UMTRA
Ground Water Project

DATA VALIDATION
SHIPROCK, NEW MEXICO
UMTRA SITE

March 2002
Water Sampling

Prepared by the
U.S. Department of Energy
Grand Junction Office

SHIPROCK, NEW MEXICO
March 2002

DATA PACKAGE CONTENTS

This data package includes the following information:

Item No.	Description of Contents
1.	**Site Hydrologist Summary**
2.	**Data Package Assessment,** which includes the following: a. Field procedures verification checklist b. Confirmation that chain-of-custody was maintained. c. Confirmation that holding time requirements were met. d. Evaluation of the adequacy of the QC sample results.
3.	**Data Assessment Summary,** which describes problems identified in the data validation process and summarizes the validator's findings.
4.	**Suspected Anomalies Report** (SAR), which is generated by the UMTRA database system. This report compares the new data set with historical data and designates "suspected anomalies" based on the many criteria listed as footnotes on each page. In aggregate, these criteria cause the suspected anomaly program to be very conservative; many of the data shown in the tables are not, in the evaluator's judgment, truly anomalies, but merely natural variations in data or routine changes in laboratory detection limits. The designation "OK" affirms the judgment that the particular entry is not an anomaly and, therefore, requires no further inquiry.
5.	**Anomalous Data Review Checksheets**, which list the subset of data that merits explanation or follow-up action. The "Disposition" column of this report describes the evaluator's judgments on the listed anomalies.
6.	**UMTRA Database Printouts** of analytical data organized as follows: a. Ground Water Quality Data (included on disk) b. Surface Water Quality Data (included on disk) c. Equipment Blank Data (included on disk) d. Time Versus Concentration Graphs e. Static Ground Water Level Measurement Data
7.	**Sampling and Analysis Work Order and Trip Reports.**

Site Hydrologist Summary

Site: Shiprock, New Mexico

Sampling Period: March 18 to March 21, 2002

SUMMARY CRITERIA

1. **Did concentrations in water from any domestic wells sampled exceed a ground water standard, a primary drinking water standard, or health advisory?**

   Domestic wells were not sampled during this event.

2. **Were standards exceeded at any point-of-compliance wells?**

   No point-of-compliance wells have been established at the Shiprock site.

3. **As a result of this sampling round, is there any indication of unexpected contaminated ground water movement?**

   The distribution and rate of movement of contaminated ground water at the site was characterized and is reported in the Final Site Observational Work Plan (SOWP) issued in November 2000. With one exception, ground water sampling data from this sampling round did not indicate any unexpected movement of contaminated ground water outside of what was portrayed in the SOWP.

   Elevated concentrations of nitrate and uranium in well 817 are most likely related to residual contaminated ground water in the weathered Mancos Shale resulting from milling operations. Well 817, just west of the disposal cell, is screened in the Mancos Shale with the top of the screened interval 10 feet below the contact with the terrace alluvium. The ground water level in this well is 6 feet below the base of the terrace alluvial material.

   Wells with sample concentrations that exceeded UMTRA standards are listed in Table 1. Graphs that show nitrate, selenium, and uranium concentrations versus time for selected floodplain and terrace wells are included in this report.

4. **Is there statistical evidence that UMTRA Project related contaminants were detected in a surface body of water in greater concentrations than upstream ambient water quality?**

Yes. Surface water concentrations were compared to statistical benchmark values derived using data from 10 samplings of locations 888 and 898, which are upstream of the site on the San Juan River. Concentrations of nitrate (11.9 mg/L) and uranium (0.0256 mg/L) exceeded their benchmark values of 4.55 mg/L (nitrate) and 0.0053 mg/L (uranium) in the sample collected from location 940 on the San Juan River. The elevated nitrate and uranium concentrations in the river are indicative of alluvial ground water discharge into the San Juan River and are prevalent at this location during low flow. Benchmark values were not exceeded at the other river locations adjacent to and downstream of the site. Surface water locations exceeding benchmark values are listed in Table 2.

At location 655, which is in a drainage channel on the floodplain, concentrations of nitrate, selenium, and uranium exceeded benchmark values (Table 2). These elevated concentrations reflect contaminated ground water from the terrace system to the south emerging as seeps along the escarpment and flowing down to the floodplain. The final SOWP indicated no unacceptable risks associated with exposure to surface water.

At locations 887 and 959, which both are on a distributary channel of the San Juan River, concentrations of nitrate, selenium, and uranium exceeded benchmark values (Table 2). San Juan River water flows through the distributary channel when the river stage is high; however, at the time of this sampling, the river stage was low and no river water was entering the channel. Therefore, the elevated concentrations at 887 and 959 reflect contaminated ground water emerging in seeps from the terrace system to the south. The final SOWP indicated no unacceptable human health risks are associated with exposure to surface water in washes and seeps.

Benchmark values were exceeded at additional surface water locations listed in Table 2. All of these locations receive discharge of ground water from the terrace system and elevated concentrations are expected. In addition, the surface water at most of these locations is ponded; therefore, the elevated concentrations may be partly attributed to concentration by evaporation.

Table 1. Shiprock Wells Exceeding UMTRA Standards in March 2002.

ANALYTE	STANDARD[1]	SITE	WELLS (AND CONCENTRATION) EXCEEDING STANDARD[1]
Nitrate	44.27	SHP01	608 (2,070), 614 (3,550), 615 (4,020), 618 (1,780), 619 (56.6), 734 (98.3), 735 (686), 854 (1,260)
Selenium	0.01	SHP01	614 (0.0935), 615 (0.806), 618 (0.44), 619 (0.332), 734 (0.145), 735 (0.122), 854 (0.0123)
Uranium	0.044	SHP01	608 (1.7), 614 (2.18), 615 (2.71), 618 (2.1), 619 (0.631), 734 (0.185), 735 (0.0778), 736 (0.236), 854 (4.11)
Nitrate	44.27	SHP02	603 (3,980), 812 (5,940), 813 (9,570), 816 (454), 817 (3,020), 818 (9,490), 826 (89.3), 827 (259), 832 (1,770), 835 (305), 836 (60.7), 839 (1,720), 841 (2,290), 846 (343), 1007 (2,330), 1057 (5,180), 1059 (1,880)
Selenium	0.01	SHP02	603 (0.192), 812 (6.35), 813 (0.0378), 816 (0.0736), 818 (2.4), 828 (0.0513), 832 (2.59), 835 (0.2), 836 (0.146), 838 (0.0782), 841 (3.09), 846 (0.533), 1007 (0.118), 1057 (0.392), 1059 (0.0606), 1060 (2.62)
Uranium	0.044	SHP02	812 (0.114), 813 (0.119), 817 (9.43), 818 (0.105), 826 (2.87), 827 (0.602), 828 (0.24), 832 (0.0903), 836 (0.0557), 839 (0.406), 841 (0.102), 1007 (2.09), 1057 (0.1), 1059 (0.0812), 1060 (0.123)

[1] Units are in mg/L.

Site Hydrologist Summary (continued)

Table 2. Locations that Exceeded Surface Water Benchmarks in March 2002.

SAMPLE ID	SITE CODE	LOCATION COMMENTS	ANALYTE	BENCHMARK[1]	CONCENTRATION[1]
655	Floodplain (SHP01)	Drainage Channel	Nitrate	4.55	6.91
			Selenium	0.0023	0.0045
			Uranium	0.0053	0.0234
887	Floodplain (SHP01)	Distributary channel	Nitrate	4.55	427
			Selenium	0.0023	0.305
			Uranium	0.0053	0.066
940	Floodplain (SHP01)	San Juan River	Nitrate	4.55	11.9
			Uranium	0.0053	0.0256
959	Floodplain (SHP01)	Distributary channel	Nitrate	4.55	314
			Selenium	0.0023	0.179
			Uranium	0.0053	0.0894
425	Terrace (SHP02)	Seep	Nitrate	4.55	164
			Selenium	0.0023	0.0194
			Uranium	0.0053	0.698
426	Terrace (SHP02	Seep	Nitrate	4.55	52.2
			Selenium	0.0023	0.0431
			Uranium	0.0053	0.138
886	Terrace (SHP02)	Many Devils Wash	Nitrate	4.55	2,750
			Selenium	0.0023	1.24
			Uranium	0.0053	0.156
889	Terrace (SHP02)	Many Devils Wash	Nitrate	4.55	3,480
			Selenium	0.0023	1.51
			Uranium	0.0053	0.187
933	Terrace (SHP02)	1st Wash	Nitrate	4.55	258
			Selenium	0.0023	0.146
			Uranium	0.0053	0.0864
934	Terrace (SHP02)	2nd Wash	Nitrate	4.55	422
			Selenium	0.0023	0.256
			Uranium	0.0053	0.0506
942	Terrace (SHP02)	Pond	Nitrate	4.55	265
			Selenium	0.0023	0.516
			Uranium	0.0053	0.0403

[1]Units are in mg/L

Craig Goodknight 9/23/02

Craig Goodknight — Date
Project Lead

Craig Goodknight for 9/23/02

Mark Kautsky — Date
Site Hydrologist

DATA ASSESSMENT

UGW Water Sampling Field Activities Verification Checklist

Project Shiprock
Date(s) of Verification 6-19-02

Date(s) of Water Sampling March 18 to March 21, 2002
Name of Verifier Sam Campbell

	Response Comments (Yes, No, N/A)	
1. Is the SAP the primary document directing field procedures?	Yes	
List other documents, SOP's, instructions.		Sampling work order dated 2-20-02
2. Were the sampling locations specified in the planning documents sampled?	Yes	Except 1004 (dry), 847 (pigeon infestation), and surface locations 786, 884, 885 and 936 (all dry), ~~and~~ or frozen)
3. Was a pre-trip calibration conducted as specified in the above named documents?	Yes	No temperature cp check, no cal info on one ORP probe and one turbidity probe
4. Was an operational check of the field equipment conducted twice daily?	Yes	
Did the operational checks meet criteria?	No	Several pH readings, ORP did not meet criteria Could not verify checks for one team - pH 4 used for check and values were not recorded during the primary cal
5. Were the number and types (alkalinity, temperature, Ec, pH, turbidity, DO, ORP) of field measurements taken as specified?	Yes	Except alkalinity at 886, no measurements at 839, 1060 - limited water
6. Was the Category of the well documented?	Yes	
7. Were the following conditions met when purging a Category I well:		
Were two pump/tubing volumes purged prior to sampling?	Yes	
Did the water level stabilize prior to sampling?	Yes	
Was a turbidity of less than 10 NTUs obtained prior to sampling?	Yes	Except at well 854
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?	Yes	
8. Were the following conditions met when purging a Category II well:		
Was the flow rate less than 100 mL/min?	No	111 mL/min

UGW Water Sampling Field Activities Verification Checklist (continued)

Were two pump/tubing volumes removed prior to sampling?	Yes	
Were water levels documented during the purge?	Yes	
9. Were duplicates taken at a frequency of one per 20 samples for ground water and surface water?	Yes	
10. Were equipment blanks taken at a frequency of one per 20 samples that were collected with nondedicated equipment?	Yes	
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?	Yes	
13. Were samples collected in the containers specified?	Yes	
14. Were samples filtered and preserved as specified?	Yes	
15. Were the number and types of samples collected as specified?	Yes	
16. Were chain of custody records completed and was sample custody maintained?	Yes	
17. Are field data sheets signed and dated by both team members?	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	Except at 940, 934, 889, 850
20. Were water levels measured at the locations specified in the planning documents?	Yes	

DATA PACKAGE ASSESSMENT

REQUISITION NUMBERS: 17889 SITE: Shiprock, NM LABORATORY: GJO ANALYSIS DATES: 3/26 → 4/17/02

REVIEWER: Jeff Price (NAME print) J.E. Price (SIGNATURE) May 16, 02 (DATE)

	ICP-MS ✓	ICP-AES ✓	GFAA	FAA	$NaBH_4$ ✓	AS	LSc	PC	IC ✓	Gravimetric	Colorimetric	Other
CHAIN 0F CUSTODY	OK	OK	NA	NA	OK	NA	NA	NA	OK	NA	OK	NA
HOLDING TIME	OK	OK			OK				OK		OK	
CALIB. VERIFICATION (For AS, internal tracer)	OK	OK			OK				OK	NA	OK	
PREP. BLANKS (Only if digestion)	NA	NA			NA				NA		NA	
INT/CONT CAL. BLANKS	OK	①			OK	NA	NA	NA	OK	NA	③	
ICP SERIAL DILUTION	OK	②	NA	NA	NA	NA	NA	NA	NA	NA	NA	
ICS (ICP only)	OK	OK	NA	NA	NA	NA	NA	NA	NA	NA	NA	
LAB. CONTROL SAMPLE	OK	OK			OK				OK		NA	
DUPLICATES	OK	OK			OK				OK		OK	
POSTDIGEST. SPKS. (Only if MS fails)	NA	NA			NA	NA	NA	NA	NA	NA	NA	
MATRIX SPKS.	OK	OK			OK				OK	NA	OK	
OVERALL ASSESS.	OK	OK			OK				OK		OK	

DATA REQUIRING FLAGS: ① Blank contamination "U" flags: Mg 286572 (6081 Equip Blank), 286605 (1501 Equip. Blank); Mn 286566 (534), 286572 (6081), 286575 (933), 286576 (959), 286579 (942), 286581 (889), 286586 (797); K 286572 (6081), 286605 (1501); Sr 286572 (6081), 286605 (1501); U 286605 (1501), ② Serial dilution failure "J" flag: Mn samples 286599 → 286609, 286592, 286598, ③ Blank contamination "U" flag: 286593 (1500), 286585 (898), 286603 (816), 286604 (835), 286605 (1501), 286606 (812), 286609 (828).

Field flags see back side →

SHIPROCK, NEW MEXICO
MARCH 2002 SAMPLING
DATA ASSESSMENT SUMMARY

The DOE-GJO Analytical Laboratory analyzed samples and reported results for this sampling event under requisition number 17889 for the UMTRA Ground Water Project.

METALS/MAJOR CATIONS ANALYSES

The determination of calcium, magnesium, manganese, potassium, sodium, and strontium was performed by inductively coupled plasma-atomic emission spectrometry (ICP-AES). Uranium was analyzed using inductively coupled-mass spectrometry (ICP-MS), and selenium was determined by hydride generation ($NaBH_4$) atomic absorption spectroscopy.

Several metals results were qualified with a "U" flag (nondetect) in the database because of continuing calibration blank (CCB) contamination. Selected manganese results were qualified with a "J" flag (estimated) in the database because the serial dilution did not meet criteria. Qualified results are listed on the *Data Package Assessment* form, and the flags are listed in the data qualifiers column of the database printouts.

INORGANIC ANALYSES

Chloride, nitrate, and sulfate were determined by ion chromatography (IC), and ammonium was determined by spectrophotometry (or colorimetry).

Several ammonium results were qualified with a "U" flag in the database because of CCB contamination; these results are listed on the *Data Package Assessment* form, and the "U" flags are listed in the data qualifiers column of the database printouts.

FIELD ANALYSES/ACTIVITIES

Results from all wells were qualified with an "F" flag in the database indicating that the well was purged and sampled using the low-flow method. Results from the following wells were qualified with a "Q" flag in the database indicating that the data is considered qualitative due to the sampling method: 734, 812, 827, 839, 1007, 1059, and 1060.

Two equipment blanks were collected for the 38 locations sampled with non-dedicated equipment. Ten terrace wells had dedicated bladder pumps installed, which decreased the number of equipment blanks required. The equipment blanks were analyzed for the same constituents as the Shiprock environmental samples. Equipment blank concentrations of UMTRA related contaminants were less than the contract required detection limit (CRDL); therefore, equipment blank results are considered acceptable.

Three field duplicate samples were collected for the 48 locations sampled during this event. Duplicate samples were collected at wells 735 and 841, and surface water location 425. There are no established regulatory criteria for the evaluation of field duplicate samples; therefore, EPA guidance for laboratory duplicates (which is conservative for field duplicates) was used to assess duplicate precision. Duplicate results met the laboratory duplicate criterion (20 relative percent difference) and are considered acceptable.

SAR

Values listed in the SAR were considered valid if: (1) identified low concentrations were the result of low detection limits; (2) the concentration detected was within 50 percent historical minimum or maximum values; (3) there were fewer than 5 historical samples for comparison. Results that did not meet these criteria are listed on the Anomalous Data Review Checksheet with a disposition to compare the potentially anomalous results to the results from the next sampling event in order to make a final determination of validity.

Selected results from the September 2001 sampling event at Shiprock were listed on the Anomalous Data Review Checksheet, which was included in the September 2001 data validation package. The disposition of the results was to compare to the next sampling event to make a final determination of validity. Potentially anomalous February 2001 results were reviewed in conjunction with the results from this event and are considered acceptable with no follow-up required.

SUMMARY

All analytical quality control criteria were met except as qualified on the Ground Water Quality Data by Parameter, Surface Water Quality by Parameter, or equipment blank database printouts. The meaning of data qualifiers is as defined on the UMTRA database printout or as defined in the USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis, Multi-Media Multi-Concentration, Document Number ILMO2.0, 1991. All data in this package are considered validated and may be treated as final results.

A disk copy of the ground water, surface water, and equipment blank database printouts with the qualifiers incorporated are included in this package.

Sam Campbell 6-19-02

Sam Campbell Date
Data Validation Lead

SAR

Site : SHP01 SHIPROCK | Test Data Date Range : 3/1/2002 to 3/31/2002 | Older Data Only Used for Baseline Data | 268 Chemical Records | 2438 History Records

LOC. ID.	ERR. TYPE FLAG	PARAM CODE / UNITS	ANOMALOUS TEST DATA POINT: LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DETLIM	# OF SAMP. / %NON DETEC	ALL TIME MINIMUMS / ALL TIME MAXIMUMS		LOWER BOUND / UPPER BOUND	3 MOST RECENT SAMPLING EVENTS: LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DETLIM	LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DETLIM	LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DET LIM
0608	5	K	3/19/2002	0001	146.0000				19	89.300	132.000	150.5545	9/12/2001	0001	194.0000				2/13/2001	0001	173.0000				2/3/2000	0001	167.0000			
	OK	mg/L			0.0119				0	194.000	200.000	204.6617			0.0151						0.0091									
	5	Mn	3/19/2002	0001	6.1600				23	2.650	4.840	7.0027	9/12/2001	0001	7.8600				2/13/2001	0001	8.2200				6/15/2000	0001	7.6400			
	OK	mg/L			0.0001				0	9.500	9.850	9.6270			0.0001						0.0002						0.0015			
	5	NH4	3/19/2002	0001	434.0000				18	170.000	306.000	482.9108	9/12/2001	0001	561.0000				2/13/2001	0001	515.0000				2/3/2000	0001	526.0000			
	OK	mg/L			0.004				0	570.000	602.000	614.3881			0.0062						0.0047									
	6	ORP	3/19/2002	N001	192.0000				11	107.000	173.000	0.0000	2/13/2001	N001	107.0000				6/15/2000	N001	227.0000				2/3/2000	N001	184.0000			
	OK	mV							0	502.000	516.000	180.1287																		
	6	Sr	3/19/2002	0001	12.1000				21	10.800	10.900	10.0736	9/12/2001	0001	11.4000				2/13/2001	0001	10.9000				2/3/2000	0001	11.0000			
	OK	mg/L			0.002				0	14.100	15.800	11.5674			0.001						0.01									
0614	5	Mn	3/19/2002	0001	5.5100				19	3.510	4.170	5.6722	9/12/2001	0001	6.5500				2/13/2001	0001	5.9100				6/13/2000	0001	5.9400			
	OK	mg/L			0.0001				0	6.400	6.550	6.9610			0.0001						0.0002						0.0015			
0615	6	Chloride	3/19/2002	0001	739.0000				17	240.000	381.000	379.3586	2/14/2001	0001	599.0000				2/5/2000	0001	498.0000				3/3/1999	0001	520.0000			
	OK	mg/L			8.02				0	634.000	700.000	627.9815			9.6															
	6	K	3/19/2002	0001	151.0000				16	102.000	103.000	104.2991	2/14/2001	0001	158.0000				2/5/2000	0001	125.0000				3/3/1999	0001	109.0000			
	OK	mg/L			0.0595				0	158.000	165.000	145.2814			0.0091															
	6	Mg	3/19/2002	0001	2840.0000				17	1252.000	1340.000	1746.4266	2/14/2001	0001	2400.0000				2/5/2000	0001	2100.0000				3/3/1999	0001	2160.0000			
	OK	mg/L			0.104				0	2540.000	2750.000	2588.0047			0.52															
	6	Na	3/19/2002	0001	4230.0000				17	1650.000	2107.000	2516.7296	2/14/2001	0001	4090.0000				2/5/2000	0001	3140.0000				3/3/1999	0001	3040.0000			
	OK	mg/L			0.21				0	3810.000	4090.000	3715.3141			7.32															
	6	ORP	3/19/2002	N001	213.0000				9	60.000	65.000	0.0000	2/14/2001	N001	60.0000				2/5/2000	N001	229.0000				3/3/1999	N001	65.0000			
	OK	mV							0	487.800	487.800	141.6501																		
	5	Se	3/19/2002	0001	0.8060				17	0.005	0.070	1.0716	2/14/2001	0001	1.8100				2/5/2000	0001					3/3/1999	0001	1.1000			
	OK	mg/L			0.01				5.8824	1.100	1.810	1.5325			4															
	6	SO4	3/19/2002	0001	18000.0000				17	6230.000	9930.000	10924.5069	2/14/2001	0001	15300.0000				2/5/2000	0001	13400.0000				3/3/1999		13000.0000			
	Ok	mg/L			7.88				0	15300.000	15600.000	15952.2462			23.56															

Error Type Flags :
2 - All time high detection limit
3 - Too low (non-trend approach)
4 - Too high (non-trend approach)
5 - Too low (trend approach)
6 - Too high (trend approach)

Flags :
I - Increased detection limit due to required dilution.
L - Less than three bore volumes removed before sampling
J - Estimated value.
H - Hold time expired, value suspect.

Approved by Sam Campbell Date 6-17-02

Hydrologist "Ok" indicates insignificant variation

Site : SHP01 SHIPROCK | Test Data Date Range : 3/1/2002 to 3/31/2002 | Older Data Only Used for Baseline Data | 268 Chemical Records | 2438 History Records

LOC. ID.	ERR. TYPE FLAG	PARAM CODE / UNITS	ANOMALOUS TEST DATA POINT: LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DETLIM	# OF SAMP. / %NON DETEC	ALL TIME MINIMUMS / ALL TIME MAXIMUMS		LOWER BOUND / UPPER BOUND	3 MOST RECENT SAMPLING EVENTS: LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DETLIM	LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DET LIM
0615	6	Sr	3/19/2002	0001	14.3000				16	8.440	8.940	9.5073	2/14/2001	0001	13.2000				2/5/2000	0001	11.7000				3/3/1999	0001	11.6000
	OK	mg/L			0.002				0	13.200	14.000	13.9447			0.01											
0618	5	Ca	3/19/2002	0001	477.0000				5	364.000	446.000	539.1082	9/12/2001	0001	553.0000				2/13/2001	0001	534.0000				10/11/1988	0001	446.0000
	OK	mg/L			0.0662				0	534.000	553.000	561.7702			0.0653						1.8925					0	0.01
	6	Chloride	3/19/2002	0001	494.0000				5	63.900	85.000	229.9293	9/12/2001	0001	274.0000				2/13/2001	0001	215.0000				10/11/1988	0001	85.0000
		mg/L			4.01				0	215.000	274.000	280.4193			0.149						2.4					0	1
	6	K	3/19/2002	0001	94.6000				5	49.000	62.600	63.3403	9/12/2001	0001	73.6000				2/13/2001	0001	62.7000				10/11/1988	0001	62.6000
	OK	mg/L			0.0119				0	70.200	73.600	74.3045			0.0151						0.0091					0	0.01
	6	Mg	3/19/2002	0001	1560.0000				5	424.000	461.000	748.1028	9/12/2001	0001	941.0000				2/13/2001	0001	711.0000				10/11/1988	0001	424.0000
		mg/L			0.104				0	711.000	941.000	955.0423			0.042						0.52					0	0.001
	6	Mn	3/19/2002	0001	10.4000				4	5.970	6.900	7.3904	9/12/2001	0001	8.2500				2/13/2001	0001	7.2600				9/18/1987	0001	5.9700
	OK	mg/L			0.0001				0	7.260	8.250	8.3149			0.0001						0.0002					0	0.01
	6	Na	3/19/2002	0001	2600.0000				5	524.000	550.000	1048.7460	9/12/2001	0001	1370.0000				2/13/2001	0001	1010.0000				10/11/1988	0001	524.0000
		mg/L			0.084				0	1080.000	1370.000	1400.6995			0.074						1.83					0	0.002
	6	NH4	3/19/2002	0001	91.7000				5	61.000	71.100	57.1514	9/12/2001	0001	71.1000				2/13/2001	0001	61.0000				10/11/1988	0001	110.0000
	OK	mg/L			0.004				0	130.000	130.000	69.1421			0.0062						0.0047					0	0.1
	6	NO3	3/19/2002	0001	1780.0000				5	27.000	42.000	1085.7921	9/12/2001	0001	1330.0000				2/13/2001	0001	988.0000				10/11/1988	0001	27.0000
	OK	mg/L			0.4				0	988.000	1330.000	1373.0342			0.61						12.56					0	1
	6	Se	3/19/2002	0001	0.4400				5	0.005	0.064	0.1902	9/12/2001	0001	0.2410				2/13/2001	0001	0.1750				10/11/1988	0001	0.0690
		mg/L			0.01				20	0.175	0.241	0.2472			0.006						0.04					0	0.005
	6	SO4	3/19/2002	0001	11300.0000				5	3960.000	4270.000	5674.8248	9/12/2001	0001	6250.0000				2/13/2001	0001	5560.0000				10/11/1988	0001	3960.0000
		mg/L			7.88				0	5560.000	6250.000	6333.8011			0.253						5.89					0	0.1
	6	Sr	3/19/2002	0001	10.7000				4	4.500	5.300	7.6599	9/12/2001	0001	8.8600				2/13/2001	0001	7.3400				10/11/1988	0001	4.5000
	OK	mg/L			0.002				0	7.340	8.860	9.0062			0.001						0.01					0	0.1
	6	U	3/19/2002	0001	2.1000				5	0.415	0.424	0.8227	9/12/2001	0001	0.9120				2/13/2001	0001	0.7920				10/11/1988	0001	0.4240
		mg/L			0.001				0	0.792	0.912	0.9307			0.0001						0.0001					0	0.003

Error Type Flags :
2 - All time high detection limit
3 - Too low (non-trend approach)
4 - Too high (non-trend approach)
5 - Too low (trend approach)
6 - Too high (trend approach)

Flags :
I - Increased detection limit due to required dilution.
L - Less than three bore volumes removed before sampling.
J - Estimated value.
H - Hold time expired, value suspect.

