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United States Department of Energy



Data for the Geochemical Investigation of UMTRAP Designated Site at Tuba City, Arizona.

September 1983

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Uranium Mill Tailings Remedial Action Project



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DATA FOR THE GEOCHEMICAL INVESTIGATION OF UMTRAP DESIGNATED SITE AT
TUBA CITY, ARIZONA

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SUMMARY

This report contains the geochemical data and the methods of data collection from the former tailings site at Tuba City, Arizona, performed under contract from the U.S. Department of Energy, Uranium Mill Tailings Remedial Action (UMTRA) Project. Data are from a one-time sampling of waters and solid material from the background, the area adjacent to the site, and the site. Selected solid samples are water extracted to remove easily soluble salts and acid extracted to remove carbonates and hydroxides. The waters, extracts, and solid samples were analyzed for selected major and trace elements.

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TABLE OF CONTENTS

	<u>PAGE</u>
CHAPTER 1. Introduction and Background to the Investigation	
1.1. Introduction.....	1
CHAPTER 2. Methods of Investigation	
2.1. Sampling Plan.....	2
2.2. Field Methods.....	2
2.3. Sample Processing.....	6
2.4. Chemical and Radiochemical Analysis.....	7
REFERENCES	8
APPENDIX Chemical Data From Tuba City, Arizona	
Table 1. Data for Water Samples: Tuba City, Arizona.....	10
Table 2. Data for Solid Samples: Tuba City, Arizona.....	13
Table 3. Data for Water Extracts: Tuba City, Arizona.....	16
Table 4. Data for HCl Extracts: Tuba City, Arizona.....	40

LIST OF FIGURES

<u>FIGURE</u>	<u>TITLE</u>	<u>PAGE</u>
2-1	Background sampling sites in the Tuba City area.....	3
2-2	Sampling sites on the Tuba City tailings pile and in the adjacent area.....	4

LIST OF TABLES

<u>TABLE</u>	<u>TITLE</u>	<u>PAGE</u>
2-1	Locations and descriptions of Tuba City sampling sites.....	5

CHAPTER 1

INTRODUCTION AND BACKGROUND TO THE INVESTIGATION

1.1 Introduction

The Uranium Mill Tailings Remedial Action (UMTRA) Project [1] of the Department of Energy includes twenty-four designated abandoned uranium mill tailings (UMT) and is responsible for containing contaminated material and for controlling further movements of contaminants as required by Title I of Public Law 95-604, "Uranium Mill Tailings Radiation Control Act of 1978". Under the UMTRA Project, research, technology development, and engineering programs are in progress.

This report contains the geochemical data and the methods of data collection from the former tailings site at Tuba City, Arizona. The data are from a one-time sampling of the soils and waters from the tailings pile, its adjacent area, and its background. Selected waters, extracts of solids, and solid samples were chemically analyzed for major and trace elements. The objectives of the data were to characterize the geochemistry of the tailings materials, to determine the contaminant distribution resulting from the former milling activities and the tailings, and to infer chemical pathways and transport mechanisms from the contaminant distribution. The characterization study was omitted, however, and this data report represents the final product.

CHAPTER 2

METHODS OF INVESTIGATION

2.1 Sampling Plan

Samples for the Tuba City tailings investigation are from three areas defined as: (1) the source, (2) the area adjacent to the source where contaminants may physically or chemically be transported, and (3) the local background which is the area not affected by the presence of the tailings. The sampling locations from the background are shown on Figure 2-1. The sampling locations from the source and adjacent area are shown on Figure 2-2. Site descriptions with coordinates of sample locations are in Table 2-1.

The objective of sampling the background was to establish a baseline chemical composition of waters in the Tuba City area to compare with the concentrations of elements in waters adjacent to the tailings. Soil sampling sites in the adjacent area were located where contaminant migration was suspected. Locations were chosen which appeared to be associated with water movement, which is a requirement for migration of elements. Vegetation patterns, salt precipitates on the surface, and dispersed or cemented materials were the major criteria for choosing locations adjacent to the tailings. Samples from the tailings were used to characterize the sands ($> 74\mu\text{m}$) and the slimes ($< 74\mu\text{m}$) of the tailings and the distribution of elements within the pile and across the interfaces with soil and cover. The distribution patterns across the interfaces indicate the migration that has occurred.

2.2 Field Methods

The following section describes the procedures used for sampling waters and solids and measuring the chemical conditions. Care was taken to minimize contamination of samples from the sampling devices and cross-contamination between samples. Also, representation of the field conditions required immediate attention to pH and Eh measurements and preservation of samples.

The surface water samples were collected in new polyethylene bottles after rinsing the bottles with the water being sampled. The bottles were completely filled to exclude air bubbles and sealed. Within eight hours of collecting a sample, the pH, Eh, and specific conductance were measured. The cations, chloride, and sulfate in the waters were stabilized by filtering through a $0.45\mu\text{m}$ filter and acidifying with nitric acid to a pH less than 2 [2].

Both Eh and pH were determined potentiometrically. A combination platinum/saturated calomel electrode for the Eh measurements was

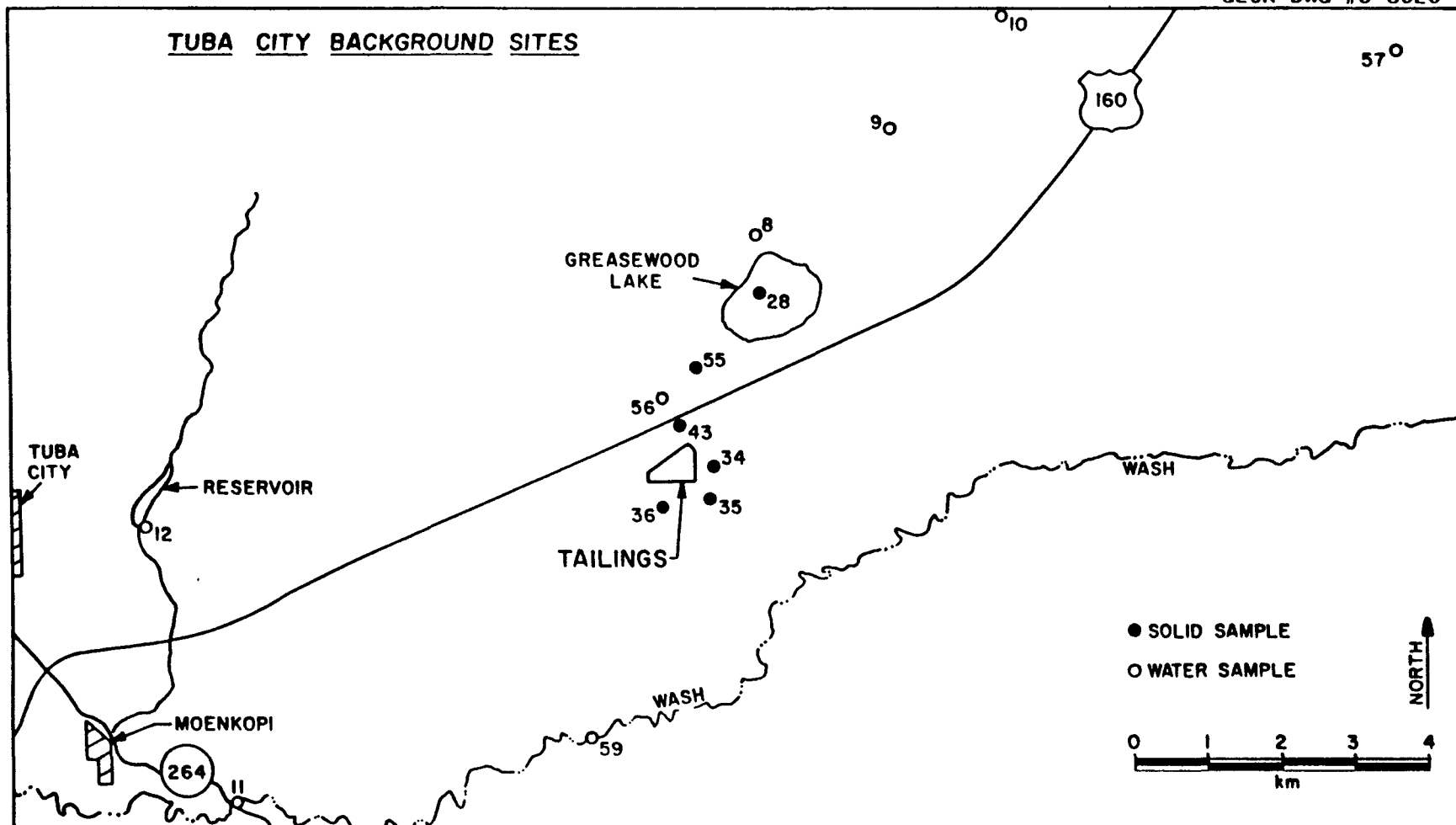


Figure 2-1. Background sampling sites in the Tuba City area.

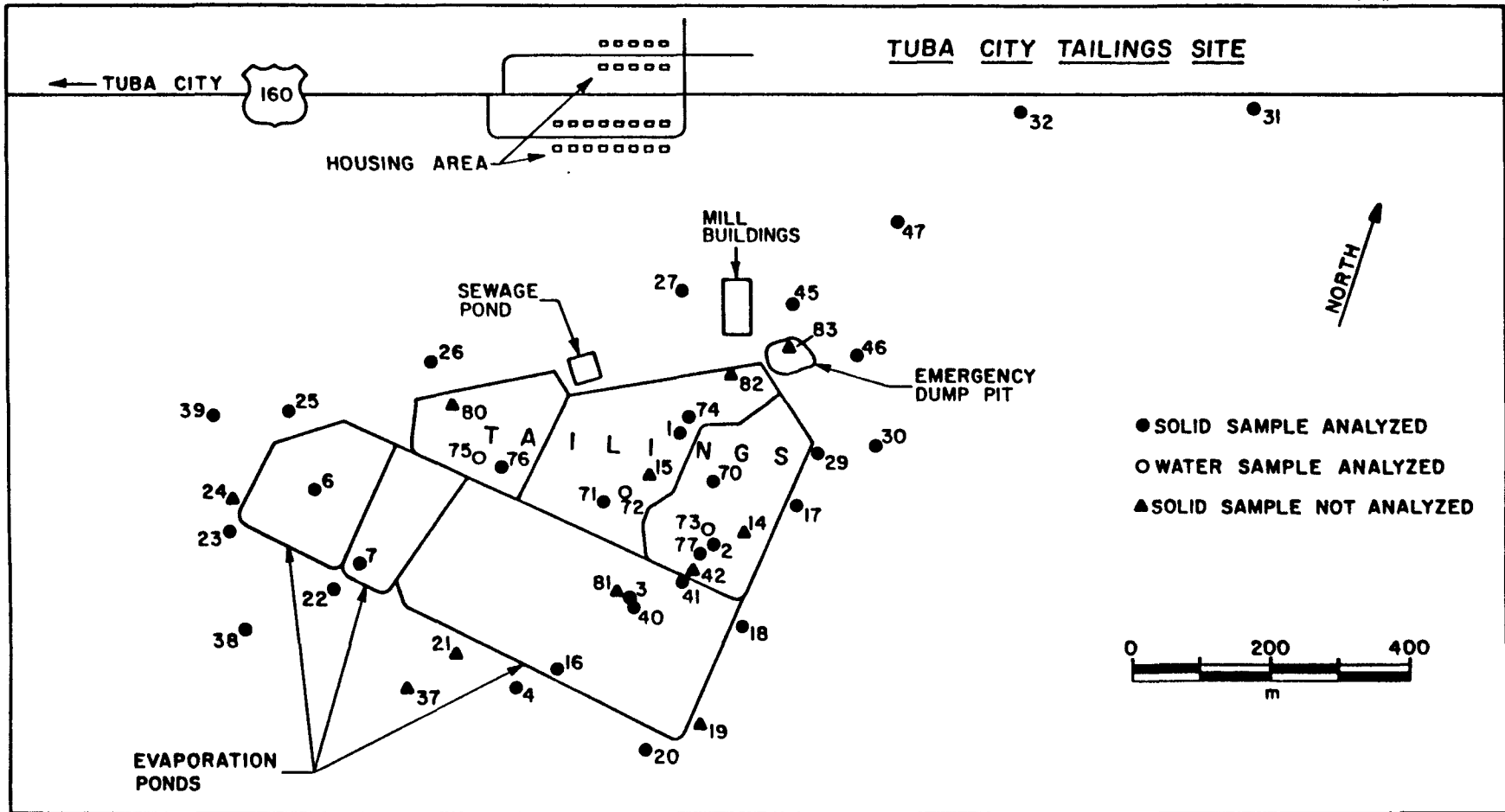


Figure 2-2. Sampling sites on the Tuba City tailings pile and in the adjacent area.

TABLE 2-1. LOCATIONS AND DESCRIPTIONS OF TUBA CITY SAMPLING SITES

Site Number	No. of Samples	Latitude	Longitude	Location Type ¹	Sample Type(s) ²	Description
TC 1	2	36.1460	111.1339	S	C	Center of tailings pile.
TC 2	2	36.1447	111.1327	S	C	SE corner of tailings.
TC 3	2	36.1437	111.1335	S	C	Between tailings and east evaporation pond.
TC 4	2	36.1374	111.1347	A	C	South of east evaporation pond.
TC 6	4	36.1425	111.1370	S	C	Center of west evaporation pond.
TC 7	5	36.1411	111.1376	S	C	SW corner of center evaporation pond.
TC 8	1	36.1722	111.1226	B	W	Small pond just north of Greasewood Lake.
TC 9	1	36.1840	111.1023	B	W	Well 3 km NE of Greasewood Lake.
TC 10	2	36.1989	111.0853	B	W	Windmill storage tank near Sand Dunes 6 km NE of Greasewood Lake.
TC 11	1	36.1037	111.2006	B	W	Small stream ~3 km SE of Moenkopi.
TC 12	1	36.1367	111.2147	B	W	South tip of Pasture Canyon Reservoir.
TC 16	7	36.1385	111.1356	S	C	South edge of east evaporation pond.
TC 17	5	36.1424	111.1331	A	C	Just off east edge of tailings.
TC 18	2	36.1398	111.1337	A	C	Off east edge of evaporation ponds.
TC 20	4	36.1357	111.1347	A	C	Off SE corner of east evaporation pond.
TC 22	3	36.1404	111.1379	A	C	Just south of dike between west and center evaporation pond.
TC 23	2	36.1420	111.1390	A	C	Just south of SW corner of west evaporation pond.
TC 25	2	36.1452	111.1383	A	C	Off NE of west evaporation pond.
TC 26	3	36.1457	111.1369	A	C	30 m NW of tailings.
TC 27	4	36.1476	111.1343	A	C	100 m north of tailings.
TC 28	2	36.1653	111.1217	B	C	Greasewood Lake bed north of tailings.
TC 30	2	36.1439	111.1323	A	C	50 m east of tailings.
TC 31	2	36.1512	111.1277	A	C	180 m NE of tailings near Highway 160.
TC 32	2	36.1509	111.1304	A	C	120 m north of tailings near Highway 160.
TC 34	2	36.1414	111.1330	B	C	80 m east of SE corner of tailings.
TC 35	2	36.1415	111.1277	B	C	120 m SE of tailings.
TC 36	2	36.1411	111.1348	B	C	150 m south of tailings pile.
TC 38	2	36.1395	111.1388	A	C	50 m south of west evaporation pond.
TC 39	2	36.1424	111.1398	A	C	45 m west of west evaporation pond.
TC 40	10	36.1401	111.1348	S	C	20 m south of tailings.
TC 41	7	36.1406	111.1341	S	C	Base of the tailings in the SE corner.
TC 43	2	36.1519	111.1334	B	C	40 m east of housing project and 10 m south of Highway 160.
TC 45	5	36.1472	111.1331	A	C	North of emergency dump pit and 35 m east of mill building.
TC 46	3	36.1458	111.1324	A	C	25 m east of emergency dump pit.
TC 47	2	36.1495	111.1320	A	C	80 m north of tailings pile.
TC 55	3	36.1540	111.1337	B	C	200 m NW of tailings pile on the north side of Highway 160.
TC 56	1	36.1515	111.1368	B	W	Water tank 0.8 km north of tailings.
TC 57	1	36.1944	111.0262	B	W	Windmill storage tank ~3 km east of Highway 160 and 45 km south of Middle Mesa.
TC 59	1	36.1116	111.1476	B	W	Moenkopi wash 4 km south and slightly west of tailings.
TC 70	12	36.1455	111.1332	S	C	North central part of upper tailings.
TC 71	11	36.1447	111.1347	S	C	South part of east lower tailings.
TC 72	1	36.1450	111.1344	S	W	Rainfall pond in the center of east lower tailings.
TC 73	1	36.1450	111.1417	S	W	Rainfall pond in the center of tailings.
TC 74	15	36.1461	111.1339	S	C	Northwest corner of east lower tailings.
TC 75	1	36.1449	111.1327	S	W	Southwest side of lower tailings.
TC 76	10	36.1447	111.1323	S	C	Southwest side of lower tailings.
TC 77	13	36.1447	111.1329	S	C	South end of tailings.

¹ S - source area; A - potentially contaminated area adjacent to source area; B - background area

² W - water sample; C - core sample

calibrated in Zobell solution [3]. A combination glass/saturated calomel electrode for pH measurements was calibrated with standard buffer solutions of pH 4 and 7. A one-liter sample collected for total gross alpha analysis was not filtered or acidified.

The cores were drilled with an 18-inch split spoon sampler (ASTM D-1586) on a 1-1/2 inch outside diameter drill rod, driven either by a sledge hammer or by a truck-mounted drill rig. The holes were opened above the split spoon with a hollow-stem auger. This minimized material from the top of the hole falling into the bottom. The split spoons were opened in the field, and the top 10-20 cm were discarded to prevent cross-contamination. The core was sampled at intervals where the color, moisture content, particle size, or mineralogy changed. The depth of the sample interval was recorded. A 1:4 solid/water slurry was prepared from each solid sample for pH and Eh measurements taken in the field or in a laboratory set up in a nearby motel room.

2.3 Sample Processing

The solids were dried under ambient conditions in the laboratory, dispersed to at least 100 mesh (0.150 mm) with a porcelain mortar and pestle by gentle grinding, and split with a precision chute-type stainless steel sample splitter. Two splits of approximately twenty-five grams each were stored for solid analysis and for future extraction. The remainder of the sample was stored for later experiments.

For many sites, water extracts were done by a procedure developed in our laboratory to obtain maximum removal of soluble materials in the shortest time at the chemical conditions of the samples. A measured weight (approximately twenty-five grams) of solid was added to approximately 100 ml of distilled water and agitated with a wrist action shaker at a rate which maintains the solid in suspension. After fifteen minutes, the solution was centrifuged, the pH, Eh, and specific conductance of the solution measured, and the supernatant decanted. The solid residue was washed twice by repeating the shaking with 100 ml of water. After each washing, the solution was centrifuged and the supernatant decanted off. The extract was filtered with a 0.45 μ m filter, acidified with concentrated nitric acid, and diluted volumetrically to 500 ml.

For some samples, acid extracts with hydrochloric acid of the water-extracted solids removed the hydroxides, carbonates, oxides, and the included contaminants. Hydrochloric acid was used as a non-oxidizing, strong acid with minimal complexing effects. The final pH values of the acid extracts were below the isoelectric point (pH ~ 2) of most silicate minerals so dissolution of precipitated coatings on mineral surfaces and the desorption of cations were maximized. The solid residues from the water extracts were weighed to the nearest 0.1 gram. Hydrochloric acid (100 ml of 0.5N) was added to the solid and agitated on a wrist action shaker for one hour. The solution was centrifuged and the pH of the solution was measured. If

the pH was greater than 2, additional HCl was added and the shaking repeated until the pH was maintained at less than 2. The solution was then filtered through a 0.45 μm filter, and diluted volumetrically to 500 ml.

2.4 Chemical and Radiochemical Analysis

Some of the waters and water extracts were chemically analyzed by the laboratory of the Center for Environmental Sciences at the University of Colorado, Denver. Atomic absorption, inductively coupled plasma, and UV-VIS spectrophotometry were used for the cations: Ag, Al, As, Ba, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, Pb, Se, Si, Sr, and V. The anions Cl and SO_4 were determined by ion chromatography. Uncertainties in the measurements were less than 10 percent for concentrations greater than one order of magnitude above the detection limit for each element, but the uncertainty increases as the detection limit is approached. Other aqueous samples were analyzed by Travis Laboratory of Rapid City, SD. Atomic absorption and inductively coupled plasma were used for the cations: Ag, Al, As, Ba, Ca, Cd, Co, Cr, Fe, K, Mg, Mn, Mo, Na, Ni, Pb, Se, Si, Sr, and V. Sulfate was determined by a gravimetric method. The chloride analyses were done by the ion-selective electrode by the GECR, Inc. laboratory.

The dried solids were analyzed for Na, Mg, K, Ca, Al, Ba, Cl, Mn, Sr, Ti, V, U, and Dy at Los Alamos National Laboratory by neutron activation analysis. Uncertainties in the measurements were usually less than 10 percent at concentration values greater than one order of magnitude above the detection limit.

Uranium in waters and extracts of solids was analyzed by GECR with a Scintrex UA-3 uranium analyzer. The measurement is based on the fluorescence of a uranyl complex formed by addition of the reagent Fluran, which converts the various uranyl species into a single species with a high degree of luminescence. The selectivity of the system provides a detection limit of 5 ppb uranium.

Gross alpha analyses were done by the Camp, Dresser, and McKee Laboratory in Wheatridge, Colorado. The unfiltered samples from the field were filtered through 5 μm filters and counted according to an approved EPA method [4].

The chemical data were entered into a data management system as it was received from the laboratories. Data from the extracts were converted to gram of element per gram of solid sample used in the extracts.

REFERENCES

- [1] Department of Energy. Annual Status Report on the Uranium Mill Tailings Remedial Action Program. DOE/NE-0011, 1980.
- [2] U. S. Environmental Protection Agency. Methods for Chemical Analysis of Water and Wastes. EPA-600/4-79-020. Office of Research and Development, Cincinnati, OH, 1979.
- [3] Langmuir, D. Eh-pH Determination. Procedures in Sedimentary Petrology, R. E. Carver (ed.). Wiley, NY, 1972, pp. 597-635.
- [4] American Public Health Association. Standard Methods for the Examination of Water and Wastewater. 14th ed., APHA Printing Office, NY, 1975.

APPENDIX

CHEMICAL DATA FROM TUBA CITY, ARIZONA

Table 1.	Data for Water Samples:	Tuba City, Arizona
Table 2.	Data for Solid Samples:	Tuba City, Arizona
Table 3.	Data for Water Extracts:	Tuba City, Arizona
Table 4.	Data for HCl Extracts:	Tuba City, Arizona

NOTES ON APPENDIX

The locations of the site numbers are shown on Figures 2-1 and 2-2 of the text. Descriptions of the sites are contained in Table 2-1. Descriptions of three digit codes for sample types in the data tables are as follows:

120	SOURCE - solid
130	SOURCE - water extract
140	SOURCE - HCl extract
220	SUBJACENT - solid
230	SUBJACENT - water extract
240	SUBJACENT - HCl extract
330	ADJACENT - water extract
340	ADJACENT - HCl extract
411	BACKGROUND - water-surface
413	BACKGROUND - water-deep subsurface
430	BACKGROUND - water extract
440	BACKGROUND - HCl extract

TABLE 1. Data for water samples; TUBA CITY, ARIZONA

Site & Sample Number	Sample Type	Sample Top cm	Sample Base cm	Eh mV	pH	cond. umho/cm ²	gross alpha pCi/s	
8.01	411	1	10	370	8.00	1100	-1	1
9.01	413	0	0	370	8.40	550	17	2
10.01	413	0	0	370	8.70	360	1	3
10.02	413	0	0	365	8.70	340	2	4
11.01	411	1	10	370	7.90	1210	101	5
12.01	411	1	10	360	8.70	360	3	6
56.01	413	0	0	390	8.10	240	-1	7
57.01	413	0	0	380	8.00	190	-1	8
59.01	411	1	10	250	8.80	1350	4	9
72.01	111	1	10	250	8.80	3100	0	10
73.01	111	1	10	245	4.50	6090	0	11
75.01	111	1	10	240	7.80	7350	0	12

NOTE: Zero value indicates no determination was made.

