5					E
1104						E
1105						N
1109		09/15/2009	10:28:57	7.78		*
1110						N
1111	4889.85	09/16/2009	15:28:24	6.8	4883.05	
1112	4890.01	09/16/2009	10:56:31	7.1	4882.91	
1113	4892	09/15/2009	16:41:34	6.85	4885.15	
1114	4892.86	09/15/2009	12:12:24	6.11	4886.75	
1115	4895.59	09/15/2009	11:40:40	8.05	4887.54	
1116	4898.84	09/15/2009	09:03:27	11.16	4887.68	
1117	4896.7	09/14/2009	18:31:35	8.95	4887.75	
1126	4895.39	09/17/2009	18:13:12	8.05	4887.34	
1127	4896.95	09/17/2009	17:16:55	9.14	4887.81	
1131	4894.78	09/17/2009	17:50:03	7.22	4887.56	
1132	4894.5	09/15/2009	09:44:38	6.91	4887.59	
1133	4896.48	09/17/2009	17:50:04	8.92	4887.56	
1134	4895.88	09/15/2009	11:08:10	8.39	4887.49	
1140		09/16/2009	14:42:47	9.2		*
1141		09/16/2009	11:22:11	9.9		*

WATER LEVEL FLAGS:

* Top of casing elevation not available because the lack of survey data. Location survey is planned in 2010

D Dry

E Extraction well, water level not measured

N Not measured, roots in well

**Static Water Level Data
Terrace Locations**

This page intentionally left blank

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	09/15/2009		33.85	4922.02	
0602	4956.89	09/15/2009	15:10:54	20.63	4936.26	
0603	4978.62	09/15/2009	15:15:09	31.25	4947.37	
0604	4995.87	09/16/2009	16:25:59	55.4	4940.47	
0725	4908.58	09/16/2009	17:25:01	14.6	4893.98	
0726	4939.95	09/14/2009	18:05:17	25.6	4914.35	
0727	4940.65	09/16/2009	15:35:30	7.27	4933.38	
0728	4964.46	09/16/2009	11:10:13	25.42	4939.04	
0730						D
0731	4972.15	09/15/2009	16:20:57	25.31	4946.84	
0804		09/15/2009				D
0805		09/15/2009				D
0812	5004.98	09/16/2009	11:30:12	61.54	4943.44	
0813	4984.37	09/15/2009	12:45:01	44.04	4940.33	
0814	4968.12	09/16/2009	12:00:45	32.69	4935.43	
0815	4953.67	09/16/2009	13:55:37	26.63	4927.04	
0816	4937.92	09/16/2009	18:10:58	25.7	4912.22	C
0817	4957.34	09/15/2009	15:30:05	19.26	4938.08	
0818						E
0819	4955.76	09/15/2009	16:30:35	20.64	4935.12	
0820	4954.95	09/15/2009	10:35:51	141.83	4813.12	
0821						D
0822						3
0823						D
0824	4958.21	09/16/2009	16:35:08	159.25	4798.96	
0825	4958.68	09/16/2009	17:00:06	128.57	4830.11	
0826	4950.73	09/15/2009	16:10:40	18.3	4932.43	
0827	4946.92	09/16/2009	14:55:33	26.91	4920.01	
0828	4949.34	09/17/2009	09:10:52	23.04	4926.3	
0829						D

Location Code	Top of Casing Elevation (Ft)	Measurement Date	Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
0830	4960.77	09/16/2009	14:30:13	16.68	4944.09	
0832						D
0833	4940.52	09/17/2009	14:05:13	31.42	4909.1	
0835	4930.48	09/17/2009	09:50:09	21.9	4908.58	
0836	4901.74	09/17/2009	09:55:54	28.38	4873.36	
0837	4889.54	09/17/2009	12:10:42	20.5	4869.04	
0838	4937.7	09/15/2009	11:55:01	29.2	4908.5	
0839						D
0841	4984.05	09/15/2009	18:15:44	45.89	4938.16	
0843	4883.56	09/17/2009	11:45:25	14.17	4869.39	
0844	4948.46	09/17/2009	09:20:00	32.19	4916.27	
0846	4934.57	09/17/2009	13:30:12	28.29	4906.28	
0848	4949.91	09/15/2009	10:55:09	41.96	4907.95	
1002						D
1003						D
1004						D
1006		09/15/2009				D
1007						3
1011						D
1048						D
1049	4923.89	09/16/2009	09:30:48	6.76	4917.13	
1057						D
1058	4973.58	09/15/2009	16:50:44	33.67	4939.91	
1059	4970.52	09/15/2009	17:15:56	23.65	4946.87	
1060						D
1068	4927.97	09/16/2009	15:05:07	7.67	4920.3	
1069						D
1070						E
1071						E
1073	4991.43	09/15/2009	14:20:52	50.38	4941.05	

Location Code	Top of Casing Elevation (Ft)	Measurement Date	Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
1074	4959.52	09/15/2009	14:45:20	35.42	4924.1	
1078						E
1079	4925.22	09/15/2009	11:30:45	18.69	4906.53	
1087						T
1088						T
1091						E
1092						E
1093R						E
1095						E
1096						E
1120		09/17/2009	10:45:30	24.31		*
1122		09/17/2009	10:25:26	24.75		*
DM7	4974.44	09/15/2009	18:00:07	52	4922.44	
MW1						3

WATER LEVEL FLAGS:

C Water elevation may not be comparable to other water elevations at this site because the water level was below the top of the pump.

D Dry

E Extraction well, water level not measured

T Treatment system well, water level not measured

3 Category III well, water level not measured

* Top of casing elevation not available because the lack of survey data. Location survey is planned in 2010.

This page intentionally left blank

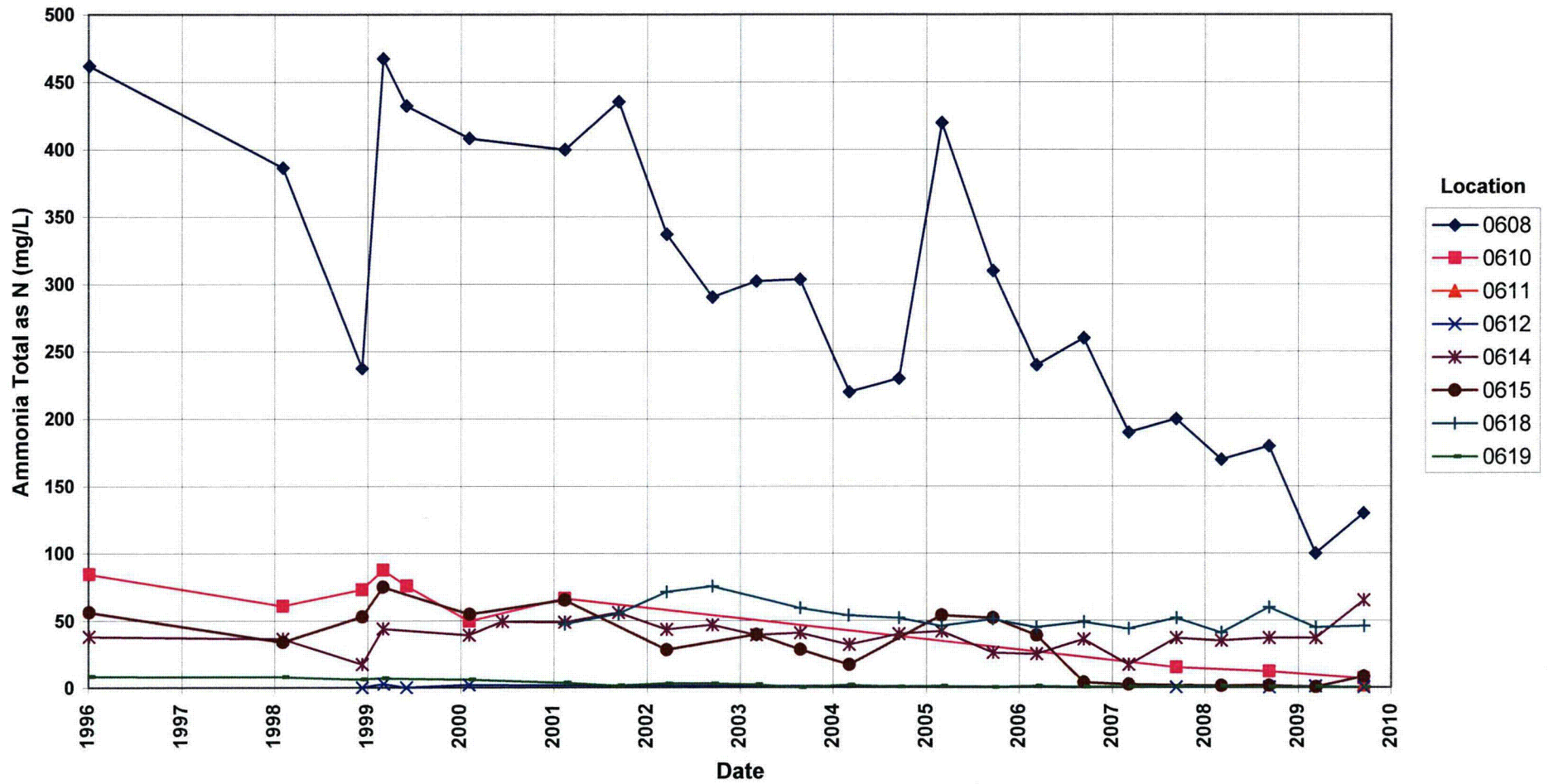
**Time-Concentration Graphs
Floodplain Groundwater Locations**

This page intentionally left blank

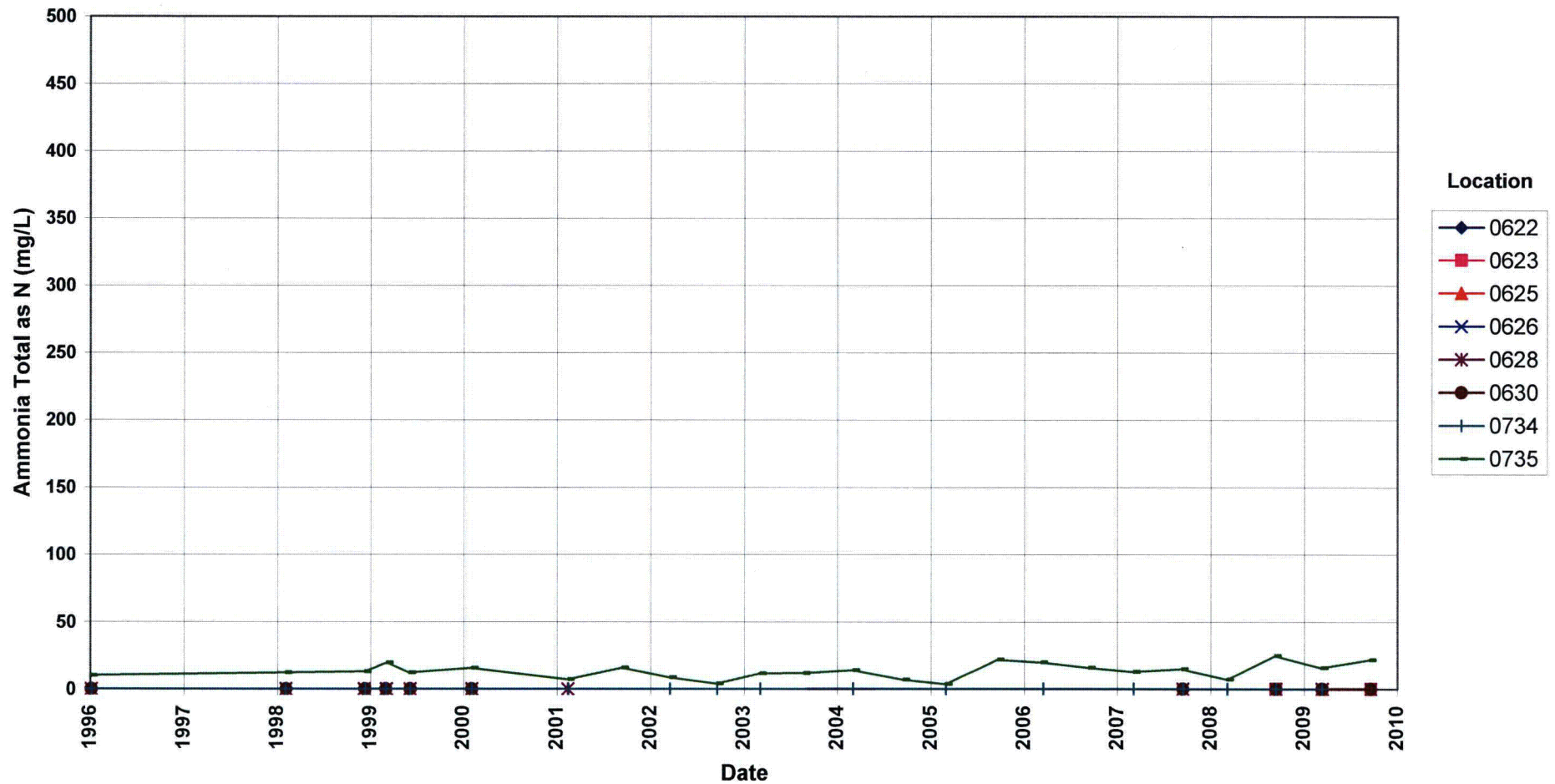
Shiprock Disposal Site (Floodplain)

Ammonia Total as N Concentration

No established groundwater standard



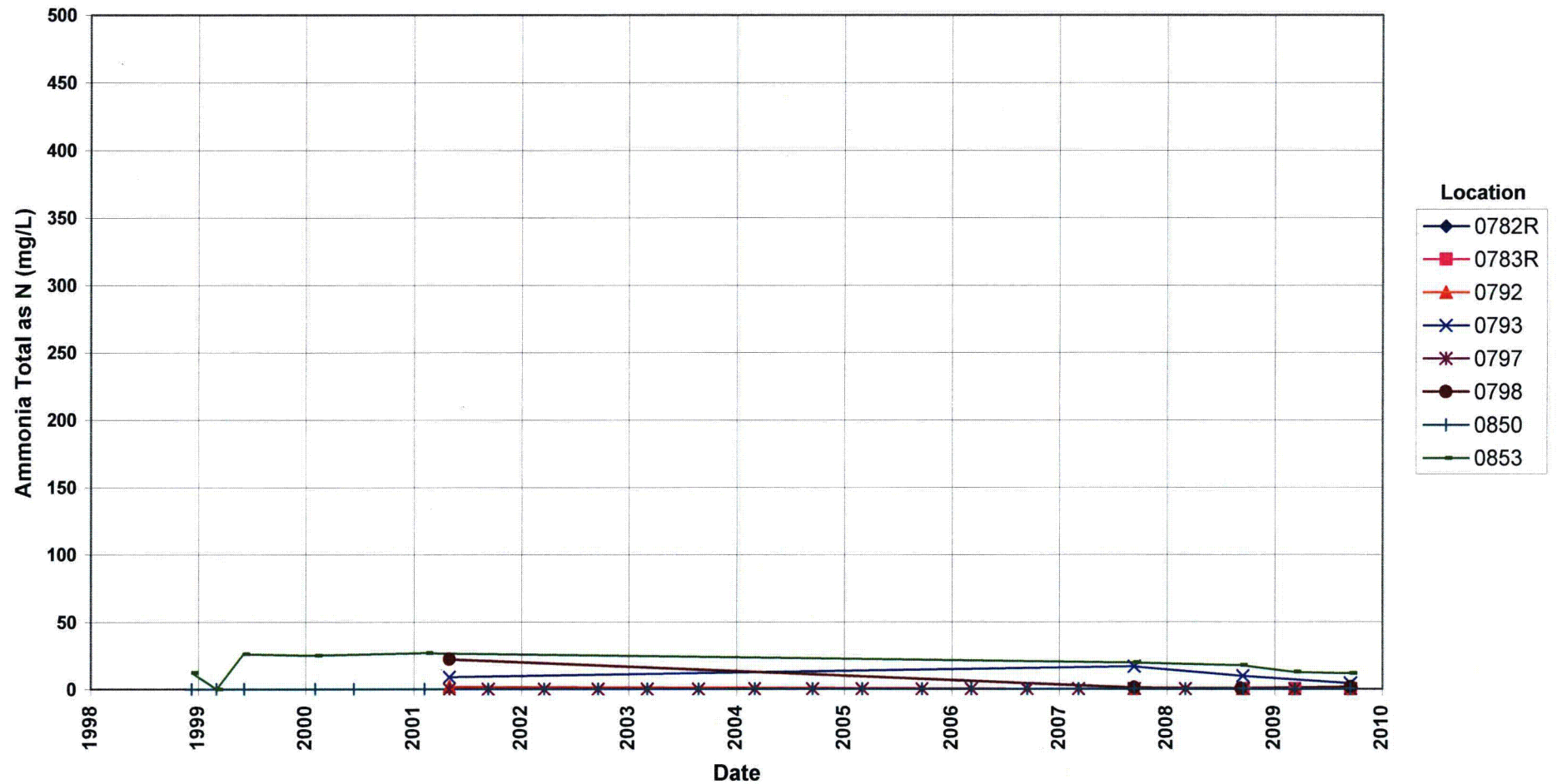
Shiprock Disposal Site (Floodplain)
Ammonia Total as N Concentration
No established groundwater standard



Shiprock Disposal Site (Floodplain)

Ammonia Total as N Concentration

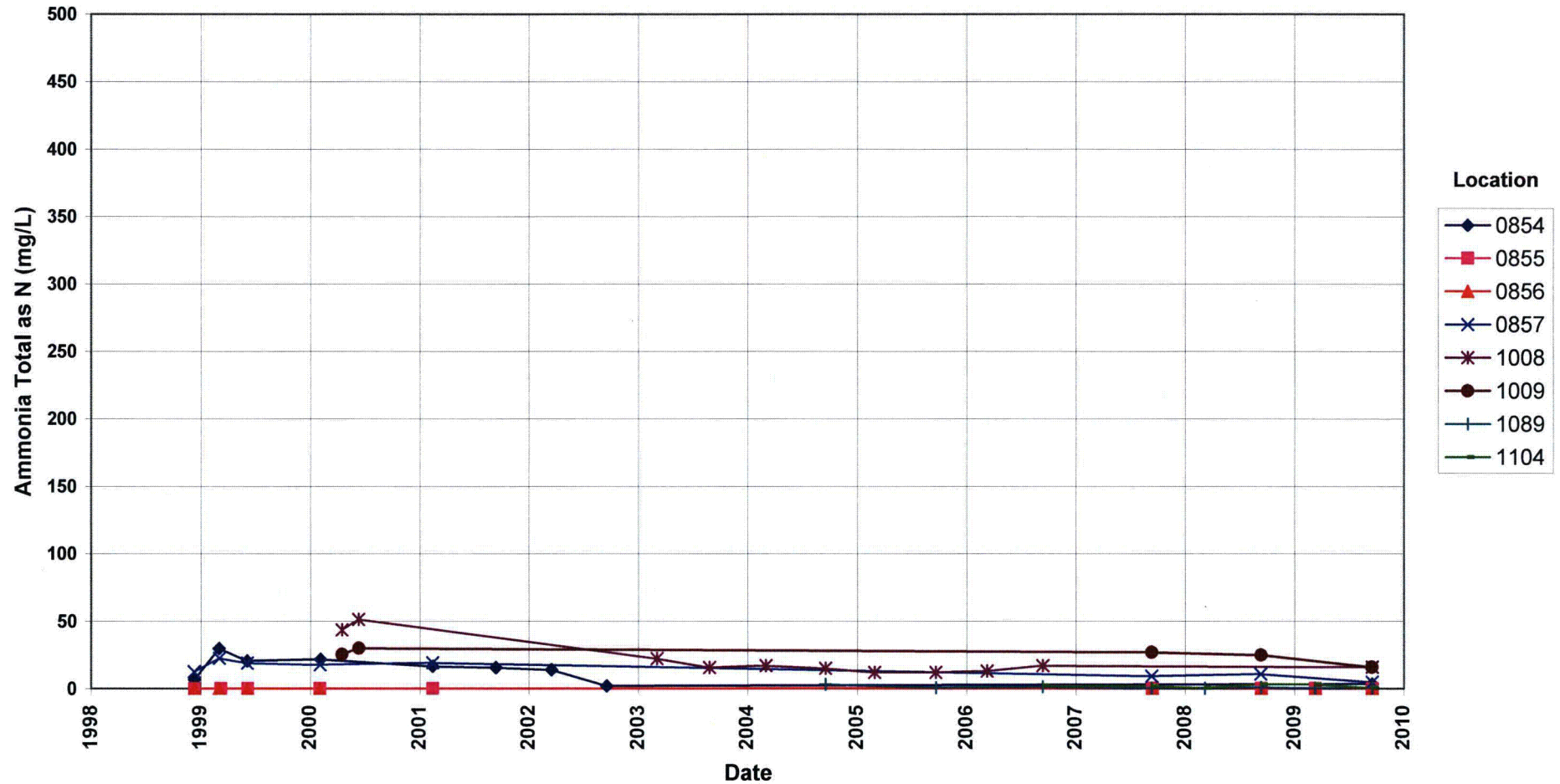
No established groundwater standard



Shiprock Disposal Site (Floodplain)

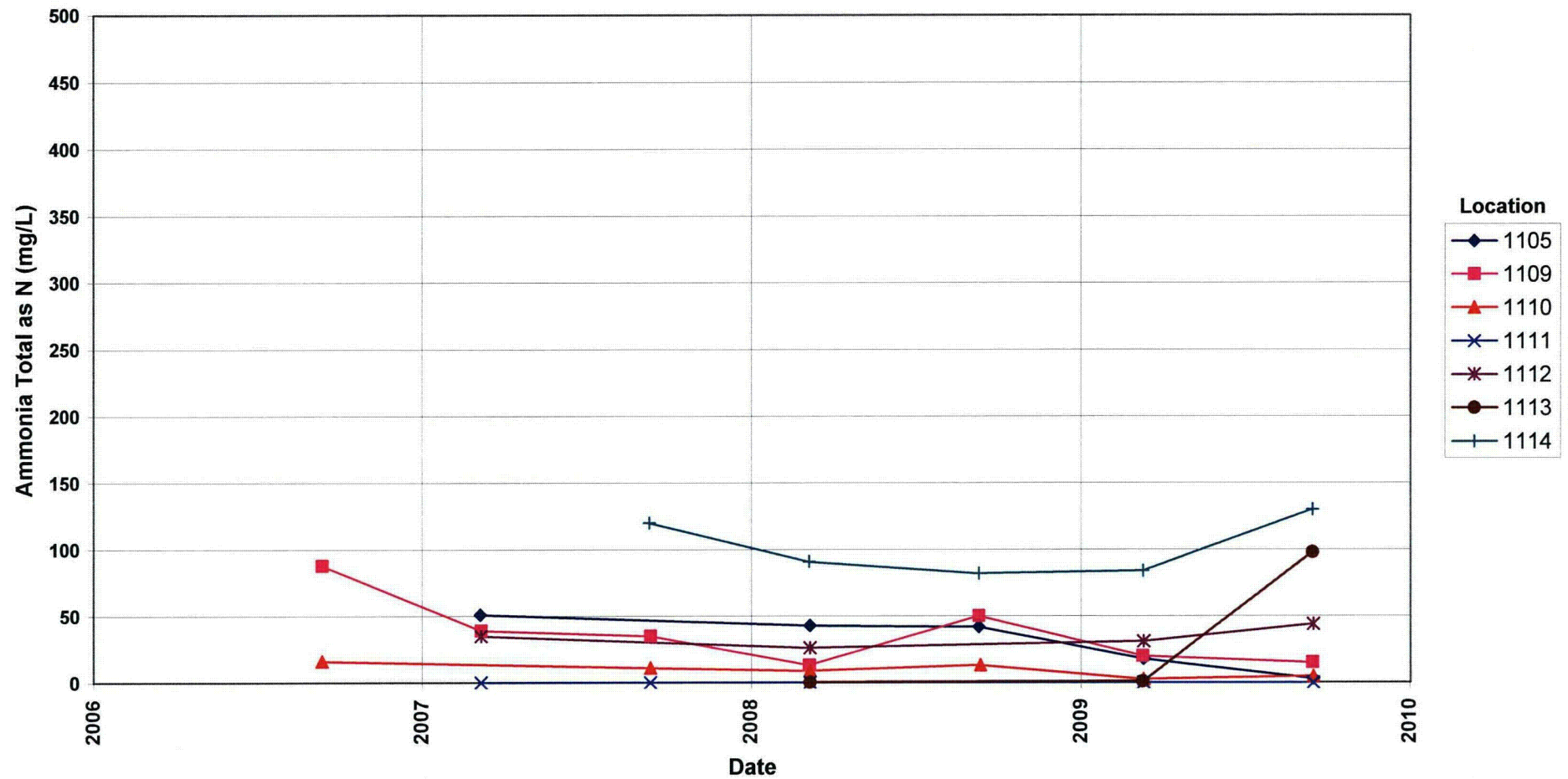
Ammonia Total as N Concentration

No established groundwater standard

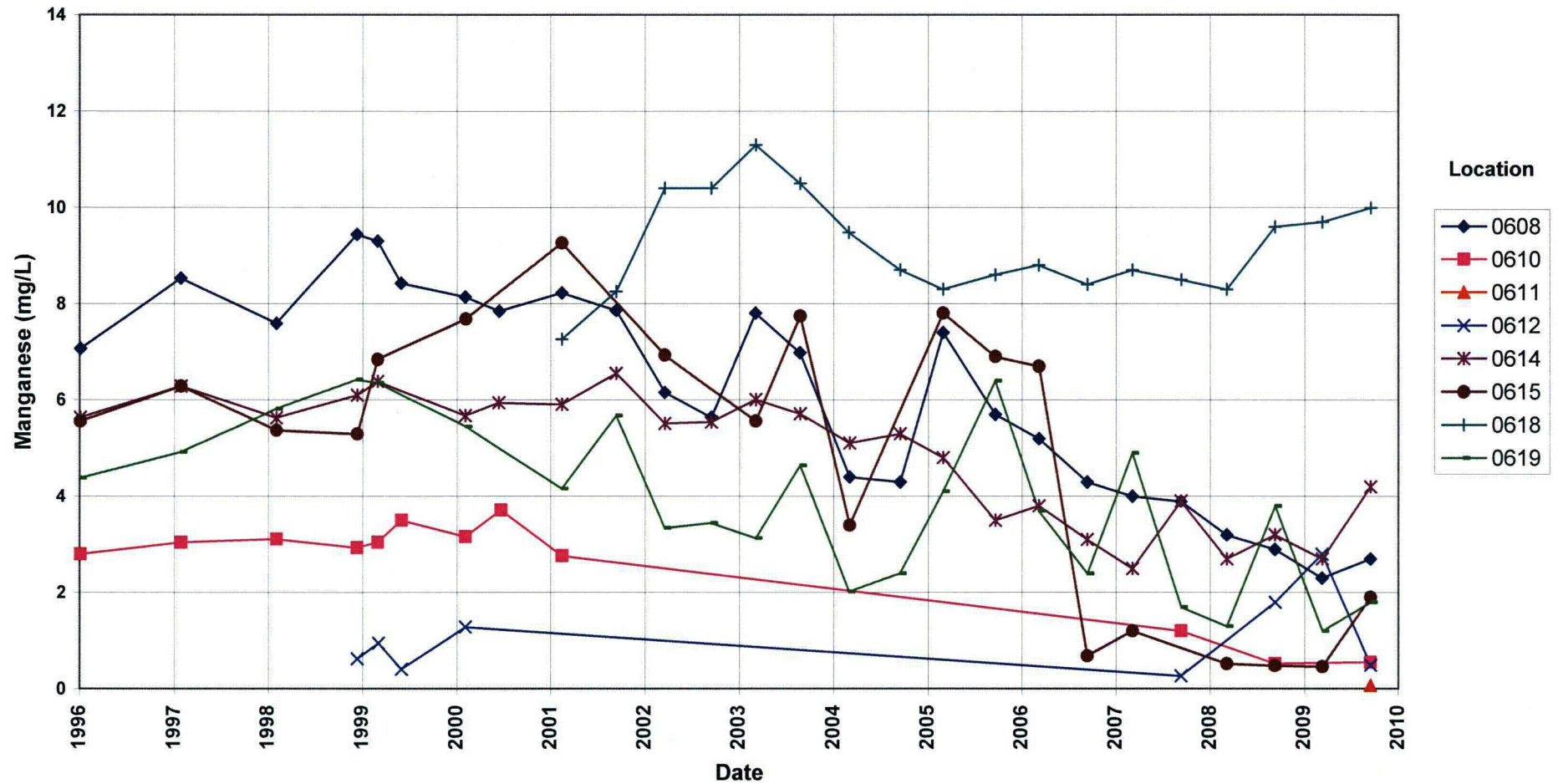


Shiprock Disposal Site (Floodplain)
Ammonia Total as N Concentration

No established groundwater standard



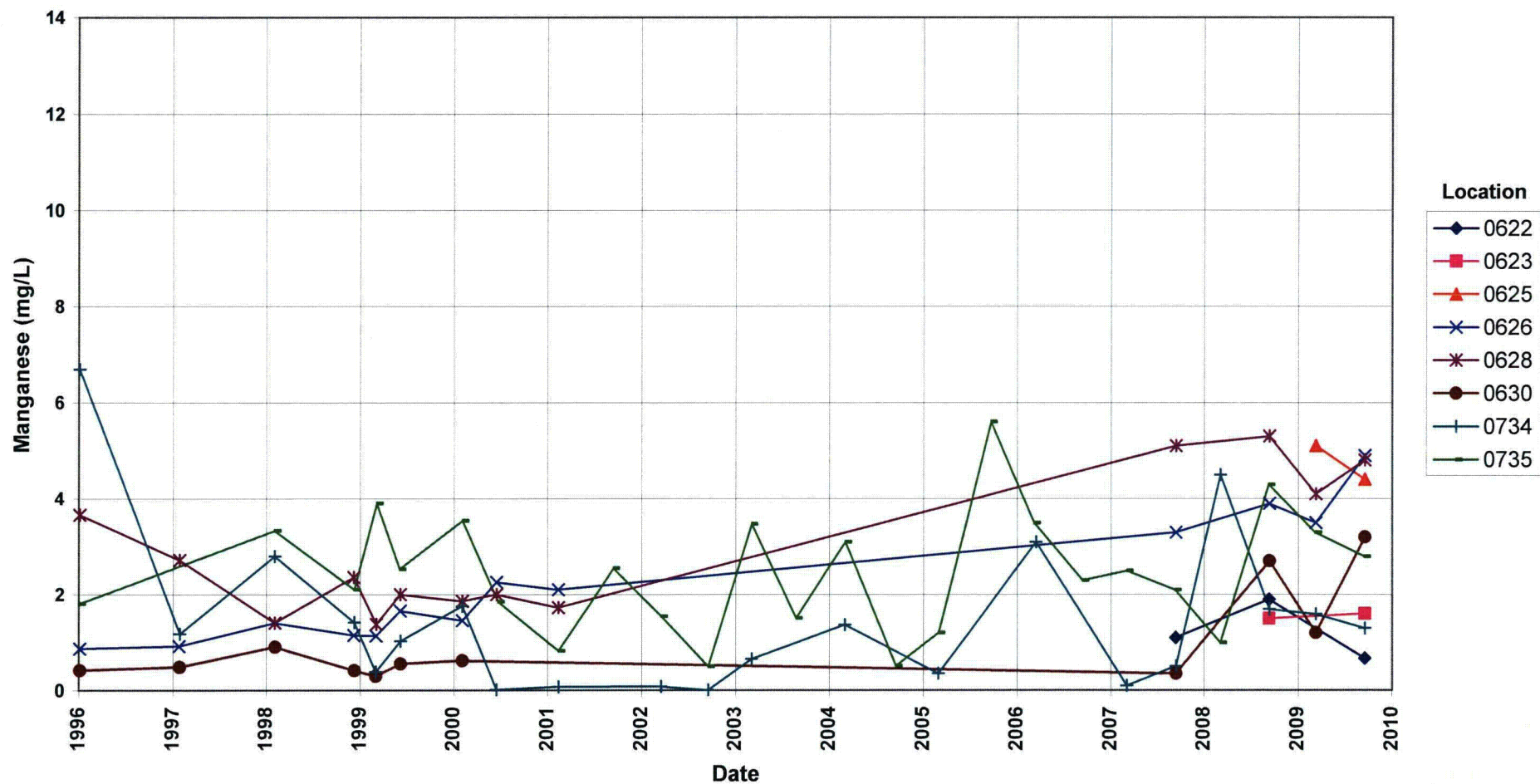
Shiprock Disposal Site (Floodplain)
Manganese Concentration
No established groundwater standard



Shiprock Disposal Site (Floodplain)

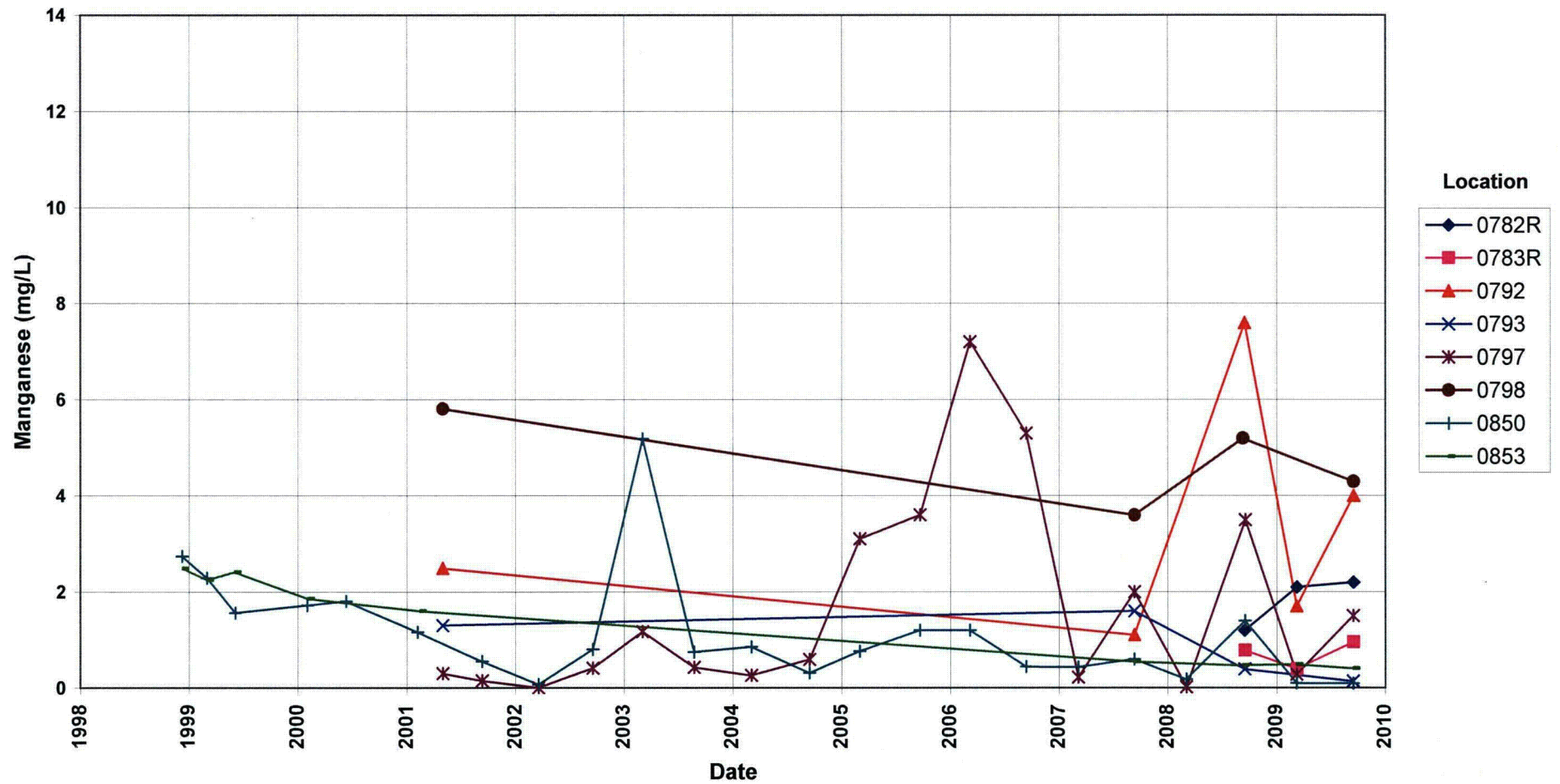
Manganese Concentration

No established groundwater standard



Shiprock Disposal Site (Floodplain)
Manganese Concentration

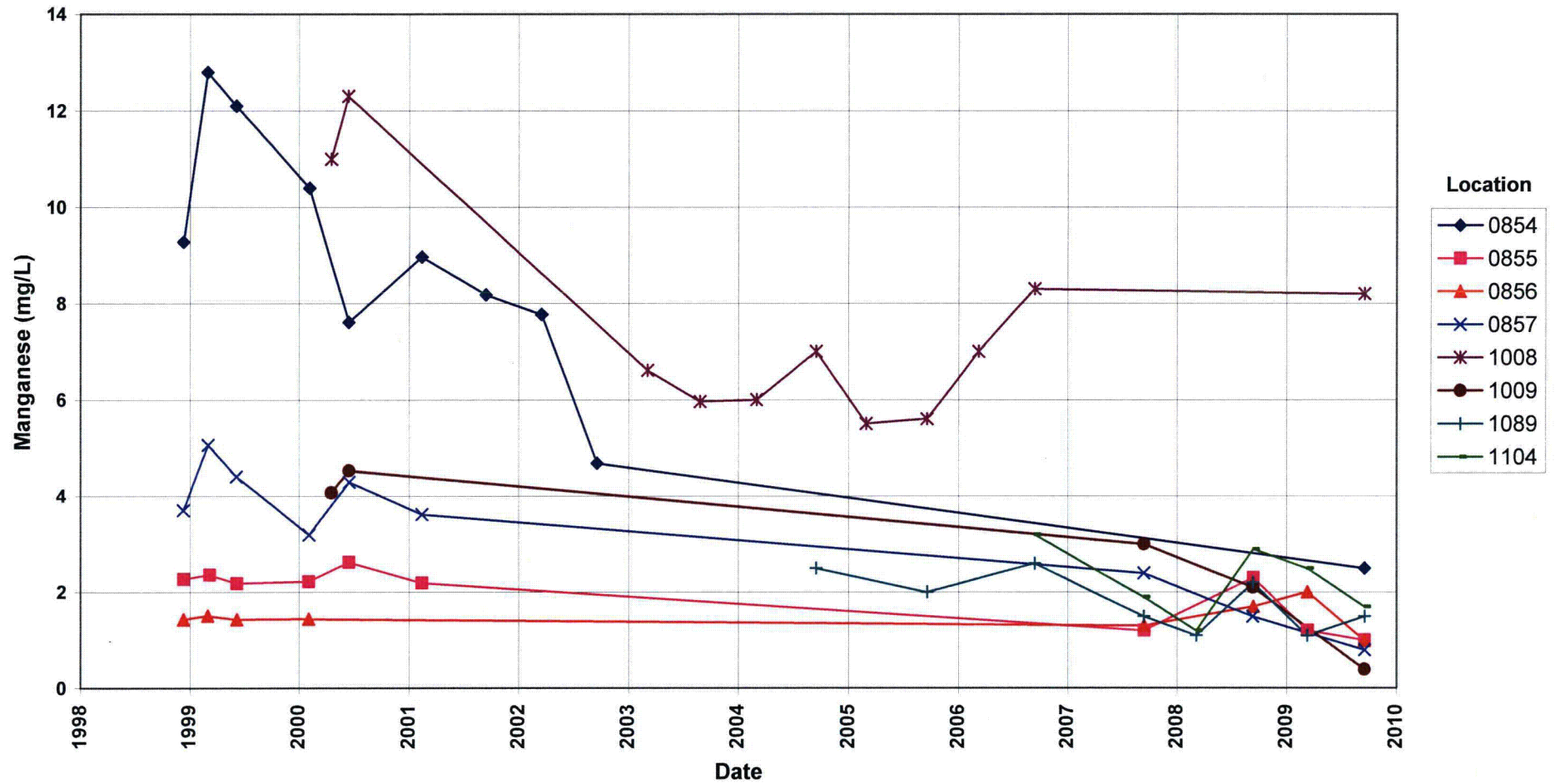
No established groundwater standard



Shiprock Disposal Site (Floodplain)