Approved by Sam Campbell Date 6-17-02

Hydrologist "Ok" indicates insignificant variation

Site : SHP01 SHIPROCK | Test Data Date Range : 3/1/2002 to 3/31/2002 | Older Data Only Used for Baseline Data | 268 Chemical Records | 2438 History Records

LOC. ID.	ERR. TYPE FLAG	PARAM CODE / UNITS	ANOMALOUS TEST DATA POINT: LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DETLIM	# OF SAMP. / %NON DETEC	ALL TIME MINIMUMS / ALL TIME MAXIMUMS		LOWER BOUND / UPPER BOUND	3 MOST RECENT SAMPLING EVENTS: LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DETLIM	LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DETLIM	LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DET LIM
0619	5	Chloride	3/19/2002	0001	305.0000				18	364.000	397.000	317.7915	9/12/2001	0001	478.0000				2/14/2001	0001	397.0000				2/5/2000	0001	571.0000			
	OK	mg/L			8.02				0	800.000	1300.000	655.4987			0.149						2.4									
	5	Mg	3/19/2002	0001	685.0000				18	822.000	930.000	762.3541	9/12/2001	0001	1130.0000				2/14/2001	0001	822.0000				2/5/2000	0001	1210.0000			
	OK	mg/L			0.104				0	2090.000	2210.000	1439.7672			0.042						0.52									
	5	Mn	3/19/2002	0001	3.3400				18	3.670	3.890	4.0407	9/12/2001	0001	5.6700				2/14/2001	0001	4.1600				2/5/2000	0001	5.4500			
	OK	mg/L			0.0001				0	8.330	8.650	6.8210			0.0001						0.0002									
	5	Na	3/19/2002	0001	2140.0000				18	2340.000	2390.000	2397.4038	9/12/2001	0001	3030.0000				2/14/2001	0001	2390.0000				2/5/2000	0001	3160.0000			
	OK	mg/L			0.084				0	7860.000	7860.000	3487.6342			0.37						1.83									
	5	SO4	3/19/2002	0001	7540.0000				18	7490.000	8420.000	7856.0461	9/12/2001	0001	10900.0000				2/14/2001	0001	8700.0000				2/5/2000	0001	11600.0000			
	OK	mg/L			7.88				0	19200.000	19200.000	12850.2614			0.506						5.89									
	5	Sr	3/19/2002	0001	8.1900				17	4.910	6.410	9.0424	9/12/2001	0001	10.5000				2/14/2001	0001	8.8200				2/5/2000	0001	11.5000			
	OK	mg/L			0.002				0	11.500	11.800	13.0664			0.001						0.01									
0655	5	Ca	3/18/2002	0001	225.0000				10	103.000	196.000	234.0455	2/8/2001	0001	366.0000				11/15/2000	0001	399.0000				6/13/2000	0001	370.0000			
	OK	mg/L			0.0662				0	399.000	401.000	557.6539			0.0757						0.0481						0.0504			
	5	Mg	3/18/2002	0001	70.1000				10	35.800	72.100	85.4940	2/8/2001	0001	136.0000				11/15/2000	0001	188.0000				6/13/2000	0001	235.0000			
	OK	mg/L			0.104				0	199.000	235.000	296.1525			0.0052						0.0352						0.024			
	5	NH4	3/18/2002	0001	0.0159				8	0.010	0.019	0.0425	2/8/2001	0001	0.0481				11/15/2000	0001	0.0725				6/13/2000	0001	0.1070			
	OK	mg/L	B		0.004				0	0.093	0.107	0.1495	B		0.0047	B											0.0047			
	5	ORP	3/18/2002	N001	141.0000				9	136.000	141.000	170.0235	2/8/2001	N001	226.0000				11/15/2000	N001	240.0000				6/13/2000	N001	178.0000			
	OK	mV							0	226.000	240.000	286.8083																		
0734	6	K	3/18/2002	0001	33.9000				9	10.400	15.200	18.3308	2/13/2001	0001	20.1000				2/2/2000	0001	19.3000				6/6/1999	0001	21.2000			
	OK	mg/L			0.0119				0	21.200	25.200	26.9164			0.0091										E					
	6	NH4	3/18/2002	0001	0.0723				10	0.001	0.018	0.0000	2/13/2001	0001	0.0178				2/2/2000	0001	0.0345				6/6/1999	0001	0.0405			
	OK	mg/L	B		0.004				20	0.400	0.400	0.0458	B		0.0047	B									B					
	5	NO3	3/18/2002	0001	98.3000				12	1.000	10.400	165.3027	2/13/2001	0001	223.0000				6/14/2000	0001	10.4000				2/2/2000	0001	211.0000			
	OK	mg/L			0.04				8.3333	232.000	261.000	337.9319			0.785						0.0314									

Error Type Flags :
2 - All time high detection limit
3 - Too low (non-trend approach)
4 - Too high (non-trend approach)
5 - Too low (trend approach)
6 - Too high (trend approach)

Flags :
I - Increased detection limit due to required dilution.
L - Less than three bore volumes removed before sampling
J - Estimated value.
H - Hold time expired, value suspect.

Approved by Sam Campbell Date 6-17-02

Hydrologist "Ok" indicates insignificant variation

Site : SHP01 SHIPROCK | Test Data Date Range : 3/1/2002 to 3/31/2002 | Older Data Only Used for Baseline Data | 268 Chemical Records | 2438 History Records

LOC. ID.	ERR. TYPE FLAG	PARAM CODE / UNITS	ANOMALOUS TEST DATA POINT: LOG DATE	SAMPLE	VALUE / FLAGS	UNCERTAINTY	DETLIM	# OF SAMP. / %NON DETEC	ALL TIME MINIMUMS / ALL TIME MAXIMUMS		LOWER BOUND / UPPER BOUND	3 MOST RECENT SAMPLING EVENTS: LOG DATE	SAMPLE	VALUE / FLAGS	UNCERTAINTY	DETLIM	LOG DATE	SAMPLE	VALUE / FLAGS	UNCERTAINTY	DETLIM
0735	5	K	3/19/2002	0001	18.0000	9	15.500	16.300	23.6364	9/12/2001	0001	33.7000	2/13/2001	0001	15.5000	2/3/2000	0001	34.2000
	OK	mg/L			0.0119	0	33.700	34.200	41.1022			0.0151			0.0091			
	5	NH4	3/19/2002	0001	11.0000	10	0.400	9.330	11.7223	9/12/2001	0001	19.8000	2/13/2001	0001	9.3300	2/3/2000	0001	20.0000
	OK	mg/L			0.004	0	20.000	25.300	27.7440			0.0062			0.0047			
0736	5	Ca	3/21/2002	0001	320.0000	12	314.000	352.000	333.1764	2/13/2001	0001	396.0000	2/2/2000	0001	352.0000	6/5/1999	0001	448.0000
	OK	mg/L			0.0662	0	450.000	468.000	474.6867			0.0757						
	5	K	3/21/2002	0001	33.5000	9	36.800	37.200	34.0183	2/13/2001	0001	38.2000	2/2/2000	0001	45.1000	6/5/1999	0001	38.5000
	OK	mg/L			0.0595	0	45.100	46.900	46.6888			0.0091				E		
	6	ORP	3/21/2002	N001	112.0000	12	-73.000	14.000	0.0000	2/13/2001	N001	-73.0000	6/22/2000	N001	70.0000	2/2/2000	N001	126.0000
	OK	mV				0	483.000	483.000	103.5186									
0797	3	Mn	3/20/2002	0001	0.0011	2	0.148	0.294	0.0740	9/11/2001	0001	0.1480	5/2/2001	0001	0.2940	5/2/2001	0001	0.2940
	OK	mg/L	B		0.0001	0	0.294	0.294	0.5880			0.0001			0.0001			0.0001
	3	NH4	3/20/2002	0001	0.0040	2	0.032	0.047	0.0161	9/11/2001	0001	0.0473	5/2/2001	0001	0.0321	5/2/2001	0001	0.0321
	OK	mg/L	U		0.004	0	0.032	0.047	0.0946	B		0.0062	B		0.0062	B		0.0062
	4	ORP	3/20/2002	N001	164.0000	2	-388.000	75.000	-194.0000	9/11/2001	N001	-388.0000	5/2/2001	N001	75.0000	5/2/2001	N001	75.0000
	OK	mV				0	75.000	75.000	150.0000									
0850	5	Chloride	3/20/2002	0001	41.2000	7	54.800	60.100	45.8335	9/11/2001	0001	60.1000	2/6/2001	0001	89.0000	6/13/2000	0001	96.2000
	OK	mg/L			0.802	0	96.200	102.000	109.5559			0.0298			0.096			0.12
	5	NH4	3/20/2002	0001	0.0223	7	0.052	0.056	0.0258	9/11/2001	0001	0.0558	2/6/2001	0001	0.0597	6/13/2000	0001	0.0873
		mg/L	B		0.004	0	0.087	0.111	0.0886	B		0.0062	B		0.0047	B		0.0047
	6	ORP	3/20/2002	N001	157.0000	8	-402.000	-67.000	0.0000	9/11/2001	N001	-402.0000	2/6/2001	N001	-40.0000	7/13/2000	N001	60.0000
	OK	mV				0	46.000	60.000	-37.9222									
	4	Se	3/20/2002	0001	0.0017	7	0.000	0.000	0.0001	9/11/2001	0001	0.0003	2/6/2001	0001	0.0001	6/13/2000	0001	0.0001
	OK	mg/L	B		0.0002	85.714	0.000	0.001	0.0015	U		0.0003	U		0.0001	U		0.0001
	6	Zobell O	3/20/2002	N001	268.0000	4	169.000	225.000	130.7169	9/11/2001	N001	169.0000	2/6/2001	N001	237.0000	7/13/2000	N001	228.0000
	OK	mV				0	228.000	237.000	192.8277									

Error Type Flags :
2 - All time high detection limit
3 - Too low (non-trend approach)
4 - Too high (non-trend approach)
5 - Too low (trend approach)
6 - Too high (trend approach)

Flags :
I - Increased detection limit due to required dilution.
L - Less than three bore volumes removed before sampling.
J - Estimated value.
H - Hold time expired, value suspect.

Approved by Sam Campbell Date 6-17-02

Hydrologist "Ok" indicates insignificant variation

Site : SHP01 SHIPROCK | Test Data Date Range : 3/1/2002 to 3/31/2002 | Older Data Only Used for Baseline Data | 268 Chemical Records | 2438 History Records

LOC. ID.	ERR. TYPE FLAG	PARAM CODE / UNITS	ANOMALOUS TEST DATA POINT: LOG DATE / FLAGS	SAMPLE / UNCERTAINTY	VALUE / DETLIM	# OF SAMP. / %NON DETEC	ALL TIME MINIMUMS / ALL TIME MAXIMUMS		LOWER BOUND / UPPER BOUND	3 MOST RECENT SAMPLING EVENTS: LOG DATE / FLAGS	SAMPLE / UNCERTAINTY	VALUE / DETLIM	LOG DATE / FLAGS	SAMPLE / UNCERTAINTY	VALUE / DETLIM	LOG DATE / FLAGS	SAMPLE / UNCERTAINTY	VALUE / DET LIM
0854	5	Chloride	3/18/2002	0001	1210.0000	6	1230.000	1240.000	1276.8640	9/12/2001	0001	1400.0000	2/13/2001	0001	1250.0000	2/5/2000	0001	1320.0000
	OK	mg/L			20.05	0	1320.000	1400.000	1448.4246			0.298			9.6			
	5	Mg	3/18/2002	0001	2990.0000	6	3070.000	3150.000	3048.6875	9/12/2001	0001	3780.0000	2/13/2001	0001	3070.0000	2/5/2000	0001	3440.0000
	OK	mg/L			0.104	0	3570.000	3780.000	3911.4489			0.042			0.52			
	5	Na	3/18/2002	0001	6030.0000	6	5700.000	5990.000	6174.3268	9/12/2001	0001	7190.0000	2/13/2001	0001	5990.0000	2/5/2000	0001	6230.0000
	OK	mg/L			0.21	0	6400.000	7190.000	7517.2974			0.37			45.75			
	5	Sr	3/18/2002	0001	14.8000	6	15.300	15.400	15.4294	9/12/2001	0001	18.1000	2/13/2001	0001	15.3000	2/5/2000	0001	16.5000
	OK	mg/L			0.002	0	17.100	18.100	18.6937			0.001			0.01			
0887	**6**	**Chloride**	**3/20/2002**	**0001**	**210.0000**	**8**	**2.830**	**45.600**	**35.0992**	**9/12/2001**	**0001**	**51.5000**	**2/5/2001**	**0001**	**138.0000**	**11/16/2000**	**0001**	**153.0000**
	OK	mg/L			2.005	0	138.000	153.000	199.6288			0.0298			0.6			0.048
	6	SO4	3/20/2002	0001	4100.0000	10	37.600	947.000	160.0331	9/12/2001	0001	1340.0000	2/5/2001	0001	2640.0000	11/16/2000	0001	2760.0000
		mg/L			1.97	0	2650.000	2760.000	3659.3915			0.0506			1.4725			0.2945
0898	6	Mn	3/20/2002	0001	0.0217	8	0.003	0.006	0.0002	9/11/2001	0001	0.0093	2/6/2001	0001	0.0063	11/16/2000	0001	0.0030
	OK	mg/L			0.0001	0	0.015	0.015	0.0105	B		0.0001	B		0.0002	B		0.002
	6	Zobell O	3/20/2002	N001	268.0000	4	167.000	209.000	118.5598	9/11/2001	N001	167.0000	2/6/2001	N001	238.0000	11/16/2000	N001	239.0000
	OK	mV				0	238.000	239.000	205.9111									
0940	6	Mn	3/18/2002	0001	0.1070	7	0.003	0.005	0.0000	9/10/2001	0001	0.0092	2/8/2001	0001	0.0434	11/16/2000	0001	0.0025
		mg/L			0.0001	0	0.043	0.044	0.0503	B		0.0001			0.0002	B		0.002
	6	NH4	3/18/2002	0001	0.2650	7	0.005	0.006	0.0000	9/10/2001	0001	0.0062	2/8/2001	0001	0.0618	11/16/2000	0001	0.0054
		mg/L			0.004	14.286	0.062	0.173	0.1029	U		0.0062	B		0.0047	B		
	6	Se	3/18/2002	0001	0.0009	7	0.000	0.000	0.0000	9/10/2001	0001	0.0003	2/8/2001	0001	0.0006	11/16/2000	0001	0.0007
	OK	mg/L	B		0.0002	42.857	0.001	0.001	0.0007	U		0.0003	B		0.0001	B		0.0001
0956	6	Mn	3/20/2002	0001	0.4680	5	0.007	0.008	0.0000	9/11/2001	0001	0.0084	2/13/2001	0001	0.0097	11/17/2000	0001	0.0066
		mg/L			0.0001	0	0.015	0.015	0.0091	B		0.0001	B		0.0002	B		0.002
	4	NH4	3/20/2002	0001	0.3230	5	0.005	0.006	0.0031	9/11/2001	0001	0.0062	2/13/2001	0001	0.0047	11/17/2000	0001	0.0047
		mg/L			0.004	60	0.006	0.016	0.0243	U		0.0062	U		0.0047	U		0.0047

Error Type Flags :
2 - All time high detection limit
3 - Too low (non-trend approach)
4 - Too high (non-trend approach)
5 - Too low (trend approach)
6 - Too high (trend approach)

Flags :
I - Increased detection limit due to required dilution.
L - Less than three bore volumes removed before sampling.
J - Estimated value.
H - Hold time expired, value suspect.

Approved by Jan Campbell Date 6-17-02

Hydrologist "Ok" indicates insignificant variation

Site : SHP01 SHIPROCK | Test Data Date Range : 3/1/2002 to 3/31/2002 | Older Data Only Used for Baseline Data | 268 Chemical Records | 2438 History Records

LOC. ID.	ERR. TYPE FLAG	PARAM CODE / UNITS	ANOMALOUS TEST DATA POINT: LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DETLIM	# OF SAMP. / %NON DETEC	ALL TIME MINIMUMS / ALL TIME MAXIMUMS		LOWER BOUND / UPPER BOUND	3 MOST RECENT SAMPLING EVENTS: LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DETLIM	LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DETLIM	LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DET LIM
0957	6	Chloride	3/20/2002	0001	16.3000			5	11.500	12.600	8.9312	9/12/2001	0001	11.5000				2/6/2001	0001	15.6000				11/16/2000	0001	16.6000			
	OK	mg/L			0.2005			0	15.600	16.600	16.2301			0.0149						0.024						0.024			
	6	K	3/20/2002	0001	2.5600			5	2.060	2.200	1.8473	9/12/2001	0001	2.0600				2/6/2001	0001	2.3000				11/16/2000	0001	2.4200			
	OK	mg/L			0.0119			0	2.350	2.420	2.2560			0.0151						0.0091						0.0327			
	6	Mn	3/20/2002	0001	0.0223			5	0.002	0.004	0.0000	9/12/2001	0001	0.0058				2/6/2001	0001	0.0100				11/16/2000	0001	0.0023			
		mg/L			0.0001			0	0.010	0.013	0.0137	B		0.0001						0.0002				B		0.002			
	5	ORP	3/20/2002	N001	188.0000			5	56.000	107.000	295.7973	9/12/2001	N001	244.5000				2/6/2001	N001	183.0000				11/16/2000	N001	149.0000			
	OK	mV						0	183.000	244.500	358.3093																			
	6	U	3/20/2002	0001	0.0026			5	0.002	0.002	0.0016	9/12/2001	0001	0.0018				2/6/2001	0001	0.0022				11/16/2000	0001	0.0021			
	OK	mg/L			0.0001			0	0.002	0.002	0.0025			0.0001						0.0001						0.0001			
	6	Zobell T	3/20/2002	N001	10.7300			4	1.400	9.000	0.0000	2/6/2001	N001	9.0000				11/16/2000	N001	1.4000				7/16/2000	N001	26.1000			
	OK	C						0	17.900	26.100	-4.5415																			
0959	4	Mn	3/20/2002	0001	0.0048			1	0.000	0.000	0.0001	9/12/2001	0001	0.0001				9/12/2001	0001	0.0001				9/12/2001	0001	0.0001			
	OK	mg/L	B		0.0001			100	0.000	0.000	0.0002	U		0.0001				U		0.0001				U		0.0001			
1205	6	Chloride	3/19/2002	0001	16.9000			4	11.800	14.400	8.2907	9/10/2001	0001	11.8000				2/12/2001	0001	17.7000				11/16/2000	0001	16.6000			
	OK	mg/L			0.401			0	16.600	17.700	15.8134			0.0149						0.024						0.024			
	6	K	3/19/2002	0001	2.3700			4	2.180	2.410	1.9529	9/10/2001	0001	2.1800				2/12/2001	0001	2.4800				11/16/2000	0001	2.4100			
	OK	mg/L			0.0119			0	2.540	2.540	2.1675			0.0151						0.0091						0.0327			
	6	Mn	3/19/2002	0001	0.0325			6	0.003	0.005	0.0000	9/10/2001	0001	0.0045				2/12/2001	0001	0.0062				11/16/2000	0001	0.0026			
	OK	mg/L			0.0001			0	0.011	0.051	0.0166	B		0.0001				B		0.0002				B		0.002			
	6	NH4	3/19/2002	0001	0.0092			6	0.005	0.006	0.0000	9/10/2001	0001	0.0062				2/12/2001	0001	0.0141				11/16/2000	0001	0.0047			
	OK	mg/L	B		0.004			33.333	0.024	0.026	0.0076	U		0.0062				B		0.0047				U		0.0047			
	6	ORP	3/19/2002	N001	169.0000			5	22.000	90.000	0.0000	9/10/2001	N001	22.0000				2/12/2001	N001	156.0000				11/16/2000	N001	187.0000			
	OK	mV						0	156.000	187.000	162.3683																			
	5	U	3/19/2002	0001	0.0015			6	0.002	0.002	0.0022	9/10/2001	0001	0.0028				2/12/2001	0001	0.0021				11/16/2000	0001	0.0020			
	OK	mg/L			0.0001			0	0.002	0.003	0.0032			0.0001						0.0001						0.0001			

Error Type Flags :
2 - All time high detection limit
3 - Too low (non-trend approach)
4 - Too high (non-trend approach)
5 - Too low (trend approach)
6 - Too high (trend approach)

Flags :
I - Increased detection limit due to required dilution.
L - Less than three bore volumes removed before sampling.
J - Estimated value.
H - Hold time expired, value suspect.

Approved by Sam Campbell Date 6-17-02

Hydrologist "Ok" indicates insignificant variation

SUSPECTED ANOMALIES REPORT

REPORT DATE: 6/17/2002 TIME: 8:16:15 AM

Site : SHP02 SHIPROCK (TAILING Test Data Date Range : 3/1/2002 to 3/31/2002 Older Data Only Used for Baseline Data 362 Chemical Records 2659 History Records

LOC. ID.	ERR. TYPE FLAG	PARAM CODE / UNITS	ANOMALOUS TEST DATA POINT: LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DETLIM	# OF SAMP. / %NON DETEC	ALL TIME MINIMUMS / ALL TIME MAXIMUMS		LOWER BOUND / UPPER BOUND	3 MOST RECENT SAMPLING EVENTS: LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DETLIM	LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DET LIM
0425	5	Ca	3/19/2002	0001	423.0000			0.0662	13	419.000	432.000	443.2823	9/11/2001	0001	468.0000			0.0653	2/13/2001	0001	477.0000			1.8925	11/17/2000	0001	485.0000			0.0481
	OK	mg/L							0	513.000	530.000	508.1114																	
	6	Chloride	3/19/2002	0001	307.0000			4.01	13	127.000	137.000	138.0729	9/11/2001	0001	225.0000			0.0745	2/13/2001	0001	216.0000			2.4	11/17/2000	0001	201.0000			0.24
	OK	mg/L							0	273.000	301.000	239.0747																	
	6	K	3/19/2002	0001	43.7000			0.0119	13	18.900	19.000	18.0738	9/11/2001	0001	35.7000			0.0151	2/13/2001	0001	32.5000			0.0091	11/17/2000	0001	28.2000			0.0327
	OK	mg/L							0	35.700	36.000	38.6580																	
	6	Mg	3/19/2002	0001	897.0000			0.104	14	315.000	335.000	269.9112	9/11/2001	0001	711.0000			0.042	2/13/2001	0001	617.0000			0.52	11/17/2000	0001	591.0000			3.52
	OK	mg/L							0	760.000	10800.000	833.0332																	
	3	Mn	3/19/2002	0001	0.0080			0.0001	15	0.030	0.048	0.0200	9/11/2001	0001	0.0864			0.0001	2/13/2001	0001	0.1810			0.0002	11/17/2000	0001	0.1920			0.002
		mg/L	B						0	189.000	249.000	373.5000																	
	6	Na	3/19/2002	0001	1410.0000			0.084	14	604.000	695.000	531.0422	9/11/2001	0001	1130.0000			0.074	2/13/2001	0001	1030.0000			1.83	11/17/2000	0001	1020.0000			30.2
	OK	mg/L							0	1670.000	1670.000	1201.6494																	
	3	Se	3/19/2002	0001	0.0194			0.0002	16	0.030	0.032	0.0202	9/11/2001	0001	0.0320			0.0006	2/13/2001	0001	0.0302			0.0025	11/17/2000	0001	0.0342			0.0025
	OK	mg/L							6.25	0.200	2.000	3.0000																	
0426	5	K	3/19/2002	0001	13.0000			0.0119	15	15.300	16.900	13.0859	9/11/2001	0001	17.2000			0.0151	2/13/2001	0001	18.6000			0.0091	11/18/2000	0001	18.0000			0.0327
	OK	mg/L							0	30.000	30.000	19.3417																	
	5	Mg	3/19/2002	0001	130.0000			0.104	15	219.000	221.000	135.5011	9/11/2001	0001	221.0000			0.0042	2/13/2001	0001	251.0000			0.0052	11/18/2000	0001	272.0000			0.0352
	OK	mg/L							0	787.000	787.000	294.6599																	
	3	NO3	3/19/2002	0001	52.2000			0.02	15	115.000	117.000	77.0500	9/11/2001	0001	117.0000			0.061	2/13/2001	0001	115.0000			0.1256	11/18/2000	0001	135.0000			0.0628
		mg/L							0	420.000	22562.000	33843.0000																	
	3	U	3/19/2002	0001	0.1380			0.0001	17	0.244	0.246	0.1635	9/11/2001	0001	0.2440			0.0001	2/13/2001	0001	0.2460			0.0001	11/18/2000	0001	0.2870			0.0001
	OK	mg/L							0	0.950	3.880	5.8200																	
0603	6	Ca	3/20/2002	0001	561.0000			0.0662	10	367.000	411.000	481.1941	9/19/2001	0001	497.0000			0.0653	2/13/2001	0001	476.0000			1.8925	6/13/2000	0001	488.0000			0.0504
	OK	mg/L							0	488.000	497.000	522.9693																	
	5	K	3/20/2002	0001	150.0000			0.0595	10	172.000	186.000	153.6937	9/19/2001	0001	172.0000			0.0151	2/13/2001	0001	186.0000			0.0091	6/13/2000	0001	196.0000			0.0456
	OK	mg/L							0	353.000	353.000	185.3095							E									

Error Type Flags : 2 - All time high detection limit
3 - Too low (non-trend approach)
4 - Too high (non-trend approach)
5 - Too low (trend approach)
6 - Too high (trend approach)

Flags : I - Increased detection limit due to required dilution.
L - Less than three bore volumes removed before sampling.
J - Estimated value.
H - Hold time expired, value suspect.

Approved by Jon Campbell Date 6-17-02

Hydrologist "Ok" indicates insignificant variation

Site : SHP02 SHIPROCK (TAILING Test Data Date Range : 3/1/2002 to 3/31/2002 Older Data Only Used for Baseline Data 362 Chemical Records 2659 History Records

LOC. ID.	ERR. TYPE FLAG	PARAM CODE / UNITS	ANOMALOUS TEST DATA POINT: LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DETLIM	# OF SAMP. / %NON DETEC	ALL TIME MINIMUMS / ALL TIME MAXIMUMS		LOWER BOUND / UPPER BOUND	3 MOST RECENT SAMPLING EVENTS: LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DETLIM	LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DETLIM	LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DET LIM
0603	5	NO3	3/20/2002	0001	3980.0000				12	106.000	3190.000	4059.7145	9/19/2001	0001	4170.0000				2/13/2001	0001	4210.0000				6/13/2000	0001	4890.0000			
	OK	mg/L			1				0	4890.000	4900.000	5846.3892			1.525						78.5						3.14			
	6	ORP	3/20/2002	N001	283.0000				11	198.000	199.000	187.2727	9/19/2001	N001	215.0000				2/13/2001	N001	226.0000				6/13/2000	N001	284.0000			
	OK	mV							0	242.000	284.000	268.5926																		
0662	5	Ca	3/19/2002	0001	110.0000				10	105.000	106.000	131.4618	2/8/2001	0001	162.0000				11/18/2000	0001	167.0000				6/20/2000	0001	160.0000			
	OK	mg/L			0.0662				0	167.000	253.000	222.7293			0.0757						0.0481						0.0504			
	5	NH4	3/19/2002	0001	0.0040				8	0.001	0.008	0.0105	2/8/2001	0001	0.0285				11/18/2000	0001	0.0227				6/20/2000	0001	0.0082			
	OK	mg/L	U		0.004				12.5	0.029	0.067	0.0542	B		0.0047				B						B		0.0047			
0812	6	Ca	3/21/2002	0001	483.0000				6	446.000	447.000	419.6058	9/19/2001	0001	446.0000				2/7/2001	0001	474.0000				2/7/2000	0001	446.0000			
	OK	mg/L			0.0662				0	474.000	495.000	474.9254			0.0653						0.0757									
	5	K	3/21/2002	0001	62.3000				6	58.500	68.300	66.4833	9/19/2001	0001	76.9000				2/7/2001	0001	72.1000				2/7/2000	0001	68.3000			
	OK	mg/L			0.0595				0	76.900	78.200	85.5257			0.0151				E		0.0091									
	5	Na	3/21/2002	0001	5860.0000				6	5910.000	6140.000	5977.0411	9/19/2001	0001	6200.0000				2/7/2001	0001	6180.0000				2/7/2000	0001	6140.0000			
	OK	mg/L			0.21				0	6360.000	6360.000	6402.5557			0.37						45.75									
	5	Se	3/21/2002	0001	6.3500				7	5.780	6.410	6.5473	9/19/2001	0001	7.0200				2/7/2001	0001	6.4400				6/21/2000	0001	6.9600			
	OK	mg/L			0.08				0	6.960	7.020	7.5879			0.3						16						0.05			
0813	6	Ca	3/20/2002	0001	648.0000				7	506.000	567.000	494.1068	9/18/2001	0001	567.0000				2/7/2001	0001	506.0000				6/13/2000	0001	604.0000			
	OK	mg/L			1.324				0	595.000	604.000	592.4736			0.0653						1.8925						1.008			
	5	Chloride	3/20/2002	0001	593.0000				7	629.000	636.000	628.6814	9/18/2001	0001	652.0000				2/7/2001	0001	675.0000				6/13/2000	0001	753.0000			
	OK	mg/L			8.02				0	675.000	753.000	738.5342			0.298						9.6						0.48			
	5	Mn	3/20/2002	0001	0.1190				7	0.198	0.204	0.1392	9/18/2001	0001	0.2940				2/7/2001	0001	0.3640				6/13/2000	0001	0.1980			
	OK	mg/L	E		0.0001				0	0.375	0.416	0.4138			0.0001						0.0002						0.0015			
	5	Na	3/20/2002	0001	2360.0000				7	2360.000	2510.000	2427.7185	9/18/2001	0001	2620.0000				2/7/2001	0001	2660.0000				6/13/2000	0001	2510.0000			
	OK	mg/L			0.084				0	2690.000	2760.000	2854.4819			0.074						1.83						8.68			
0816	3	Mn	3/21/2002	0001	0.0001				7	0.000	0.002	0.0001	9/19/2001	0001	0.0022				2/9/2001	0001	0.0002				6/25/2000	0001	0.0021			
	OK	mg/L	UE		0.0001				14.286	0.446	0.446	0.6690	B		0.0001				U		0.0002				B		0.0015			

Error Type Flags :
2 - All time high detection limit
3 - Too low (non-trend approach)
4 - Too high (non-trend approach)
5 - Too low (trend approach)
6 - Too high (trend approach)

Flags :
I - Increased detection limit due to required dilution.
L - Less than three bore volumes removed before sampling.
J - Estimated value.
H - Hold time expired, value suspect.