Negative sign indicates values less than the detection limits.

TABLE 1 (continuation) page 2

As us/s	Al us/s	As us/s	Ba us/s	Ca us/s	
1.00E-002	1.20E+000	2.30E-001	8.20E-002	1.25E+001	1
-1.00E-002	-2.00E-001	-1.00E-002	4.50E-002	1.89E+001	2
3.00E-002	-2.00E-001	-1.00E-002	2.30E-002	1.07E+001	3
-1.00E-002	-2.00E-001	-1.00E-002	1.90E-002	1.01E+001	4
-1.00E-002	-2.00E-001	-1.00E-002	6.90E-002	3.34E+001	5
-1.00E-002	-2.00E-001	-1.00E-002	8.10E-002	1.53E+001	6
-1.00E-002	-2.00E-001	-1.00E-002	5.90E-002	2.50E+001	7
-1.00E-002	-2.00E-001	-1.00E-002	6.50E-002	2.64E+001	8
1.00E-002	-2.00E-001	-1.00E-002	7.60E-002	4.10E+001	9
1.20E-001	1.90E-001	5.29E+000	2.10E-001	1.20E+002	10
1.70E-001	4.25E+001	6.00E-002	2.00E-002	4.90E+002	11
1.20E-001	3.30E-001	1.50E-001	2.00E-002	4.55E+002	12

TABLE 1 (continuation) Page 3

Cd us/s	Cl us/s	Co us/s	Cr us/s	
-5.00E-004	5.30E+001	-2.00E-002	2.00E-002	1
-5.00E-004	4.00E+001	-2.00E-002	-1.00E-002	2
-5.00E-004	1.80E+001	-2.00E-002	-1.00E-002	3
-5.00E-004	1.57E+001	-1.00E-002	-1.00E-002	4
-5.00E-004	2.70E+001	-1.00E-002	-1.00E-002	5
-5.00E-004	1.90E+001	-1.00E-002	-1.00E-002	6
-5.00E-004	1.10E+001	-1.00E-002	-1.00E-002	7
-5.00E-004	6.80E+000	-1.00E-002	1.00E-002	8
-5.00E-004	2.20E+001	-1.00E-002	-1.00E-002	9
-1.00E-002	9.76E+001	8.00E-002	-5.00E-002	10
8.60E-001	6.66E+001	2.41E+001	2.00E-001	11
-1.00E-002	1.19E+002	3.60E-001	8.00E-002	12

TABLE 1 (continuation) Page 4

Fe us/s	K us/s	Ms us/s	Mn us/s	Mo us/s	
6.60E-001	8.30E+000	3.50E+000	3.00E-002	-2.00E-002	1
4.00E-002	-5.00E-001	3.80E+000	-1.00E-002	-2.00E-002	2
3.00E-002	-5.00E-001	2.70E+000	1.00E-002	-2.00E-002	3
-1.00E-002	-5.00E-001	2.50E+000	-1.00E-002	-2.00E-002	4
8.00E-002	6.80E+000	1.80E+001	1.00E-002	-2.00E-002	5
3.00E-002	5.10E+000	1.50E+001	1.00E-002	-2.00E-002	6
2.00E-002	6.00E-001	5.60E+000	-1.00E-002	-2.00E-002	7
2.00E-002	8.00E-001	5.60E+000	1.00E-002	-2.00E-002	8
-1.00E-002	5.70E+000	2.20E+001	-1.00E-002	-2.00E-002	9
1.00E-001	1.18E+001	1.60E+001	-1.00E-001	2.35E+000	10
1.02E+001	1.45E+001	1.00E+003	2.55E+001	1.00E-001	11
1.50E-001	2.43E+001	5.70E+002	1.30E+000	1.40E+000	12

TABLE 1 (continuation) page 5

Na ug/s	Ni ug/s	Pb ug/s	Se ug/s	Si ug/s	
2.40E+002	-2.00E-002	-5.00E-003	-1.00E-002	1.60E+001	1
1.10E+002	-2.00E-002	-5.00E-003	-1.00E-002	8.50E+000	2
7.60E+001	4.00E-002	-5.00E-003	-1.00E-002	6.50E+000	3
7.60E+001	-2.00E-002	-5.00E-003	-1.00E-002	6.90E+000	4
2.40E+002	-2.00E-002	-5.00E-003	-1.00E-002	1.20E+000	5
4.80E+001	-2.00E-002	-5.00E-003	-1.00E-002	9.00E-001	6
1.80E+001	-2.00E-002	-5.00E-003	-1.00E-002	5.60E+000	7
1.20E+001	-2.00E-002	-5.00E-003	-1.00E-002	7.90E+000	8
2.09E+002	-2.00E-002	-5.00E-003	-1.00E-002	2.30E+000	9
7.75E+002	1.50E-001	-5.00E-002	3.00E-002	4.05E+000	10
3.25E+001	9.40E+001	-5.00E-002	-1.00E-002	5.50E+000	11
3.88E+002	5.40E-001	-5.00E-002	4.00E-002	3.15E+000	12

TABLE 1 (continuation) page 6

S04 ug/s	Sr ug/s	U ug/s	V ug/s	
7.30E+001	2.17E-001	0.00E+000	1.90E-001	1
4.90E+001	2.12E-001	0.00E+000	2.00E-002	2
2.20E+001	1.39E-001	0.00E+000	4.00E-002	3
2.00E+001	1.34E-001	0.00E+000	3.00E-002	4
3.89E+002	1.15E+000	0.00E+000	-2.00E-002	5
3.40E+001	5.23E-001	0.00E+000	-2.00E-002	6
1.30E+001	4.24E-001	0.00E+000	-2.00E-002	7
1.60E+001	3.88E-001	0.00E+000	-2.00E-002	8
3.66E+002	1.23E+000	0.00E+000	2.00E-002	9
1.68E+003	6.50E-001	2.96E+001	4.40E-001	10
9.60E+003	4.00E-001	1.08E+001	2.00E-001	11
6.70E+003	8.00E-001	9.20E-001	4.80E-001	12

TABLE 2. Data for solid samples; TUBA CITY, ARIZONA

Site & Sample Number	Sam- ple Type	Sample		Eh mV	pH	
		Top cm	Base cm			
16.01	120	1	15	430	5.50	1
16.02	120	15	30	530	4.40	2
16.03	120	30	45	540	4.40	3
16.04	220	61	76	450	5.70	4
16.05	220	76	91	400	7.00	5
16.06	220	107	122	410	7.70	6
16.07	220	122	137	400	7.90	7

NOTE: Zero value indicates no determination was made.

Negative sign indicates values less than the detection limits.

TABLE 2 (continuation) Page 2

Al us/g	As us/g	Ba us/g	Ca us/g	Cl us/g	
3.14E+004	1.44E+003	9.01E+002	4.88E+004	9.30E+001	1
4.54E+004	8.96E+002	1.69E+003	1.17E+005	-5.90E+001	2
3.45E+004	6.36E+002	5.04E+002	1.42E+005	1.18E+002	3
1.82E+004	1.02E+003	5.53E+002	1.21E+005	-8.20E+001	4
1.81E+004	1.00E+003	4.20E+002	1.21E+005	5.00E+001	5
1.57E+004	2.06E+001	-1.56E+002	2.98E+004	-8.40E+001	6
2.18E+004	1.09E+001	1.38E+003	2.79E+004	-7.50E+001	7

TABLE 2 (continuation) page 3

Co us/s	Cr us/s	Cu us/s	Fe us/s	K us/s	
2.45E+002	5.60E+001	4.17E+003	3.84E+004	1.11E+004	1
3.67E+002	8.10E+001	5.37E+003	1.65E+004	9.55E+003	2
3.55E+002	9.00E+001	4.64E+003	9.09E+003	1.06E+004	3
6.80E+001	4.50E+001	1.47E+003	1.13E+005	8.87E+003	4
2.60E+001	1.70E+001	2.28E+003	3.75E+004	9.86E+003	5
2.30E+001	8.70E+000	-2.26E+002	9.26E+004	-3.85E+003	6
2.90E+001	1.29E+001	-1.95E+002	7.21E+004	1.02E+004	7

TABLE 2 (continuation) page 4

Mg us/s	Mn us/s	Na us/s	Rb us/s	Sb us/s	
8.36E+003	2.59E+002	2.97E+003	-4.50E+001	9.90E+000	1
8.50E+003	2.84E+002	3.77E+002	-5.70E+001	-5.00E-001	2
8.60E+003	2.66E+002	3.86E+002	-4.70E+001	8.50E+000	3
-1.69E+003	1.81E+003	1.80E+003	-3.50E+001	6.40E+000	4
2.37E+003	6.45E+002	2.69E+003	4.60E+001	4.00E-001	5
-1.65E+003	2.00E+003	2.30E+003	-2.70E+001	1.20E+000	6
-1.41E+003	1.73E+003	3.26E+003	4.10E+001	7.00E-001	7

TABLE 2 (continuation) page 5

Se us/g	Sr us/g	Th-232 us/g	Ti us/g	U us/g	
-1.00E+000	-1.86E+002	5.00E+000	1.45E+003	3.05E+002	1
-5.80E+000	-2.27E+002	5.20E+000	4.75E+003	8.53E+002	2
-3.80E+000	-1.53E+002	3.90E+000	1.23E+003	2.82E+002	3
-4.50E+000	-3.09E+002	5.00E+000	-7.26E+002	2.45E+002	4
0.00E+000	-1.96E+002	2.90E+000	5.83E+002	5.70E+001	5
-1.80E+000	-3.09E+002	3.10E+000	-7.14E+002	1.60E+001	6
0.00E+000	-2.65E+002	5.40E+000	-6.17E+002	8.10E+000	7

TABLE 2 (continuation) page 6

V us/g	W us/g	Zn us/g	
5.51E+002	3.08E+001	7.10E+002	1
9.12E+002	4.34E+001	9.63E+002	2
2.77E+002	4.33E+001	8.95E+002	3
1.57E+002	-1.09E+001	2.35E+002	4
3.70E+001	-8.20E+000	1.11E+002	5
6.20E+001	-8.50E+000	4.48E+002	6
3.90E+001	0.00E+000	2.75E+002	7

TABLE 3. Data for water extracts; TUBA CITY, ARIZONA

Site & Sample Number	Sam- ple Type	Sample		Eh mV	PH	cond. umho/ cm ²	
		Top cm	Base cm				
1.01	130	1	10	0	0.00	0	1
1.04	130	30	40	0	0.00	0	2
2.01	130	1	10	0	0.00	0	3
2.04	130	30	40	0	0.00	0	4
3.01	130	1	10	0	0.00	0	5
3.04	130	30	40	0	0.00	0	6
4.01	330	1	10	0	0.00	0	7
4.04	330	30	40	0	0.00	0	8
6.01	130	1	25	460	5.60	2840	9
6.02	130	25	64	495	4.00	2370	10
6.04	130	96	127	585	3.80	2340	11
6.06	130	152	191	505	8.00	1894	12
7.01	130	1	32	510	6.00	2010	13
7.02	130	32	46	535	4.40	1992	14
7.03	130	46	64	485	7.00	2180	15
7.05	130	113	127	465	7.50	2340	16
7.08	130	142	205	375	7.70	2050	17
16.01	130	1	15	555	3.10	9610	18
16.02	130	15	30	570	3.00	8880	19
16.03	130	30	45	515	3.40	8980	20
16.04	230	61	76	515	4.20	2820	21
16.05	230	76	91	425	6.60	2310	22
16.07	230	122	137	480	8.30	1115	23
17.01	330	1	23	425	6.20	595	24
17.02	330	23	45	350	7.40	615	25
17.04	330	91	114	380	8.50	305	26
17.06	330	478	503	450	8.40	375	27
17.09	330	691	701	335	9.40	70	28
18.02	330	36	45	420	8.70	200	29
18.04	330	107	122	350	7.70	315	30
20.01	330	1	23	330	9.30	60	31
20.02	330	23	46	330	7.40	245	32
20.04	330	107	122	385	7.20	1820	33
20.06	330	145	165	350	7.80	395	34
22.01	330	1	25	340	7.30	220	35
22.04	330	91	114	350	7.40	620	36
22.05	330	114	137	350	7.40	795	37
23.01	330	1	15	345	7.20	230	38
23.05	330	66	90	435	7.50	325	39
25.01	330	1	25	280	9.10	60	40
25.04	330	76	91	330	7.60	240	41
26.01	330	1	15	330	8.70	135	42
26.04	330	45	60	340	7.60	255	43
26.06	330	76	91	280	9.30	85	44
27.01	330	1	25	325	8.80	85	45

NOTE: Zero value indicates no determination was made.

Negative sign indicates values less than the detection limits.

TABLE 3 (continuation) Page 2

As us/s	Al us/s	As us/s	Ba us/s	Ca us/s	
0.00E+000	3.29E+001	1.95E+000	8.53E-002	2.32E+003	1
0.00E+000	1.83E+002	7.74E+000	9.85E-002	2.95E+003	2
0.00E+000	2.96E+000	2.96E-001	1.18E-001	2.27E+003	3
0.00E+000	2.27E+002	1.04E+001	1.20E-001	3.07E+003	4
0.00E+000	8.48E+002	1.12E+002	1.14E-001	2.17E+003	5
0.00E+000	1.36E+001	3.39E-001	1.36E-001	2.12E+003	6
0.00E+000	8.19E-001	2.46E-001	1.97E-001	2.62E+001	7
0.00E+000	4.92E+000	-8.20E-002	2.21E-001	3.77E+001	8
-1.00E+000	2.40E+000	4.00E+000	-4.00E-001	8.86E+003	9
-1.00E+000	2.00E+001	3.60E+000	-4.00E-001	7.40E+003	10
-1.00E+000	3.14E+001	1.40E+000	-4.00E-001	8.00E+003	11
-1.00E+000	2.20E+000	-1.00E+000	8.00E-001	3.90E+003	12
-1.00E+000	2.80E+000	5.20E+000	8.00E-001	8.40E+003	13
-1.00E+000	6.40E+000	9.80E+000	6.00E-001	4.00E+003	14
-1.00E+000	5.60E+000	1.20E+000	-4.00E-001	9.40E+003	15
-1.00E+000	4.60E+000	2.00E+000	4.00E-001	8.60E+003	16
-1.01E+000	5.04E+000	-1.01E+000	4.03E-001	6.85E+003	17
-1.00E+000	4.14E+003	-1.00E+000	4.00E-001	9.40E+003	18
-1.00E+000	4.36E+003	3.00E+000	-4.00E-001	7.04E+003	19
-1.00E+000	2.86E+003	-1.00E+000	-4.00E-001	8.50E+003	20
-1.00E+000	2.00E+002	-1.00E+000	-4.00E-001	8.40E+003	21
-1.00E+000	3.80E+000	-1.00E+000	4.00E-001	6.70E+003	22
-1.00E+000	8.40E+002	3.60E+000	-4.00E-001	7.50E+003	23
-1.00E+000	2.80E+000	-1.00E+000	8.00E-001	4.80E+002	24
-1.00E+000	4.20E+000	-1.00E+000	6.00E-001	1.00E+003	25
-1.00E+000	1.60E+000	-1.00E+000	6.00E-001	3.00E+002	26
-1.00E+000	2.20E+000	-1.00E+000	8.00E-001	4.60E+002	27
-1.00E+000	8.00E-001	1.20E+000	8.00E-001	1.60E+002	28
-1.00E+000	2.00E+000	-1.00E+000	1.40E+000	1.60E+002	29
-1.00E+000	1.00E+000	-1.00E+000	3.40E+000	5.00E+002	30
-1.00E+000	3.42E+001	-1.00E+000	8.00E-001	8.00E+001	31
-1.00E+000	2.00E+000	2.00E+000	1.20E+000	7.00E+002	32
-1.00E+000	4.40E+000	-1.00E+000	6.00E-001	3.40E+003	33
-1.00E+000	1.00E+000	-1.00E+000	2.80E+000	6.00E+002	34
-1.00E+000	1.00E+000	-1.00E+000	1.80E+000	4.60E+002	35
-1.00E+000	2.60E+000	-1.00E+000	1.80E+000	1.00E+003	36
-1.00E+000	2.40E+000	-1.00E+000	8.00E-001	1.02E+003	37
-1.00E+000	6.00E-001	1.12E+001	1.80E+000	4.80E+002	38
-1.00E+000	3.40E+000	-1.00E+000	8.00E-001	8.00E+001	39
-1.00E+000	2.00E-001	-1.00E+000	4.00E-001	1.60E+002	40
-1.00E+000	7.00E+000	-1.00E+000	6.00E-001	4.00E+001	41
-1.00E+000	-2.00E-001	-1.00E+000	8.00E-001	3.00E+002	42
-1.00E+000	8.00E-001	-1.00E+000	1.00E+000	6.00E+002	43
-1.00E+000	1.80E+000	-1.00E+000	4.00E-001	3.20E+002	44
-1.00E+000	6.00E-001	-1.00E+000	4.00E-001	1.20E+002	45

TABLE 3 (continuation) page 3

Cd ug/g	Cl ug/g	Co ug/g	Cr ug/g	Cu ug/g	
7.67E-001	6.09E+001	0.00E+000	2.44E-001	1.71E+002	1
1.27E+000	7.03E+001	0.00E+000	9.85E-001	2.25E+003	2
1.37E-001	-4.93E+000	0.00E+000	2.96E-001	1.48E+002	3
4.27E-001	-6.67E+000	0.00E+000	9.33E-001	1.33E+002	4
1.45E+000	-5.17E+000	0.00E+000	2.07E+000	4.44E+002	5
2.72E-001	-4.24E+000	0.00E+000	2.55E-001	2.29E+002	6
-4.10E-003	-4.10E+000	0.00E+000	1.64E-001	8.19E-001	7
-4.10E-003	-4.10E+000	0.00E+000	2.46E-001	4.10E-001	8
4.00E-001	5.36E+001	1.10E+001	-1.00E+000	0.00E+000	9
-2.00E-001	5.53E+001	2.40E+000	-1.00E+000	0.00E+000	10
-2.00E-001	6.99E+001	1.40E+000	-1.00E+000	0.00E+000	11
2.00E-001	6.72E+001	-4.00E-001	-1.00E+000	0.00E+000	12
-2.00E-001	5.85E+001	-4.00E-001	-1.00E+000	0.00E+000	13
-2.00E-001	4.06E+001	-4.00E-001	-1.00E+000	0.00E+000	14
-2.00E-001	6.35E+001	-4.00E-001	-1.00E+000	0.00E+000	15
-2.00E-001	6.22E+001	-4.00E-001	-1.00E+000	0.00E+000	16
-2.02E-001	6.96E+001	-4.03E-001	-1.01E+000	0.00E+000	17
6.60E+000	1.19E+002	2.04E+002	2.40E+000	0.00E+000	18
7.20E+000	1.43E+002	2.46E+002	5.60E+000	0.00E+000	19
5.40E+000	1.93E+002	2.30E+002	3.00E+000	0.00E+000	20
1.00E+000	1.08E+002	3.60E+001	-1.00E+000	0.00E+000	21
4.00E-001	7.15E+001	1.80E+000	-1.00E+000	0.00E+000	22
1.80E+000	1.99E+002	8.70E+001	7.40E+000	0.00E+000	23
-2.00E-001	6.30E+001	-4.00E-001	-1.00E+000	0.00E+000	24
-2.00E-001	7.24E+001	-4.00E-001	-1.00E+000	0.00E+000	25
-2.00E-001	6.52E+001	-4.00E-001	-1.00E+000	0.00E+000	26
-2.00E-001	6.41E+002	-4.00E-001	-1.00E+000	0.00E+000	27
2.00E-001	1.35E+002	-4.00E-001	-1.00E+000	0.00E+000	28
-2.00E-001	8.18E+001	-4.00E-001	-1.00E+000	0.00E+000	29
-2.00E-001	1.57E+002	-4.00E-001	-1.00E+000	0.00E+000	30
-2.00E-001	7.05E+001	-4.00E-001	-1.00E+000	0.00E+000	31
-2.00E-001	8.73E+001	-4.00E-001	-1.00E+000	0.00E+000	32
-2.00E-001	7.56E+001	-4.00E-001	-1.00E+000	0.00E+000	33
-2.00E-001	1.80E+002	-4.00E-001	-1.00E+000	0.00E+000	34
-2.00E-001	1.25E+002	-4.00E-001	-1.00E+000	0.00E+000	35
-2.00E-001	8.58E+001	-4.00E-001	-1.00E+000	0.00E+000	36
-2.00E-001	7.79E+001	-4.00E-001	-1.00E+000	0.00E+000	37
-2.00E-001	9.40E+001	-4.00E-001	-1.00E+000	0.00E+000	38
-2.00E-001	4.59E+001	-4.00E-001	-1.00E+000	0.00E+000	39
-2.00E-001	6.35E+001	-4.00E-001	-1.00E+000	0.00E+000	40
-2.00E-001	4.73E+001	-4.00E-001	-1.00E+000	0.00E+000	41
-2.00E-001	8.92E+001	-4.00E-001	-1.00E+000	0.00E+000	42
-2.00E-001	7.18E+001	-4.00E-001	-1.00E+000	0.00E+000	43
-2.00E-001	7.08E+001	-4.00E-001	-1.00E+000	0.00E+000	44
-2.00E-001	4.81E+001	-4.00E-001	-1.00E+000	0.00E+000	45

TABLE 3 (continuation) page 4

Fe us/s	K us/s	Ms us/s	Mn us/s	Mo us/s	
1.07E+001	1.10E+001	1.71E+003	3.78E+001	3.66E-001	1
6.61E+002	3.10E+001	1.10E+003	2.53E+001	1.83E+000	2
5.12E+000	2.96E+000	3.35E+001	1.38E+000	-9.85E-002	3
7.73E+002	4.00E+001	2.00E+002	6.93E+000	3.47E+000	4
2.89E+003	5.17E+000	5.58E+002	1.02E+001	2.79E+000	5
6.79E+000	1.53E+001	3.82E+002	6.70E+000	-8.48E-002	6
1.72E+000	1.64E+001	4.92E+000	-8.19E-002	8.19E-002	7
2.62E+000	5.74E+000	4.10E+000	-8.20E-002	-8.20E-002	8
-2.00E+000	4.10E+001	8.10E+002	7.80E+001	2.56E+001	9
-2.00E+000	4.30E+001	2.20E+002	9.80E+000	1.40E+000	10
2.00E+000	7.10E+001	1.44E+002	8.20E+000	6.00E-001	11
-2.00E+000	2.80E+001	1.44E+002	7.00E+000	-4.00E-001	12
-2.00E+000	4.60E+001	3.20E+001	-2.00E+000	2.72E+001	13
-2.00E+000	3.50E+001	6.40E+001	2.20E+000	5.00E+000	14
-2.00E+000	3.02E+001	2.08E+002	-2.00E+000	6.10E+001	15
-2.00E+000	3.02E+001	4.40E+002	-2.00E+000	5.20E+001	16
-2.02E+000	1.71E+001	2.54E+002	-2.02E+000	4.70E+001	17
1.30E+002	1.13E+002	5.56E+003	1.85E+002	-4.00E-001	18
5.96E+002	1.28E+002	7.08E+003	2.24E+002	-4.00E-001	19
3.06E+002	2.53E+002	6.48E+003	2.20E+002	8.00E+000	20
6.40E+000	2.40E+001	1.02E+004	3.50E+001	-4.00E-001	21
-2.00E+000	3.50E+001	8.20E+002	4.20E+000	-4.00E-001	22
2.06E+002	6.80E+001	1.62E+003	9.40E+003	-4.00E-001	23
-2.00E+000	3.90E+001	8.00E+001	-2.00E+000	-4.00E-001	24
-2.00E+000	1.90E+001	2.00E+002	-2.00E+000	-4.00E-001	25
-2.00E+000	1.20E+001	8.00E+001	-2.00E+000	-4.00E-001	26
-2.00E+000	3.30E+001	1.40E+002	-2.00E+000	-4.00E-001	27
-2.00E+000	1.70E+001	6.00E+001	-2.00E+000	-4.00E-001	28
-2.00E+000	1.20E+001	1.00E+001	-2.00E+000	-4.00E-001	29
-2.00E+000	1.00E+001	8.00E+001	-2.00E+000	-4.00E-001	30
6.20E+000	4.30E+001	1.60E+001	-2.00E+000	-4.00E-001	31
-2.00E+000	2.60E+001	7.20E+001	-2.00E+000	-4.00E-001	32
-2.00E+000	2.00E+001	1.08E+002	-2.00E+000	-4.00E-001	33
-2.00E+000	4.60E+001	6.80E+001	-2.00E+000	-4.00E-001	34
-2.00E+000	8.40E+001	8.00E+001	-2.00E+000	-4.00E-001	35
-2.00E+000	3.50E+001	9.20E+001	-2.00E+000	-4.00E-001	36
-2.00E+000	1.90E+001	2.32E+002	-2.00E+000	-4.00E-001	37
-2.00E+000	1.00E+002	6.00E+001	-2.00E+000	6.00E-001	38
-2.00E+000	2.00E+001	1.60E+001	-2.00E+000	-4.00E-001	39
-2.00E+000	2.00E+001	3.60E+001	-2.00E+000	-4.00E-001	40
2.00E+000	-1.00E+001	1.00E+001	-2.00E+000	-4.00E-001	41
-2.00E+000	2.40E+001	2.00E+001	-2.00E+000	-4.00E-001	42
-2.00E+000	1.90E+001	7.60E+001	-2.00E+000	-4.00E-001	43
-2.00E+000	2.00E+001	1.20E+002	-2.00E+000	-4.00E-001	44
-2.00E+000	1.00E+001	1.00E+001	-2.00E+000	-4.00E-001	45

