CLINCH RIVER AND POPLAR CREEK

BOTTOM SEDIMENTS DATA

ROUTINE SAMPLING PROGRAM

1975- 1981

APPROVAL FOR RELEASE

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Title/Subject CLINCH RIVER AND POPLAR CREEK BOTTOM SEDIMENTS DATA, ROUTINE SAMPLING PROGRAM 1975 - 1981

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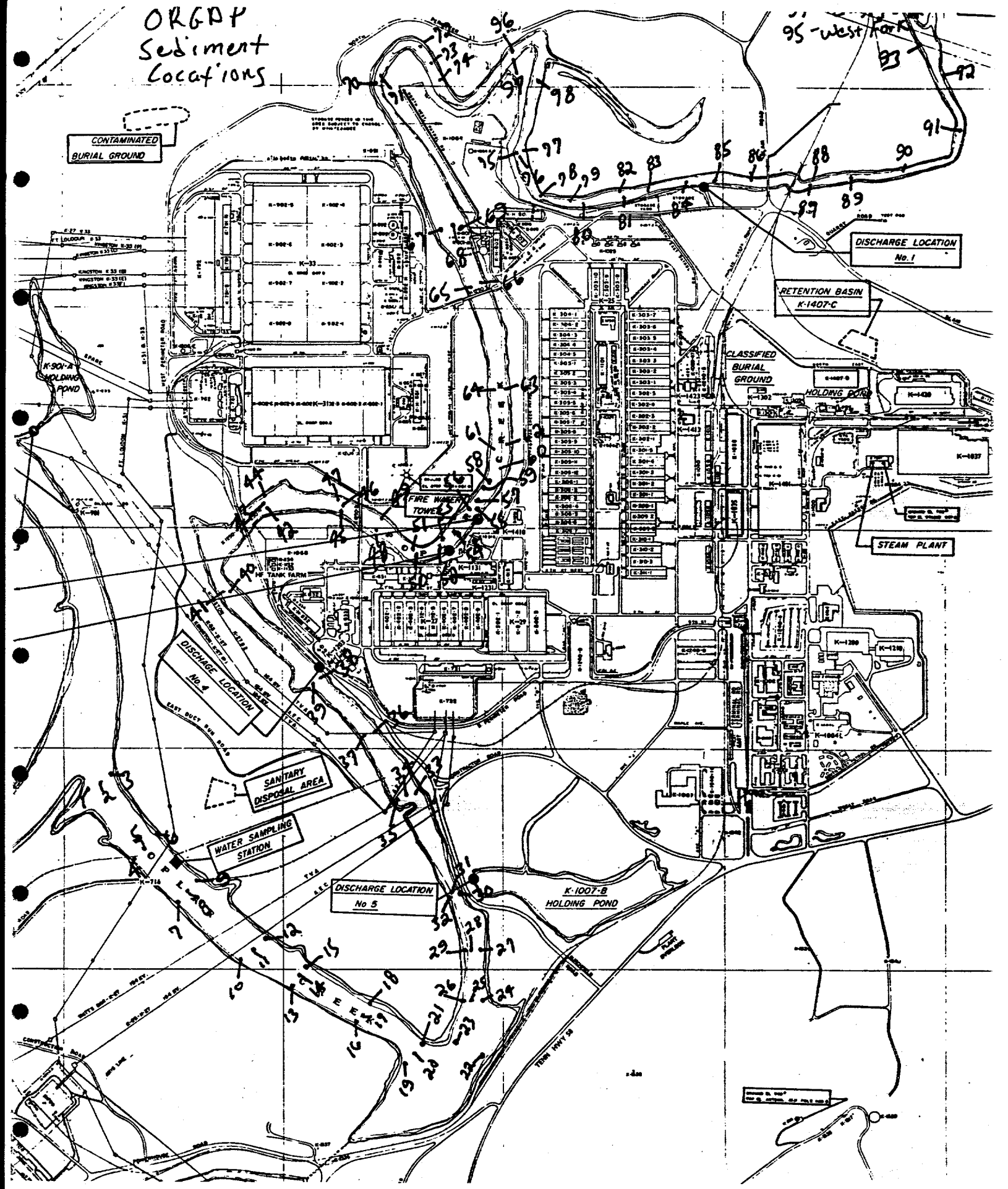
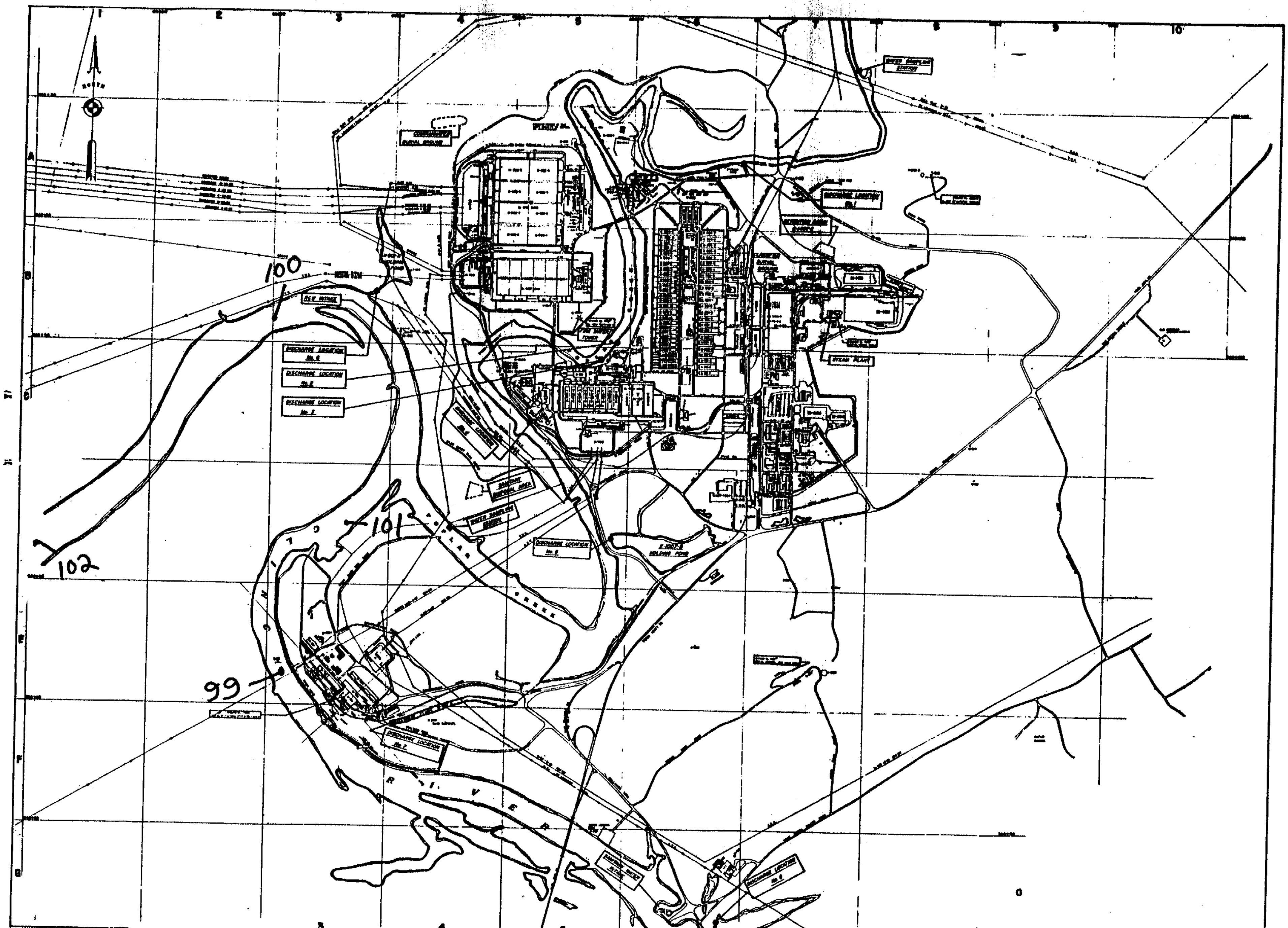
#643