Manganese Concentration

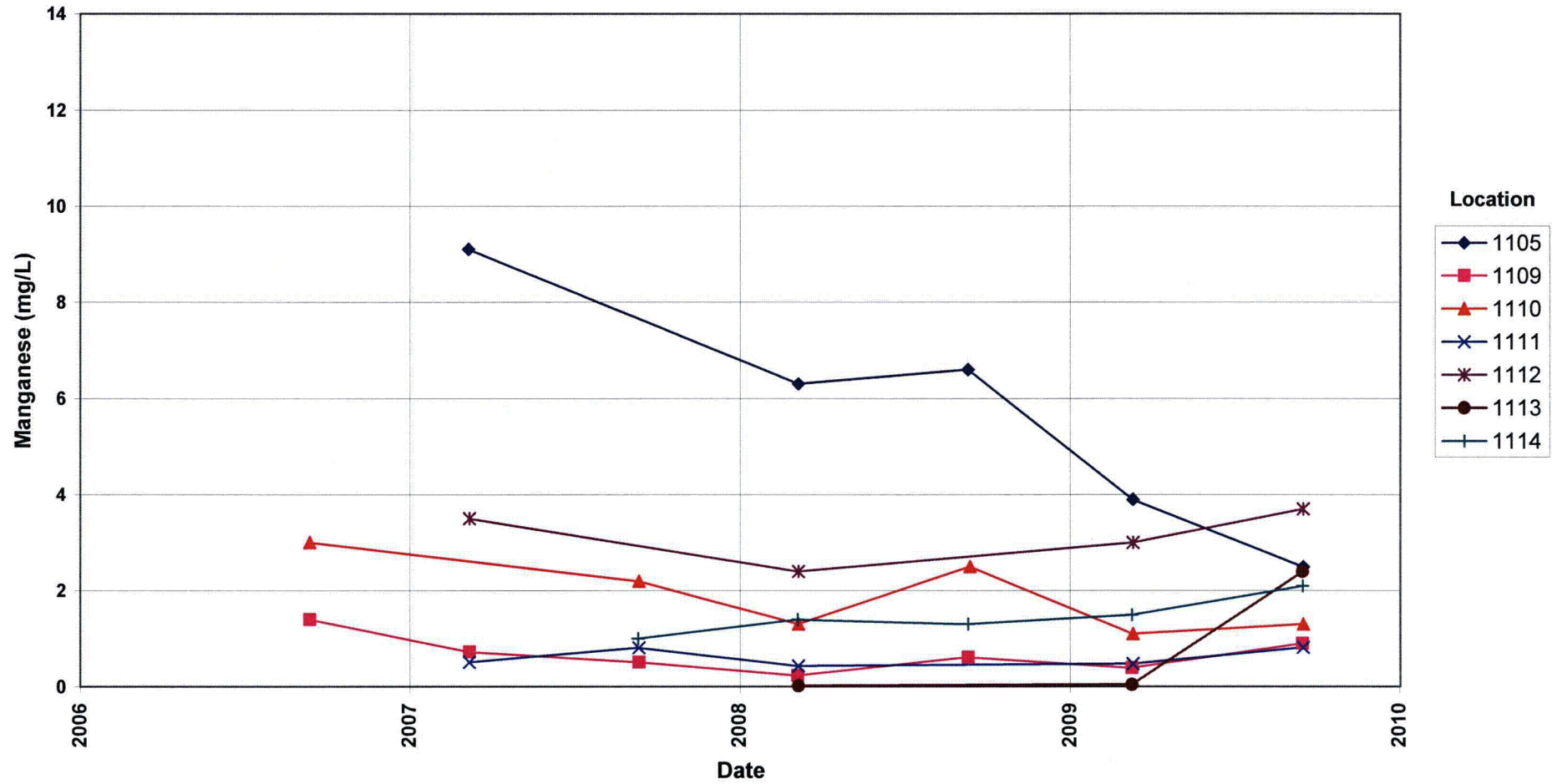
No established groundwater standard



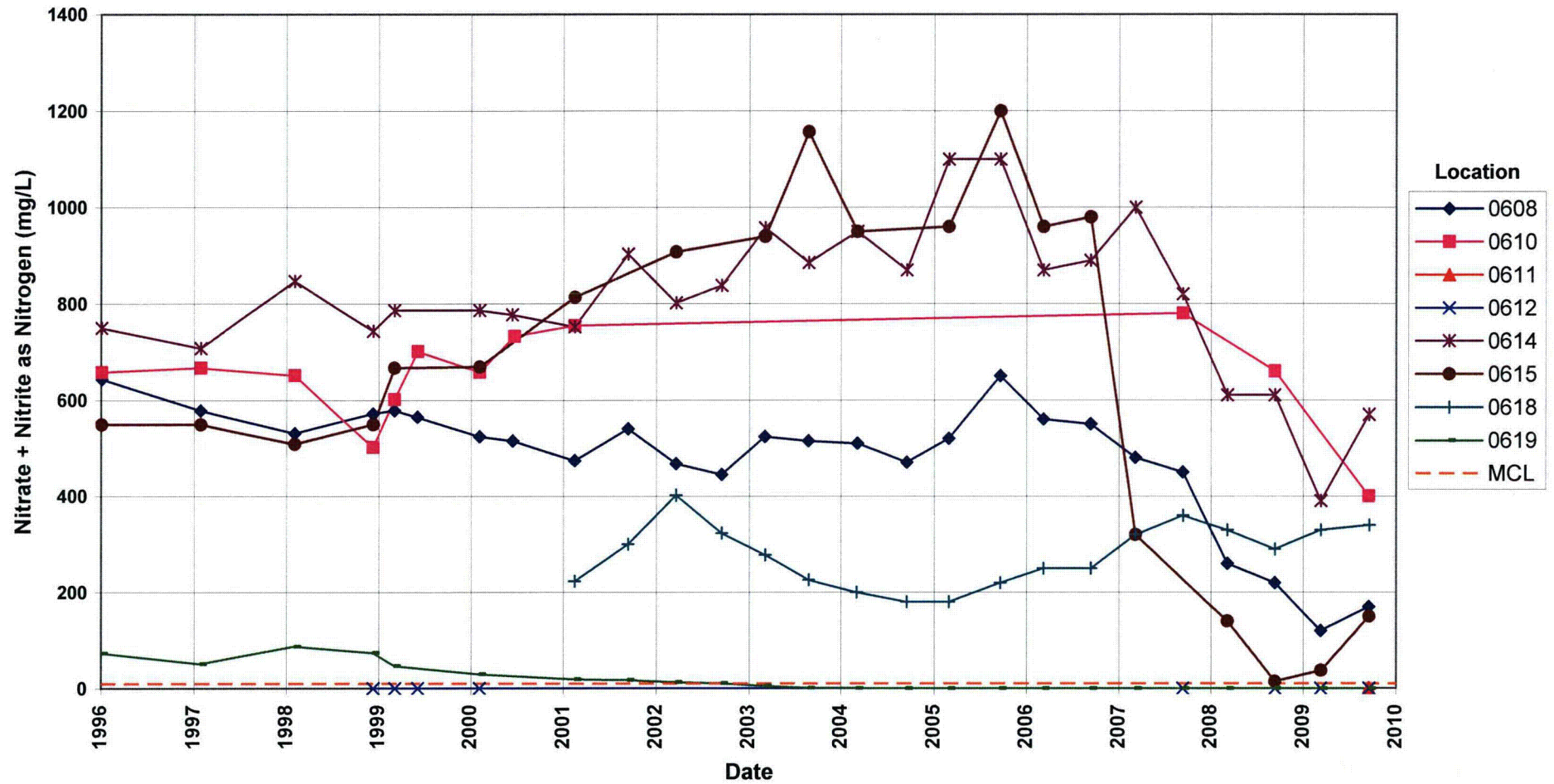
Shiprock Disposal Site (Floodplain)

Manganese Concentration

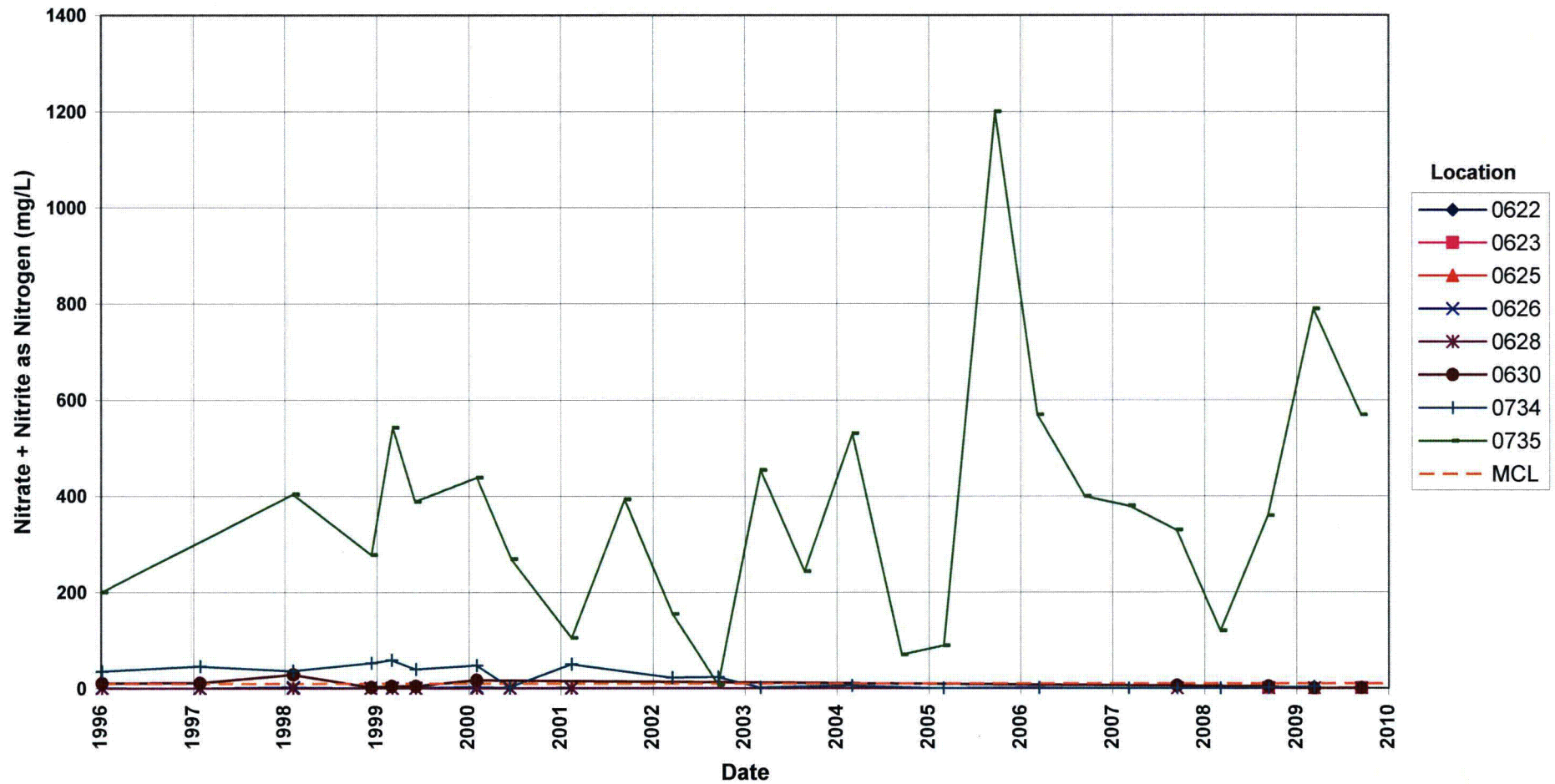
No established groundwater standard



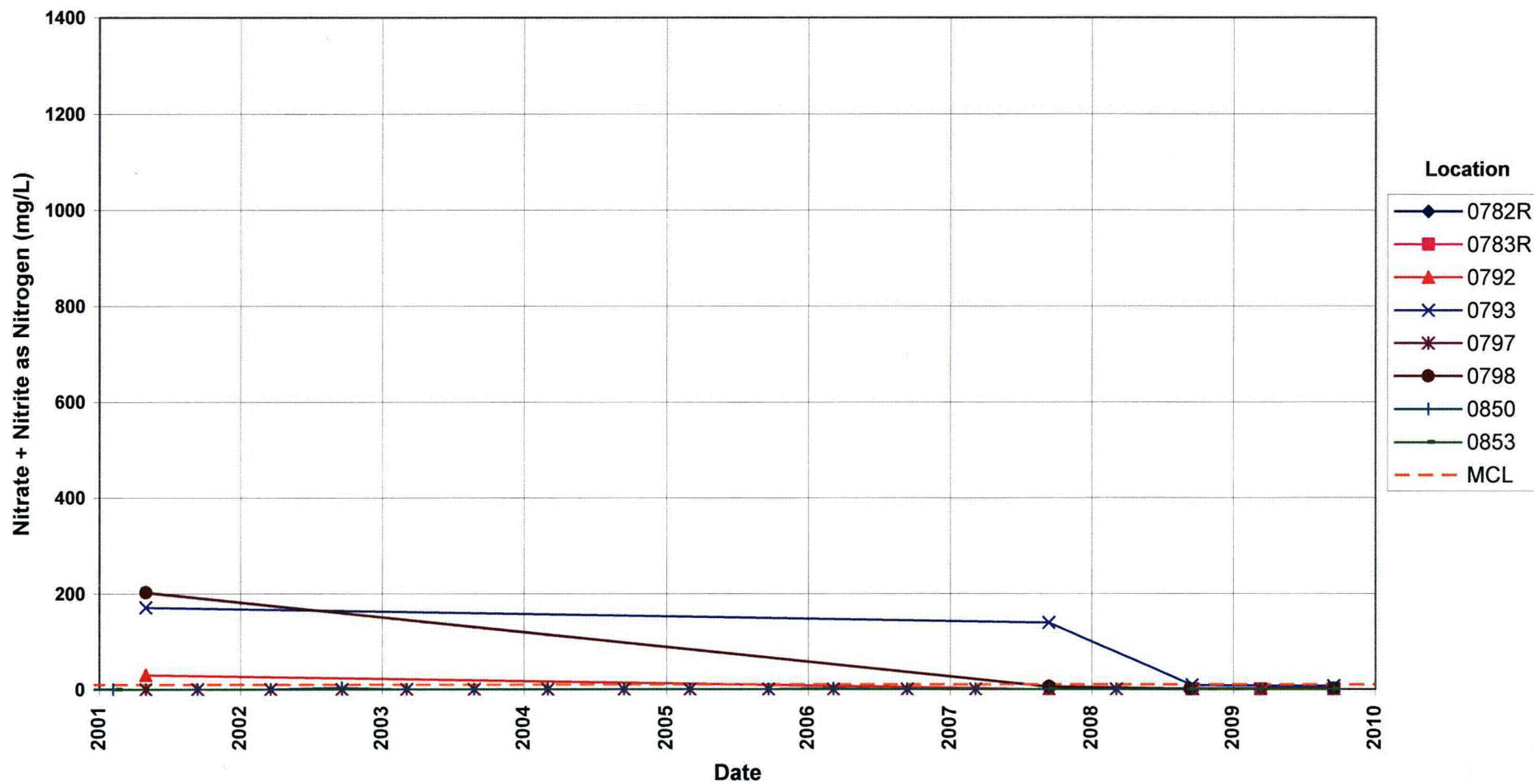
Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
 40 CFR 192.02 Maximum Contaminant Level (MCL) = 10.0 mg/L



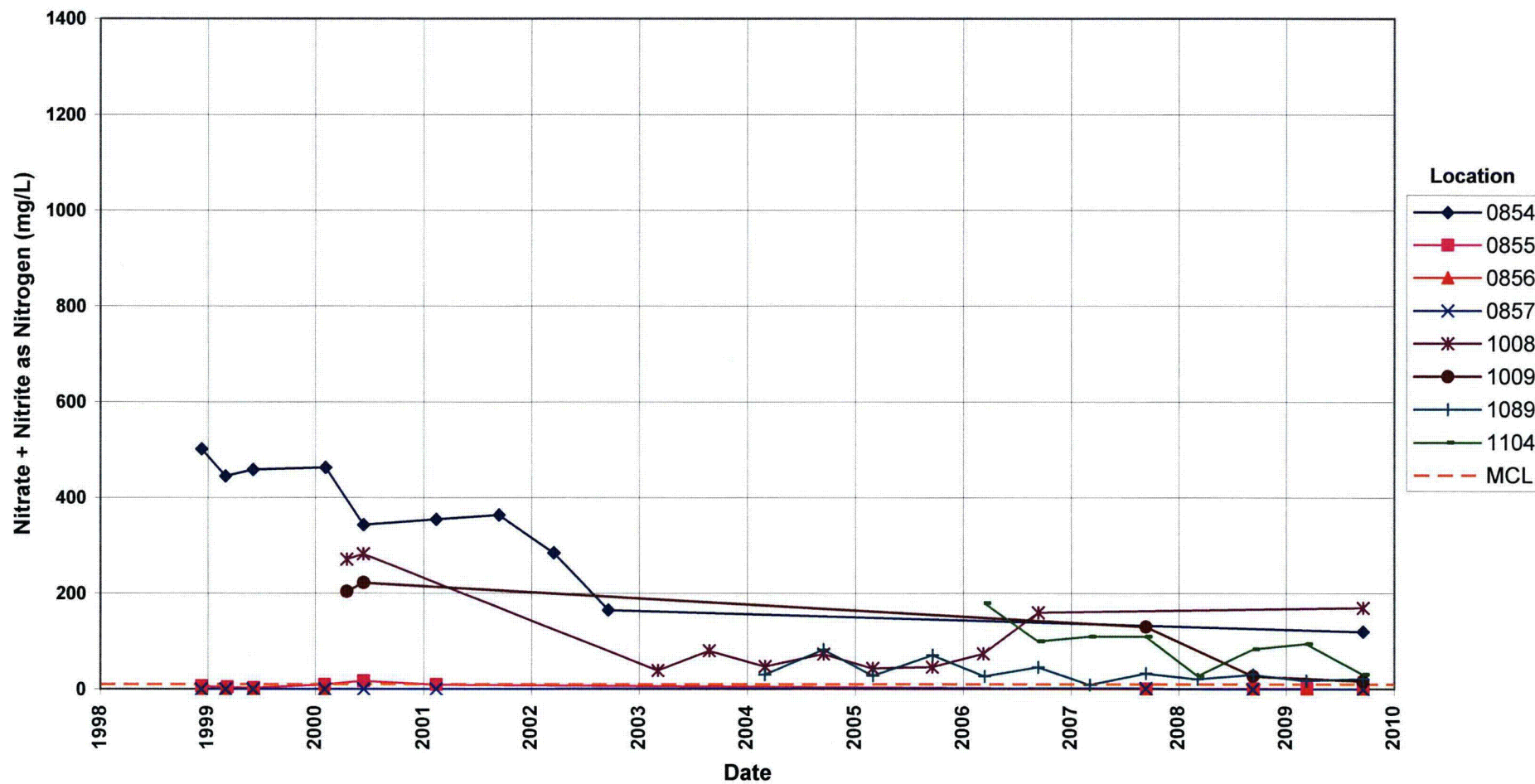
Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
40 CFR 192.02 Maximum Contaminant Level (MCL) = 10.0 mg/L



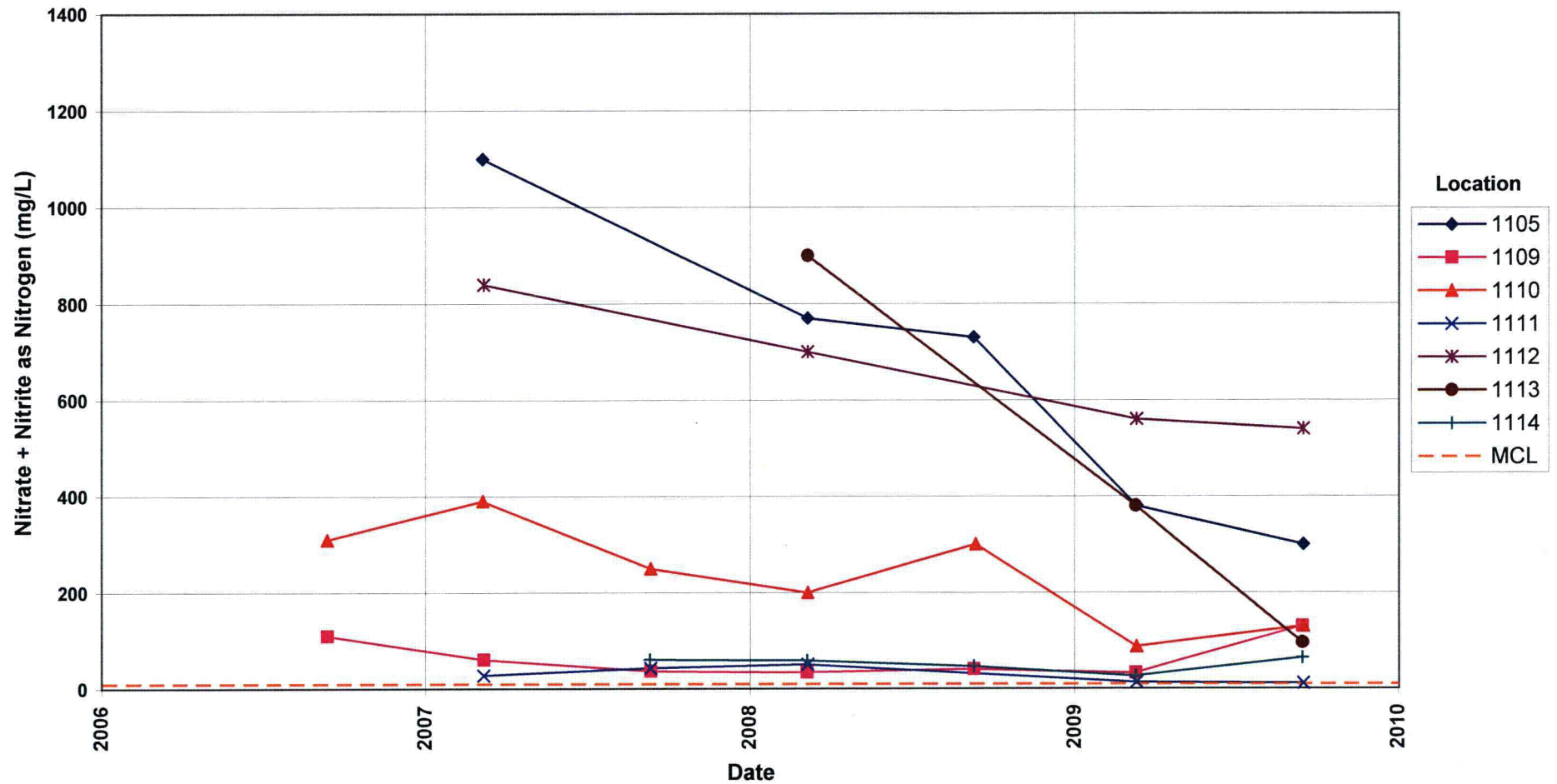
Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
40 CFR 192.02 Maximum Contaminant Level (MCL) = 10.0 mg/L



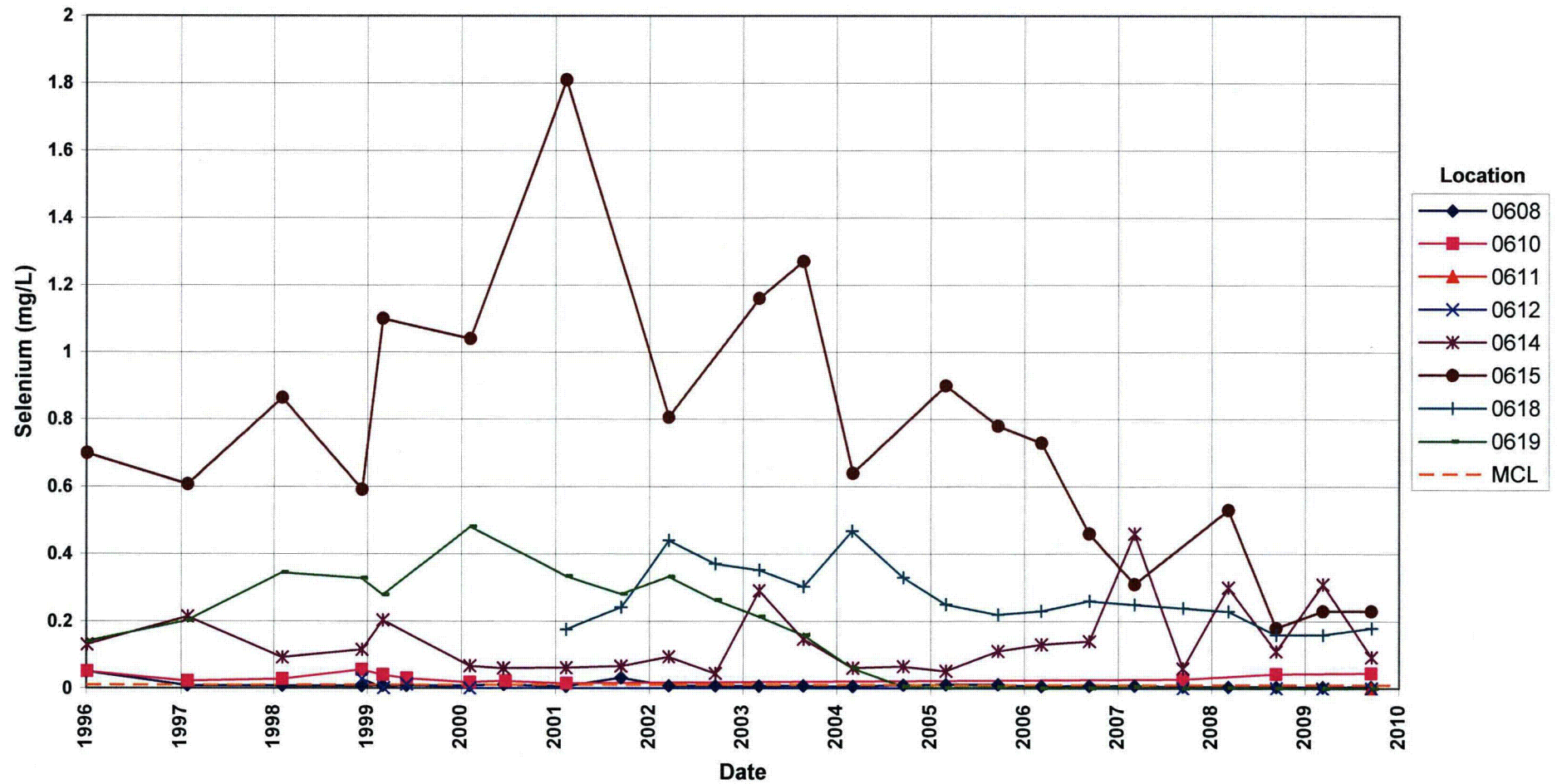
Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
40 CFR 192.02 Maximum Contaminant Level (MCL) = 10.0 mg/L



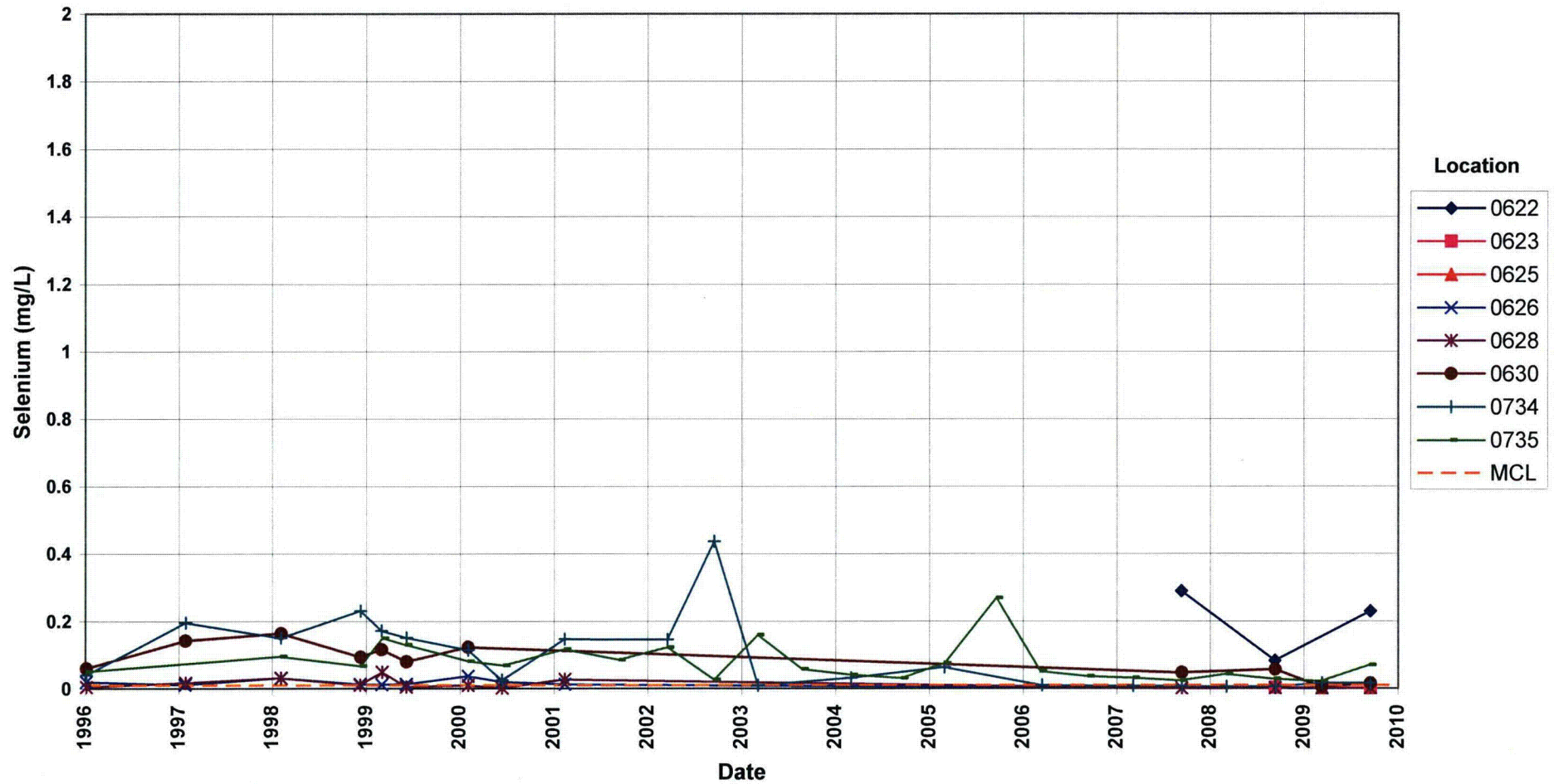
Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
40 CFR 192.02 Maximum Contaminant Level (MCL) = 10.0 mg/L



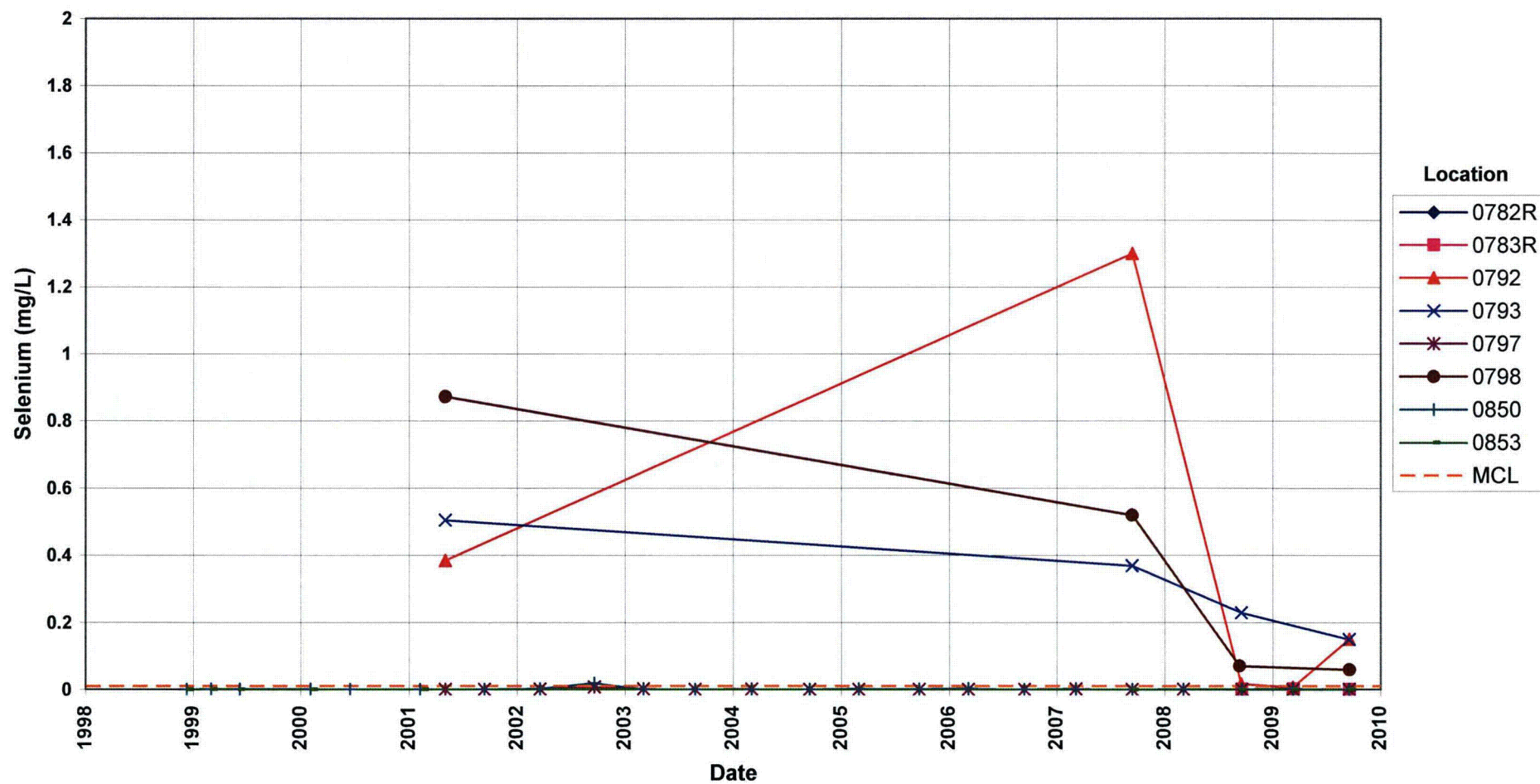
Shiprock Disposal Site (Floodplain)
Selenium Concentration
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.01 mg/L



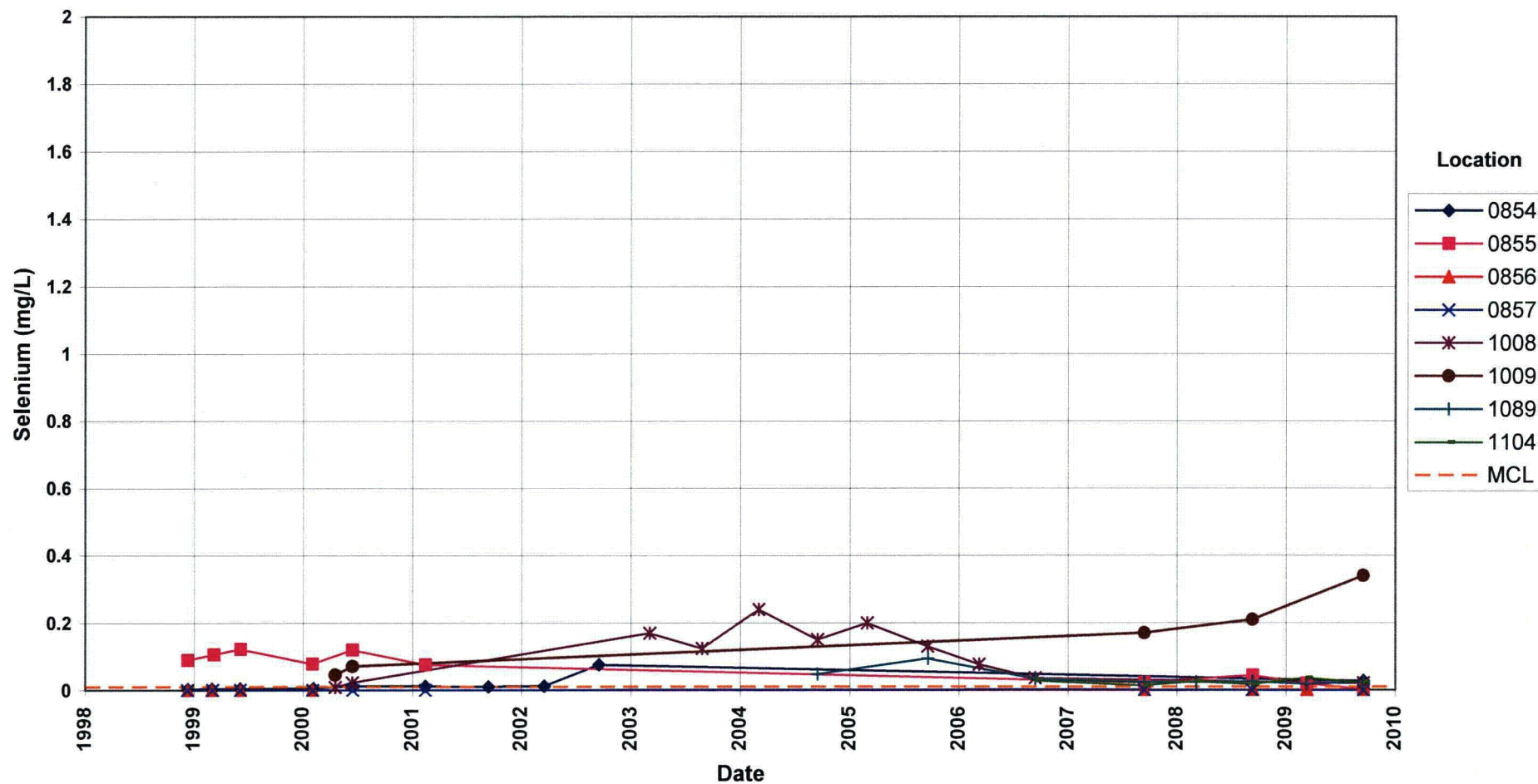
Shiprock Disposal Site (Floodplain)
Selenium Concentration
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.01 mg/L



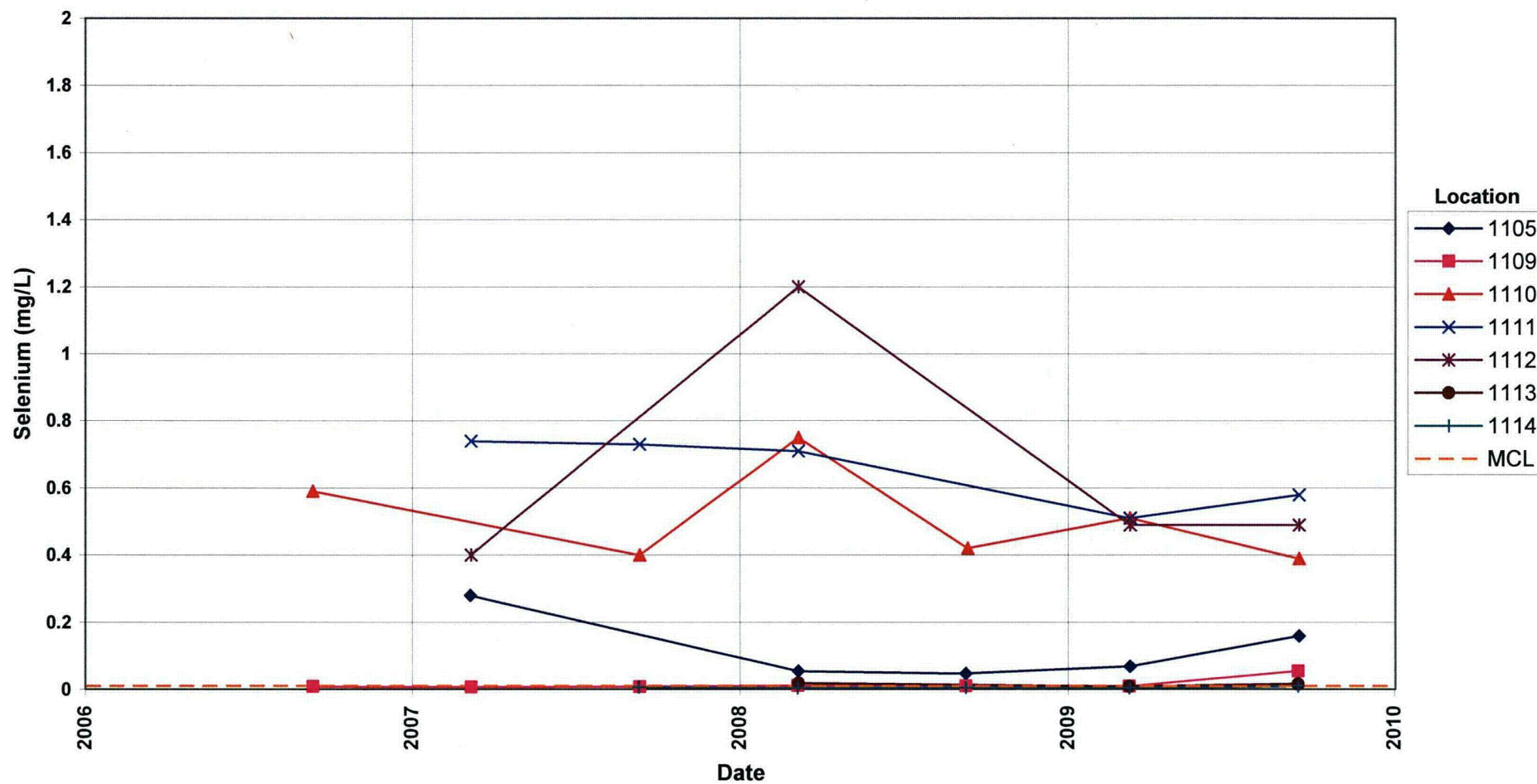
Shiprock Disposal Site (Floodplain)
Selenium Concentration
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.01 mg/L



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



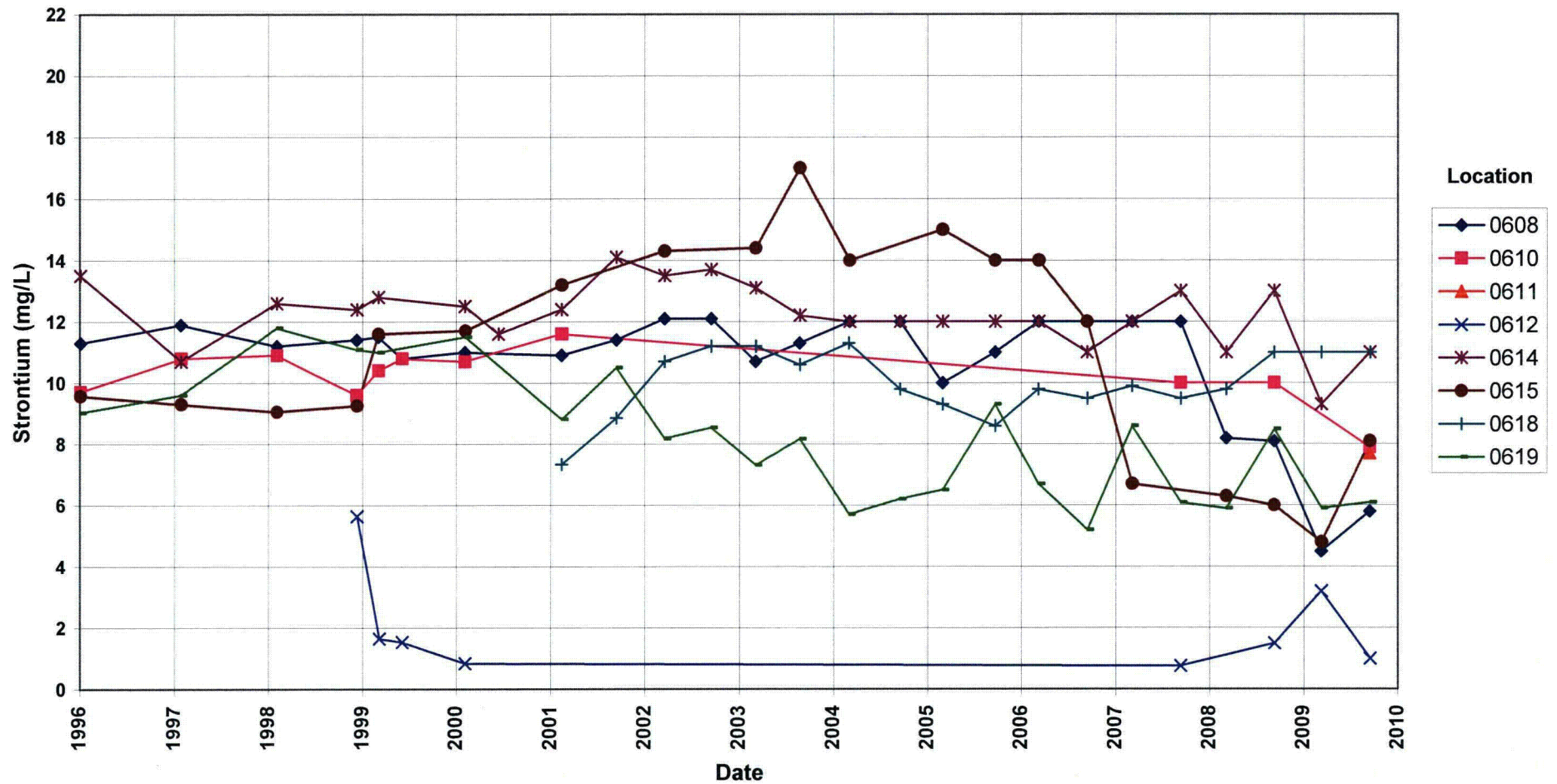
Shiprock Disposal Site (Floodplain)
Selenium Concentration
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.01 mg/L