TABLE 3 (continuation) page 5

Na us/s	Ni us/s	Pb us/s	Se us/s	Si us/s	
7.19E+001	0.00E+000	8.53E-001	-1.22E-001	2.07E+001	1
3.80E+002	0.00E+000	1.38E+001	-1.41E-001	2.53E+001	2
1.97E+000	0.00E+000	6.90E-001	-9.85E-002	7.88E+000	3
5.33E+000	0.00E+000	1.12E+001	-1.33E-001	1.07E+001	4
4.13E+000	0.00E+000	5.17E+000	-1.03E-001	6.20E+000	5
8.48E+000	0.00E+000	7.64E-001	-8.48E-002	2.21E+001	6
2.46E+000	0.00E+000	4.10E-001	-8.19E-002	1.80E+001	7
2.05E+001	0.00E+000	4.92E-001	-8.20E-002	2.46E+001	8
2.40E+002	1.72E+001	2.00E+000	-2.00E-001	5.50E+001	9
7.50E+001	4.80E+000	1.00E+000	-2.00E-001	2.00E+001	10
9.50E+001	4.20E+000	-1.00E+000	-2.00E-001	2.00E+001	11
5.00E+001	-4.00E-001	-1.00E+000	-2.00E-001	7.60E+000	12
1.40E+001	-4.00E-001	-1.00E+000	-2.00E-001	1.30E+001	13
1.20E+001	6.00E-001	-1.00E+000	-2.00E-001	1.30E+001	14
1.50E+001	4.00E-001	-1.00E+000	-2.00E-001	1.30E+001	15
1.50E+001	-4.00E-001	-1.00E+000	-2.00E-001	1.80E+001	16
2.02E+001	-4.03E-001	-1.01E+000	-2.02E-001	2.38E+001	17
1.00E+001	6.56E+002	1.40E+000	-2.00E-001	1.80E+001	18
1.60E+001	7.70E+002	8.80E+000	-2.00E-001	2.02E+002	19
1.20E+002	6.20E+002	1.88E+001	-2.00E-001	1.30E+001	20
5.50E+001	8.20E+001	-1.00E+000	-2.00E-001	1.69E+002	21
4.50E+001	1.00E+000	-1.00E+000	-2.00E-001	1.58E+002	22
3.90E+003	2.16E+002	-1.00E+000	-2.00E-001	2.02E+002	23
1.40E+001	-4.00E-001	-1.00E+000	-2.00E-001	2.36E+001	24
3.00E+001	1.00E+000	-1.00E+000	-2.00E-001	1.69E+002	25
1.40E+002	-4.00E-001	-1.00E+000	-2.00E-001	1.80E+001	26
1.75E+002	-4.00E-001	-1.00E+000	-2.00E-001	3.40E+001	27
2.40E+001	-4.00E-001	-1.00E+000	-2.00E-001	1.30E+001	28
3.00E+001	4.00E-001	-1.00E+000	-2.00E-001	2.90E+001	29
1.25E+002	8.00E-001	-1.00E+000	-2.00E-001	1.85E+002	30
1.70E+001	1.40E+000	-1.00E+000	-2.00E-001	1.04E+002	31
2.20E+001	1.20E+000	1.40E+000	-2.00E-001	1.85E+002	32
1.26E+002	4.00E-001	-1.00E+000	-2.00E-001	1.80E+002	33
2.30E+002	6.00E-001	-1.00E+000	-2.00E-001	1.80E+002	34
1.50E+001	1.00E+000	-1.00E+000	-2.00E-001	1.80E+002	35
9.00E+001	6.00E-001	-1.00E+000	-2.00E-001	1.80E+002	36
1.40E+001	4.00E-001	-1.00E+000	-2.00E-001	1.80E+002	37
3.50E+001	8.00E-001	-1.00E+000	-2.00E-001	1.91E+002	38
1.20E+001	-4.00E-001	-1.00E+000	-2.00E-001	1.80E+001	39
3.00E+001	6.00E-001	-1.00E+000	-2.00E-001	7.70E+001	40
-1.00E+001	6.00E-001	-1.00E+000	-2.00E-001	2.90E+001	41
-1.00E+001	6.00E-001	-1.00E+000	-2.00E-001	9.30E+001	42
1.60E+001	8.00E-001	-1.00E+000	-2.00E-001	1.80E+002	43
3.00E+001	6.00E-001	-1.00E+000	-2.00E-001	5.00E+001	44
-1.00E+001	6.00E-001	-1.00E+000	-2.00E-001	7.60E+000	45

TABLE 3 (continuation) Page 6

S04 us/s	Sr us/s	U us/s	V us/s	
1.60E+004	0.00E+000	7.80E+000	2.44E+000	1
1.46E+004	0.00E+000	2.87E+002	1.41E+000	2
6.98E+003	0.00E+000	9.46E-001	-9.85E-001	3
1.11E+004	0.00E+000	1.76E+001	-1.33E+000	4
2.07E+004	0.00E+000	2.23E+001	2.07E+000	5
6.50E+003	0.00E+000	9.84E-001	-8.48E-001	6
-8.19E+001	0.00E+000	1.31E-001	-8.19E-001	7
-8.20E+001	0.00E+000	9.84E-003	-8.20E-001	8
2.50E+004	9.20E+000	8.40E-002	7.60E+000	9
1.90E+004	1.40E+001	1.72E+000	2.00E+000	10
2.00E+004	1.72E+001	5.20E-001	1.60E+000	11
9.50E+003	1.50E+001	4.20E-001	8.00E-001	12
2.07E+004	1.50E+001	-2.00E-003	2.00E+000	13
1.08E+004	1.10E+001	1.60E+000	1.00E+000	14
2.33E+004	1.72E+001	1.98E+000	2.00E+000	15
2.20E+004	1.58E+001	9.00E-002	2.20E+000	16
1.85E+004	1.05E+001	8.06E-001	1.61E+000	17
8.00E+004	5.60E+000	2.80E+002	2.60E+000	18
8.70E+004	1.44E+001	1.76E+002	2.06E+002	19
6.20E+004	1.56E+001	5.84E+001	3.10E+001	20
2.65E+004	1.26E+001	8.80E+000	1.40E+000	21
1.84E+004	1.62E+001	4.48E+000	1.60E+000	22
6.00E+004	2.54E+001	4.40E+001	1.06E+001	23
1.44E+003	2.60E+000	2.20E-001	-4.00E-001	24
1.40E+003	8.80E+000	4.80E-001	-4.00E-001	25
9.00E+002	3.80E+000	3.00E-002	-4.00E-001	26
1.16E+003	8.80E+000	5.20E-002	-4.00E-001	27
3.80E+002	1.40E+000	1.60E-002	-4.00E-001	28
3.40E+002	1.40E+000	2.20E-002	-4.00E-001	29
2.20E+002	6.80E+000	3.40E-002	-4.00E-001	30
-2.00E+002	1.40E+000	1.20E-002	-4.00E-001	31
2.00E+002	6.40E+000	1.10E-001	-4.00E-001	32
6.36E+003	1.40E+001	7.20E-002	-4.00E-001	33
2.20E+002	3.80E+000	1.80E-002	-4.00E-001	34
2.40E+002	4.40E+000	7.80E-002	-4.00E-001	35
1.60E+003	7.60E+000	7.20E-002	-4.00E-001	36
1.86E+003	5.00E+000	4.60E-002	-4.00E-001	37
-2.00E+002	3.20E+000	1.12E+000	1.20E+000	38
-2.00E+002	1.40E+000	1.00E-001	-4.00E-001	39
2.20E+002	2.60E+000	2.80E-002	-4.00E-001	40
-2.00E+002	1.00E+000	7.00E-002	-4.00E-001	41
-2.00E+002	1.40E+000	5.80E-002	-4.00E-001	42
-2.00E+002	5.00E+000	2.20E-002	-4.00E-001	43
1.10E+003	6.40E+000	1.40E-002	-4.00E-001	44
-2.00E+002	1.00E+000	2.00E-001	-4.00E-001	45

TABLE 3. (continuation) page 7

Site & Sample Number	Sam- ple Type	Sample		Eh mV	PH	cond. umho/ cm ²	
		Top cm	Base cm				
27.04	330	61	81	310	9.10	60	46
27.06	330	107	109	340	8.90	65	47
27.08	330	120	127	405	7.60	280	48
28.01	430	1	10	305	9.60	620	49
28.05	430	61	91	305	9.30	765	50
30.01	330	1	15	385	6.90	495	51
30.05	330	76	91	335	7.80	340	52
31.01	330	1	23	305	9.00	55	53
31.06	330	120	137	315	8.90	100	54
32.01	330	1	25	280	9.10	900	55
32.06	330	120	137	305	8.00	110	56
34.01	430	1	15	290	9.00	65	57
34.03	430	30	45	300	8.90	80	58
35.01	430	1	15	295	9.20	50	59
35.06	430	91	107	290	9.30	50	60
36.01	430	1	23	285	9.20	60	61
36.05	430	76	91	355	7.60	255	62
38.01	330	1	15	335	7.60	240	63
38.06	330	76	91	305	9.30	50	64
39.01	330	1	18	365	6.70	145	65
39.03	330	46	91	330	7.70	265	66
40.01	130	1	15	615	2.50	8360	67
40.02	130	15	30	620	2.40	8300	68
40.03	130	30	45	630	2.60	6310	69
40.04	130	45	56	625	2.50	7280	70
40.05	130	56	64	635	2.50	8240	71
40.06	230	64	79	435	5.20	2620	72
40.07	230	79	91	325	8.40	1685	73
40.09	230	107	122	320	8.60	960	74
40.11	230	152	168	305	7.00	1105	75
40.13	230	193	208	345	7.30	415	76
41.01	130	1	20	525	4.20	2100	77
41.02	130	20	30	460	6.40	2190	78
41.04	130	60	76	385	7.50	1010	79
41.06	130	274	290	285	7.50	455	80
41.07	130	396	411	290	8.90	275	81
41.08	130	457	472	330	8.70	265	82
41.09	130	518	533	300	7.60	590	83
43.01	430	1	18	360	7.40	375	84
43.05	430	122	137	375	7.70	350	85
45.01	330	1	15	325	8.80	200	86
45.03	330	31	45	285	9.10	170	87
45.06	330	123	137	270	9.40	60	88
45.08	330	323	340	335	7.70	370	89
45.10	330	366	378	335	7.70	335	90

TABLE 3 (continuation) page 8

As us/s	Al us/s	As us/s	Ba us/s	Ca us/s	
-1.00E+000	-2.00E-001	-1.00E+000	4.00E-001	3.00E+002	46
-1.00E+000	-2.00E-001	-1.00E+000	4.00E-001	3.00E+002	47
-1.00E+000	1.20E+000	-1.00E+000	4.00E-001	1.20E+002	48
-1.00E+000	4.00E+001	1.40E+000	-4.00E-001	2.00E+001	49
-1.00E+000	3.00E+000	-1.00E+000	-4.00E-001	5.00E+002	50
-1.00E+000	1.20E+000	8.80E+000	4.00E-001	6.00E+002	51
-1.00E+000	2.40E+000	-1.00E+000	6.00E-001	6.00E+002	52
-1.00E+000	2.00E-001	1.60E+000	-4.00E-001	3.20E+002	53
-1.00E+000	1.20E+000	-1.00E+000	4.00E-001	3.00E+002	54
-1.00E+000	2.00E+000	-1.00E+000	-4.00E-001	3.20E+002	55
-1.00E+000	7.00E+000	-1.00E+000	-4.00E-001	1.20E+002	56
-1.00E+000	8.00E-001	-1.00E+000	-4.00E-001	1.20E+002	57
-1.00E+000	-2.00E-001	-1.00E+000	-4.00E-001	1.60E+002	58
-1.00E+000	1.20E+000	-1.00E+000	4.00E-001	1.20E+002	59
-1.00E+000	-2.00E-001	-1.00E+000	6.00E-001	8.00E+001	60
-1.00E+000	6.00E+000	-1.00E+000	-4.00E-001	1.60E+002	61
-1.00E+000	4.00E-001	-1.00E+000	4.00E-001	6.00E+002	62
-1.00E+000	6.00E-001	-1.00E+000	2.00E+000	6.00E+002	63
-1.00E+000	-2.00E-001	-1.00E+000	4.00E-001	3.00E+002	64
-1.00E+000	6.00E-001	-1.00E+000	4.00E-001	3.00E+002	65
-1.00E+000	2.60E+000	-1.00E+000	3.80E+000	1.02E+003	66
-1.00E+000	1.67E+003	3.66E+001	-4.00E-001	7.80E+003	67
1.60E+000	1.96E+003	4.84E+001	-4.00E-001	8.02E+003	68
2.40E+000	1.05E+003	1.26E+001	1.00E+000	8.40E+003	69
-1.00E+000	1.45E+003	1.40E+001	6.00E-001	8.54E+003	70
-1.00E+000	1.60E+003	3.60E+001	-4.00E-001	8.30E+003	71
-1.00E+000	4.20E+000	-1.00E+000	6.00E-001	7.60E+003	72
-1.00E+000	1.80E+000	-1.00E+000	1.20E+000	1.72E+003	73
-1.00E+000	1.40E+000	-1.00E+000	2.00E+000	7.00E+002	74
-1.00E+000	8.00E-001	-1.00E+000	1.40E+000	3.80E+002	75
-1.00E+000	4.00E-001	-1.00E+000	2.40E+000	6.40E+002	76
-1.00E+000	4.00E+001	-1.00E+000	1.40E+000	7.80E+003	77
-1.00E+000	4.60E+000	-1.00E+000	8.00E-001	5.90E+003	78
-1.00E+000	2.20E+000	-1.00E+000	1.80E+000	1.28E+003	79
-1.00E+000	4.00E-001	-1.00E+000	1.20E+000	6.40E+002	80
-1.00E+000	6.00E-001	-1.00E+000	8.00E-001	1.12E+002	81
-1.00E+000	2.00E-001	-1.00E+000	1.60E+000	2.40E+002	82
-1.00E+000	6.00E-001	-1.00E+000	8.00E-001	5.00E+002	83
-1.00E+000	8.00E-001	-1.00E+000	1.20E+000	1.12E+002	84
-1.00E+000	8.00E-001	8.60E+000	1.00E+000	7.00E+002	85
-1.00E+000	3.00E+000	7.60E+000	8.00E-001	4.80E+002	86
-1.00E+000	-2.00E-001	-1.00E+000	6.00E-001	2.40E+002	87
-1.00E+000	-2.00E-001	-1.00E+000	6.00E-001	1.60E+002	88
-1.00E+000	8.00E-001	-1.00E+000	6.00E-001	6.20E+002	89
-1.00E+000	-2.00E-001	-1.00E+000	4.00E-001	4.80E+002	90

TABLE 3 (continuation) Page 9

Cd ug/s	Cl ug/s	Co ug/s	Cr ug/s	Cu ug/s	
-2.00E-001	7.21E+001	-4.00E-001	-1.00E+000	0.00E+000	46
-2.00E-001	7.69E+001	-4.00E-001	-1.00E+000	0.00E+000	47
-2.00E-001	5.90E+001	-4.00E-001	-1.00E+000	0.00E+000	48
-2.00E-001	7.43E+001	-4.00E-001	-1.00E+000	0.00E+000	49
-2.00E-001	2.12E+002	-4.00E-001	-1.00E+000	0.00E+000	50
-2.00E-001	6.58E+001	8.00E-001	-1.00E+000	0.00E+000	51
-2.00E-001	1.33E+002	-4.00E-001	-1.00E+000	0.00E+000	52
-2.00E-001	6.25E+001	-4.00E-001	-1.00E+000	0.00E+000	53
-2.00E-001	9.36E+001	-4.00E-001	-1.00E+000	0.00E+000	54
-2.00E-001	7.97E+001	-4.00E-001	-1.00E+000	0.00E+000	55
-2.00E-001	5.43E+001	-4.00E-001	-1.00E+000	0.00E+000	56
-2.00E-001	1.05E+002	-4.00E-001	-1.00E+000	0.00E+000	57
-2.00E-001	9.64E+001	-4.00E-001	-1.00E+000	0.00E+000	58
-2.00E-001	8.92E+001	-4.00E-001	-1.00E+000	0.00E+000	59
-2.00E-001	1.09E+002	-4.00E-001	-1.00E+000	0.00E+000	60
-2.00E-001	9.64E+001	-4.00E-001	-1.00E+000	0.00E+000	61
-2.00E-001	6.22E+001	-4.00E-001	-1.00E+000	0.00E+000	62
-2.00E-001	1.08E+002	-4.00E-001	-1.00E+000	0.00E+000	63
-2.00E-001	1.02E+002	-4.00E-001	-1.00E+000	0.00E+000	64
-2.00E-001	7.76E+001	-4.00E-001	-1.00E+000	0.00E+000	65
-2.00E-001	1.65E+002	-4.00E-001	-1.00E+000	0.00E+000	66
7.80E+000	6.99E+001	1.88E+002	1.30E+001	0.00E+000	67
8.20E+000	6.90E+001	1.32E+002	1.86E+001	0.00E+000	68
4.60E+000	4.98E+001	1.03E+002	1.20E+001	0.00E+000	69
6.20E+000	7.08E+001	1.34E+002	1.30E+001	0.00E+000	70
6.80E+000	9.19E+001	2.03E+002	1.48E+001	0.00E+000	71
8.00E-001	7.63E+001	1.10E+001	-1.00E+000	0.00E+000	72
-2.00E-001	8.76E+001	-4.00E-001	-1.00E+000	0.00E+000	73
-2.00E-001	9.73E+001	-4.00E-001	-1.00E+000	0.00E+000	74
-2.00E-001	5.25E+001	-4.00E-001	-1.00E+000	0.00E+000	75
-2.00E-001	6.52E+001	-4.00E-001	-1.00E+000	0.00E+000	76
6.00E-001	5.83E+001	6.40E+000	-1.00E+000	0.00E+000	77
1.20E+000	7.90E+001	4.60E+000	-1.00E+000	0.00E+000	78
-2.00E-001	1.01E+002	-4.00E-001	-1.00E+000	0.00E+000	79
-2.00E-001	1.08E+002	-4.00E-001	-1.00E+000	0.00E+000	80
-2.00E-001	6.35E+001	-4.00E-001	-1.00E+000	0.00E+000	81
-2.00E-001	1.48E+002	-4.00E-001	-1.00E+000	0.00E+000	82
-2.00E-001	2.14E+002	-4.00E-001	-1.00E+000	0.00E+000	83
-2.00E-001	1.08E+002	-4.00E-001	-1.00E+000	0.00E+000	84
-2.00E-001	5.48E+001	-4.00E-001	-1.00E+000	0.00E+000	85
-2.00E-001	8.54E+001	-4.00E-001	-1.00E+000	0.00E+000	86
-2.00E-001	1.20E+002	-4.00E-001	-1.00E+000	0.00E+000	87
-2.00E-001	1.11E+002	-4.00E-001	-1.00E+000	0.00E+000	88
-2.00E-001	2.08E+002	-4.00E-001	-1.00E+000	0.00E+000	89
-2.00E-001	2.24E+002	-4.00E-001	-1.00E+000	0.00E+000	90

TABLE 3 (continuation) Page 10

Fe ug/g	K ug/g	Mg ug/g	Mn ug/g	Mo ug/g	
-2.00E+000	1.20E+001	7.60E+001	-2.00E+000	-4.00E-001	46
-2.00E+000	1.20E+001	6.00E+001	-2.00E+000	-4.00E-001	47
-2.00E+000	-1.00E+001	1.00E+001	-2.00E+000	-4.00E-001	48
6.40E+000	1.90E+001	1.00E+001	-2.00E+000	-4.00E-001	49
-2.00E+000	4.40E+001	1.88E+002	-2.00E+000	-4.00E-001	50
-2.00E+000	3.30E+001	3.20E+001	-2.00E+000	-4.00E-001	51
-2.00E+000	1.70E+001	8.00E+001	-2.00E+000	-4.00E-001	52
-2.00E+000	6.10E+001	8.00E+001	-2.00E+000	-4.00E-001	53
-2.00E+000	1.70E+001	9.20E+001	-2.00E+000	-4.00E-001	54
-2.00E+000	4.10E+001	8.80E+001	-2.00E+000	-4.00E-001	55
2.00E+000	-1.00E+001	2.00E+001	-2.00E+000	-4.00E-001	56
-2.00E+000	2.80E+001	-1.00E+001	-2.00E+000	-4.00E-001	57
-2.00E+000	1.50E+001	-1.00E+001	-2.00E+000	-4.00E-001	58
-2.00E+000	3.02E+001	1.20E+001	-2.00E+000	-4.00E-001	59
-2.00E+000	1.70E+001	1.00E+001	-2.00E+000	-4.00E-001	60
2.00E+000	1.70E+001	1.60E+001	-2.00E+000	-4.00E-001	61
-2.00E+000	1.70E+001	8.80E+001	-2.00E+000	-4.00E-001	62
-2.00E+000	5.10E+001	4.80E+001	-2.00E+000	-4.00E-001	63
-2.00E+000	1.20E+001	4.80E+001	-2.00E+000	-4.00E-001	64
-2.00E+000	4.10E+001	2.00E+000	-2.00E+000	-4.00E-001	65
-2.00E+000	3.70E+001	2.20E+002	-2.00E+000	-4.00E-001	66
2.22E+003	5.80E+001	2.04E+003	4.50E+001	6.00E-001	67
2.24E+003	5.60E+001	2.00E+003	4.40E+001	2.00E+001	68
2.14E+003	7.40E+001	1.32E+003	3.30E+001	6.00E-001	69
2.18E+003	4.80E+001	1.44E+003	4.00E+001	6.00E-001	70
2.20E+003	7.10E+001	2.08E+003	6.50E+001	5.00E+000	71
-2.00E+000	3.44E+001	1.11E+003	2.60E+001	-4.00E-001	72
-2.00E+000	5.10E+001	5.96E+002	-2.00E+000	-4.00E-001	73
-2.00E+000	3.90E+001	3.40E+002	-2.00E+000	-4.00E-001	74
6.40E+000	-1.00E+001	9.20E+001	-2.00E+000	-4.00E-001	75
-2.00E+000	1.30E+001	1.40E+002	-2.00E+000	-4.00E-001	76
1.42E+001	1.30E+001	6.44E+002	1.86E+001	-4.00E-001	77
-2.00E+000	4.40E+001	6.64E+002	9.20E+000	-4.00E-001	78
-2.00E+000	1.50E+001	2.44E+002	-2.00E+000	-4.00E-001	79
-2.00E+000	1.50E+001	9.20E+001	-2.00E+000	-4.00E-001	80
-2.00E+000	1.20E+001	-1.00E+001	-2.00E+000	-4.00E-001	81
2.20E+000	-1.00E+001	4.40E+001	-2.00E+000	-4.00E-001	82
-2.00E+000	3.02E+001	7.60E+001	-2.00E+000	-4.00E-001	83
2.60E+000	1.00E+001	1.20E+001	-2.00E+000	-4.00E-001	84
-2.00E+000	5.80E+001	6.00E+001	-2.00E+000	4.00E-001	85
-2.00E+000	7.40E+001	1.04E+002	-2.00E+000	1.80E+000	86
-2.00E+000	1.30E+001	6.00E+001	-2.00E+000	1.00E+000	87
-2.00E+000	1.20E+001	6.40E+001	-2.00E+000	-4.00E-001	88
-2.00E+000	1.00E+001	5.20E+001	-2.00E+000	-4.00E-001	89
-2.00E+000	1.00E+001	4.80E+001	-2.00E+000	-4.00E-001	90