ORGDP
Sediment
Locations



ORGDP Sediment Locations



July 1993

mple #	% Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
		µg/g								
1	7.2	<0.1	<0.1	50	40	250	1200	60	70	79.6
2	4.5	20	5	130	100	200	760	160	120	6.1
3	1.5	<0.1	<0.1	20	20	20	260	30	30	0.39
4	2.5	10	<0.1	110	40	200	460	120	100	85.9
5	4.0	10	3	170	90	250	680	140	160	106.1
6	4.7	5	<0.1	140	50	300	540	120	130	101.4
7	7.4	10	<0.1	150	80	250	590	130	160	42.1
8	7.0	5	<0.1	180	80	300	700	1300	160	11.9
9	8.4	3	<0.1	150	40	200	540	120	140	68.6
10	7.4	3	<0.1	140	100	50	500	120	320	6.2
11	6.0	<0.1	<0.1	60	30	20	310	60	90	0.35
12	6.0	5	<0.1	130	70	50	440	120	120	67.1
13	8.2	10	<0.1	180	70	10	540	140	150	8.8
14	12.0	<0.1	<0.1	120	160	<5	580	160	140	120.1
15	7.6	5	<0.1	110	120	150	490	100	120	5.0
16	9.0	10	<0.1	160	140	10	790	170	140	9.2
17	10.5	<0.1	<0.1	120	160	5	570	140	150	92
18	13.0	10	<0.1	160	150	10	480	200	130	113.9
19	5.5	5	<0.1	70	90	100	1150	100	140	88.9
20	5.0	10	<0.1	100	40	50	860	100	180	3.4
21	6.0	20	<0.1	180	100	10	480	130	110	6.2
22	9.0	5	<0.1	150	90	150	560	110	160	34.3
23	6.6	<0.1	<0.1	60	8	5	540	60	90	6.2
24	8.5	2	<0.1	120	100	100	670	120	140	34.3
25	5.5	<0.1	<0.1	110	100	46	1130	50	70	6.2
26	5.7	10	<0.1	170	100	40	390	110	100	88.9
27	6.0	5	<0.1	150	100	150	950	100	130	110.8
28	6.0	5	<0.1	220	100	150	570	150	180	6.4
29	6.0	5	<0.1	190	100	400	370	100	140	127.9
30	5.4	3	<0.1	110	80	80	300	60	120	138.8
31	6.0	300	5	150	150	400	500	150	160	126.4
32	6.0	10	<0.1	140	110	250	400	80	140	129.5
33	6.0	10	<0.1	130	80	300	610	80	120	59.3
34	6.0	300	5	180	70	400	440	80	170	110.8

	μg/g									
	Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
35	7.3	5	<0.1	110	1100	150	410	90	100	99.8
36	8.0	<0.1	<0.1	110	90	100	1270	100	150	1.7
37	7.0	3	<0.1	130	120	400	380	80	100	3.3
38	6.0	<0.1	<0.1	60	60	200	500	60	70	90.5
39	8.0	2	<0.1	90	90	350	690	100	100	31.2
40	3.0	5	<0.1	60	70	250	330	70	70	31.2
41	5.0	10	<0.1	130	80	400	480	180	130	103
42	1.5	10	<0.1	80	80	250	230	230	70	3.2
43	4.5	<0.1	<0.1	80	90	50	940	250	160	0.8
44	8.0	<0.1	<0.1	80	90	10	470	160	70	1.4
45	2.5	5	<0.1	90	90	15	280	100	70	4.5
46	4.3	2	<0.1	70	70	20	830	80	70	1.7
47	4.0	<0.1	<0.1	70	20	15	320	60	50	0.3
48	8.0	1	<0.1	90	150	100	1090	700	180	2.5
49	2.2	5	<0.1	60	30	10	300	60	70	2.0
50	3.5	<0.1	<0.1	50	20	30	1260	40	50	0.3
51	3.6	5	<0.1	90	50	20	1200	200	100	90.5
52	5.5	<0.1	<0.1	50	30	30	1060	200	60	53
53	5.0	<0.1	<0.1	50	40	30	1460	200	70	110.8
54	6.0	<0.1	<0.1	70	70	70	700	200	160	123.[illegible]
55	6.6	30	2	240	70	200	650	400	200	107.6
56	4.2	15	1	120	60	150	500	300	160	79.6
57	4.2	15	1	100	40	150	350	200	140	85.8
58	2.0	10	<0.1	50	30	50	360	40	60	84.2
59	4.5	15	1	140	90	130	560	130	160	103
60	5.8	<0.1	<0.1	70	80	160	1210	110	100	93.6
61	5.5	1	1	60	30	170	540	70	90	117
62	8.0	<0.1	<0.1	80	80	50	700	80	160	45.2
63	6.0	10	2	80	80	120	950	90	100	3.1
64	7.0	1	5	90	110	130	660	90	180	78
65	3.3	20	10	360	100	100	620	160	280	111
66	9.6	1	20	100	180	100	640	70	130	102
67	5.1	5	5	130	80	50	80	70	220	142
68	6.2	<0.1	<0.1	50	40	50	1340	40	50	83