Shiprock Disposal Site (Floodplain)

Strontium Concentration

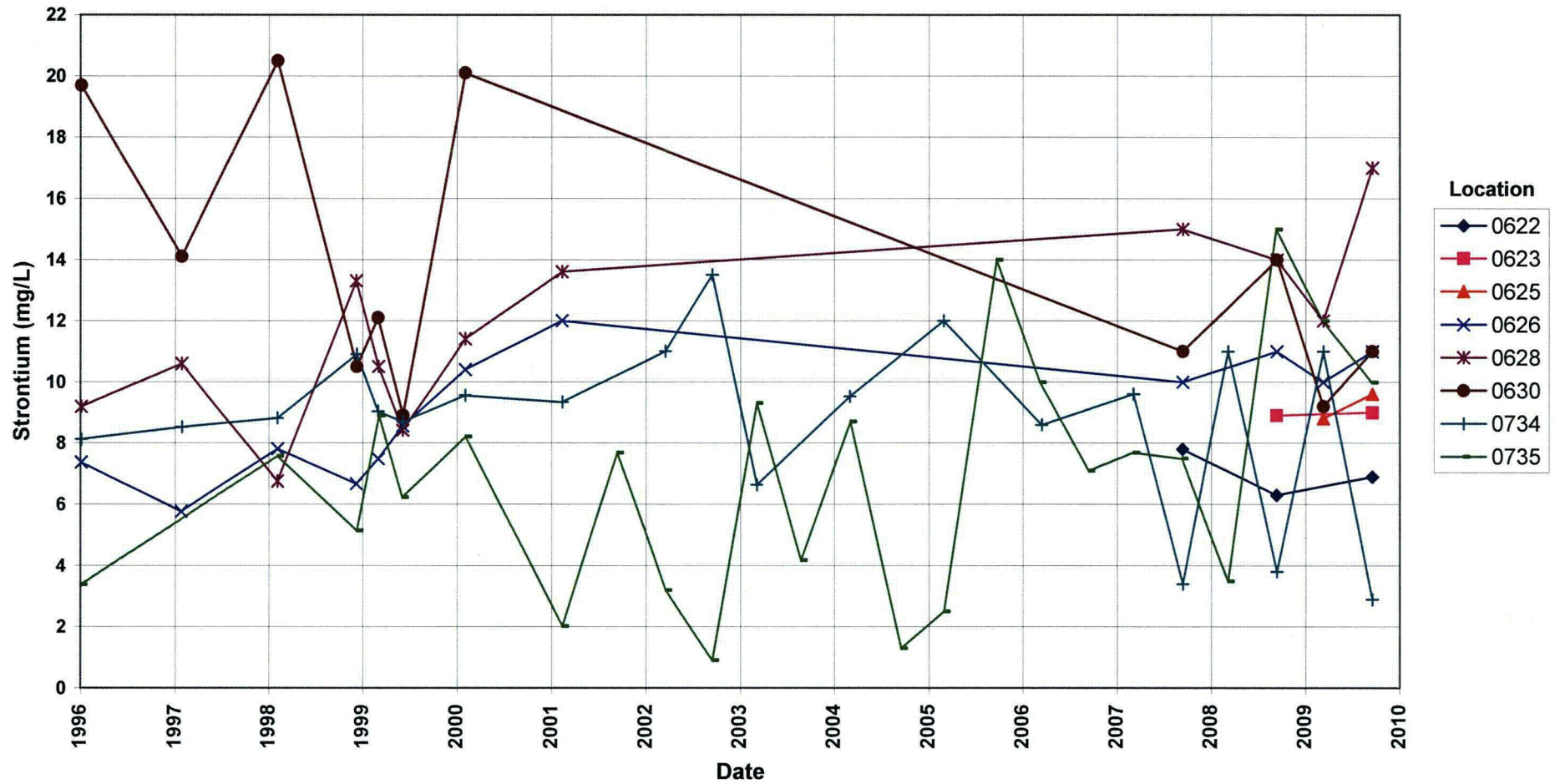
No established groundwater standard



Shiprock Disposal Site (Floodplain)

Strontium Concentration

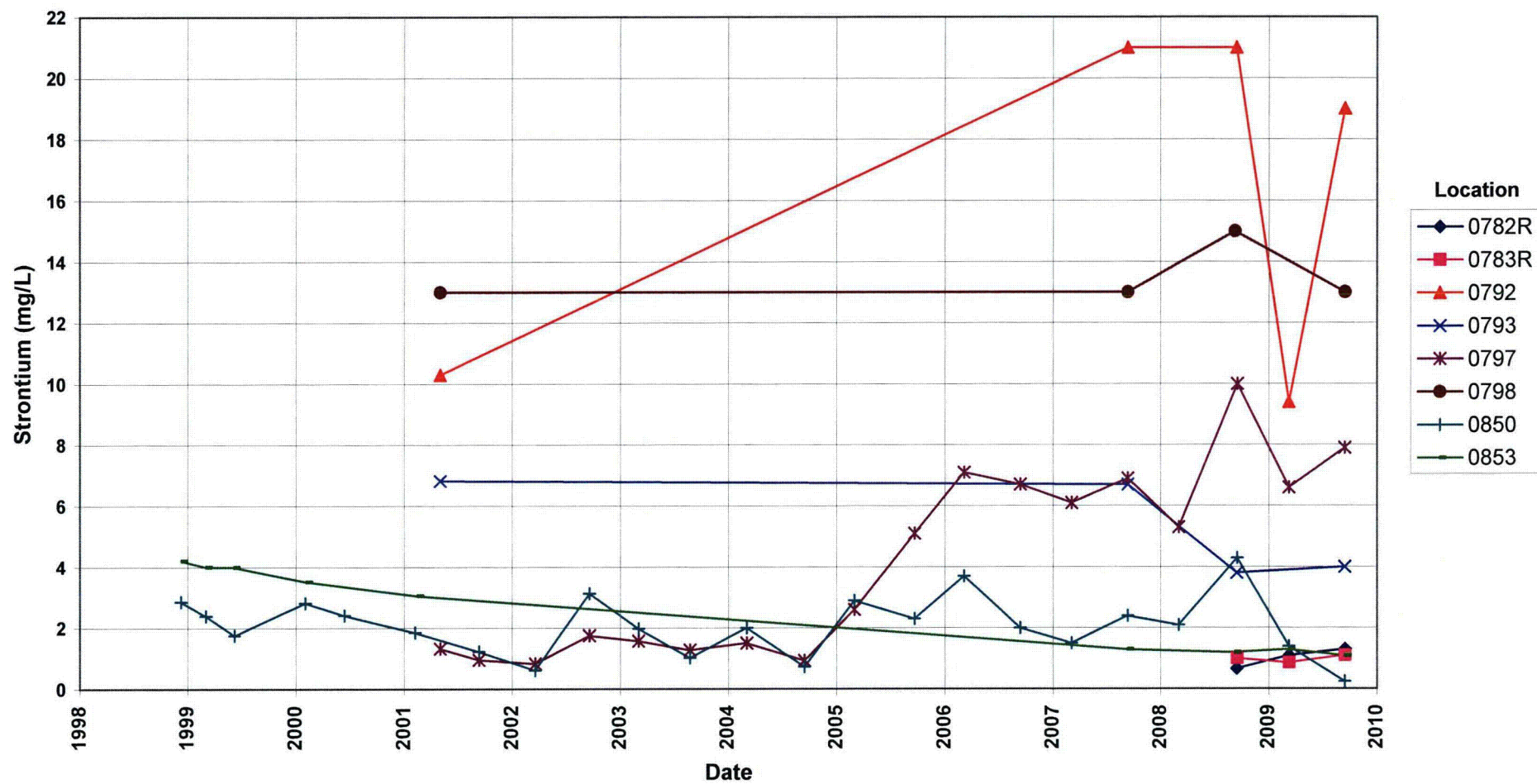
No established groundwater standard



Shiprock Disposal Site (Floodplain)

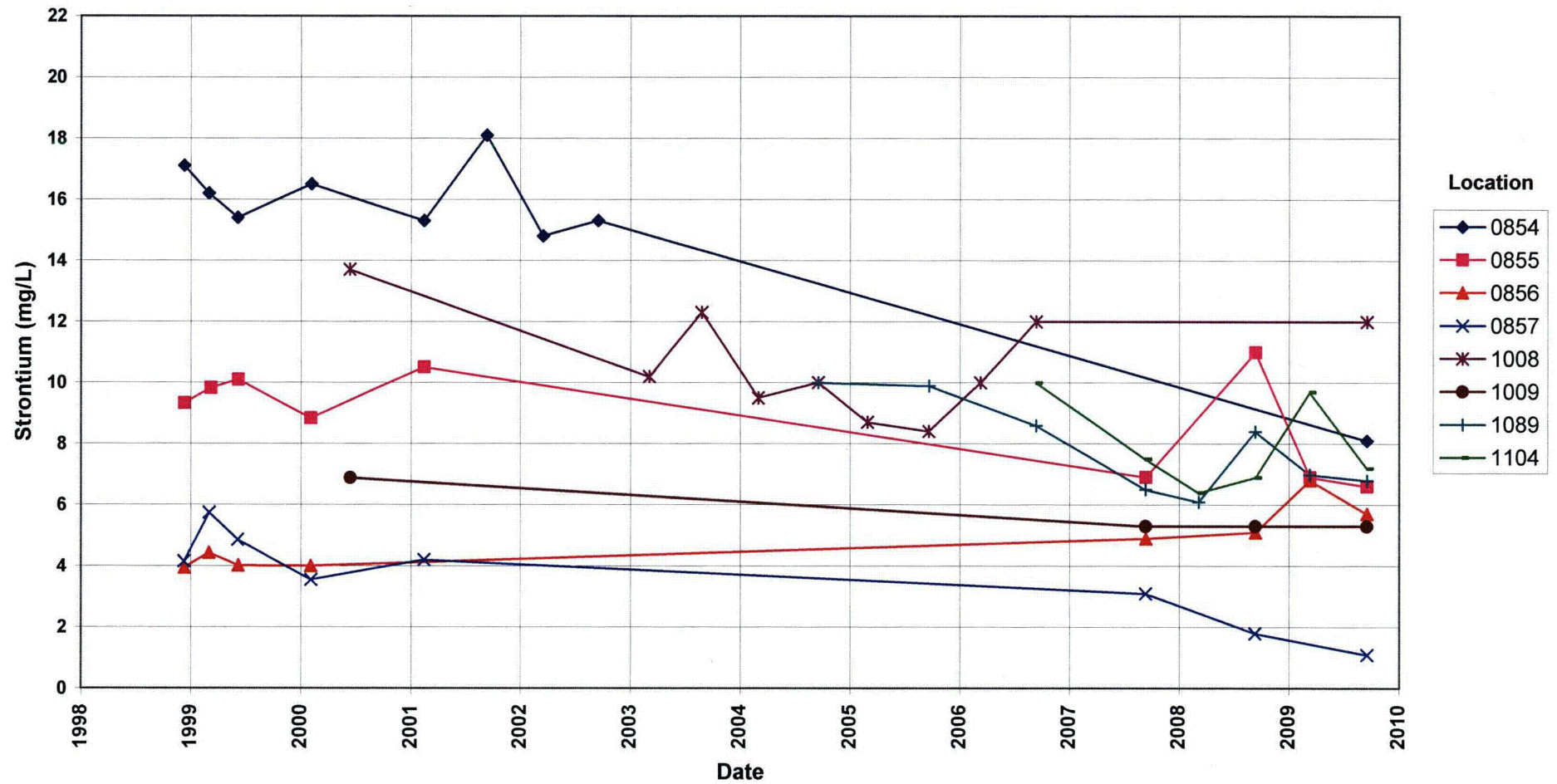
Strontium Concentration

No established groundwater standard



Shiprock Disposal Site (Floodplain) Strontium Concentration

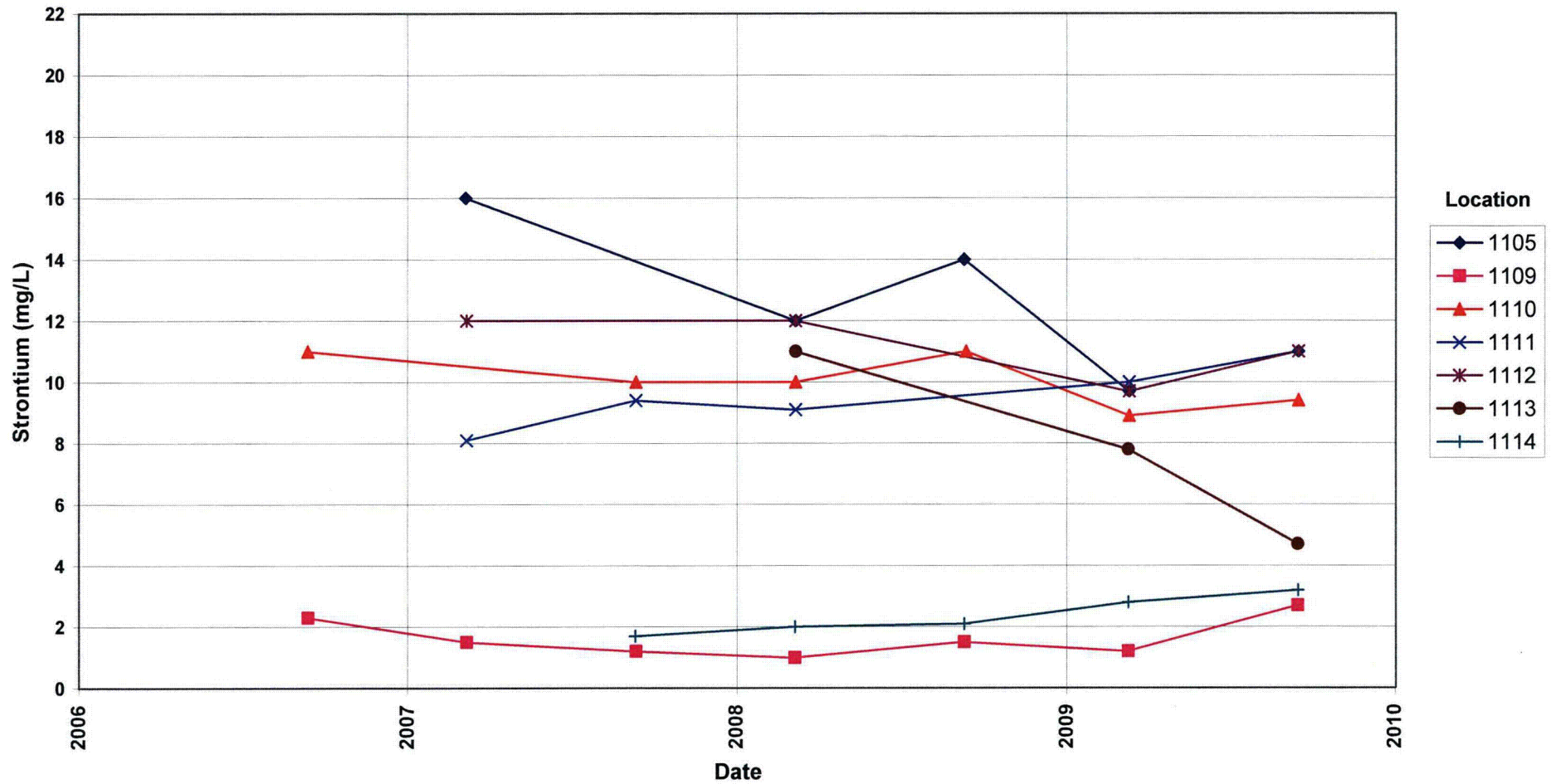
No established groundwater standard



Shiprock Disposal Site (Floodplain)

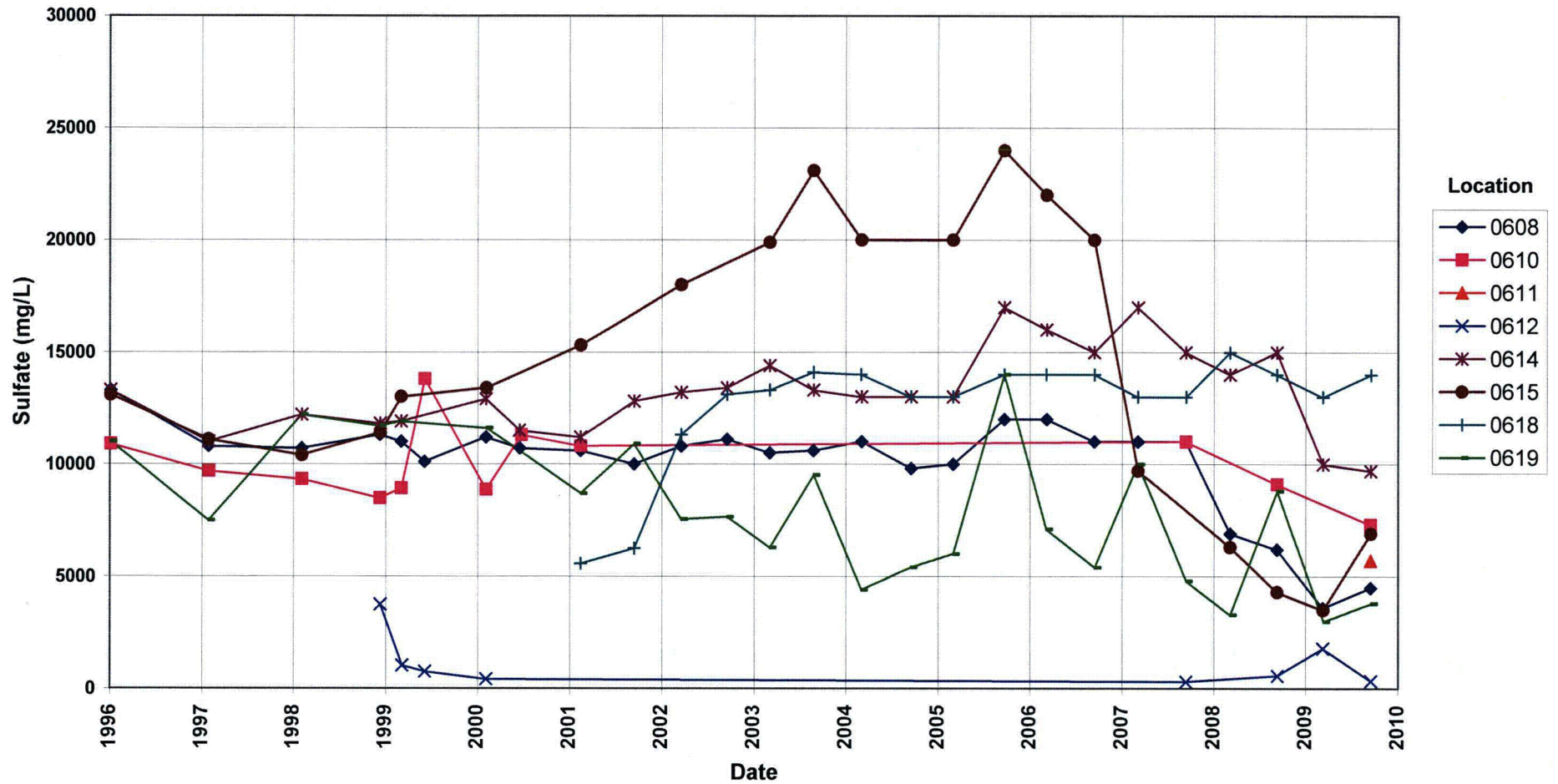
Strontium Concentration

No established groundwater standard



Shiprock Disposal Site (Floodplain) Sulfate Concentration

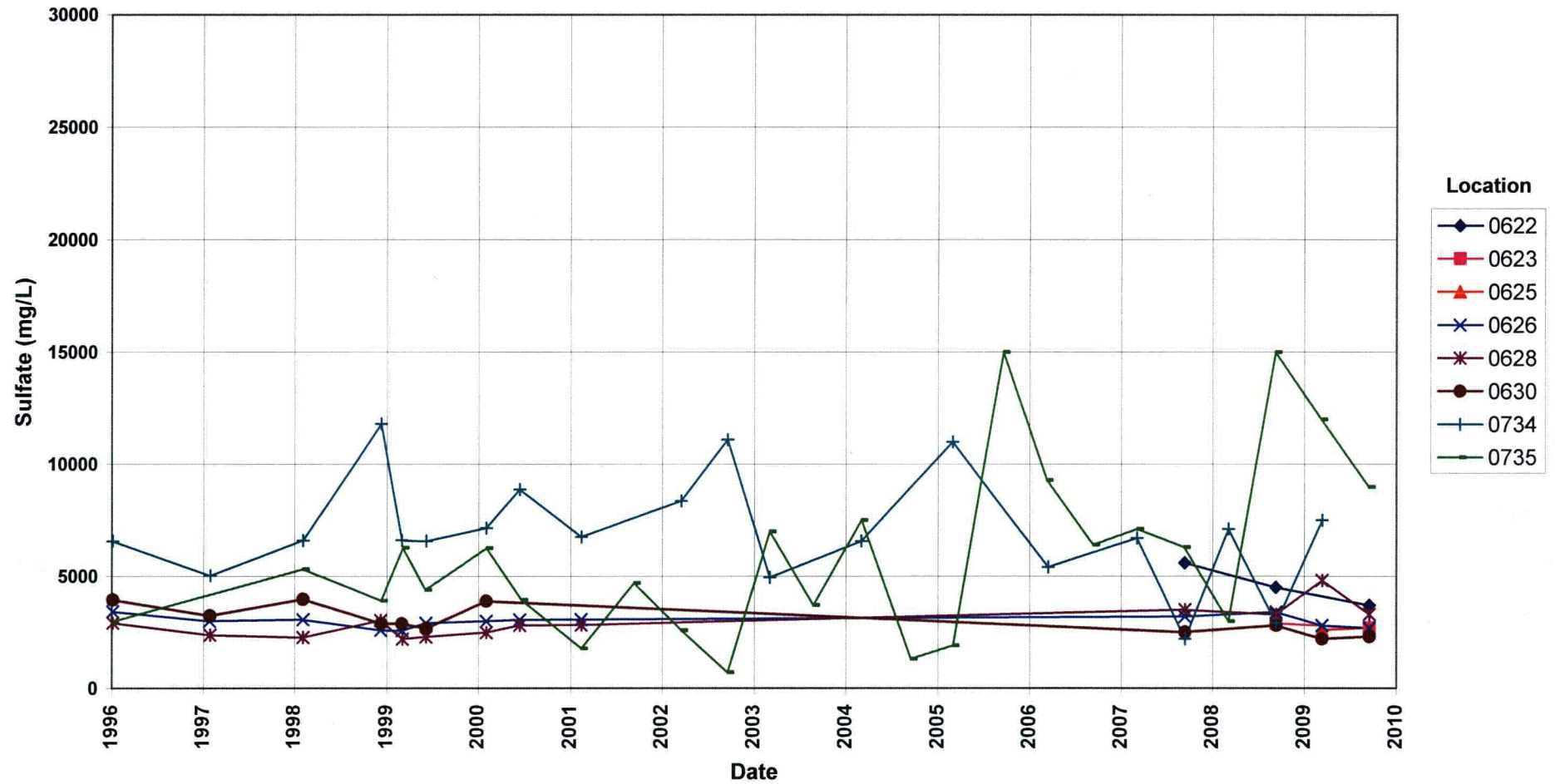
No established groundwater standard



Shiprock Disposal Site (Floodplain)

Sulfate Concentration

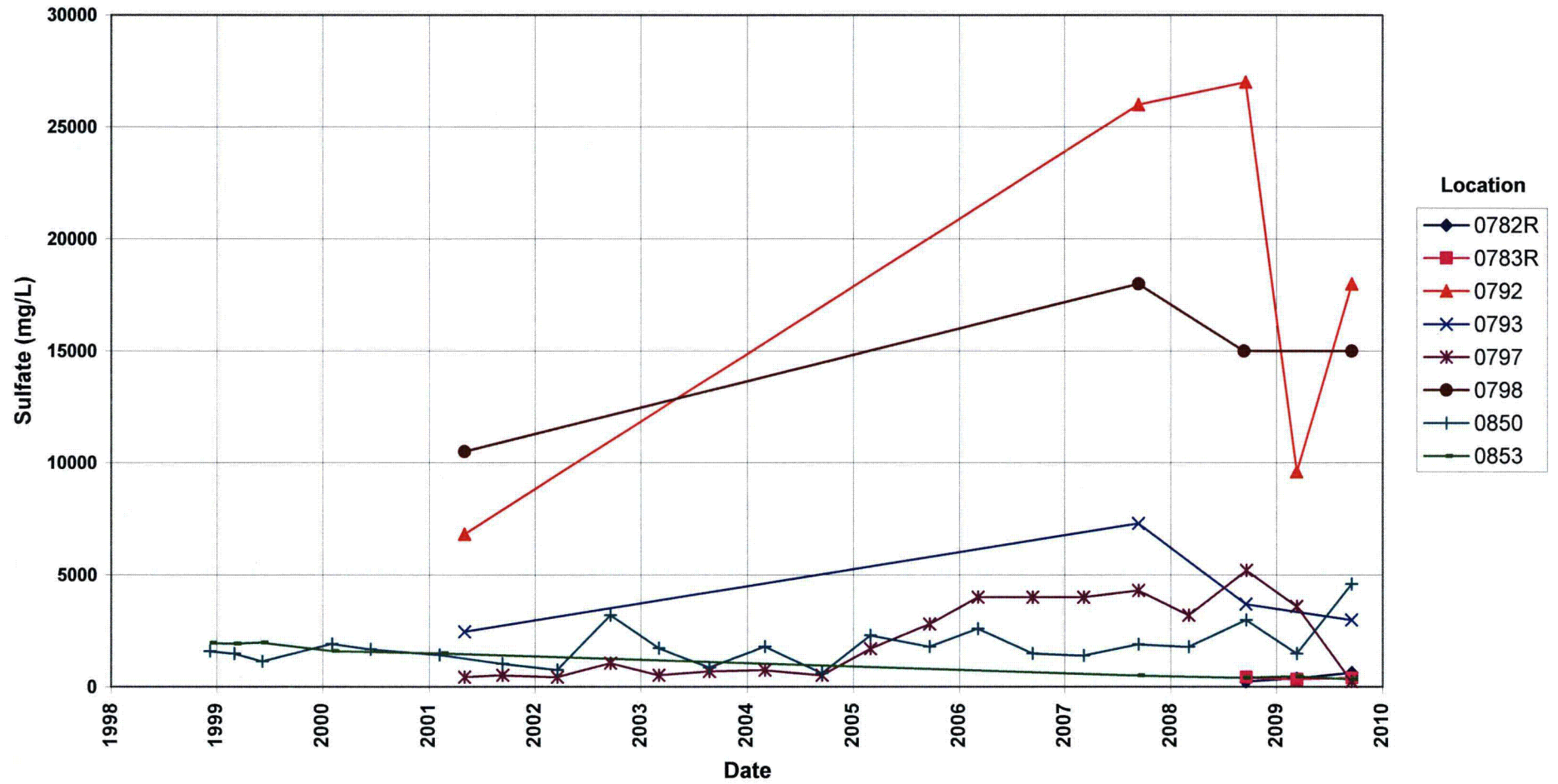
No established groundwater standard



Shiprock Disposal Site (Floodplain)

Sulfate Concentration

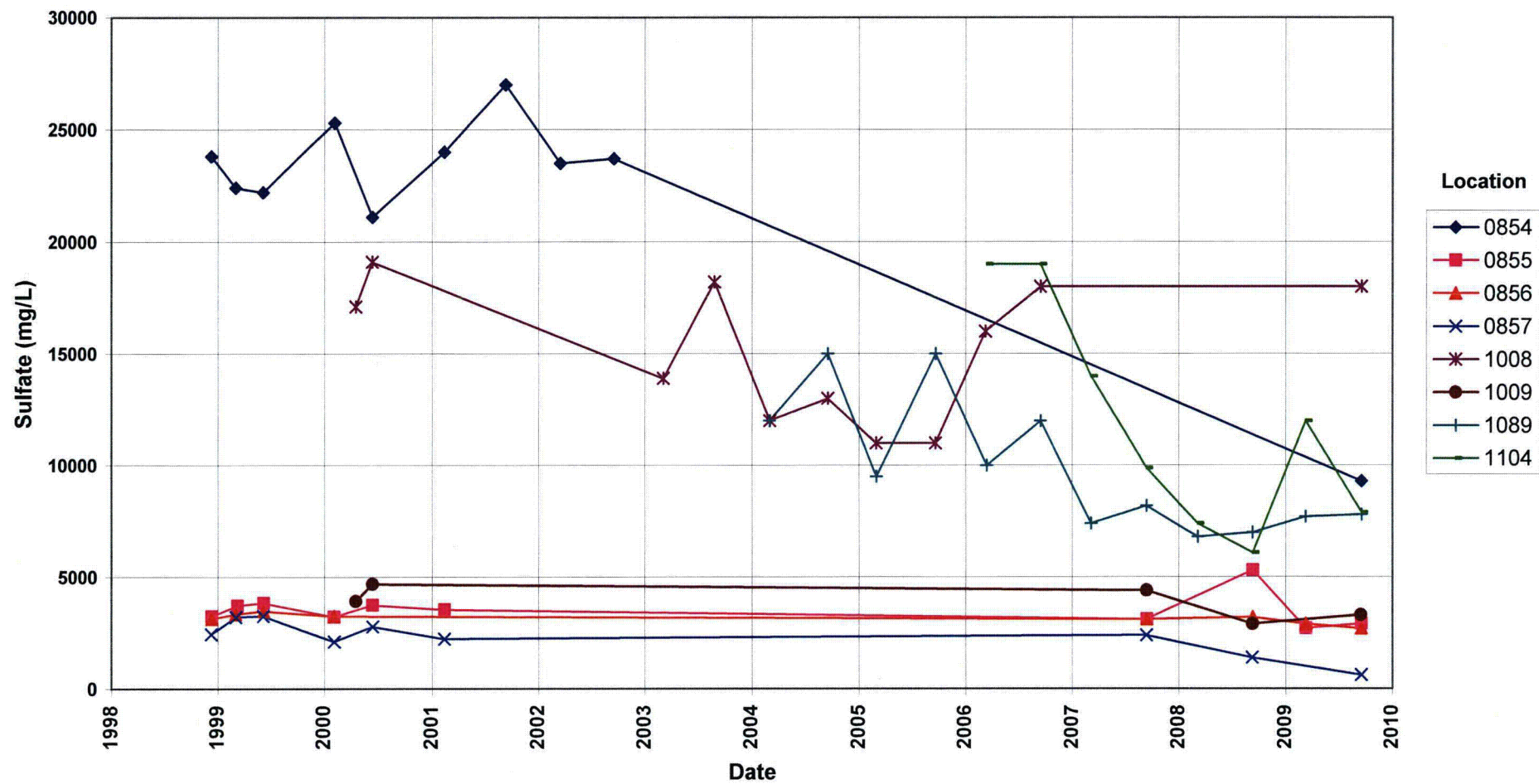
No established groundwater standard



Shiprock Disposal Site (Floodplain)

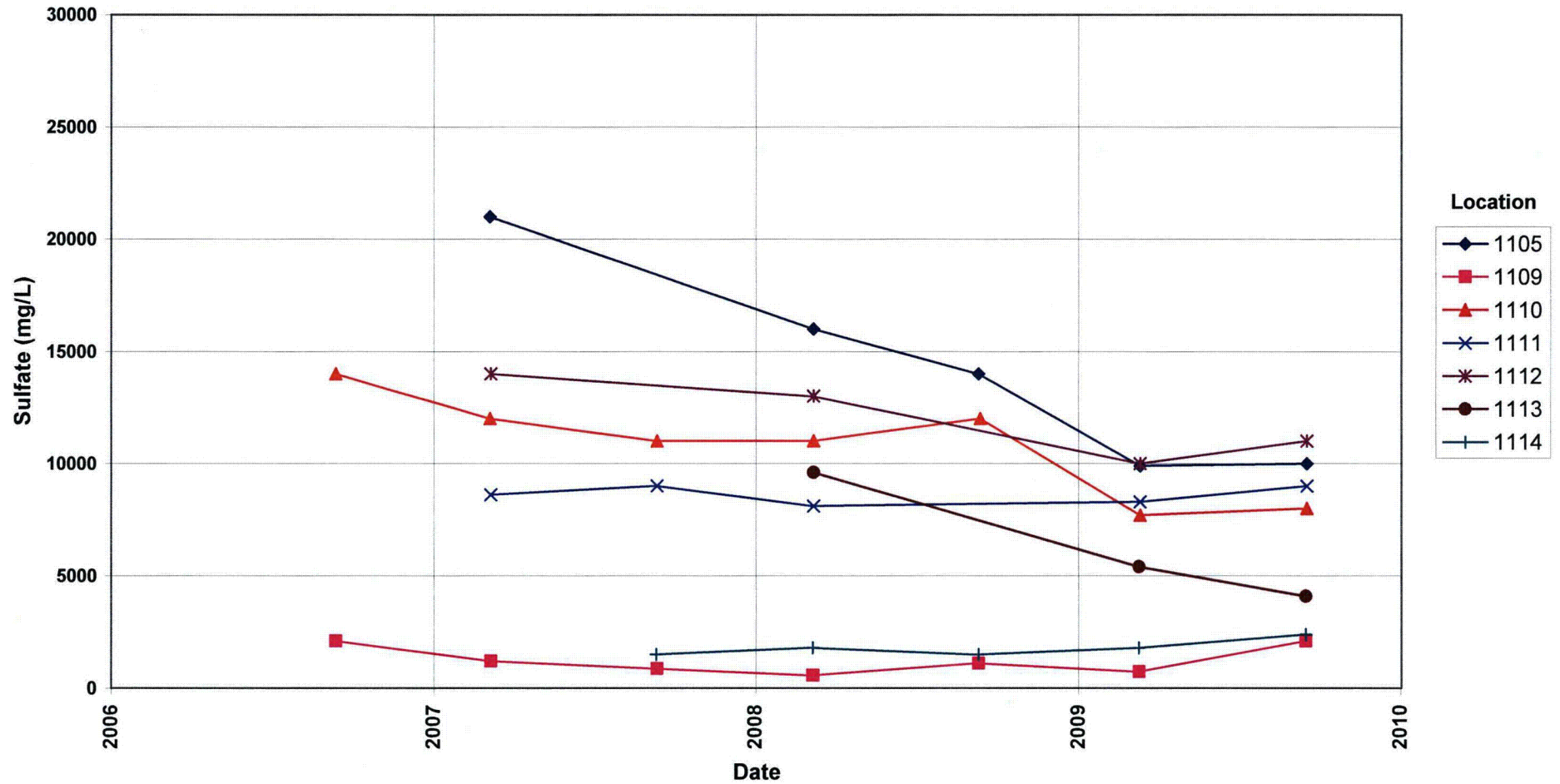
Sulfate Concentration

No established groundwater standard

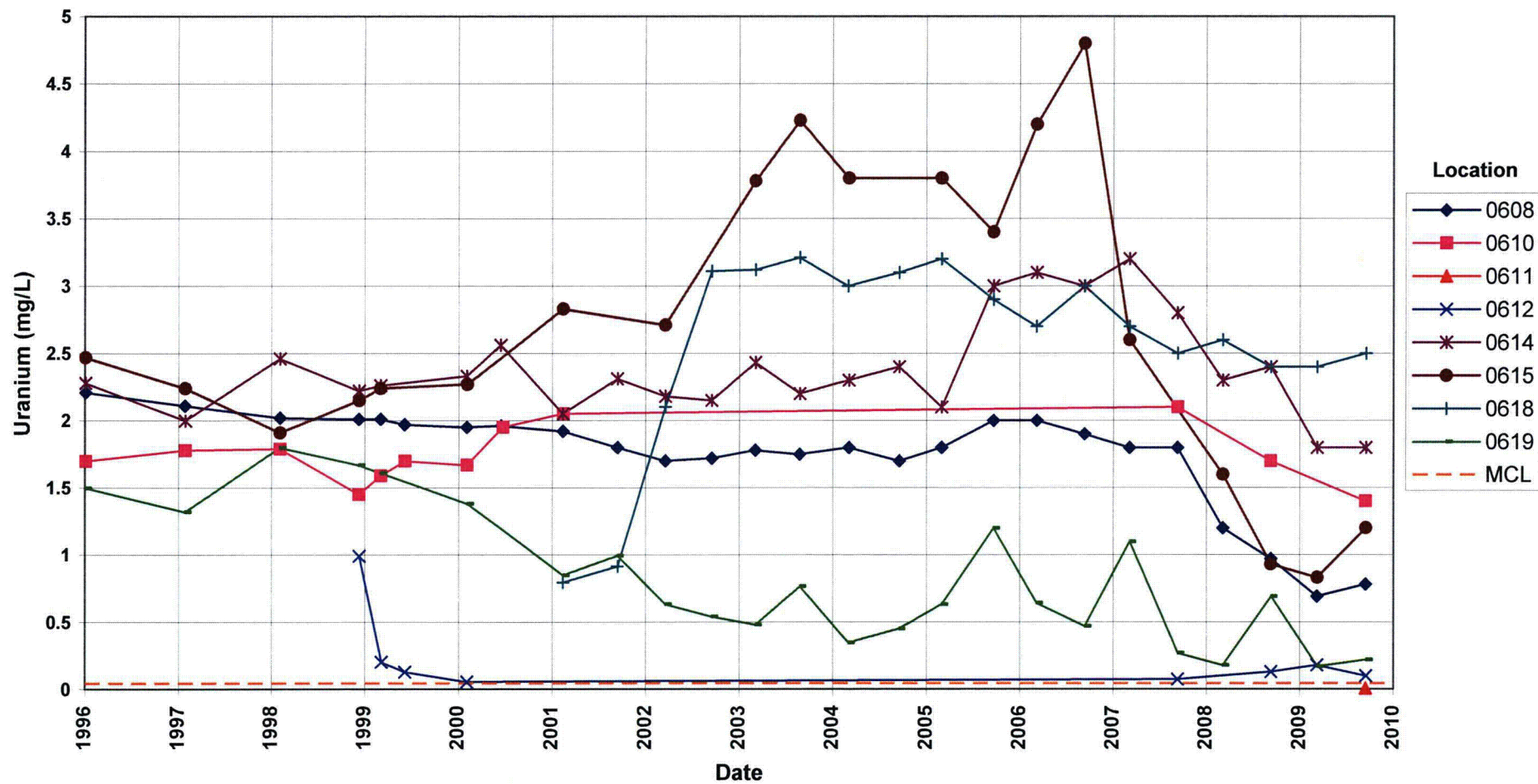


Shiprock Disposal Site (Floodplain) Sulfate Concentration

No established groundwater standard

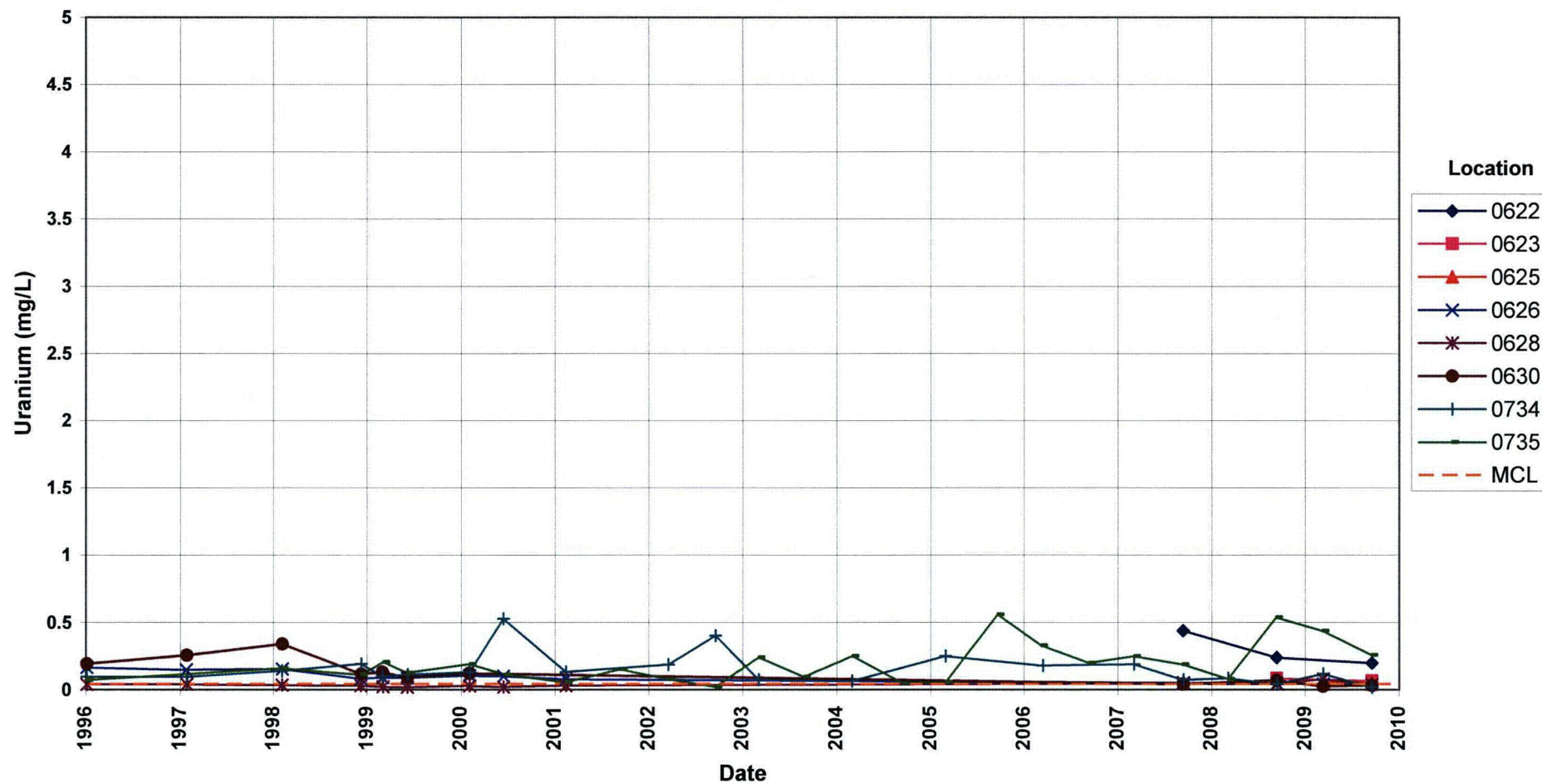


Shiprock Disposal Site (Floodplain)
Uranium Concentration
 40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.044 mg/L