TABLE 3 (continuation) Page 11

Na us/s	Ni us/s	Pb us/s	Se us/s	S1 us/s	
2.96E+001	8.00E-001	-1.00E+000	-2.00E-001	7.20E+001	46
3.70E+001	8.00E-001	-1.00E+000	-2.00E-001	8.24E+001	47
1.50E+001	4.00E-001	-1.00E+000	-2.00E-001	7.60E+000	48
8.34E+002	6.00E-001	-1.00E+000	-2.00E-001	1.31E+002	49
1.73E+003	-4.00E-001	-1.00E+000	-2.00E-001	1.75E+002	50
1.50E+001	3.00E+000	-1.00E+000	-2.00E-001	1.69E+002	51
8.80E+001	8.00E-001	-1.00E+000	-2.00E-001	1.69E+002	52
3.60E+001	8.00E-001	-1.00E+000	-2.00E-001	8.24E+001	53
2.60E+002	8.00E-001	-1.00E+000	-2.00E-001	8.24E+001	54
3.00E+001	1.00E+000	-1.00E+000	-2.00E-001	6.60E+001	55
1.50E+001	-4.00E-001	-1.00E+000	-2.00E-001	2.00E+001	56
2.30E+001	6.00E-001	-1.00E+000	-2.00E-001	6.60E+001	57
2.50E+001	6.00E-001	-1.00E+000	-2.00E-001	6.10E+001	58
2.60E+001	8.00E-001	-1.00E+000	-2.00E-001	4.50E+001	59
2.00E+001	8.00E-001	-1.00E+000	-2.00E-001	4.50E+001	60
3.60E+001	1.20E+000	-1.00E+000	-2.00E-001	7.70E+001	61
1.40E+001	1.00E+000	1.40E+000	-2.00E-001	8.24E+001	62
-1.00E+001	1.00E+000	1.00E+000	-2.00E-001	1.74E+002	63
3.00E+001	8.00E-001	-1.00E+000	-2.00E-001	8.24E+001	64
2.54E+001	1.00E+000	-1.00E+000	-2.00E-001	1.75E+002	65
2.40E+001	8.00E-001	-1.00E+000	-2.00E-001	1.58E+002	66
-1.00E+001	6.30E+002	-1.00E+000	-2.00E-001	1.96E+002	67
2.50E+001	5.56E+002	3.20E+000	-2.00E-001	1.85E+002	68
2.54E+001	3.66E+002	1.44E+001	-2.00E-001	4.50E+001	69
-1.00E+001	4.60E+002	2.60E+000	-2.00E-001	1.80E+002	70
-1.00E+001	6.36E+002	1.40E+000	-2.00E-001	1.96E+002	71
-1.00E+001	2.00E+001	-1.00E+000	-2.00E-001	1.47E+002	72
2.30E+001	-4.00E-001	-1.00E+000	-2.00E-001	5.00E+001	73
1.60E+001	-4.00E-001	-1.00E+000	-2.00E-001	5.00E+001	74
2.30E+001	-4.00E-001	-1.00E+000	-2.00E-001	7.60E+000	75
2.40E+001	6.00E-001	-1.00E+000	-2.00E-001	1.64E+002	76
-1.00E+001	2.90E+001	1.40E+000	-2.00E-001	6.60E+001	77
4.50E+001	6.60E+000	2.00E+000	-2.00E-001	1.52E+002	78
2.20E+001	-4.00E-001	-1.00E+000	-2.00E-001	1.69E+002	79
1.15E+002	-4.00E-001	-1.00E+000	-2.00E-001	1.69E+002	80
1.65E+002	-4.00E-001	-1.00E+000	-2.00E-001	7.20E+001	81
6.70E+001	4.00E-001	-1.00E+000	-2.00E-001	7.60E+000	82
4.40E+002	6.00E-001	-1.00E+000	-2.00E-001	1.58E+002	83
6.00E+001	-4.00E-001	-1.00E+000	-2.00E-001	1.30E+001	84
1.50E+001	-4.00E-001	-1.00E+000	-2.00E-001	1.64E+002	85
1.80E+002	1.00E+000	1.40E+000	-2.00E-001	8.24E+001	86
1.25E+002	6.00E-001	-1.00E+000	-2.00E-001	6.60E+001	87
6.50E+001	6.00E-001	1.40E+000	-2.00E-001	5.00E+001	88
1.65E+002	6.00E-001	-1.00E+000	-2.00E-001	1.75E+002	89
1.55E+002	8.00E-001	-1.00E+000	-2.00E-001	1.80E+002	90

TABLE 3 (continuation) Page 12

S04 us/s	Sr us/s	U us/s	V us/s	
2.60E+002	3.20E+000	1.98E-001	-4.00E-001	46
-2.00E+002	2.60E+000	3.60E-001	-4.00E-001	47
-2.00E+002	1.40E+000	2.40E-001	-4.00E-001	48
-2.00E+002	6.00E-001	1.90E-001	1.20E+000	49
2.48E+003	1.76E+001	3.80E-001	3.46E+001	50
8.80E+002	2.00E+000	1.26E+000	6.00E-001	51
2.60E+002	5.60E+000	1.64E-001	-4.00E-001	52
5.20E+002	3.20E+000	1.14E-001	4.00E-001	53
8.00E+002	6.80E+000	2.40E-002	-4.00E-001	54
9.20E+002	5.00E+000	1.62E-001	-4.00E-001	55
-2.00E+002	1.40E+000	5.60E-002	-4.00E-001	56
-2.00E+002	1.00E+000	6.60E-002	4.00E-001	57
-2.00E+002	1.00E+000	1.40E-002	-4.00E-001	58
-2.00E+002	1.00E+000	1.40E-002	-4.00E-001	59
-2.00E+002	6.00E-001	8.00E-003	-4.00E-001	60
-2.00E+002	1.40E+000	1.00E-002	-4.00E-001	61
-2.00E+002	7.00E+000	5.00E-002	-4.00E-001	62
-2.00E+002	4.40E+000	5.80E-002	-4.00E-001	63
-2.00E+002	2.80E+000	1.60E-002	-4.00E-001	64
-2.00E+002	1.40E+000	1.20E-002	-4.00E-001	65
1.48E+003	1.72E+001	1.38E-001	-4.00E-001	66
5.30E+004	5.60E+000	1.68E+002	2.16E+001	67
5.54E+004	8.80E+000	2.24E+002	4.40E+001	68
4.54E+004	9.40E+000	1.20E+002	2.60E+000	69
5.14E+004	1.06E+001	1.52E+002	1.10E+001	70
5.90E+004	8.80E+000	2.13E+002	7.20E+000	71
2.44E+004	1.22E+001	1.06E+000	1.80E+000	72
4.00E+003	4.40E+000	2.80E-002	-4.00E-001	73
1.92E+003	3.80E+000	1.20E-002	-4.00E-001	74
1.22E+003	1.00E+000	6.20E-002	-4.00E-001	75
6.00E+002	2.00E+000	3.60E-002	-4.00E-001	76
1.75E+004	6.80E+000	1.76E+000	1.60E+000	77
1.51E+004	1.20E+001	3.40E+000	1.60E+000	78
2.02E+003	7.60E+000	1.00E-001	-4.00E-001	79
4.00E+002	2.60E+000	1.80E-002	-4.00E-001	80
-2.00E+002	1.40E+000	1.40E-001	-4.00E-001	81
5.20E+002	1.40E+000	1.20E-002	-4.00E-001	82
6.80E+002	1.40E+000	1.46E-001	-4.00E-001	83
-2.00E+002	1.40E+000	1.76E+001	-4.00E-001	84
1.30E+003	5.60E+000	5.60E-001	8.00E-001	85
1.28E+003	6.80E+000	2.20E+000	-4.00E-001	86
6.40E+002	3.20E+000	1.40E-001	-4.00E-001	87
4.00E+002	2.60E+000	6.00E-003	-4.00E-001	88
-2.00E+002	3.80E+000	1.12E-001	-4.00E-001	89
-2.00E+002	3.80E+000	3.20E-002	-4.00E-001	90

TABLE 3. (continuation) page 13

Site & Sample Number	Sam- ple Type	Sample		Eh mV	pH	cond. umho/ cm ²	
		Top cm	Base cm				
46.01	330	1	15	360	7.40	680	91
46.02	330	15	30	350	7.50	465	92
46.06	330	76	91	340	7.60	475	93
47.01	330	1	15	345	7.40	245	94
47.03	330	30	45	270	9.10	55	95
55.01	430	1	15	305	9.20	65	96
55.03	430	30	45	330	7.70	255	97
55.05	430	56	68	335	7.70	250	98
70.01	130	1	10	880	2.80	3260	99
70.02	130	10	20	860	2.50	3880	100
70.04	130	85	100	315	3.40	3280	101
70.07	130	240	250	430	2.50	4570	102
70.10	130	385	400	340	3.30	2670	103
70.14	130	570	580	385	4.00	3050	104
70.17	130	620	630	320	3.10	3450	105
70.18	130	630	640	370	3.00	3350	106
70.19	230	640	650	395	3.60	1310	107
70.20	230	650	660	340	3.80	1230	108
70.21	230	660	670	295	3.80	1190	109
70.23	230	740	750	415	4.90	1990	110
71.01	130	1	10	275	10.60	2940	111
71.02	130	10	25	280	9.80	1050	112
71.04	130	85	100	300	10.00	985	113
71.07	130	140	150	290	8.40	1000	114
71.10	130	335	350	320	3.40	3420	115
71.13	130	460	470	370	3.20	3370	116
71.14	130	470	480	410	3.00	4020	117
71.15	230	480	490	520	3.60	1990	118
71.16	230	490	500	305	4.00	2250	119
71.17	230	520	530	295	3.10	2380	120
71.18	230	530	540	315	4.30	1990	121
74.01	130	1	10	350	10.10	3020	122
74.02	130	10	20	345	10.10	1550	123
74.04	130	40	50	305	8.50	3420	124
74.07	130	135	150	390	4.90	3590	125
74.10	130	208	215	410	6.00	3550	126
74.12	130	223	233	325	5.80	3190	127
74.13	130	233	240	305	7.20	3610	128
74.14	230	240	250	275	8.40	1355	129
74.15	230	250	260	375	5.20	2090	130
74.16	230	260	270	275	6.30	1895	131
74.18	230	290	300	265	5.00	1715	132
74.20	230	340	350	345	6.90	1415	133
74.23	230	414	420	355	7.10	670	134
74.25	230	435	450	285	8.40	1330	135

TABLE 3 (continuation) Page 14

As us/s	Al us/s	As us/s	Ba us/s	Ca us/s	
-1.00E+000	8.00E+000	9.20E+000	8.00E-001	1.10E+003	91
-1.00E+000	7.20E+000	2.40E+000	6.00E-001	1.00E+003	92
-1.00E+000	5.40E+000	-1.00E+000	4.00E-001	8.00E+002	93
-1.00E+000	-2.00E-001	1.40E+000	6.00E-001	4.80E+002	94
-1.00E+000	2.28E+001	-1.00E+000	1.14E+003	4.00E+002	95
-1.00E+000	-2.00E-001	-1.00E+000	1.56E+001	3.20E+002	96
-1.00E+000	8.00E-001	-1.00E+000	1.11E+002	6.00E+002	97
-1.00E+000	4.00E-001	-1.00E+000	9.60E+001	6.20E+002	98
-2.48E+000	5.45E+002	-2.48E+000	2.77E+002	1.83E+004	99
-2.43E+000	8.98E+002	3.79E+001	3.11E+002	1.75E+004	100
-2.27E+000	5.45E+002	1.68E+001	3.27E+002	1.52E+004	101
-2.34E+000	7.48E+002	1.26E+001	9.35E+001	1.68E+004	102
-1.98E+000	9.92E+001	3.97E+000	2.38E+002	1.33E+004	103
-2.45E+000	2.21E+002	4.90E+000	5.74E+002	1.72E+004	104
-2.48E+000	7.18E+002	1.39E+001	2.23E+002	1.25E+004	105
-2.34E+000	7.94E+002	3.74E+000	2.62E+002	1.03E+004	106
-2.34E+000	9.35E+001	2.80E+000	4.67E+002	2.34E+003	107
-2.31E+000	7.27E+001	4.63E+000	2.41E+002	2.45E+003	108
-1.89E+000	8.11E+001	6.06E+000	2.51E+002	2.08E+003	109
-2.36E+000	6.75E+001	-2.36E+000	4.72E+001	9.20E+003	110
-1.01E+000	5.77E+002	1.01E+002	1.15E+002	4.05E+001	111
-1.98E+000	2.78E+002	1.98E+002	3.01E+002	7.94E+001	112
-2.34E+000	1.87E+001	1.02E+002	2.66E+002	9.35E+001	113
-2.19E+000	1.32E+001	8.33E+000	4.39E+002	2.19E+003	114
-2.40E+000	1.20E+002	3.85E+000	3.65E+002	1.42E+004	115
-2.34E+000	3.04E+002	2.80E+000	4.67E+001	1.68E+004	116
-1.95E+000	5.27E+002	4.69E+000	1.56E+000	8.79E+003	117
-1.88E+000	1.32E+002	4.51E+000	1.47E+001	4.32E+003	118
-2.19E+000	1.75E+002	3.95E+000	2.72E+002	8.46E+003	119
-1.97E+000	2.95E+002	-1.97E+000	4.33E+001	1.12E+004	120
-2.34E+000	2.10E+002	-2.34E+000	1.07E+002	1.05E+004	121
-2.38E+000	6.81E+001	2.38E+002	2.19E+002	9.52E+001	122
-2.48E+000	1.24E+002	1.15E+002	3.32E+002	9.90E+001	123
-2.50E+000	1.50E+000	1.75E+001	5.85E+002	3.70E+002	124
-2.03E+000	1.71E+001	2.68E+001	1.18E+002	1.32E+004	125
-1.95E+000	7.42E+000	1.17E+002	2.42E+002	1.19E+004	126
-2.43E+000	7.77E+000	1.46E+002	2.43E+002	7.04E+003	127
-2.12E+000	1.10E+001	1.27E+002	2.97E+002	7.84E+003	128
-2.38E+000	3.19E+001	9.14E+001	1.95E+001	2.62E+003	129
-2.31E+000	9.72E+000	6.48E+001	3.24E+002	9.31E+003	130
-2.50E+000	1.05E+001	4.50E+000	2.25E+002	8.50E+003	131
-2.43E+000	1.46E+001	-2.43E+000	7.77E+001	1.07E+004	132
-2.07E+000	3.72E+000	-2.07E+000	4.96E+001	3.10E+003	133
-2.29E+000	1.38E+000	-2.29E+000	3.44E+001	7.80E+002	134
-1.00E+000	8.03E-001	-1.00E+000	1.20E+001	8.03E+002	135

TABLE 3 (continuation) page 15

Cd us/s	Cl us/s	Co us/s	Cr us/s	Cu us/s	
-2.00E-001	1.28E+002	-4.00E-001	-1.00E+000	0.00E+000	91
-2.00E-001	1.32E+002	-4.00E-001	-1.00E+000	0.00E+000	92
-2.00E-001	1.22E+002	-4.00E-001	-1.00E+000	0.00E+000	93
-2.00E-001	1.35E+002	-4.00E-001	-1.00E+000	0.00E+000	94
-2.00E-001	6.99E+001	4.00E+000	-1.00E+000	0.00E+000	95
-2.00E-001	1.41E+002	-4.00E-001	-1.00E+000	0.00E+000	96
-2.00E-001	1.13E+002	-4.00E-001	-1.00E+000	0.00E+000	97
-2.00E-001	1.17E+002	-4.00E-001	-1.00E+000	0.00E+000	98
9.90E-001	1.70E+002	5.20E+001	4.46E+000	0.00E+000	99
1.94E+000	2.06E+002	9.71E+001	1.41E+001	0.00E+000	100
1.36E+000	3.02E+002	7.73E+001	-2.27E+000	0.00E+000	101
1.40E+000	2.69E+002	1.94E+002	9.35E+000	0.00E+000	102
1.19E+000	1.62E+002	3.97E+001	-1.98E+000	0.00E+000	103
1.47E+000	2.86E+002	9.07E+001	-2.45E+000	0.00E+000	104
3.96E+000	3.72E+002	1.01E+002	-2.48E+000	0.00E+000	105
6.54E+000	2.99E+002	1.03E+002	-2.34E+000	0.00E+000	106
4.67E-001	2.09E+002	1.07E+001	-2.34E+000	0.00E+000	107
4.63E-001	1.55E+002	9.26E+000	-2.31E+000	0.00E+000	108
7.58E-001	1.30E+002	8.71E+000	-1.89E+000	0.00E+000	109
9.43E-001	2.19E+002	8.02E+000	-2.36E+000	0.00E+000	110
-2.02E-001	5.20E+002	5.26E+000	1.21E+000	0.00E+000	111
-3.97E-001	3.37E+002	1.19E+000	-1.98E+000	0.00E+000	112
-4.67E-001	3.09E+002	1.87E+000	-2.34E+000	0.00E+000	113
-4.39E-001	2.40E+002	-8.77E-001	-2.19E+000	0.00E+000	114
4.81E-001	3.46E+002	8.65E+001	-2.40E+000	0.00E+000	115
1.87E+000	3.71E+002	9.11E+001	-2.34E+000	0.00E+000	116
2.73E+000	3.48E+002	8.98E+001	-1.95E+000	0.00E+000	117
3.76E-001	1.59E+002	1.17E+001	-1.88E+000	0.00E+000	118
4.39E-001	1.67E+002	1.27E+001	-2.19E+000	0.00E+000	119
7.87E-001	1.67E+002	1.02E+001	-1.97E+000	0.00E+000	120
4.67E-001	1.89E+002	1.07E+001	-2.34E+000	0.00E+000	121
-4.76E-001	7.39E+002	3.81E+000	-2.38E+000	0.00E+000	122
-4.95E-001	5.87E+002	-9.90E-001	-2.48E+000	0.00E+000	123
-5.00E-001	1.54E+002	-1.00E+000	-2.50E+000	0.00E+000	124
-4.07E-001	2.09E+002	1.18E+001	-2.03E+000	0.00E+000	125
-3.91E-001	2.26E+002	4.30E+000	-1.95E+000	0.00E+000	126
-4.85E-001	3.10E+002	-9.71E-001	-2.43E+000	0.00E+000	127
-4.24E-001	2.43E+002	5.93E+000	-2.12E+000	0.00E+000	128
-4.76E-001	1.39E+002	-9.52E-001	-2.38E+000	0.00E+000	129
-4.63E-001	1.77E+002	-9.26E-001	-2.31E+000	0.00E+000	130
-5.00E-001	1.39E+002	-1.00E+000	-2.50E+000	0.00E+000	131
-4.85E-001	1.90E+002	-9.71E-001	-2.43E+000	0.00E+000	132
-4.13E-001	1.57E+002	-8.26E-001	-2.07E+000	0.00E+000	133
-4.59E-001	2.71E+002	-9.17E-001	-2.29E+000	0.00E+000	134
-2.01E-001	9.64E+001	-4.02E-001	-1.00E+000	0.00E+000	135

TABLE 3 (continuation) Page 16

Fe us/s	K us/s	Mg us/s	Mn us/s	Mo us/s	
-2.00E+000	4.80E+001	7.20E+001	-2.00E+000	8.00E-001	91
-2.00E+000	5.30E+001	1.28E+002	-2.00E+000	8.00E-001	92
-2.00E+000	1.60E+001	8.40E+001	-2.00E+000	4.00E-001	93
-2.00E+000	5.10E+001	2.40E+000	-2.00E+000	-4.00E-001	94
2.60E+000	1.50E+001	4.00E+001	1.74E+001	-4.00E-001	95
-2.00E+000	1.30E+001	3.60E+000	-2.00E+000	-4.00E-001	96
-2.00E+000	1.50E+001	8.00E+001	-2.00E+000	-4.00E-001	97
-2.00E+000	1.70E+001	8.80E+001	-2.00E+000	-4.00E-001	98
6.09E+002	2.97E+001	9.90E+002	2.43E+001	-9.90E-001	99
2.74E+003	3.64E+001	1.89E+003	4.42E+001	-9.71E-001	100
2.16E+002	7.73E+001	2.77E+003	8.18E+001	-9.09E-001	101
1.63E+003	1.05E+002	2.80E+003	4.39E+001	1.17E+001	102
1.09E+002	2.58E+001	1.44E+003	1.51E+001	1.19E+000	103
3.58E+001	2.45E+002	2.70E+003	5.88E+001	1.47E+000	104
9.90E+001	2.52E+002	2.67E+003	1.44E+002	1.98E+000	105
1.29E+002	2.10E+002	2.43E+003	1.87E+002	1.87E+000	106
1.40E+001	5.61E+001	1.78E+002	1.73E+001	4.21E+000	107
1.44E+001	5.56E+001	1.57E+002	1.90E+001	4.17E+000	108
9.47E+000	6.44E+001	1.52E+002	2.01E+001	1.14E+000	109
-4.72E+000	2.83E+001	1.42E+002	2.83E+001	-9.43E-001	110
1.16E+002	3.81E+002	8.50E+001	-2.02E+000	1.34E+002	111
2.42E+001	5.99E+001	-1.98E+001	-3.97E+000	2.90E+001	112
4.11E+001	4.67E+001	-2.34E+001	-4.67E+000	2.48E+001	113
-4.39E+000	2.19E+001	-2.19E+001	-4.39E+000	1.32E+000	114
6.25E+001	2.45E+002	1.97E+003	2.55E+001	1.92E+000	115
8.18E+001	4.02E+002	3.36E+003	8.18E+001	1.87E+000	116
8.79E+001	2.58E+002	2.89E+003	1.27E+002	1.95E+000	117
2.37E+001	8.27E+001	4.51E+002	3.38E+001	1.13E+000	118
2.50E+001	1.12E+002	4.25E+002	3.51E+001	-8.77E-001	119
1.65E+001	1.97E+001	3.54E+002	3.46E+001	-7.87E-001	120
1.73E+001	2.34E+001	2.99E+002	3.27E+001	-9.35E-001	121
7.14E+001	1.38E+002	-2.38E+001	-4.76E+000	2.33E+002	122
1.49E+001	1.68E+002	-2.48E+001	-4.95E+000	1.24E+002	123
-5.00E+000	2.50E+001	-2.50E+001	-5.00E+000	4.00E+000	124
-4.07E+000	4.88E+001	-2.03E+001	-4.07E+000	1.34E+001	125
-3.91E+000	6.45E+001	-1.95E+001	-3.91E+000	1.22E+002	126
-4.85E+000	5.83E+001	-2.43E+001	-4.85E+000	7.52E+001	127
-4.24E+000	6.99E+001	-2.12E+001	-4.24E+000	1.03E+002	128
-4.76E+000	4.52E+001	-2.38E+001	-4.76E+000	3.48E+001	129
-4.63E+000	4.63E+001	-2.31E+001	-4.63E+000	1.82E+002	130
-5.00E+000	4.25E+001	-2.50E+001	-5.00E+000	2.28E+002	131
-4.85E+000	2.43E+001	-2.43E+001	-4.85E+000	1.94E+001	132
-4.13E+000	2.07E+001	-2.07E+001	1.74E+001	-8.26E-001	133
-4.59E+000	-2.29E+001	-2.29E+001	-4.59E+000	-9.17E-001	134
-2.01E+000	2.21E+001	-1.00E+001	-2.01E+000	-4.02E-001	135