Approved by Sam Campbell Date 6-17-02

Hydrologist "Ok" indicates insignificant variation

Site : SHP02 SHIPROCK (TAILING Test Data Date Range : 3/1/2002 to 3/31/2002 Older Data Only Used for Baseline Data 362 Chemical Records 2659 History Records

LOC. ID.	ERR. TYPE FLAG	PARAM CODE / UNITS	ANOMALOUS TEST DATA POINT: LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DETLIM	# OF SAMP. / %NON DETEC	ALL TIME MINIMUMS / ALL TIME MAXIMUMS		LOWER BOUND / UPPER BOUND	3 MOST RECENT SAMPLING EVENTS: LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DETLIM	LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DETLIM	LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DET LIM
0817	4	NO3	3/21/2002	0001	3020.0000			1	1	298.000	298.000	149.0000	9/19/2001	0001	298.0000			298.0000	9/19/2001	0001	298.0000			298.0000	9/19/2001	0001	298.0000			298.0000
	OK	mg/L			1				0	298.000	298.000	596.0000			0.1525			0.1525			0.1525			0.1525			0.1525			0.1525
	4	U	3/21/2002	0001	9.4300			1.270	1	1.270	1.270	0.6350	9/19/2001	0001	1.2700			1.2700	9/19/2001	0001	1.2700			1.2700	9/19/2001	0001	1.2700			1.2700
	OK	mg/L			0.01				0	1.270	1.270	2.5400			0.0025			0.0025			0.0025			0.0025			0.0025			0.0025
0818	6	ORP	3/20/2002	N001	252.0000				4	159.000	170.000	148.8327	9/18/2001	N001	177.0000				2/8/2001	N001	159.0000				12/1/1998	N001	170.0000			
	OK	mV							0	197.000	197.000	181.6999																		
	6	SO4	3/20/2002	0001	10400.0000			7.88	5	7375.000	7812.500	8846.1325	9/18/2001	0001	9180.0000			0.506	2/8/2001	0001	9290.0000			23.56	12/1/1998	0001	8963.0000			
	OK	mg/L							0	9180.000	9290.000	10316.1240																		
0826	6	Ca	3/21/2002	0001	457.0000			0.0662	7	416.000	420.000	409.1467	9/19/2001	0001	420.0000			0.0653	2/13/2001	0001	448.0000			0.0757	6/13/2000	0001	416.0000			0.0504
	OK	mg/L							0	438.000	448.000	447.1954																		
	5	K	3/21/2002	0001	116.0000			0.0595	7	102.000	116.000	127.8106	9/19/2001	0001	133.0000			0.0151	2/13/2001	0001	143.0000			0.0091	6/13/2000	0001	116.0000			0.0456
	OK	mg/L							0	133.000	143.000	156.6053							E										
	6	ORP	3/21/2002	N001	265.0000				7	173.000	197.000	169.6790	9/19/2001	N001	202.0000				2/13/2001	N001	216.0000				6/13/2000	N001	197.0000			
	OK	mV							0	242.000	243.000	251.4126																		
	5	U	3/21/2002	0001	2.8700			0.001	8	2.380	2.860	3.0116	9/19/2001	0001	3.2600			0.0025	2/13/2001	0001	3.4300			0.01	6/13/2000	0001	2.9500			0.001
	OK	mg/L							0	3.400	3.430	3.9243																		
0827	6	Ca	3/19/2002	0001	490.0000			0.0662	6	427.000	454.000	403.1781	9/19/2001	0001	427.0000			0.0653	2/15/2001	0001	454.0000			0.0757	2/3/2000	0001	465.0000			
	OK	mg/L							0	487.000	510.000	437.3585																		
	5	Chloride	3/19/2002	0001	338.0000			4.01	6	284.000	312.000	342.3128	9/19/2001	0001	473.0000			0.149	2/15/2001	0001	313.0000			2.4	2/3/2000	0001	284.0000			
	OK	mg/L							0	325.000	473.000	509.5438																		
	5	K	3/19/2002	0001	36.6000			0.0595	6	21.100	21.200	45.7503	9/19/2001	0001	56.6000			0.0151	2/15/2001	0001	37.2000			0.0091	2/3/2000	0001	21.2000			
	OK	mg/L							0	37.200	56.600	65.3572							E										
	5	Mg	3/19/2002	0001	908.0000			0.104	6	495.000	531.000	1037.5400	9/19/2001	0001	1290.0000			0.042	2/15/2001	0001	848.0000			0.52	2/3/2000	0001	533.0000			
	OK	mg/L							0	848.000	1290.000	1475.6549																		
	5	Na	3/19/2002	0001	1700.0000			0.084	6	1200.000	1270.000	2000.4090	9/19/2001	0001	2560.0000			0.074	2/15/2001	0001	1640.0000			1.83	2/3/2000	0001	1330.0000			
	OK	mg/L							0	1640.000	2560.000	2843.3352																		

Error Type Flags :
2 - All time high detection limit
3 - Too low (non-trend approach)
4 - Too high (non-trend approach)
5 - Too low (trend approach)
6 - Too high (trend approach)

Flags :
I - Increased detection limit due to required dilution.
L - Less than three bore volumes removed before sampling.
J - Estimated value.
H - Hold time expired, value suspect.

Approved by Jan Campbell Date 6-17-02

Hydrologist "Ok" indicates insignificant variation

Site : SHP02 SHIPROCK (TAILING Test Data Date Range : 3/1/2002 to 3/31/2002 Older Data Only Used for Baseline Data 362 Chemical Records 2659 History Records

LOC. ID.	ERR. TYPE FLAG	PARAM CODE / UNITS	ANOMALOUS TEST DATA POINT: LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DETLIM	# OF SAMP. / %NON DETE C	ALL TIME MINIMUMS / ALL TIME MAXIMUMS		BOUND: UPPER BOUND	3 MOST RECENT SAMPLING EVENTS: LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DETLIM	LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DETLIM	LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DET LIM
0827	6	ORP	3/19/2002	N001	268.0000				10	114.000	122.000	94.1414	9/19/2001	N001	185.0000				2/15/2001	N001	144.0000				7/12/2000	N001	180.0000			
	OK	mV							0	199.000	216.000	222.2310																		
	5	SO4	3/19/2002	0001	6740.0000				10	3735.000	3972.000	7878.2968	9/19/2001	0001	9650.0000				2/15/2001	0001	6740.0000				6/25/2000	0001	6780.0000			
	OK	mg/L			3.94				0	6780.000	9650.000	10908.0244			0.253						5.89						0.589			
	5	Sr	3/19/2002	0001	9.1200				6	7.750	7.830	9.1350	9/19/2001	0001	10.3000				2/15/2001	0001	8.8900				2/3/2000	0001	7.8300			
	OK	mg/L			0.002				0	8.890	10.300	10.9602			0.001						0.01									
0828	5	Chloride	3/21/2002	0001	35.0000				6	79.500	103.000	65.5068	9/19/2001	0001	103.0000				2/13/2001	0001	163.0000				2/3/2000	0001	79.5000			
		mg/L			0.802				0	155.000	163.000	165.5758			0.0745						0.6									
	5	K	**3/21/2002**	**0001**	10.4000				6	13.300	17.100	15.1634	9/19/2001	0001	18.1000				2/13/2001	0001	25.1000				2/3/2000	0001	13.3000			
	OK	mg/L			0.0119				0	19.200	25.100	26.9537			0.0151				E		0.0091									
	5	Mg	3/21/2002	0001	135.0000				6	188.000	214.000	135.3175	9/19/2001	0001	188.0000				2/13/2001	0001	**495.0000**				**2/3/2000**	**0001**	275.0000			
	OK	mg/L			0.0052				0	357.000	495.000	499.5802			0.0042						**0.0052**									
	5	Na	3/21/2002	0001	292.0000				6	431.000	434.000	348.7767	9/19/2001	0001	434.0000				2/13/2001	0001	**693.0000**				**2/3/2000**	**0001**	**431.0000**			
	OK	mg/L			0.084				0	634.000	693.000	696.3176			0.074						**1.83**									
	6	ORP	3/21/2002	N001	250.0000				7	-87.000	-14.000	0.0000	9/19/2001	N001	-87.0000				2/13/2001	N001	173.0000				6/24/2000	N001	81.0000			
	OK	mV							0	204.000	204.000	159.1112																		
	5	Sr	3/21/2002	0001	2.7200				6	3.660	4.040	3.1315	9/19/2001	0001	3.6600				2/13/2001	0001	5.6900				2/3/2000	0001	4.9100			
	OK	mg/L			0.0001				0	5.320	5.690	5.5380			0.0001						0.01									
0832	5	Mn	3/19/2002	0001	0.0001				7	0.000	0.001	0.0012	9/19/2001	0001	0.0095				2/7/2001	0001	0.0002				6/21/2000	0001	0.0015			
		mg/L	U		0.0001				42.857	0.002	0.010	0.0110	B		0.0001				U		0.0002				U		0.0015			
	6	Na	3/19/2002	0001	2610.0000				6	756.000	1240.000	1323.8797	9/19/2001	0001	1890.0000				2/7/2001	0001	1360.0000				2/7/2000	0001	2040.0000			
	OK	mg/L			0.084				0	1890.000	2040.000	2575.5784			0.074						1.83									
	6	ORP	3/19/2002	N001	282.0000				8	133.000	152.000	112.7731	9/19/2001	N001	133.0000				2/7/2001	N001	190.0000				6/21/2000	N001	156.0000			
	OK	mV							0	190.000	197.000	187.8246																		
0835	5	Ca	3/21/2002	0001	631.0000				6	360.000	366.000	671.9705	9/19/2001	0001	679.0000				**2/7/2001**	0001	577.0000				2/6/2000	0001	419.0000			
	OK	mg/L			1.324				0	577.000	679.000	757.4688			0.653						**1.8925**									

Error Type Flags :
2 - All time high detection limit
3 - Too low (non-trend approach)
4 - Too high (non-trend approach)
5 - Too low (trend approach)
6 - Too high (trend approach)

Flags :
I - Increased detection limit due to required dilution.
L - Less than three bore volumes removed before sampling
J - Estimated value.
H - Hold time expired, value suspect.

Approved by Sam Campbell Date 6-17-02

Hydrologist "Ok" indicates insignificant variation

Site : SHP02 SHIPROCK (TAILING Test Data Date Range : 3/1/2002 to 3/31/2002 Older Data Only Used for Baseline Data 362 Chemical Records 2659 History Records

LOC. ID.	ERR. TYPE FLAG	PARAM CODE / UNITS	ANOMALOUS TEST DATA POINT: LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DETLIM	# OF SAMP. / %NON DETEC	ALL TIME MINIMUMS / ALL TIME MAXIMUMS		LOWER BOUND / UPPER BOUND	3 MOST RECENT SAMPLING EVENTS: LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DETLIM	LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DET LIM
0835	6	Na	3/21/2002	0001	365.0000				6	114.000	118.000	279.7221	9/19/2001	0001	304.0000				2/7/2001	0001	241.0000				2/6/2000	0001	124.0000
	ok	mg/L			0.084				0	241.000	304.000	362.6645			0.074						0.0183						
0836	5	Chloride	3/19/2002	0001	38.9000				7	35.600	37.600	39.4230	9/19/2001	0001	46.4000				2/5/2001	0001	37.6000				2/6/2000	0001	41.4000
	OK	mg/L			2.005				0	41.600	46.400	49.4987			0.0745						0.096						
	5	Mg	3/19/2002	0001	243.0000				7	259.000	260.000	252.4134	9/19/2001	0001	259.0000				2/5/2001	0001	261.0000				2/6/2000	0001	260.0000
	OK	mg/L			0.104				0	268.000	269.000	262.4628			0.0042						0.0052						
	6	Sr	3/19/2002	0001	6.7100				7	6.200	6.400	6.2266	9/19/2001	0001	6.4000				2/5/2001	0001	6.4500				2/6/2000	0001	6.4900
	OK	mg/L			0.002				0	6.540	6.630	6.6733			0.001						0.01						
0838	6	NO3	3/19/2002	0001	32.6000				8	11.200	11.600	10.9193	9/18/2001	0001	15.2000				2/6/2001	0001	11.2000				6/22/2000	0001	15.6000
		mg/L			0.02				0	15.500	15.600	17.3324			0.0305						0.0314						0.0314
	6	ORP	3/19/2002	N001	258.0000				9	104.000	121.000	80.3572	9/18/2001	N001	121.0000				2/6/2001	N001	187.0000				7/11/2000	N001	173.0000
	OK	mV							0	192.000	206.000	215.1152															
	6	Se	3/19/2002	0001	0.0782				7	0.027	0.030	0.0289	9/18/2001	0001	0.0502				2/6/2001	0001	0.0404				6/22/2000	0001	0.0389
	OK	mg/L			0.002				0	0.050	0.054	0.0615			0.0015						0.0025						0.0005
	6	Sr	3/19/2002	0001	5.3700				6	3.510	3.590	3.5988	9/18/2001	0001	4.4400				2/6/2001	0001	4.3600				2/6/2000	0001	3.5100
	OK	mg/L			0.002				0	4.510	4.830	5.1828			0.0001						0.0001						
0839	6	Ca	3/20/2002	0001	482.0000				6	433.000	439.000	414.3440	9/19/2001	0001	443.0000				2/8/2001	0001	468.0000				2/7/2000	0001	433.0000
	ok	mg/L			0.0662				0	490.000	490.000	477.5080			0.0653						0.0757						
	5	Chloride	3/20/2002	0001	387.0000				6	430.000	445.000	434.1509	9/19/2001	0001	447.0000				2/8/2001	0001	445.0000				2/7/2000	0001	467.0000
	OK	mg/L			8.02				0	449.000	467.000	469.2198			0.149						2.4						
	5	K	3/20/2002	0001	96.7000				6	90.200	102.000	106.0338	9/19/2001	0001	114.0000				2/8/2001	0001	111.0000				2/7/2000	0001	113.0000
	OK	mg/L			0.0595				0	113.000	114.000	127.9981			0.0151				E		0.0091						
	5	NH4	3/20/2002	0001	83.6000				8	36.800	38.100	89.3584	9/19/2001	0001	113.0000				2/8/2001	0001	114.0000				6/22/2000	0001	107.0000
	OK	mg/L			0.004				0	114.000	138.000	191.0173			0.0062						0.0047						0.0047
	5	NO3	3/20/2002	0001	1720.0000				9	1573.000	1771.000	1971.1209	9/19/2001	0001	2260.0000				2/8/2001	0001	2390.0000				6/22/2000	0001	2300.0000
	OK	mg/L			1				0	2500.000	2600.000	3031.7859			1.525						78.5						1.57

Error Type Flags :
2 - All time high detection limit
3 - Too low (non-trend approach)
4 - Too high (non-trend approach)
5 - Too low (trend approach)
6 - Too high (trend approach)

Flags :
I - Increased detection limit due to required dilution.
L - Less than three bore volumes removed before sampling.
J - Estimated value.
H - Hold time expired, value suspect.

Approved by Jan Campbell Date 6-17-02

Hydrologist "Ok" indicates insignificant variation

Site : SHP02 SHIPROCK (TAILING Test Data Date Range : 3/1/2002 to 3/31/2002 Older Data Only Used for Baseline Data 362 Chemical Records 2659 History Records

LOC. ID.	ERR. TYPE FLAG	PARAM CODE / UNITS	ANOMALOUS TEST DATA POINT: LOG DATE	SAMPLE	VALUE	# OF SAMP. / %NON DETE C	ALL TIME MINIMUMS / ALL TIME MAXIMUMS		LOWER BOUND / UPPER BOUND	3 MOST RECENT SAMPLING EVENTS: LOG DATE	SAMPLE	VALUE	LOG DATE	SAMPLE	VALUE	LOG DATE	SAMPLE	VALUE
			FLAGS	UNCERTAINTY	DETLIM					FLAGS	UNCERTAINTY	DETLIM	FLAGS	UNCERTAINTY	DETLIM	FLAGS	UNCERTAINTY	DET LIM
0839	5	SO4	3/20/2002	0001	9960.0000	9	9210.000	9288.000	10675.0504	9/19/2001	0001	11200.0000	2/8/2001	0001	10700.0000	6/22/2000	0001	10400.0000
	OK	mg/L			7.88	0	11200.000	11700.000	12298.3200			0.506			23.56			1.178
0841	5	K	3/19/2002	0001	46.4000	6	40.000	44.100	52.9375	9/18/2001	0001	58.4000	2/7/2001	0001	55.5000	2/7/2000	0001	44.1000
	OK	mg/L			0.0595	0	55.500	58.400	66.4966			0.0151	E		0.0091			
	5	Na	3/19/2002	0001	5760.0000	6	5180.000	5400.000	5861.9820	9/18/2001	0001	5840.0000	2/7/2001	0001	5860.0000	2/7/2000	0001	5710.0000
	OK	mg/L			0.21	0	5840.000	5860.000	6208.7110			0.37			45.75			
	6	ORP	3/19/2002	N001	267.0000	10	111.000	114.000	72.8072	9/18/2001	N001	111.0000	2/7/2001	N001	208.0000	6/20/2000	N001	114.0000
	OK	mV				0	183.000	208.000	200.1840									
0846	5	Na	3/19/2002	0001	619.0000	6	459.000	492.000	625.0462	9/19/2001	0001	610.0000	2/6/2001	0001	660.0000	2/6/2000	0001	604.0000
	OK	mg/L			0.084	0	610.000	660.000	748.6308			0.074			1.83			
	6	ORP	3/19/2002	N001	282.0000	9	90.000	93.000	110.8302	9/19/2001	N001	145.0000	2/6/2001	N001	188.0000	7/11/2000	N001	152.0000
	OK	mV				0	188.000	203.000	243.3651									
	5	Se	3/19/2002	0001	0.5330	7	0.668	0.733	0.6714	9/19/2001	0001	0.7330	2/6/2001	0001	0.9150	6/22/2000	0001	0.9060
	OK	mg/L			0.02	0	0.915	0.931	1.0090			0.015			1			0.01
	6	Sr	3/19/2002	0001	6.0600	6	5.680	5.710	5.2343	9/19/2001	0001	5.6800	2/6/2001	0001	5.7100	2/6/2000	0001	6.4800
	OK	mg/L			0.002	0	6.370	6.480	5.9178			0.001			0.01			
0886	5	Ca	3/20/2002	0001	343.0000	9	361.000	386.000	379.3399	9/11/2001	0001	518.0000	2/9/2001	0001	386.0000	11/17/2000	0001	424.0000
	OK	mg/L			0.0662	0	473.000	518.000	553.3778			0.1306			0.0757			0.0481
	6	Zobell O	3/20/2002	N001	268.0000	5	101.000	220.000	17.6413	9/11/2001	N001	101.0000	2/9/2001	N001	249.0000	11/17/2000	N001	242.0000
	OK	mV				0	242.000	249.000	167.6111									
0889	5	Ca	3/20/2002	0001	340.0000	9	358.000	365.000	341.1743	9/11/2001	0001	449.0000	2/9/2001	0001	378.0000	11/17/2000	0001	426.0000
	OK	mg/L			0.0662	0	491.000	506.000	549.1028			0.0653			0.0757			0.0481
	6	ORP	3/20/2002	N001	235.0000	11	-432.000	6.000	0.0000	9/11/2001	N001	-432.0000	2/9/2001	N001	182.0000	11/17/2000	N001	6.0000
	OK	mV				0	231.000	243.000	181.1469									
	6	Zobell O	3/20/2002	N001	268.0000	5	101.000	220.000	17.6413	9/11/2001	N001	101.0000	2/9/2001	N001	249.0000	11/17/2000	N001	242.0000
	OK	mV				0	242.000	249.000	167.6111									

Error Type Flags :
2 - All time high detection limit
3 - Too low (non-trend approach)
4 - Too high (non-trend approach)
5 - Too low (trend approach)
6 - Too high (trend approach)

Flags :
I - Increased detection limit due to required dilution.
L - Less than three bore volumes removed before sampling.
J - Estimated value.
H - Hold time expired, value suspect.

Approved by Sam Campbell Date 6-17-02

Hydrologist "Ok" indicates insignificant variation

Site : SHP02 SHIPROCK (TAILING Test Data Date Range : 3/1/2002 to 3/31/2002 Older Data Only Used for Baseline Data 362 Chemical Records 2659 History Records

LOC. ID.	ERR. TYPE FLAG	PARAM CODE / UNITS	ANOMALOUS TEST DATA POINT: LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DETLIM	# OF SAMP. / %NON DETEC	ALL TIME MINIMUMS / ALL TIME MAXIMUMS		LOWER BOUND / UPPER BOUND	3 MOST RECENT SAMPLING EVENTS: LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DETLIM	LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DETLIM	LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DET LIM
0933	5	NO3	3/20/2002	0001	258.0000				9	7.100	227.000	265.6907	9/12/2001	0001	395.0000				2/7/2001	0001	428.0000				11/16/2000	0001	475.0000			
	OK	mg/L			0.1				0	475.000	500.000	715.0780			0.1525						0.785						0.157			
	5	Se	3/20/2002	0001	0.1460				7	0.203	0.213	0.1943	9/12/2001	0001	0.2130				2/7/2001	0001	0.2410				11/16/2000	0001	0.3070			
	OK	mg/L			0.002				0	0.274	0.307	0.3257			0.006						0.04						0.04			
0934	5	K	3/20/2002	0001	8.7500				7	4.680	5.230	8.7940	9/13/2001	0001	16.4000				2/8/2001	0001	5.5100				11/17/2000	0001	6.0200			
	OK	mg/L			0.0119				0	6.790	16.400	19.3212			0.0151						0.0091						0.0327			
	6	Na	3/20/2002	0001	418.0000				7	151.000	161.000	296.3188	9/13/2001	0001	346.0000				2/8/2001	0001	236.0000				11/17/2000	0001	215.0000			
	OK	mg/L			0.084				0	236.000	346.000	399.7348			0.074						0.0183						0.302			
	6	NO3	3/20/2002	0001	422.0000				8	28.600	56.400	262.5837	9/13/2001	0001	343.0000				2/8/2001	0001	195.0000				11/17/2000	0001	161.0000			
	OK	mg/L			0.1				0	195.000	343.000	413.8733			0.1525						0.1256						0.0628			
	6	U	3/20/2002	0001	0.0506				8	0.030	0.031	0.0333	9/13/2001	0001	0.0423				2/8/2001	0001	0.0361				11/17/2000	0001	0.0330			
	OK	mg/L			0.0001				0	0.036	0.042	0.0451			0.0001						0.0001						0.0001			
0942	6	Ca	3/20/2002	0001	548.0000				7	330.000	461.000	273.5217	9/12/2001	0001	330.0000				2/5/2001	0001	515.0000				11/17/2000	0001	556.0000			
	OK	mg/L			0.0662				0	533.000	556.000	509.5576			0.0653						1.8925						1.2025			
	6	Chloride	3/20/2002	0001	102.0000				7	36.600	41.100	29.0066	9/12/2001	0001	36.6000				2/5/2001	0001	64.6000				11/17/2000	0001	66.6000			
		mg/L			2.005				0	64.600	66.600	74.0072			0.0298						0.096						0.12			
	6	K	3/20/2002	0001	8.1500				7	4.390	5.250	3.0921	9/12/2001	0001	4.3900				2/5/2001	0001	6.0000				11/17/2000	0001	5.6900			
	OK	mg/L			0.0119				0	6.000	7.480	6.9467			0.0151						0.0091						0.0327			
	6	Mg	3/20/2002	0001	237.0000				7	86.300	170.000	60.5879	9/12/2001	0001	86.3000				2/5/2001	0001	207.0000				11/17/2000	0001	185.0000			
	OK	mg/L			0.104				0	186.000	207.000	183.4538			0.0042						0.0052						0.0352			
	6	Na	3/20/2002	0001	387.0000				7	177.000	188.000	152.3311	9/12/2001	0001	177.0000				2/5/2001	0001	286.0000				11/17/2000	0001	257.0000			
	OK	mg/L			0.084				0	272.000	286.000	304.9942			0.0074						0.0183						0.302			
	6	Se	3/20/2002	0001	0.5160				7	0.156	0.163	0.1057	9/12/2001	0001	0.1630				2/5/2001	0001	0.3670				11/17/2000	0001	0.3640			
	OK	mg/L			0.01				0	0.364	0.367	0.4574			0.006						0.04						0.04			
	6	SO4	3/20/2002	0001	2640.0000				8	1220.000	1990.000	953.4052	9/12/2001	0001	1220.0000				2/5/2001	0001	2140.0000				11/17/2000	0001	2080.0000			
	OK	mg/L			1.97				0	2140.000	2350.000	1916.7254			0.0506						1.4725						0.2945			

Error Type Flags : 2 - All time high detection limit
3 - Too low (non-trend approach)
4 - Too high (non-trend approach)
5 - Too low (trend approach)
6 - Too high (trend approach)

Flags : I - Increased detection limit due to required dilution.
L - Less than three bore volumes removed before sampling.
J - Estimated value.
H - Hold time expired, value suspect.