Shiprock Disposal Site (Floodplain) Uranium Concentration

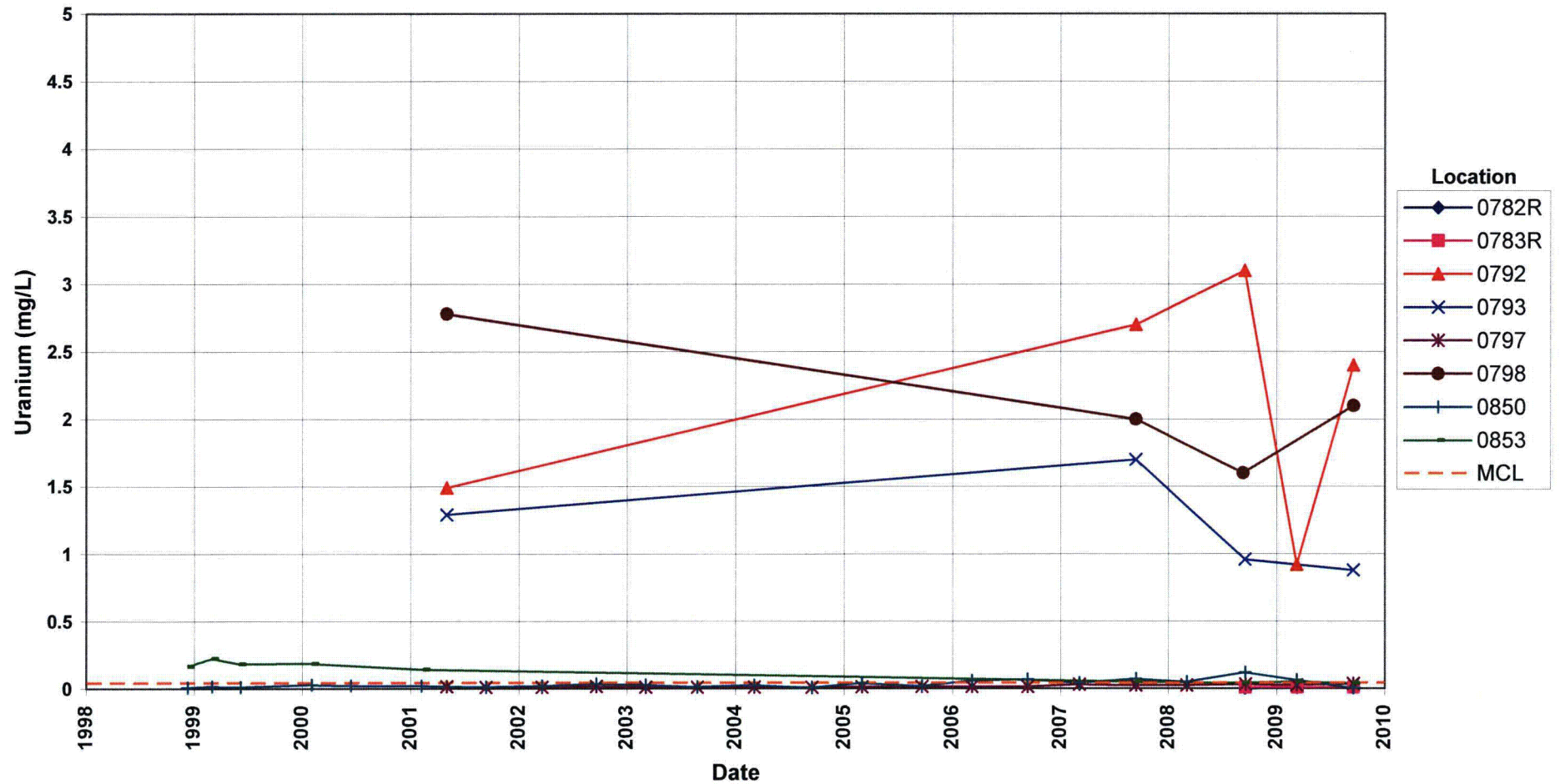
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.044 mg/L



Shiprock Disposal Site (Floodplain)

Uranium Concentration

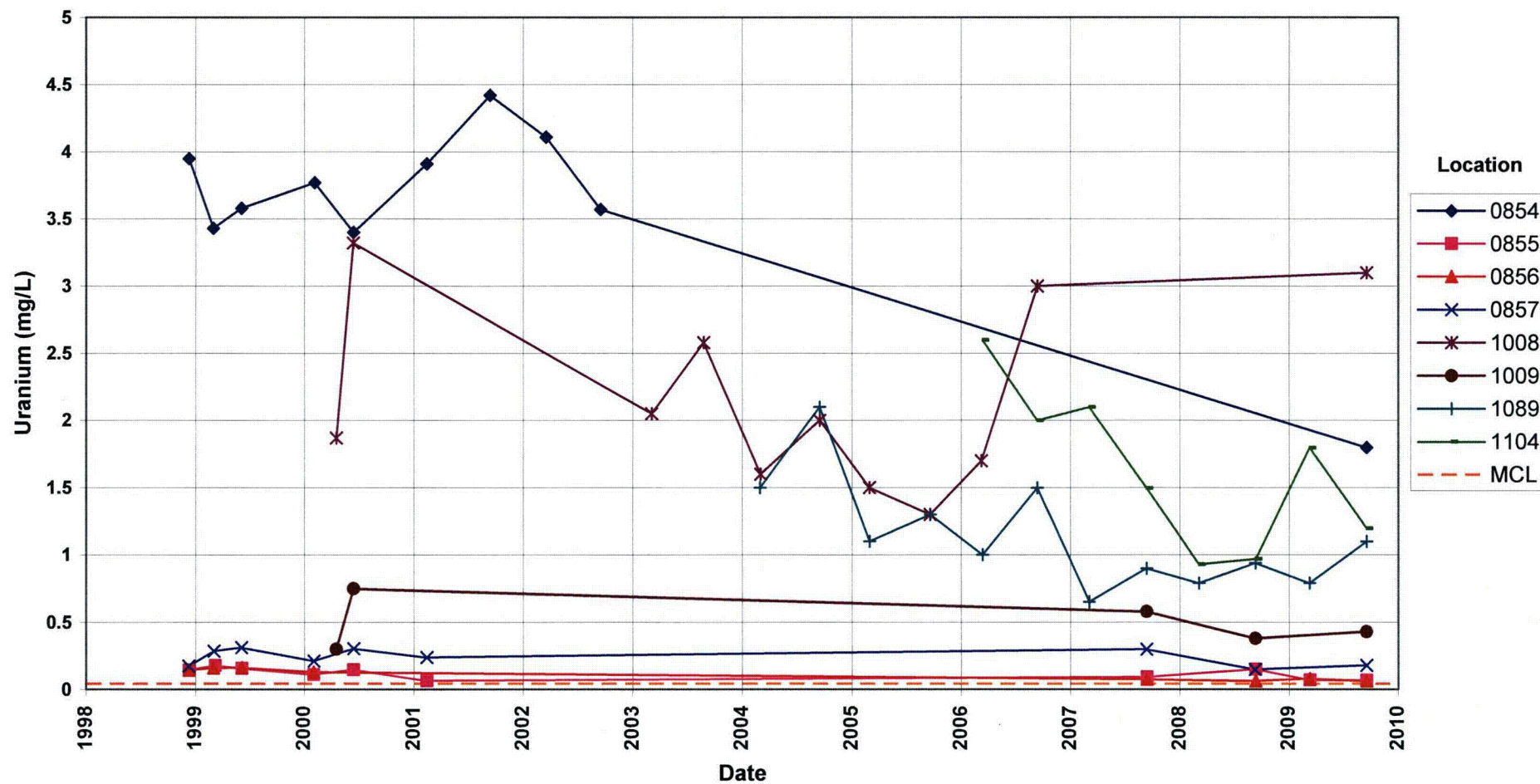
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.044 mg/L



Shiprock Disposal Site (Floodplain)

Uranium Concentration

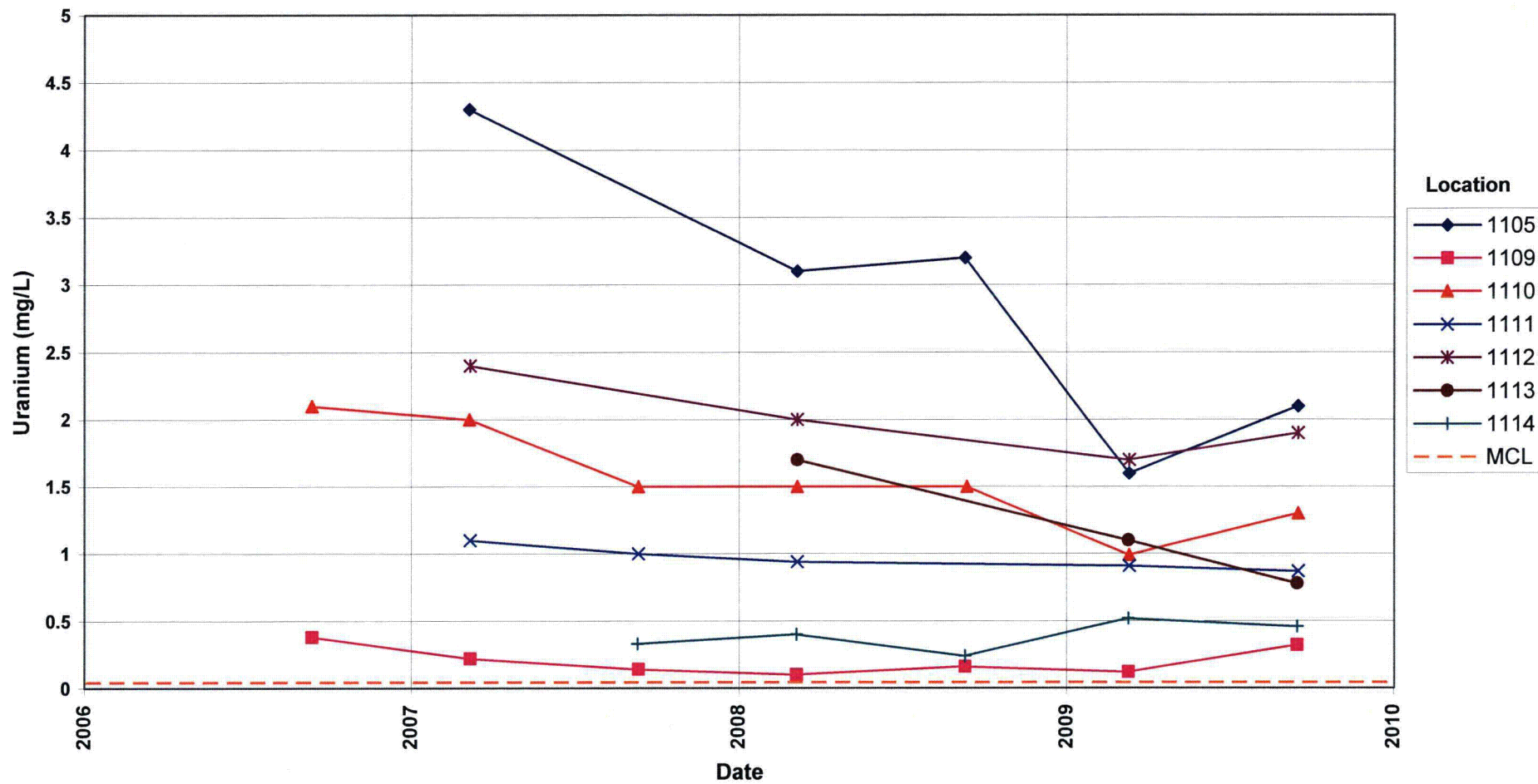
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.044 mg/L



Shiprock Disposal Site (Floodplain)

Uranium Concentration

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

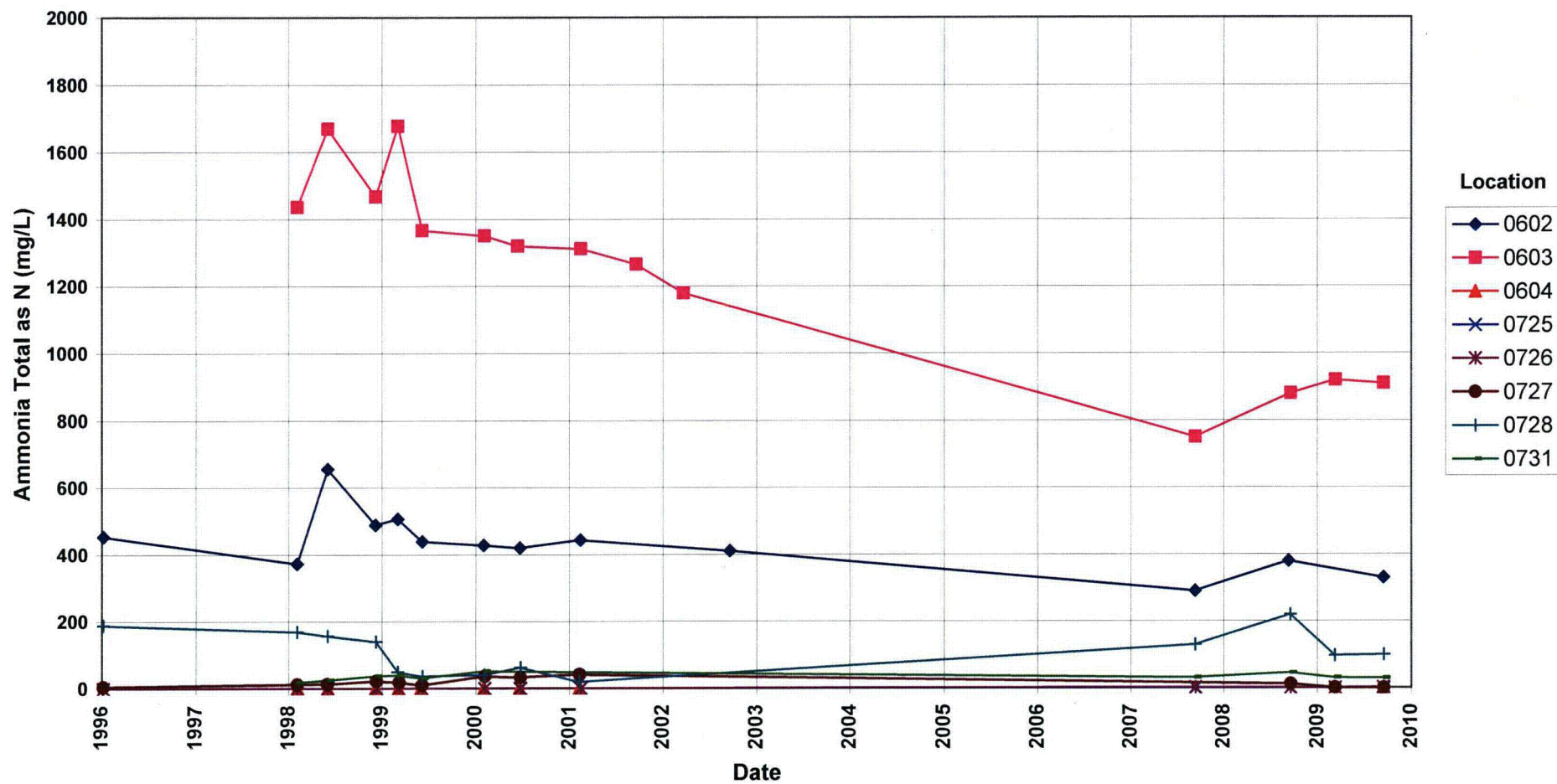


This page intentionally left blank

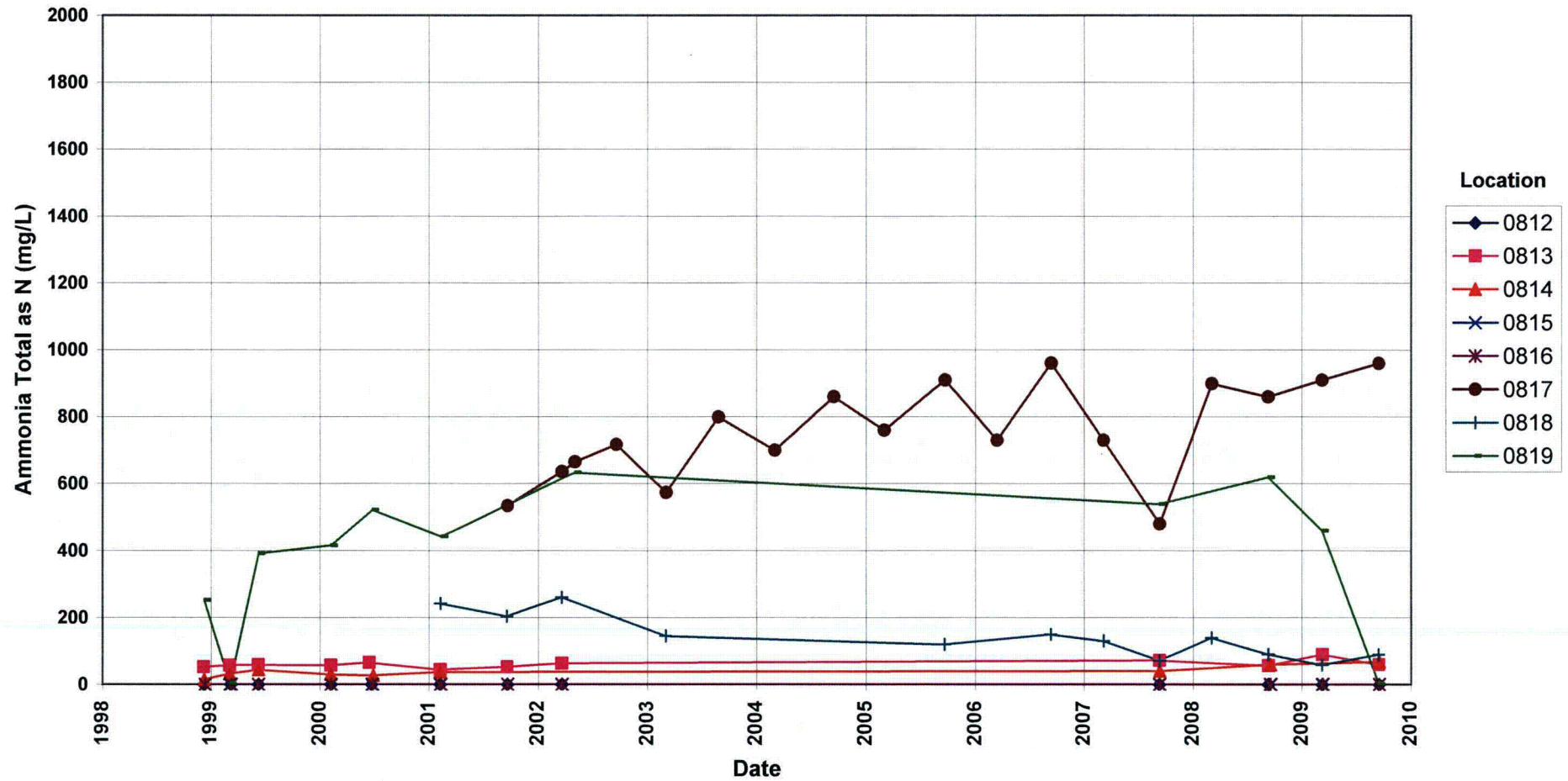
**Time-Concentration Graphs
Terrace Groundwater Locations**

This page intentionally left blank

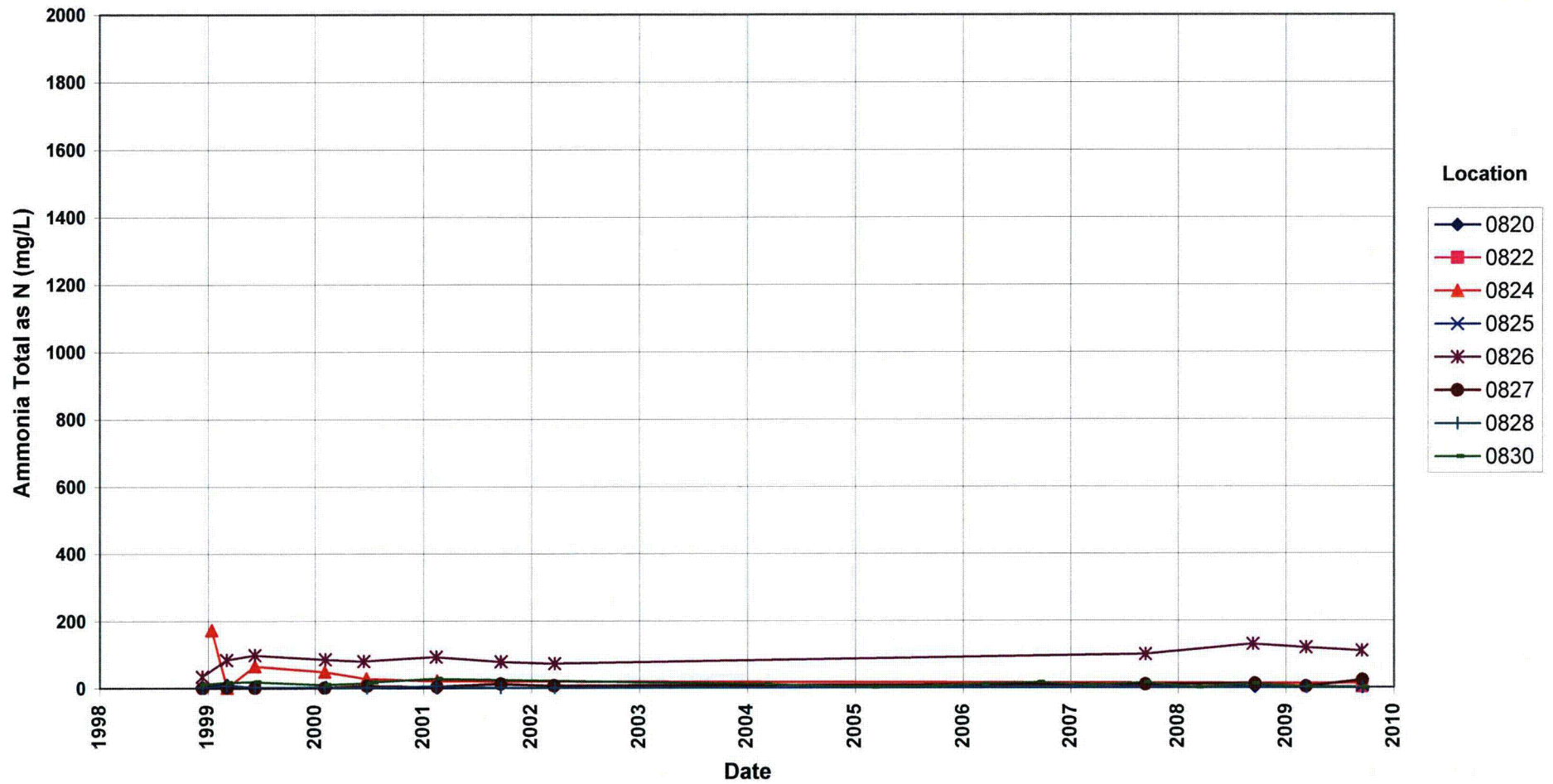
Shiprock Disposal Site (Terrace) **Ammonia Total as N Concentration** No established groundwater standard



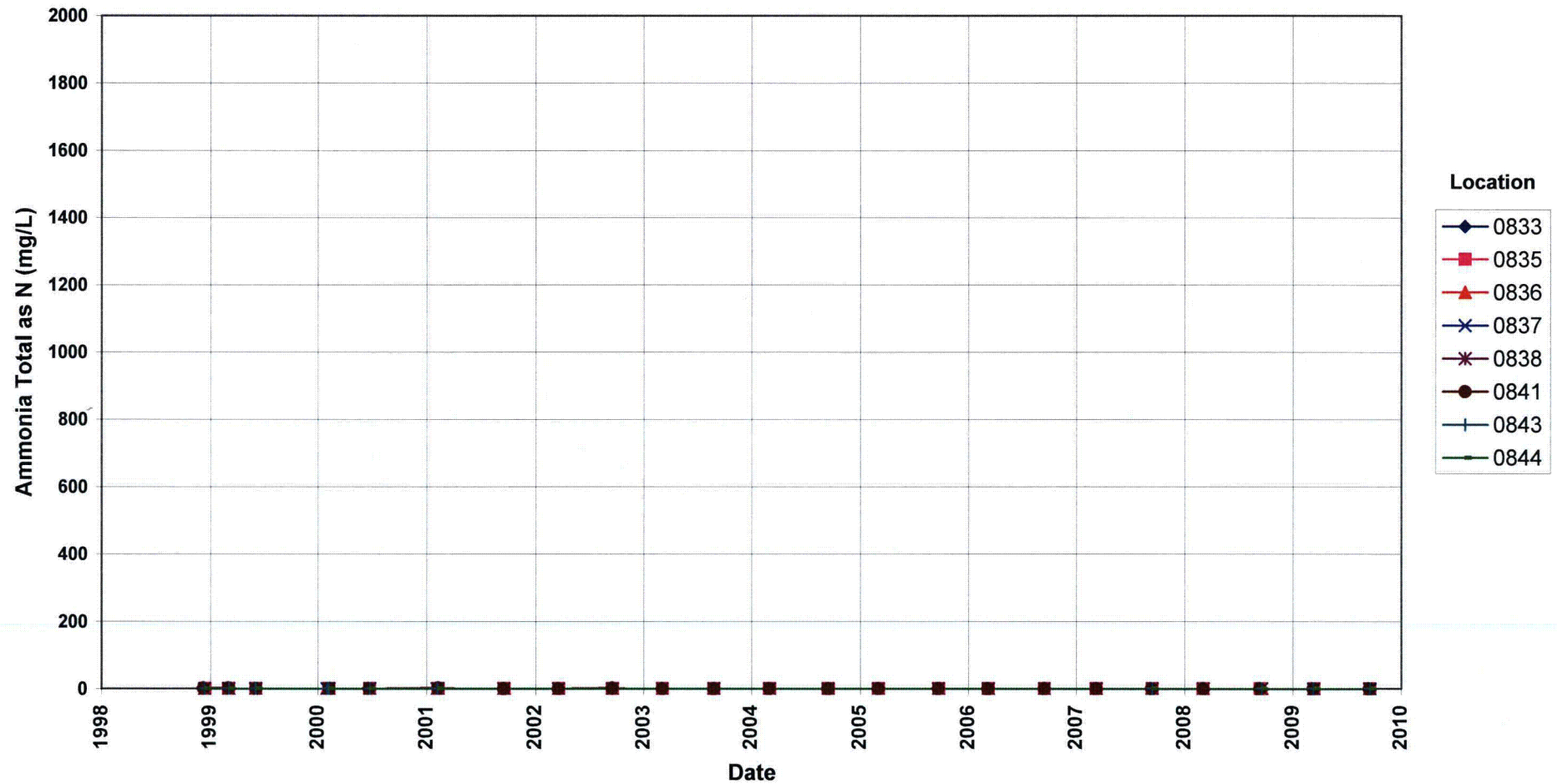
Shiprock Disposal Site (Terrace)
Ammonia Total as N Concentration
No established groundwater standard



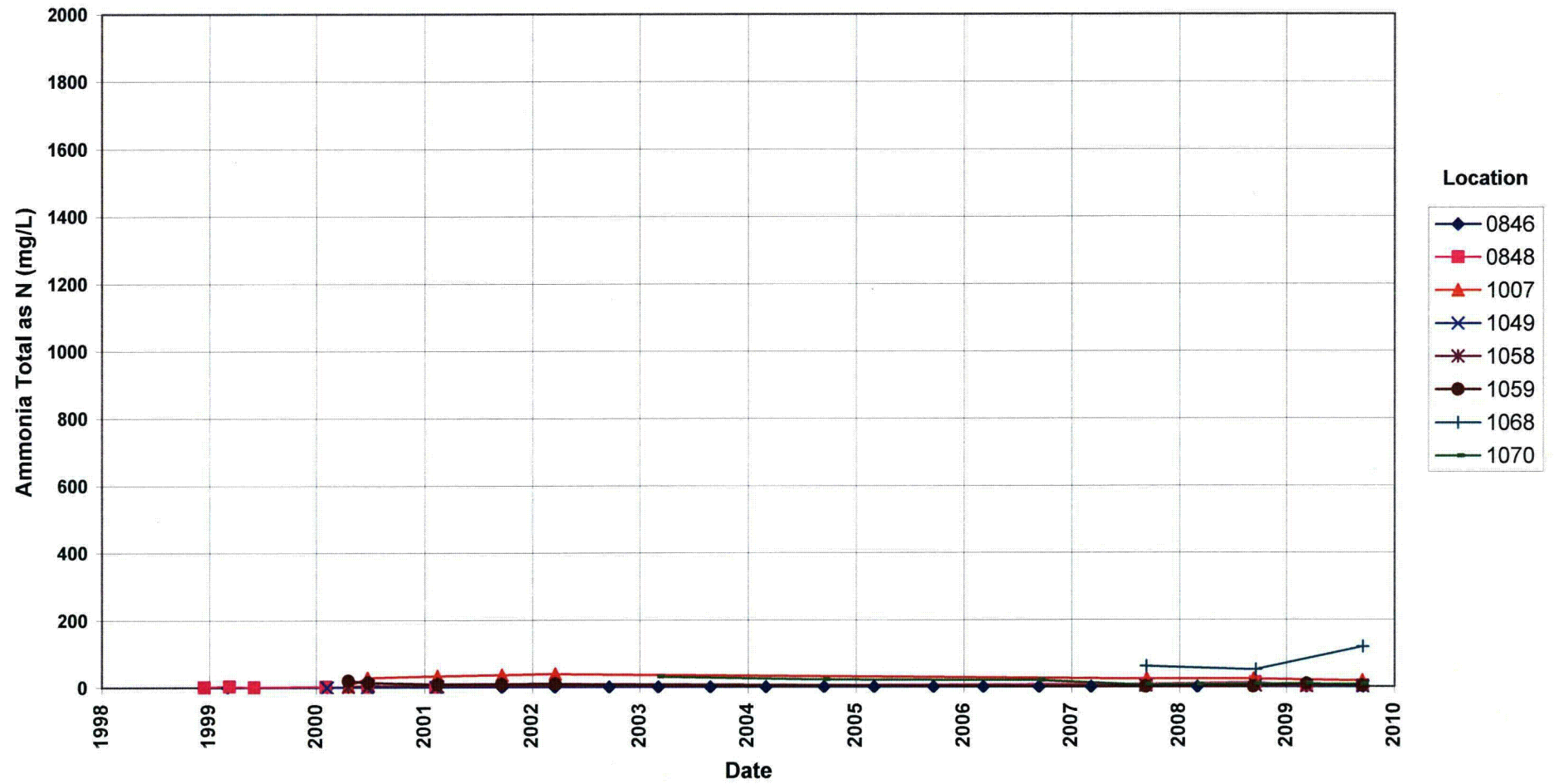
Shiprock Disposal Site (Terrace)
Ammonia Total as N Concentration
No established groundwater standard



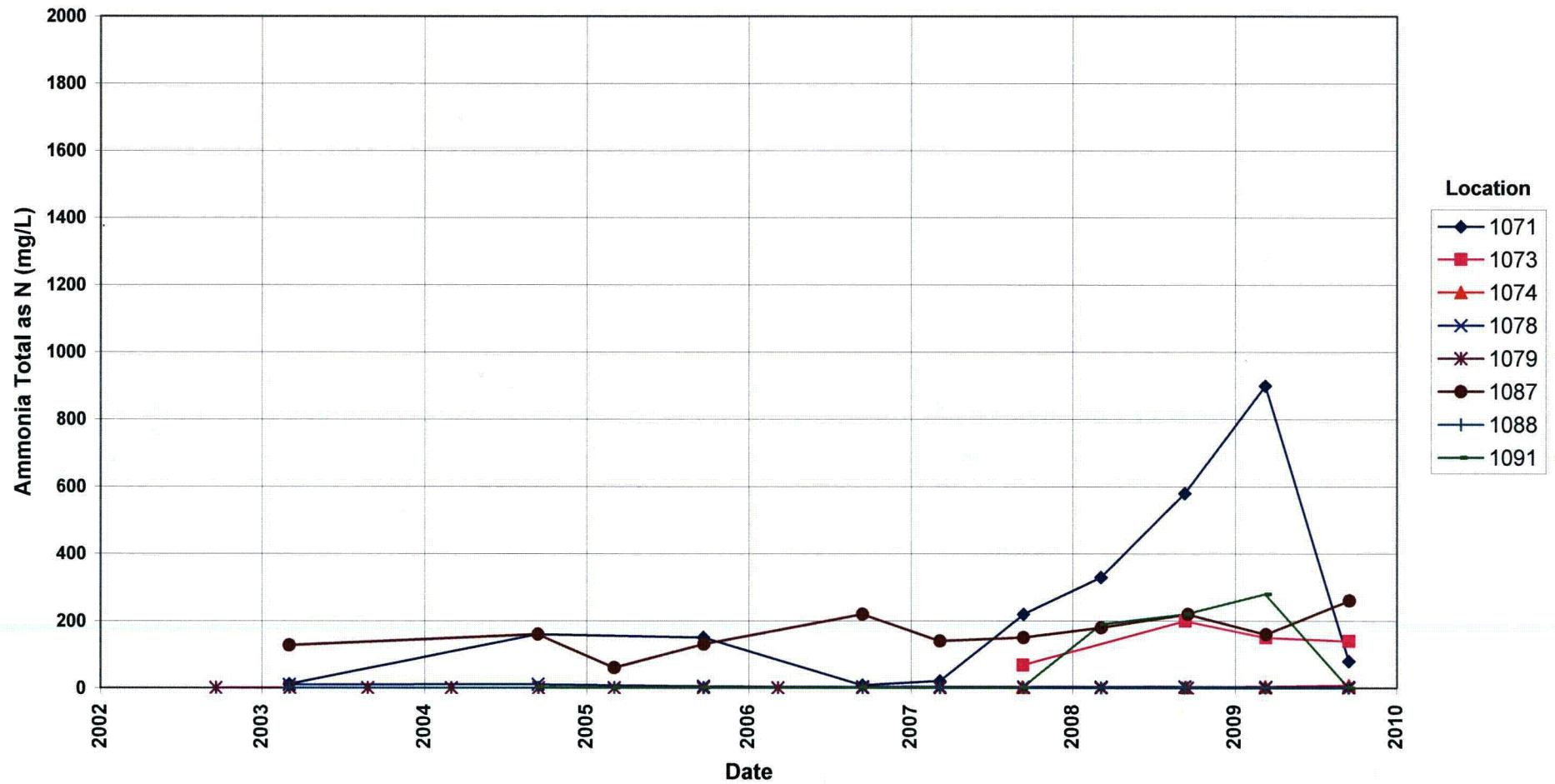
Shiprock Disposal Site (Terrace)
Ammonia Total as N Concentration
No established groundwater standard



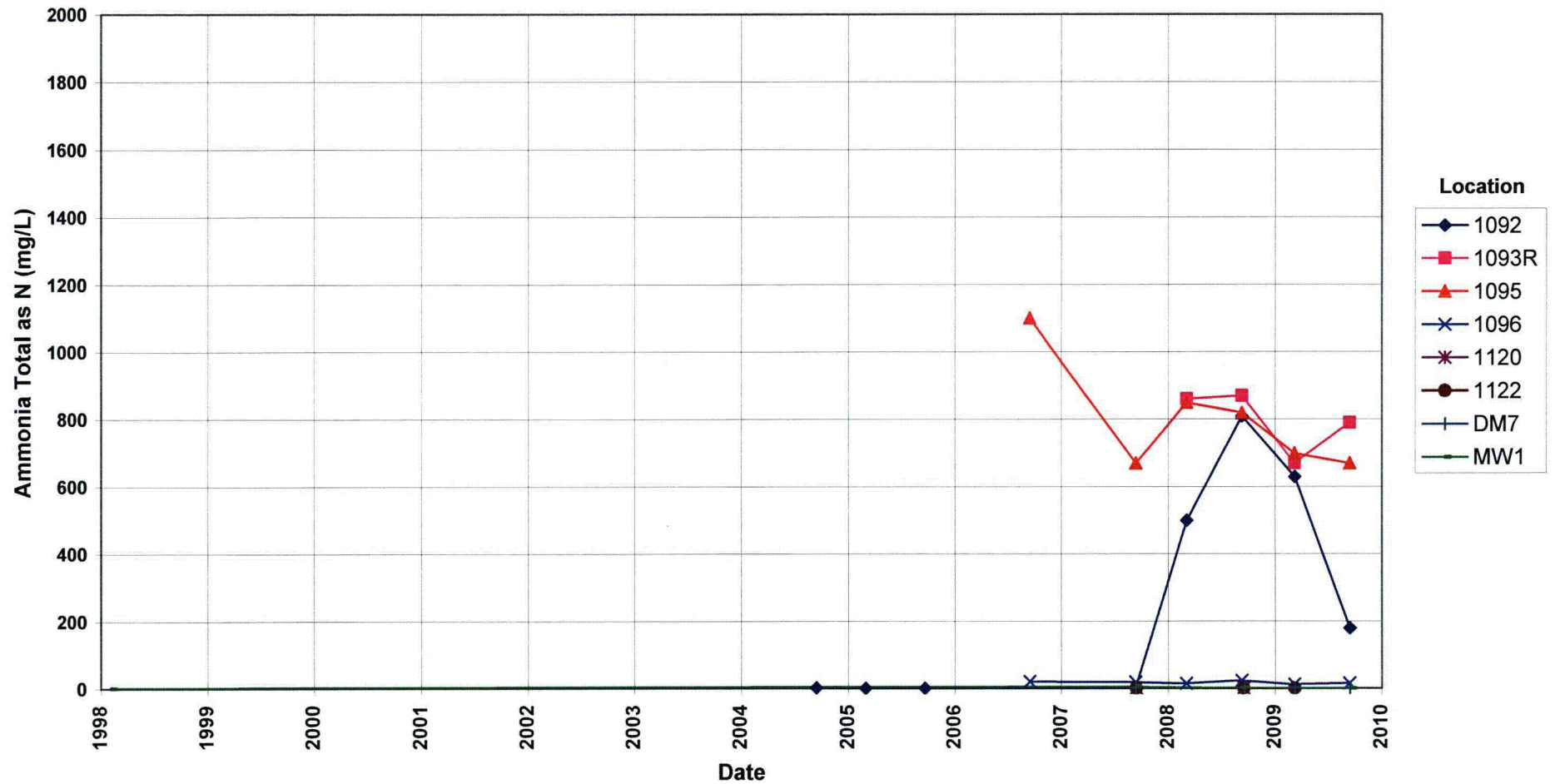
Shiprock Disposal Site (Terrace)
Ammonia Total as N Concentration
No established groundwater standard



Shiprock Disposal Site (Terrace)
Ammonia Total as N Concentration
No established groundwater standard

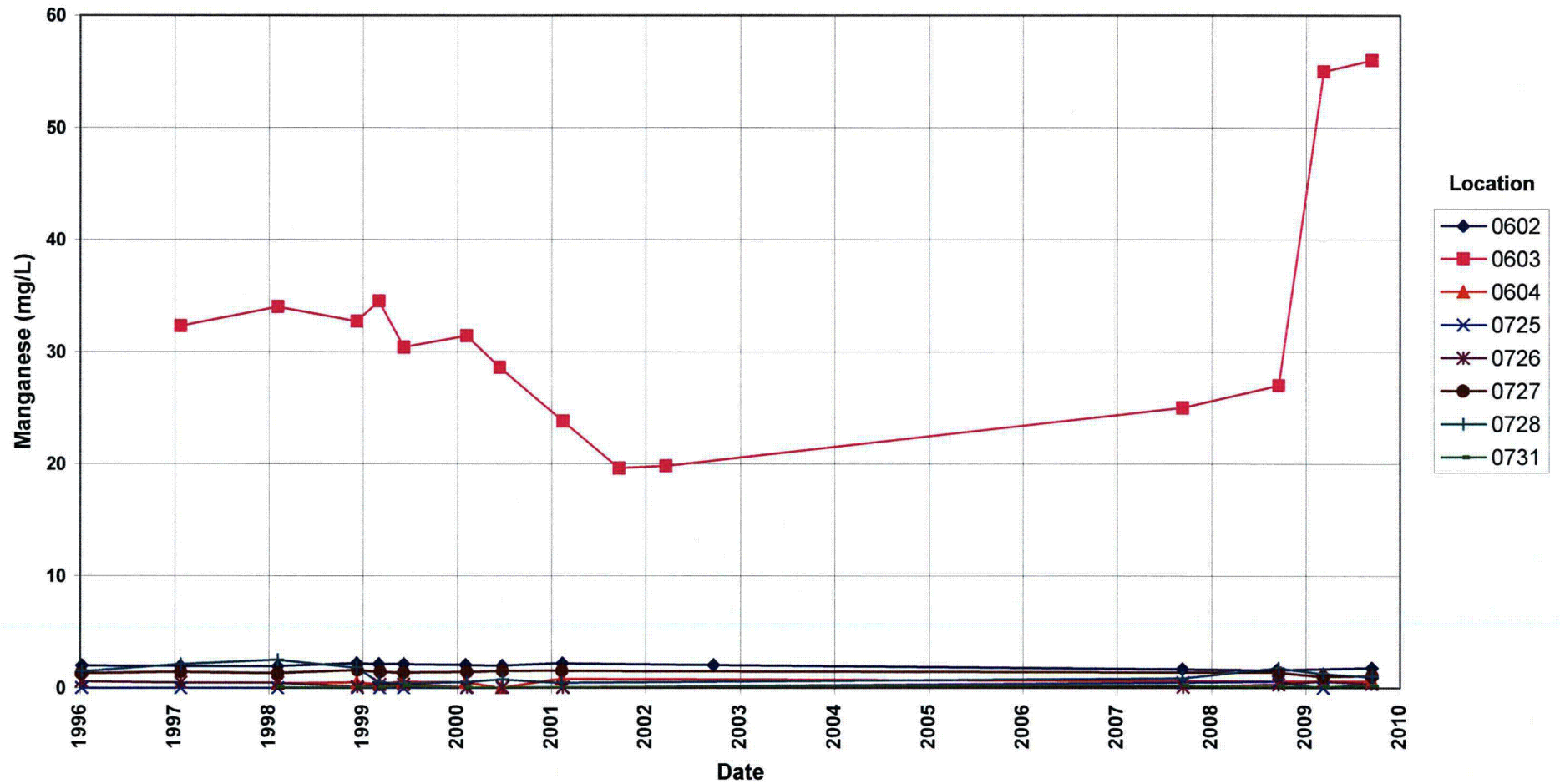


Shiprock Disposal Site (Terrace)
Ammonia Total as N Concentration
No established groundwater standard