	%	µg/g								
	Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
69	4.0	1	5	110	170	250	710	260	200	117
70	7.9	2	5	120	90	50	720	120	250	120
71	4.0	5	1	60	30	30	420	70	90	3.8
72	5.6	2	2	60	30	50	570	70	90	91
73	7.5	<0.1	<0.1	60	40	10	480	70	100	72
74	7.2	0.5	2	70	50	30	900	80	110	75
75	5.7	1	1	130	50	35	530	100	150	86
76	9.4	1	1	130	70	35	940	120	180	95
77	5.3	0.5	1	70	30	25	300	70	90	0.6
78	3.5	1	<0.1	60	70	15	340	500	200	64
79	3.7	10	<0.1	60	30	15	240	80	70	7
80	4.0	1	<0.1	90	30	15	530	70	100	77
81	8.6	0.5	<0.1	90	60	15	970	90	120	1.8
82	7.2	<0.1	<0.1	100	50	15	940	90	150	3.9
83	5.1	0.1	<0.1	50	30	10	1400	70	60	2.5
84	5.8	10	1	570	280	50	450	1000	250	137
85	4.7	10	1	240	110	60	500	300	200	40.1
86	3.7	5	<0.1	50	40	30	390	60	60	3.6
87	7.2	5	1	100	50	40	550	70	120	147
88	3.7	2	<0.1	50	50	40	350	40	50	6
89	4.8	5	1	60	50	40	430	70	50	4.8
90	3.4	2	<0.1	40	40	20	280	40	50	67
91	2.8	5	<0.1	30	30	70	240	40	50	42
92	6.1	1	<0.1	60	50	85	440	50	80	50
93	2.3	2	<0.1	30	30	20	240	40	50	72
94 East Fork	6.7	<0.1	<0.1	60	130	25	590	60	80	0.8
95 West Fork	5.9	<0.1	<0.1	50	200	60	1230	150	80	0.4
96	6.9	<0.1	10	90	460	50	660	120	160	6
97	3.8	5	<0.1	70	200	80	580	80	110	105
98	4.5	5	1	80	40	60	340	80	100	9

July 1975

Sample #	Cs^{137}	Np^{237}	Pu	Tc^{99}
	Pico Cu/g			
2	22	<2	<3	<46
11	<9			<46
20				131
28				306
36				197
37				99
42				193
43				125
44				90
45				76
46				95
47				<46
48				<46
49				<46
50				<46
63				<46
71				<46
77				<46
81				64
82				72
83				<46
84				257
85				444
86				<46
89				<46
east fork 94				<46
west fork 95				<46

isotope (wt %)	Sample # 2	37	46	63	83	94
U-234	0.0082	0.0083	0.0070	0.0092	0.0072	0.00
U-235	1.06	0.96	0.80	1.10	0.95	0.6
U-236	0.0061	0.020	0.015	0.012	0.0078	0.01
U-238	98.92	99.01	99.18	98.88	99.04	99.2

July 1996

mple #	% Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
			Mg/g							
1										
2	2.0	2	<0.1	115	59	30	500	120	75	6.1
3										
4										
5	3.4	2	<0.1	80	23	50	775	70	100	6.4
6										
7										
8	0.8	2	<0.1	140	53	50	700	90	165	16.2
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27	2.5	5	<0.1	200	67	50	870	150	200	16.6
28										
29										
30										
31										
32										
33										
34										

	Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
	µg/g									
35										
36	1.8	10	<0.1	300	78	20	630	250	250	21.2
37										
38										
39										
40										
41										
42										
43										
44										
45										
46										
47										
48										
49	0.9	10	<0.1	150	66	50	500	100	160	36
50										
51	2.2	40.2	<0.1	125	34	50	660	120	110	9.4
52										
53										
54	1.8	10	<0.1	70	16	20	495	65	85	1.5
55										
56										
57										
58										
59										
60										
61										
62										
63										
64										
65										
66										
67										
68										

	%	µg/g								
	Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
69										
70										
71										
72										
73										
74										
75										
76										
77	0.8	10	<0.1	42	25	20	875	70	80	29.[illegible]
78										
79	5.2	5	<0.1	185	90	50	730	155	200	24.6
80										
81	0.7	1.0	<0.1	100	45	40	970	100	130	33.5
82	3.8	1.0	<0.1	61	40	10	1000	65	82	0.86
83	3.1	5	<0.1	80	120	50	835	90	175	5.6
84	0.6	1.0	<0.1	45	32	40	1085	57	60	0.8
85	0.9	1.0	<0.1	410	200	50	700	175	180	5.3
86										
87										
88	0.8	5	<0.1	330	430	20	590	1500	410	93.2
89										
90										
91										
92										
93										
94 East Fork	0.8	10	<0.1	75	48	25	1390	85	130	2.7
95										
96										
97										
98										
99	2.4	<0.1	<5.0	92	15	20	540	50	70	0.6
100										
101										
102										

July 1976

Isotope (wt %)	Sample # 5	8	27	36	49	51	54
U-234	0.0083	0.0083	0.0069	0.010	0.0083	0.0065	0
U-235	0.96	0.98	0.86	1.22	1.061	0.82	0.84
U-236	0.018	0.012	0.011	0.011	0.0092	0.014	0
U-238	99.01	99.06	99.18	98.81	98.97	99.23	0

	77	79	82	83	81	85	84
U-234	0.0067	0.0069	0.0069	0.022	0.0064	0.0078	0.007[illegible]
U-235	0.89	0.93	0.84	1.54	0.84	0.93	0.86
U-236	0.009	0.012	0.013	0.002	0.011	0.0075	0.001
U-238	99.15	99.11	99.21	98.46	99.21	99.11	99.19

	88	100	94	99
U-234	0.01	0.0064	0.0076	0
U-235	1.34	0.78	0.97	0.87
U-236	0.0076	0.019	0.0077	0
U-238	98.69	99.26	99.07	0

Radionuclides

Thorium (picocu/g) All samples <0.1

Plutonium (picocu/g) All Samples <2.0

November 1976

mple #	% Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
		µg/g								
1										
2	3.3	2.0	<0.1	65	30	20	410	660	80	0.76
3										
4										
5	7.6	20	10	110	87	140	315	780	175	1.7
6										
7										
8	7.6	2	<0.1	90	104	20	515	490	145	0.91
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27	3.0	10	<0.1	200	62	45	680	648	220	5.6
28										
29										
30										
31										
32										
33										
34										

	μg/g									
	So Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
35										
36	4.7	2	<0.1	83	20	30	300	580	100	1.8
37										
38										
39										
40										
41										
42										
43										
44										
45										
46										
47										
48										
49	4.0	125	10	215	76	45	480	506	223	82.8
50										
51	5.0	0.5	<0.1	100	355	35	500	520	145	2.8
52										
53										
54	8.8	20	10	180	75	35	1000	600	200	5.6
55										
56										
57										
58										
59										
60										
61										
62										
63										
64										
65										
66										
67										
68										

	%	µg/g								
	Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
69										
70										
71										
72										
73										
74										
75										
76										
77	5.5	20	<0.1	125	81	75	678	445	180	11.6
78										
79	4.6	<0.1	<0.1	65	49	30	1070	365	105	4.0
80										
81	6.0	2	10	300	175	35	550	145	182	11.7
82	3.6	<0.1	<0.1	70	150	33	500	500	100	4.0
83	6.1	100	<0.1	100	175	40	700	170	170	13.2
84	4.8	2	<0.1	160	250	20	780	623	225	31
85	4.8	2	<0.1	140	153	25	600	325	163	17.5
86										
87										
88	3.5	1	10	45	26	35	528	70	85	4.7
89										
90										
91										
92										
93										
94										
95										
96										
97										
98										
99	4.0	<0.1	<0.1	38	25	10	2100	600	80	0.2
100	.25	20	<0.1	60	50	20	615	50	115	19
101										
102										