Approved by Sam Campbell Date 6-17-02

Hydrologist "Ok" indicates insignificant variation

Site : SHP02 SHIPROCK (TAILING Test Data Date Range : 3/1/2002 to 3/31/2002 Older Data Only Used for Baseline Data 362 Chemical Records 2659 History Records

LOC. ID.	ERR. TYPE FLAG	PARAM CODE / UNITS	ANOMALOUS TEST DATA POINT: LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DETLIM	# OF SAMP. / %NON DETEC	ALL TIME MINIMUMS / ALL TIME MAXIMUMS		LOWER BOUND / UPPER BOUND	3 MOST RECENT SAMPLING EVENTS: LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DETLIM	LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DETLIM	LOG DATE	SAMPLE	VALUE	FLAGS	UNCERTAINTY	DET LIM
0942	6	Sr	3/20/2002	0001	6.5200				7	2.990	4.920	2.4212	9/12/2001	0001	2.9900				2/5/2001	0001	5.7800				11/17/2000	0001	5.4100			
	OK	mg/L			0.002				0	5.760	5.780	5.5941			0.0001						0.01						0.0001			
	6	U	3/20/2002	0001	0.0403				8	0.018	0.030	0.0136	9/12/2001	0001	0.0184				2/5/2001	0001	0.0363				11/17/2000	0001	0.0332			
	OK	mg/L			0.0001				0	0.037	0.037	0.0315			0.0001						0.0001						0.0001			
1007	5	NO3	3/20/2002	0001	2330.0000				4	127.000	930.000	2334.7801	9/19/2001	0001	2070.0000				2/13/2001	0001	1360.0000				6/22/2000	0001	930.0000			
	OK	mg/L			1				0	1360.000	2070.000	3045.0139			1.525						12.56						0.314			
1057	5	Mn	3/20/2002	0001	9.2500				4	8.490	9.760	9.9000	9/18/2001	0001	10.0000				2/13/2001	0001	10.7000				6/24/2000	0001	9.7600			
	OK	mg/L	E		0.0001				0	10.000	10.700	11.9886			0.0001						0.005						0.0015			
	5	NH4	3/20/2002	0001	2120.0000				4	1190.000	1950.000	2285.3238	9/18/2001	0001	2280.0000				2/13/2001	0001	2170.0000				6/24/2000	0001	1950.0000			
	OK	mg/L			0.004				0	2170.000	2280.000	3124.7340			0.0062						0.0047						0.0047			
	6	NO3	3/20/2002	0001	5180.0000				4	4440.000	4830.000	2423.5447	9/18/2001	0001	4440.0000				2/13/2001	0001	4830.0000				6/24/2000	0001	5540.0000			
	OK	mg/L			2				0	7250.000	7250.000	4265.8629			1.525						78.5						3.14			
	5	Se	3/20/2002	0001	0.3920				4	0.379	0.493	0.6175	9/18/2001	0001	0.5930				2/13/2001	0001	0.5620				6/24/2000	0001	0.4930			
	OK	mg/L			0.01				0	0.562	0.593	0.7405			0.015						0.25						0.005			
	5	SO4	3/20/2002	0001	15900.0000				4	10500.000	15600.000	16054.1444	9/18/2001	0001	16700.0000				2/13/2001	0001	15800.0000				6/24/2000	0001	15600.0000			
	OK	mg/L			7.88				0	15800.000	16700.000	21617.0184			0.506						23.56						1.178			
1059	6	Mn	3/20/2002	0001	0.2500				4	0.215	0.261	0.0000	9/18/2001	0001	0.2150				2/14/2001	0001	0.2610				6/25/2000	0001	0.7780			
	OK	mg/L			0.0001				0	1.430	1.430	0.0674			0.0001						0.0002						0.0015			
	6	NH4	3/20/2002	0001	12.8000				4	11.300	11.500	0.3193	9/18/2001	0001	11.5000				2/14/2001	0001	11.3000				6/25/2000	0001	18.2000			
	OK	mg/L			0.004				0	25.000	25.000	9.6407			0.0062						0.0047						0.0047			
	5	NO3	3/20/2002	0001	1880.0000				4	834.000	1140.000	2041.4955	9/18/2001	0001	1820.0000				2/14/2001	0001	1450.0000				6/25/2000	0001	1140.0000			
	OK	mg/L			0.4				0	1450.000	1820.000	2265.1202			0.61						12.56						0.628			
	5	SO4	3/20/2002	0001	9230.0000				4	4780.000	7380.000	10013.8494	9/18/2001	0001	9610.0000				2/14/2001	0001	8340.0000				6/25/2000	0001	7380.0000			
	OK	mg/L			7.88				0	8340.000	9610.000	12547.6410			0.506						5.89						0.589			
1060	6	U	3/20/2002	0001	0.1230				4	0.039	0.127	0.0000	9/18/2001	0001	0.0393				2/6/2001	0001	0.1270				6/23/2000	0001	0.1870			
	OK	mg/L			0.0001				0	0.300	0.300	0.0025			0.0001						0.0001						0.0001			

Error Type Flags : 2 - All time high detection limit
3 - Too low (non-trend approach)
4 - Too high (non-trend approach)
5 - Too low (trend approach)
6 - Too high (trend approach)

Flags : I - Increased detection limit due to required dilution.
L - Less than three bore volumes removed before sampling.
J - Estimated value.
H - Hold time expired, value suspect.

Approved by Jan Campbell Date 6-17-02

Hydrologist "Ok" indicates insignificant variation

DATA REVIEW CHECKSHEET

ANOMALOUS DATA REVIEW CHECKSHEET

SITE: Shiprock SAMPLING DATA: Ground water/surface water

REVIEWER(s): Sam Campbell (NAME print) Sam Campbell (SIGNATURE) 6-17-02 (DATE)

SITE HYDROLOGIST: Craig Goodknight (NAME print) Craig Goodknight (SIGNATURE) 9/23/02 (DATE)

DATE OF REVIEW: 6-17-02

	LOC. NO.	ANALYTE	TYPE OF ANOMALY	DISPOSITION
SHP 01	425	Mn	Low	Compare to next round
	426	NO_3	↓	
	618	Cl	High	
	↓	Mg	↓	
		Na		
		Se		
		SO_4		
	↓	U	↓	
	850	NH_4	Low	
	887	SO_4	High	
	940	Mn	↓	
	↓	NH_4		
	956	Mn		
	↓	NH_4		
	957	Mn	↓	
SHP 02	828	Cl	Low	
	838	NO_3	High	
	942	Cl	↓	
	425	Mn	Low	
	426	NO_3	↓	
				↓

WATER QUALITY DATA

GROUND WATER QUALITY DATA BY PARAMETER (USEE200) FOR SITE SHP01, SHIPROCK
REPORT DATE: 6/17/2002 2:36 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	0608	WL	03/19/2002	0001	KM		840		F	#	-	-
	mg/L	0614	WL	03/19/2002	0001	AL		596		F	#	-	-
	mg/L	0615	WL	03/19/2002	0001	AL		780		F	#	-	-
	mg/L	0618	WL	03/19/2002	0001	AL		708		F	#	-	-
	mg/L	0619	WL	03/19/2002	0001	AL		604		F	#	-	-
	mg/L	0734	WL	03/18/2002	0001	AL		676		FQ	#	-	-
	mg/L	0735	WL	03/19/2002	0001	AL		437		F	#	-	-
	mg/L	0736	WL	03/21/2002	0001	AL		450		F	#	-	-
	mg/L	0797	WL	03/20/2002	0001	AL		321		F	#	-	-
	mg/L	0850	WL	03/20/2002	0001	AL	B	302		F	#	-	-
	mg/L	0854	WL	03/18/2002	0001	AL		1250		F	#	-	-
Ammonium	mg/L	0608	WL	03/19/2002	0001	KM		434.000		F	#	0.004	-
	mg/L	0614	WL	03/19/2002	0001	AL		55.900		F	#	0.004	-
	mg/L	0615	WL	03/19/2002	0001	AL		36.200		F	#	0.004	-
	mg/L	0618	WL	03/19/2002	0001	AL		91.700		F	#	0.004	-
	mg/L	0619	WL	03/19/2002	0001	AL		3.930		F	#	0.004	-
	mg/L	0734	WL	03/18/2002	0001	AL		0.0723	B	FQ	#	0.004	-
	mg/L	0735	WL	03/19/2002	0001	AL		11.000		F	#	0.004	-
	mg/L	0735	WL	03/19/2002	0002	AL		10.900		F	#	0.004	-
	mg/L	0736	WL	03/21/2002	0001	AL		0.131		F	#	0.004	-
	mg/L	0797	WL	03/20/2002	0001	AL		0.004	U	F	#	0.004	-
	mg/L	0850	WL	03/20/2002	0001	AL	B	0.0223	B	F	#	0.004	-
	mg/L	0854	WL	03/18/2002	0001	AL		18.000		F	#	0.004	-
Calcium	mg/L	0608	WL	03/19/2002	0001	KM		439.000		F	#	0.0662	-
	mg/L	0614	WL	03/19/2002	0001	AL		470.000		F	#	0.0662	-
	mg/L	0615	WL	03/19/2002	0001	AL		455.000		F	#	0.0662	-

GROUND WATER QUALITY DATA BY PARAMETER (USEE200) FOR SITE SHP01, SHIPROCK
REPORT DATE: 6/17/2002 2:36 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Calcium	mg/L	0618	WL	03/19/2002	0001	AL		477.000		F	#	0.0662	-
	mg/L	0619	WL	03/19/2002	0001	AL		383.000		F	#	0.0662	-
	mg/L	0734	WL	03/18/2002	0001	AL		395.000		FQ	#	0.0662	-
	mg/L	0735	WL	03/19/2002	0001	AL		168.000		F	#	0.0662	-
	mg/L	0735	WL	03/19/2002	0002	AL		158.000		F	#	0.0662	-
	mg/L	0736	WL	03/21/2002	0001	AL		320.000		F	#	0.0662	-
	mg/L	0797	WL	03/20/2002	0001	AL		42.000		F	#	0.0662	-
	mg/L	0850	WL	03/20/2002	0001	AL	B	39.500		F	#	0.0662	-
	mg/L	0854	WL	03/18/2002	0001	AL		429.000		F	#	0.0662	-
Chloride	mg/L	0608	WL	03/19/2002	0001	KM		326.000		F	#	4.01	-
	mg/L	0614	WL	03/19/2002	0001	AL		552.000		F	#	8.02	-
	mg/L	0615	WL	03/19/2002	0001	AL		739.000		F	#	8.02	-
	mg/L	0618	WL	03/19/2002	0001	AL		494.000		F	#	4.01	-
	mg/L	0619	WL	03/19/2002	0001	AL		305.000		F	#	8.02	-
	mg/L	0734	WL	03/18/2002	0001	AL		316.000		FQ	#	4.01	-
	mg/L	0735	WL	03/19/2002	0001	AL		151.000		F	#	2.005	-
	mg/L	0735	WL	03/19/2002	0002	AL		141.000		F	#	2.005	-
	mg/L	0736	WL	03/21/2002	0001	AL		129.000		F	#	4.01	-
	mg/L	0797	WL	03/20/2002	0001	AL		16.700		F	#	0.401	-
	mg/L	0850	WL	03/20/2002	0001	AL	B	41.200		F	#	0.802	-
	mg/L	0854	WL	03/18/2002	0001	AL		1210.000		F	#	20.05	-
Magnesium	mg/L	0608	WL	03/19/2002	0001	KM		1610.000		F	#	0.104	-
	mg/L	0614	WL	03/19/2002	0001	AL		2380.000		F	#	0.104	-
	mg/L	0615	WL	03/19/2002	0001	AL		2840.000		F	#	0.104	-
	mg/L	0618	WL	03/19/2002	0001	AL		1560.000		F	#	0.104	-
	mg/L	0619	WL	03/19/2002	0001	AL		685.000		F	#	0.104	-

GROUND WATER QUALITY DATA BY PARAMETER (USEE200) FOR SITE SHP01, SHIPROCK
REPORT DATE: 6/17/2002 2:36 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Magnesium	mg/L	0734	WL	03/18/2002	0001	AL		730.000		FQ	#	0.104	-
	mg/L	0735	WL	03/19/2002	0001	AL		316.000		F	#	0.104	-
	mg/L	0735	WL	03/19/2002	0002	AL		310.000		F	#	0.104	-
	mg/L	0736	WL	03/21/2002	0001	AL		303.000		F	#	0.104	-
	mg/L	0797	WL	03/20/2002	0001	AL		10.900		F	#	0.104	-
	mg/L	0850	WL	03/20/2002	0001	AL	B	8.640		F	#	0.104	-
	mg/L	0854	WL	03/18/2002	0001	AL		2990.000		F	#	0.104	-
Manganese	mg/L	0608	WL	03/19/2002	0001	KM		6.160		F	#	0.0001	-
	mg/L	0614	WL	03/19/2002	0001	AL		5.510		F	#	0.0001	-
	mg/L	0615	WL	03/19/2002	0001	AL		6.930	E	F	#	0.0001	-
	mg/L	0618	WL	03/19/2002	0001	AL		10.400		F	#	0.0001	-
	mg/L	0619	WL	03/19/2002	0001	AL		3.340		F	#	0.0001	-
	mg/L	0734	WL	03/18/2002	0001	AL		0.078		FQ	#	0.0001	-
	mg/L	0735	WL	03/19/2002	0001	AL		1.550		F	#	0.0001	-
	mg/L	0735	WL	03/19/2002	0002	AL		1.480		F	#	0.0001	-
	mg/L	0736	WL	03/21/2002	0001	AL		1.850		F	#	0.0001	-
	mg/L	0797	WL	03/20/2002	0001	AL		0.0011	B	UF	#	0.0001	-
	mg/L	0850	WL	03/20/2002	0001	AL	B	0.0689		F	#	0.0001	-
	mg/L	0854	WL	03/18/2002	0001	AL		7.770		F	#	0.0001	-
Nitrate as NO3	mg/L	0608	WL	03/19/2002	0001	KM		2070.000		F	#	1	-
	mg/L	0614	WL	03/19/2002	0001	AL		3550.000		F	#	1	-
	mg/L	0615	WL	03/19/2002	0001	AL		4020.000		F	#	1	-
	mg/L	0618	WL	03/19/2002	0001	AL		1780.000		F	#	0.4	-
	mg/L	0619	WL	03/19/2002	0001	AL		56.600		F	#	0.02	-
	mg/L	0734	WL	03/18/2002	0001	AL		98.300		FQ	#	0.04	-
	mg/L	0735	WL	03/19/2002	0001	AL		686.000		F	#	0.2	-

GROUND WATER QUALITY DATA BY PARAMETER (USEE200) FOR SITE SHP01, SHIPROCK
REPORT DATE: 6/17/2002 2:36 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Nitrate as NO3	mg/L	0735	WL	03/19/2002	0002	AL		664.000		F	#	0.2	-
	mg/L	0736	WL	03/21/2002	0001	AL		0.0251	B	F	#	0.02	-
	mg/L	0797	WL	03/20/2002	0001	AL		0.020	U	F	#	0.02	-
	mg/L	0850	WL	03/20/2002	0001	AL	B	0.0715	B	F	#	0.02	-
	mg/L	0854	WL	03/18/2002	0001	AL		1260.000		F	#	0.4	-
ORP of Zobell Solution	mV	0797	WL	03/20/2002	N001	AL		268		F	#	-	-
	mV	0850	WL	03/20/2002	N001	AL	B	268		F	#	-	-
Oxidation Reduction Potent	mV	0608	WL	03/19/2002	N001	KM		192		F	#	-	-
	mV	0614	WL	03/19/2002	N001	AL		194		F	#	-	-
	mV	0615	WL	03/19/2002	N001	AL		213		F	#	-	-
	mV	0618	WL	03/19/2002	N001	AL		195		F	#	-	-
	mV	0619	WL	03/19/2002	N001	AL		188.3		F	#	-	-
	mV	0734	WL	03/18/2002	N001	AL		162		FQ	#	-	-
	mV	0735	WL	03/19/2002	N001	AL		145		F	#	-	-
	mV	0736	WL	03/21/2002	N001	AL		112		F	#	-	-
	mV	0797	WL	03/20/2002	N001	AL		164		F	#	-	-
	mV	0850	WL	03/20/2002	N001	AL	B	157		F	#	-	-
	mV	0854	WL	03/18/2002	N001	AL		187		F	#	-	-
pH	s.u.	0608	WL	03/19/2002	N001	KM		6.93		F	#	-	-
	s.u.	0614	WL	03/19/2002	N001	AL		7.09		F	#	-	-
	s.u.	0615	WL	03/19/2002	N001	AL		6.91		F	#	-	-
	s.u.	0618	WL	03/19/2002	N001	AL		6.85		F	#	-	-
	s.u.	0619	WL	03/19/2002	N001	AL		7.13		F	#	-	-
	s.u.	0734	WL	03/18/2002	N001	AL		7.31		FQ	#	-	-
	s.u.	0735	WL	03/19/2002	N001	AL		7.16		F	#	-	-
	s.u.	0736	WL	03/21/2002	N001	AL		7.13		F	#	-	-

GROUND WATER QUALITY DATA BY PARAMETER (USEE200) FOR SITE SHP01, SHIPROCK
REPORT DATE: 6/17/2002 2:36 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
pH	s.u.	0797	WL	03/20/2002	N001	AL		7.67		F	#	-	-
	s.u.	0850	WL	03/20/2002	N001	AL	B	7.82		F	#	-	-
	s.u.	0854	WL	03/18/2002	N001	AL		7.14		F	#	-	-
Potassium	mg/L	0608	WL	03/19/2002	0001	KM		146.000		F	#	0.0119	-
	mg/L	0614	WL	03/19/2002	0001	AL		136.000		F	#	0.0119	-
	mg/L	0615	WL	03/19/2002	0001	AL		151.000		F	#	0.0595	-
	mg/L	0618	WL	03/19/2002	0001	AL		94.600		F	#	0.0119	-
	mg/L	0619	WL	03/19/2002	0001	AL		51.800		F	#	0.0119	-
	mg/L	0734	WL	03/18/2002	0001	AL		33.900		FQ	#	0.0119	-
	mg/L	0735	WL	03/19/2002	0001	AL		18.000		F	#	0.0119	-
	mg/L	0735	WL	03/19/2002	0002	AL		17.500		F	#	0.0119	-
	mg/L	0736	WL	03/21/2002	0001	AL		33.500		F	#	0.0595	-
	mg/L	0797	WL	03/20/2002	0001	AL		1.840		F	#	0.0119	-
	mg/L	0850	WL	03/20/2002	0001	AL	B	2.640		F	#	0.0119	-
	mg/L	0854	WL	03/18/2002	0001	AL		141.000		F	#	0.0119	-
Selenium	mg/L	0608	WL	03/19/2002	0001	KM		0.0068		F	#	0.0002	-
	mg/L	0614	WL	03/19/2002	0001	AL		0.0935		F	#	0.002	-
	mg/L	0615	WL	03/19/2002	0001	AL		0.806		F	#	0.01	-
	mg/L	0618	WL	03/19/2002	0001	AL		0.440		F	#	0.01	-
	mg/L	0619	WL	03/19/2002	0001	AL		0.332		F	#	0.01	-
	mg/L	0734	WL	03/18/2002	0001	AL		0.145		FQ	#	0.004	-
	mg/L	0735	WL	03/19/2002	0001	AL		0.122		F	#	0.004	-
	mg/L	0735	WL	03/19/2002	0002	AL		0.108		F	#	0.002	-
	mg/L	0736	WL	03/21/2002	0001	AL		0.0002	U	F	#	0.0002	-
	mg/L	0797	WL	03/20/2002	0001	AL		0.00041	B	F	#	0.0002	-
	mg/L	0850	WL	03/20/2002	0001	AL	B	0.0017	B	F	#	0.0002	-

GROUND WATER QUALITY DATA BY PARAMETER (USEE200) FOR SITE SHP01, SHIPROCK
REPORT DATE: 6/17/2002 2:36 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	SAMPLE: ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Selenium	mg/L	0854	WL	03/18/2002	0001	AL		0.0123		F	#	0.0002	-
Sodium	mg/L	0608	WL	03/19/2002	0001	KM		2000.000		F	#	0.084	-
	mg/L	0614	WL	03/19/2002	0001	AL		2670.000		F	#	0.084	-
	mg/L	0615	WL	03/19/2002	0001	AL		4230.000		F	#	0.21	-
	mg/L	0618	WL	03/19/2002	0001	AL		2600.000		F	#	0.084	-
	mg/L	0619	WL	03/19/2002	0001	AL		2140.000		F	#	0.084	-
	mg/L	0734	WL	03/18/2002	0001	AL		2430.000		FQ	#	0.084	-
	mg/L	0735	WL	03/19/2002	0001	AL		940.000		F	#	0.084	-
	mg/L	0735	WL	03/19/2002	0002	AL		937.000		F	#	0.084	-
	mg/L	0736	WL	03/21/2002	0001	AL		1890.000		F	#	0.084	-
	mg/L	0797	WL	03/20/2002	0001	AL		293.000		F	#	0.084	-
	mg/L	0850	WL	03/20/2002	0001	AL	B	453.000		F	#	0.084	-
	mg/L	0854	WL	03/18/2002	0001	AL		6030.000		F	#	0.21	-
Specific Conductance	umhos/cm	0608	WL	03/19/2002	N001	KM		15810		F	#	-	-
	umhos/cm	0614	WL	03/19/2002	N001	AL		21550		F	#	-	-
	umhos/cm	0615	WL	03/19/2002	N001	AL		27200		F	#	-	-
	umhos/cm	0618	WL	03/19/2002	N001	AL		18430		F	#	-	-
	umhos/cm	0619	WL	03/19/2002	N001	AL		12220		F	#	-	-
	umhos/cm	0734	WL	03/18/2002	N001	AL		13600		FQ	#	-	-
	umhos/cm	0735	WL	03/19/2002	N001	AL		6306		F	#	-	-
	umhos/cm	0736	WL	03/21/2002	N001	AL		9650		F	#	-	-
	umhos/cm	0797	WL	03/20/2002	N001	AL		1550		F	#	-	-
	umhos/cm	0850	WL	03/20/2002	N001	AL	B	2282		F	#	-	-
	umhos/cm	0854	WL	03/18/2002	N001	AL		31790		F	#	-	-
Strontium	mg/L	0608	WL	03/19/2002	0001	KM		12.100		F	#	0.002	-
	mg/L	0614	WL	03/19/2002	0001	AL		13.500		F	#	0.002	-

GROUND WATER QUALITY DATA BY PARAMETER (USEE200) FOR SITE SHP01, SHIPROCK
REPORT DATE: 6/17/2002 2:36 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Strontium	mg/L	0615	WL	03/19/2002	0001	AL		14.300		F	#	0.002	-
	mg/L	0618	WL	03/19/2002	0001	AL		10.700		F	#	0.002	-
	mg/L	0619	WL	03/19/2002	0001	AL		8.190		F	#	0.002	-
	mg/L	0734	WL	03/18/2002	0001	AL		11.000		FQ	#	0.002	-
	mg/L	0735	WL	03/19/2002	0001	AL		3.200		F	#	0.0001	-
	mg/L	0735	WL	03/19/2002	0002	AL		3.040		F	#	0.0001	-
	mg/L	0736	WL	03/21/2002	0001	AL		6.710		F	#	0.002	-
	mg/L	0797	WL	03/20/2002	0001	AL		0.834		F	#	0.0001	-
	mg/L	0850	WL	03/20/2002	0001	AL	B	0.614		F	#	0.0001	-
	mg/L	0854	WL	03/18/2002	0001	AL		14.800		F	#	0.002	-
Sulfate	mg/L	0608	WL	03/19/2002	0001	KM		10800.000		F	#	7.88	-
	mg/L	0614	WL	03/19/2002	0001	AL		13200.000		F	#	7.88	-
	mg/L	0615	WL	03/19/2002	0001	AL		18000.000		F	#	7.88	-
	mg/L	0618	WL	03/19/2002	0001	AL		11300.000		F	#	7.88	-
	mg/L	0619	WL	03/19/2002	0001	AL		7540.000		F	#	7.88	-
	mg/L	0734	WL	03/18/2002	0001	AL		8350.000		FQ	#	3.94	-
	mg/L	0735	WL	03/19/2002	0001	AL		2570.000		F	#	1.97	-
	mg/L	0735	WL	03/19/2002	0002	AL		2550.000		F	#	1.97	-
	mg/L	0736	WL	03/21/2002	0001	AL		5670.000		F	#	3.94	-
	mg/L	0797	WL	03/20/2002	0001	AL		431.000		F	#	0.394	-
	mg/L	0850	WL	03/20/2002	0001	AL	B	751.000		F	#	0.788	-
	mg/L	0854	WL	03/18/2002	0001	AL		23500.000		F	#	19.7	-
Temperature	C	0608	WL	03/19/2002	N001	KM		9.66		F	#	-	-
	C	0614	WL	03/19/2002	N001	AL		11.24		F	#	-	-
	C	0615	WL	03/19/2002	N001	AL		14.02		F	#	-	-
	C	0618	WL	03/19/2002	N001	AL		13.8		F	#	-	-

GROUND WATER QUALITY DATA BY PARAMETER (USEE200) FOR SITE SHP01, SHIPROCK
REPORT DATE: 6/17/2002 2:36 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Temperature	C	0619	WL	03/19/2002	N001	AL		14.72		F	#	-	-
	C	0734	WL	03/18/2002	N001	AL		11.42		FQ	#	-	-
	C	0735	WL	03/19/2002	N001	AL		7.39		F	#	-	-
	C	0736	WL	03/21/2002	N001	AL		11.12		F	#	-	-
	C	0797	WL	03/20/2002	N001	AL		15.33		F	#	-	-
	C	0850	WL	03/20/2002	N001	AL	B	15.87		F	#	-	-
	C	0854	WL	03/18/2002	N001	AL		9.92		F	#	-	-
Temperature of Zobell Solu	C	0797	WL	03/20/2002	N001	AL		10.73		F	#	-	-
	C	0850	WL	03/20/2002	N001	AL	B	10.73		F	#	-	-
Turbidity	NTU	0608	WL	03/19/2002	N001	KM		7.2		F	#	-	-
	NTU	0614	WL	03/19/2002	N001	AL		5.98		F	#	-	-
	NTU	0615	WL	03/19/2002	N001	AL		6.52		F	#	-	-
	NTU	0618	WL	03/19/2002	N001	AL		8.07		F	#	-	-
	NTU	0619	WL	03/19/2002	N001	AL		3.44		F	#	-	-
	NTU	0734	WL	03/18/2002	N001	AL		37.7		FQ	#	-	-
	NTU	0735	WL	03/19/2002	N001	AL		4.94		F	#	-	-
	NTU	0736	WL	03/21/2002	N001	AL		2.96		F	#	-	-
	NTU	0797	WL	03/20/2002	N001	AL		3.05		F	#	-	-
	NTU	0850	WL	03/20/2002	N001	AL	B	8.98		F	#	-	-
	NTU	0854	WL	03/18/2002	N001	AL		25.3		F	#	-	-
Uranium	mg/L	0608	WL	03/19/2002	0001	KM		1.700		F	#	0.001	-
	mg/L	0614	WL	03/19/2002	0001	AL		2.180		F	#	0.001	-
	mg/L	0615	WL	03/19/2002	0001	AL		2.710		F	#	0.001	-
	mg/L	0618	WL	03/19/2002	0001	AL		2.100		F	#	0.001	-
	mg/L	0619	WL	03/19/2002	0001	AL		0.631		F	#	0.001	-
	mg/L	0734	WL	03/18/2002	0001	AL		0.185		FQ	#	0.0001	-

GROUND WATER QUALITY DATA BY PARAMETER (USEE200) FOR SITE SHP01, SHIPROCK
REPORT DATE: 6/17/2002 2:36 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Uranium	mg/L	0735	WL	03/19/2002	0001	AL		0.0778		F	#	0.0001	-
	mg/L	0735	WL	03/19/2002	0002	AL		0.0778		F	#	0.0001	-
	mg/L	0736	WL	03/21/2002	0001	AL		0.236		F	#	0.0001	-
	mg/L	0797	WL	03/20/2002	0001	AL		0.0093		F	#	0.0001	-
	mg/L	0850	WL	03/20/2002	0001	AL	B	0.0173		F	#	0.0001	-
	mg/L	0854	WL	03/18/2002	0001	AL		4.110		F	#	0.01	-

GROUND WATER QUALITY DATA BY PARAMETER (USEE200) FOR SITE SHP01, SHIPROCK
REPORT DATE: 6/17/2002 2:36 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE200 WHERE site_code='SHP01' AND quality_assurance = TRUE AND (data_validation_qualifiers IS NULL OR data_validation_qualifiers NOT LIKE '%R%' AND data_validation_qualifiers NOT LIKE '%X%') AND DATE_SAMPLED between #3/1/2002# and #3/31/2002#

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

LOCATION TYPES: WL WELL

ZONES OF COMPLETION:

AL ALLUVIUM KM MANCOS SHALE

FLOW CODES: B BACKGROUND

LAB QUALIFIERS:

	Replicate analysis not within control limits.
+	Correlation coefficient for MSA < 0.995.
>	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
M	GFAA duplicate injection precision not met.
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
P	> 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
S	Result determined by method of standard addition (MSA).
U	Analytical result below detection limit.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X	Laboratory defined (USEPA CLP organic) qualifier, see case narrative
Y	Laboratory defined (USEPA CLP organic) qualifier, see case narrative
Z	Laboratory defined (USEPA CLP organic) 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.	R	Unusable result.	U	Parameter analyzed for but was not detected
X	Location is undefined.				