Shiprock Disposal Site (Terrace) Manganese Concentration

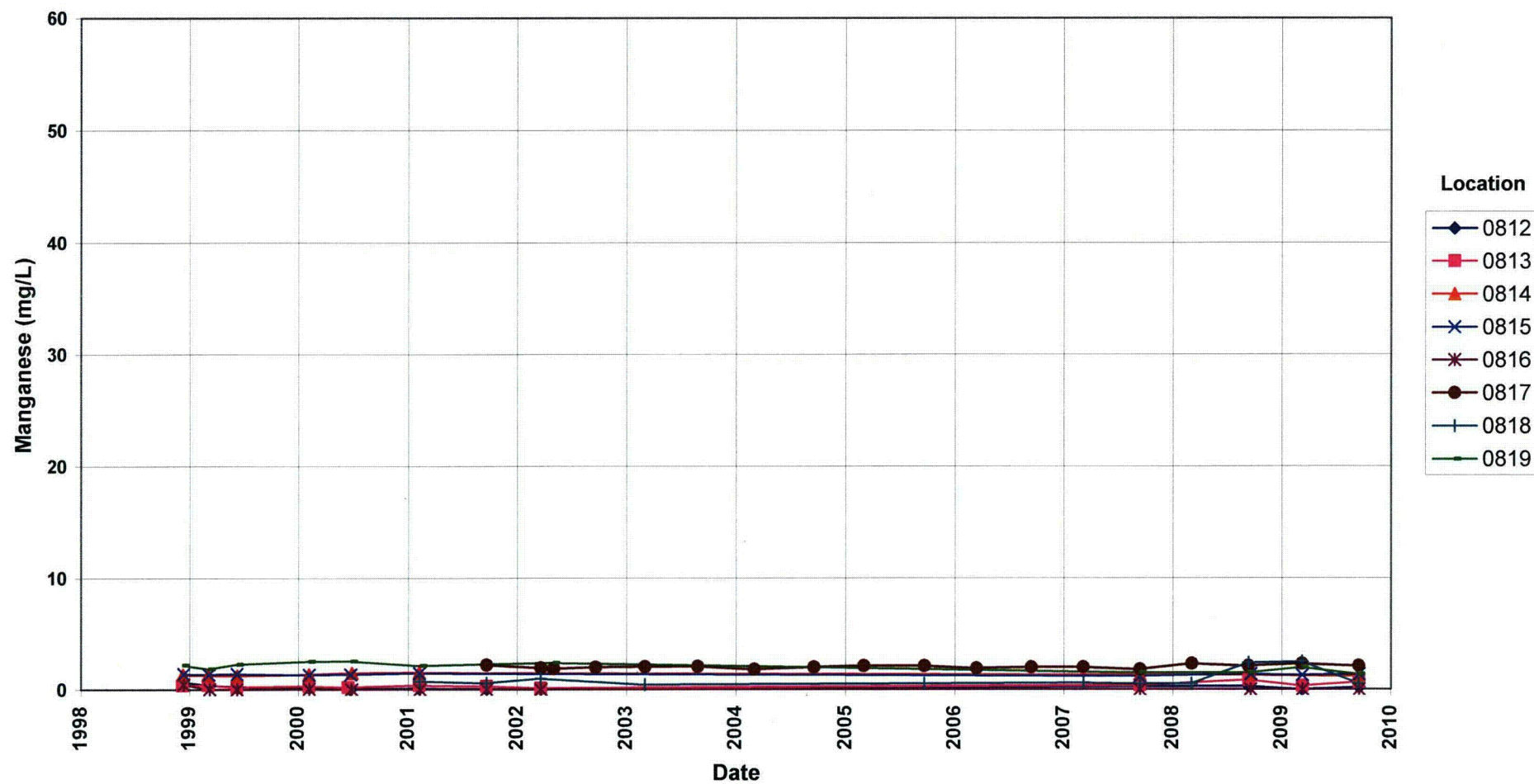
No established groundwater standard



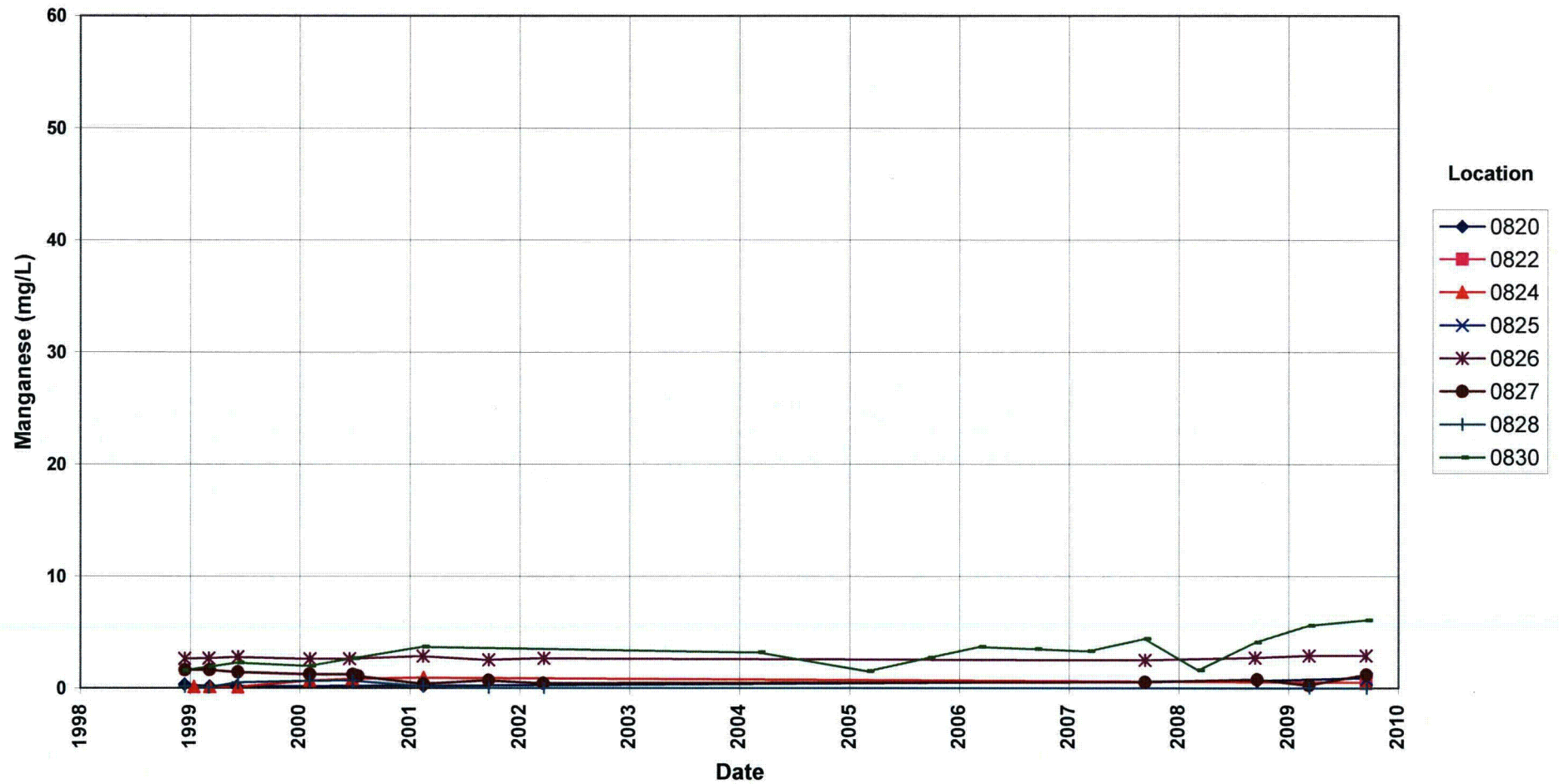
Shiprock Disposal Site (Terrace)

Manganese Concentration

No established groundwater standard



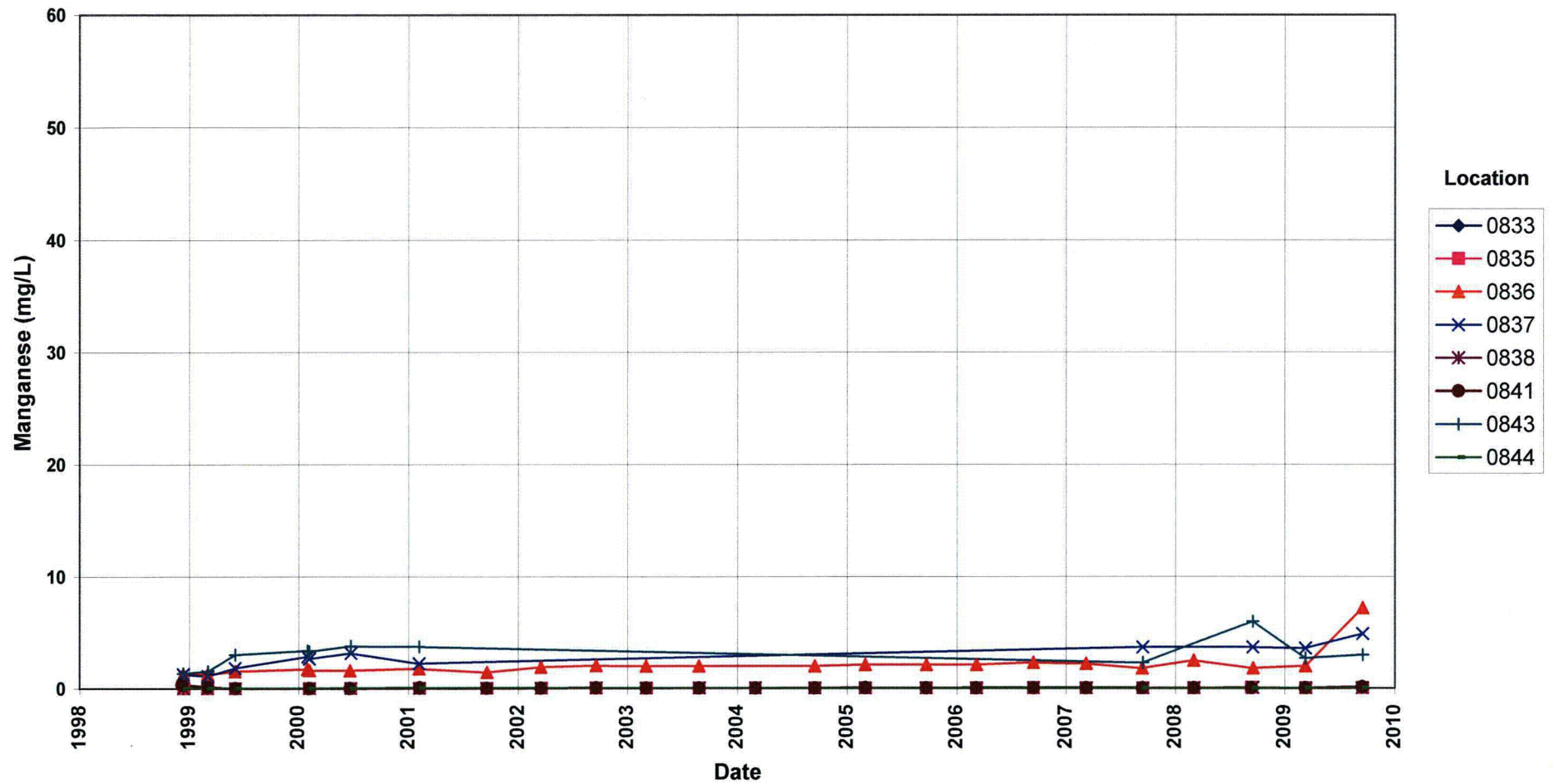
Shiprock Disposal Site (Terrace)
Manganese Concentration
No established groundwater standard



Shiprock Disposal Site (Terrace)

Manganese Concentration

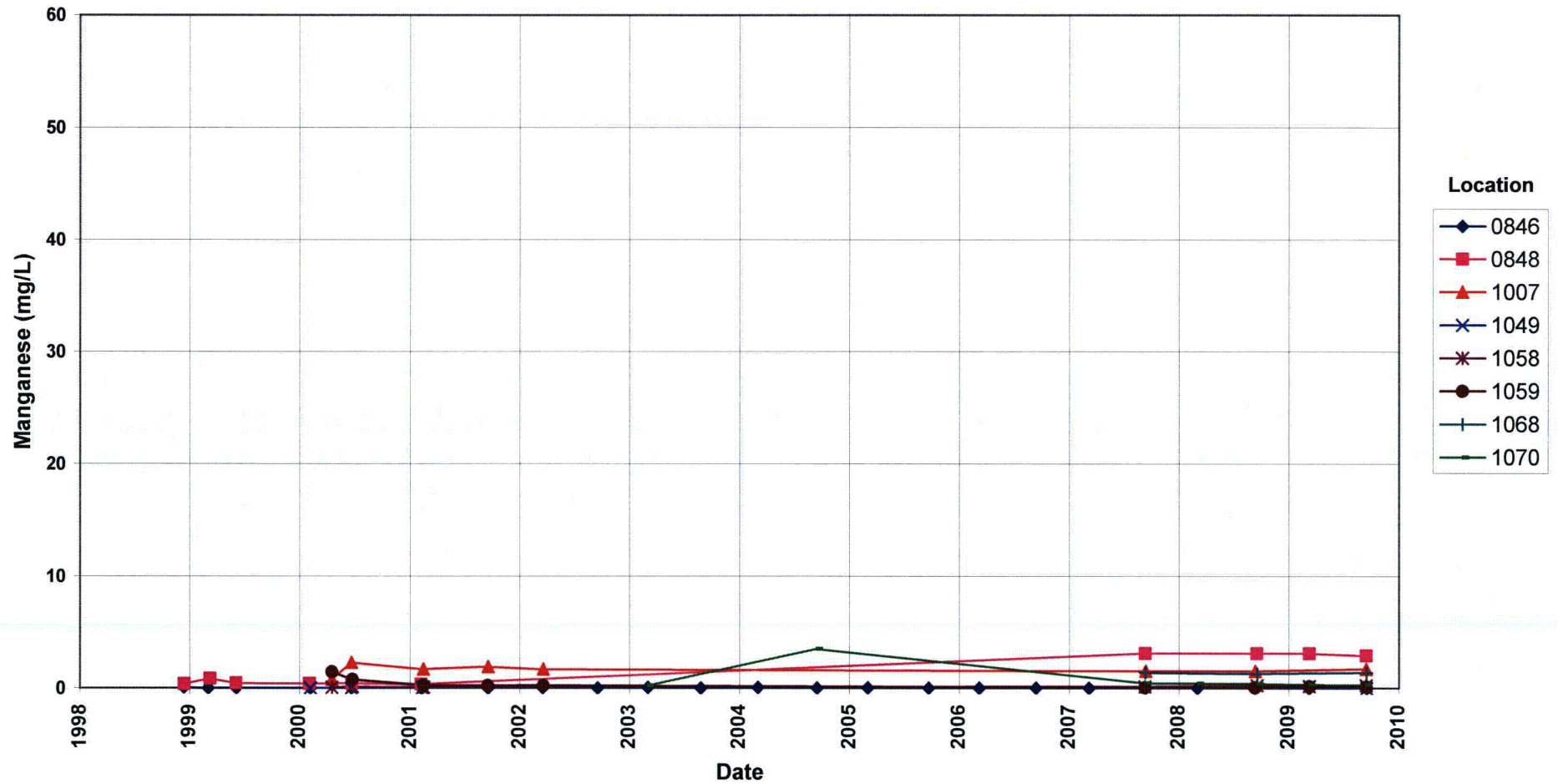
No established groundwater standard



Shiprock Disposal Site (Terrace)

Manganese Concentration

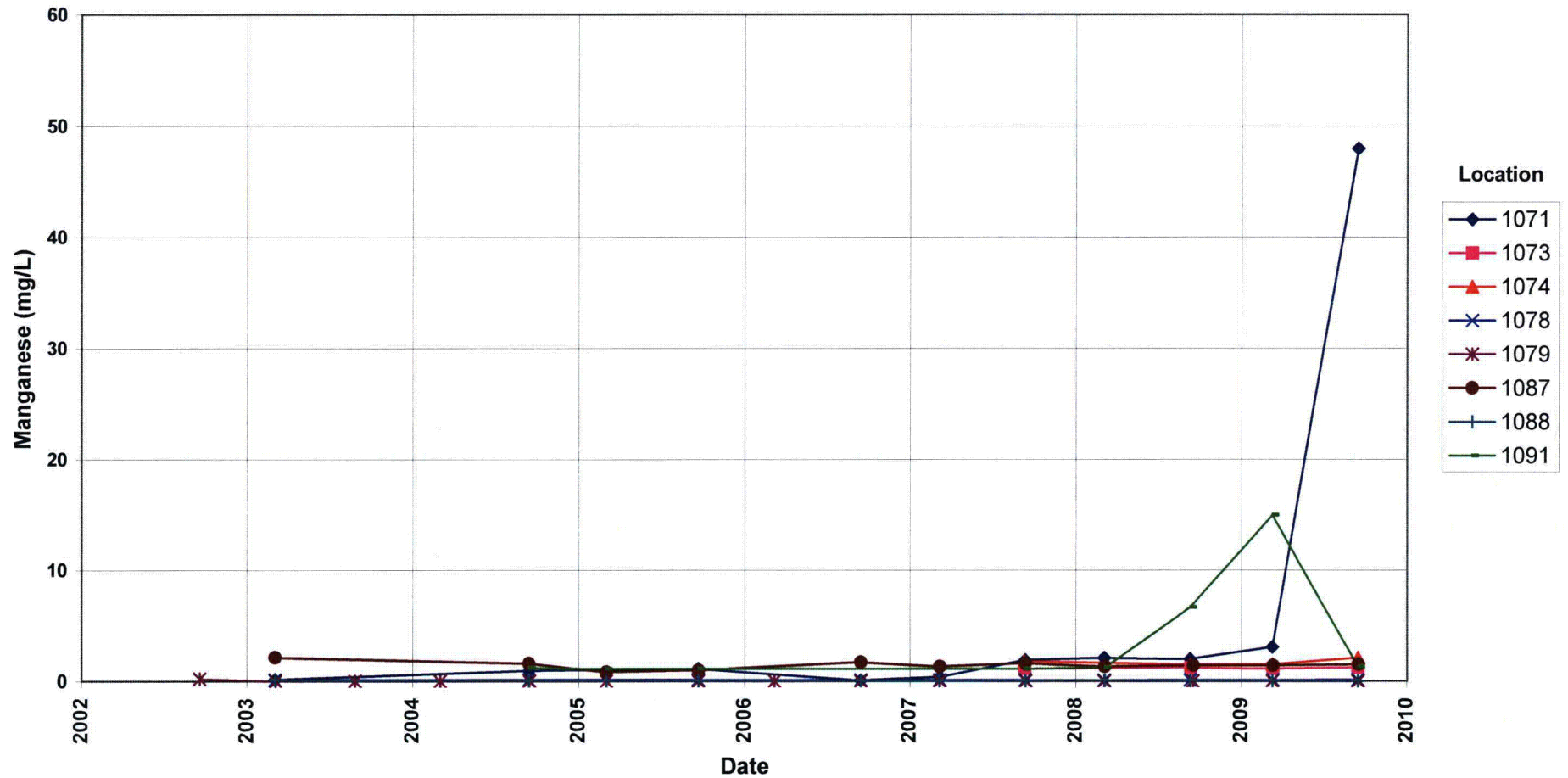
No established groundwater standard



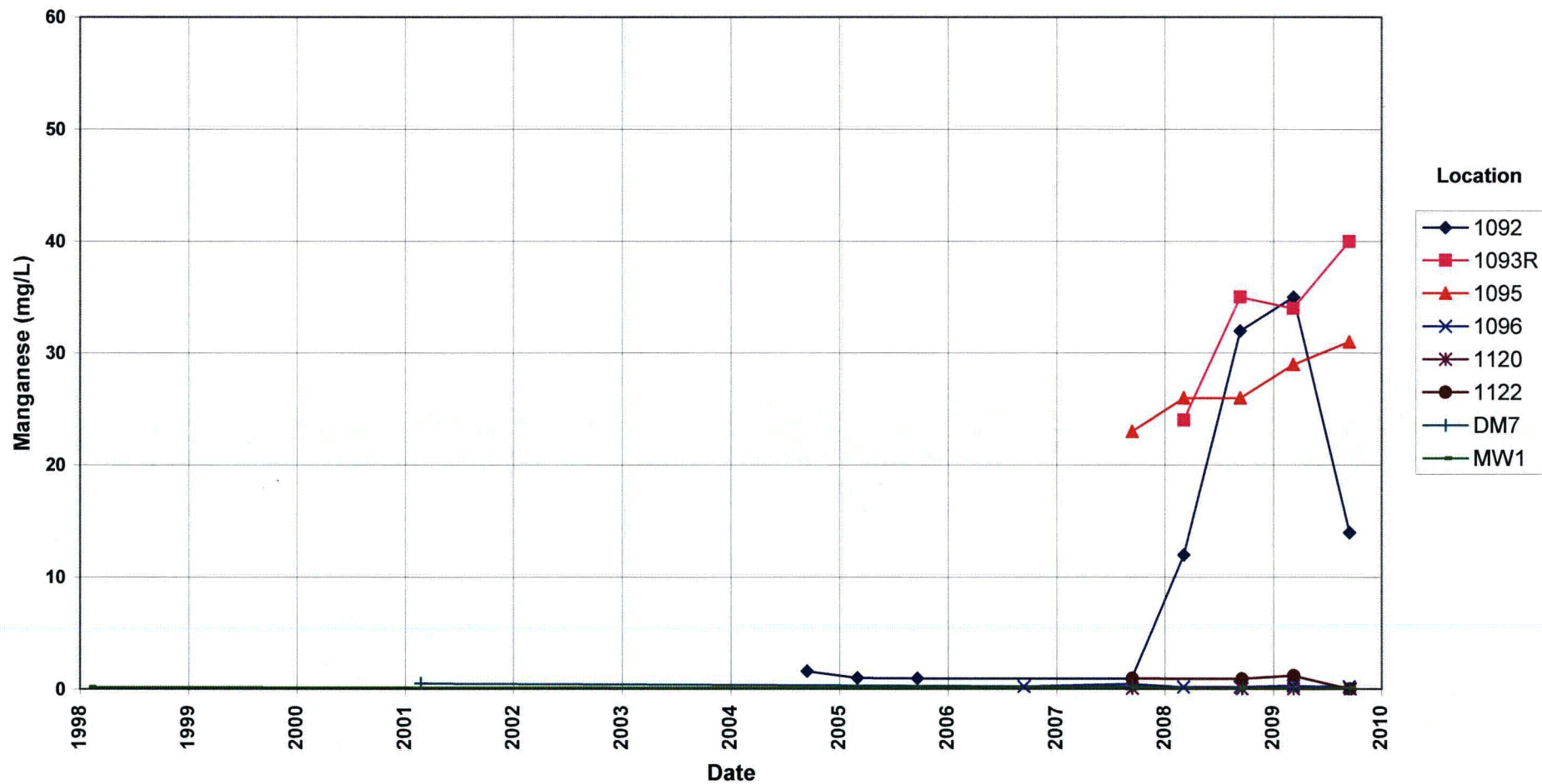
Shiprock Disposal Site (Terrace)

Manganese Concentration

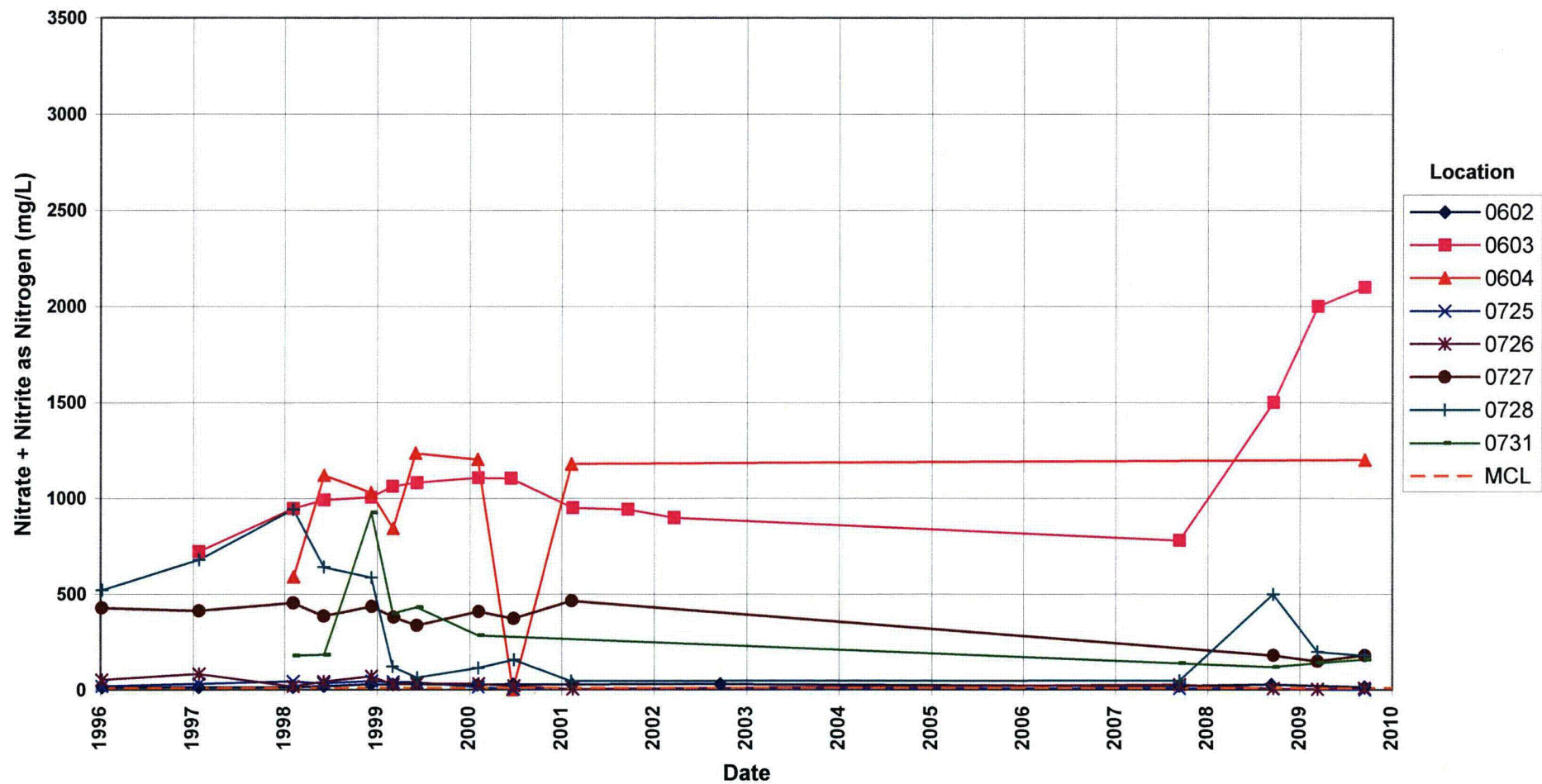
No established groundwater standard



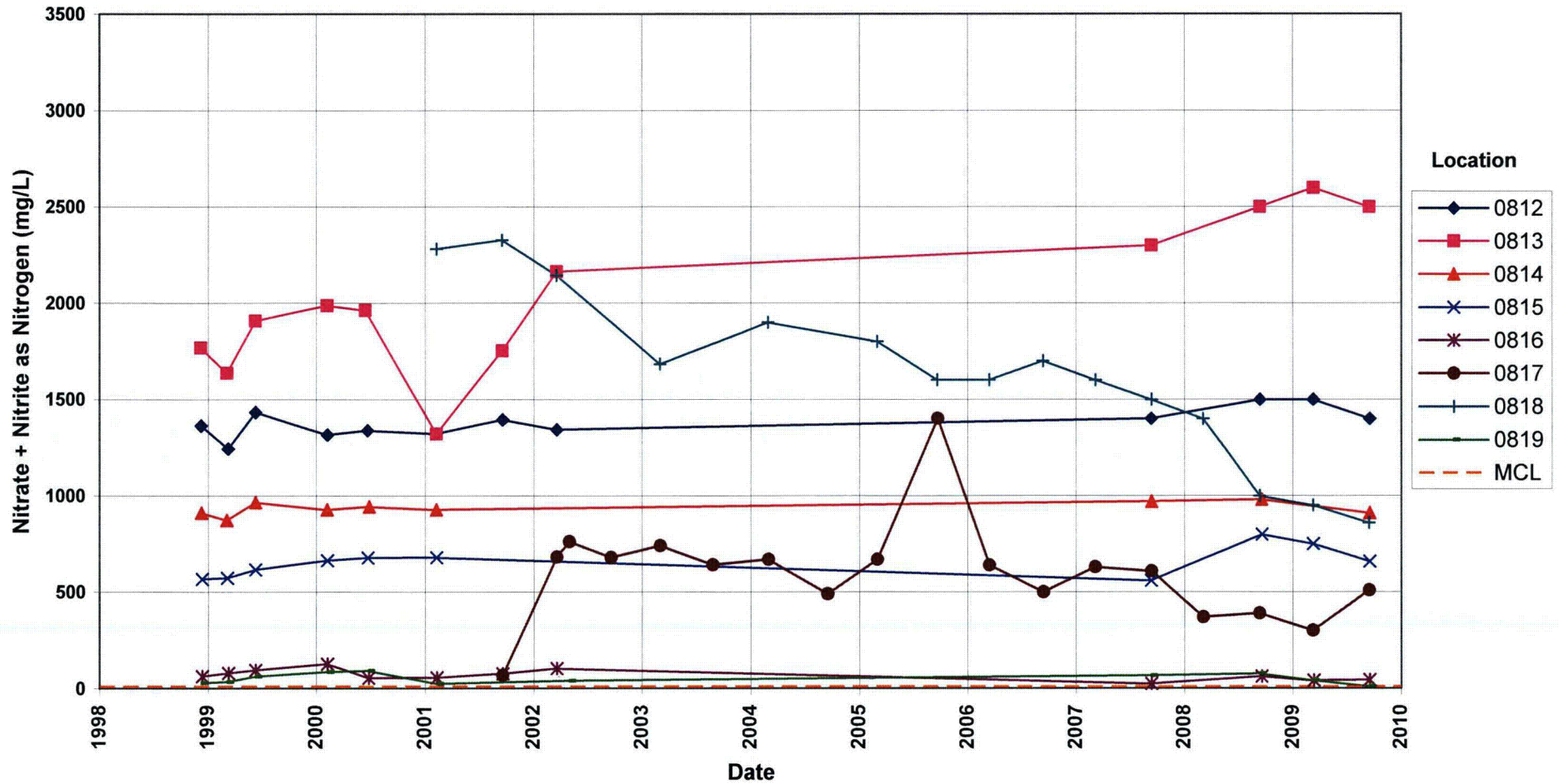
Shiprock Disposal Site (Terrace)
Manganese Concentration
No established groundwater standard



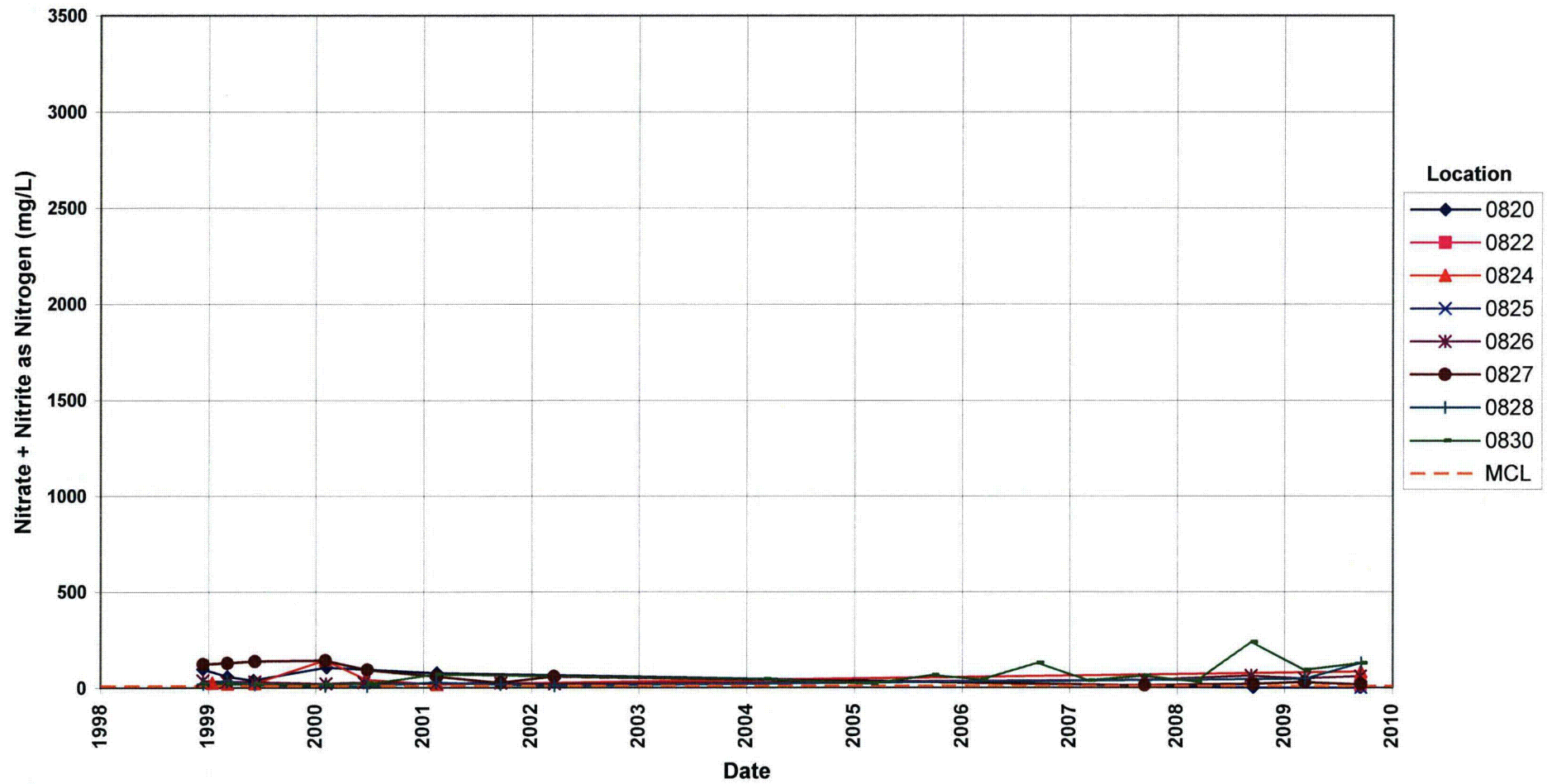
Shiprock Disposal Site (Terrace)
Nitrate + Nitrite as Nitrogen Concentration
 40 CFR 192.02 Maximum Contaminant Level (MCL) = 10.0 mg/L



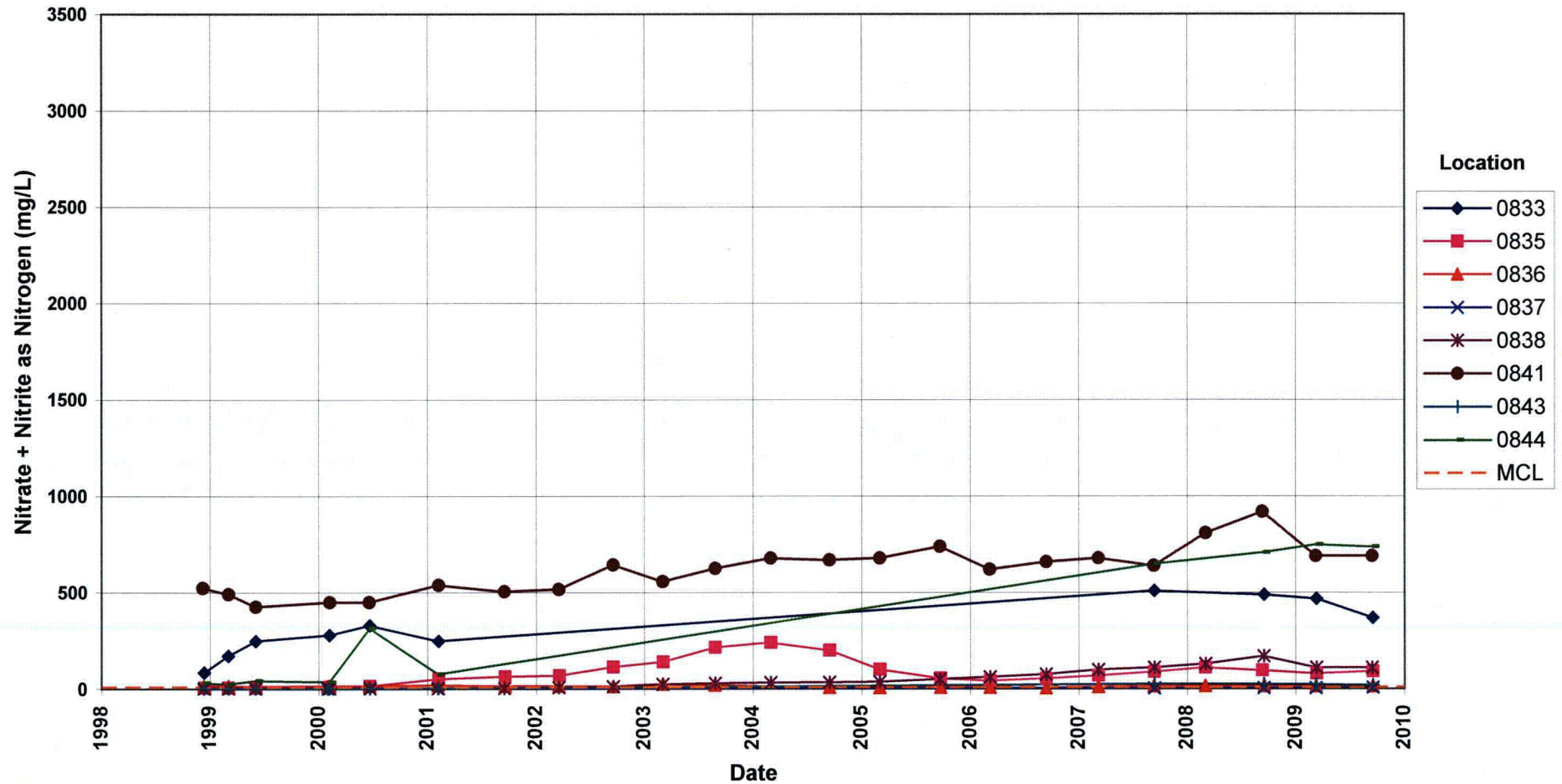
Shiprock Disposal Site (Terrace)
Nitrate + Nitrite as Nitrogen Concentration
 40 CFR 192.02 Maximum Contaminant Level (MCL) = 10.0 mg/L



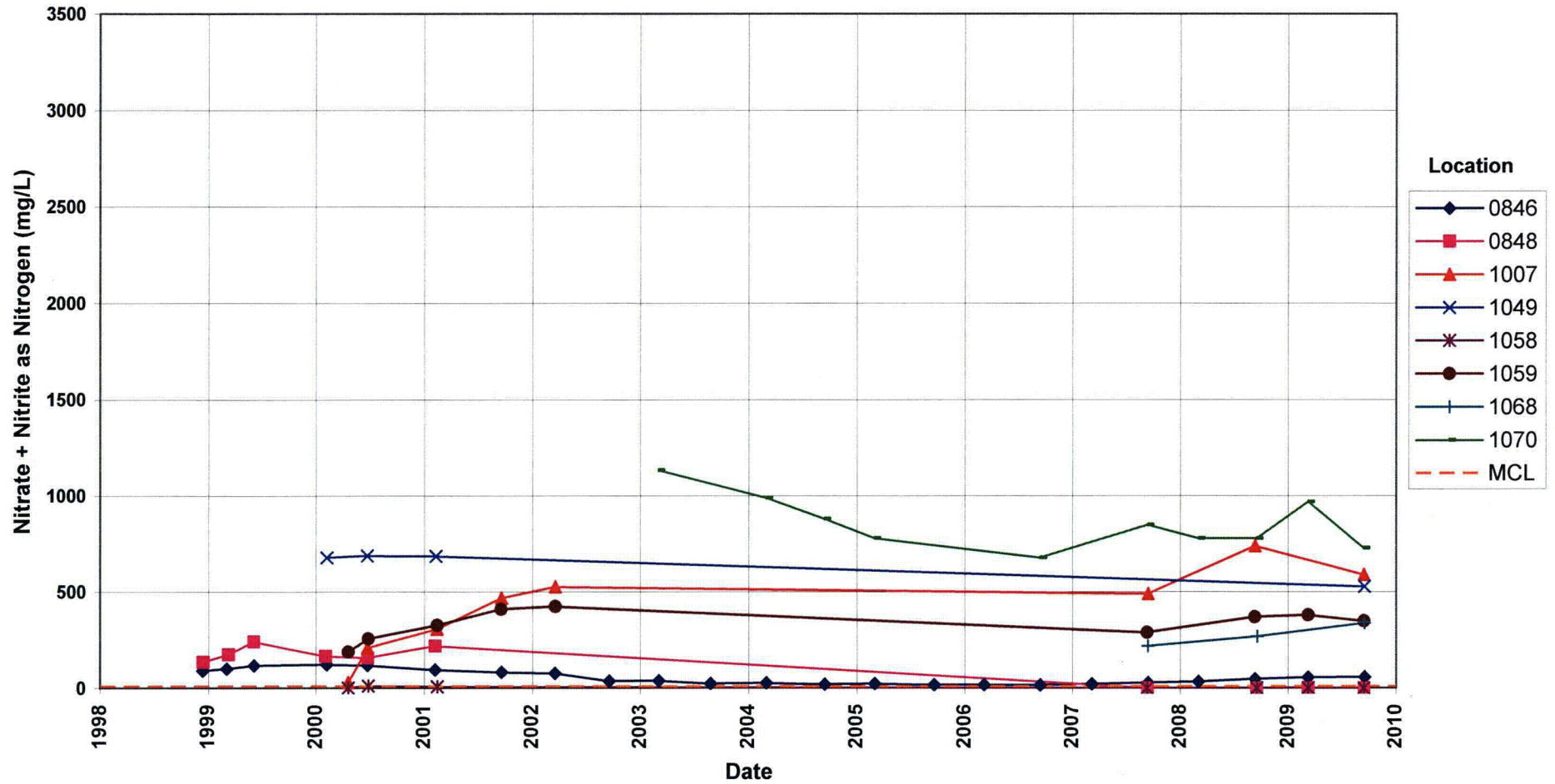
Shiprock Disposal Site (Terrace)
Nitrate + Nitrite as Nitrogen Concentration
40 CFR 192.02 Maximum Contaminant Level (MCL) = 10.0 mg/L