TABLE 3 (continuation) Page 17

Na us/s	Ni us/s	Pb us/s	Se us/s	Si us/s	
3.00E+001	8.00E-001	-1.00E+000	-2.00E-001	1.75E+002	91
1.05E+002	6.00E-001	-1.00E+000	-2.00E-001	1.64E+002	92
2.40E+002	6.00E-001	-1.00E+000	-2.00E-001	1.75E+002	93
1.56E+001	8.00E-001	-1.00E+000	-2.00E-001	1.85E+002	94
3.50E+001	4.20E+000	-1.00E+000	-2.00E-001	4.50E+001	95
-1.00E+001	4.00E-001	-1.00E+000	-2.00E-001	9.90E+001	96
1.50E+001	-4.00E-001	-1.00E+000	-2.00E-001	1.75E+002	97
2.50E+001	-4.00E-001	-1.00E+000	-2.00E-001	1.75E+002	98
-2.48E+001	1.24E+002	3.47E+000	-4.95E-001	4.46E+001	99
-2.43E+001	2.18E+002	6.31E+000	-4.85E-001	4.37E+001	100
1.02E+002	1.93E+002	4.45E+001	-4.55E-001	4.09E+001	101
1.64E+002	8.18E+002	7.57E+001	-4.67E-001	6.78E+001	102
5.04E+001	1.09E+002	8.73E+000	-3.97E-001	5.75E+001	103
4.90E+002	2.57E+002	4.46E+001	-4.90E-001	4.41E+001	104
5.05E+002	2.23E+002	2.97E+001	-4.95E-001	1.36E+002	105
4.56E+002	1.75E+002	2.80E+001	-4.67E-001	1.29E+002	106
4.67E+001	1.26E+001	4.67E+000	-4.67E-001	4.21E+001	107
3.94E+001	1.25E+001	3.24E+000	-4.63E-001	4.17E+001	108
4.17E+001	1.14E+001	2.65E+000	-3.79E-001	5.49E+001	109
5.19E+001	6.13E+000	3.30E+000	-4.72E-001	1.79E+001	110
4.19E+003	1.42E+001	9.51E+000	2.02E-001	1.17E+003	111
3.15E+003	9.52E+000	5.16E+000	-3.97E-001	2.50E+002	112
3.48E+003	8.41E+000	-2.34E+000	-4.67E-001	1.29E+002	113
4.82E+002	-8.77E-001	-2.19E+000	-4.39E-001	9.87E+001	114
6.25E+003	2.50E+002	2.98E+001	-4.81E-001	1.20E+002	115
2.01E+003	1.99E+002	1.64E+001	-4.67E-001	1.29E+002	116
1.05E+003	1.86E+002	1.25E+001	-3.91E-001	1.07E+002	117
1.41E+002	2.33E+001	-1.88E+000	-3.76E-001	5.45E+001	118
9.87E+001	2.15E+001	5.70E+000	-4.39E-001	6.36E+001	119
7.09E+001	1.61E+001	1.97E+000	-3.94E-001	2.56E+001	120
6.54E+001	7.94E+000	6.07E+000	-4.67E-001	1.78E+001	121
9.05E+003	1.00E+001	1.33E+001	4.76E-001	1.81E+002	122
8.17E+003	3.47E+000	6.44E+000	4.95E-001	9.80E+001	123
6.15E+002	-1.00E+000	-2.50E+000	-5.00E-001	1.90E+001	124
5.69E+003	2.32E+001	4.07E+000	-4.07E-001	1.02E+002	125
6.80E+003	4.30E+000	6.25E+000	-3.91E-001	1.19E+002	126
6.31E+003	1.46E+000	3.40E+000	-4.85E-001	1.33E+002	127
6.86E+003	7.20E+000	-2.12E+000	-4.24E-001	1.61E+002	128
1.05E+003	1.43E+000	3.33E+000	-4.76E-001	9.52E+001	129
1.55E+003	-9.26E-001	3.24E+000	-4.63E-001	9.26E+001	130
1.53E+003	-1.00E+000	2.50E+000	-5.00E-001	1.25E+002	131
7.28E+002	1.46E+000	3.40E+000	-4.85E-001	4.37E+001	132
5.99E+002	-8.26E-001	-2.07E+000	-4.13E-001	3.72E+001	133
7.48E+002	-9.17E-001	-2.29E+000	-4.59E-001	4.13E+001	134
7.93E+002	-4.02E-001	1.41E+000	-2.01E-001	1.31E+001	135

TABLE 3 (continuation) Page 18

SO4 us/g	Sr us/g	U us/g	V us/g	
1.22E+003	3.80E+000	4.40E+000	6.00E-001	91
1.22E+003	5.60E+000	4.40E+000	6.00E-001	92
7.60E+002	8.20E+000	8.20E-001	-4.00E-001	93
-2.00E+002	3.80E+000	7.60E-001	-4.00E-001	94
1.36E+003	2.00E+000	7.40E-001	-4.00E-001	95
-2.00E+002	2.60E+000	2.00E-002	-4.00E-001	96
-2.00E+002	8.20E+000	3.20E-002	-4.00E-001	97
2.80E+002	9.40E+000	5.60E-002	4.00E-001	98
5.84E+004	1.24E+001	4.31E+001	2.48E+000	99
7.04E+004	1.36E+001	8.93E+001	5.34E+000	100
5.68E+004	2.64E+001	2.18E+001	2.05E+001	101
6.31E+004	2.20E+001	1.50E+000	3.97E+001	102
4.11E+004	5.48E+001	9.52E+000	3.17E+000	103
5.56E+004	6.67E+001	1.03E+001	1.47E+000	104
4.95E+004	6.83E+001	9.90E+000	9.90E+000	105
4.67E+004	8.69E+001	1.68E+001	1.40E+001	106
7.57E+003	8.88E+000	1.54E+000	2.34E+000	107
7.78E+003	9.26E+000	2.04E+000	1.85E+000	108
7.58E+003	8.33E+000	2.46E+000	1.52E+000	109
8.25E+003	2.22E+001	3.87E+000	1.89E+000	110
1.78E+003	6.07E-001	1.70E+002	2.43E+000	111
2.38E+003	1.19E+000	4.44E+001	2.38E+000	112
9.81E+002	1.40E+000	6.54E+001	2.34E+000	113
6.01E+003	2.19E+000	2.46E+000	-8.77E-001	114
4.57E+004	8.37E+001	1.13E+001	5.29E+000	115
5.49E+004	1.12E+002	1.29E+001	6.07E+000	116
4.39E+004	7.34E+001	6.88E+000	1.48E+001	117
1.41E+004	1.73E+001	1.95E+000	1.13E+000	118
1.84E+004	2.85E+001	2.98E+000	8.77E-001	119
2.95E+004	2.76E+001	3.62E+000	7.87E+000	120
3.22E+004	2.71E+001	2.80E+000	6.07E+000	121
7.62E+003	1.43E+000	1.37E+003	5.71E+000	122
4.46E+003	1.49E+000	5.35E+002	3.96E+000	123
-5.00E+002	1.50E+000	1.00E+000	-1.00E+000	124
4.35E+003	1.06E+002	8.13E-001	4.47E+000	125
4.02E+003	8.40E+001	1.56E-001	4.69E+000	126
3.02E+004	6.41E+001	5.34E-002	2.43E+000	127
2.75E+004	7.75E+001	5.93E-002	5.08E+000	128
9.52E+003	2.10E+001	1.10E-001	9.52E-001	129
2.55E+004	2.78E+001	5.56E-002	3.70E+000	130
1.85E+004	2.35E+001	4.00E-002	2.50E+000	131
2.52E+004	2.28E+001	1.17E+000	6.31E+000	132
7.81E+003	7.85E+000	1.57E+000	-8.26E-001	133
3.03E+003	4.59E+000	1.61E+000	-9.17E-001	134
3.21E+003	5.02E+000	2.41E-001	-4.02E-001	135

TABLE 3. (continuation) Page 19

Site & Sample Number	Sam- ple Type	Sample		Eh mV	PH	cond. umho/ cm ²	
		Top cm	Base cm				
74.27	230	490	500	300	10.40	1850	136
76.01	130	1	10	370	10.30	1450	137
76.03	130	20	26	285	7.10	2250	138
76.05	130	32	45	430	3.50	2990	139
76.07	130	140	150	430	3.00	3120	140
76.10	130	290	300	390	4.00	3540	141
76.14	130	415	425	435	3.20	3970	142
76.15	130	425	435	390	3.20	3510	143
76.16	230	435	440	315	3.80	2170	144
76.17	230	440	450	280	4.50	1440	145
76.19	230	490	500	350	4.10	1760	146
77.01	130	1	10	330	3.00	2760	147
77.02	130	10	20	390	3.80	2030	148
77.04	130	30	38	420	3.30	2070	149
77.07	130	75	90	420	4.10	1950	150
77.11	130	265	272	560	2.90	3390	151
77.14	130	340	350	460	3.70	2350	152
77.17	230	440	450	305	4.20	2180	153
77.19	230	540	550	320	3.70	2220	154
77.24	230	690	700	370	2.90	3350	155
77.28	230	820	830	440	3.10	2840	156
77.29	230	830	840	280	3.00	3550	157
77.30	230	840	850	330	6.10	2100	158
77.31	230	860	870	320	5.30	1960	159

TABLE 3 (continuation) page 20

As ug/s	Al ug/s	As ug/s	Ba ug/s	Ca ug/s	
-1.01E+000	2.89E+001	6.03E+001	1.21E+001	6.48E+001	136
-2.36E+000	3.30E+000	4.20E+001	1.89E+001	4.53E+002	137
-2.48E+000	5.45E+000	4.80E+001	2.23E+001	4.55E+003	138
-2.45E+000	4.90E+002	1.03E+001	2.55E+001	1.76E+004	139
-2.45E+000	1.15E+003	2.94E+000	2.21E+001	1.50E+004	140
-2.29E+000	5.28E+002	2.75E+000	2.29E+001	1.40E+004	141
-2.48E+000	5.00E+002	4.95E+000	7.92E+000	8.42E+003	142
-2.48E+000	4.70E+002	3.47E+000	1.98E+000	6.19E+003	143
-2.34E+000	1.07E+002	-2.34E+000	2.80E+000	8.64E+003	144
-1.85E+000	2.63E+001	-1.85E+000	1.11E+000	2.41E+003	145
-2.03E+000	4.07E+001	-2.03E+000	2.03E+000	3.25E+003	146
-2.08E+000	3.54E+002	-2.08E+000	1.25E+000	1.60E+004	147
-2.08E+000	2.96E+001	2.50E+000	8.33E-001	1.62E+004	148
2.73E+000	1.76E+002	-1.95E+000	1.56E+000	1.56E+004	149
-2.29E+000	1.15E+002	3.67E+000	1.83E+000	1.79E+004	150
-2.34E+000	3.74E+002	3.46E+001	2.80E+000	1.73E+004	151
-2.34E+000	1.40E+002	-2.34E+000	2.80E+000	1.82E+004	152
-2.25E+000	1.80E+001	-2.25E+000	1.35E+000	1.49E+004	153
-2.43E+000	4.85E+001	2.91E+000	1.46E+000	9.22E+003	154
-2.43E+000	1.21E+003	3.40E+000	2.91E+000	1.77E+004	155
-2.43E+000	7.52E+002	1.65E+001	2.43E+000	1.50E+004	156
-2.03E+000	7.32E+002	1.18E+001	4.47E+000	1.20E+004	157
-1.87E+000	4.85E+000	-1.87E+000	1.12E+000	8.02E+003	158
-2.45E+000	3.92E+000	-2.45E+000	9.80E-001	8.09E+003	159

TABLE 3 (continuation) page 21

Cd ug/s	Cl ug/s	Co ug/s	Cr ug/s	Cu ug/s	
-2.02E-001	2.66E+002	-4.05E-001	-1.01E+000	0.00E+000	136
-4.72E-001	3.61E+002	-9.43E-001	-2.36E+000	0.00E+000	137
-4.95E-001	4.64E+002	-9.90E-001	-2.48E+000	0.00E+000	138
9.80E-001	3.23E+002	9.07E+001	-2.45E+000	0.00E+000	139
4.90E+000	3.00E+002	9.31E+001	-2.45E+000	0.00E+000	140
4.59E+000	2.82E+002	1.06E+002	-2.29E+000	0.00E+000	141
4.46E+000	3.15E+002	1.01E+002	-2.48E+000	0.00E+000	142
2.97E+000	3.34E+002	7.43E+001	-2.48E+000	0.00E+000	143
-4.67E-001	1.56E+002	1.12E+001	-2.34E+000	0.00E+000	144
-3.70E-001	1.13E+002	6.30E+000	-1.85E+000	0.00E+000	145
-4.07E-001	1.33E+002	6.91E+000	-2.03E+000	0.00E+000	146
-4.17E-001	1.22E+002	1.88E+001	2.08E+000	0.00E+000	147
-4.17E-001	1.15E+002	-8.33E-001	-2.08E+000	0.00E+000	148
-3.91E-001	8.65E+001	5.47E+000	-1.95E+000	0.00E+000	149
4.59E-001	1.17E+002	5.73E+001	-2.29E+000	0.00E+000	150
9.35E-001	2.07E+002	1.38E+002	-2.34E+000	0.00E+000	151
-4.67E-001	1.59E+002	3.36E+001	-2.34E+000	0.00E+000	152
-4.50E-001	1.15E+002	1.44E+001	-2.25E+000	0.00E+000	153
-4.85E-001	2.36E+002	2.91E+001	-2.43E+000	0.00E+000	154
1.17E+001	2.85E+002	1.04E+002	-2.43E+000	0.00E+000	155
6.31E+000	2.10E+002	1.36E+002	-2.43E+000	0.00E+000	156
6.10E+000	1.68E+002	1.04E+002	-2.03E+000	0.00E+000	157
7.46E-001	1.69E+002	4.10E+000	-1.87E+000	0.00E+000	158
4.90E-001	1.72E+002	-9.80E-001	-2.45E+000	0.00E+000	159

TABLE 3 (continuation) page 22

Fe ug/g	K ug/g	Mg ug/g	Mn ug/g	Mo ug/g	
8.50E+000	5.16E+001	-1.01E+001	-2.02E+000	7.59E+001	136
-4.72E+000	1.37E+002	9.06E+002	-4.72E+000	1.89E+001	137
-4.95E+000	1.56E+002	1.93E+003	-4.95E+000	1.98E+001	138
2.84E+002	7.40E+001	1.41E+003	1.18E+002	1.47E+000	139
9.80E+001	1.74E+002	1.61E+003	2.79E+002	1.23E+001	140
4.04E+001	2.66E+002	1.51E+003	5.73E+002	9.17E-001	141
5.45E+001	1.83E+002	8.42E+002	4.80E+002	9.90E-001	142
3.61E+001	1.19E+002	5.94E+002	3.02E+002	9.90E-001	143
7.94E+000	2.34E+001	9.35E+001	4.02E+001	-9.35E-001	144
-3.70E+000	1.85E+001	4.44E+001	2.26E+001	-7.41E-001	145
-4.07E+000	2.03E+001	4.88E+001	2.40E+001	-8.13E-001	146
1.98E+002	-2.08E+001	6.33E+002	1.71E+001	-8.33E-001	147
4.58E+000	-2.08E+001	3.33E+001	-4.17E+000	-8.33E-001	148
2.73E+001	-1.95E+001	1.72E+002	4.69E+000	-7.81E-001	149
2.66E+001	-2.29E+001	1.65E+002	5.05E+000	9.17E-001	150
3.15E+002	6.54E+001	2.62E+003	3.97E+001	9.35E-001	151
7.01E+001	-2.34E+001	4.58E+002	6.54E+000	-9.35E-001	152
1.44E+001	-2.25E+001	5.95E+002	9.91E+000	-9.01E-001	153
2.18E+001	4.61E+001	9.42E+002	1.89E+001	-9.71E-001	154
1.65E+001	7.33E+001	2.02E+003	4.30E+002	9.71E-001	155
3.52E+002	1.36E+002	7.67E+002	3.79E+002	9.71E-001	156
2.74E+002	1.14E+002	7.56E+002	4.37E+002	1.22E+000	157
-3.73E+000	2.80E+001	9.70E+001	2.57E+001	1.12E+000	158
-4.90E+000	4.17E+001	1.18E+002	3.28E+001	-9.80E-001	159

TABLE 3 (continuation) Page 23

Na ug/g	Ni ug/g	Pb ug/g	Se ug/g	Si ug/g	
2.81E+003	1.21E+000	-1.01E+000	-2.02E-001	6.17E+001	136
4.20E+003	-9.43E-001	-2.36E+000	-4.72E-001	3.07E+001	137
3.32E+003	-9.90E-001	-2.48E+000	-4.95E-001	5.84E+001	138
1.81E+003	2.21E+002	5.88E+001	-4.90E-001	5.78E+001	139
1.05E+003	1.08E+002	3.43E+000	-4.90E-001	1.23E+002	140
7.34E+002	1.19E+002	1.61E+001	-4.59E-001	1.26E+002	141
6.93E+002	8.42E+001	7.92E+000	-4.95E-001	1.24E+002	142
6.83E+002	4.95E+001	4.95E+000	-4.95E-001	1.36E+002	143
8.18E+001	1.12E+001	3.27E+000	-4.67E-001	6.78E+001	144
4.63E+001	4.81E+000	1.85E+000	-3.70E-001	4.37E+001	145
5.08E+001	5.28E+000	2.85E+000	-4.07E-001	3.66E+001	146
-2.08E+001	3.13E+001	6.67E+000	-4.17E-001	3.75E+001	147
-2.08E+001	3.75E+000	-2.08E+000	-4.17E-001	2.71E+001	148
-1.95E+001	1.17E+001	-1.95E+000	-3.91E-001	2.54E+001	149
-2.29E+001	1.70E+002	2.29E+000	-4.59E-001	2.98E+001	150
9.35E+001	4.91E+002	6.21E+001	-4.67E-001	4.21E+001	151
-2.34E+001	1.05E+002	-2.34E+000	-4.67E-001	3.04E+001	152
3.51E+001	2.93E+001	2.25E+001	-4.50E-001	2.93E+001	153
4.13E+001	8.50E+001	7.77E+000	-4.85E-001	3.16E+001	154
4.73E+002	1.33E+002	2.28E+001	-4.85E-001	8.25E+001	155
3.52E+002	2.23E+002	4.42E+001	-4.85E-001	4.37E+001	156
4.27E+002	1.83E+002	2.93E+001	-4.07E-001	9.15E+001	157
6.53E+001	1.87E+000	-1.87E+000	-3.73E-001	2.43E+001	158
8.58E+001	9.80E-001	2.45E+000	-4.90E-001	4.41E+001	159

TABLE 3 (continuation) Page 24

S04 ug/g	Sr ug/g	U ug/g	V ug/g	
2.17E+003	6.07E-001	2.59E+002	4.05E+000	136
1.17E+004	2.36E+000	3.54E+000	4.72E+000	137
2.39E+004	1.39E+001	3.96E+000	3.96E+000	138
5.98E+004	2.55E+001	8.04E+000	5.39E+000	139
5.64E+004	8.24E+001	1.12E+001	2.70E+001	140
5.05E+004	1.04E+002	1.19E+001	3.67E+000	141
3.76E+004	7.28E+001	1.58E+001	3.96E+000	142
3.17E+004	5.20E+001	1.29E+001	2.48E+000	143
2.49E+004	2.94E+001	1.64E+000	-9.35E-001	144
5.56E+003	9.26E+000	2.22E-001	-7.41E-001	145
8.13E+003	1.30E+001	1.02E+000	-8.13E-001	146
5.08E+004	1.04E+001	4.08E+001	1.67E+000	147
4.46E+004	1.04E+001	3.92E+000	2.08E+000	148
4.49E+004	1.72E+001	7.03E+000	1.95E+000	149
5.14E+004	1.56E+001	1.47E+001	2.29E+000	150
6.40E+004	2.48E+001	2.10E+001	1.87E+000	151
5.37E+004	1.31E+001	4.67E+000	1.87E+000	152
4.05E+004	5.23E+001	7.21E+000	2.25E+000	153
2.91E+004	4.47E+001	2.18E+001	9.71E-001	154
6.94E+004	1.15E+002	6.60E+001	1.14E+002	155
5.58E+004	8.25E+001	5.34E+000	4.13E+001	156
3.48E+004	8.74E+001	5.20E+001	3.78E+001	157
2.12E+004	2.69E+001	5.97E-001	1.12E+000	158
2.24E+004	1.67E+001	1.96E-001	9.80E-001	159

TABLE 4. Data for HCl extracts; TUBA CITY, ARIZONA

Site & Sample Number	Sam- ple Type	Sample Top cm	Sample Base cm	Eh mV	PH	
6.01	140	1	25	0	0.00	1
6.02	140	25	64	0	0.00	2
6.04	140	96	127	0	0.00	3
6.06	140	152	191	0	0.00	4
7.01	140	1	32	0	0.00	5
7.02	140	32	46	0	0.00	6
7.03	140	46	64	0	0.00	7
7.05	140	113	127	0	0.00	8
7.08	140	142	205	0	0.00	9
16.01	140	1	15	0	0.00	10
16.02	140	15	30	0	0.00	11
16.03	140	30	45	0	0.00	12
16.04	240	61	76	0	0.00	13
16.05	240	76	91	0	0.00	14
16.07	240	122	137	0	0.00	15
17.01	340	1	23	0	0.00	16
17.02	340	23	45	0	0.00	17
17.04	340	91	114	0	0.00	18
17.06	340	478	503	0	0.00	19
17.09	340	691	701	0	0.00	20
18.02	340	36	45	0	0.00	21
18.04	340	107	122	0	0.00	22
20.01	340	1	23	0	0.00	23
20.02	340	23	46	0	0.00	24
20.04	340	107	122	0	0.00	25
20.06	340	145	165	0	0.00	26
22.01	340	1	25	0	0.00	27
22.04	340	91	114	0	0.00	28
22.05	340	114	137	0	0.00	29
23.01	340	1	15	0	0.00	30
23.05	340	66	90	0	0.00	31
25.01	340	1	25	0	0.00	32
25.04	340	76	91	0	0.00	33
26.01	340	1	15	0	0.00	34
26.04	340	45	60	0	0.00	35
26.06	340	76	91	0	0.00	36
27.01	340	1	25	0	0.00	37
27.04	340	61	81	0	0.00	38
27.06	340	107	109	0	0.00	39
27.08	340	120	127	0	0.00	40
28.01	440	1	10	0	0.00	41
28.05	440	61	91	0	0.00	42
30.01	340	1	15	0	0.00	43
30.05	340	76	91	0	0.00	44
31.01	340	1	23	0	0.00	45

NOTE: Zero value indicates no determination was made.

Negative sign indicates values less than the detection limits.