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY PARAMETER (USEE200) FOR SITE SHP02, SHIPROCK (TAILINGS AREA)
REPORT DATE: 6/17/2002 2:36 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	0603	WL	03/20/2002	0001	AL		268		F	#	-	-
	mg/L	0812	WL	03/21/2002	0001	AL		685		FQ	#	-	-
	mg/L	0813	WL	03/20/2002	0001	AL		604		F	#	-	-
	mg/L	0816	WL	03/21/2002	0001	AL		259		F	#	-	-
	mg/L	0817	WL	03/21/2002	0001	KM		1197		F	#	-	-
	mg/L	0818	WL	03/20/2002	0001	AL		496		F	#	-	-
	mg/L	0826	WL	03/21/2002	0001	AL		1637		F	#	-	-
	mg/L	0827	WL	03/19/2002	0001	AL		927		FQ	#	-	-
	mg/L	0828	WL	03/21/2002	0001	AL		286		F	#	-	-
	mg/L	0832	WL	03/19/2002	0001	AL		332		F	#	-	-
	mg/L	0835	WL	03/21/2002	0001	AL		290		F	#	-	-
	mg/L	0836	WL	03/19/2002	0001	AL		328		F	#	-	-
	mg/L	0838	WL	03/19/2002	0001	AL		193		F	#	-	-
	mg/L	0841	WL	03/19/2002	0001	AL		604		F	#	-	-
	mg/L	0846	WL	03/19/2002	0001	AL		256		F	#	-	-
	mg/L	1007	WL	03/20/2002	0001	AL		1347		FQ	#	-	-
	mg/L	1057	WL	03/20/2002	0001	AL		416		F	#	-	-
	mg/L	1059	WL	03/20/2002	0001	KM		675		FQ	#	-	-
Ammonium	mg/L	0603	WL	03/20/2002	0001	AL		1520.000		F	#	0.004	-
	mg/L	0812	WL	03/21/2002	0001	AL		0.0294	B	UFQ	#	0.004	-
	mg/L	0813	WL	03/20/2002	0001	AL		79.900		F	#	0.004	-
	mg/L	0816	WL	03/21/2002	0001	AL		0.034	B	UF	#	0.004	-
	mg/L	0817	WL	03/21/2002	0001	KM		819.000		F	#	0.004	-
	mg/L	0818	WL	03/20/2002	0001	AL		335.000		F	#	0.004	-
	mg/L	0826	WL	03/21/2002	0001	AL		93.600		F	#	0.004	-
	mg/L	0827	WL	03/19/2002	0001	AL		8.150		FQ	#	0.004	-

GROUND WATER QUALITY DATA BY PARAMETER (USEE200) FOR SITE SHP02, SHIPROCK (TAILINGS AREA)
REPORT DATE: 6/17/2002 2:36 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Ammonium	mg/L	0828	WL	03/21/2002	0001	AL		0.0107	B	UF	#	0.004	-
	mg/L	0832	WL	03/19/2002	0001	AL		0.0074	B	F	#	0.004	-
	mg/L	0835	WL	03/21/2002	0001	AL		0.0315	B	UF	#	0.004	-
	mg/L	0836	WL	03/19/2002	0001	AL		0.0192	B	F	#	0.004	-
	mg/L	0838	WL	03/19/2002	0001	AL		0.004	U	F	#	0.004	-
	mg/L	0839	WL	03/20/2002	0001	AL		83.600		FQ	#	0.004	-
	mg/L	0841	WL	03/19/2002	0001	AL		0.0128	B	F	#	0.004	-
	mg/L	0841	WL	03/19/2002	0002	AL		0.0135	B	UF	#	0.004	-
	mg/L	0846	WL	03/19/2002	0001	AL		0.004	U	F	#	0.004	-
	mg/L	1007	WL	03/20/2002	0001	AL		50.900		FQ	#	0.004	-
	mg/L	1057	WL	03/20/2002	0001	AL		2120.000		F	#	0.004	-
	mg/L	1059	WL	03/20/2002	0001	KM		12.800		FQ	#	0.004	-
Calcium	mg/L	0603	WL	03/20/2002	0001	AL		561.000		F	#	0.0662	-
	mg/L	0812	WL	03/21/2002	0001	AL		483.000		FQ	#	0.0662	-
	mg/L	0813	WL	03/20/2002	0001	AL		648.000		F	#	1.324	-
	mg/L	0816	WL	03/21/2002	0001	AL		308.000		F	#	0.0662	-
	mg/L	0817	WL	03/21/2002	0001	KM		527.000		F	#	0.0662	-
	mg/L	0818	WL	03/20/2002	0001	AL		580.000		F	#	1.324	-
	mg/L	0826	WL	03/21/2002	0001	AL		457.000		F	#	0.0662	-
	mg/L	0827	WL	03/19/2002	0001	AL		490.000		FQ	#	0.0662	-
	mg/L	0828	WL	03/21/2002	0001	AL		196.000		F	#	0.0662	-
	mg/L	0832	WL	03/19/2002	0001	AL		429.000		F	#	0.0662	-
	mg/L	0835	WL	03/21/2002	0001	AL		631.000		F	#	1.324	-
	mg/L	0836	WL	03/19/2002	0001	AL		493.000		F	#	0.0662	-
	mg/L	0838	WL	03/19/2002	0001	AL		507.000		F	#	0.0662	-
	mg/L	0839	WL	03/20/2002	0001	AL		482.000		FQ	#	0.0662	-

GROUND WATER QUALITY DATA BY PARAMETER (USEE200) FOR SITE SHP02, SHIPROCK (TAILINGS AREA)
REPORT DATE: 6/17/2002 2:36 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Calcium	mg/L	0841	WL	03/19/2002	0001	AL		420.000		F	#	0.331	-
	mg/L	0841	WL	03/19/2002	0002	AL		438.000		F	#	0.0662	-
	mg/L	0846	WL	03/19/2002	0001	AL		453.000		F	#	0.0662	-
	mg/L	1007	WL	03/20/2002	0001	AL		499.000		FQ	#	0.0662	-
	mg/L	1057	WL	03/20/2002	0001	AL		486.000		F	#	0.0662	-
	mg/L	1059	WL	03/20/2002	0001	KM		441.000		FQ	#	0.0662	-
	mg/L	1060	WL	03/20/2002	0001	AL		468.000		FQ	#	0.0662	-
Chloride	mg/L	0603	WL	03/20/2002	0001	AL		154.000		F	#	4.01	-
	mg/L	0812	WL	03/21/2002	0001	AL		2300.000		FQ	#	8.02	-
	mg/L	0813	WL	03/20/2002	0001	AL		593.000		F	#	8.02	-
	mg/L	0816	WL	03/21/2002	0001	AL		165.000		F	#	2.005	-
	mg/L	0817	WL	03/21/2002	0001	KM		414.000		F	#	4.01	-
	mg/L	0818	WL	03/20/2002	0001	AL		876.000		F	#	8.02	-
	mg/L	0826	WL	03/21/2002	0001	AL		637.000		F	#	8.02	-
	mg/L	0827	WL	03/19/2002	0001	AL		338.000		FQ	#	4.01	-
	mg/L	0828	WL	03/21/2002	0001	AL		35.000		F	#	0.802	-
	mg/L	0832	WL	03/19/2002	0001	AL		540.000		F	#	4.01	-
	mg/L	0835	WL	03/21/2002	0001	AL		96.700		F	#	2.005	-
	mg/L	0836	WL	03/19/2002	0001	AL		38.900		F	#	2.005	-
	mg/L	0838	WL	03/19/2002	0001	AL		28.600		F	#	2.005	-
	mg/L	0839	WL	03/20/2002	0001	AL		387.000		FQ	#	8.02	-
	mg/L	0841	WL	03/19/2002	0001	AL		765.000		F	#	8.02	-
	mg/L	0841	WL	03/19/2002	0002	AL		770.000		F	#	8.02	-
	mg/L	0846	WL	03/19/2002	0001	AL		103.000		F	#	2.005	-
	mg/L	1007	WL	03/20/2002	0001	AL		423.000		FQ	#	8.02	-
	mg/L	1057	WL	03/20/2002	0001	AL		591.000		F	#	8.02	-

GROUND WATER QUALITY DATA BY PARAMETER (USEE200) FOR SITE SHP02, SHIPROCK (TAILINGS AREA)
REPORT DATE: 6/17/2002 2:36 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Chloride	mg/L	1059	WL	03/20/2002	0001	KM		565.000		FQ	#	8.02	-
Magnesium	mg/L	0603	WL	03/20/2002	0001	AL		557.000		F	#	0.104	-
	mg/L	0812	WL	03/21/2002	0001	AL		2120.000		FQ	#	0.104	-
	mg/L	0813	WL	03/20/2002	0001	AL		3120.000		F	#	0.104	-
	mg/L	0816	WL	03/21/2002	0001	AL		391.000		F	#	0.104	-
	mg/L	0817	WL	03/21/2002	0001	KM		1640.000		F	#	0.104	-
	mg/L	0818	WL	03/20/2002	0001	AL		2720.000		F	#	0.104	-
	mg/L	0826	WL	03/21/2002	0001	AL		2330.000		F	#	0.104	-
	mg/L	0827	WL	03/19/2002	0001	AL		908.000		FQ	#	0.104	-
	mg/L	0828	WL	03/21/2002	0001	AL		135.000		F	#	0.0052	-
	mg/L	0832	WL	03/19/2002	0001	AL		1040.000		F	#	0.104	-
	mg/L	0835	WL	03/21/2002	0001	AL		193.000		F	#	0.104	-
	mg/L	0836	WL	03/19/2002	0001	AL		243.000		F	#	0.104	-
	mg/L	0838	WL	03/19/2002	0001	AL		144.000		F	#	0.104	-
	mg/L	0839	WL	03/20/2002	0001	AL		1890.000		FQ	#	0.104	-
	mg/L	0841	WL	03/19/2002	0001	AL		779.000		F	#	0.104	-
	mg/L	0841	WL	03/19/2002	0002	AL		774.000		F	#	0.104	-
	mg/L	0846	WL	03/19/2002	0001	AL		214.000		F	#	0.104	-
	mg/L	1007	WL	03/20/2002	0001	AL		2120.000		FQ	#	0.104	-
	mg/L	1057	WL	03/20/2002	0001	AL		2380.000		F	#	0.104	-
	mg/L	1059	WL	03/20/2002	0001	KM		684.000		FQ	#	0.104	-
	mg/L	1060	WL	03/20/2002	0001	AL		843.000		FQ	#	0.104	-
Manganese	mg/L	0603	WL	03/20/2002	0001	AL		19.800	E	JF	#	0.0005	-
	mg/L	0812	WL	03/21/2002	0001	AL		0.0234	E	JFQ	#	0.0001	-
	mg/L	0813	WL	03/20/2002	0001	AL		0.119	E	JF	#	0.0001	-
	mg/L	0816	WL	03/21/2002	0001	AL		0.0001	UE	JF	#	0.0001	-

GROUND WATER QUALITY DATA BY PARAMETER (USEE200) FOR SITE SHP02, SHIPROCK (TAILINGS AREA)
REPORT DATE: 6/17/2002 2:36 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Manganese	mg/L	0817	WL	03/21/2002	0001	KM		1.940	E	JF	#	0.0001	-
	mg/L	0818	WL	03/20/2002	0001	AL		0.977	E	JF	#	0.0001	-
	mg/L	0826	WL	03/21/2002	0001	AL		2.660	E	JF	#	0.0001	-
	mg/L	0827	WL	03/19/2002	0001	AL		0.424		FQ	#	0.0001	-
	mg/L	0828	WL	03/21/2002	0001	AL		0.0001	UE	JF	#	0.0001	-
	mg/L	0832	WL	03/19/2002	0001	AL		0.0001	U	F	#	0.0001	-
	mg/L	0835	WL	03/21/2002	0001	AL		0.0001	UE	JF	#	0.0001	-
	mg/L	0836	WL	03/19/2002	0001	AL		1.900		F	#	0.0001	-
	mg/L	0838	WL	03/19/2002	0001	AL		0.0072	B	F	#	0.0001	-
	mg/L	0839	WL	03/20/2002	0001	AL		0.636	E	JFQ	#	0.0001	-
	mg/L	0841	WL	03/19/2002	0001	AL		0.0169	B	JF	#	0.0005	-
	mg/L	0841	WL	03/19/2002	0002	AL		0.0344		F	#	0.0001	-
	mg/L	0846	WL	03/19/2002	0001	AL		0.0121		F	#	0.0001	-
	mg/L	1007	WL	03/20/2002	0001	AL		1.670		FQ	#	0.0001	-
	mg/L	1057	WL	03/20/2002	0001	AL		9.250	E	JF	#	0.0001	-
	mg/L	1059	WL	03/20/2002	0001	KM		0.250		FQ	#	0.0001	-
	mg/L	1060	WL	03/20/2002	0001	AL		0.118	E	FQ	#	0.0001	-
Nitrate as NO3	mg/L	0603	WL	03/20/2002	0001	AL		3980.000		F	#	1	-
	mg/L	0812	WL	03/21/2002	0001	AL		5940.000		FQ	#	2	-
	mg/L	0813	WL	03/20/2002	0001	AL		9570.000		F	#	2	-
	mg/L	0816	WL	03/21/2002	0001	AL		454.000		F	#	0.1	-
	mg/L	0817	WL	03/21/2002	0001	KM		3020.000		F	#	1	-
	mg/L	0818	WL	03/20/2002	0001	AL		9490.000		F	#	2	-
	mg/L	0826	WL	03/21/2002	0001	AL		89.300		F	#	0.02	-
	mg/L	0827	WL	03/19/2002	0001	AL		259.000		FQ	#	0.1	-
	mg/L	0828	WL	03/21/2002	0001	AL		44.200		F	#	0.02	-

GROUND WATER QUALITY DATA BY PARAMETER (USEE200) FOR SITE SHP02, SHIPROCK (TAILINGS AREA)
REPORT DATE: 6/17/2002 2:36 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Nitrate as NO3	mg/L	0832	WL	03/19/2002	0001	AL		1770.000		F	#	0.4	-
	mg/L	0835	WL	03/21/2002	0001	AL		305.000		F	#	0.1	-
	mg/L	0836	WL	03/19/2002	0001	AL		60.700		F	#	0.02	-
	mg/L	0838	WL	03/19/2002	0001	AL		32.600		F	#	0.02	-
	mg/L	0839	WL	03/20/2002	0001	AL		1720.000		FQ	#	1	-
	mg/L	0841	WL	03/19/2002	0001	AL		2290.000		F	#	1	-
	mg/L	0841	WL	03/19/2002	0002	AL		2250.000		F	#	1	-
	mg/L	0846	WL	03/19/2002	0001	AL		343.000		F	#	0.1	-
	mg/L	1007	WL	03/20/2002	0001	AL		2330.000		FQ	#	1	-
	mg/L	1057	WL	03/20/2002	0001	AL		5180.000		F	#	2	-
	mg/L	1059	WL	03/20/2002	0001	KM		1880.000		FQ	#	0.4	-
Oxidation Reduction Potent	mV	0603	WL	03/20/2002	N001	AL		283		F	#	-	-
	mV	0812	WL	03/21/2002	N001	AL		236		FQ	#	-	-
	mV	0813	WL	03/20/2002	N001	AL		260		F	#	-	-
	mV	0816	WL	03/21/2002	N001	AL		229		F	#	-	-
	mV	0817	WL	03/21/2002	N001	KM		258		F	#	-	-
	mV	0818	WL	03/20/2002	N001	AL		252		F	#	-	-
	mV	0826	WL	03/21/2002	N001	AL		265		F	#	-	-
	mV	0827	WL	03/19/2002	N001	AL		268		FQ	#	-	-
	mV	0828	WL	03/21/2002	N001	AL		250		F	#	-	-
	mV	0832	WL	03/19/2002	N001	AL		282		F	#	-	-
	mV	0835	WL	03/21/2002	N001	AL		244		F	#	-	-
	mV	0836	WL	03/19/2002	N001	AL		253		F	#	-	-
	mV	0838	WL	03/19/2002	N001	AL		258		F	#	-	-
	mV	0841	WL	03/19/2002	N001	AL		267		F	#	-	-
	mV	0846	WL	03/19/2002	N001	AL		282		F	#	-	-

GROUND WATER QUALITY DATA BY PARAMETER (USEE200) FOR SITE SHP02, SHIPROCK (TAILINGS AREA)
REPORT DATE: 6/17/2002 2:36 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Oxidation Reduction Potent	mV	1007	WL	03/20/2002	N001	AL		256		FQ	#	-	-
	mV	1057	WL	03/20/2002	N001	AL		261		F	#	-	-
	mV	1059	WL	03/20/2002	N001	KM		261		FQ	#	-	-
pH	s.u.	0603	WL	03/20/2002	N001	AL		6.39		F	#	-	-
	s.u.	0812	WL	03/21/2002	N001	AL		7.05		FQ	#	-	-
	s.u.	0813	WL	03/20/2002	N001	AL		6.67		F	#	-	-
	s.u.	0816	WL	03/21/2002	N001	AL		7.41		F	#	-	-
	s.u.	0817	WL	03/21/2002	N001	KM		6.7		F	#	-	-
	s.u.	0818	WL	03/20/2002	N001	AL		6.72		F	#	-	-
	s.u.	0826	WL	03/21/2002	N001	AL		6.63		F	#	-	-
	s.u.	0827	WL	03/19/2002	N001	AL		6.57		FQ	#	-	-
	s.u.	0828	WL	03/21/2002	N001	AL		7.27		F	#	-	-
	s.u.	0832	WL	03/19/2002	N001	AL		7		F	#	-	-
	s.u.	0835	WL	03/21/2002	N001	AL		7.02		F	#	-	-
	s.u.	0836	WL	03/19/2002	N001	AL		7.01		F	#	-	-
	s.u.	0838	WL	03/19/2002	N001	AL		6.99		F	#	-	-
	s.u.	0841	WL	03/19/2002	N001	AL		7.29		F	#	-	-
	s.u.	0846	WL	03/19/2002	N001	AL		7.02		F	#	-	-
	s.u.	1007	WL	03/20/2002	N001	AL		6.78		FQ	#	-	-
	s.u.	1057	WL	03/20/2002	N001	AL		6.92		F	#	-	-
	s.u.	1059	WL	03/20/2002	N001	KM		7.06		FQ	#	-	-
Potassium	mg/L	0603	WL	03/20/2002	0001	AL		150.000		F	#	0.0595	-
	mg/L	0812	WL	03/21/2002	0001	AL		62.300		FQ	#	0.0595	-
	mg/L	0813	WL	03/20/2002	0001	AL		125.000		F	#	0.0595	-
	mg/L	0816	WL	03/21/2002	0001	AL		16.000		F	#	0.0595	-
	mg/L	0817	WL	03/21/2002	0001	KM		189.000		F	#	0.0595	-

GROUND WATER QUALITY DATA BY PARAMETER (USEE200) FOR SITE SHP02, SHIPROCK (TAILINGS AREA)
REPORT DATE: 6/17/2002 2:36 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Potassium	mg/L	0818	WL	03/20/2002	0001	AL		112.000		F	#	0.0595	-
	mg/L	0826	WL	03/21/2002	0001	AL		116.000		F	#	0.0595	-
	mg/L	0827	WL	03/19/2002	0001	AL		36.600		FQ	#	0.0595	-
	mg/L	0828	WL	03/21/2002	0001	AL		10.400		F	#	0.0119	-
	mg/L	0832	WL	03/19/2002	0001	AL		21.900		F	#	0.0595	-
	mg/L	0835	WL	03/21/2002	0001	AL		8.720		F	#	0.0119	-
	mg/L	0836	WL	03/19/2002	0001	AL		4.700		F	#	0.0119	-
	mg/L	0838	WL	03/19/2002	0001	AL		6.260		F	#	0.0119	-
	mg/L	0839	WL	03/20/2002	0001	AL		96.700		FQ	#	0.0595	-
	mg/L	0841	WL	03/19/2002	0001	AL		46.400		F	#	0.0595	-
	mg/L	0841	WL	03/19/2002	0002	AL		46.700		F	#	0.0595	-
	mg/L	0846	WL	03/19/2002	0001	AL		9.050		F	#	0.0119	-
	mg/L	1007	WL	03/20/2002	0001	AL		114.000		FQ	#	0.0595	-
	mg/L	1057	WL	03/20/2002	0001	AL		348.000		F	#	0.0595	-
	mg/L	1059	WL	03/20/2002	0001	KM		28.900		FQ	#	0.0595	-
	mg/L	1060	WL	03/20/2002	0001	AL		27.000		FQ	#	0.0595	-
Selenium	mg/L	0603	WL	03/20/2002	0001	AL		0.192		F	#	0.004	-
	mg/L	0812	WL	03/21/2002	0001	AL		6.350		FQ	#	0.08	-
	mg/L	0813	WL	03/20/2002	0001	AL		0.0378		F	#	0.001	-
	mg/L	0816	WL	03/21/2002	0001	AL		0.0736		F	#	0.002	-
	mg/L	0817	WL	03/21/2002	0001	KM		0.0024	B	F	#	0.0002	-
	mg/L	0818	WL	03/20/2002	0001	AL		2.400		F	#	0.04	-
	mg/L	0826	WL	03/21/2002	0001	AL		0.0095		F	#	0.0002	-
	mg/L	0827	WL	03/19/2002	0001	AL		0.0087		FQ	#	0.0002	-
	mg/L	0828	WL	03/21/2002	0001	AL		0.0513		F	#	0.001	-
	mg/L	0832	WL	03/19/2002	0001	AL		2.590		F	#	0.04	-

GROUND WATER QUALITY DATA BY PARAMETER (USEE200) FOR SITE SHP02, SHIPROCK (TAILINGS AREA)
REPORT DATE: 6/17/2002 2:36 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Selenium	mg/L	0835	WL	03/21/2002	0001	AL		0.200		F	#	0.002	-
	mg/L	0836	WL	03/19/2002	0001	AL		0.146		F	#	0.002	-
	mg/L	0838	WL	03/19/2002	0001	AL		0.0782		F	#	0.002	-
	mg/L	0839	WL	03/20/2002	0001	AL		0.0038	B	FQ	#	0.0002	-
	mg/L	0841	WL	03/19/2002	0001	AL		3.090		F	#	0.04	-
	mg/L	0841	WL	03/19/2002	0002	AL		3.160		F	#	0.04	-
	mg/L	0846	WL	03/19/2002	0001	AL		0.533		F	#	0.02	-
	mg/L	1007	WL	03/20/2002	0001	AL		0.118		FQ	#	0.002	-
	mg/L	1057	WL	03/20/2002	0001	AL		0.392		F	#	0.01	-
	mg/L	1059	WL	03/20/2002	0001	KM		0.0606		FQ	#	0.001	-
	mg/L	1060	WL	03/20/2002	0001	AL		2.620		FQ	#	0.04	-
Sodium	mg/L	0603	WL	03/20/2002	0001	AL		646.000		F	#	0.084	-
	mg/L	0812	WL	03/21/2002	0001	AL		5860.000		FQ	#	0.21	-
	mg/L	0813	WL	03/20/2002	0001	AL		2360.000		F	#	0.084	-
	mg/L	0816	WL	03/21/2002	0001	AL		1200.000		F	#	0.084	-
	mg/L	0817	WL	03/21/2002	0001	KM		1510.000		F	#	0.084	-
	mg/L	0818	WL	03/20/2002	0001	AL		2820.000		F	#	0.084	-
	mg/L	0826	WL	03/21/2002	0001	AL		2170.000		F	#	0.084	-
	mg/L	0827	WL	03/19/2002	0001	AL		1700.000		FQ	#	0.084	-
	mg/L	0828	WL	03/21/2002	0001	AL		292.000		F	#	0.084	-
	mg/L	0832	WL	03/19/2002	0001	AL		2610.000		F	#	0.084	-
	mg/L	0835	WL	03/21/2002	0001	AL		365.000		F	#	0.084	-
	mg/L	0836	WL	03/19/2002	0001	AL		287.000		F	#	0.084	-
	mg/L	0838	WL	03/19/2002	0001	AL		158.000		F	#	0.084	-
	mg/L	0839	WL	03/20/2002	0001	AL		2020.000		FQ	#	0.084	-
	mg/L	0841	WL	03/19/2002	0001	AL		5760.000		F	#	0.21	-

GROUND WATER QUALITY DATA BY PARAMETER (USEE200) FOR SITE SHP02, SHIPROCK (TAILINGS AREA)
REPORT DATE: 6/17/2002 2:36 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Sodium	mg/L	0841	WL	03/19/2002	0002	AL		5880.000		F	#	0.21	-
	mg/L	0846	WL	03/19/2002	0001	AL		619.000		F	#	0.084	-
	mg/L	1007	WL	03/20/2002	0001	AL		2640.000		FQ	#	0.084	-
	mg/L	1057	WL	03/20/2002	0001	AL		1860.000		F	#	0.084	-
	mg/L	1059	WL	03/20/2002	0001	KM		3830.000		FQ	#	0.084	-
	mg/L	1060	WL	03/20/2002	0001	AL		2630.000		FQ	#	0.084	-
Specific Conductance	umhos/cm	0603	WL	03/20/2002	N001	AL		15800		F	#	-	-
	umhos/cm	0812	WL	03/21/2002	N001	AL		31290		FQ	#	-	-
	umhos/cm	0813	WL	03/20/2002	N001	AL		25570		F	#	-	-
	umhos/cm	0816	WL	03/21/2002	N001	AL		7549		F	#	-	-
	umhos/cm	0817	WL	03/21/2002	N001	KM		19070		F	#	-	-
	umhos/cm	0818	WL	03/20/2002	N001	AL		26340		F	#	-	-
	umhos/cm	0826	WL	03/21/2002	N001	AL		18200		F	#	-	-
	umhos/cm	0827	WL	03/19/2002	N001	AL		11140		FQ	#	-	-
	umhos/cm	0828	WL	03/21/2002	N001	AL		2885		F	#	-	-
	umhos/cm	0832	WL	03/19/2002	N001	AL		14890		F	#	-	-
	umhos/cm	0835	WL	03/21/2002	N001	AL		4756		F	#	-	-
	umhos/cm	0836	WL	03/19/2002	N001	AL		4179		F	#	-	-
	umhos/cm	0838	WL	03/19/2002	N001	AL		3258		F	#	-	-
	umhos/cm	0841	WL	03/19/2002	N001	AL		24420		F	#	-	-
	umhos/cm	0846	WL	03/19/2002	N001	AL		5241		F	#	-	-
	umhos/cm	1007	WL	03/20/2002	N001	AL		19060		FQ	#	-	-
	umhos/cm	1057	WL	03/20/2002	N001	AL		28080		F	#	-	-
	umhos/cm	1059	WL	03/20/2002	N001	KM		18120		FQ	#	-	-
Strontium	mg/L	0603	WL	03/20/2002	0001	AL		2.330		F	#	0.002	-
	mg/L	0812	WL	03/21/2002	0001	AL		14.900		FQ	#	0.002	-