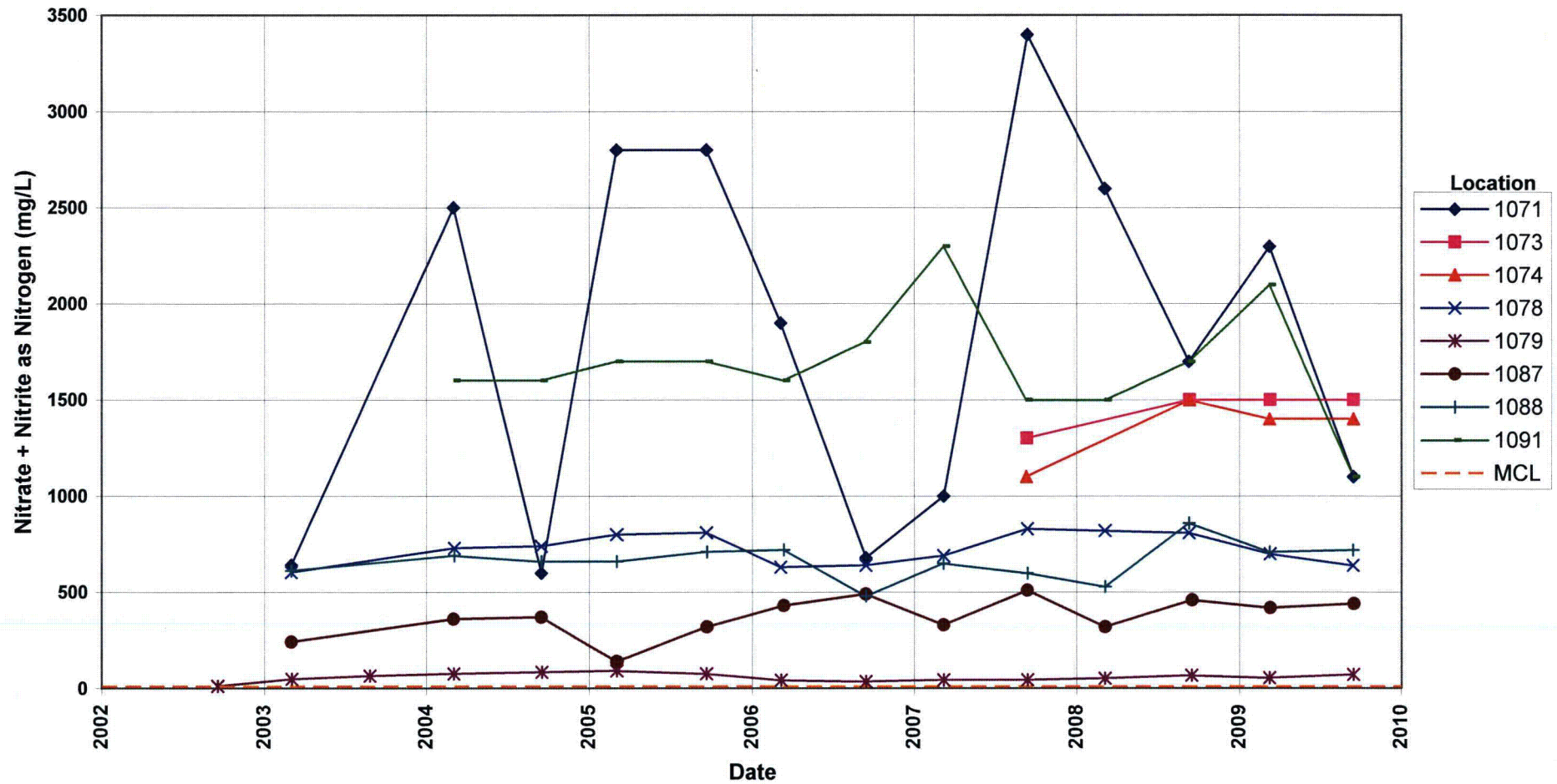
Shiprock Disposal Site (Terrace)
Nitrate + Nitrite as Nitrogen Concentration
40 CFR 192.02 Maximum Contaminant Level (MCL) = 10.0 mg/L



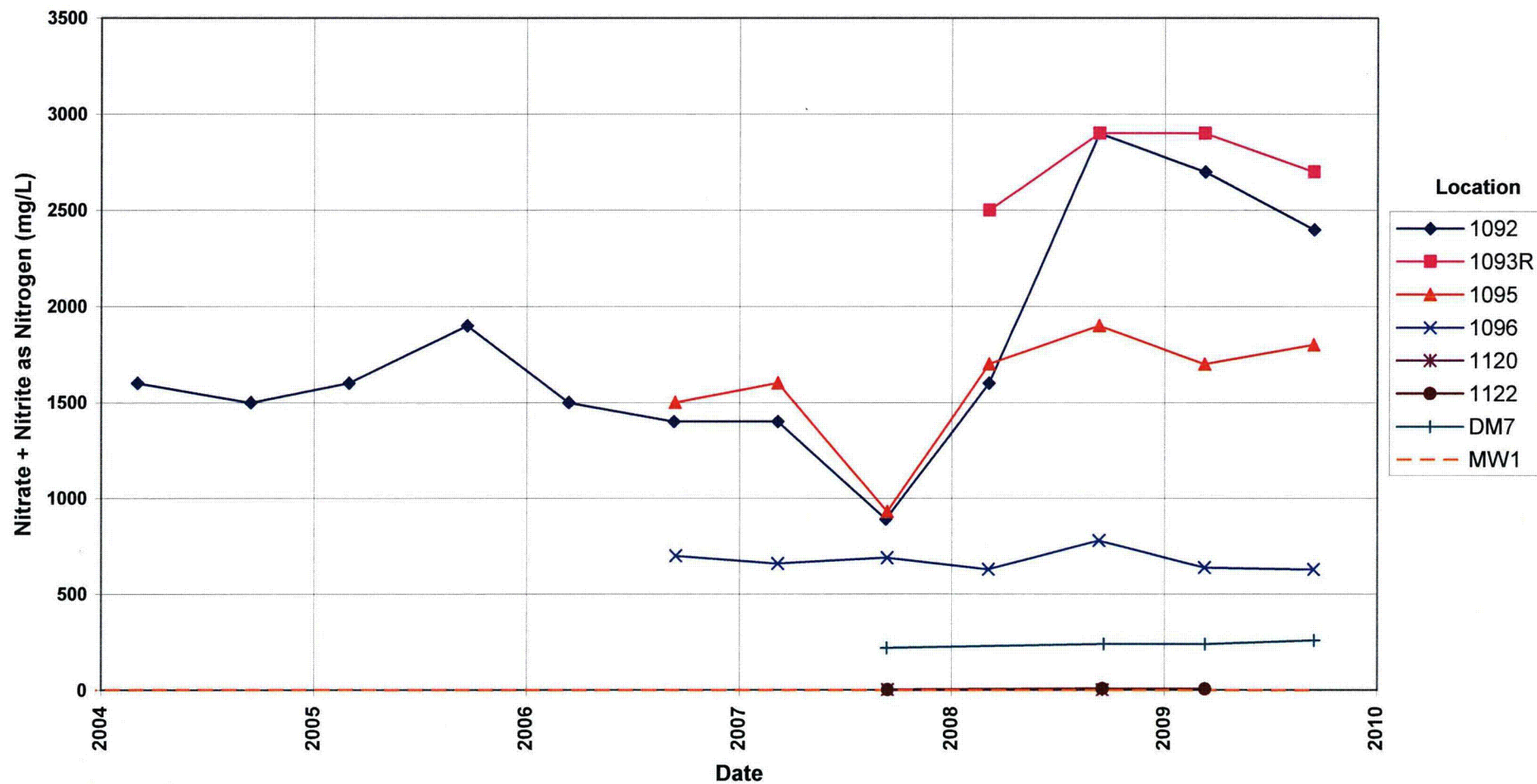
Shiprock Disposal Site (Terrace)
Nitrate + Nitrite as Nitrogen Concentration
40 CFR 192.02 Maximum Contaminant Level (MCL) = 10.0 mg/L



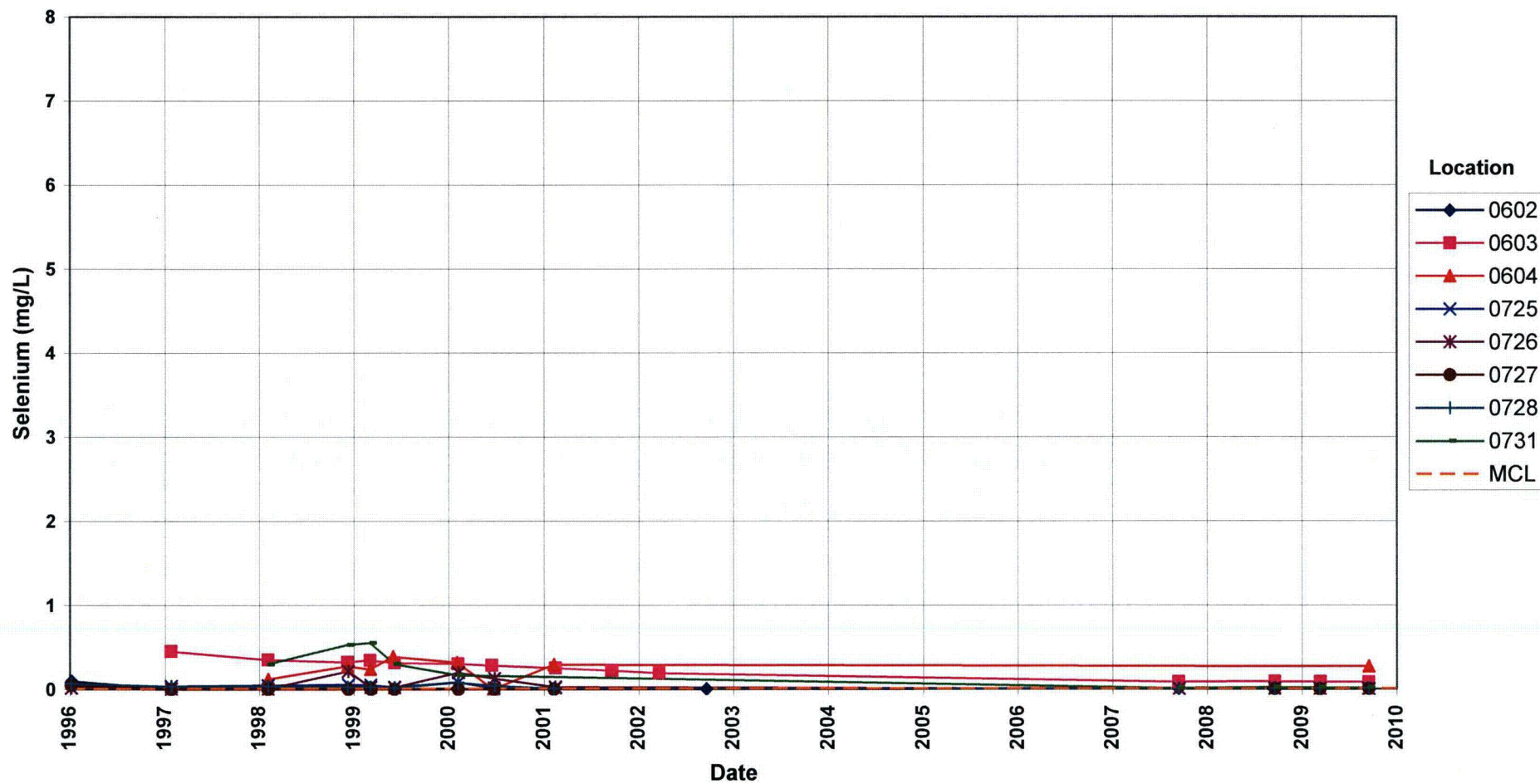
Shiprock Disposal Site (Terrace)
Nitrate + Nitrite as Nitrogen Concentration
 40 CFR 192.02 Maximum Contaminant Level (MCL) = 10.0 mg/L



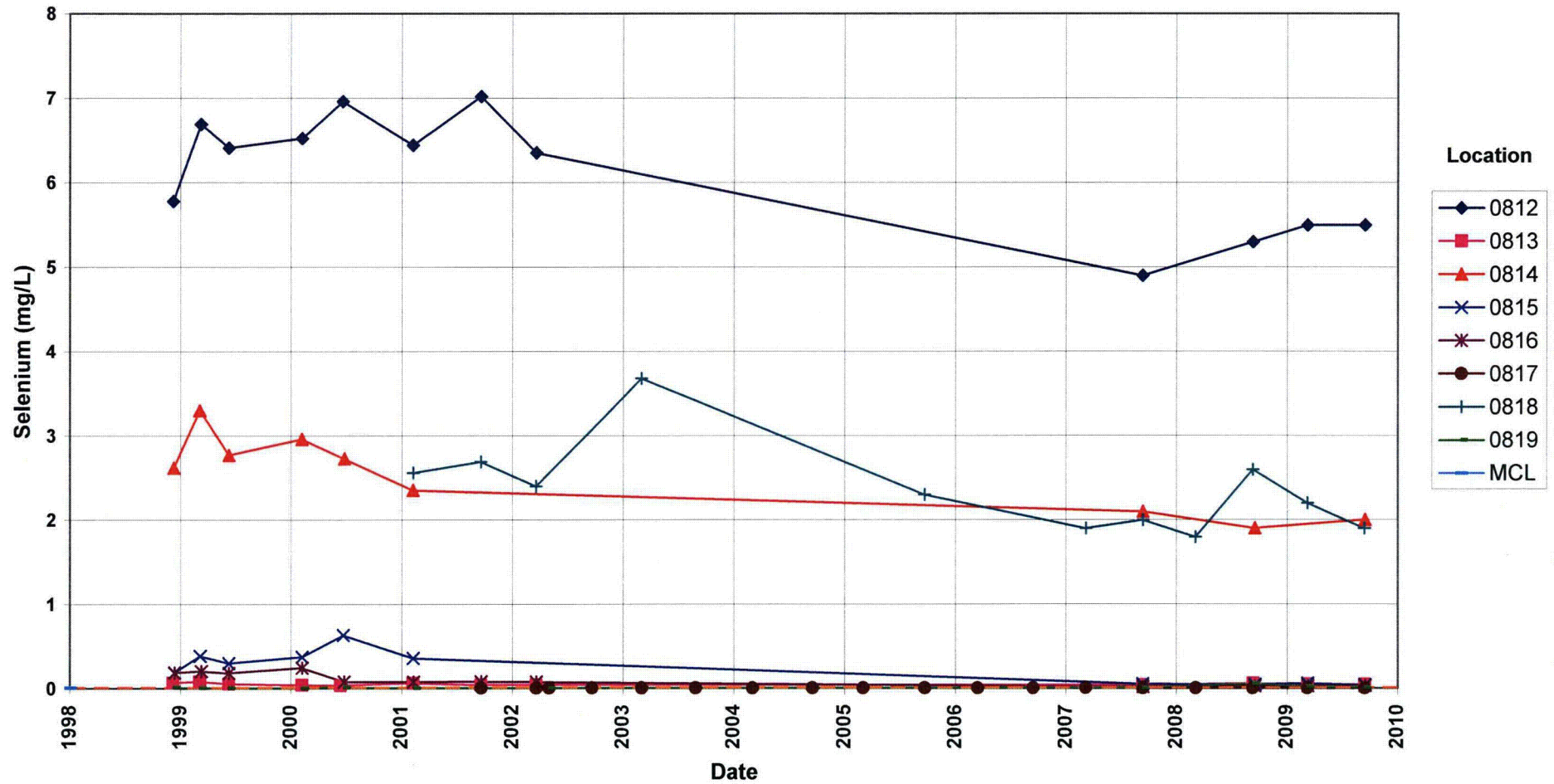
Shiprock Disposal Site (Terrace)
Nitrate + Nitrite as Nitrogen Concentration
40 CFR 192.02 Maximum Contaminant Level (MCL) = 10.0 mg/L



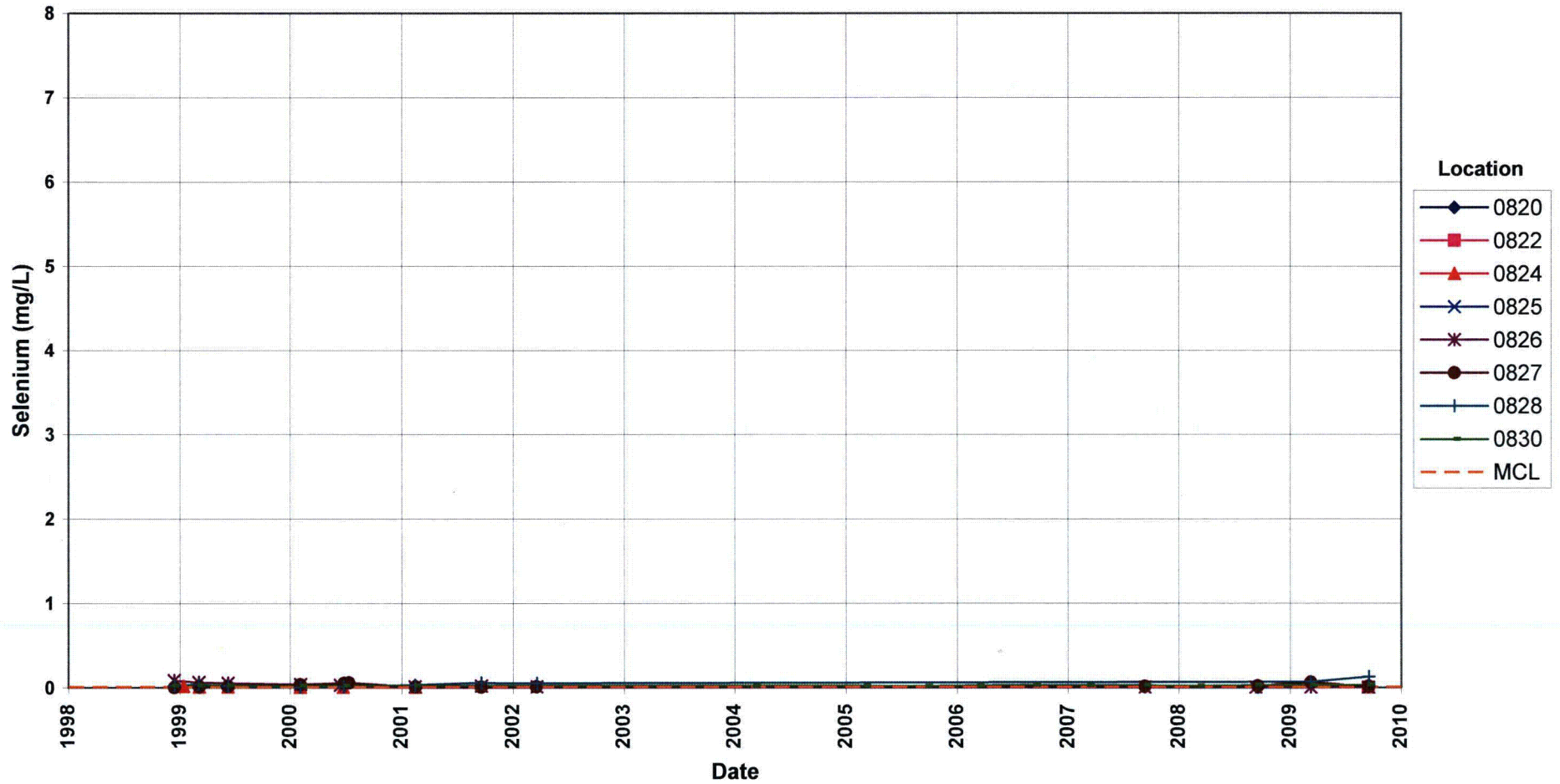
Shiprock Disposal Site (Terrace)
Selenium Concentration
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.01 mg/L



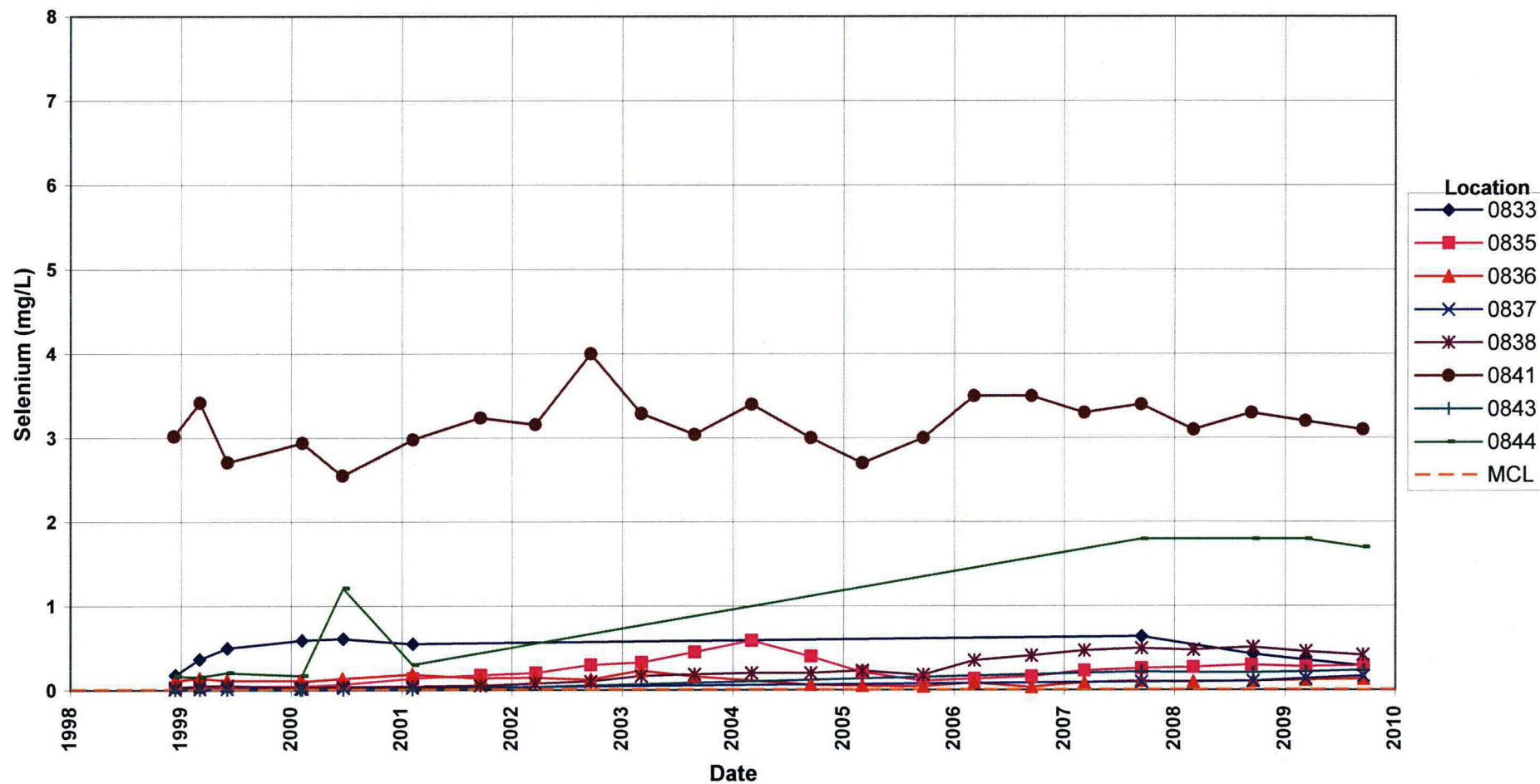
Shiprock Disposal Site (Terrace)
Selenium Concentration
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.01 mg/L



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

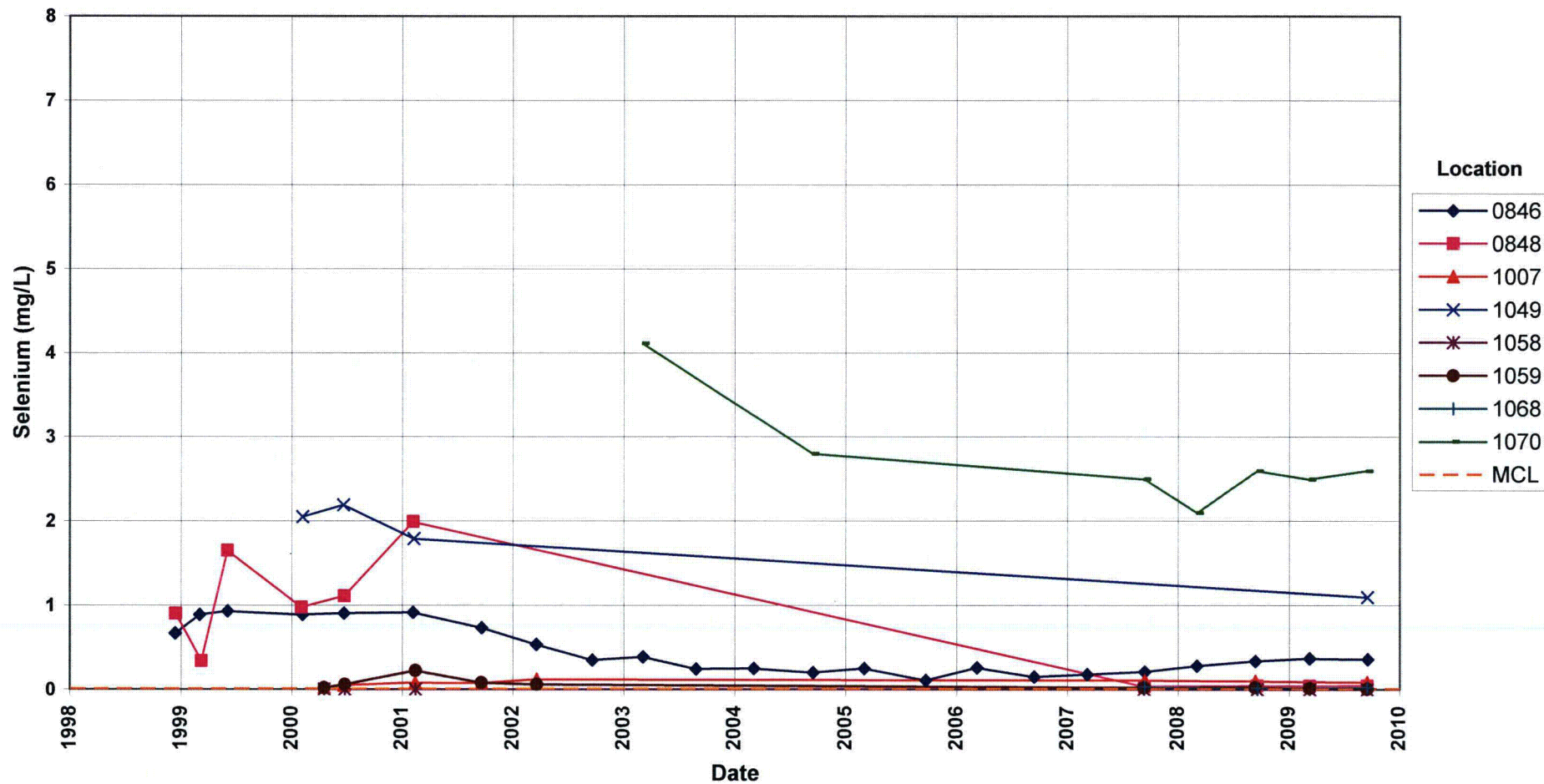


Shiprock Disposal Site (Terrace)
Selenium Concentration
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.01 mg/L

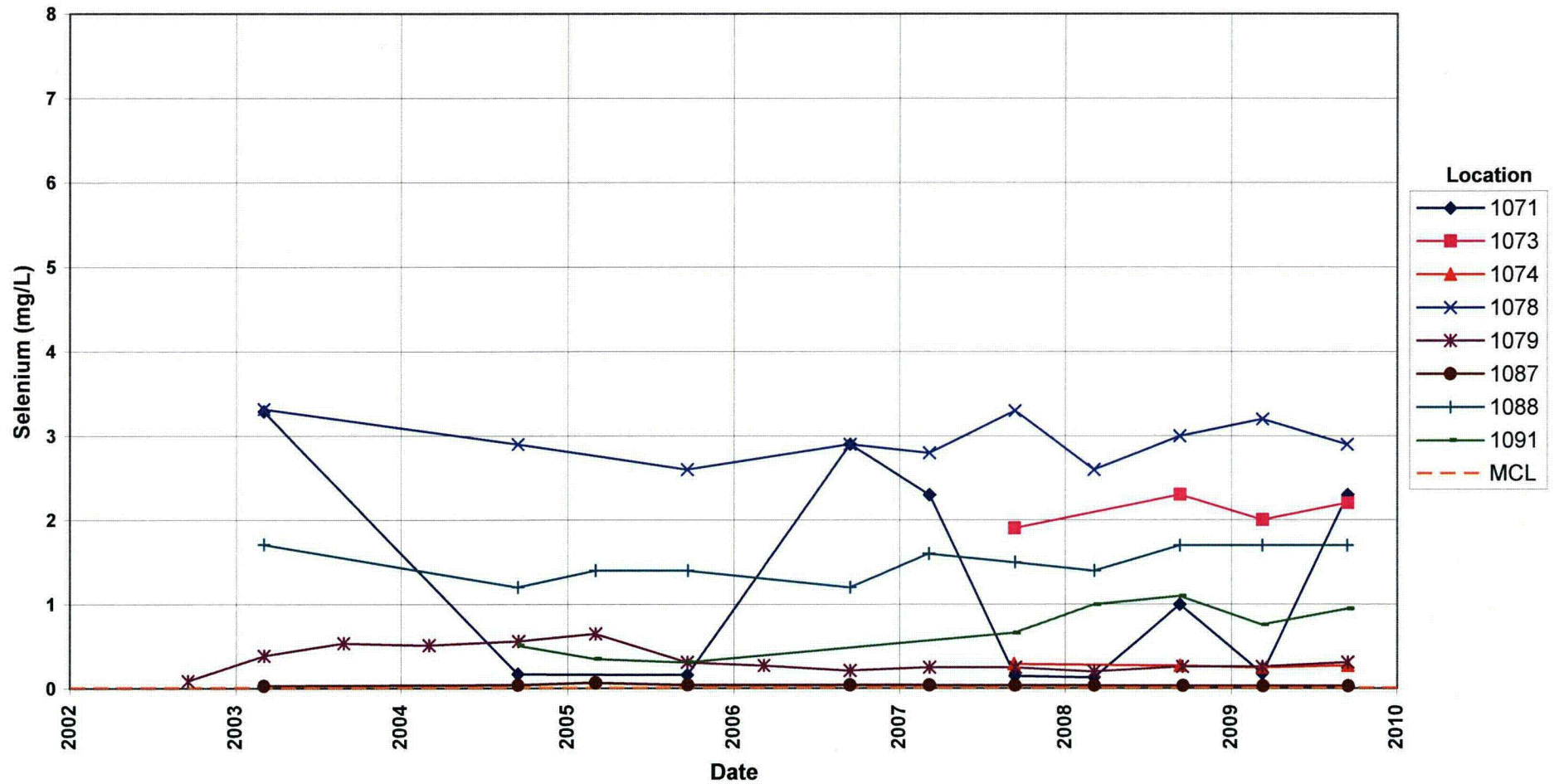


Shiprock Disposal Site (Terrace) Selenium Concentration

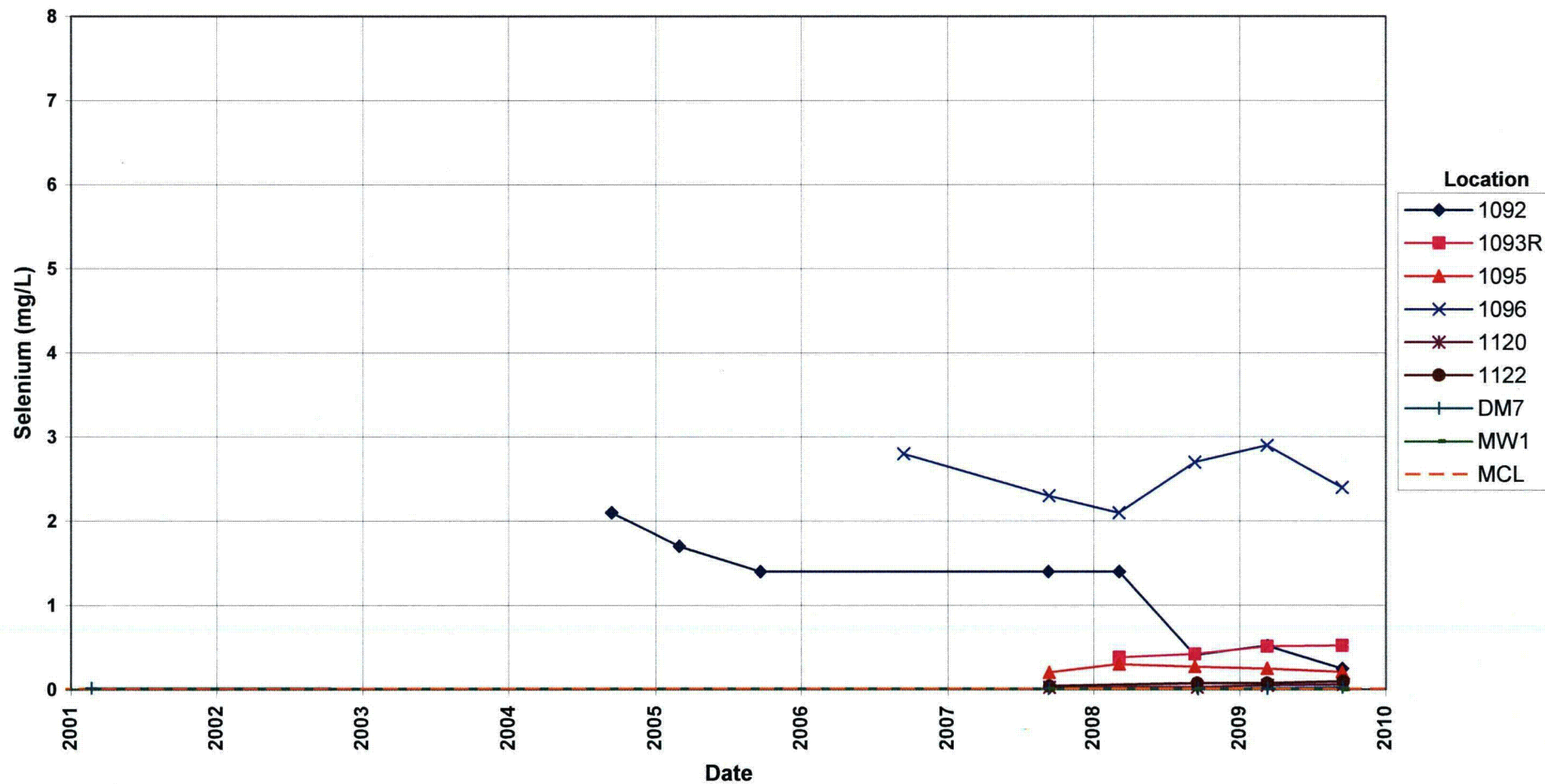
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.01 mg/L



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



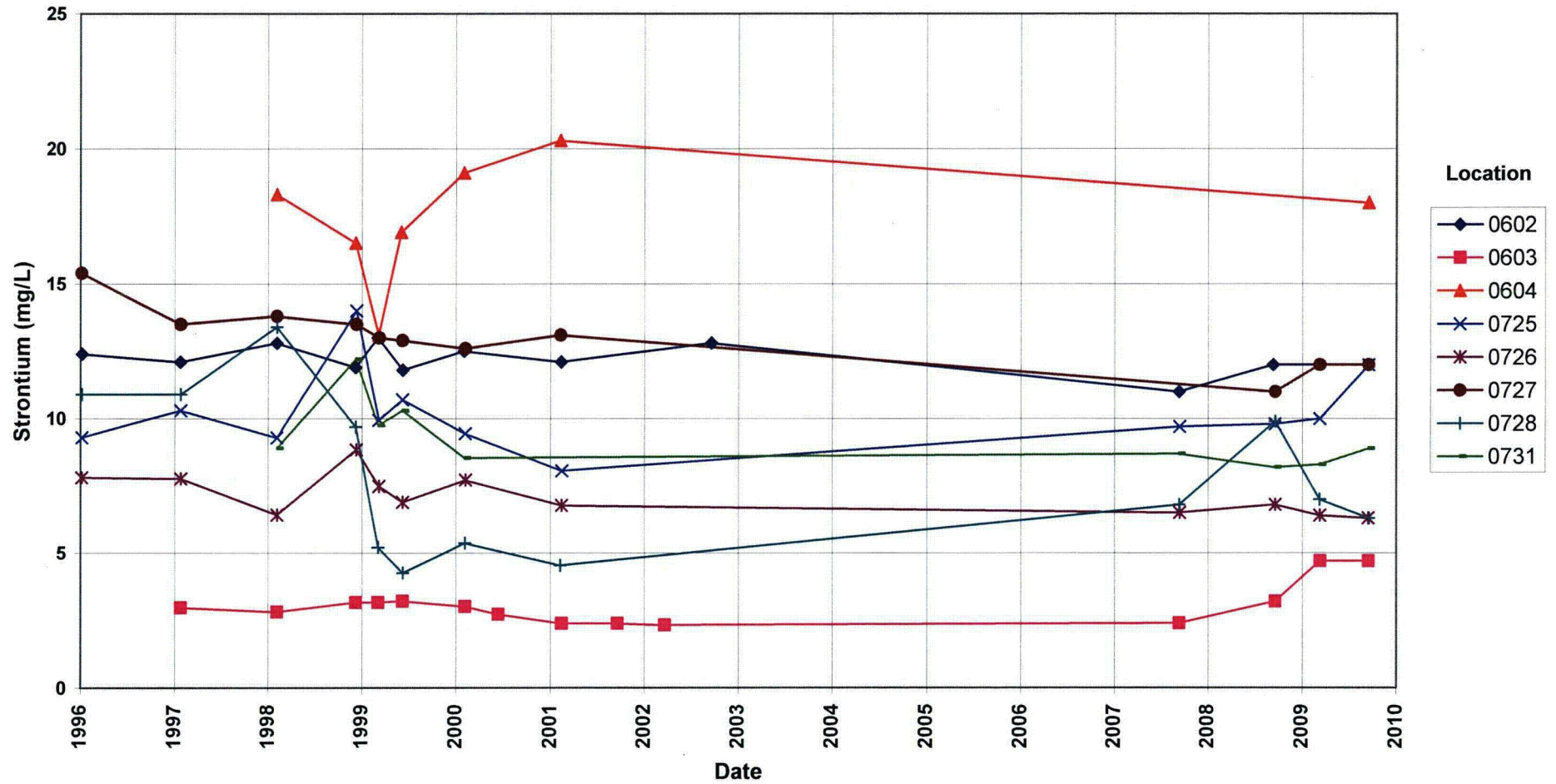
Shiprock Disposal Site (Terrace)
Selenium Concentration
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.01 mg/L



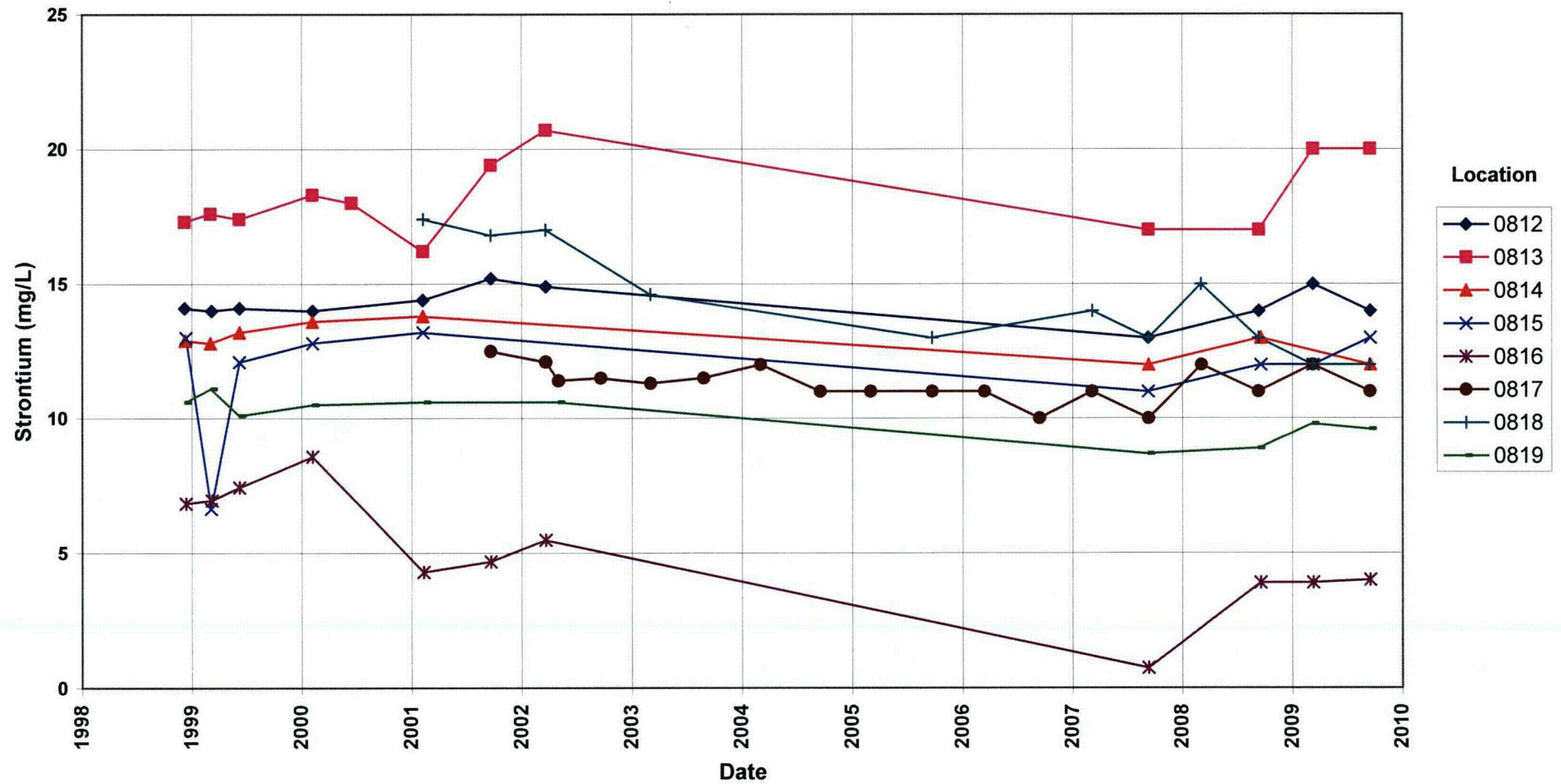
Shiprock Disposal Site (Terrace)