TABLE 4 (continuation) Page 2

As us/s	Al us/s	As us/s	Ba us/s	Ca us/s	
0.00E+000	1.18E+003	2.37E+001	8.55E-001	5.88E+003	1
0.00E+000	3.29E+001	2.52E+001	1.10E+000	8.77E+002	2
0.00E+000	5.62E+001	3.17E+001	5.62E-001	1.69E+003	3
0.00E+000	9.49E+001	-1.05E+000	8.44E+000	3.76E+004	4
0.00E+000	1.23E+002	2.60E+001	-4.48E-001	2.47E+003	5
0.00E+000	2.82E+001	2.79E+001	2.07E+001	3.52E+002	6
0.00E+000	2.82E+003	2.82E+001	-4.78E-001	1.38E+004	7
0.00E+000	3.17E+002	5.37E+000	-4.88E-001	1.17E+004	8
0.00E+000	1.30E+003	1.58E+000	-4.50E-001	8.33E+003	9
0.00E+000	4.40E+002	1.37E+002	-7.04E-001	6.51E+003	10
0.00E+000	3.23E+002	1.19E+002	-4.98E-001	4.60E+003	11
0.00E+000	1.79E+002	1.55E+002	-6.21E-001	5.90E+003	12
0.00E+000	6.80E+002	7.46E+001	-4.39E-001	1.54E+003	13
0.00E+000	3.81E+002	-1.25E+000	-5.00E-001	6.50E+003	14
0.00E+000	2.50E+002	-1.25E+000	9.95E+001	3.58E+004	15
0.00E+000	1.08E+002	1.83E+000	3.33E+001	5.02E+003	16
0.00E+000	3.84E+002	-1.02E+000	7.42E+001	1.99E+004	17
0.00E+000	4.57E+001	-1.20E+000	4.95E+001	2.93E+004	18
0.00E+000	9.38E+001	-1.56E+000	1.24E+002	5.00E+003	19
0.00E+000	1.03E+001	-1.03E+000	2.02E+001	8.26E+002	20
0.00E+000	1.47E+002	-1.13E+000	6.47E+001	1.78E+004	21
0.00E+000	8.16E+001	-1.02E+000	1.06E+002	4.16E+004	22
0.00E+000	1.51E+002	-1.12E+000	7.26E+001	2.03E+004	23
0.00E+000	1.43E+002	-1.24E+000	7.76E+001	2.09E+004	24
0.00E+000	1.02E+002	-1.20E+000	4.71E+001	2.04E+004	25
0.00E+000	1.17E+002	-1.02E+000	7.40E+001	1.92E+004	26
0.00E+000	2.39E+002	-1.04E+000	1.62E+001	1.58E+003	27
0.00E+000	1.16E+002	-1.01E+000	2.63E+001	1.01E+004	28
0.00E+000	9.77E+001	-1.03E+000	1.60E+001	5.43E+003	29
0.00E+000	7.92E+002	3.79E+001	2.14E+001	1.23E+003	30
0.00E+000	1.88E+002	-2.08E+000	3.75E+001	1.08E+004	31
0.00E+000	7.49E+002	-1.05E+000	3.00E+001	4.96E+003	32
0.00E+000	1.01E+002	-1.35E+000	2.11E+001	1.97E+003	33
0.00E+000	2.39E+002	-1.04E+000	1.08E+001	1.45E+003	34
0.00E+000	6.02E+002	-1.04E+000	2.41E+001	9.13E+003	35
0.00E+000	4.77E+002	-1.04E+000	2.70E+001	1.03E+004	36
0.00E+000	1.83E+002	-2.29E+000	7.16E+001	2.64E+004	37
0.00E+000	4.89E+002	-1.03E+000	2.92E+001	1.03E+004	38
0.00E+000	7.33E+002	-1.03E+000	3.76E+001	4.44E+003	39
0.00E+000	1.58E+002	-2.25E+000	1.99E+002	9.56E+004	40
0.00E+000	6.07E+002	-1.46E+000	6.73E+001	7.02E+003	41
0.00E+000	4.01E+001	-1.05E+000	2.05E+001	6.75E+002	42
0.00E+000	1.17E+002	2.16E+001	2.04E+001	1.61E+004	43
0.00E+000	7.47E+001	-1.04E+000	1.66E+001	3.01E+003	44
0.00E+000	1.78E+002	-1.05E+000	1.67E+001	2.51E+003	45

TABLE 4 (continuation) Page 3

Cd us/s	Cl us/s	Co us/s	Cr us/s	Cu us/s	
2.14E+000	0.00E+000	7.37E+001	1.07E+000	0.00E+000	1
-2.19E-001	0.00E+000	-4.39E-001	-1.10E+000	0.00E+000	2
-2.81E-001	0.00E+000	-5.62E-001	1.40E+000	0.00E+000	3
8.44E+000	0.00E+000	1.16E+001	-1.05E+000	0.00E+000	4
-2.24E-001	0.00E+000	-4.48E-001	-1.12E+000	0.00E+000	5
-2.35E-001	0.00E+000	-4.69E-001	-1.17E+000	0.00E+000	6
1.67E+000	0.00E+000	1.20E+001	8.13E+000	0.00E+000	7
9.76E-001	0.00E+000	3.66E+000	2.93E+000	0.00E+000	8
1.35E+000	0.00E+000	4.50E+000	1.73E+001	0.00E+000	9
7.04E-001	0.00E+000	2.82E+000	5.99E+000	0.00E+000	10
4.93E-001	0.00E+000	7.46E+000	2.24E+000	0.00E+000	11
3.11E-001	0.00E+000	1.55E+001	2.80E+000	0.00E+000	12
2.19E-001	0.00E+000	3.95E+000	1.97E+000	0.00E+000	13
1.50E+000	0.00E+000	1.38E+001	1.50E+000	0.00E+000	14
5.00E-001	0.00E+000	7.75E+000	-1.25E+000	0.00E+000	15
-2.28E-001	0.00E+000	1.14E+000	-1.14E+000	0.00E+000	16
4.10E-001	0.00E+000	3.69E+000	-1.02E+000	0.00E+000	17
2.40E-001	0.00E+000	3.61E+000	-1.20E+000	0.00E+000	18
-3.13E-001	0.00E+000	1.56E+000	-1.56E+000	0.00E+000	19
-2.07E-001	0.00E+000	3.10E+000	-1.03E+000	0.00E+000	20
2.26E-001	0.00E+000	1.81E+000	-1.13E+000	0.00E+000	21
6.12E-001	0.00E+000	4.49E+000	-1.02E+000	0.00E+000	22
2.24E-001	0.00E+000	3.36E+000	-1.12E+000	0.00E+000	23
2.49E-001	0.00E+000	2.74E+000	-1.24E+000	0.00E+000	24
2.40E-001	0.00E+000	2.40E+000	-1.20E+000	0.00E+000	25
2.03E-001	0.00E+000	3.66E+000	-1.02E+000	0.00E+000	26
-2.07E-001	0.00E+000	3.11E+000	-1.04E+000	0.00E+000	27
-2.02E-001	0.00E+000	4.45E+000	-1.01E+000	0.00E+000	28
-2.06E-001	0.00E+000	2.06E+000	-1.03E+000	0.00E+000	29
4.12E-001	0.00E+000	4.12E+000	2.47E+000	0.00E+000	30
-4.17E-001	0.00E+000	-8.33E-001	-2.08E+000	0.00E+000	31
-2.11E-001	0.00E+000	1.69E+000	3.38E+000	0.00E+000	32
-2.70E-001	0.00E+000	-5.41E-001	-1.35E+000	0.00E+000	33
-2.07E-001	0.00E+000	4.15E-001	-1.04E+000	0.00E+000	34
-2.07E-001	0.00E+000	2.07E+000	1.87E+000	0.00E+000	35
-2.07E-001	0.00E+000	1.66E+000	2.07E+000	0.00E+000	36
-4.59E-001	0.00E+000	4.59E+000	-2.29E+000	0.00E+000	37
-2.06E-001	0.00E+000	1.65E+000	1.85E+000	0.00E+000	38
2.07E-001	0.00E+000	3.72E+000	3.93E+000	0.00E+000	39
1.80E+000	0.00E+000	1.35E+001	-2.25E+000	0.00E+000	40
2.92E-001	0.00E+000	5.85E-001	-1.46E+000	0.00E+000	41
-2.11E-001	0.00E+000	-4.22E-001	-1.05E+000	0.00E+000	42
1.22E+000	0.00E+000	3.37E+001	1.63E+000	0.00E+000	43
-2.07E-001	0.00E+000	-4.15E-001	-1.04E+000	0.00E+000	44
2.09E-001	0.00E+000	4.18E+000	-1.05E+000	0.00E+000	45

TABLE 4 (continuation) Page 4

Fe us/s	K us/s	Ms us/s	Mn us/s	Mo us/s	
2.88E+001	5.34E+001	3.21E+002	3.42E+002	2.14E+000	1
4.93E+001	2.19E+001	-1.10E+001	-2.19E+000	5.70E+000	2
2.81E+002	2.30E+001	-1.40E+001	-2.81E+000	8.43E+000	3
3.38E+001	7.91E+001	3.67E+002	1.16E+002	7.81E+000	4
7.85E+001	2.65E+001	-1.12E+001	2.69E+000	2.69E+000	5
6.46E+001	1.92E+001	-1.17E+001	-2.35E+000	2.35E+000	6
5.80E+002	3.25E+001	1.44E+002	3.11E+001	3.11E+000	7
2.24E+002	2.88E+001	1.17E+002	3.29E+001	1.46E+000	8
4.34E+002	2.66E+001	9.46E+001	1.69E+001	1.80E+000	9
1.00E+003	-1.76E+001	-1.76E+001	-3.52E+000	2.11E+000	10
2.49E+002	3.61E+001	1.64E+002	4.98E+000	2.49E+000	11
3.03E+002	2.55E+001	1.55E+001	-3.11E+000	2.64E+001	12
3.95E+001	-1.10E+001	-1.10E+001	2.63E+000	8.77E-001	13
2.50E+002	2.95E+001	1.75E+002	3.50E+001	7.50E-001	14
4.38E+001	1.00E+002	6.25E+002	2.20E+002	9.75E+000	15
9.82E+000	5.14E+001	2.69E+002	2.97E+001	-4.57E-001	16
1.43E+001	1.18E+002	4.92E+002	8.50E+001	1.84E+000	17
2.40E+001	4.21E+001	3.46E+002	9.74E+001	5.77E+000	18
3.13E+000	5.31E+001	2.69E+002	2.03E+001	-6.25E-001	19
5.58E+000	1.20E+001	2.48E+002	1.24E+001	-4.13E-001	20
4.52E+000	5.66E+001	2.13E+002	3.28E+001	1.36E+000	21
2.24E+001	8.16E+001	2.49E+002	5.51E+001	6.73E+000	22
1.57E+001	1.12E+002	5.38E+002	5.04E+001	2.24E+000	23
1.92E+001	7.46E+001	2.34E+002	6.34E+001	7.46E-001	24
2.07E+001	4.81E+001	2.36E+002	9.01E+001	4.81E-001	25
2.85E+001	7.11E+001	2.32E+002	1.03E+002	6.10E-001	26
8.82E+001	1.09E+002	4.27E+002	6.95E+001	-4.15E-001	27
4.45E+001	4.05E+001	1.78E+002	8.91E+001	-4.05E-001	28
6.79E+000	2.57E+001	1.28E+002	3.19E+001	-4.12E-001	29
4.12E+002	1.90E+002	8.23E+002	3.27E+002	-4.12E-001	30
1.38E+001	7.08E+001	2.25E+002	5.00E+001	-8.33E-001	31
5.70E+002	1.85E+002	7.59E+002	5.70E+001	-4.22E-001	32
5.41E+000	4.73E+001	1.62E+002	1.62E+001	-5.41E-001	33
3.73E+001	6.64E+001	2.90E+002	3.73E+001	-4.15E-001	34
3.11E+002	1.66E+002	4.98E+002	6.12E+001	4.15E-001	35
3.01E+002	1.30E+002	4.77E+002	7.37E+001	-4.15E-001	36
5.96E+001	7.80E+001	3.21E+002	1.95E+002	-9.17E-001	37
2.08E+002	1.08E+002	4.12E+002	9.88E+001	-4.12E-001	38
6.30E+002	1.60E+002	4.88E+002	1.94E+002	-4.13E-001	39
1.46E+002	2.30E+002	7.66E+002	2.79E+002	4.50E+000	40
9.88E+001	2.27E+002	7.31E+002	2.78E+001	5.85E-001	41
7.81E+000	3.59E+001	8.86E+001	6.33E+000	-4.22E-001	42
2.00E+002	1.53E+002	2.55E+003	7.35E+001	4.08E-001	43
3.53E+000	2.49E+001	1.24E+002	2.07E+001	-4.15E-001	44
7.53E+001	8.37E+001	4.18E+002	5.33E+001	-4.18E-001	45

TABLE 4 (continuation) page 5

Na us/s	Ni us/s	Pb us/s	Se us/s	Si us/s	
3.21E+001	1.92E+002	-1.07E+000	-2.14E-001	7.48E+002	1
-1.10E+001	1.10E+000	-1.10E+000	-2.19E-001	6.58E+001	2
-1.40E+001	5.62E-001	-1.40E+000	-2.81E-001	7.02E+001	3
1.27E+001	2.74E+001	2.11E+000	-2.11E-001	7.91E+001	4
-1.12E+001	1.57E+000	2.24E+000	-2.24E-001	9.64E+001	5
-1.17E+001	-4.69E-001	3.52E+000	-2.35E-001	5.87E+001	6
-1.20E+001	1.79E+001	7.18E+000	-2.39E-001	7.06E+002	7
-1.22E+001	7.07E+000	2.44E+000	-2.44E-001	2.32E+002	8
1.13E+001	1.13E+001	2.25E+000	-2.25E-001	8.39E+002	9
-1.76E+001	8.45E+000	-1.76E+000	-3.52E-001	7.04E+001	10
-1.24E+001	2.49E+001	-1.24E+000	-2.49E-001	4.98E+001	11
-1.55E+001	7.45E+001	3.11E+001	-3.11E-001	6.21E+001	12
-1.10E+001	1.32E+001	1.10E+000	-2.19E-001	2.01E+002	13
-1.25E+001	2.75E+001	-1.25E+000	-2.50E-001	1.45E+002	14
2.35E+001	3.13E+001	2.00E+000	-2.50E-001	2.19E+002	15
-1.14E+001	3.65E+000	2.97E+000	-2.28E-001	1.32E+002	16
1.48E+001	4.92E+000	1.64E+000	-2.05E-001	4.82E+002	17
2.40E+001	4.57E+000	2.40E+000	-2.40E-001	6.01E+001	18
2.63E+001	-6.25E-001	2.50E+000	-3.13E-001	2.31E+002	19
-1.03E+001	-4.13E-001	1.03E+000	-2.07E-001	4.13E+001	20
1.13E+001	2.71E+000	2.26E+000	-2.26E-001	1.24E+002	21
2.04E+001	7.35E+000	3.06E+000	-2.04E-001	1.07E+002	22
1.12E+001	3.59E+000	2.24E+000	-2.24E-001	1.40E+002	23
1.24E+001	2.99E+000	2.49E+000	-2.49E-001	1.74E+002	24
2.62E+001	3.37E+000	1.20E+000	-2.40E-001	1.20E+002	25
2.64E+001	2.85E+000	1.63E+000	-2.03E-001	1.42E+002	26
1.74E+001	7.47E+000	1.04E+000	-2.07E-001	3.99E+002	27
-1.01E+001	9.72E+000	1.01E+000	-2.02E-001	1.11E+002	28
-1.03E+001	7.82E+000	-1.03E+000	-2.06E-001	1.08E+002	29
2.67E+001	2.67E+001	3.09E+000	-2.06E-001	4.53E+002	30
-2.08E+001	2.92E+000	-2.08E+000	-4.17E-001	1.58E+002	31
5.27E+001	2.53E+000	1.69E+000	-2.11E-001	4.75E+002	32
-1.35E+001	1.89E+000	-1.35E+000	-2.70E-001	1.03E+002	33
-1.04E+001	1.45E+000	-1.04E+000	-2.07E-001	3.73E+002	34
-1.04E+001	2.49E+000	1.04E+000	-2.07E-001	4.56E+002	35
-1.04E+001	2.49E+000	1.66E+000	-2.07E-001	4.67E+002	36
-2.29E+001	6.42E+000	1.38E+001	-4.59E-001	1.74E+002	37
1.03E+001	2.88E+000	2.06E+000	-2.06E-001	4.53E+002	38
1.03E+001	3.93E+000	1.55E+001	-2.07E-001	4.29E+002	39
4.50E+001	2.16E+001	6.76E+000	-4.50E-001	2.25E+002	40
7.46E+002	2.05E+000	1.46E+000	-2.92E-001	3.73E+002	41
5.27E+001	-4.22E-001	1.05E+000	-2.11E-001	1.11E+002	42
1.65E+001	9.18E+001	7.65E+001	-2.04E-001	1.43E+002	43
-1.04E+001	2.49E+000	-1.04E+000	-2.07E-001	1.04E+002	44
7.53E+000	5.86E+000	6.28E+000	-2.09E-001	3.50E+002	45

TABLE 4 (continuation) Page 6

S04 us/s	Sr us/s	U us/s	V us/s	
1.07E+004	1.13E+001	1.03E+002	1.39E+002	1
1.47E+003	8.77E-001	1.23E+001	1.47E+001	2
3.31E+003	3.37E+000	2.81E+000	1.40E+001	3
4.49E+002	6.48E+001	2.36E+000	1.05E+001	4
5.00E+003	4.48E+000	1.70E+000	1.57E+000	5
-2.35E+002	3.05E+000	1.41E+000	1.17E+000	6
1.08E+004	1.91E+001	5.45E+001	7.18E+000	7
7.07E+003	1.78E+001	1.46E+001	1.22E+001	8
9.01E+003	1.35E+001	3.60E+001	2.46E+002	9
1.90E+004	4.58E+000	1.97E+001	9.01E+001	10
1.37E+004	8.71E+000	1.19E+002	2.99E+001	11
1.60E+004	6.21E+000	5.47E+001	8.63E+001	12
2.96E+003	2.19E+000	4.39E+001	1.27E+001	13
3.43E+003	8.75E+000	4.20E+001	1.25E+000	14
-2.50E+002	6.58E+001	5.60E+000	1.23E+001	15
-2.28E+002	1.71E+001	5.30E+000	2.74E+000	16
-2.05E+002	2.34E+001	6.56E-001	9.63E+000	17
-2.40E+002	3.80E+001	4.81E-001	1.18E+001	18
-3.13E+002	3.28E+001	5.00E-001	-6.25E-001	19
-2.07E+002	3.10E+000	4.13E-001	-4.13E-001	20
-2.26E+002	1.76E+001	4.52E-001	9.95E+000	21
-2.04E+002	6.39E+001	3.27E-001	1.04E+001	22
-2.24E+002	4.60E+001	3.59E-001	4.04E+000	23
-2.49E+002	4.43E+001	1.99E-001	5.22E+000	24
-2.40E+002	4.81E+001	1.92E-001	5.53E+000	25
-2.03E+002	4.27E+001	4.27E-002	4.88E+000	26
-2.07E+002	8.92E+000	1.93E-001	1.04E+000	27
-2.02E+002	2.23E+001	8.91E-002	4.05E-001	28
-2.06E+002	1.75E+001	1.65E-001	1.03E+000	29
-2.06E+002	1.71E+001	2.04E+001	2.67E+000	30
-4.17E+002	3.88E+001	3.17E-001	5.42E+000	31
-2.11E+002	2.00E+001	1.46E-001	4.22E+000	32
-2.70E+002	2.11E+001	5.95E-002	2.97E+000	33
-2.07E+002	9.34E+000	2.90E-001	1.24E+000	34
-2.07E+002	2.63E+001	6.02E-002	2.49E+000	35
-2.07E+002	3.28E+001	6.43E-002	2.07E+000	36
-4.59E+002	5.05E+001	5.50E+000	1.33E+001	37
-2.06E+002	2.43E+001	7.82E+000	2.06E+000	38
-2.07E+002	2.07E+001	5.17E+000	4.55E+000	39
-4.50E+002	1.55E+002	5.41E-001	2.30E+001	40
-2.92E+002	1.34E+002	2.05E-001	-5.85E-001	41
-2.11E+002	9.07E+000	2.74E-001	1.05E+000	42
-2.04E+002	1.53E+001	2.86E+001	7.55E+000	43
-2.07E+002	1.20E+001	4.98E-001	4.36E+000	44
-2.09E+002	1.13E+001	6.07E-001	1.67E+000	45

TABLE 4 (continuation) Page 7

Site & Sample Number	Sam- ple Type	Sample		Eh mV	PH	
		Top cm	Base cm			
31.06	340	120	137	0	0.00	46
32.01	340	1	25	0	0.00	47
32.06	340	120	137	0	0.00	48
34.01	440	1	15	0	0.00	49
34.03	440	35	45	0	0.00	50
35.01	440	1	15	0	0.00	51
35.06	440	91	107	0	0.00	52
36.01	440	1	23	0	0.00	53
36.05	440	76	91	0	0.00	54
38.01	340	1	15	0	0.00	55
38.06	340	76	91	0	0.00	56
39.01	340	1	18	0	0.00	57
39.03	340	46	91	0	0.00	58
40.01	140	1	15	0	0.00	59
40.02	140	15	30	0	0.00	60
40.03	140	30	45	0	0.00	61
40.04	140	45	56	0	0.00	62
40.05	140	56	64	0	0.00	63
40.06	240	64	79	0	0.00	64
40.07	240	79	91	0	0.00	65
40.09	240	107	122	0	0.00	66
40.11	240	152	168	0	0.00	67
40.13	240	193	208	0	0.00	68
41.01	140	1	20	0	0.00	69
41.02	140	20	30	0	0.00	70
41.04	140	60	76	0	0.00	71
41.06	140	274	290	0	0.00	72
41.07	140	396	411	0	0.00	73
41.08	140	457	472	0	0.00	74
41.09	140	518	533	0	0.00	75
43.01	440	1	18	0	0.00	76
43.05	440	122	137	0	0.00	77
45.01	340	1	15	0	0.00	78
45.03	340	31	45	0	0.00	79
45.06	340	123	137	0	0.00	80
45.08	340	323	340	0	0.00	81
45.10	340	366	378	0	0.00	82
46.01	340	1	15	0	0.00	83
46.02	340	15	30	0	0.00	84
46.06	340	76	91	0	0.00	85
47.01	340	1	15	0	0.00	86
47.03	340	30	45	0	0.00	87
55.01	440	1	15	0	0.00	88
55.03	440	30	45	0	0.00	89
55.05	440	56	68	0	0.00	90

TABLE 4 (continuation) Page 8

As ug/g	Al ug/g	As ug/g	Ba ug/g	Ca ug/g	
0.00E+000	2.12E+002	-1.05E+000	1.57E+002	2.45E+004	46
0.00E+000	1.88E+002	-1.04E+000	2.08E+001	3.02E+003	47
0.00E+000	2.85E+002	-2.48E+000	2.18E+002	5.42E+004	48
0.00E+000	1.76E+002	-1.30E+000	9.27E+001	1.88E+004	49
0.00E+000	1.02E+002	-1.02E+000	2.14E+002	4.15E+004	50
0.00E+000	6.28E+001	-1.05E+000	3.10E+001	3.24E+003	51
0.00E+000	3.96E+001	-1.04E+000	1.67E+001	2.40E+003	52
0.00E+000	5.94E+002	-1.02E+000	2.05E+001	4.30E+003	53
0.00E+000	5.17E+001	-1.03E+000	2.81E+001	4.65E+003	54
0.00E+000	7.11E+001	-1.02E+000	4.39E+001	4.57E+003	55
0.00E+000	4.29E+001	-1.19E+000	1.90E+001	4.05E+003	56
0.00E+000	4.75E+001	-1.03E+000	4.13E+000	1.24E+003	57
0.00E+000	9.64E+002	-1.02E+000	1.23E+002	1.93E+004	58
0.00E+000	4.25E+001	1.28E+002	2.50E+000	4.75E+003	59
0.00E+000	1.72E+001	1.25E+002	7.35E+000	5.27E+003	60
0.00E+000	1.41E+001	1.16E+002	1.41E+001	4.69E+003	61
0.00E+000	1.90E+001	1.22E+002	2.37E+000	4.50E+003	62
0.00E+000	4.35E+001	1.23E+002	4.83E-001	4.93E+003	63
0.00E+000	1.59E+003	1.55E+001	5.72E+000	2.12E+003	64
0.00E+000	9.60E+002	-1.04E+000	2.06E+002	6.74E+003	65
0.00E+000	8.68E+002	-1.03E+000	2.17E+002	5.48E+003	66
0.00E+000	9.41E+001	-1.34E+000	7.96E+001	1.10E+004	67
0.00E+000	4.29E+002	-1.02E+000	2.03E+002	4.12E+003	68
0.00E+000	9.01E+001	6.08E+000	5.63E+000	2.36E+003	69
0.00E+000	5.22E+002	-1.05E+000	8.44E+000	1.27E+003	70
0.00E+000	6.12E+001	-1.02E+000	2.04E+001	4.55E+004	71
0.00E+000	2.03E+000	-1.02E+000	2.03E+001	1.88E+004	72
0.00E+000	1.41E+002	-2.43E+000	2.18E+002	1.41E+004	73
0.00E+000	2.50E+002	-1.02E+000	8.16E+001	2.86E+003	74
0.00E+000	2.20E+002	-1.05E+000	1.53E+002	8.37E+003	75
0.00E+000	1.47E+002	1.91E+001	4.26E+001	9.85E+003	76
0.00E+000	1.52E+002	-2.17E+000	2.43E+002	3.48E+004	77
0.00E+000	2.11E+002	4.53E+000	6.17E+001	1.34E+004	78
0.00E+000	5.37E+002	-1.03E+000	5.62E+001	9.40E+003	79
0.00E+000	3.81E+002	-1.02E+000	7.07E+001	8.13E+003	80
0.00E+000	4.08E+002	-1.02E+000	7.14E+001	1.79E+004	81
0.00E+000	2.66E+001	-1.02E+000	3.38E+001	2.15E+003	82
0.00E+000	1.27E+002	1.81E+001	7.11E+001	1.42E+004	83
0.00E+000	9.22E+001	6.35E+000	5.84E+001	8.40E+003	84
0.00E+000	7.88E+001	-1.05E+000	3.47E+001	5.88E+003	85
0.00E+000	6.63E+002	1.22E+000	2.35E+001	3.57E+003	86
0.00E+000	6.93E+001	-2.48E+000	1.49E+001	1.24E+003	87
0.00E+000	6.56E+002	-1.03E+000	3.62E+001	5.37E+003	88
0.00E+000	1.66E+002	-1.04E+000	8.82E+001	1.55E+004	89
0.00E+000	2.46E+002	-1.05E+000	3.97E+001	1.36E+003	90