GROUND WATER QUALITY DATA BY PARAMETER (USEE200) FOR SITE SHP02, SHIPROCK (TAILINGS AREA)
REPORT DATE: 6/17/2002 2:36 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Strontium	mg/L	0813	WL	03/20/2002	0001	AL		20.700		F	#	0.002	-
	mg/L	0816	WL	03/21/2002	0001	AL		5.480		F	#	0.002	-
	mg/L	0817	WL	03/21/2002	0001	KM		12.100		F	#	0.002	-
	mg/L	0818	WL	03/20/2002	0001	AL		17.000		F	#	0.002	-
	mg/L	0826	WL	03/21/2002	0001	AL		12.700		F	#	0.002	-
	mg/L	0827	WL	03/19/2002	0001	AL		9.120		FQ	#	0.002	-
	mg/L	0828	WL	03/21/2002	0001	AL		2.720		F	#	0.0001	-
	mg/L	0832	WL	03/19/2002	0001	AL		8.170		F	#	0.002	-
	mg/L	0835	WL	03/21/2002	0001	AL		6.460		F	#	0.002	-
	mg/L	0836	WL	03/19/2002	0001	AL		6.710		F	#	0.002	-
	mg/L	0838	WL	03/19/2002	0001	AL		5.370		F	#	0.002	-
	mg/L	0839	WL	03/20/2002	0001	AL		11.200		FQ	#	0.002	-
	mg/L	0841	WL	03/19/2002	0001	AL		9.000		F	#	0.002	-
	mg/L	0841	WL	03/19/2002	0002	AL		8.940		F	#	0.002	-
	mg/L	0846	WL	03/19/2002	0001	AL		6.060		F	#	0.002	-
	mg/L	1007	WL	03/20/2002	0001	AL		11.900		FQ	#	0.002	-
	mg/L	1057	WL	03/20/2002	0001	AL		9.860		F	#	0.002	-
	mg/L	1059	WL	03/20/2002	0001	KM		19.500		FQ	#	0.002	-
	mg/L	1060	WL	03/20/2002	0001	AL		9.590		FQ	#	0.002	-
Sulfate	mg/L	0603	WL	03/20/2002	0001	AL		5580.000		F	#	3.94	-
	mg/L	0812	WL	03/21/2002	0001	AL		15300.000		FQ	#	7.88	-
	mg/L	0813	WL	03/20/2002	0001	AL		10900.000		F	#	7.88	-
	mg/L	0816	WL	03/21/2002	0001	AL		3950.000		F	#	1.97	-
	mg/L	0817	WL	03/21/2002	0001	KM		9400.000		F	#	3.94	-
	mg/L	0818	WL	03/20/2002	0001	AL		10400.000		F	#	7.88	-
	mg/L	0826	WL	03/21/2002	0001	AL		13100.000		F	#	7.88	-

GROUND WATER QUALITY DATA BY PARAMETER (USEE200) FOR SITE SHP02, SHIPROCK (TAILINGS AREA)
REPORT DATE: 6/17/2002 2:36 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Sulfate	mg/L	0827	WL	03/19/2002	0001	AL		6740.000		FQ	#	3.94	-
	mg/L	0828	WL	03/21/2002	0001	AL		1270.000		F	#	0.788	-
	mg/L	0832	WL	03/19/2002	0001	AL		8280.000		F	#	3.94	-
	mg/L	0835	WL	03/21/2002	0001	AL		2540.000		F	#	1.97	-
	mg/L	0836	WL	03/19/2002	0001	AL		2430.000		F	#	1.97	-
	mg/L	0838	WL	03/19/2002	0001	AL		1850.000		F	#	1.97	-
	mg/L	0839	WL	03/20/2002	0001	AL		9960.000		FQ	#	7.88	-
	mg/L	0841	WL	03/19/2002	0001	AL		13900.000		F	#	7.88	-
	mg/L	0841	WL	03/19/2002	0002	AL		13900.000		F	#	7.88	-
	mg/L	0846	WL	03/19/2002	0001	AL		2790.000		F	#	1.97	-
	mg/L	1007	WL	03/20/2002	0001	AL		11800.000		FQ	#	7.88	-
	mg/L	1057	WL	03/20/2002	0001	AL		15900.000		F	#	7.88	-
	mg/L	1059	WL	03/20/2002	0001	KM		9230.000		FQ	#	7.88	-
Temperature	C	0603	WL	03/20/2002	N001	AL		16.86		F	#	-	-
	C	0812	WL	03/21/2002	N001	AL		15.07		FQ	#	-	-
	C	0813	WL	03/20/2002	N001	AL		16.61		F	#	-	-
	C	0816	WL	03/21/2002	N001	AL		14.03		F	#	-	-
	C	0817	WL	03/21/2002	N001	KM		20.46		F	#	-	-
	C	0818	WL	03/20/2002	N001	AL		15.97		F	#	-	-
	C	0826	WL	03/21/2002	N001	AL		18.6		F	#	-	-
	C	0827	WL	03/19/2002	N001	AL		13.99		FQ	#	-	-
	C	0828	WL	03/21/2002	N001	AL		17.17		F	#	-	-
	C	0832	WL	03/19/2002	N001	AL		16.06		F	#	-	-
	C	0835	WL	03/21/2002	N001	AL		15.6		F	#	-	-
	C	0836	WL	03/19/2002	N001	AL		15		F	#	-	-
	C	0838	WL	03/19/2002	N001	AL		15.38		F	#	-	-

GROUND WATER QUALITY DATA BY PARAMETER (USEE200) FOR SITE SHP02, SHIPROCK (TAILINGS AREA)
REPORT DATE: 6/17/2002 2:36 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Temperature	C	0841	WL	03/19/2002	N001	AL		15.98		F	#	-	-
	C	0846	WL	03/19/2002	N001	AL		15.41		F	#	-	-
	C	1007	WL	03/20/2002	N001	AL		14.47		FQ	#	-	-
	C	1057	WL	03/20/2002	N001	AL		16.03		F	#	-	-
	C	1059	WL	03/20/2002	N001	KM		14.08		FQ	#	-	-
Turbidity	NTU	0603	WL	03/20/2002	N001	AL		1.16		F	#	-	-
	NTU	0812	WL	03/21/2002	N001	AL		6.96		FQ	#	-	-
	NTU	0813	WL	03/20/2002	N001	AL		0.6		F	#	-	-
	NTU	0816	WL	03/21/2002	N001	AL		3.32		F	#	-	-
	NTU	0817	WL	03/21/2002	N001	KM		9.19		F	#	-	-
	NTU	0818	WL	03/20/2002	N001	AL		1.77		F	#	-	-
	NTU	0826	WL	03/21/2002	N001	AL		6.43		F	#	-	-
	NTU	0827	WL	03/19/2002	N001	AL		9.35		FQ	#	-	-
	NTU	0828	WL	03/21/2002	N001	AL		5.94		F	#	-	-
	NTU	0832	WL	03/19/2002	N001	AL		7.52		F	#	-	-
	NTU	0835	WL	03/21/2002	N001	AL		3.29		F	#	-	-
	NTU	0836	WL	03/19/2002	N001	AL		8.28		F	#	-	-
	NTU	0838	WL	03/19/2002	N001	AL		6.08		F	#	-	-
	NTU	0841	WL	03/19/2002	N001	AL		9.93		F	#	-	-
	NTU	0846	WL	03/19/2002	N001	AL		5.53		F	#	-	-
	NTU	1007	WL	03/20/2002	N001	AL		59.2		FQ	#	-	-
	NTU	1057	WL	03/20/2002	N001	AL		7.71		F	#	-	-
	NTU	1059	WL	03/20/2002	N001	KM		12.4		FQ	#	-	-
Uranium	mg/L	0603	WL	03/20/2002	0001	AL		0.0108		F	#	0.0001	-
	mg/L	0812	WL	03/21/2002	0001	AL		0.114		FQ	#	0.0001	-
	mg/L	0813	WL	03/20/2002	0001	AL		0.119		F	#	0.0001	-

GROUND WATER QUALITY DATA BY PARAMETER (USEE200) FOR SITE SHP02, SHIPROCK (TAILINGS AREA)
REPORT DATE: 6/17/2002 2:36 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Uranium	mg/L	0816	WL	03/21/2002	0001	AL		0.0384		F	#	0.0001	-
	mg/L	0817	WL	03/21/2002	0001	KM		9.430		F	#	0.01	-
	mg/L	0818	WL	03/20/2002	0001	AL		0.105		F	#	0.0001	-
	mg/L	0826	WL	03/21/2002	0001	AL		2.870		F	#	0.001	-
	mg/L	0827	WL	03/19/2002	0001	AL		0.602		FQ	#	0.001	-
	mg/L	0828	WL	03/21/2002	0001	AL		0.240		F	#	0.0001	-
	mg/L	0832	WL	03/19/2002	0001	AL		0.0903		F	#	0.0001	-
	mg/L	0835	WL	03/21/2002	0001	AL		0.0394		F	#	0.0001	-
	mg/L	0836	WL	03/19/2002	0001	AL		0.0557		F	#	0.0001	-
	mg/L	0838	WL	03/19/2002	0001	AL		0.0338		F	#	0.0001	-
	mg/L	0839	WL	03/20/2002	0001	AL		0.406		FQ	#	0.001	-
	mg/L	0841	WL	03/19/2002	0001	AL		0.102		F	#	0.0001	-
	mg/L	0841	WL	03/19/2002	0002	AL		0.102		F	#	0.0001	-
	mg/L	0846	WL	03/19/2002	0001	AL		0.041		F	#	0.0001	-
	mg/L	1007	WL	03/20/2002	0001	AL		2.090		FQ	#	0.001	-
	mg/L	1057	WL	03/20/2002	0001	AL		0.100		F	#	0.0001	-
	mg/L	1059	WL	03/20/2002	0001	KM		0.0812		FQ	#	0.0001	-
	mg/L	1060	WL	03/20/2002	0001	AL		0.123		FQ	#	0.0001	-

GROUND WATER QUALITY DATA BY PARAMETER (USEE200) FOR SITE SHP02, SHIPROCK (TAILINGS AREA)
REPORT DATE: 6/17/2002 2:36 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE200 WHERE site_code='SHP02' AND quality_assurance = TRUE AND (data_validation_qualifiers IS NULL OR data_validation_qualifiers NOT LIKE '%R%' AND data_validation_qualifiers NOT LIKE '%X%') AND DATE_SAMPLED between #3/1/2002# and #3/31/2002#

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

LOCATION TYPES: WL WELL

ZONES OF COMPLETION:

AL ALLUVIUM KM MANCOS SHALE

FLOW CODES:

LAB QUALIFIERS:

*	Replicate analysis not within control limits.
+	Correlation coefficient for MSA < 0.995.
>	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
M	GFAA duplicate injection precision not met.
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
P	> 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
S	Result determined by method of standard addition (MSA).
U	Analytical result below detection limit.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
Y	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
Z	Laboratory defined (USEPA CLP organic) 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.	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 BY PARAMETER (USEE800) FOR SITE SHP01, SHIPROCK
REPORT DATE: 6/17/2002 2:38 pm

PARAMETER	UNITS	LOCATION ID	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	0655	03/18/2002	0001	184			#	-	-
	mg/L	0887	03/20/2002	0001	312			#	-	-
	mg/L	0897	03/20/2002	0001	101			#	-	-
	mg/L	0898	03/20/2002	0001	104			#	-	-
	mg/L	0940	03/18/2002	0001	114			#	-	-
	mg/L	0956	03/20/2002	0001	132			#	-	-
	mg/L	0957	03/20/2002	0001	119			#	-	-
	mg/L	1205	03/19/2002	0001	115			#	-	-
Ammonium	mg/L	0655	03/18/2002	0001	0.0159	B		#	0.004	-
	mg/L	0887	03/20/2002	0001	0.0432	B		#	0.004	-
	mg/L	0897	03/20/2002	0001	0.0147	B		#	0.004	-
	mg/L	0898	03/20/2002	0001	0.0106	B	U	#	0.004	-
	mg/L	0940	03/18/2002	0001	0.265			#	0.004	-
	mg/L	0956	03/20/2002	0001	0.323			#	0.004	-
	mg/L	0957	03/20/2002	0001	0.0244	B		#	0.004	-
	mg/L	0959	03/20/2002	0001	0.0377	B		#	0.004	-
	mg/L	1205	03/19/2002	0001	0.0092	B		#	0.004	-
Calcium	mg/L	0655	03/18/2002	0001	225.000			#	0.0662	-
	mg/L	0887	03/20/2002	0001	518.000			#	0.0662	-
	mg/L	0897	03/20/2002	0001	54.100			#	0.0662	-
	mg/L	0898	03/20/2002	0001	55.200			#	0.0662	-
	mg/L	0940	03/18/2002	0001	61.500			#	0.0662	-
	mg/L	0956	03/20/2002	0001	51.700			#	0.0662	-
	mg/L	0957	03/20/2002	0001	53.300			#	0.0662	-
	mg/L	0959	03/20/2002	0001	446.000			#	0.0662	-
	mg/L	1205	03/19/2002	0001	57.500			#	0.0662	-
Chloride	mg/L	0655	03/18/2002	0001	74.500			#	2.005	-
	mg/L	0887	03/20/2002	0001	210.000			#	2.005	-
	mg/L	0897	03/20/2002	0001	15.300			#	0.2005	-
	mg/L	0898	03/20/2002	0001	16.200			#	0.2005	-
	mg/L	0940	03/18/2002	0001	23.800			#	0.2005	-
	mg/L	0956	03/20/2002	0001	15.200			#	0.2005	-
	mg/L	0957	03/20/2002	0001	16.300			#	0.2005	-
	mg/L	0959	03/20/2002	0001	186.000			#	2.005	-
	mg/L	1205	03/19/2002	0001	16.900			#	0.401	-

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE SHP01, SHIPROCK
REPORT DATE: 6/17/2002 2:38 pm

PARAMETER	UNITS	LOCATION ID	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Magnesium	mg/L	0655	03/18/2002	0001	70.100			#	0.104	-
	mg/L	0887	03/20/2002	0001	337.000			#	0.104	-
	mg/L	0897	03/20/2002	0001	11.300			#	0.0052	-
	mg/L	0898	03/20/2002	0001	12.600			#	0.0052	-
	mg/L	0940	03/18/2002	0001	36.300			#	0.0052	-
	mg/L	0956	03/20/2002	0001	11.400			#	0.0052	-
	mg/L	0957	03/20/2002	0001	12.200			#	0.0052	-
	mg/L	0959	03/20/2002	0001	516.000			#	0.104	-
	mg/L	1205	03/19/2002	0001	11.700			#	0.0052	-
Manganese	mg/L	0655	03/18/2002	0001	0.558			#	0.0001	-
	mg/L	0887	03/20/2002	0001	0.0683			#	0.0001	-
	mg/L	0897	03/20/2002	0001	0.030			#	0.0001	-
	mg/L	0898	03/20/2002	0001	0.0217			#	0.0001	-
	mg/L	0940	03/18/2002	0001	0.107			#	0.0001	-
	mg/L	0956	03/20/2002	0001	0.468			#	0.0001	-
	mg/L	0957	03/20/2002	0001	0.0223			#	0.0001	-
	mg/L	0959	03/20/2002	0001	0.0048	B	U	#	0.0001	-
	mg/L	1205	03/19/2002	0001	0.0325			#	0.0001	-
Nitrate as NO3	mg/L	0655	03/18/2002	0001	6.910			#	0.02	-
	mg/L	0887	03/20/2002	0001	427.000			#	0.1	-
	mg/L	0897	03/20/2002	0001	0.928	B		#	0.02	-
	mg/L	0898	03/20/2002	0001	1.040			#	0.02	-
	mg/L	0940	03/18/2002	0001	11.900			#	0.02	-
	mg/L	0956	03/20/2002	0001	0.302	B		#	0.02	-
	mg/L	0957	03/20/2002	0001	0.536	B		#	0.02	-
	mg/L	0959	03/20/2002	0001	314.000			#	0.1	-
	mg/L	1205	03/19/2002	0001	0.704	B		#	0.02	-
ORP of Zobell Solution	mV	0898	03/20/2002	N001	268			#	-	-
	mV	0957	03/20/2002	N001	268			#	-	-
Oxidation Reduction Potent	mV	0655	03/18/2002	N001	141			#	-	-
	mV	0887	03/20/2002	N001	221			#	-	-
	mV	0897	03/20/2002	N001	196			#	-	-
	mV	0898	03/20/2002	N001	152			#	-	-
	mV	0940	03/18/2002	N001	130			#	-	-
	mV	0956	03/20/2002	N001	196			#	-	-

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE SHP01, SHIPROCK
REPORT DATE: 6/17/2002 2:38 pm

PARAMETER	UNITS	LOCATION ID	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Oxidation Reduction Potent	mV	0957	03/20/2002	N001	188			#	-	-
	mV	0959	03/20/2002	N001	209			#	-	-
	mV	1205	03/19/2002	N001	169			#	-	-
pH	s.u.	0655	03/18/2002	N001	8.08			#	-	-
	s.u.	0887	03/20/2002	N001	8.02			#	-	-
	s.u.	0897	03/20/2002	N001	9.01			#	-	-
	s.u.	0898	03/20/2002	N001	9.15			#	-	-
	s.u.	0940	03/18/2002	N001	8.87			#	-	-
	s.u.	0956	03/20/2002	N001	8.89			#	-	-
	s.u.	0957	03/20/2002	N001	9.01			#	-	-
	s.u.	0959	03/20/2002	N001	7.77			#	-	-
	s.u.	1205	03/19/2002	N001	8.99			#	-	-
Potassium	mg/L	0655	03/18/2002	0001	13.300			#	0.0119	-
	mg/L	0887	03/20/2002	0001	12.200			#	0.0119	-
	mg/L	0897	03/20/2002	0001	2.550			#	0.0119	-
	mg/L	0898	03/20/2002	0001	2.620			#	0.0119	-
	mg/L	0940	03/18/2002	0001	2.870			#	0.0119	-
	mg/L	0956	03/20/2002	0001	2.530			#	0.0119	-
	mg/L	0957	03/20/2002	0001	2.560			#	0.0119	-
	mg/L	0959	03/20/2002	0001	16.500			#	0.0119	-
	mg/L	1205	03/19/2002	0001	2.370			#	0.0119	-
Selenium	mg/L	0655	03/18/2002	0001	0.0045 B			#	0.0002	-
	mg/L	0887	03/20/2002	0001	0.305			#	0.004	-
	mg/L	0897	03/20/2002	0001	0.0011 B			#	0.0002	-
	mg/L	0898	03/20/2002	0001	0.0002 B			#	0.0002	-
	mg/L	0940	03/18/2002	0001	0.0008 B			#	0.0002	-
	mg/L	0956	03/20/2002	0001	0.0006 B			#	0.0002	-
	mg/L	0957	03/20/2002	0001	0.0002 U			#	0.0002	-
	mg/L	0959	03/20/2002	0001	0.179			#	0.002	-
	mg/L	1205	03/19/2002	0001	0.0008 B			#	0.0002	-
Sodium	mg/L	0655	03/18/2002	0001	985.000			#	0.084	-
	mg/L	0887	03/20/2002	0001	609.000			#	0.084	-
	mg/L	0897	03/20/2002	0001	41.300			#	0.0042	-
	mg/L	0898	03/20/2002	0001	46.300			#	0.0042	-
	mg/L	0940	03/18/2002	0001	82.600			#	0.0042	-

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE SHP01, SHIPROCK
REPORT DATE: 6/17/2002 2:38 pm

PARAMETER	UNITS	LOCATION ID	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Sodium	mg/L	0956	03/20/2002	0001	40.500			#	0.0042	-
	mg/L	0957	03/20/2002	0001	45.000			#	0.0042	-
	mg/L	0959	03/20/2002	0001	895.000			#	0.084	-
	mg/L	1205	03/19/2002	0001	42.200			#	0.0042	-
Specific Conductance	umhos/cm	0655	03/18/2002	N001	5402			#	-	-
	umhos/cm	0887	03/20/2002	N001	3248			#	-	-
	umhos/cm	0897	03/20/2002	N001	589			#	-	-
	umhos/cm	0898	03/20/2002	N001	605			#	-	-
	umhos/cm	0940	03/18/2002	N001	663			#	-	-
	umhos/cm	0956	03/20/2002	N001	574			#	-	-
	umhos/cm	0957	03/20/2002	N001	585			#	-	-
	umhos/cm	0959	03/20/2002	N001	7579			#	-	-
	umhos/cm	1205	03/19/2002	N001	719			#	-	-
Strontium	mg/L	0655	03/18/2002	0001	10.300			#	0.002	-
	mg/L	0887	03/20/2002	0001	7.360			#	0.002	-
	mg/L	0897	03/20/2002	0001	0.824			#	0.0001	-
	mg/L	0898	03/20/2002	0001	0.819			#	0.0001	-
	mg/L	0940	03/18/2002	0001	0.915			#	0.0001	-
	mg/L	0956	03/20/2002	0001	0.797			#	0.0001	-
	mg/L	0957	03/20/2002	0001	0.823			#	0.0001	-
	mg/L	0959	03/20/2002	0001	7.450			#	0.002	-
	mg/L	1205	03/19/2002	0001	0.784			#	0.0001	-
Sulfate	mg/L	0655	03/18/2002	0001	2790.000			#	1.97	-
	mg/L	0887	03/20/2002	0001	4100.000			#	1.97	-
	mg/L	0897	03/20/2002	0001	160.000			#	0.197	-
	mg/L	0898	03/20/2002	0001	166.000			#	0.197	-
	mg/L	0940	03/18/2002	0001	332.000			#	0.197	-
	mg/L	0956	03/20/2002	0001	153.000			#	0.197	-
	mg/L	0957	03/20/2002	0001	164.000			#	0.197	-
	mg/L	0959	03/20/2002	0001	4200.000			#	1.97	-
	mg/L	1205	03/19/2002	0001	163.000			#	0.394	-
Temperature	C	0655	03/18/2002	N001	6.82			#	-	-
	C	0887	03/20/2002	N001	10.23			#	-	-
	C	0898	03/20/2002	N001	11.38			#	-	-
	C	0940	03/18/2002	N001	8.84			#	-	-

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE SHP01, SHIPROCK
REPORT DATE: 6/17/2002 2:38 pm

PARAMETER	UNITS	LOCATION ID	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Temperature	C	0956	03/20/2002	N001	7.13			#	-	-
	C	0957	03/20/2002	N001	10.51			#	-	-
	C	0959	03/20/2002	N001	3.6			#	-	-
	C	1205	03/19/2002	N001	8.54			#	-	-
Temperature of Zobell Solu	C	0898	03/20/2002	N001	10.73			#	-	-
	C	0957	03/20/2002	N001	10.73			#	-	-
Turbidity	NTU	0655	03/18/2002	N001	56.3			#	-	-
	NTU	0940	03/18/2002	N001	43			#	-	-
Uranium	mg/L	0655	03/18/2002	0001	0.0234			#	0.0001	-
	mg/L	0887	03/20/2002	0001	0.066			#	0.0001	-
	mg/L	0897	03/20/2002	0001	0.0018			#	0.0001	-
	mg/L	0898	03/20/2002	0001	0.0021			#	0.0001	-
	mg/L	0940	03/18/2002	0001	0.0256			#	0.0001	-
	mg/L	0956	03/20/2002	0001	0.002			#	0.0001	-
	mg/L	0957	03/20/2002	0001	0.0026			#	0.0001	-
	mg/L	0959	03/20/2002	0001	0.0894			#	0.0001	-
	mg/L	1205	03/19/2002	0001	0.0015			#	0.0001	-

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE SHP01, SHIPROCK
REPORT DATE: 6/17/2002 2:38 pm

PARAMETER	UNITS	LOCATION ID	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE800 WHERE site_code='SHP01' AND quality_assurance = TRUE AND (data_validation_qualifiers IS NULL OR data_validation_qualifiers NOT LIKE '%R%' AND data_validation_qualifiers NOT LIKE '%X%') AND DATE_SAMPLED between #3/1/2002# and #3/31/2002#

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

LAB QUALIFIERS:

*	Replicate analysis not within control limits.
+	Correlation coefficient for MSA < 0.995.
>	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
M	GFAA duplicate injection precision not met.
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
P	> 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
S	Result determined by method of standard addition (MSA).
U	Analytical result below detection limit.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
Y	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
Z	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFIERS:

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

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE SHP02, SHIPROCK (TAILINGS AREA)
REPORT DATE: 6/17/2002 2:38 pm

PARAMETER	UNITS	LOCATION ID	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	0425	03/19/2002	0001	840			#	-	-
	mg/L	0426	03/19/2002	0001	209			#	-	-
	mg/L	0662	03/19/2002	0001	60			#	-	-
	mg/L	0889	03/20/2002	0001	572			#	-	-
	mg/L	0933	03/20/2002	0001	427			#	-	-
	mg/L	0934	03/20/2002	0001	124			#	-	-
	mg/L	0942	03/20/2002	0001	282			#	-	-
Ammonium	mg/L	0425	03/19/2002	0001	0.488			#	0.004	-
	mg/L	0425	03/19/2002	0002	0.416			#	0.004	-
	mg/L	0426	03/19/2002	0001	0.004		U	#	0.004	-
	mg/L	0662	03/19/2002	0001	0.004		U	#	0.004	-
	mg/L	0886	03/20/2002	0001	0.0822		B	#	0.004	-
	mg/L	0889	03/20/2002	0001	0.0746		B	#	0.004	-
	mg/L	0933	03/20/2002	0001	0.0524		B	#	0.004	-
	mg/L	0934	03/20/2002	0001	0.044		B	#	0.004	-
	mg/L	0942	03/20/2002	0001	0.145			#	0.004	-
Calcium	mg/L	0425	03/19/2002	0001	423.000			#	0.0662	-
	mg/L	0425	03/19/2002	0002	420.000			#	0.0662	-
	mg/L	0426	03/19/2002	0001	414.000			#	0.0662	-
	mg/L	0662	03/19/2002	0001	110.000			#	0.0662	-
	mg/L	0886	03/20/2002	0001	343.000			#	0.0662	-
	mg/L	0889	03/20/2002	0001	340.000			#	0.0662	-
	mg/L	0933	03/20/2002	0001	437.000			#	0.0662	-
	mg/L	0934	03/20/2002	0001	667.000			#	1.324	-
	mg/L	0942	03/20/2002	0001	548.000			#	0.0662	-
Chloride	mg/L	0425	03/19/2002	0001	307.000			#	4.01	-
	mg/L	0425	03/19/2002	0002	299.000			#	4.01	-
	mg/L	0426	03/19/2002	0001	75.100			#	2.005	-
	mg/L	0662	03/19/2002	0001	55.600			#	2.005	-
	mg/L	0886	03/20/2002	0001	1430.000			#	20.05	-
	mg/L	0889	03/20/2002	0001	1830.000			#	20.05	-
	mg/L	0933	03/20/2002	0001	186.000			#	2.005	-
	mg/L	0934	03/20/2002	0001	129.000			#	2.005	-
	mg/L	0942	03/20/2002	0001	102.000			#	2.005	-
Magnesium	mg/L	0425	03/19/2002	0001	897.000			#	0.104	-