July 1977.

mple #	% Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
		μg/g								
1										
2	4.3	43	<0.1	68	37	21	130	320	250	8.0
3										
4										
5	4.5	10	<0.1	62	16	24	170	98	54	7.1
6										
7										
8	4.7	12	<0.1	77	17	21	130	92	90	14.8
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27	5.0	1.3	<0.1	17	5	21	20	28	8	3.3
28										
29										
30										
31										
32										
33										
34										

	% Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
		µg/g								
35										
36	4.6	39	<0.1	160	35	26	120	70	62	4.8
37										
38										
39										
40										
41										
42										
43										
44										
45										
46										
47										
48										
49	5.2	3.4	<0.1	92	10	26	270	43	25	5.2
50										
51	4.3	<0.1	<0.1	31	7	23	50	35	100	2.2
52										
53										
54	4.1	0.5	<0.1	43	10	25	160	39	26	1.6
55										
56										
57										
58										
59										
60										
61										
62										
63										
64										
65										
66										
67										
68										

	%	μg/g								
	Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
69										
70										
71										
72										
73										
74										
75										
76										
77	3.7	<0.1	<0.1	57	11	25	440	93	21	1.3
78										
79	4.2	0.8	<0.1	45	11	24	100	43	27	3.1
80										
81	4.5	307	<0.1	110	72	29	150	170	9	39.9
82	4.5	5.7	<0.1	19	27	23	20	30	5	5.7
83	4.8	<0.1	<0.1	41	8	25	80	38	20	1.2
84	4.7	21	<0.1	270	180	33	270	680	120	73.9
85	5.0	<0.1	<0.1	56	12	26	150	43	22	5.9
86										
87										
88	4.6	8.2	<0.1	56	46	29	210	46	43	9.6
89										
90										
91										
92										
93										
94	5.3	62	<0.1	63	31	27	70	70	37	18.5
95										
96										
97										
98										
99	4.8	<0.1	<0.1	38	13	22	230	27	28	1.0
100	5.7	32	<0.1	66	28	27	760	56	78	13.5
101										
102										

November 1977

mple #	% Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
		µg/g								
1										
2	4.1	10.2	<0.1	65	116	90	352	76	124	12.8
3										
4										
5	4.2	13.8	<0.1	66	39	100	380	51	124	14.7
6										
7										
8	2.4	12.5	<0.1	156	57	80	587	67	148	17.1
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27	1.6	1.4	<0.1	57.6	20	80	550	31	120	6.5
28										
29										
30										
31										
32										
33										
34										

	Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
35										
36	1.9	38	<0.1	266	70	80	394	120	166	72.2
37										
38										
39										
40										
41										
42										
43										
44										
45										
46										
47										
48										
49	2.1	<0.1	<0.1 ~~66~~	60 ~~70~~	30 ~~95~~	75 ~~871~~	871 ~~90~~	90 ~~200~~	3.8	
50										
51	4.1	3.0	<0.1	73	42	46	435	78	106	8.5
52										
53										
54	2.2	21.5	<0.1	193	95	70	954	164	200	93.7
55										
56										
57										
58										
59										
60										
61										
62										
63										
64										
65										
66										
67										
68										

μg/g

	%	µg/g								
	Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
69										
70										
71										
72										
73										
74										
75										
76										
77	2.1	5.2	<0.1	75	38	70	441	66	134	8.5
78										
79	1.5	8.4	<0.1	50	30	90	265	61	114	11.8
80										
81	3.1	<0.1	<0.1	49	23	30	308	69	68	2.0
82	1.4	<0.1	<0.1	30	14	90	150	30	95	3.3
83	2.7	6.5	<0.1	69	37	42	177	274	89	10.7
84	5.8	1.6	<0.1	537	162	73	533	224	130	10.1
85	4.1	7.8	<0.1	88	46	48	351	334	104	10.4
86										
87										
88	5.3	11	<0.1	196	186	66	432	892	186	172
89										
90										
91										
92										
93										
94										
95										
96										
97										
98										
99	2.4	0.3	<0.1	50	40	90	2290	38	120	3.1
100	4.2	8.9	<0.1	88	53	44	614	322	106	10.7
101										
102	3.0	0.4	<0.1	126	23	47	632	73	75	1.9