TABLE 4 (continuation) Page 9

Cd ug/g	Cl ug/g	Co ug/g	Cr ug/g	Cu ug/g	
4.22E-001	0.00E+000	3.16E+000	-1.05E+000	0.00E+000	46
-2.08E-001	0.00E+000	1.67E+000	-1.04E+000	0.00E+000	47
4.95E-001	0.00E+000	5.45E+000	-2.48E+000	0.00E+000	48
-2.60E-001	0.00E+000	3.91E+000	-1.30E+000	0.00E+000	49
8.16E-001	0.00E+000	4.08E+000	-1.02E+000	0.00E+000	50
-2.09E-001	0.00E+000	-4.18E-001	-1.05E+000	0.00E+000	51
-2.08E-001	0.00E+000	-4.17E-001	-1.04E+000	0.00E+000	52
-2.05E-001	0.00E+000	6.15E-001	2.46E+000	0.00E+000	53
-2.07E-001	0.00E+000	-4.13E-001	-1.03E+000	0.00E+000	54
-2.03E-001	0.00E+000	-4.07E-001	-1.02E+000	0.00E+000	55
4.76E-001	0.00E+000	-4.76E-001	-1.19E+000	0.00E+000	56
-2.07E-001	0.00E+000	-4.13E-001	-1.03E+000	0.00E+000	57
-2.04E-001	0.00E+000	3.67E+000	2.04E+000	0.00E+000	58
-2.50E-001	0.00E+000	-5.00E-001	4.75E+000	0.00E+000	59
-2.45E-001	0.00E+000	-4.90E-001	2.70E+000	0.00E+000	60
2.35E-001	0.00E+000	-4.69E-001	1.17E+000	0.00E+000	61
-2.37E-001	0.00E+000	-4.74E-001	2.13E+000	0.00E+000	62
-2.42E-001	0.00E+000	1.93E+000	2.90E+000	0.00E+000	63
8.47E-001	0.00E+000	2.22E+001	2.12E+001	0.00E+000	64
2.07E+000	0.00E+000	1.87E+001	2.49E+000	0.00E+000	65
-2.07E+000	0.00E+000	3.72E+000	4.55E+000	0.00E+000	66
-2.69E+000	0.00E+000	2.15E+000	-1.34E+000	0.00E+000	67
-2.04E+000	0.00E+000	3.06E+000	2.45E+000	0.00E+000	68
4.50E-001	0.00E+000	3.38E+000	1.13E+000	0.00E+000	69
1.69E+000	0.00E+000	2.74E+001	2.11E+000	0.00E+000	70
1.02E+000	0.00E+000	1.02E+001	1.22E+000	0.00E+000	71
-2.03E-001	0.00E+000	2.24E+000	-1.02E+000	0.00E+000	72
-4.85E-001	0.00E+000	-9.71E-001	-2.43E+000	0.00E+000	73
-2.04E-001	0.00E+000	-4.08E-001	-1.02E+000	0.00E+000	74
-2.09E-001	0.00E+000	1.05E+000	-1.05E+000	0.00E+000	75
7.58E-001	0.00E+000	2.27E+001	-9.47E-001	0.00E+000	76
-4.35E-001	0.00E+000	4.78E+000	-2.17E+000	0.00E+000	77
2.06E-001	0.00E+000	1.34E+001	1.85E+000	0.00E+000	78
-2.07E-001	0.00E+000	1.65E+000	1.65E+000	0.00E+000	79
-2.03E-001	0.00E+000	1.63E+000	3.86E+000	0.00E+000	80
-2.04E-001	0.00E+000	2.04E+000	1.63E+000	0.00E+000	81
-2.05E-001	0.00E+000	-4.10E-001	-1.02E+000	0.00E+000	82
2.03E-001	0.00E+000	1.02E+001	-1.02E+000	0.00E+000	83
-2.05E-001	0.00E+000	3.89E+000	-1.02E+000	0.00E+000	84
-2.10E-001	0.00E+000	-4.20E-001	-1.05E+000	0.00E+000	85
-2.04E-001	0.00E+000	1.02E+000	2.86E+000	0.00E+000	86
-4.95E-001	0.00E+000	-9.90E-001	-2.48E+000	0.00E+000	87
-2.07E-001	0.00E+000	1.03E+000	1.86E+000	0.00E+000	88
-2.07E-001	0.00E+000	1.66E+000	-1.04E+000	0.00E+000	89
-2.09E-001	0.00E+000	-4.18E-001	-1.05E+000	0.00E+000	90

TABLE 4 (continuation) Page 10

Fe us/s	K us/s	Mg us/s	Mn us/s	Mo us/s	
1.96E+001	6.86E+001	3.92E+002	8.44E+001	6.33E-001	46
8.33E+001	6.25E+001	3.00E+002	5.83E+001	-4.17E-001	47
4.11E+001	1.11E+002	3.86E+002	1.04E+002	1.98E+000	48
2.42E+001	9.38E+001	3.02E+002	5.60E+001	7.81E-001	49
3.27E+001	9.69E+001	3.10E+002	1.06E+002	6.53E+000	50
5.65E+000	3.66E+001	7.95E+001	2.41E+001	-4.18E-001	51
-2.08E+000	2.27E+001	7.50E+001	1.25E+001	-4.17E-001	52
5.64E+002	1.13E+002	6.15E+002	4.51E+001	-4.10E-001	53
-2.07E+000	2.58E+001	1.16E+002	2.38E+001	1.03E+000	54
-2.03E+000	6.10E+001	1.10E+002	2.54E+001	-4.07E-001	55
2.38E+000	1.67E+001	4.76E+001	9.52E+000	-4.76E-001	56
2.69E+000	3.62E+001	6.61E+001	2.38E+001	-4.13E-001	57
2.98E+002	1.79E+002	1.02E+003	5.92E+001	8.16E-001	58
8.63E+002	-1.25E+001	1.25E+001	-2.50E+000	2.83E+001	59
4.90E+002	-1.23E+001	1.23E+001	-2.45E+000	2.77E+001	60
2.00E+002	-1.17E+001	-1.17E+001	-2.35E+000	3.99E+000	61
3.79E+002	-1.18E+001	-1.18E+001	-2.37E+000	6.16E+000	62
6.16E+002	-1.21E+001	1.30E+001	-2.42E+000	6.28E+000	63
2.10E+003	8.47E+001	2.54E+002	3.50E+001	8.47E-001	64
4.36E+002	2.18E+002	9.54E+002	1.45E+002	1.04E+000	65
7.85E+002	1.81E+002	7.23E+002	2.09E+002	6.20E-001	66
8.06E+000	3.23E+001	1.77E+002	1.03E+002	-5.38E-001	67
6.94E+002	6.12E+001	2.04E+002	1.31E+002	-4.08E-001	68
1.07E+002	1.31E+001	6.31E+001	7.88E+000	-4.50E-001	69
2.69E+002	2.95E+001	7.59E+001	2.32E+001	-4.22E-001	70
2.86E+001	1.79E+002	8.16E+002	1.07E+002	2.04E+000	71
-2.03E+000	3.56E+001	1.42E+002	1.11E+002	3.05E+000	72
4.85E+001	3.40E+001	1.55E+002	9.95E+001	-9.71E-001	73
6.73E+000	3.47E+001	2.04E+001	1.59E+002	-4.08E-001	74
1.26E+001	1.10E+002	4.18E+002	9.73E+001	1.05E+000	75
5.68E+001	9.47E+001	9.47E+002	1.05E+002	9.47E-001	76
4.35E+001	7.39E+001	3.57E+002	1.80E+002	6.09E+000	77
2.01E+002	1.95E+002	2.57E+003	1.04E+002	4.12E-001	78
2.09E+002	1.19E+002	5.17E+002	6.82E+001	4.13E-001	79
6.86E+002	9.15E+001	2.93E+002	8.23E+001	-4.07E-001	80
1.99E+002	9.69E+001	3.71E+002	2.76E+001	8.16E-001	81
-2.05E+000	1.68E+001	4.10E+001	3.89E+000	-4.10E-001	82
3.05E+001	1.27E+002	1.52E+003	7.62E+001	-4.07E-001	83
8.81E+000	6.66E+001	7.99E+002	5.43E+001	-4.10E-001	84
-2.10E+000	3.68E+001	1.43E+002	3.15E+001	-4.20E-001	85
4.80E+002	1.48E+002	5.71E+002	6.53E+001	-4.08E-001	86
2.48E+001	4.06E+001	5.94E+001	2.48E+001	-9.90E-001	87
2.89E+002	1.32E+002	7.02E+002	3.82E+001	-4.13E-001	88
3.53E+000	6.22E+001	3.11E+002	1.97E+001	-4.15E-001	89
1.15E+002	4.18E+001	2.51E+002	1.15E+001	-4.18E-001	90

TABLE 4 (continuation) Page 11

Na ug/g	Ni ug/g	Pb ug/g	Se ug/g	Si ug/g	
2.17E+001	5.06E+000	2.11E+000	-2.11E-001	1.64E+002	46
1.90E+001	2.08E+000	2.71E+000	-2.08E-001	3.33E+002	47
-2.48E+001	7.92E+000	3.96E+000	-4.95E-001	1.88E+002	48
1.30E+001	3.65E+000	3.39E+000	-2.60E-001	1.82E+002	49
1.65E+001	5.92E+000	2.04E+000	-2.04E-001	1.02E+002	50
-1.05E+001	-4.18E-001	-1.05E+000	-2.09E-001	9.00E+001	51
-1.04E+001	-4.17E-001	-1.04E+000	-2.08E-001	7.29E+001	52
4.10E+001	2.87E+000	1.64E+000	-2.05E-001	3.89E+002	53
-1.03E+001	-4.13E-001	-1.03E+000	-2.07E-001	7.85E+001	54
-1.02E+001	1.22E+000	-1.02E+000	-2.03E-001	1.05E+002	55
-1.19E+001	-4.76E-001	-1.19E+000	-2.38E-001	7.14E+001	56
-1.03E+001	-4.13E-001	-1.03E+000	-2.07E-001	1.03E+002	57
2.04E+001	5.31E+000	2.04E+000	-2.04E-001	4.49E+002	58
-1.25E+001	2.50E+000	-1.25E+000	-2.50E-001	5.00E+001	59
-1.23E+001	1.72E+000	1.23E+000	-2.45E-001	4.90E+001	60
-1.17E+001	1.17E+000	1.88E+000	-2.35E-001	4.69E+001	61
-1.18E+001	1.18E+000	-1.18E+000	-2.37E-001	4.74E+001	62
-1.21E+001	2.90E+000	-1.21E+000	-2.42E-001	6.04E+001	63
1.99E+001	1.11E+002	1.69E+000	-2.12E-001	5.30E+002	64
1.04E+001	2.59E+001	2.07E+000	-2.07E-001	4.98E+002	65
1.03E+001	1.55E+001	1.65E+000	-2.07E-001	5.22E+002	66
1.34E+001	3.76E+000	-1.34E+000	-2.69E-001	9.41E+001	67
1.02E+001	1.43E+000	1.02E+000	-2.04E-001	4.49E+002	68
-1.13E+001	8.56E+000	-1.13E+000	-2.25E-001	1.24E+002	69
-1.05E+001	1.82E+002	1.05E+000	-2.11E-001	1.90E+002	70
3.06E+001	1.22E+001	5.10E+000	-2.04E-001	1.12E+002	71
1.79E+001	2.03E+000	1.02E+000	-2.03E-001	4.07E+001	72
-2.43E+001	-9.71E-001	-2.43E+000	-4.85E-001	1.84E+002	73
1.86E+001	1.43E+000	-1.02E+000	-2.04E-001	2.30E+002	74
5.75E+001	1.05E+000	1.05E+000	-2.09E-001	2.98E+002	75
9.47E+000	3.13E+001	3.98E+001	-1.89E-001	1.47E+002	76
2.17E+001	6.09E+000	4.35E+000	-4.35E-001	1.52E+002	77
2.33E+001	3.09E+001	3.70E+001	-2.06E-001	2.78E+002	78
-1.03E+001	2.89E+000	1.65E+000	-2.07E-001	4.55E+002	79
-1.02E+001	2.85E+000	2.03E+000	-2.03E-001	3.86E+002	80
1.71E+001	2.86E+000	2.04E+000	-2.04E-001	4.59E+002	81
-1.02E+001	-4.10E-001	-1.02E+000	-2.05E-001	7.17E+001	82
1.02E+001	2.03E+001	2.24E+001	-2.03E-001	1.50E+002	83
-1.02E+001	9.22E+000	9.22E+000	-2.05E-001	1.18E+002	84
1.05E+001	1.05E+000	1.05E+000	-2.10E-001	1.05E+002	85
2.04E+001	2.86E+000	2.65E+000	-2.04E-001	4.04E+002	86
-2.48E+001	-9.90E-001	-2.48E+000	-4.95E-001	1.49E+002	87
2.07E+001	1.03E+000	1.03E+000	-2.07E-001	3.97E+002	88
1.95E+001	2.90E+000	1.66E+000	-2.07E-001	1.54E+002	89
-1.05E+001	-4.18E-001	-1.05E+000	-2.09E-001	3.50E+002	90

TABLE 4 (continuation) Page 12

S04 ug/s	Sr ug/s	U ug/s	V ug/s	
-2.11E+002	6.96E+001	1.90E-001	8.65E+000	46
-2.08E+002	1.21E+001	3.75E+000	8.33E-001	47
-4.95E+002	8.07E+001	3.47E-001	2.33E+001	48
-2.60E+002	4.64E+001	8.07E-001	9.38E+000	49
-2.04E+002	7.04E+001	2.24E-001	1.00E+001	50
-2.09E+002	1.23E+001	1.26E-001	4.18E-001	51
-2.08E+002	1.42E+001	1.67E-002	6.25E-001	52
-2.05E+002	2.05E+001	1.17E-001	2.05E+000	53
-2.07E+002	2.48E+001	8.26E-002	1.24E+000	54
-2.03E+002	2.11E+001	3.05E-002	1.83E+000	55
-2.38E+002	1.31E+001	4.52E-002	9.52E-001	56
-2.07E+002	5.79E+000	5.37E-002	-4.13E-001	57
-2.04E+002	6.53E+001	1.22E-001	7.35E+000	58
1.35E+004	1.00E+000	2.60E+000	7.25E+000	59
1.41E+004	1.72E+000	2.94E+000	7.35E-001	60
1.27E+004	7.04E-001	1.88E+000	7.04E-001	61
1.30E+004	7.11E-001	1.61E+000	5.45E+000	62
1.33E+004	1.21E+000	2.61E+000	7.25E+000	63
2.97E+003	3.81E+000	6.10E+001	8.47E+000	64
-2.07E+002	2.45E+001	2.32E+000	4.15E-001	65
-2.07E+002	2.17E+001	5.79E-001	2.07E+000	66
-2.69E+002	2.28E+001	1.08E+000	2.69E+000	67
-2.04E+002	1.02E+001	4.08E-001	2.86E+000	68
1.58E+003	6.76E-001	8.02E+000	3.15E+000	69
-2.11E+002	2.74E+000	6.16E+001	1.48E+000	70
-2.04E+002	6.63E+001	6.53E-001	2.12E+001	71
-2.03E+002	2.54E+001	3.25E-001	7.72E+000	72
-4.85E+002	1.84E+001	9.71E-001	9.71E-001	73
-2.04E+002	1.22E+001	3.27E-001	8.16E-001	74
-2.09E+002	2.09E+001	3.35E-001	1.26E+000	75
-1.89E+002	1.99E+001	1.21E+002	5.49E+000	76
-4.35E+002	5.22E+001	1.57E+000	1.26E+001	77
-2.06E+002	2.06E+001	1.69E+001	7.61E+000	78
-2.07E+002	3.41E+001	1.90E+000	1.45E+000	79
-2.03E+002	1.93E+001	3.05E-001	3.46E+000	80
-2.04E+002	4.08E+001	1.63E-001	7.14E+000	81
-2.05E+002	7.17E+000	1.02E-001	4.10E-001	82
-2.03E+002	2.95E+001	9.15E+000	5.08E+000	83
-2.05E+002	2.42E+001	4.51E+000	6.15E+000	84
-2.10E+002	2.46E+001	3.15E-001	2.31E+000	85
-2.04E+002	1.39E+001	4.08E+000	2.04E+000	86
-4.95E+002	5.94E+000	1.98E+000	1.98E+000	87
-2.07E+002	4.03E+001	1.03E-001	1.03E+000	88
-2.07E+002	8.88E+001	3.32E-001	4.98E+000	89
-2.09E+002	1.46E+001	3.35E-001	1.05E+000	90

TABLE 4 (continuation) Page 13

Site & Sample Number	Sam- ple Type	Sample		Eh mV	PH	
		Top cm	Base cm			
70.01	140	1	10	0	0.00	91
70.02	140	10	20	0	0.00	92
70.04	140	85	100	0	0.00	93
70.07	140	240	250	0	0.00	94
70.10	140	385	400	0	0.00	95
70.14	140	570	580	0	0.00	96
70.17	140	620	630	0	0.00	97
70.18	140	630	640	0	0.00	98
70.19	240	640	650	0	0.00	99
70.20	240	650	660	0	0.00	100
70.21	240	660	670	0	0.00	101
70.23	240	740	750	0	0.00	102
71.01	140	1	10	0	0.00	103
71.02	140	10	25	0	0.00	104
71.04	140	85	100	0	0.00	105
71.07	140	140	150	0	0.00	106
71.10	140	335	350	0	0.00	107
71.13	140	460	470	0	0.00	108
71.14	140	470	480	0	0.00	109
71.15	240	480	490	0	0.00	110
71.16	240	490	500	0	0.00	111
71.17	240	520	530	0	0.00	112
71.18	240	530	540	0	0.00	113
74.01	140	1	10	0	0.00	114
74.02	140	10	20	0	0.00	115
74.04	140	40	50	0	0.00	116
74.07	140	135	150	0	0.00	117
74.10	140	208	215	0	0.00	118
74.12	140	223	233	0	0.00	119
74.13	140	233	240	0	0.00	120
74.14	240	240	250	0	0.00	121
74.15	240	250	260	0	0.00	122
74.16	240	260	270	0	0.00	123
74.18	240	290	300	0	0.00	124
74.20	240	340	350	0	0.00	125
74.23	240	414	420	0	0.00	126
74.25	240	435	450	0	0.00	127
74.27	240	490	500	0	0.00	128
76.01	140	1	10	0	0.00	129
76.03	140	20	26	0	0.00	130
76.05	140	32	45	0	0.00	131
76.07	140	140	150	0	0.00	132
76.10	140	290	300	0	0.00	133
76.14	140	415	425	0	0.00	134
76.15	140	425	435	0	0.00	135

TABLE 4 (continuation) Page 14

As us/s	Al us/s	As us/s	Ba us/s	Ca us/s	
0.00E+000	1.47E+001	6.47E+001	5.88E+000	6.32E+003	91
0.00E+000	2.50E+001	6.00E+001	1.50E+001	7.17E+003	92
0.00E+000	1.23E+002	1.07E+002	7.04E+000	5.46E+003	93
0.00E+000	6.68E+001	8.69E+001	2.14E+000	4.41E+003	94
0.00E+000	1.74E+001	7.48E+001	6.52E+000	3.26E+003	95
0.00E+000	1.13E+002	9.70E+001	3.31E+000	6.14E+003	96
0.00E+000	2.59E+002	6.92E+001	1.55E+000	3.73E+003	97
0.00E+000	3.18E+002	5.13E+001	4.46E+000	4.94E+003	98
0.00E+000	4.46E+001	1.44E+001	1.07E+003	9.90E+001	99
0.00E+000	5.94E+001	2.48E+001	3.96E+001	9.90E+001	100
0.00E+000	8.91E+001	3.22E+001	3.96E+001	2.87E+002	101
0.00E+000	3.00E+003	-2.50E+000	8.00E+001	1.60E+003	102
0.00E+000	6.14E+002	7.25E+001	4.77E+002	4.99E+004	103
0.00E+000	1.61E+003	1.36E+002	7.34E+002	8.99E+004	104
0.00E+000	4.50E+002	1.10E+002	9.00E+002	1.04E+005	105
0.00E+000	9.17E+000	1.88E+001	1.74E+002	3.90E+003	106
0.00E+000	5.24E+001	8.09E+001	5.24E+001	4.06E+003	107
0.00E+000	1.22E+002	4.37E+001	7.69E+000	4.72E+003	108
0.00E+000	2.29E+002	7.25E+001	5.96E+001	7.34E+003	109
0.00E+000	6.64E+001	2.27E+001	8.59E+001	8.59E+001	110
0.00E+000	2.16E+002	1.73E+001	2.88E+001	5.00E+002	111
0.00E+000	3.42E+003	3.85E+000	8.55E+000	2.99E+003	112
0.00E+000	4.78E+003	-2.50E+000	9.50E+000	2.00E+003	113
0.00E+000	1.45E+002	9.91E+001	1.74E+002	6.48E+004	114
0.00E+000	1.07E+002	9.08E+001	1.90E+002	6.27E+004	115
0.00E+000	1.52E+001	6.36E+001	3.94E+001	5.94E+003	116
0.00E+000	2.34E+001	1.46E+002	4.67E+000	5.70E+003	117
0.00E+000	2.21E+001	2.21E+002	7.08E+000	4.65E+003	118
0.00E+000	5.00E+000	2.50E+002	1.05E+001	2.25E+003	119
0.00E+000	4.63E+000	2.43E+002	1.85E+001	1.62E+003	120
0.00E+000	9.52E+000	2.38E+002	1.43E+001	1.03E+003	121
0.00E+000	4.95E+001	2.48E+002	1.49E+001	3.47E+003	122
0.00E+000	2.54E+002	2.01E+001	1.92E+000	3.54E+003	123
0.00E+000	2.75E+003	2.50E+000	3.21E+000	1.61E+003	124
0.00E+000	5.56E+001	-2.14E+000	4.91E+001	2.99E+003	125
0.00E+000	9.43E+001	4.72E+000	2.83E+001	2.17E+004	126
0.00E+000	2.25E+002	-2.50E+000	3.50E+001	3.93E+004	127
0.00E+000	2.39E+002	3.85E+001	6.41E+000	1.22E+004	128
0.00E+000	2.45E+002	1.21E+002	5.64E+001	8.09E+004	129
0.00E+000	2.10E+003	7.19E+001	2.67E+001	4.79E+004	130
0.00E+000	1.27E+002	9.87E+001	2.22E+001	5.54E+003	131
0.00E+000	4.17E+002	3.01E+001	1.09E+001	5.80E+003	132
0.00E+000	5.63E+002	4.60E+001	7.50E+000	1.10E+004	133
0.00E+000	3.92E+002	1.57E+001	6.54E+000	5.03E+003	134
0.00E+000	1.14E+002	6.12E+000	5.10E+000	2.21E+003	135