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE SHP02, SHIPROCK (TAILINGS AREA)
REPORT DATE: 6/17/2002 2:38 pm

PARAMETER	UNITS	LOCATION ID	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Magnesium	mg/L	0425	03/19/2002	0002	900.000			#	0.104	-
	mg/L	0426	03/19/2002	0001	130.000			#	0.104	-
	mg/L	0662	03/19/2002	0001	14.700			#	0.104	-
	mg/L	0886	03/20/2002	0001	1050.000			#	0.104	-
	mg/L	0889	03/20/2002	0001	1300.000			#	0.104	-
	mg/L	0933	03/20/2002	0001	518.000			#	0.104	-
	mg/L	0934	03/20/2002	0001	237.000			#	0.104	-
	mg/L	0942	03/20/2002	0001	237.000			#	0.104	-
Manganese	mg/L	0425	03/19/2002	0001	0.008	B		#	0.0001	-
	mg/L	0425	03/19/2002	0002	0.0094	B		#	0.0001	-
	mg/L	0426	03/19/2002	0001	0.0098	B		#	0.0001	-
	mg/L	0662	03/19/2002	0001	0.0117			#	0.0001	-
	mg/L	0886	03/20/2002	0001	0.106			#	0.0001	-
	mg/L	0889	03/20/2002	0001	0.0118		U	#	0.0001	-
	mg/L	0933	03/20/2002	0001	0.0045	B	U	#	0.0001	-
	mg/L	0934	03/20/2002	0001	0.0035	B	U	#	0.0001	-
	mg/L	0942	03/20/2002	0001	0.0105		U	#	0.0001	-
Nitrate as NO3	mg/L	0425	03/19/2002	0001	164.000			#	0.04	-
	mg/L	0425	03/19/2002	0002	165.000			#	0.04	-
	mg/L	0426	03/19/2002	0001	52.200			#	0.02	-
	mg/L	0662	03/19/2002	0001	1.180			#	0.02	-
	mg/L	0886	03/20/2002	0001	2750.000			#	1	-
	mg/L	0889	03/20/2002	0001	3480.000			#	1	-
	mg/L	0933	03/20/2002	0001	258.000			#	0.1	-
	mg/L	0934	03/20/2002	0001	422.000			#	0.1	-
	mg/L	0942	03/20/2002	0001	265.000			#	0.1	-
ORP of Zobell Solution	mV	0886	03/20/2002	N001	268			#	-	-
	mV	0889	03/20/2002	N001	268			#	-	-
Oxidation Reduction Potent	mV	0425	03/19/2002	N001	176			#	-	-
	mV	0426	03/19/2002	N001	182			#	-	-
	mV	0662	03/19/2002	N001	176			#	-	-
	mV	0886	03/20/2002	N001	216			#	-	-
	mV	0889	03/20/2002	N001	235			#	-	-
	mV	0933	03/20/2002	N001	204			#	-	-
	mV	0934	03/20/2002	N001	197			#	-	-

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE SHP02, SHIPROCK (TAILINGS AREA)
REPORT DATE: 6/17/2002 2:38 pm

PARAMETER	UNITS	LOCATION ID	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Oxidation Reduction Potent	mV	0942	03/20/2002	N001	217			#	-	-
pH	s.u.	0425	03/19/2002	N001	7.68			#	-	-
	s.u.	0426	03/19/2002	N001	7.29			#	-	-
	s.u.	0662	03/19/2002	N001	8.8			#	-	-
	s.u.	0886	03/20/2002	N001	8.14			#	-	-
	s.u.	0889	03/20/2002	N001	8.5			#	-	-
	s.u.	0933	03/20/2002	N001	7.46			#	-	-
	s.u.	0934	03/20/2002	N001	6.68			#	-	-
	s.u.	0942	03/20/2002	N001	7.55			#	-	-
Potassium	mg/L	0425	03/19/2002	0001	43.700			#	0.0119	-
	mg/L	0425	03/19/2002	0002	43.000			#	0.0119	-
	mg/L	0426	03/19/2002	0001	13.000			#	0.0119	-
	mg/L	0662	03/19/2002	0001	7.410			#	0.0119	-
	mg/L	0886	03/20/2002	0001	45.400			#	0.0595	-
	mg/L	0889	03/20/2002	0001	59.300			#	0.0595	-
	mg/L	0933	03/20/2002	0001	17.500			#	0.0119	-
	mg/L	0934	03/20/2002	0001	8.750			#	0.0119	-
	mg/L	0942	03/20/2002	0001	8.150			#	0.0119	-
Selenium	mg/L	0425	03/19/2002	0001	0.0194			#	0.0002	-
	mg/L	0425	03/19/2002	0002	0.0192			#	0.0002	-
	mg/L	0426	03/19/2002	0001	0.0431			#	0.001	-
	mg/L	0662	03/19/2002	0001	0.0004 B			#	0.0002	-
	mg/L	0886	03/20/2002	0001	1.240			#	0.02	-
	mg/L	0889	03/20/2002	0001	1.510			#	0.02	-
	mg/L	0933	03/20/2002	0001	0.146			#	0.002	-
	mg/L	0934	03/20/2002	0001	0.256			#	0.004	-
	mg/L	0942	03/20/2002	0001	0.516			#	0.01	-
Sodium	mg/L	0425	03/19/2002	0001	1410.000			#	0.084	-
	mg/L	0425	03/19/2002	0002	1400.000			#	0.084	-
	mg/L	0426	03/19/2002	0001	944.000			#	0.084	-
	mg/L	0662	03/19/2002	0001	832.000			#	0.084	-
	mg/L	0886	03/20/2002	0001	7690.000			#	0.21	-
	mg/L	0889	03/20/2002	0001	9650.000			#	0.21	-
	mg/L	0933	03/20/2002	0001	882.000			#	0.084	-
	mg/L	0934	03/20/2002	0001	418.000			#	0.084	-

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE SHP02, SHIPROCK (TAILINGS AREA)
REPORT DATE: 6/17/2002 2:38 pm

PARAMETER	UNITS	LOCATION ID	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Sodium	mg/L	0942	03/20/2002	0001	387.000			#	0.084	-
Specific Conductance	umhos/cm	0425	03/19/2002	N001	10750			#	-	-
	umhos/cm	0426	03/19/2002	N001	5948			#	-	-
	umhos/cm	0662	03/19/2002	N001	4261			#	-	-
	umhos/cm	0886	03/20/2002	N001	31950			#	-	-
	umhos/cm	0889	03/20/2002	N001	37380			#	-	-
	umhos/cm	0933	03/20/2002	N001	7674			#	-	-
	umhos/cm	0934	03/20/2002	N001	5141			#	-	-
	umhos/cm	0942	03/20/2002	N001	4970			#	-	-
Strontium	mg/L	0425	03/19/2002	0001	8.920			#	0.002	-
	mg/L	0425	03/19/2002	0002	8.980			#	0.002	-
	mg/L	0426	03/19/2002	0001	9.130			#	0.002	-
	mg/L	0662	03/19/2002	0001	12.000			#	0.002	-
	mg/L	0886	03/20/2002	0001	8.990			#	0.002	-
	mg/L	0889	03/20/2002	0001	8.440			#	0.002	-
	mg/L	0933	03/20/2002	0001	7.220			#	0.002	-
	mg/L	0934	03/20/2002	0001	6.730			#	0.002	-
	mg/L	0942	03/20/2002	0001	6.520			#	0.002	-
Sulfate	mg/L	0425	03/19/2002	0001	6470.000			#	3.94	-
	mg/L	0425	03/19/2002	0002	6640.000			#	3.94	-
	mg/L	0426	03/19/2002	0001	3330.000			#	1.97	-
	mg/L	0662	03/19/2002	0001	1980.000			#	1.97	-
	mg/L	0886	03/20/2002	0001	17500.000			#	19.7	-
	mg/L	0889	03/20/2002	0001	22200.000			#	19.7	-
	mg/L	0933	03/20/2002	0001	4280.000			#	1.97	-
	mg/L	0934	03/20/2002	0001	2670.000			#	1.97	-
	mg/L	0942	03/20/2002	0001	2640.000			#	1.97	-
Temperature	C	0425	03/19/2002	N001	7.5			#	-	-
	C	0426	03/19/2002	N001	13.54			#	-	-
	C	0662	03/19/2002	N001	15.08			#	-	-
	C	0886	03/20/2002	N001	13.37			#	-	-
	C	0889	03/20/2002	N001	15.91			#	-	-
	C	0933	03/20/2002	N001	1.16			#	-	-
	C	0934	03/20/2002	N001	5.03			#	-	-
	C	0942	03/20/2002	N001	7.35			#	-	-

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE SHP02, SHIPROCK (TAILINGS AREA)
REPORT DATE: 6/17/2002 2:38 pm

PARAMETER	UNITS	LOCATION ID	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Temperature of Zobell Solu	C	0886	03/20/2002	N001	10.73			#	-	-
	C	0889	03/20/2002	N001	10.73			#		
Uranium	mg/L	0425	03/19/2002	0001	0.698			#	0.001	-
	mg/L	0425	03/19/2002	0002	0.707			#	0.001	-
	mg/L	0426	03/19/2002	0001	0.138			#	0.0001	-
	mg/L	0662	03/19/2002	0001	0.0012			#	0.0001	-
	mg/L	0886	03/20/2002	0001	0.156			#	0.0001	-
	mg/L	0889	03/20/2002	0001	0.187			#	0.0001	-
	mg/L	0933	03/20/2002	0001	0.0864			#	0.0001	-
	mg/L	0934	03/20/2002	0001	0.0506			#	0.0001	-
	mg/L	0942	03/20/2002	0001	0.0403			#	0.0001	-

RECORDS: SELECTED FROM USEE800 WHERE site_code='SHP02' AND quality_assurance = TRUE AND (data_validation_qualifiers IS NULL OR data_validation_qualifiers NOT LIKE '%R%' AND data_validation_qualifiers NOT LIKE '%X%') AND DATE_SAMPLED between #3/1/2002# and #3/31/2002#

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

LAB QUALIFIERS:

	Replicate analysis not within control limits.
+	Correlation coefficient for MSA < 0.995.
>	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
M	GFAA duplicate injection precision not met.
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
P	> 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
S	Result determined by method of standard addition (MSA).
U	Analytical result below detection limit.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
Y	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
Z	Laboratory defined (USEPA CLP organic) 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.
R	Unusable result.
U	Parameter analyzed for but was not detected.
X	Location is undefined.	

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

BLANKS REPORT (USEE810) FOR SITE SHP01, SHIPROCK
REPORT DATE: 6/17/2002 2:40 pm

PARAMETER	UNITS	LOCATION ID	SAMPLE DATE	SAMPLE ID	SAMPLE TYPE	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION	UN-CERTAINTY
Ammonium	mg/L	0999	03/19/2002	0001	E	0.0264	B		#	0.004	-
Calcium	mg/L	0999	03/19/2002	0001	E	0.0662	U		#	0.0662	-
Chloride	mg/L	0999	03/19/2002	0001	E	0.0401	U		#	0.0401	-
Magnesium	mg/L	0999	03/19/2002	0001	E	0.0134	B	U	#	0.0052	-
Manganese	mg/L	0999	03/19/2002	0001	E	0.0013	B	U	#	0.0001	-
Nitrate as NO3	mg/L	0999	03/19/2002	0001	E	0.020	U		#	0.02	-
Potassium	mg/L	0999	03/19/2002	0001	E	0.115		U	#	0.0119	-
Selenium	mg/L	0999	03/19/2002	0001	E	0.0002	U		#	0.0002	-
Sodium	mg/L	0999	03/19/2002	0001	E	0.0042	U		#	0.0042	-
Strontium	mg/L	0999	03/19/2002	0001	E	0.0013	B	U	#	0.0001	-
Sulfate	mg/L	0999	03/19/2002	0001	E	0.0394	U		#	0.0394	-
Uranium	mg/L	0999	03/19/2002	0001	E	0.0001	U		#	0.0001	-

BLANKS REPORT (USEE810) FOR SITE SHP01, SHIPROCK
REPORT DATE: 6/17/2002 2:40 pm

PARAMETER	UNITS	LOCATION ID	SAMPLE DATE	ID	SAMPLE TYPE	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION	UN-CERTAINTY

RECORDS: SELECTED FROM USEE810 WHERE site_code='SHP01' AND quality_assurance = TRUE AND (data_validation_qualifiers IS NULL OR data_validation_qualifiers NOT LIKE '%R%' AND data_validation_qualifiers NOT LIKE '%X%') AND DATE_SAMPLED between #3/1/2002# and #3/31/2002#

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

SAMPLE TYPES: E EQUIPMENT BLANK

LAB QUALIFIERS:

	Replicate analysis not within control limits.
+	Correlation coefficient for MSA < 0.995.
>	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
M	GFAA duplicate injection precision not met
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC)
P	> 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
S	Result determined by method of standard addition (MSA).
U	Analytical result below detection limit.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
Y	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
Z	Laboratory defined (USEPA CLP organic) 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.	R	Unusable result.	U	Parameter analyzed for but was not detected.
X	Location is undefined.				

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

BLANKS REPORT (USEE810) FOR SITE SHP02, SHIPROCK (TAILINGS AREA)
REPORT DATE: 6/17/2002 2:40 pm

PARAMETER	UNITS	LOCATION ID	SAMPLE DATE	SAMPLE ID	SAMPLE TYPE	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION	UN-CERTAINTY
Ammonium	mg/L	0999	03/21/2002	0001	E	0.0308	B	U	#	0.004	-
Calcium	mg/L	0999	03/21/2002	0001	E	0.0662	U		#	0.0662	-
Chloride	mg/L	0999	03/21/2002	0001	E	0.0401	U		#	0.0401	-
Magnesium	mg/L	0999	03/21/2002	0001	E	0.0064	B	U	#	0.0052	-
Manganese	mg/L	0999	03/21/2002	0001	E	0.0001	UE	J	#	0.0001	-
Nitrate as NO3	mg/L	0999	03/21/2002	0001	E	0.051	B		#	0.02	-
Potassium	mg/L	0999	03/21/2002	0001	E	0.0588	B	U	#	0.0119	-
Selenium	mg/L	0999	03/21/2002	0001	E	0.0002	U		#	0.0002	-
Sodium	mg/L	0999	03/21/2002	0001	E	0.0042	U		#	0.0042	-
Strontium	mg/L	0999	03/21/2002	0001	E	0.00035	B	U	#	0.0001	-
Sulfate	mg/L	0999	03/21/2002	0001	E	0.0394	U		#	0.0394	-
Uranium	mg/L	0999	03/21/2002	0001	E	0.00012	B	U	#	0.0001	-

BLANKS REPORT (USEE810) FOR SITE SHP02, SHIPROCK (TAILINGS AREA)
REPORT DATE: 6/17/2002 2:40 pm

PARAMETER	UNITS	LOCATION ID	SAMPLE DATE	ID	SAMPLE TYPE	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION	UN-CERTAINTY

RECORDS: SELECTED FROM USEE810 WHERE site_code='SHP02' AND quality_assurance = TRUE AND (data_validation_qualifiers IS NULL OR data_validation_qualifiers NOT LIKE '%R%' AND data_validation_qualifiers NOT LIKE '%X%') AND DATE_SAMPLED between #3/1/2002# and #3/31/2002#

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

SAMPLE TYPES: E EQUIPMENT BLANK

LAB QUALIFIERS:

	Replicate analysis not within control limits.
+	Correlation coefficient for MSA < 0.995.
	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
M	GFAA duplicate injection precision not met.
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
P	> 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
S	Result determined by method of standard addition (MSA).
U	Analytical result below detection limit.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
Y	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
Z	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFIERS:

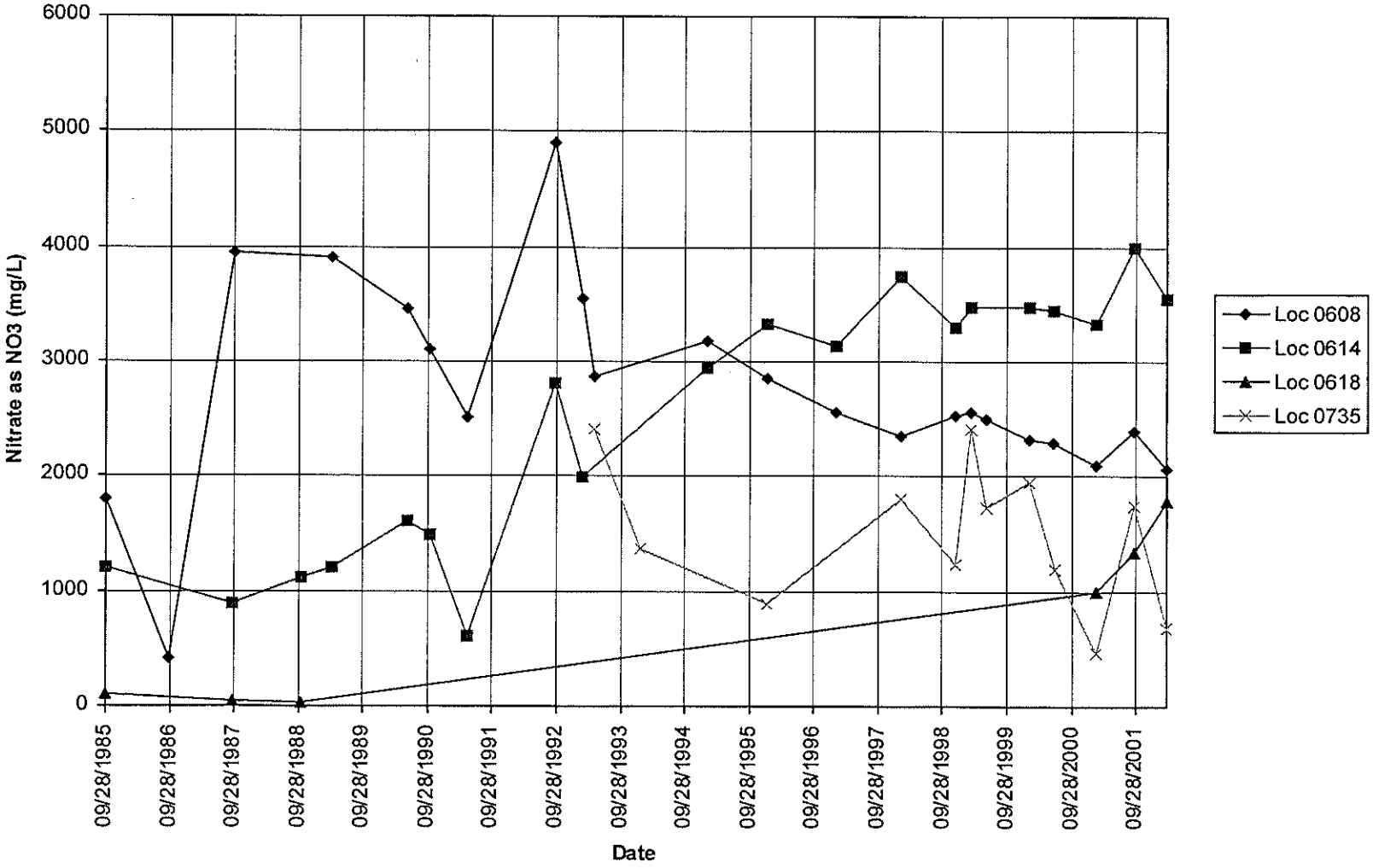
F	Low flow sampling method used.	G	Possible grout contamination, pH > 9.	J	Estimated value.
L	Less than 3 bore volumes purged prior to sampling.	R	Unusable result.	U	Parameter analyzed for but was not detected.
X	Location is undefined.				

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

TIME VERSUS CONCENTRATION GRAPHS

SHIPROCK (SHP01)

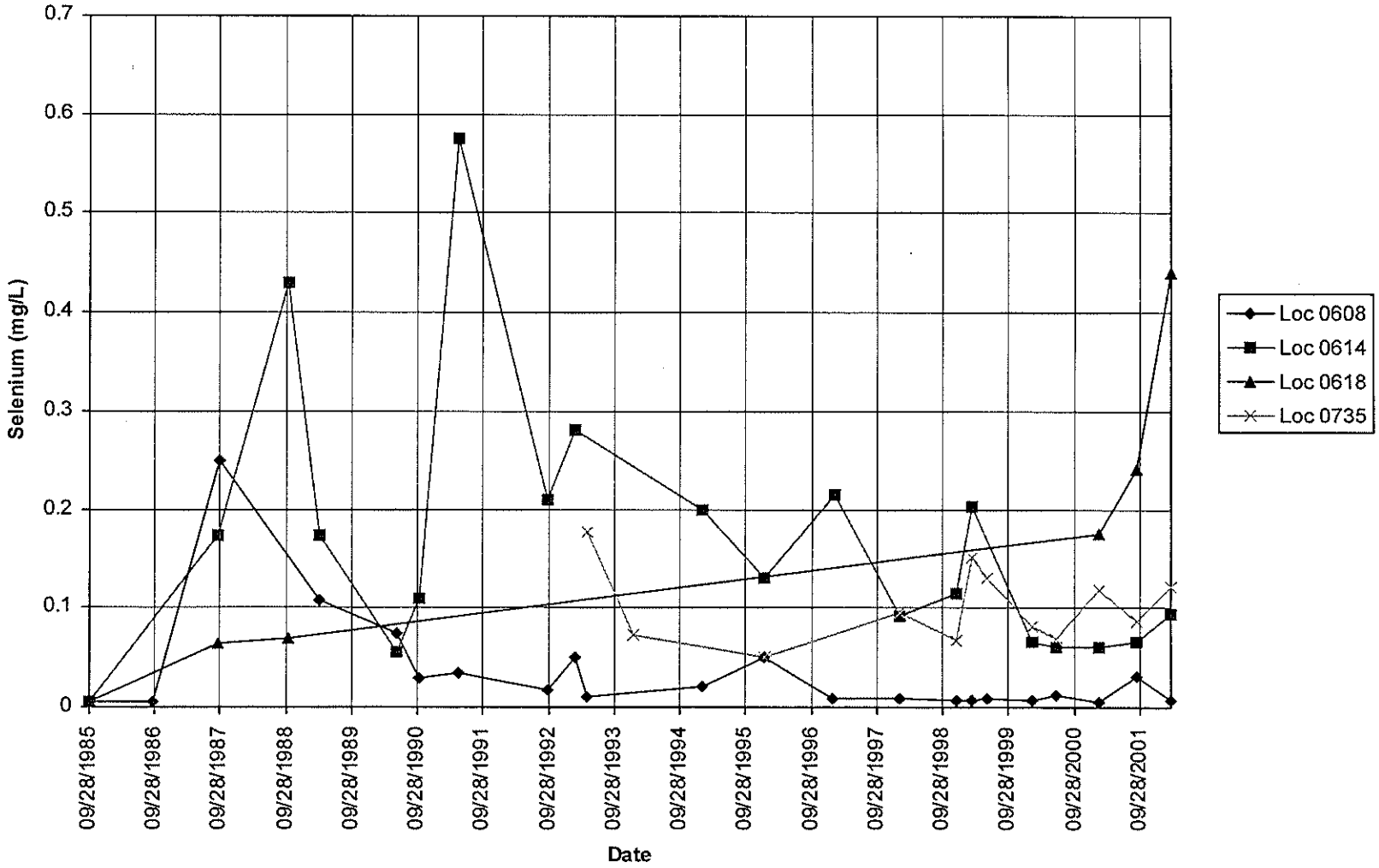
Nitrate as NO3 Concentration



6/17/2002 2:55 pm

SHIPROCK (SHP01)