Strontium Concentration

No established groundwater standard



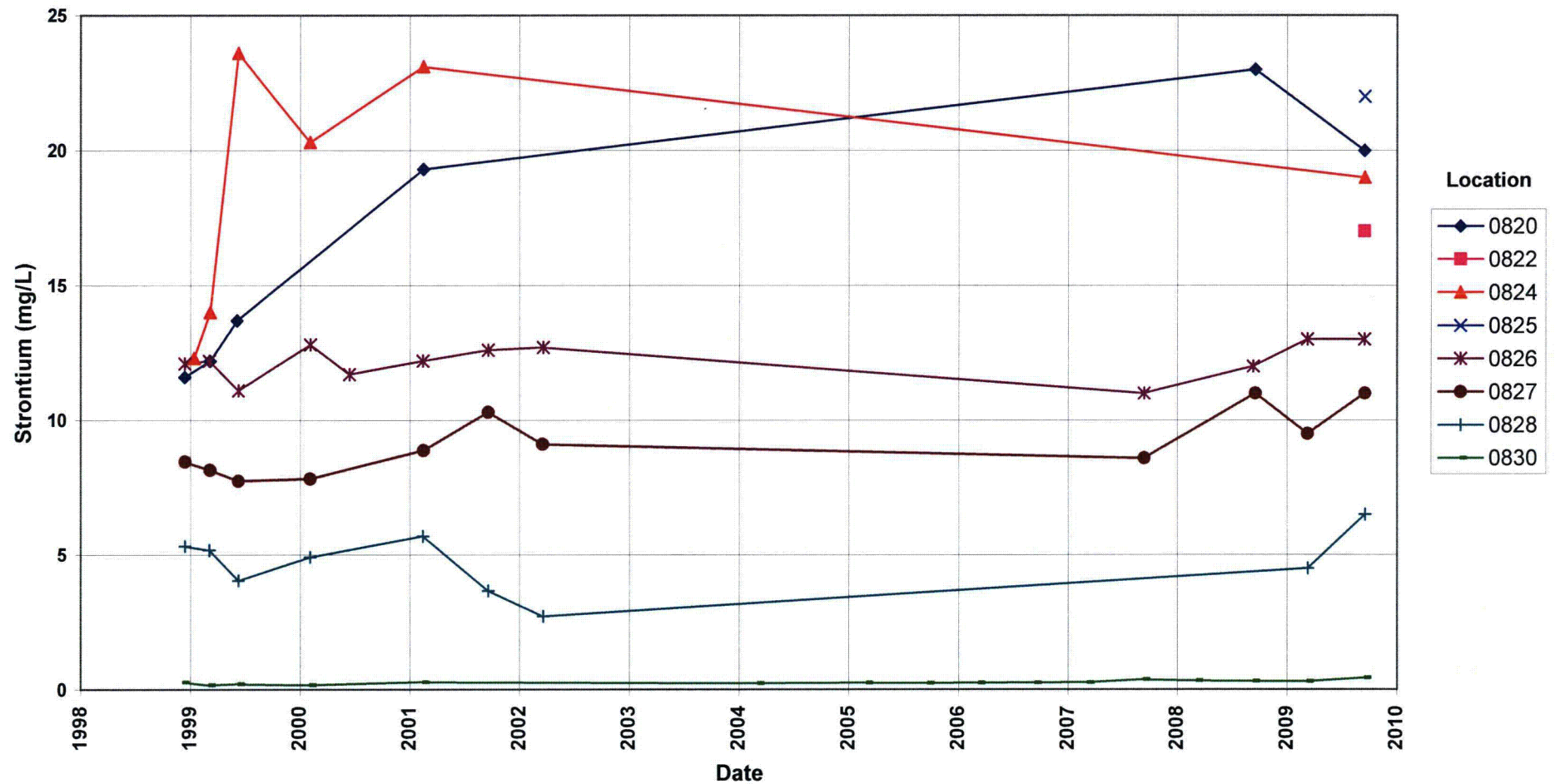
Shiprock Disposal Site (Terrace)
Strontium Concentration
No established groundwater standard



Shiprock Disposal Site (Terrace)

Strontium Concentration

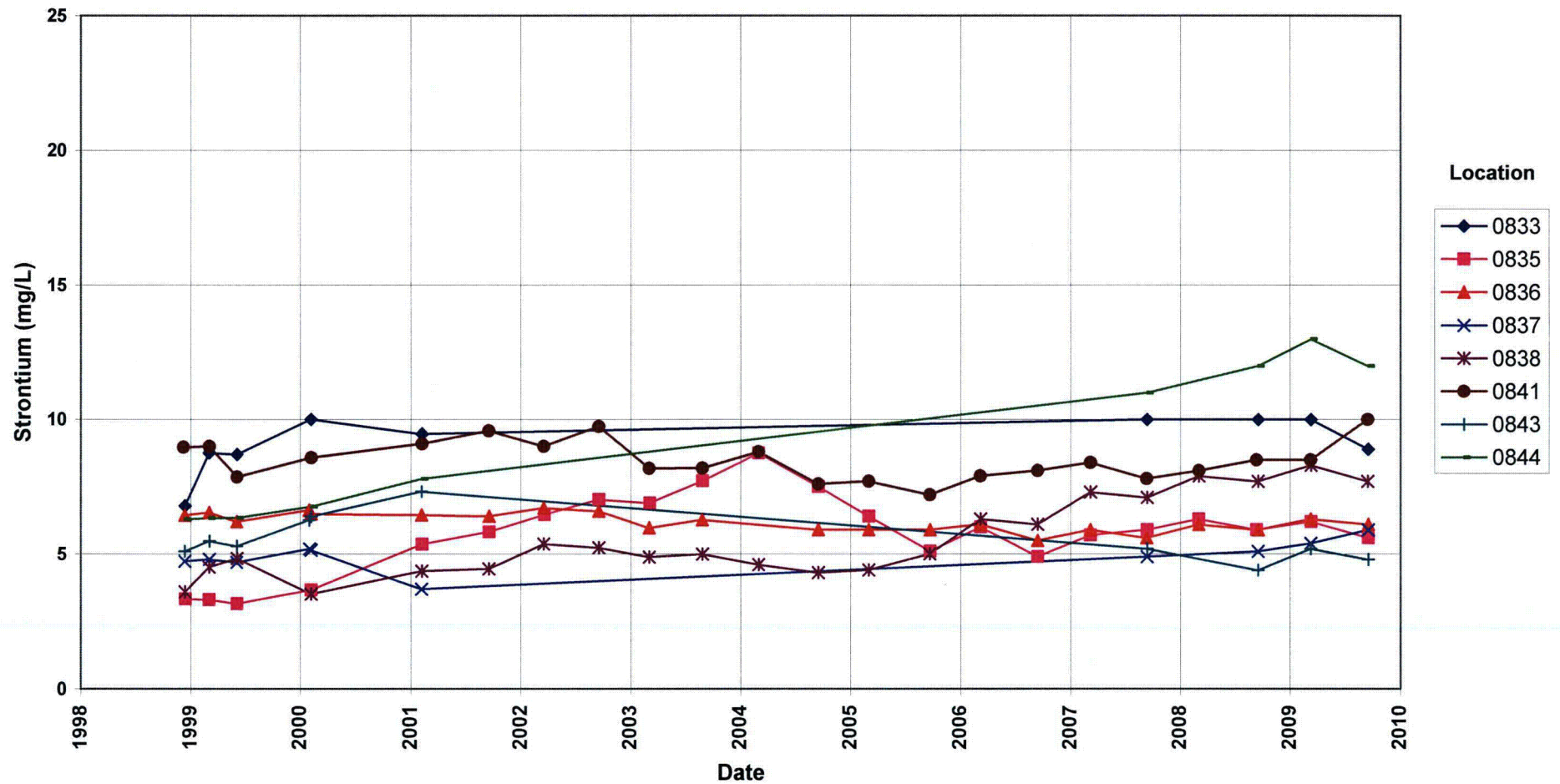
No established groundwater standard



Shiprock Disposal Site (Terrace)

Strontium Concentration

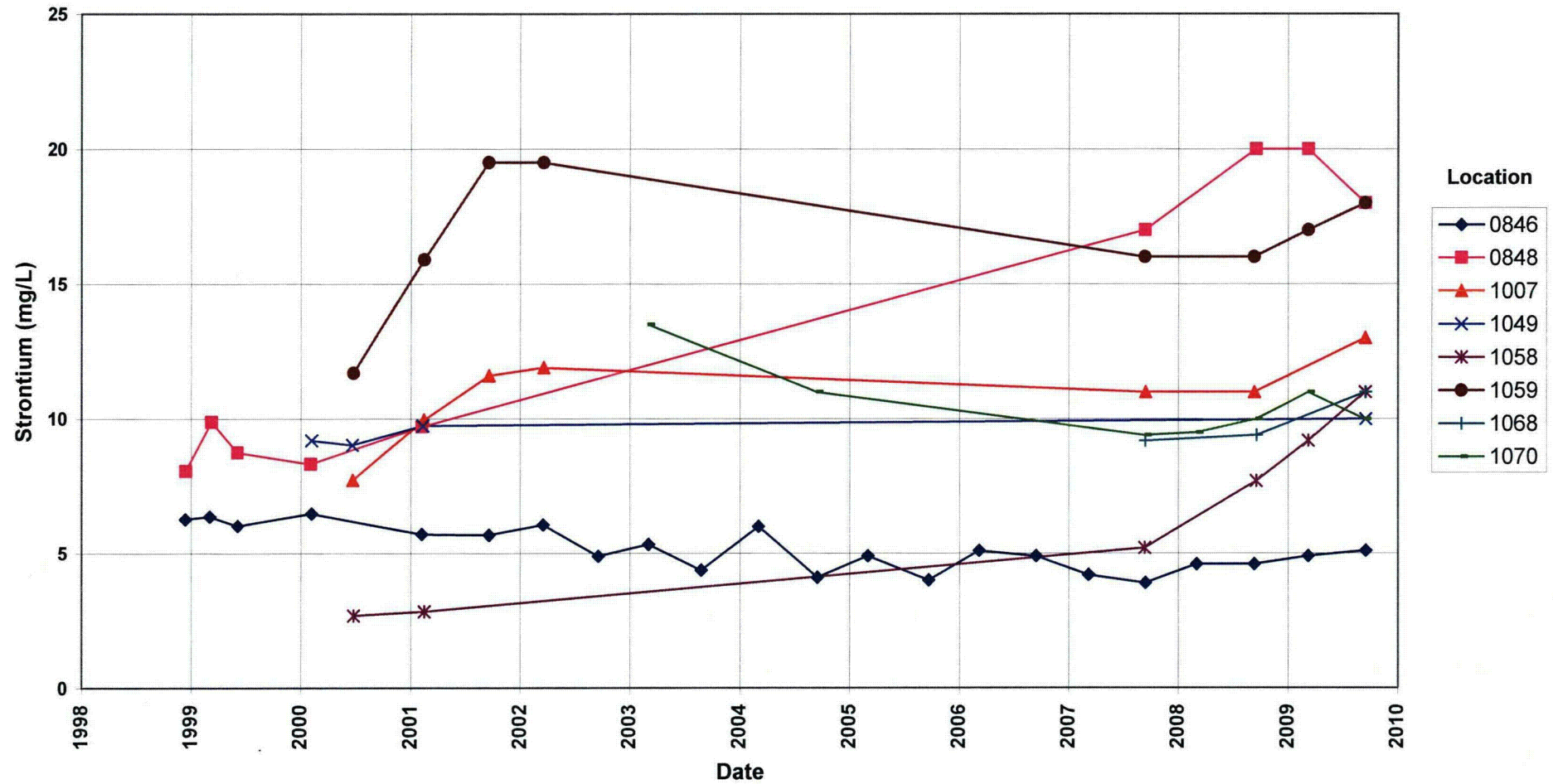
No established groundwater standard



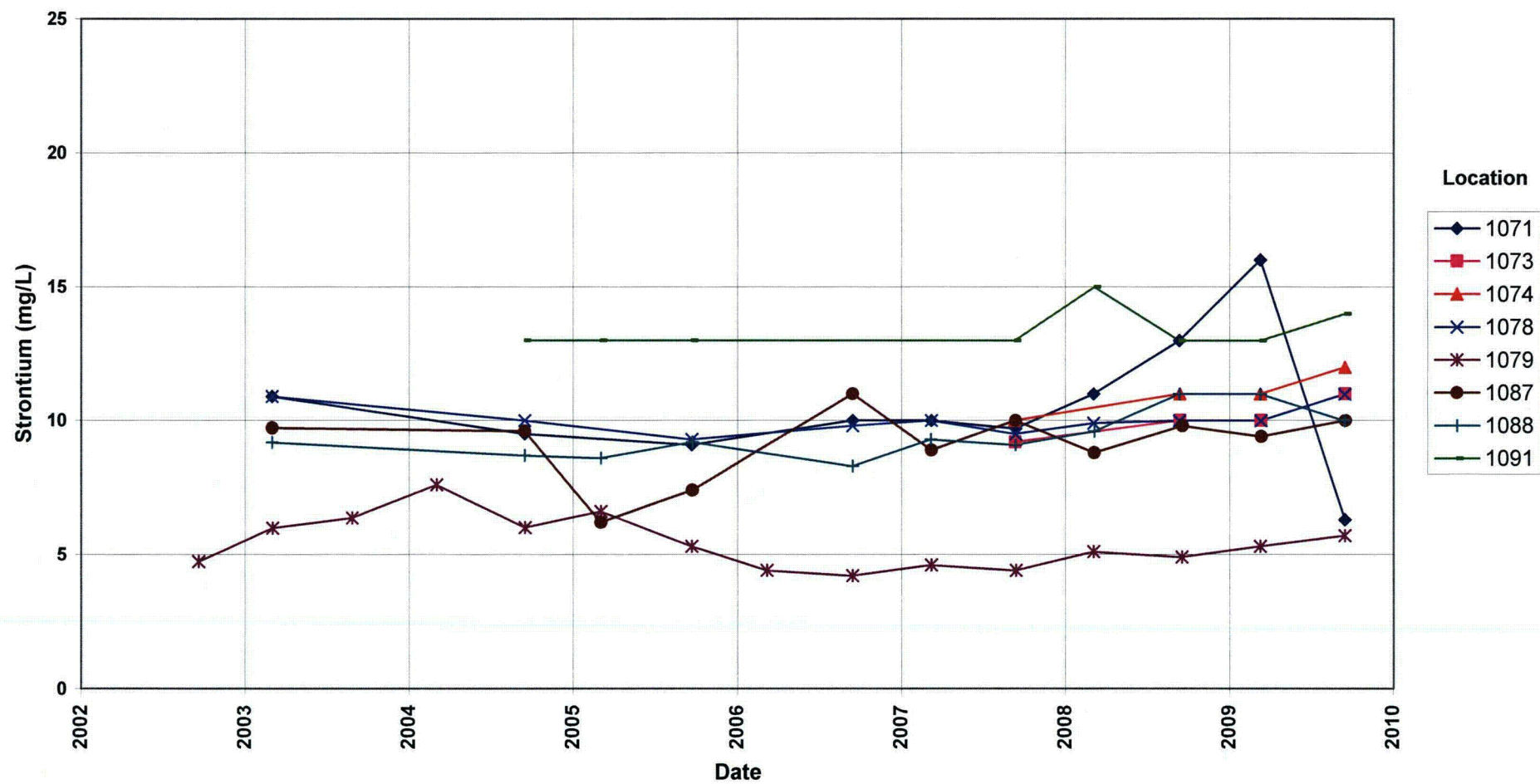
Shiprock Disposal Site (Terrace)

Strontium Concentration

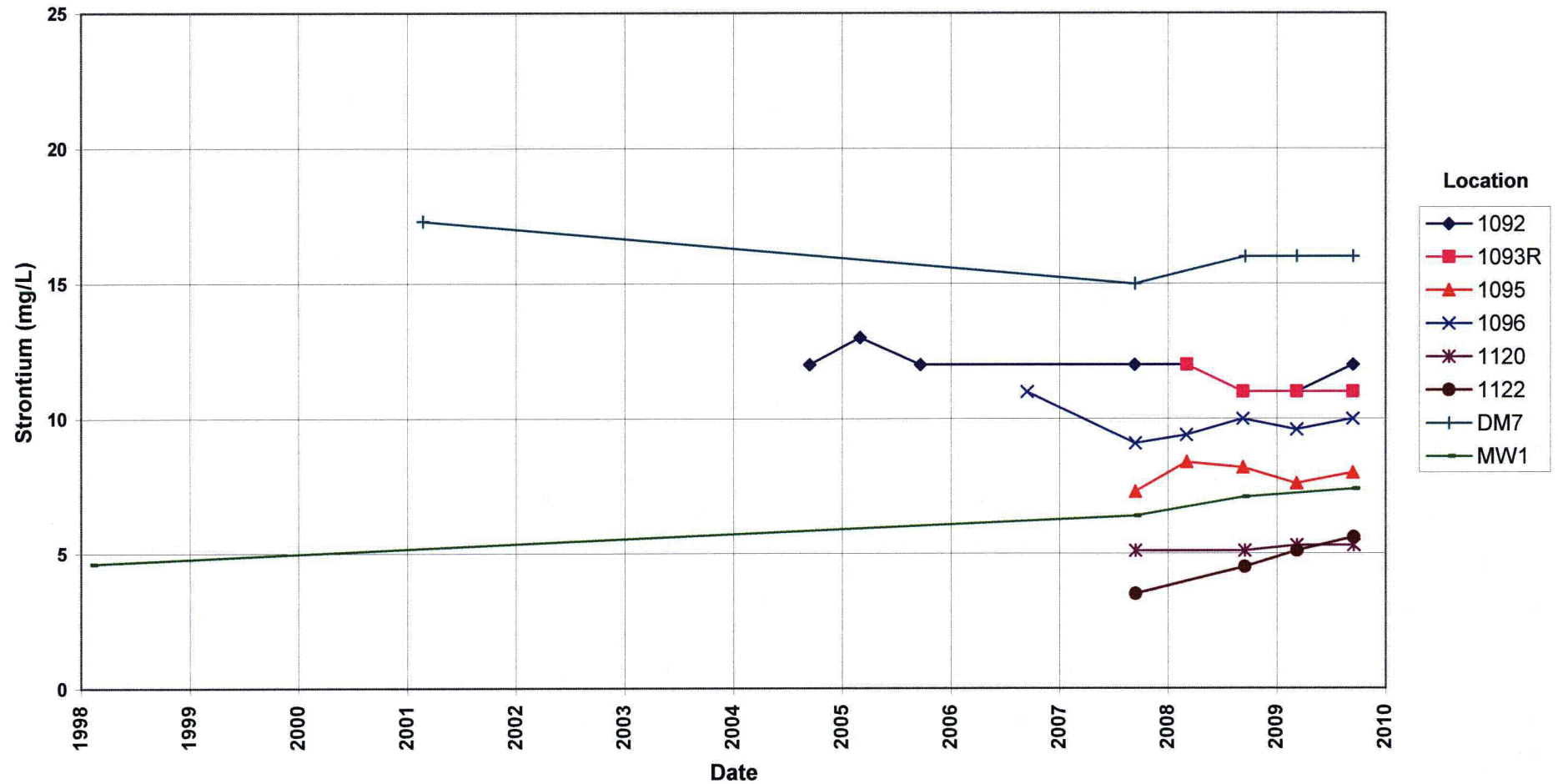
No established groundwater standard



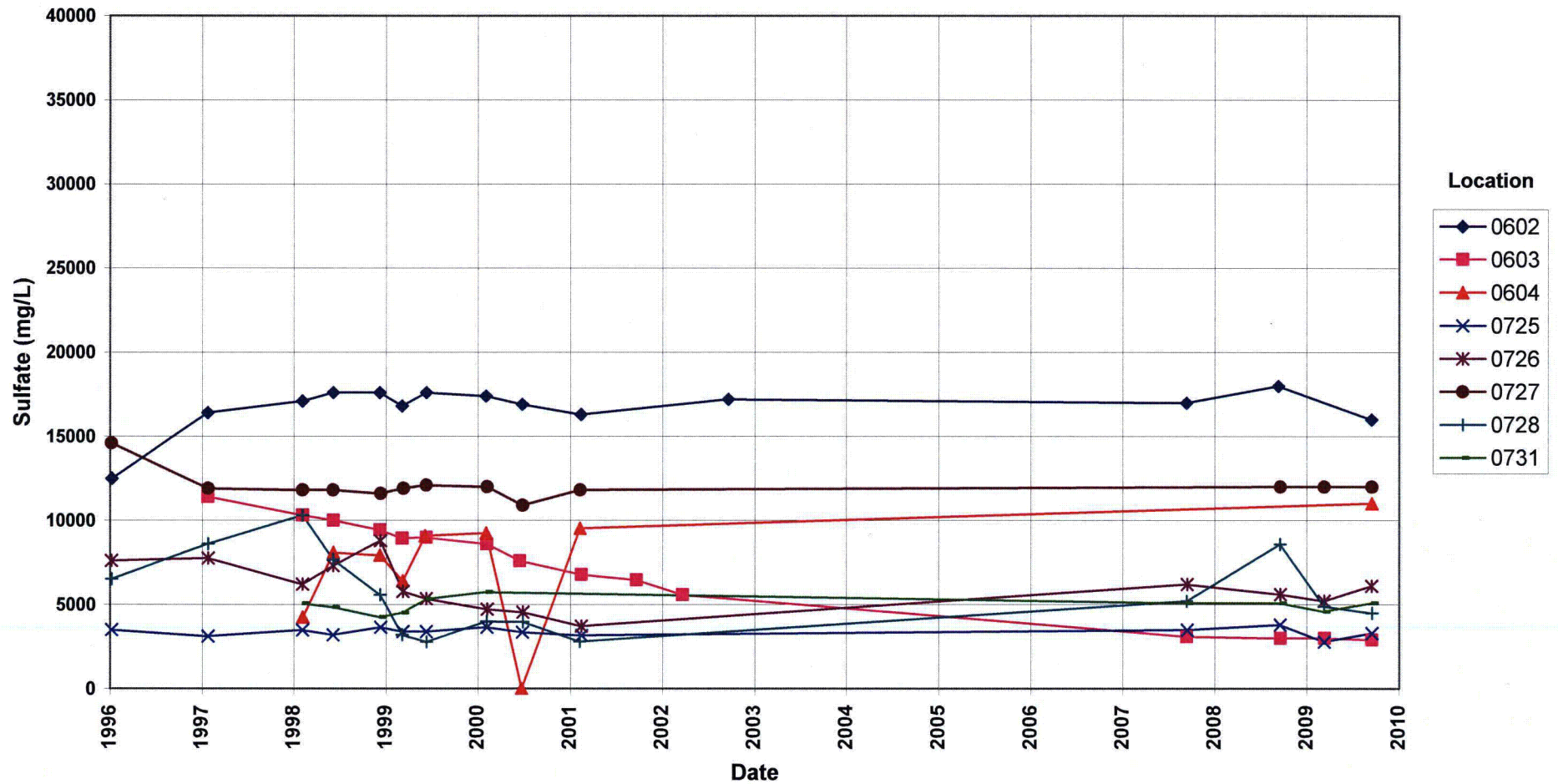
Shiprock Disposal Site (Terrace)
Strontium Concentration
No established groundwater standard



Shiprock Disposal Site (Terrace)
Strontium Concentration
No established groundwater standard



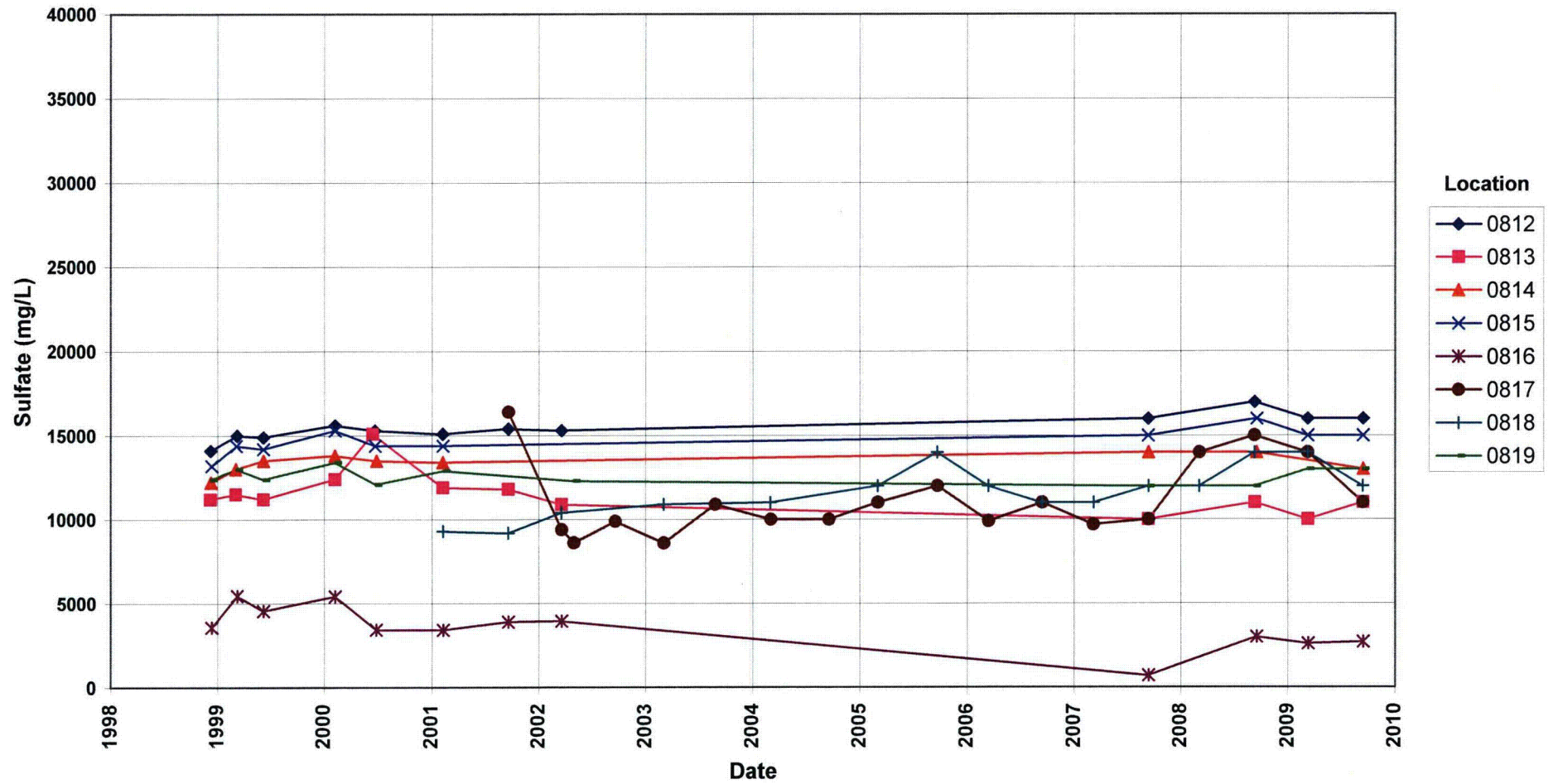
Shiprock Disposal Site (Terrace)
Sulfate Concentration
No established groundwater standard



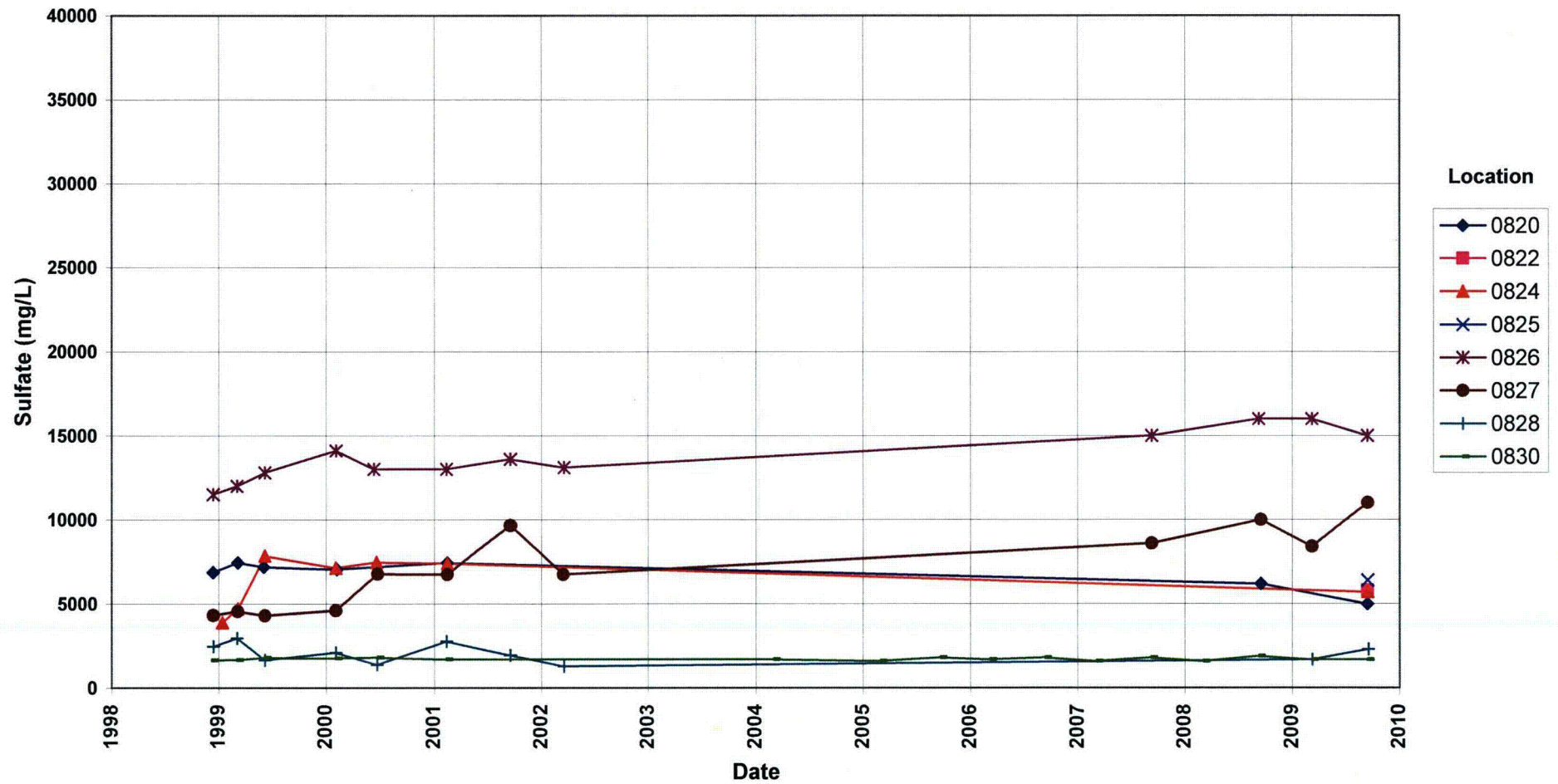
Shiprock Disposal Site (Terrace)

Sulfate Concentration

No established groundwater standard



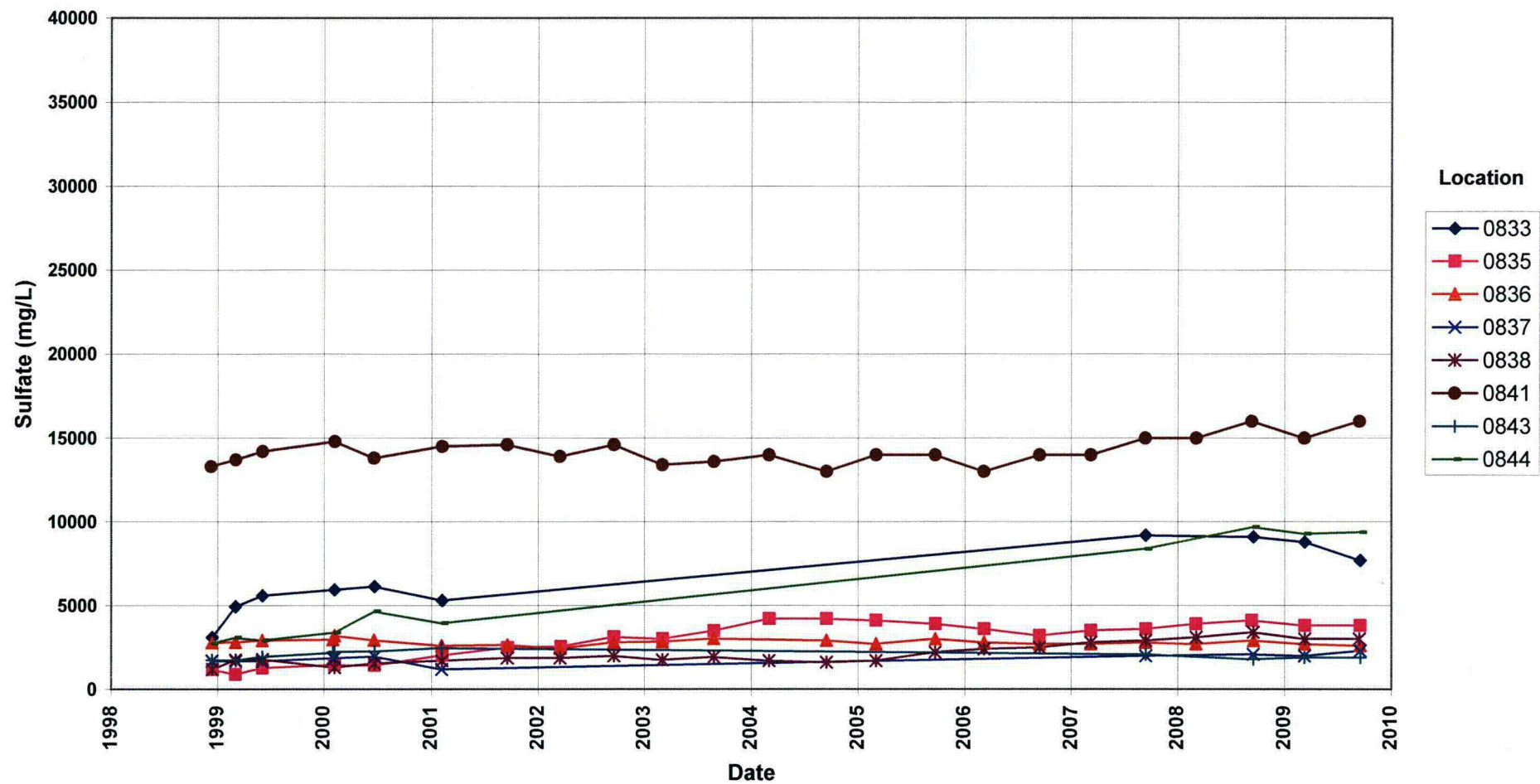
Shiprock Disposal Site (Terrace)
Sulfate Concentration
No established groundwater standard



Shiprock Disposal Site (Terrace)

Sulfate Concentration

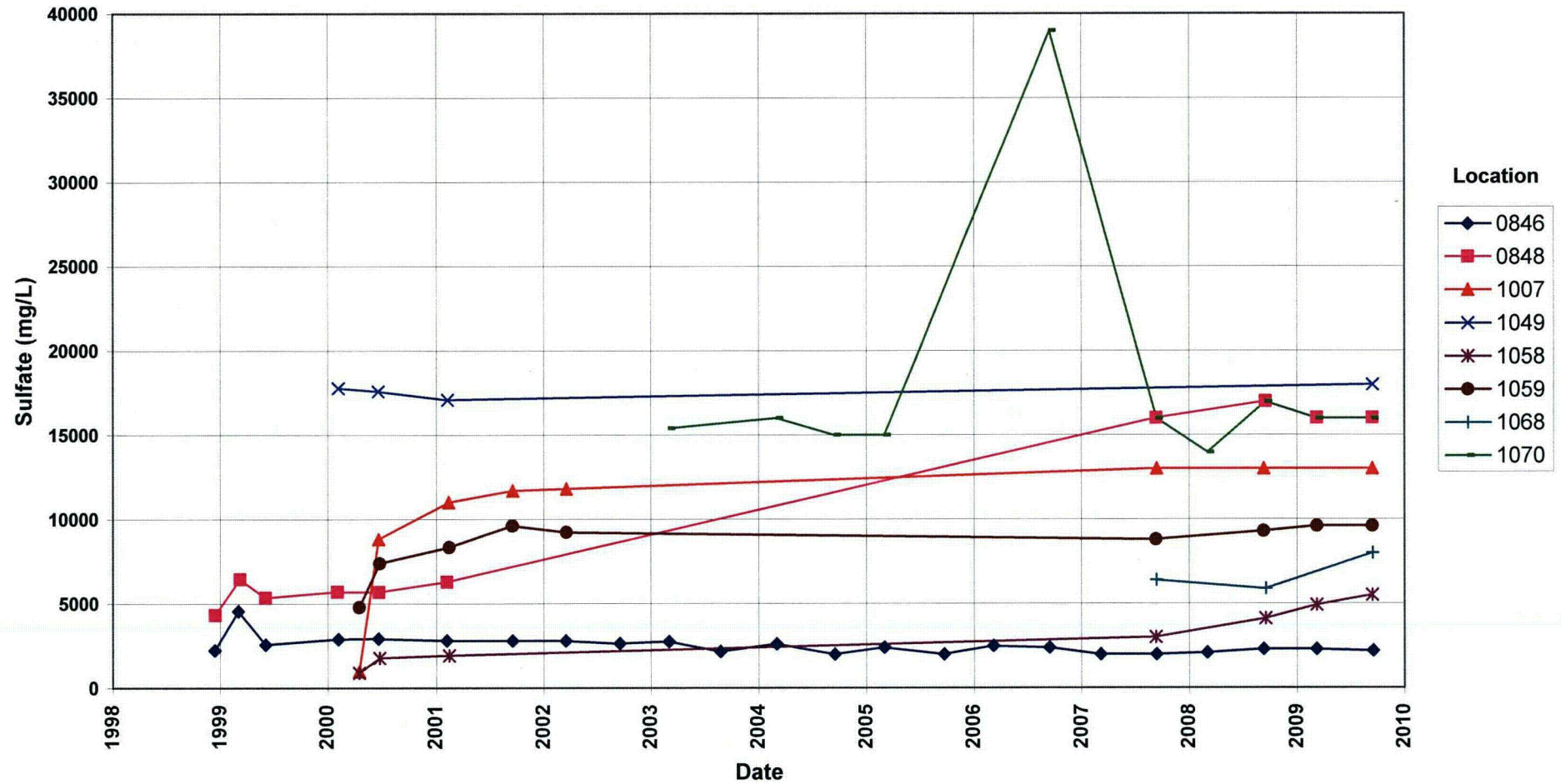
No established groundwater standard



Shiprock Disposal Site (Terrace)

Sulfate Concentration

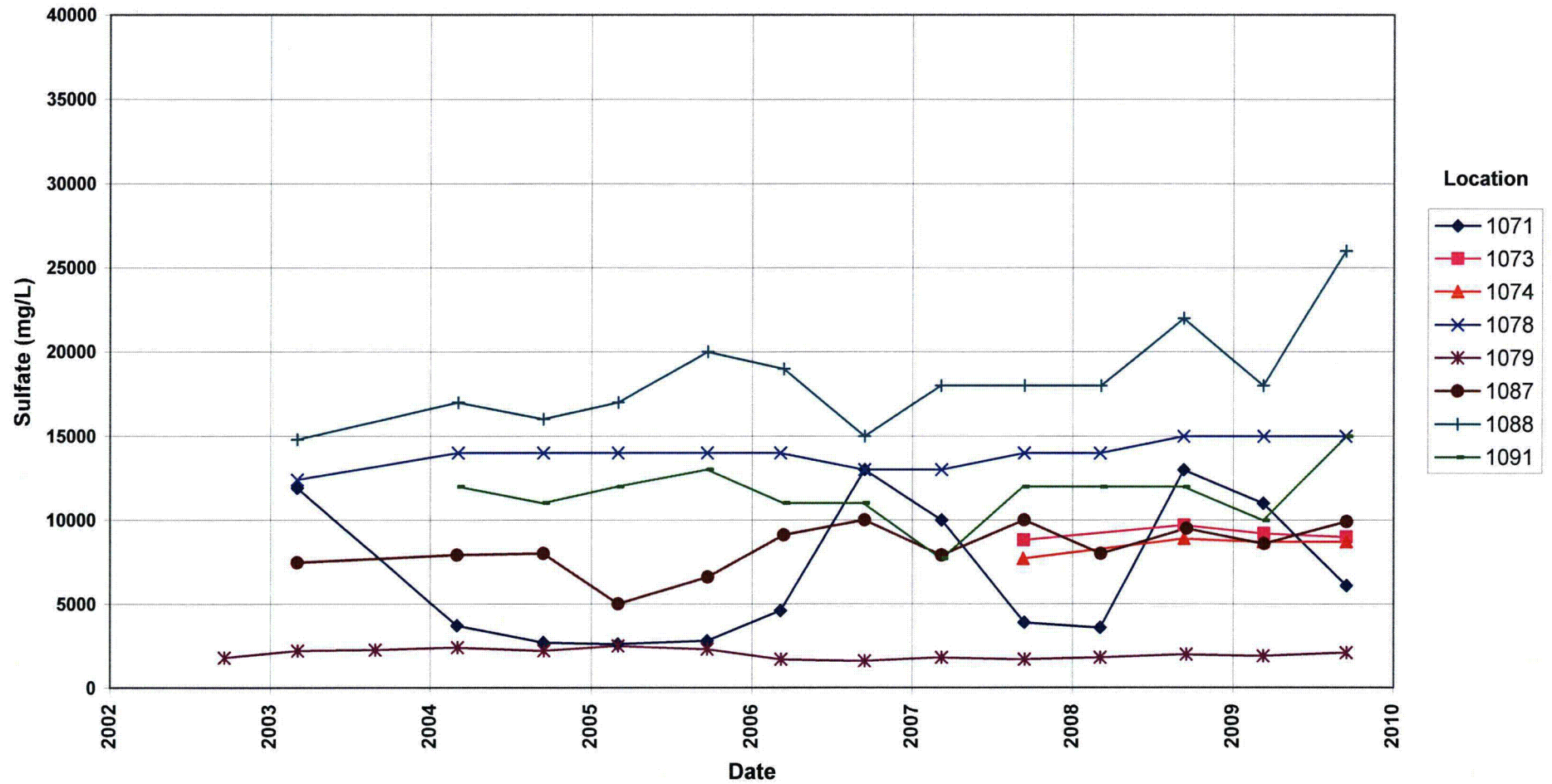
No established groundwater standard



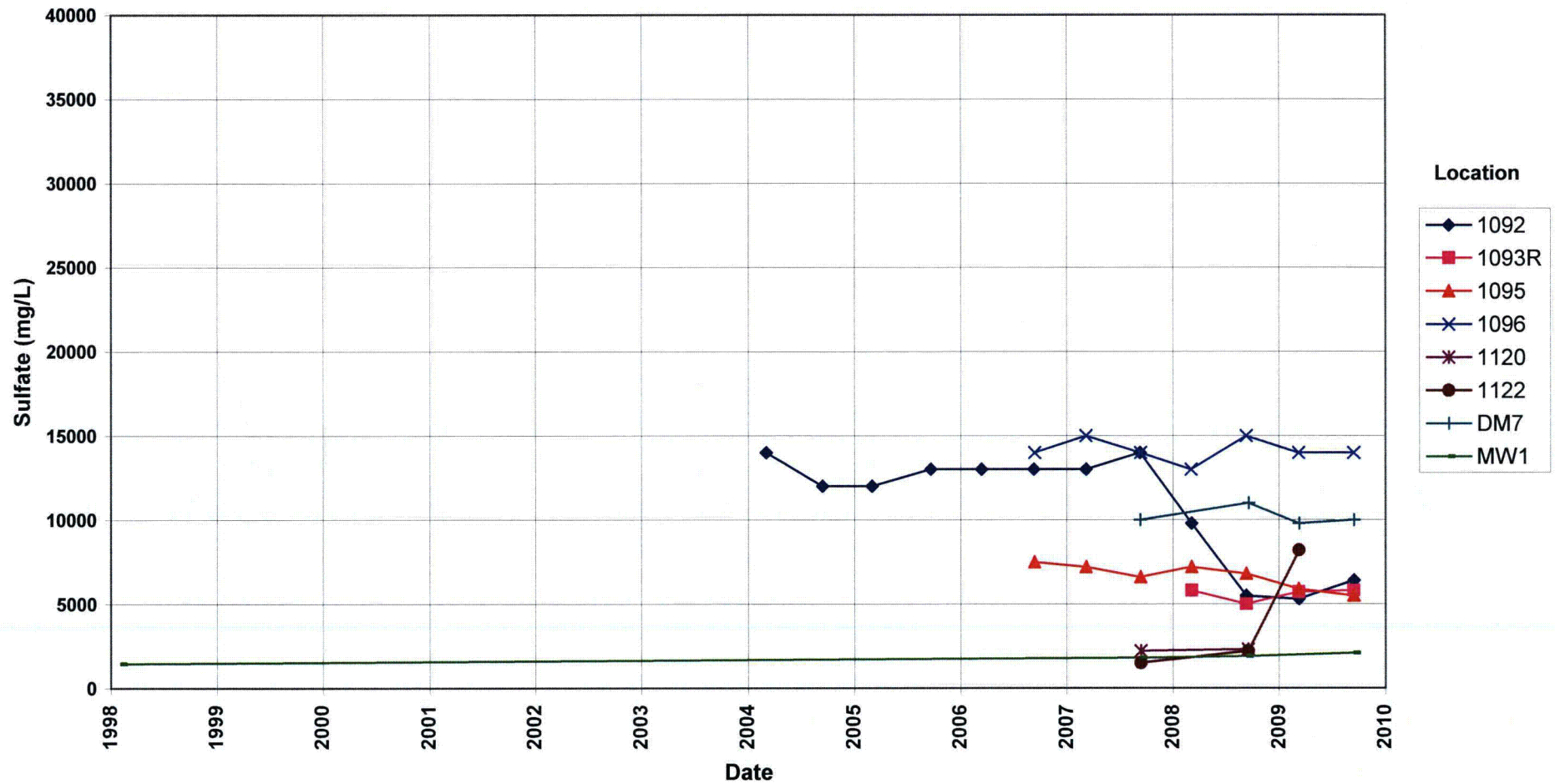
Shiprock Disposal Site (Terrace)