November 1977

Sample #	Cs	Np	Tc	Pu
	— pico Cu/g —			
2	10	<0.3	652	1.8
5				
8	<9	<0.3	693	<0.4
27				
36	<9	<0.3	800	0.4
49				
51	<9	<0.3	790	<0.4
54				
77	<9	<0.3	770	<0.4
79				
82	<9	<0.3	250	<0.3
83				
81	<9	<0.3	<60	1.3
85				
84	<9	<0.3	<60	<0.4
88				
100	<9	<0.3	558	<0.4
94				
102	<9	<0.3	<60	<0.4
99				

July 1978

Sample #	Cs (picocu/g)	Np (picocu/g)	Tc (picocu/g)	Pu (picocu/g)
2	8	<0.3	<50	<0.3
23	<4	↓	↓	↓
54	<4			
65	<4			
84	<4			
86	<4			

July 1978

mple #	% Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
		µg/g								
1										
2	6.4	8.1	<0.1	59	69	32	620	64	113	9.6
3										
4										
5										
6										
7										
8										
9										
10										
11	9.1	11.6	<0.1	80	~~69~~ 110	44	591	93	112	18
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	6.2	1.7	<0.1	67	37	25	966	65	99	7.8
24										
25										
26										
27										
28										
29										
30										
31										
32										
33										
34										

	% Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
		µg/g								
35										
36	7.4	12.1	<0.1	200	63	36	608	141	232	22.3
37										
38										
39										
40										
41										
42										
43										
44										
45										
46										
47										
48										
49										
50										
51										
52										
53										
54	5.7	1.1	<0.1	90	49	37	712	79	85	5.8
55										
56	4.9	28	<0.1	100	90	42	518	328	216	34.6
57										
58										
59										
60										
61										
62										
63										
64										
65	5.9	2.7	<0.1	61	62	47	690	93	135	14.6
66										
67										
68										

	%	µg/g								
	Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
69										
70										
71										
72										
73										
74										
75										
76										
77	5.1	4.5	<0.1	59	45	45	671	94	113	21.4
78										
79										
80										
81										
82										
83	6.2	16.4	<0.1	370	260	73	617	560	226	113.5
84	5.0	<0.1	<0.1	45	22	38	1291	42	54	3.19
85										
86	4.5	2.8	<0.1	59	41	37	976	46	74	6.9
87										
88										
89										
90										
91										
92										
93										
94	4.3	25.4	<0.1	58	90	49	905	44	88	14
95										
96										
97										
98										

November 1978

pico Cu/g

Sample	Cs	Np	Tc	Pu
11	<4	<0.2	<50	<0.2
36	↓	↓	↓	↓
56	↓	↓	↓	↓
77	↓	↓	↓	↓
83	↓	↓	↓	↓
94	↓	↓	↓	↓

November 1978

mple #	% Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
		µg/g								
1										
2	14.0	7.2	<0.1	141	160	94	473	109	136	20
3										
4										
5										
6										
7										
8										
9										
10										
11	7.8	0.3	<0.1	79	90	67	940	72	139	8.8
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22								~~41~~	~~102~~	~~10.~~ 8
23	5.0	2.5	<0.1	51	45	53	631	41	102	10.8
24										
25										
26										
27										
28										
29										
30										
31										
32										
33										
34										

	Al (%)	Hg (µg/g)	Cd (µg/g)	Cr (µg/g)	Cu (µg/g)	Pb (µg/g)	Mn (µg/g)	Ni (µg/g)	Zn (µg/g)	U (µg/g)
35										
36	5.0	3.2	<0.1	58	43	49	415	48	86	6.3
37										
38										
39										
40										
41										
42										
43										
44										
45										
46										
47										
48										
49										
50										
51										
52										
53										
54	4.8	4.6	<0.1	52	65	57	1197	40	88	2.5
55										
56	3.1	6.9	<0.1	20	26	32	607	47	82	8.4
57										
58										
59										
60										
61										
62										
63										
64										
65	4.1	2.7	<0.1	44	22	47	802	28	61	4.8
66										
67										
68										