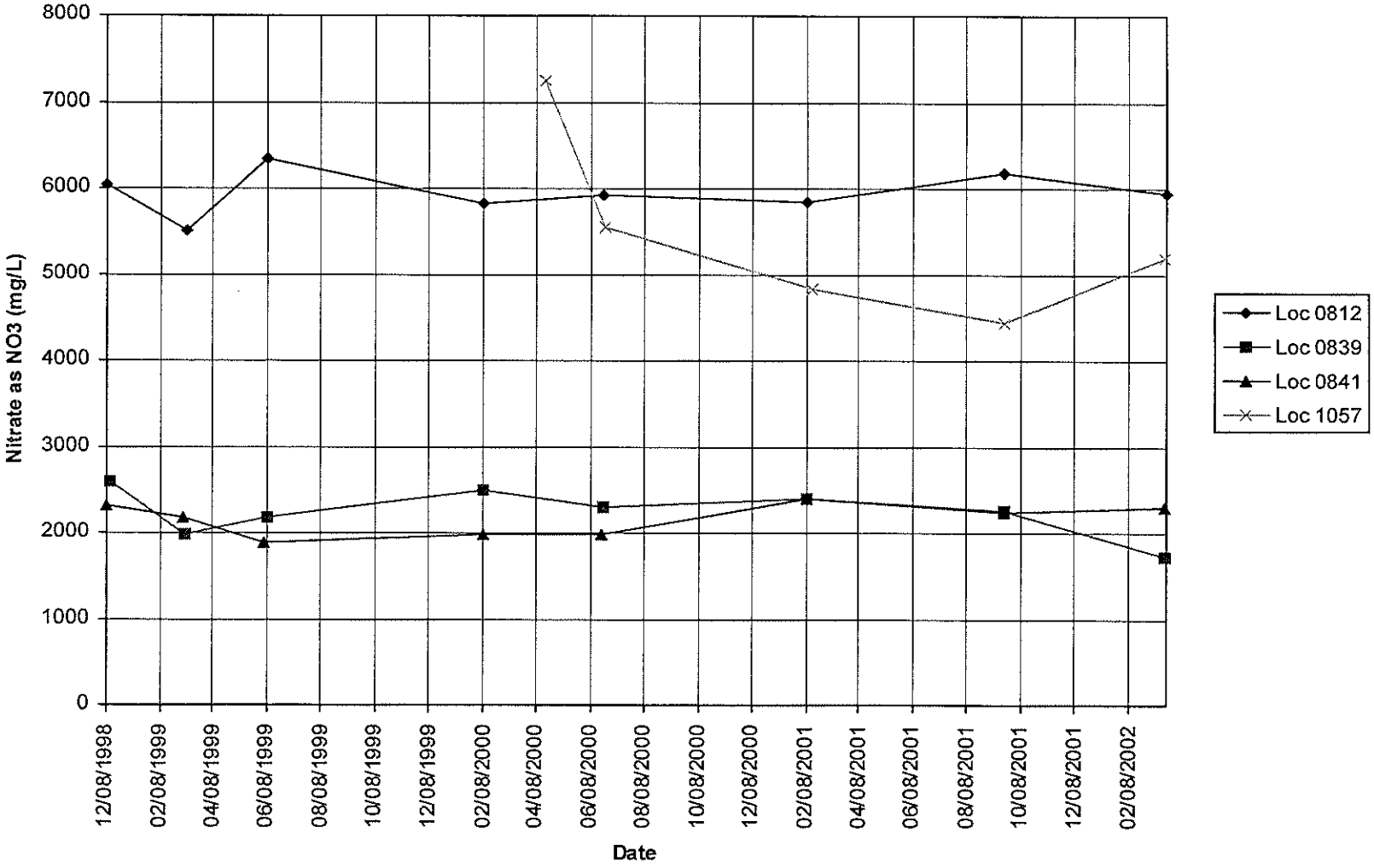
Selenium Concentration



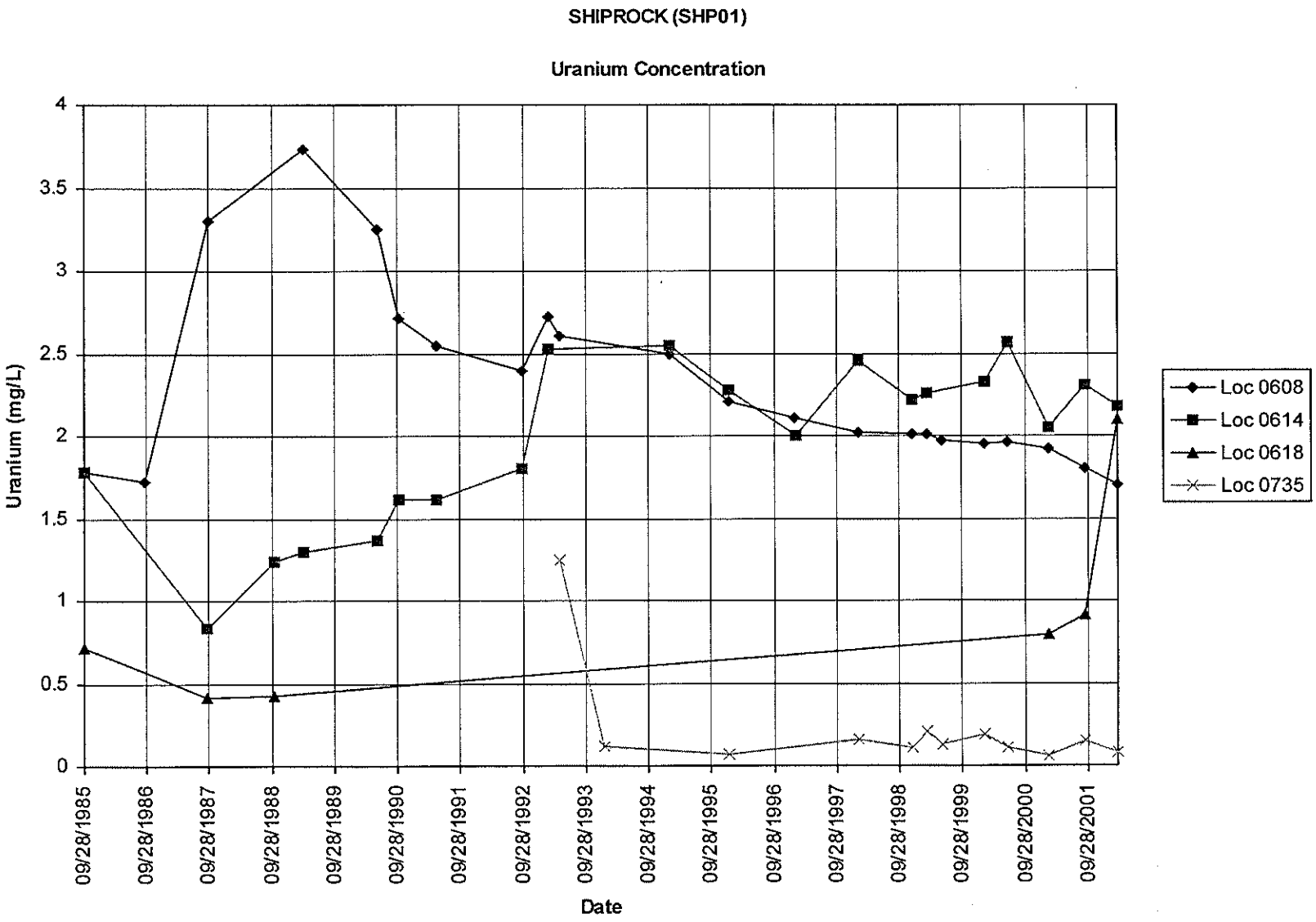
6/17/2002 2:56 pm

SHIPROCK (TAILINGS AREA) (SHP02)

Nitrate as NO3 Concentration



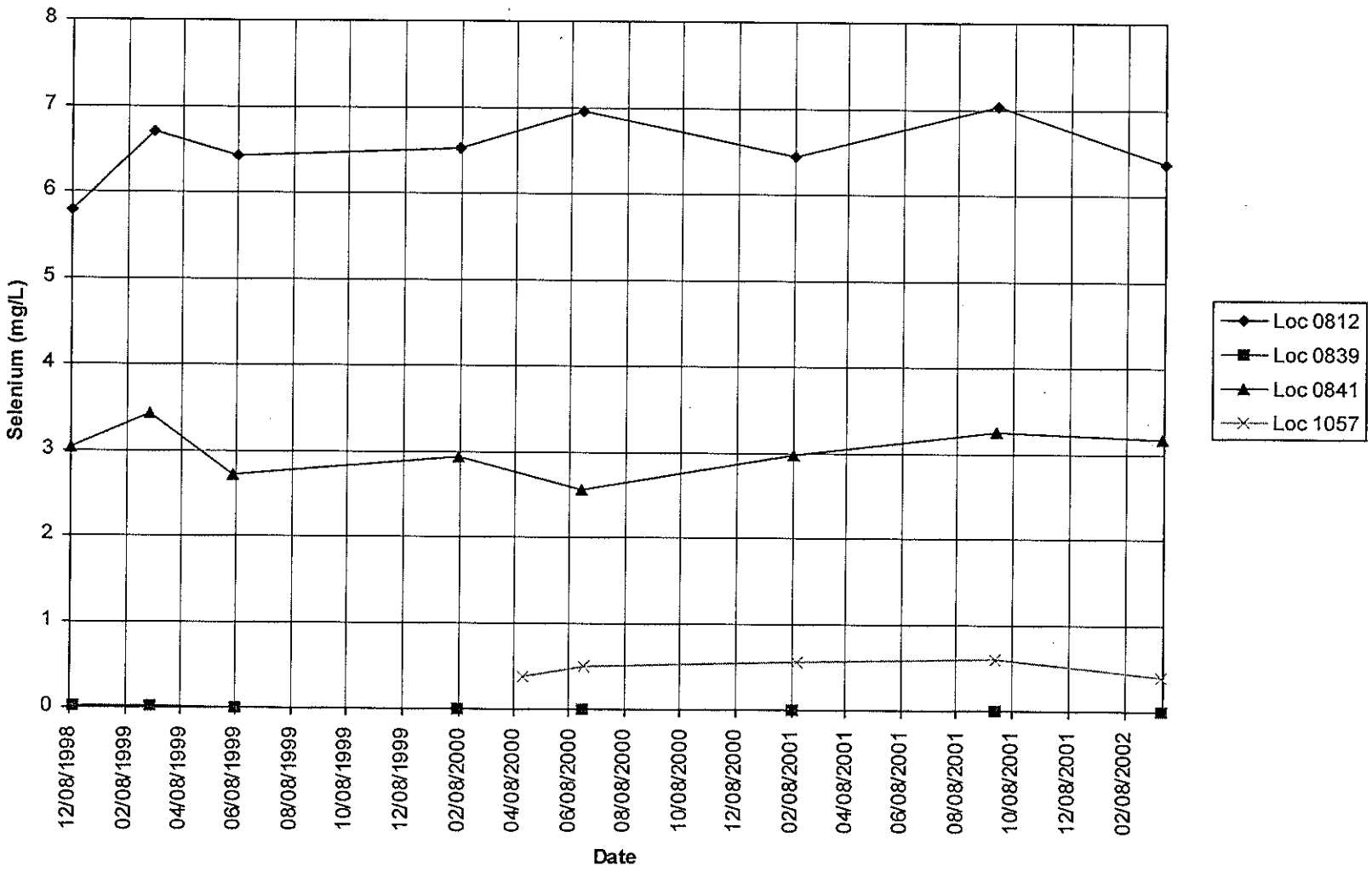
6/17/2002 2:58 pm



6/17/2002 2:56 pm

SHIPROCK (TAILINGS AREA) (SHP02)

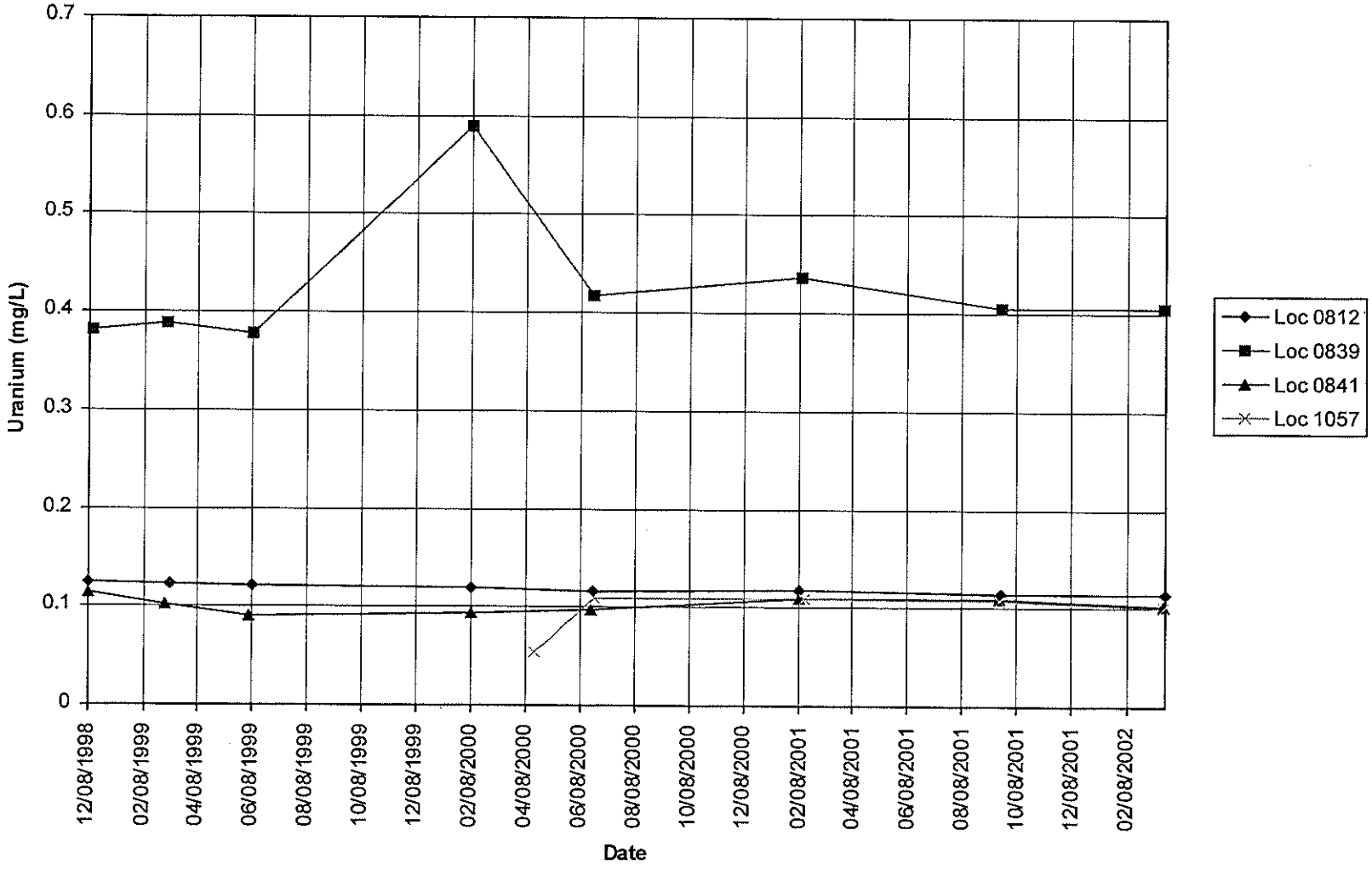
Selenium Concentration



6/17/2002 2:59 pm

SHIPROCK (TAILINGS AREA) (SHP02)

Uranium Concentration



6/17/2002 2:58 pm

WATER LEVELS

STATIC GROUND WATER LEVELS (USEE700) FOR SITE SHP01, SHIPROCK
REPORT DATE: 6/17/2002 2:39 pm

LOCATION CODE	FLOW CODE	TOP OF CASING ELEVATION (FT NGVD)	MEASUREMENT		DEPTH FROM TOP OF CASING (FT)	GROUND WATER ELEVATION (FT NGVD)	WATER LEVEL FLAG
			DATE	TIME			
0608		4893.35	03/19/2002	09:17	6.20	4887.15	
0614		4892.79	03/19/2002	09:56	7.24	4885.55	
0615		4892.23	03/19/2002	10:27	7.32	4884.91	
0618		4891.51	03/19/2002	13:21	6.82	4884.69	
0619		4892.19	03/19/2002	14:03	7.59	4884.60	
0734		4886.55	03/18/2002	16:20	6.48	4880.07	
0735		4895.85	03/18/2002	08:33	7.46	4888.39	
0736		4887.99	03/21/2002	10:10	6.33	4881.66	
0797		4908.04	03/20/2002	17:06	8.48	4899.56	
0850	B	4907.51	03/20/2002	15:39	8.15	4899.36	
0854		4890.75	03/18/2002	17:18	8.05	4882.70	

RECORDS: SELECTED FROM USEE700 WHERE site_code='SHP01' AND LOG_DATE between #3/1/2002# and #3/31/2002#

FLOW CODES: B BACKGROUND

WATER LEVEL FLAGS:

STATIC GROUND WATER LEVELS (USEE700) FOR SITE SHP02, SHIPROCK (TAILINGS AREA)
REPORT DATE: 6/17/2002 2:39 pm

LOCATION CODE	FLOW CODE	TOP OF CASING ELEVATION (FT NGVD)	MEASUREMENT		DEPTH FROM TOP OF CASING (FT)	GROUND WATER ELEVATION (FT NGVD)	WATER LEVEL FLAG
			DATE	TIME			
0603		4978.62	03/20/2002	12:59	30.40	4948.22	
0727		4940.65	03/21/2002	12:00	7.17	4933.48	
0800		4995.76	03/21/2002	12:00		-	D
0801		4995.29	03/21/2002	12:00	66.69	4928.60	
0802		4996.01	03/21/2002	12:00		-	D
0803		4994.40	03/21/2002	12:00		-	D
0812		5004.98	03/21/2002	10:00	60.89	4944.09	
0813		4984.37	03/20/2002	15:41	43.51	4940.86	
0814		4968.12	03/21/2002	12:00	31.80	4936.32	
0815		4953.67	03/21/2002	12:00	25.95	4927.72	
0817		4957.34	03/21/2002	10:52	19.20	4938.14	
0818		4998.25	03/20/2002	15:03	53.61	4944.64	
0819		4955.76	03/21/2002	12:00	20.03	4935.73	
0826		4950.73	03/21/2002	13:52	17.98	4932.75	
0827		4946.92	03/19/2002	16:42	27.18	4919.74	
0828		4949.34	03/21/2002	14:38	15.40	4933.94	
0829		4941.94	03/21/2002	12:00	52.32	4889.62	
0835		4930.48	03/21/2002	09:13	19.64	4910.84	
0836		4901.74	03/19/2002	09:38	24.93	4876.81	
0838		4937.70	03/19/2002	11:25	26.40	4911.30	
0839		4943.21	03/20/2002	16:30	25.92	4917.29	
0841		4984.05	03/19/2002	14:30	45.27	4938.78	
0846		4934.57	03/19/2002	10:23	24.61	4909.96	
1004		4957.61	03/20/2002	14:00	41.92	4915.69	
1007		4962.01	03/20/2002	09:47	44.58	4917.43	
1057		4980.89	03/20/2002	14:23	32.98	4947.91	
1059		4970.52	03/20/2002	08:41	23.35	4947.17	
1060		4970.62	03/19/2002	11:45	38.25	4932.37	

STATIC GROUND WATER LEVELS (USEE700) FOR SITE SHP02, SHIPROCK (TAILINGS AREA)
REPORT DATE: 6/17/2002 2:39 pm

LOCATION CODE	FLOW CODE	TOP OF CASING ELEVATION (FT NGVD)	MEASUREMENT		DEPTH FROM TOP OF CASING (FT)	GROUND WATER ELEVATION (FT NGVD)	WATER LEVEL FLAG
			DATE	TIME			
1065		4923.84	03/21/2002	12:00	1.05	4922.79	
1066		4901.39	03/21/2002	12:00	1.62	4899.77	
1067		-	03/21/2002	12:00	6.36	-6.36	
1068		4929.47	03/21/2002	12:00	4.35	4925.12	
1069		4923.68	03/21/2002	12:00	3.47	4920.21	

RECORDS: SELECTED FROM USEE700 WHERE site_code='SHP02' AND LOG_DATE between #3/1/2002# and #3/31/2002#

FLOW CODES:

WATER LEVEL FLAGS:
D Dry

SAMPLING AND ANALYSIS WORK ORDER AND TRIP REPORT

MACTEC ENVIRONMENTAL RESTORATION SERVICES, LLC

CONTRACT NO.: DE-AC13-96GJ87335
TASK ORDER NO.: MAC02-05
CONTROL NO.: 3100-T02-0374

February 20, 2002

Project Manager
Department of Energy
Grand Junction Office
2597 B3/4 Road
Grand Junction, CO 81503
ATTN: Donald Metzler

SUBJECT: Contract No. DE-AC13-96GJ87335—March 2002 UMTRA Ground Water Sampling at Shiprock, New Mexico

Dear Mr. Metzler:

Attached are the map and tables specifying the sampling locations and analytes for routine monitoring at the Shiprock, New Mexico, UMTRA site. Water quality data will be collected from monitor wells and surface locations at this site as part of the routine UMTRA Ground Water sampling that is scheduled to begin the week of March 18, 2002.

The following lists show the Ground Water Project monitor well and surface water locations that will be sampled during this sampling event.

Ground Water Project Monitor Wells (filtered)*

SHP01

608 Km	615 Al	619 Al	735 Al	797 Al	850 Al	854 Al
614 Al	618 Al	734 Al				

SHP02

603 Km	817 Km	827 Al	835 Al	839 Al	847	1057 Qa
812 Al	818 Al	828 Al	836 Al	841 Al	1004 Km	1059 Km
813 Al	818 Al	832 Al	838 Al	846 Al	1007 Fl	1060 Qa
816 Al						

*NOTE: Al = Alluvium; Fl = Fill material; Km = Mancos Shale; Qa = Quaternary

Surface Water (filtered)

SHP01

655	897	940	956	957	959	1205
887	898					

SHP02

425	662	884	886	933	936	1061
426	786	885	889	934	942	

RECORD COPY

2597 B 3/4 ROAD
GRAND JUNCTION, COLORADO 81503
PHONE: 970 248-6000 FAX: 970 248-6040

Data loggers will be downloaded from the following locations:

SHP01

616	617	857

SHP02

602	730	826	830	841	843	848
728	731	827	837			

QA/QC samples will be collected as directed in the *Sampling and Analysis Plan for the UMTRA Ground Water Project*. Samples collected for alkalinity will be filtered only. Access agreements are being reviewed and are expected to be complete by the beginning of fieldwork.

If you have any questions, please call me at extension 6059 or Dave Traub at extension 6557.

Sincerely,

Sam Marutzky
Project Manager

SM/lcg/ld
Attachments

cc w/o att: K. Miller
Contract File (J. Dearborn)
cc w/att: C. Bahrke
R. Chessmore
C. Goodknight
D. Traub
Project Record File GWSHP 14.06 thru P. Taylor

Sampling Frequencies for Locations at Shiprock, New Mexico

Wells	Quarterly	Semiannually	Annually	Biennially	Not Sampled	Notes
Ground Water Project Monitor Wells						
SHP01						
608		X				Low flow
614		X				Low flow
615		X				Low flow
616					X	Data logger only
617					X	Data logger only
618		X				Low flow
619		X				Low flow
734		X				Low flow
735		X				Low flow
797		X				Low flow
850		X				Low flow
854		X				Low flow
857					X	Data logger only
SHP02						
602					X	Data logger only
603		X				Low flow
648				Odd year		Measure flow rate semiannually; sample biennially
727					X	WL only
728					X	Data logger only
730					X	Data logger only
731					X	Data logger only
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				Low flow
813		X				Low flow
814					X	WL only
815					X	WL only
816		X				
817		X				Low flow
818		X				Low flow
819					X	WL only
826		X				Low flow; data logger
827		X				Low flow; data logger
828		X				Low flow
829					X	WL only
830					X	Data logger only
832		X				Low flow
835		X				
836		X				
837					X	Data logger only
838		X				Low flow
839		X				Low flow
841		X				Low flow; data logger

Sampling Frequencies for Locations at Shiprock, New Mexico

Wells	Quarterly	Semiannually	Annually	Biennially	Not Sampled	Notes
SHP02						
843					X	Data logger only
846		X				
847		X				Low flow
848					X	Data logger only
1004		X				Low flow
1007		X				Low flow
1057		X				Low flow
1059		X				Low flow
1060		X				Low flow
1065					X	WL only; Many Devils Wash
1066					X	WL only; Many Devils Wash
1067					X	WL only; Bob Lee Wash
1068					X	WL only; Bob Lee Wash
1069					X	WL only; Bob Lee Wash
Ground Water Project Surface Water Locations						
SHP01						
655		X				Drainage channel
887		X				Distributary channel
897		X				Just below mouth of Many Devils Wash
898		X				San Juan River upgradient
940		X				Just NE of 854, San Juan River
956		X				San Juan River at intake
957		X				San Juan River about 1500' below dist. Channel
959		X				Distributary channel just below 1st wash
1205		X				San Juan River E of well 853
SHP02						
425		X				Escarpment Seep; flow rate
426		X				Escarpment Seep; flow rate
662		X				Lower Bob Lee Wash
786		X				Seep below US Hwy 666 bridge
884		X				Irrigation return flow
885		X				Upper Bob Lee Wash; water level
886		X				Many Devils Wash; water level
889		X				Many Devils Wash; water level
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
1061		X				

Constituent Sampling Breakdown For Individual UMTRA Sites

Site	Shiprock	
Analyte	Ground Water	Surface Water
Approx. No. Samples/yr	52	40
Field Measurements	*UGW*	*UGW*
Alkalinity	X	X
Dissolved Oxygen		
Redox Potential	X	X
pH	X	X
Specific Conductance	X	X
Turbidity	X	
Temperature	X	X
Laboratory Measurements	*UGW*	*UGW*
Aluminum		
Ammonium	X	X
Antimony		
Arsenic		
Barium		
Beryllium		
Bromide		
Cadmium		
Calcium	X	X
Chloride	X	X
Chromium		
Cobalt		
Copper		
Fluoride		
Gamma Spec		
Gross Alpha		
Gross Beta		
Iron		
Lead		
Lead-210		
Magnesium	X	X
Manganese	X	X
Molybdenum		

Constituent Sampling Breakdown For Individual UMTRA Sites

Site	Shiprock	
Analyte	Ground Water	Surface Water
Laboratory Measurements (Continued)	*UGW*	*UGW*
Nickel		
Nickel-63		
Nitrate	X	X
Organics		
PCBs		
Phosphate		
Polonium-210		
Potassium	X	X
Radium-226		
Radium-228		
Radon-222		
Selenium	X	X
Silica		
Sodium	X	X
Strontium	X	X
Sulfate	X	X
Sulfide		
Thallium		
Thorium-230		
Thorium-232		
Tin		
Total Dissolved Solids		
Total Organic Carbon		
Tritium		
Uranium	X	X
Uranium-234, -238		
Vanadium		
VOCs		
Zinc		
Total Analytes	12	12

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

mactec-ers
MACTEC ENVIRONMENTAL RESTORATION SERVICES, LLC

CONTRACT NO.: DE-AC13-96GJ87335
TASK ORDER NO.: MAC02-05
CONTROL NO.: 3100-N/A

MEMO TO: Sam Marutzky

FROM: T. Franzone LCA for

DATE: April 18, 2002

SUBJECT: UGW Trip Report

Site: Shiprock, NM

Dates of Sampling Event: March 18 through March 21, 2002

Team Members: Sam Campbell, Tony Franzone, Tom Maveal, and Dave Miller.

Number of Locations Sampled: 31 ground water monitor wells and 17 surface water locations were sampled.

Locations Not Sampled/Reason: All wells scheduled for sampling were sampled, except for wells 847 and 1004. Well 1004 was dry and well 847 was not sampled because it was determined to be a possible health hazard due to severe pigeon infestation. Surface locations 786, 884, 885, and 936 were not sampled because the areas had no visible flow. Locations 884 and 936 were frozen solid.

Field Variance: None.

Well/Location Specific Information: Low flow sampling was performed at all wells. The following list identifies their classification: wells 603, 608, 614, 618, 619, 735, 736, 797, 813, 816, 817, 818, 826, 828, 832, 835, 836, 838, 841, 846, 850, 854, and 1057 were Type I wells. Wells 615, 734, and 1059 were Type II wells. Wells 812, 827, 839, 1004, 1007, and 1060 were classified as Type III wells. Locations 425, 615, and 854 all had yellow-stained water. Well 736 had black suspended particles distributed throughout the water. Additional water was withdrawn from well 853 in accordance with NABIR recommendations, and shipped to their office at the University of Massachusetts. The site lead requested that well 736 be added to the list for sampling, and also that water flow be measured at surface locations 425, 426, and 786. The additional well was sampled, and location 425 had an observed approximate flow of 2.0-2.5 liters per minute, and location 426 had a flow of 1.0-2.0 liters per minute. Location 786 did not have any visible flow. Well 734 did not reach turbidity stabilization even at extremely low purge rate.

Quality Control Sample Cross Reference: Following are the false identifications assigned to the quality control samples:

False ID	True ID	Sample Type	Associated Matrix	Ticket Number
4251	425	Duplicate	Surface Water	NDS-247
7351	735	Duplicate	Ground Water	NDK-771
1500	841	Duplicate	Ground Water	NDP-806
6081	Equipment Blank	Equipment Blank-Peristaltic	Surface Water	NDK-773
1501	Equipment Blank	Equipment Blank-Peristaltic	Ground Water	NDP-819

Requisition Numbers Assigned: UGW requisition number is 17889.

Water Level Measurements: Water level measurements were taken on all sampled wells. Water levels were requested to be taken on the following wells: 727, 800, 801, 802, 803, 814, 815, 819, 829, 1065, 1066, 1067, 1068, and 1069.

Well Inspection Summary: Well inspections were conducted on all sampled wells. Sampled wells were in good condition, with the exception of well 899, which had a bent casing, and a water level meter could not be used due to this damage. Well 797 is mislabeled as 253.

Data Logger Download: The following dataloggers were downloaded: 602, 617, 728, 730, 731, 826, 827, 830, 837, 841, 843, 848, 857, and 899. Well 616 datalogger was scheduled for downloading, but this well doesn't have a datalogger in it. Well 843 datalogger requires a new 15 foot cable, the existing cable is badly damaged at the connector pins.

Corrective Action: None.

Equipment: None.

Regulatory: None.

Site Issues: Ron Everson with NECA supplied us with access keys for their quarry, in order to access disposal site wells. The keys are now located in the Site Notebook.

Additional Action Required/Taken: None

TF/lcg

Distribution:

cc: C. Bahrke
C. Goodknight
D. Metzler
K. Miller
Project Record File GWSHP 14.12 thru K. Sutton