Sulfate Concentration

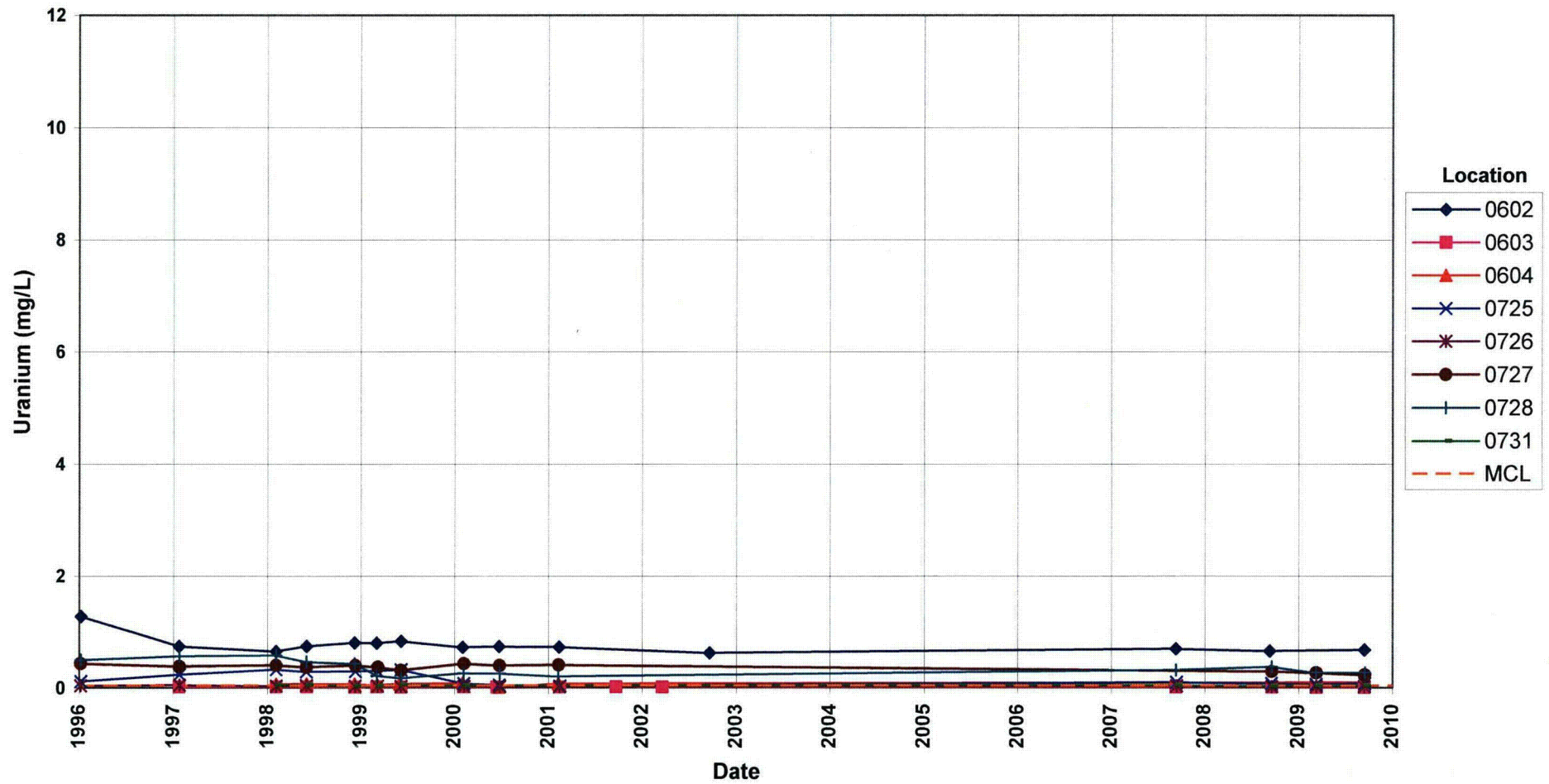
No established groundwater standard



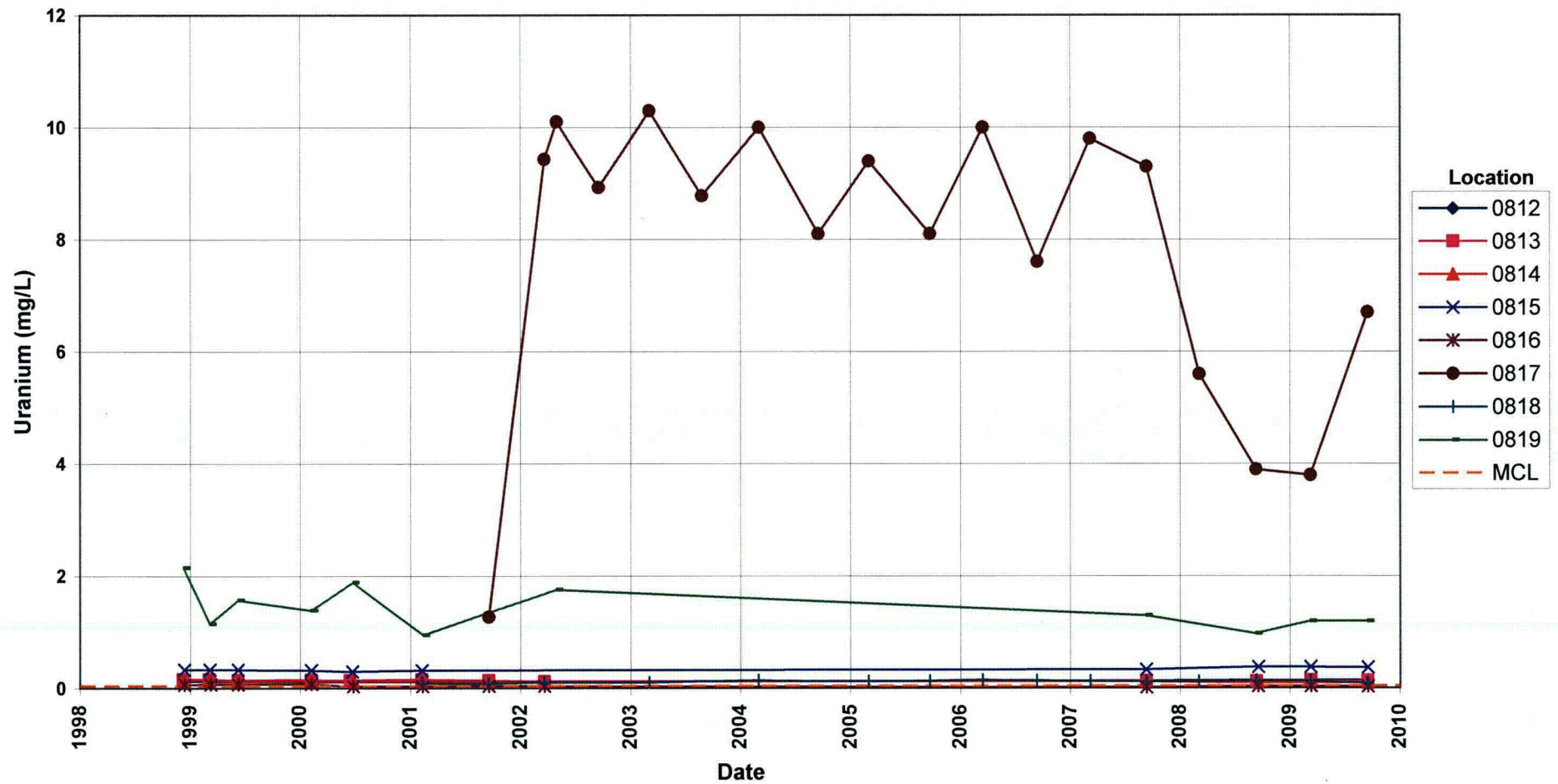
Shiprock Disposal Site (Terrace)
Sulfate Concentration
No established groundwater standard



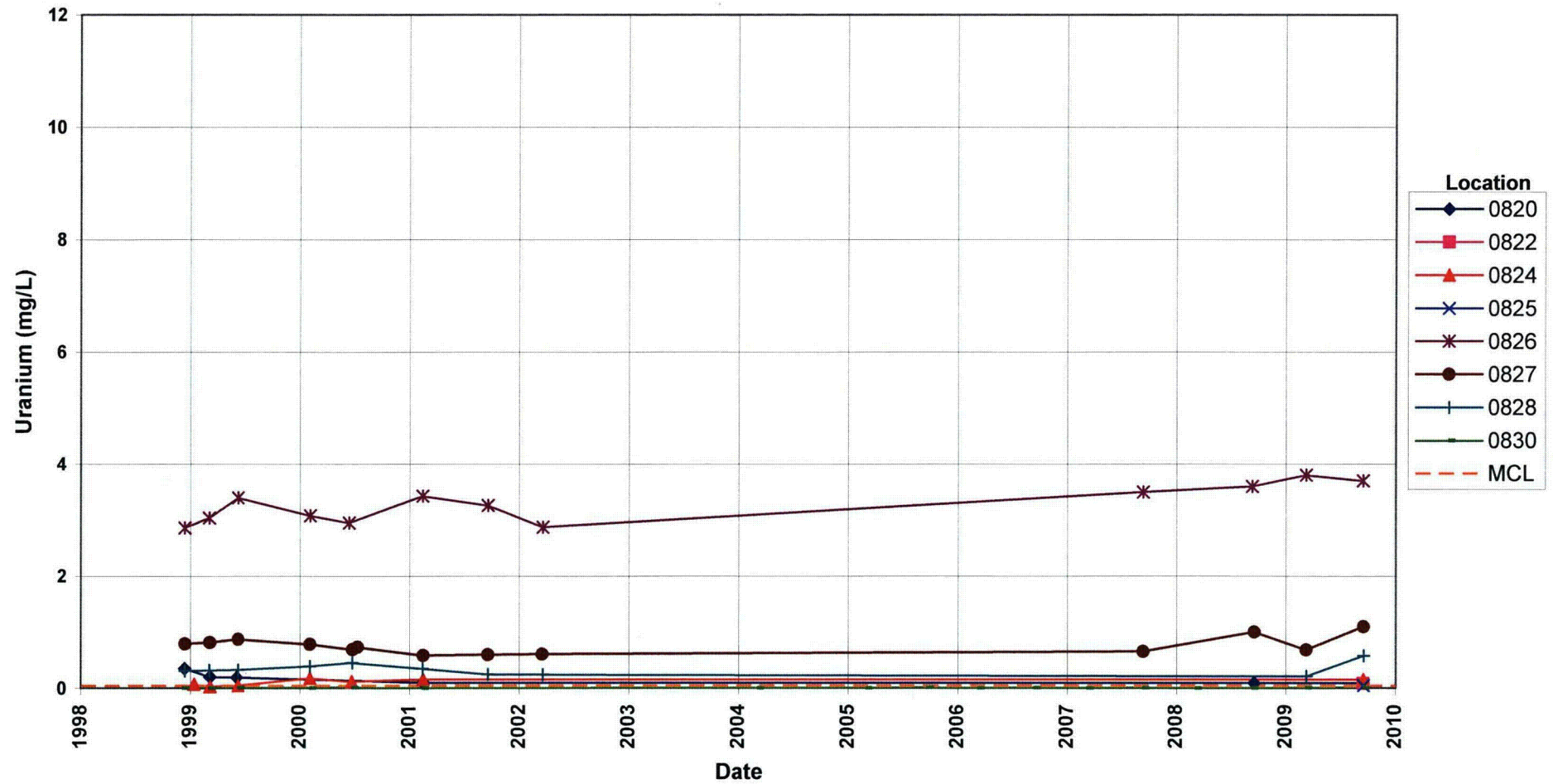
Shiprock Disposal Site (Terrace)
Uranium Concentration
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.044 mg/L



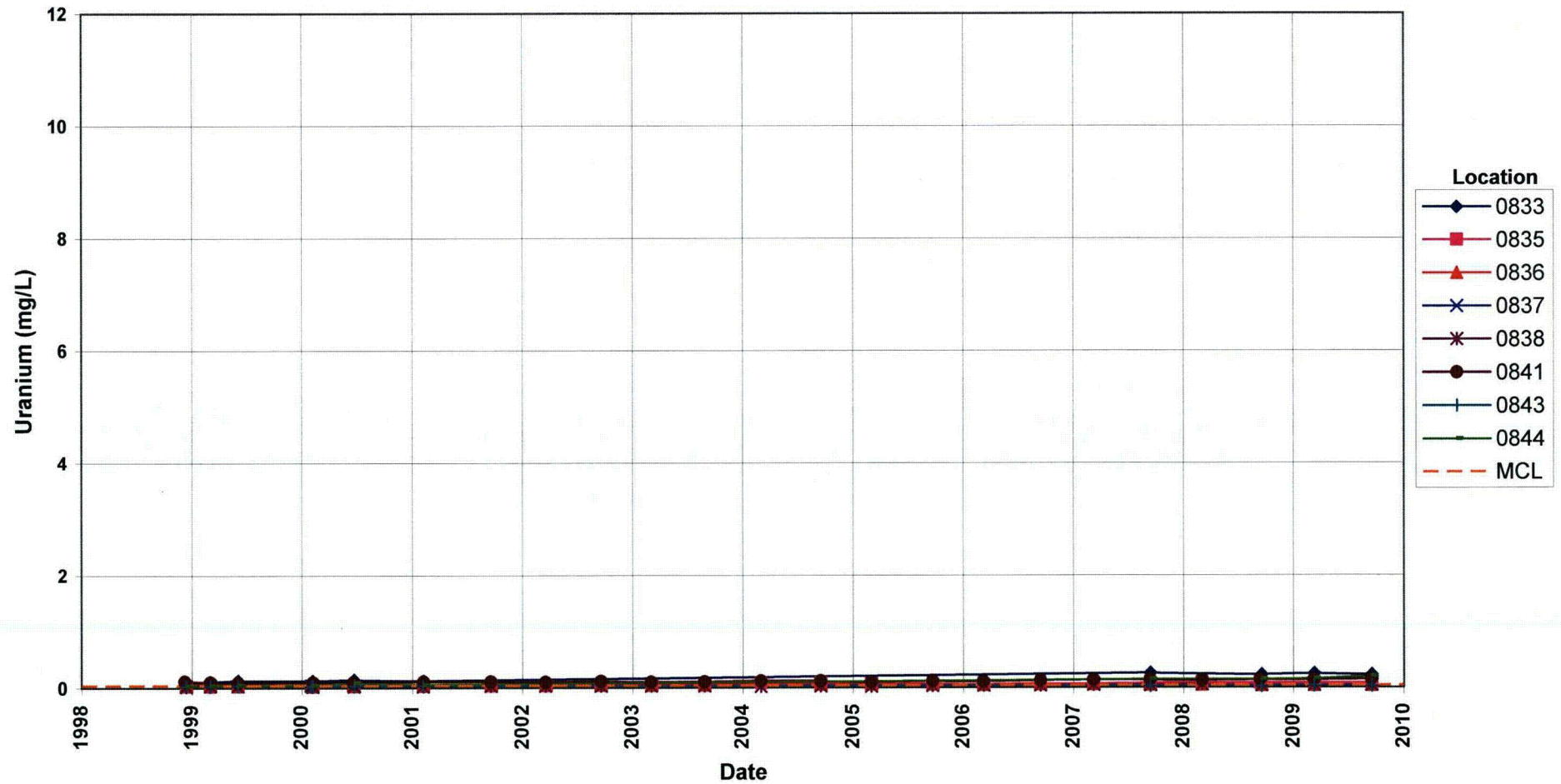
Shiprock Disposal Site (Terrace)
Uranium Concentration
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.044 mg/L



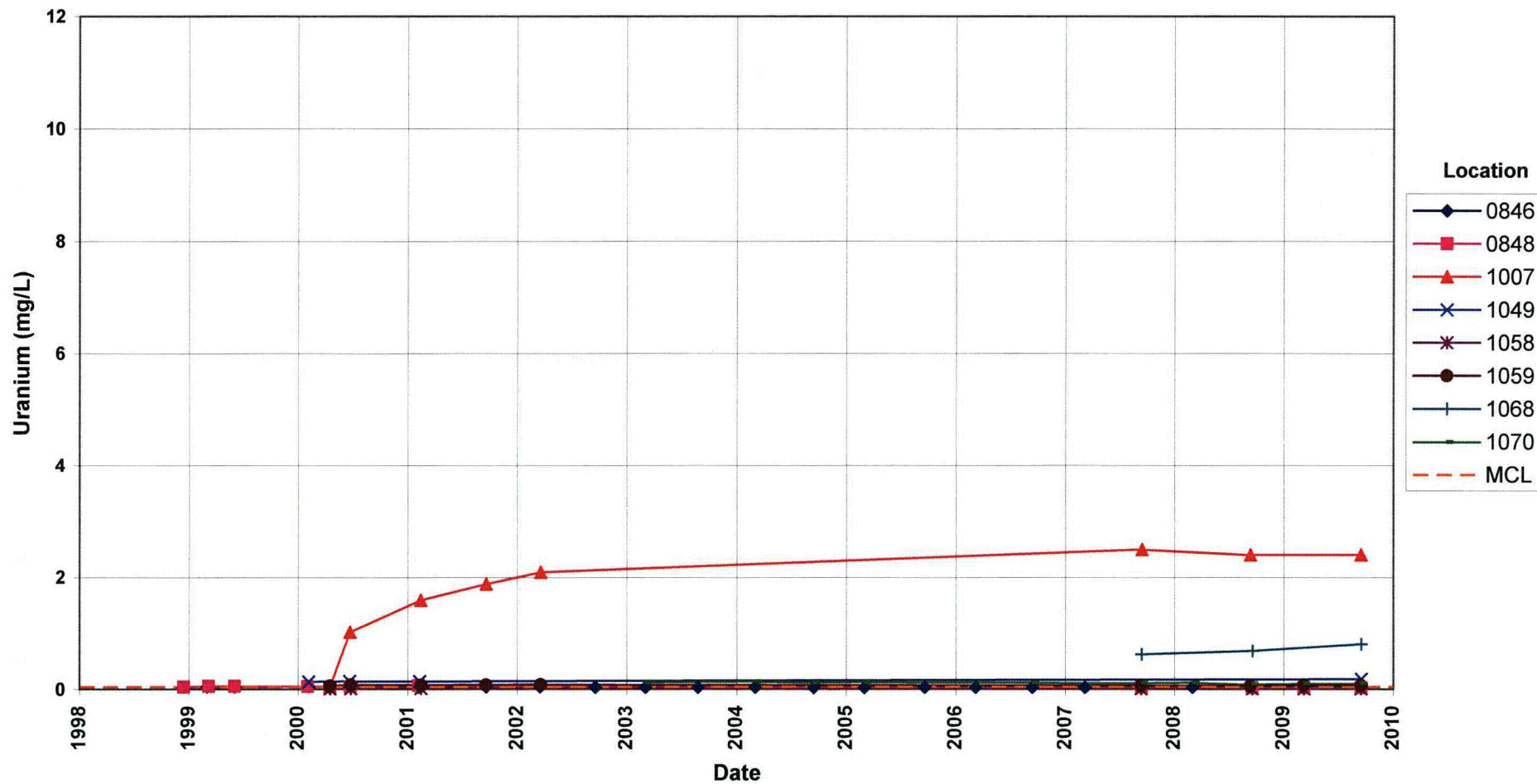
Shiprock Disposal Site (Terrace)
Uranium Concentration
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.044 mg/L



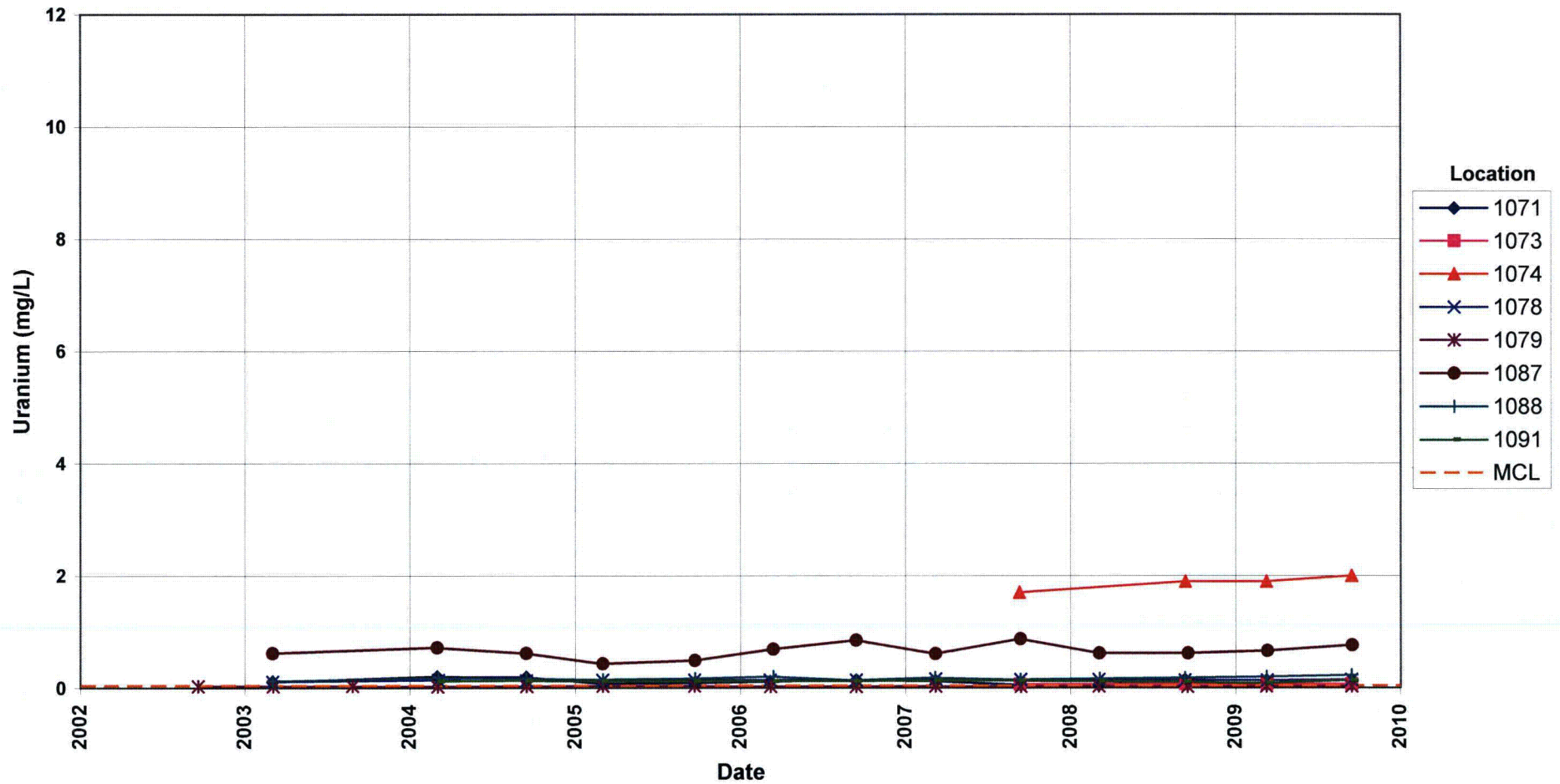
Shiprock Disposal Site (Terrace)
Uranium Concentration
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.044 mg/L



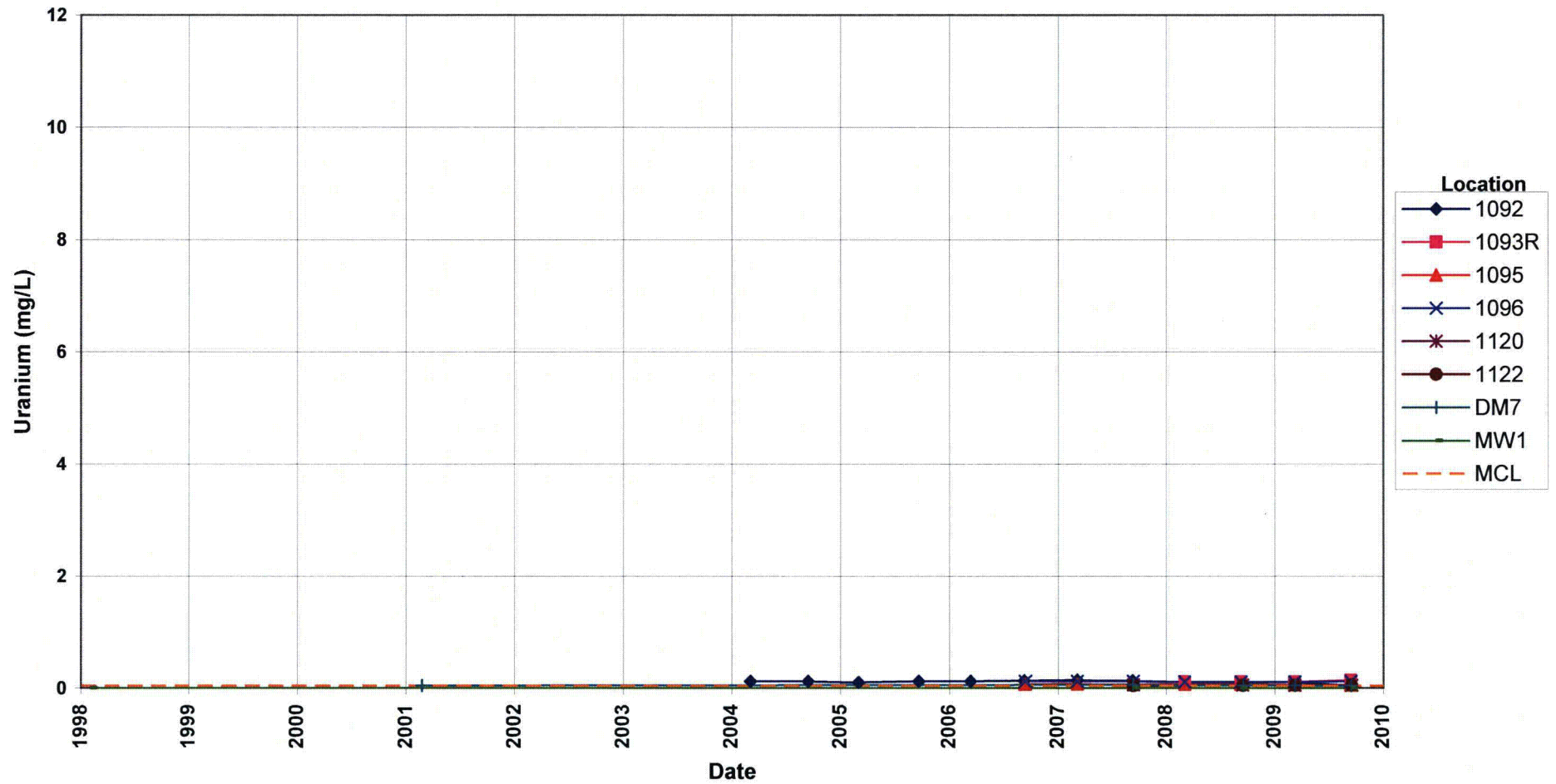
Shiprock Disposal Site (Terrace)
Uranium Concentration
40 CFR 192.02 Maximum Contaminant Level (MCL) = 0.044 mg/L



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



This page intentionally left blank

Attachment 3
Sampling and Analysis Work Order

This page intentionally left blank



established 1959

Task Order LM-501
Control Number 09-0981

August 20, 2009

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

SUBJECT: Contract No. DE-AM01-07LM00060, Stoller
September 2009 Environmental Sampling at Shiprock, New Mexico

REFERENCE: FY 2009 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 routine monitoring. Water quality data will be collected from monitor wells and surface locations at this site as part of the environmental sampling scheduled to begin the week of September 14, 2009.

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

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

SHP01

608 Km	622 Al	736 Al	792 Al	855 Al	1105 Nr	1115 Nr
610 Al	623 Al	766 Al	793 Al	856 Al	1109 Nr	1116 Nr
611 Nr	625 Al	768 Al	797 Al	857 Al	1110 Nr	1117 Nr
612 Al	626 Al	773 Al	798 Al	1008 Al	1111 Nr	1132 Nr
614 Al	628 Al	775 Al	850 Al	1009 Al	1112 Nr	1134 Nr
615 Al	630 Al	779 Al	853 Al	1089 Al	1113 Nr	1140 Al
618 Al	734 Al	782R Al	854 Al	1104 Nr	1114 Nr	1141 Al
619 Al	735 Al	783R Al				

SHP02

602 Km	812 Al/Km	823 Km	835 Al	1002 Km	1060 Al	1088 Nr
603 Al/Km	813 Al/Km	824 Km	836 Al	1003 Km	1068 Al	1091 Al
604 Km	814 Al/Km	825 Km	837 Al	1004 Km	1069 Al/Km	1092 Al
610 Nr	815 Al/Km	826 Al/Km	838 Al	1007 Al/Km	1070 Al/Km	1093R Al
611 Nr	816 Al/Km	827 Al/Km	839 Al	1011 Al/Km	1071 Al/Km	1095 Nr
725 Al/Km	817 Km	828 Al/Km	841 Al	1048 Al/Km	1073 Al/Km	1096 Nr
726 Km	818 Al	829 Km	843 Al	1049 Al/Km	1074 Al/Km	1120 Nr
727 Km	819 Km	830 Km	844 Al/Km	1057 Al/Km	1078 Al/Km	1122 Nr
728 Al/Km	820 Km	832 Al	846 Al	1058 Km	1079 Al	DM7 Km
730 Al	821 Km	833 Al	848 Al/Km	1059 Km	1087 Nr	MW1 Km
731 Al/Km	822 Km					

*NOTE: Al = Alluvium; Km = Mancos Shale; Nr = No recovery of data for classifying

Surface Locations**SHP01**

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

SHP02

662	884	889	934	942	958	1215
786	885	933	936	949		

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

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 Donivan, Stoller
Lauren Goodknight, Stoller
David Miller, Stoller
EDD Delivery
rc-grand.junction

Sampling Frequencies for Locations at Shiprock, New Mexico

Location ID	Quarterly	Semiannually	Annually	Biennially	Not Sampled	Notes
Monitor Wells						
SHP01						
608		X				Low flow
610		X				
611		X				
612		X				
614		X				Low flow
615		X				Low flow
617					X	Data logger only
618		X				Low flow
619		X				Low flow
622		X				
623		X				
625		X				
626		X				
628		X				
630		X				
734		X				Low flow
735		X				Low flow
736		X				Low flow; data logger
766		X				
768		X				
773		X				
775		X				
779		X				
782R		X				
783R		X				
792		X				
793		X				
797		X				Low flow
798		X				
850		X				Low flow
853		X				
854		X				Data logger only
855		X				
856		X				
857		X				Data logger only
862					X	WLs only in Feb.
863					X	WLs only in Feb.
1000					X	WLs only in Feb.
1001					X	WLs only in Feb.
1008		X				Data logger only
1009		X				
1062					X	WLs only in Feb.
1089		X				U, SO4, NO3 only at vault
1104		X				U, SO4, NO3 only at vault
1105		X				
1109		X				Trench 2; U, SO4, NO3 only at vault

1110		X				Trench 1; U, SO4, NO3 only at vault
1111		X				Well point; U, SO4, NO3 only. Purge 1 casing vol then sample
SHP01						
1112		X				Well point; U, SO4, NO3 only. Purge 1 casing vol then sample
1113		X				Well point; U, SO4, NO3 only. Purge 1 casing vol then sample
1114		X				Well point; U, SO4, NO3 only. Purge 1 casing vol then sample
1115		X				Well point; U, SO4, NO3 only. Purge 1 casing vol then sample
1116		X				Well point; U, SO4, NO3 only. Purge 1 casing vol then sample
1117		X				Well point; U, SO4, NO3 only. Purge 1 casing vol then sample
1132		X				
1134		X				
1140		X				
1141		X				
SHP02						
600					X	WL semi-annually only
602		X				WL; Data logger
603		X				WL semi-annually only
604		X				WL semi-annually only; data logger
648				Odd year		Measure flow rate semiannually; sample biennially; next in 2/11
725		X				Data logger only
726		X				WLs semi-annually
727		X				
728		X				WLs semi-annually; data logger
730		X				Data logger
731		X				WL; Data logger
800					X	Water levels only; in March
801					X	Water levels only; in March
802					X	Water levels only; in March
803					X	Water levels only; in March
812		X				WLs semi-annually
813		X				WLs semi-annually; data logger
814		X				WL semi-annually only
815		X				WL semi-annually only
816		X				WL semi-annually only
817		X				Low flow; WL semi-annually
818		X				Ext. well; U, SO4, NO3 only at vault
819		X				WL semi-annually only; data logger
820		X				WL semi-annually only
821		X				WL semi-annually only
822		X				WL semi-annually only
823		X				WL semi-annually only

824		X				WL semi-annually only
825		X				WL semi-annually only
SHP02						
826		X				Data logger; WL semi-annually
827		X				WL; Data logger
828		X				WL semi-annually only; data logger
829		X				WL semi-annually only
830		X				Data logger
832		X				Low flow
833		X				WL semi-annually only
835		X				Low flow; data logger
836		X				Low flow; data logger
837		X				Data logger only
838		X				Low flow
839		X				Low flow
841		X				Low flow; data logger
843		X				Data logger only
844		X				WL semi-annually only
846		X				Low flow; data logger
848		X				WL; Data logger
1002		X				WL semi-annually only
1003		X				WL semi-annually only
1004		X				WL semi-annually only
1007		X				WL semi-annually only
1011		X				
1048		X				WL semi-annually only
1049		X				WL semi-annually only
1057		X				WL semi-annually only
1058		X				
1059		X				WL semi-annually only
1060		X				Low flow; data logger
1067					X	WL only; Bob Lee Wash
1068		X				WL only; Bob Lee Wash
1069		X				WL only; Bob Lee Wash; data logger
1070		X				Ext. well; U, SO4, NO3 only at vault
1071		X				Ext. well; U, SO4, NO3 only at vault
1073		X				WL semi-annually only; data logger
1074		X				
1078		X				Ext. well; U, SO4, 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, NO3 only at vault
1092		X				Ext. well; U, SO4, NO3 only at vault
1093R		X				Ext. well; U, SO4, NO3 only at vault
1095		X				Ext. well; U, SO4, NO3 only at vault
1096		X				Ext. well; U, SO4, NO3 only at vault

1120		X				
1122		X				
MW1		X				WL semi-annually only
DM7		X				WL semi-annually only
Surface Locations						
SHP01						
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, SO ₄ , NO ₃ only at vault
1203		X				East of disposal cell
1205		X				San Juan River E of well 853
SHP02						
662		X				Lower Bob Lee Wash
786		X				Seep below US Hwy 666 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 666
934		X				2nd wash W of Highway 666
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				

Sampling conducted in March and September

Constituent Sampling Breakdown

Analyte	Groundwater	Surface Water	Required Detection Limit (mg/L)	Analytical Method	Line Item Code
Approx. No. Samples/yr	248	56			
Field Measurements					
Alkalinity					
Dissolved Oxygen	X				
Redox Potential	X	X			
pH	X	X			
Specific Conductance	X	X			
Turbidity	X	X			
Temperature	X	X			
Laboratory Measurements					
Aluminum					
Ammonia as N (NH ₃ -N)	X	X	0.1	EPA 350.1	WCH-A-005
Calcium	X	X	5	SW-846 6010	LMM-01
Chloride	X	X	0.5	SW-846 9056	MIS-A-039
Chromium					
Iron					
Lead					
Magnesium	X	X	5	SW-846 6010	LMM-01
Manganese	X	X	0.005	SW-846 6010	LMM-01
Molybdenum					
Nickel					
Nickel-63					
Nitrate + Nitrite as N (NO ₃ +NO ₂)-N	X	X	0.05	EPA 353.1	WCH-A-022
Potassium	X	X	1	SW-846 6010	LMM-01
Radium-226					
Radium-228					
Selenium	X	X	0.0001	SW-846 6020	LMM-02
Silica					
Sodium	X	X	1	SW-846 6010	LMM-01
Strontium	X	X	0.2	SW-846 6010	LMM-01
Sulfate	X	X	0.5	SW-846 9056	MIS-A-044
Sulfide					
Total Dissolved Solids					
Total Organic Carbon					
Uranium	X	X	0.0001	SW-846 6020	LMM-02
Vanadium					
Zinc					
Total No. of Analytes	12	12			

Note: All 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.

This page intentionally left blank

Attachment 4
Trip Report

This page intentionally left blank

Memorandum

DATE: September 30, 2009
TO: David Miller
FROM: Jeff Price
SUBJECT: Sampling Trip Report

Site: Shiprock, NM

Dates of Sampling Event: September 14-18, 2009.

Team Members: Heidi Frasure, Sam Campbell, David Atkinson, Kent Moe, Dan Sellers, and Jeff Price

Number of Locations Sampled: Water samples for metals, anions, and (NO₂+NO₃)-N / NH₃-N were collected from 109 wells and 13 surface water locations.

Locations Not Sampled/Reason: 15 surface water locations (655, 786, 884, 885, 887, 889, 933, 934, 936, 937, 938, 939, 942, 958, and 959) and 19 wells (730, 766, 768, 773, 775, 779, 821, 823, 829, 832, 839, 1002, 1003, 1004, 1011, 1048, 1057, 1060, and 1069) were dry. Due to the limited volume of water, only metals samples were collected in wells 734, 1120, and 1122.

Location Specific Information: The casing of well 828 was extended in response to construction in the area. The result is a new total depth of 26.70 below top of PVC casing.

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
2604	01-1132	Duplicate	Groundwater	HKQ-669
2729	01-1009	Duplicate	Groundwater	HKQ-692
2810	02-0813	Duplicate	Groundwater	HKQ-876
2811	02-0826	Duplicate	Groundwater	HKQ-877
2812	02-0841	Duplicate	Groundwater	HKQ-878
2813	02-0603	Duplicate	Groundwater	HKQ-879
2814	02-0731	Duplicate	Groundwater	HKQ-880
2731	N/A	Equipment Blank	N/A	HKR-361

RIN Number Assigned: Samples were assigned to RIN 09092562 (SHP01) and 09092565 (SHP02).

Sample Shipment: Samples were shipped in eight containers from Grand Junction to ALS Laboratory Group on September 23, 2009.

Well Inspection Summary: Well inspections were conducted at all sampled wells; several wells on the flood plain have plant roots invading the screened areas. Well 02-1049 appears to have been flooded out and dirtied in a flash flood.

Equipment: All wells were sampled using the low-flow procedure with a peristaltic pump and dedicated tubing or a dedicated bladder pump. Some Category III wells on the terrace were sampled with a bailer. The flowing extraction wells were sampled according to Category IV protocol.

Water Level Measurements: Water levels were collected in all wells. The following water level measurements were taken on wells that were not sampled.

Well	Date	Depth to Water (ft)
0600	9/15/09	33.85
0616	9/15/09	Dry
0629	9/15/09	4.60
0804	9/15/09	Dry
0805	9/15/09	Dry
1006	9/15/09	Dry
1010	9/15/09	9.64

Field Variance: None.

Institutional Controls: All gates were closed and locked during the sampling event.

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

Signs: No missing or vandalized signs were observed.

Trespassing/Site Disturbances: N/A

Site Issues:

Disposal Cell/Drainage Structure Integrity: N/A

Vegetation/Noxious Weed Concerns: Tamarisk plant infestations on the flood plain are creating access problems for surface water locations and some wells.

Maintenance Requirements: N/A

Safety Issues: None.

Corrective Action Taken: None.

(JEP/lcg)

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

\\Condor\Home\L40048\My Documents\Ground Water\SHP\0909shp-TRP.doc