TABLE 4 (continuation) page 15

Cd us/s	Cl us/s	Co us/s	Cr us/s	Cu us/s	
-2.94E-001	0.00E+000	-5.88E-001	2.35E+000	0.00E+000	91
-3.33E-001	0.00E+000	1.67E+000	2.00E+000	0.00E+000	92
-3.52E-001	0.00E+000	9.15E+000	1.76E+000	0.00E+000	93
-2.67E-001	0.00E+000	1.34E+001	3.48E+000	0.00E+000	94
-4.35E-001	0.00E+000	-8.70E-001	-2.17E+000	0.00E+000	95
6.02E-001	0.00E+000	6.33E+000	-1.51E+000	0.00E+000	96
1.55E+000	0.00E+000	2.85E+001	1.30E+000	0.00E+000	97
1.59E+000	0.00E+000	2.23E+001	1.59E+000	0.00E+000	98
-4.95E-001	0.00E+000	2.48E+000	-2.48E+000	0.00E+000	99
-4.95E-001	0.00E+000	-9.90E-001	-2.48E+000	0.00E+000	100
-4.95E-001	0.00E+000	-9.90E-001	-2.48E+000	0.00E+000	101
-5.00E-001	0.00E+000	1.25E+001	4.50E+000	0.00E+000	102
5.91E+000	0.00E+000	3.61E+002	7.27E+000	0.00E+000	103
7.80E+000	0.00E+000	4.66E+002	3.76E+001	0.00E+000	104
3.50E+000	0.00E+000	2.85E+002	5.95E+001	0.00E+000	105
-4.59E-001	0.00E+000	6.88E+000	-2.29E+000	0.00E+000	106
5.24E-001	0.00E+000	2.49E+001	1.31E+000	0.00E+000	107
3.50E-001	0.00E+000	2.10E+001	-1.75E+000	0.00E+000	108
-4.59E-001	0.00E+000	1.47E+001	-2.29E+000	0.00E+000	109
-3.91E-001	0.00E+000	7.81E-001	-1.95E+000	0.00E+000	110
-4.81E-001	0.00E+000	-9.62E-001	-2.40E+000	0.00E+000	111
-4.27E-001	0.00E+000	8.97E+000	-2.14E+000	0.00E+000	112
-5.00E-001	0.00E+000	1.25E+001	-2.50E+000	0.00E+000	113
3.05E+000	0.00E+000	1.16E+002	2.26E+001	0.00E+000	114
2.68E+000	0.00E+000	7.74E+001	1.90E+001	0.00E+000	115
-3.03E-001	0.00E+000	7.58E+000	2.12E+000	0.00E+000	116
-4.67E-001	0.00E+000	4.67E+000	-2.34E+000	0.00E+000	117
-4.42E-001	0.00E+000	6.64E+000	-2.21E+000	0.00E+000	118
-5.00E-001	0.00E+000	2.50E+000	-2.50E+000	0.00E+000	119
-4.63E-001	0.00E+000	2.31E+000	-2.31E+000	0.00E+000	120
-4.76E-001	0.00E+000	9.52E-001	-2.38E+000	0.00E+000	121
-4.95E-001	0.00E+000	-9.90E-001	2.48E+000	0.00E+000	122
-2.75E-001	0.00E+000	1.37E+000	2.20E+000	0.00E+000	123
-3.57E-001	0.00E+000	2.86E+000	1.79E+000	0.00E+000	124
3.42E+000	0.00E+000	7.69E+000	-2.14E+000	0.00E+000	125
-4.72E-001	0.00E+000	1.65E+001	-2.36E+000	0.00E+000	126
5.00E-001	0.00E+000	3.50E+001	-2.50E+000	0.00E+000	127
6.41E-001	0.00E+000	3.85E+001	3.63E+000	0.00E+000	128
2.45E+000	0.00E+000	1.42E+002	2.35E+001	0.00E+000	129
6.98E+000	0.00E+000	3.33E+002	2.44E+001	0.00E+000	130
-3.16E-001	0.00E+000	9.49E+000	2.85E+000	0.00E+000	131
1.45E+000	0.00E+000	1.81E+001	1.81E+000	0.00E+000	132
1.00E+000	0.00E+000	2.50E+001	-2.50E+000	0.00E+000	133
1.63E+000	0.00E+000	3.27E+001	-1.63E+000	0.00E+000	134
1.02E+000	0.00E+000	1.70E+001	-1.70E+000	0.00E+000	135

TABLE 4 (continuation) Page 16

Fe us/s	K us/s	Mg us/s	Mn us/s	Mo us/s	
4.12E+002	-1.47E+001	-1.47E+001	-2.94E+000	-5.88E-001	91
3.50E+002	-1.67E+001	-1.67E+001	-3.33E+000	1.33E+000	92
1.87E+002	2.54E+001	1.41E+002	3.52E+000	5.99E+000	93
6.55E+002	2.19E+001	1.60E+002	2.67E+000	2.06E+001	94
9.78E+001	-2.17E+001	-2.17E+001	-4.35E+000	1.00E+001	95
1.58E+002	2.47E+001	2.17E+002	4.52E+000	3.92E+000	96
1.97E+002	7.77E+001	6.99E+002	4.02E+001	3.37E+000	97
2.31E+002	5.57E+001	4.78E+002	4.46E+001	5.41E+000	98
2.33E+001	2.87E+001	-2.48E+001	-4.95E+000	4.95E+000	99
3.12E+001	-2.48E+001	-2.48E+001	-4.95E+000	3.96E+000	100
4.46E+001	2.48E+001	-2.48E+001	-4.95E+000	1.98E+000	101
4.65E+001	-2.50E+001	-2.50E+001	5.00E+000	-1.00E+000	102
2.48E+003	1.22E+003	2.27E+004	2.89E+002	2.27E+000	103
4.59E+003	2.04E+003	1.88E+004	2.61E+002	1.93E+001	104
5.25E+003	3.13E+003	2.75E+004	6.10E+002	3.10E+001	105
2.64E+002	2.66E+001	1.28E+002	-4.59E+000	-9.17E-001	106
1.90E+002	6.28E+001	4.87E+002	6.54E+000	6.02E+000	107
1.57E+002	8.74E+001	8.39E+002	1.99E+001	8.04E+000	108
2.39E+002	5.50E+001	5.41E+002	2.29E+001	4.59E+000	109
4.30E+001	2.27E+001	-1.95E+001	-3.91E+000	3.52E+000	110
1.25E+002	3.94E+001	-2.40E+001	-4.81E+000	1.92E+000	111
1.03E+002	2.14E+001	-2.14E+001	-4.27E+000	2.14E+000	112
1.10E+002	2.50E+001	-2.50E+001	-5.00E+000	3.00E+000	113
2.84E+003	1.73E+003	1.71E+004	2.30E+002	3.17E+001	114
2.77E+003	1.76E+003	1.73E+004	2.20E+002	1.64E+001	115
4.70E+002	3.03E+001	7.27E+002	1.36E+001	1.82E+000	116
1.03E+002	2.34E+001	-2.34E+001	-4.67E+000	5.28E+001	117
1.39E+002	5.53E+001	-2.21E+001	-4.42E+000	1.15E+001	118
1.15E+002	2.90E+001	-2.50E+000	-5.00E+000	1.15E+001	119
6.48E+001	3.80E+001	2.31E+001	-4.63E+000	7.87E+000	120
7.86E+001	3.57E+001	4.76E+001	4.76E+000	8.10E+000	121
2.10E+002	2.97E+001	2.48E+001	8.42E+000	1.29E+001	122
6.32E+001	2.75E+001	1.48E+001	4.95E+000	1.26E+001	123
2.25E+002	2.93E+001	1.79E+001	-3.57E+000	9.29E+000	124
2.14E+001	2.14E+001	4.27E+001	6.62E+001	-8.55E-001	125
5.90E+001	4.72E+001	3.96E+002	1.98E+002	1.89E+000	126
6.25E+001	1.00E+002	3.70E+002	3.45E+002	5.00E+000	127
5.50E+002	1.50E+002	1.92E+003	2.54E+002	1.28E+000	128
3.48E+003	1.46E+003	1.81E+004	2.50E+002	1.81E+001	129
2.42E+003	1.50E+003	1.47E+004	4.72E+002	5.35E+000	130
4.03E+002	1.90E+001	5.06E+001	3.16E+000	1.68E+001	131
2.83E+002	4.53E+001	2.90E+002	5.62E+001	1.92E+001	132
2.75E+002	5.75E+001	3.60E+002	1.23E+002	1.15E+001	133
1.70E+002	5.23E+001	2.94E+002	1.35E+002	7.52E+000	134
9.18E+001	3.40E+001	1.43E+002	6.12E+001	6.80E+000	135

TABLE 4 (continuation) page 17

Na ug/s	Ni ug/s	Pb ug/s	Se ug/s	Si ug/s	
-1.47E+001	2.06E+000	-1.47E+000	-2.94E-001	4.41E+001	91
-1.67E+001	2.33E+000	3.33E+000	-3.33E-001	6.67E+001	92
-1.76E+001	1.76E+001	1.58E+001	-3.52E-001	2.64E+001	93
-1.34E+001	5.88E+001	2.27E+001	-2.67E-001	5.35E+001	94
-2.17E+001	2.17E+000	5.65E+000	-4.35E-001	8.70E+001	95
-1.51E+001	1.81E+001	3.01E+001	-3.01E-001	1.30E+002	96
7.77E+001	7.25E+001	7.77E+000	-2.59E-001	9.07E+001	97
4.14E+001	3.98E+001	7.96E+000	-3.18E-001	1.11E+002	98
-2.48E+001	2.48E+000	4.95E+000	-4.95E-001	9.90E+001	99
-2.48E+001	2.48E+000	3.96E+000	-4.95E-001	9.90E+001	100
-2.48E+001	1.49E+000	2.48E+000	-4.95E-001	9.90E+001	101
-2.50E+001	1.65E+001	-2.50E+000	-5.00E-001	1.90E+002	102
1.38E+003	8.75E+002	9.43E+002	-2.27E-001	1.56E+003	103
4.13E+002	1.40E+003	2.09E+003	-4.59E-001	1.90E+003	104
5.75E+002	5.00E+002	5.00E+002	-5.00E-001	1.45E+003	105
4.31E+001	7.34E+000	3.21E+001	-4.59E-001	2.29E+002	106
3.53E+002	9.42E+001	1.18E+001	-2.62E-001	9.16E+001	107
2.19E+002	5.24E+001	6.99E+000	-3.50E-001	1.22E+002	108
4.59E+001	3.44E+001	6.88E+000	-4.59E-001	1.74E+002	109
-1.95E+001	2.34E+000	1.95E+000	-3.91E-001	1.17E+002	110
-2.40E+001	1.92E+000	-2.40E+000	-4.81E-001	1.83E+002	111
-2.14E+001	1.32E+001	-2.14E+000	-4.27E-001	2.22E+002	112
-2.50E+001	1.45E+001	-2.50E+000	-5.00E-001	1.90E+002	113
3.20E+002	2.21E+002	4.12E+002	-3.05E-001	7.85E+002	114
2.38E+002	1.58E+002	3.27E+002	-2.98E-001	4.46E+002	115
3.03E+001	6.36E+000	1.52E+001	-3.03E-001	1.15E+002	116
6.07E+001	3.27E+000	2.57E+001	-4.67E-001	1.78E+002	117
8.85E+001	2.21E+000	5.75E+000	-4.42E-001	2.77E+002	118
6.50E+001	1.50E+000	6.25E+001	-5.00E-001	2.75E+002	119
6.02E+001	3.24E+000	6.94E+001	-4.63E-001	1.99E+002	120
1.07E+002	3.33E+000	4.76E+000	-4.76E-001	1.67E+002	121
2.48E+001	-9.90E-001	-2.48E+000	-4.95E-001	2.13E+002	122
3.57E+001	2.75E+000	-1.37E+000	-2.75E-001	2.40E+002	123
-1.79E+001	1.43E+001	-1.79E+000	-3.57E-001	2.77E+002	124
3.76E+001	8.12E+000	-2.14E+000	-4.27E-001	1.07E+002	125
4.15E+001	2.36E+001	7.08E+000	-4.72E-001	1.79E+002	126
3.00E+002	6.25E+001	-2.50E+000	-5.00E-001	1.75E+002	127
7.48E+002	8.55E+001	8.01E+001	-2.14E-001	3.15E+002	128
1.35E+002	2.21E+002	2.52E+002	-4.90E-001	6.37E+002	129
2.97E+002	6.10E+002	2.56E+002	-2.33E-001	9.30E+002	130
2.78E+001	1.58E+001	3.16E+001	-3.16E-001	6.33E+001	131
9.96E+001	1.81E+001	1.81E+000	-3.62E-001	9.06E+001	132
5.45E+001	2.50E+001	2.00E+001	-5.00E-001	2.60E+002	133
9.80E+001	3.27E+001	4.90E+000	-3.27E-001	1.14E+002	134
5.44E+001	1.22E+001	3.06E+000	-3.40E-001	1.11E+002	135

TABLE 4 (continuation) page 18

S04 us/s	Sr us/s	U us/s	V us/s	
1.50E+004	7.35E+000	2.65E+000	1.24E+001	91
1.76E+004	6.00E+000	2.67E+000	3.33E+000	92
1.35E+004	1.06E+001	1.02E+001	8.45E+000	93
1.23E+004	6.95E+000	2.67E+000	2.41E+000	94
6.35E+003	2.09E+001	1.83E+001	3.91E+000	95
1.35E+004	3.40E+001	3.37E+001	3.01E+000	96
1.25E+004	2.95E+001	1.76E+001	4.15E+000	97
1.46E+004	4.46E+001	1.53E+001	4.46E+000	98
-4.95E+002	2.48E+000	6.53E+000	5.45E+000	99
-4.95E+002	1.98E+000	6.53E+000	3.47E+000	100
-4.95E+002	1.49E+000	6.14E+000	2.48E+000	101
5.05E+003	3.50E+000	1.86E+001	4.00E+000	102
-2.27E+002	7.05E+001	7.64E+001	7.95E+000	103
-4.59E+002	7.57E+001	1.38E+002	7.80E+000	104
-5.00E+002	1.03E+002	9.20E+001	1.50E+001	105
-4.59E+002	1.83E+000	2.57E+001	3.67E+000	106
1.10E+004	2.62E+001	1.36E+001	3.93E+000	107
1.43E+004	3.50E+001	1.54E+001	1.01E+001	108
1.88E+004	4.82E+001	1.69E+001	1.33E+001	109
-3.91E+002	3.91E-001	3.75E+000	8.20E+000	110
-4.81E+002	4.81E+000	8.46E+000	1.01E+001	111
8.29E+003	5.56E+000	1.32E+001	1.42E+002	112
7.25E+003	5.00E+000	1.62E+001	1.98E+002	113
-3.05E+002	6.62E+001	9.02E+001	9.15E+000	114
-2.98E+002	5.80E+001	4.52E+001	1.73E+001	115
-3.03E+002	4.55E+000	4.73E+001	1.21E+000	116
9.35E+003	3.74E+001	1.66E+002	1.87E+000	117
5.40E+003	3.32E+001	8.85E+001	2.21E+000	118
1.30E+003	4.00E+001	3.20E+001	2.00E+000	119
-4.63E+002	5.09E+001	1.70E+001	9.26E-001	120
-4.76E+002	2.38E+001	7.81E+000	1.90E+000	121
5.10E+003	1.98E+001	6.53E+000	9.41E+000	122
5.49E+003	1.04E+001	5.60E+000	1.59E+001	123
4.29E+003	3.57E+000	1.43E+001	1.23E+002	124
-4.27E+002	8.55E+000	7.35E+000	1.03E+001	125
-4.72E+002	4.01E+001	1.28E+001	-9.43E-001	126
-5.00E+002	7.85E+001	1.08E+001	1.75E+001	127
-2.14E+002	2.74E+001	9.40E+001	1.07E+001	128
-4.90E+002	7.35E+001	1.25E+002	4.12E+001	129
4.65E+003	6.23E+001	3.72E+002	5.95E+001	130
1.42E+004	7.91E+000	1.42E+002	1.27E+001	131
1.71E+004	4.09E+001	9.86E+000	3.62E+001	132
2.55E+004	7.10E+001	2.20E+003	3.35E+001	133
1.50E+004	4.08E+001	2.35E+001	1.63E+001	134
4.66E+003	2.52E+001	1.36E+001	1.02E+001	135

TABLE 4 (continuation) page 19

Site & Sample Number	Sam- ple Type	Sample		Eh mV	PH	
		Top cm	Base cm			
76.16	240	435	440	0	0.00	136
76.17	240	440	450	0	0.00	137
76.19	240	490	500	0	0.00	138
77.01	140	1	10	0	0.00	139
77.02	140	10	20	0	0.00	140
77.04	140	30	38	0	0.00	141
77.07	140	75	90	0	0.00	142
77.11	140	265	272	0	0.00	143
77.14	140	340	350	0	0.00	144
77.17	240	440	450	0	0.00	145
77.19	240	540	550	0	0.00	146
77.24	240	690	700	0	0.00	147
77.28	240	820	830	0	0.00	148
77.29	240	830	840	0	0.00	149
77.30	240	840	850	0	0.00	150
77.31	240	860	870	0	0.00	151

TABLE 4 (continuation) page 20

As ug/g	Al ug/g	As ug/g	Ba ug/g	Ca ug/g	
0.00E+000	4.25E+001	3.00E+000	-5.00E-001	2.38E+003	136
0.00E+000	1.35E+001	3.15E+000	1.35E+000	9.01E+001	137
0.00E+000	1.36E+001	-2.27E+000	1.36E+000	9.09E+001	138
0.00E+000	2.78E+001	1.39E+002	2.78E+000	9.26E+003	139
0.00E+000	2.46E+000	1.72E+001	3.45E+001	5.42E+003	140
0.00E+000	2.59E+001	3.45E+001	2.59E+001	8.62E+003	141
0.00E+000	3.42E+001	1.76E+002	1.37E+000	4.62E+003	142
0.00E+000	8.79E+001	1.41E+002	1.10E+000	4.81E+003	143
0.00E+000	4.35E+001	9.32E+001	6.21E-001	5.12E+003	144
0.00E+000	1.53E+001	1.60E+001	1.90E+001	3.53E+003	145
0.00E+000	1.34E+001	3.19E+001	2.18E+001	1.51E+003	146
0.00E+000	3.24E+002	2.86E+001	1.01E+001	4.62E+003	147
0.00E+000	1.86E+002	9.17E+001	1.21E+001	5.52E+003	148
0.00E+000	6.25E+001	1.12E+002	9.62E+000	2.60E+003	149
0.00E+000	3.52E+002	7.03E+000	6.64E+000	2.93E+003	150
0.00E+000	2.50E+003	-1.54E+000	5.25E+000	1.85E+003	151

TABLE 4 (continuation) Page 21

Cd us/s	Cl us/s	Co us/s	Cr us/s	Cu us/s	
-2.50E-001	0.00E+000	-5.00E-001	-1.25E+000	0.00E+000	136
-4.50E-001	0.00E+000	-9.01E-001	-2.25E+000	0.00E+000	137
-4.55E-001	0.00E+000	-9.09E-001	-2.27E+000	0.00E+000	138
-4.63E-001	0.00E+000	-9.26E-001	2.31E+000	0.00E+000	139
-2.46E-001	0.00E+000	1.23E+000	-1.23E+000	0.00E+000	140
-4.31E-001	0.00E+000	-8.62E-001	-2.16E+000	0.00E+000	141
-3.42E-001	0.00E+000	2.74E+000	6.16E+000	0.00E+000	142
-2.75E-001	0.00E+000	1.87E+001	4.95E+000	0.00E+000	143
-3.11E-001	0.00E+000	2.48E+000	2.17E+000	0.00E+000	144
-3.07E-001	0.00E+000	-6.13E-001	-1.53E+000	0.00E+000	145
-3.36E-001	0.00E+000	-6.71E-001	-1.68E+000	0.00E+000	146
2.31E+000	0.00E+000	1.73E+001	1.45E+000	0.00E+000	147
3.45E-001	0.00E+000	1.00E+001	2.07E+000	0.00E+000	148
-4.81E-001	0.00E+000	8.65E+000	-2.40E+000	0.00E+000	149
3.91E-001	0.00E+000	4.30E+000	-1.95E+000	0.00E+000	150
9.26E-001	0.00E+000	9.26E+000	1.85E+000	0.00E+000	151

TABLE 4 (continuation) Page 22

Fe us/s	K us/s	Mg us/s	Mn us/s	Mo us/s	
5.50E+001	-1.25E+001	-1.25E+001	-2.50E+000	1.00E+000	136
1.22E+001	-2.25E+001	-2.25E+001	-4.50E+000	-9.01E-001	137
1.05E+001	-2.27E+001	-2.27E+001	-4.55E+000	-9.09E-001	138
4.05E+002	-2.31E+001	-2.31E+001	-4.63E+000	3.70E+000	139
4.19E+001	-1.23E+001	-1.23E+001	-2.46E+000	1.97E+000	140
1.19E+002	-2.16E+001	-2.16E+001	-4.31E+000	3.45E+000	141
3.25E+002	-1.71E+001	-1.71E+001	-3.42E+000	3.87E+001	142
3.85E+002	1.92E+001	2.75E+002	3.57E+000	6.32E+000	143
2.64E+002	-1.55E+001	2.80E+001	-3.11E+000	3.11E+000	144
7.67E+001	-1.53E+001	3.68E+001	-3.07E+000	2.45E+000	145
4.19E+001	1.68E+001	3.69E+001	-3.36E+000	5.70E+000	146
2.08E+002	1.68E+001	2.89E+002	6.65E+001	2.89E+000	147
2.33E+002	2.28E+001	5.38E+001	2.59E+001	4.48E+000	148
1.15E+002	2.40E+001	4.81E+001	2.40E+001	4.81E+000	149
2.34E+002	-1.95E+001	2.11E+001	9.77E+000	1.95E+000	150
1.54E+002	1.79E+001	1.67E+001	2.62E+001	9.26E-001	151

TABLE 4 (continuation) Page 23

Na us/s	Ni us/s	Pb us/s	Se us/s	Si us/s	
-1.25E+001	7.50E-001	2.00E+000	-2.50E-001	3.75E+001	136
-2.25E+001	-9.01E-001	2.25E+000	-4.50E-001	9.01E+001	137
-2.27E+001	-9.09E-001	3.64E+000	-4.55E-001	9.09E+001	138
-2.31E+001	3.24E+000	6.02E+000	-4.63E-001	9.26E+001	139
-1.23E+001	1.72E+000	1.23E+000	-2.46E-001	4.93E+001	140
-2.16E+001	2.16E+000	8.62E+000	-4.31E-001	8.62E+001	141
-1.71E+001	8.90E+000	3.42E+000	-3.42E-001	6.85E+001	142
-1.37E+001	7.69E+001	2.20E+001	-2.75E-001	6.87E+001	143
-1.55E+001	3.73E+000	4.04E+000	-3.11E-001	6.21E+001	144
-1.53E+001	1.53E+000	2.55E+001	-3.07E-001	4.60E+001	145
-1.68E+001	3.36E+000	1.01E+001	-3.36E-001	6.71E+001	146
3.76E+001	2.17E+001	2.31E+000	-2.89E-001	1.01E+002	147
-1.72E+001	1.72E+001	1.55E+001	-3.45E-001	6.90E+001	148
-2.40E+001	1.01E+001	4.23E+001	-4.81E-001	9.62E+001	149
-1.95E+001	3.91E+000	-1.95E+000	-3.91E-001	1.68E+002	150
1.54E+001	3.70E+000	1.54E+000	-3.09E-001	8.26E+002	151

TABLE 4 (continuation) Page 24

S04 us/s	Sr us/s	U us/s	V us/s	
5.30E+003	7.50E+000	2.40E+000	1.50E+000	136
-4.50E+002	3.15E+000	1.44E+000	9.01E-001	137
-4.55E+002	1.82E+000	1.64E+000	9.09E-001	138
2.36E+004	6.02E+000	4.81E+001	4.63E+000	139
1.31E+004	3.69E+000	4.33E+000	1.72E+000	140
2.27E+004	8.19E+000	4.66E+000	3.02E+000	141
1.23E+004	4.11E+000	1.00E+001	4.11E+000	142
1.37E+004	6.87E+000	4.95E+000	4.12E+000	143
1.12E+004	4.66E+000	1.06E+001	4.97E+000	144
7.67E+003	1.17E+001	3.19E+000	4.91E+000	145
2.55E+003	1.68E+001	3.89E+000	4.36E+000	146
1.37E+004	4.05E+001	8.67E+000	2.89E+001	147
1.45E+004	3.28E+001	2.76E+001	1.72E+001	148
4.33E+003	3.13E+001	2.31E+001	1.44E+001	149
4.41E+003	7.03E+000	1.56E+001	3.52E+001	150
2.65E+003	3.70E+000	2.84E+001	9.26E+000	151