	%	μg/g								
	Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
69										
70										
71										
72										
73										
74										
75										
76										
77	4.2	7.4	<0.1	47	39	50	759	44	80	11.8
78										
79										
80										
81										
82										
83	3.8	25.2	<0.1	70	217	57	424	217	112	76.
84	4.3	4.5	<0.1	50	50	54	656	58	90	20.7
85										
86	3.9	7.5	<0.1	37	32	53	602	28	74	5.2
87										
88										
89										
90										
91										
92										
93										
94	4.9	2.9	<0.1	39	32	60	1222	29	51	4.2
95										
96										
97										
98										

July 1979

pico Cu/g

Sample #	Pu	Np	Cs	Tc
101	0.09	0.03	5	<20
2	0.34	0.03	30	30
23	<0.02	0.09	<1	<20
36	0.14	0.14	<1	<20
54	0.04	0.02	<1	<20
56	<0.02	<0.02	<1	<20
77	0.14	0.13	<1	<20
83	0.04	0.04	<1	<20
84	1.12	0.91	3	930
86	<0.02	0.02		<20
94	<0.02	0.03	<1	<20
102	0.03	<0.02	2	<20
11	<0.02	<0.02	<1	
65	0.15	0.37	<1	20

July 1979

mple #	% Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
		µg/g								
1										
2	9.0	40	<0.1	310	105	55	590	120	170	15.5
3										
4										
5										
6										
7										
8										
9										
10										
11	6.7	<0.1	<0.1	120	82	20	500	120	130	9.1
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	6.3	0.3	<0.1	70	39	55	430	115	100	4.6
24										
25										
26										
27										
28										
29										
30										
31										
32										
33										
34										

	Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
35										
36	5.7	<0.1	<0.1	50	22	40	290	60	106	5.3
37										
38										
39										
40										
41										
42										
43										
44										
45										
46										
47										
48										
49										
50										
51										
52										
53										
54	3.3	15.1	<0.1	58	22	38	440	86	103	10.1
55										
56	4.2	1.8	<0.1	44	20	40	870	65	73	5.3
57										
58										
59										
60										
61										
62										
63										
64										
65	4.2	2.0	<0.1	47	21	40	462	102	68	4.2
66										
67										
68										

μg/g

	%	μg/g								
	Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
69										
70										
71										
72										
73										
74										
75										
76										
77	4.2	2.4	<0.1	44	35	41	1240	70	72	4.4
78										
79										
80										
81										
82										
83	2.4	2.9	<0.1	35	16	40	425	58	66	6.7
84	3.5	<0.1	<0.1	35	15	37	1035	45	48	2.9
85										
86	5.5	<0.1	<0.1 ~~[illegible]~~	105 ~~[illegible]~~	130	52	570	410	173	102
87										
88										
89										
90										
91										
92										
93										
94	3.4	6.7	<0.1	34	21	40	535	70	79	16.4
95										
96										
97										
98										
99										
100										
101	2.5	<0.1	<0.1	29	14	25	970	35	45	2.8
102	3.2	<0.1	<0.1 ~~27~~	27 ~~[illegible]~~	12	23	362	21	44	1.4

November 1979

pico Cu/g

Sample #	Cs	Np	Pu	Tc
101	13	<0.02	0.16	<10
102	<1	<0.02	<0.02	<10
2	28	<0.02	0.41	<10
23	<1	<0.02	<0.02	<10
54	<1	<0.02	<0.02	<10
65	<1	<0.02	<0.02	<10
83	<1	<0.02	0.23	<10
86	<1	<0.02	<0.02	<10

November 1979

mple #	% Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
		µg/g								
1										
2	9.6	29.6	<0.1	128	115	70	609	150	155	18.0
3										
4										
5										
6										
7										
8										
9										
10										
11	3.0	26.5	<0.1	86	41	48	433	93	90	20.2
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	7.9	2.3	<0.1	81	80	65	585	100	118	7.4
24										
25										
26										
27										
28										
29										
30										
31										
32										
33										
34										

	% Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
		µg/g								
35										
36	7.2	7.5	<0.1	390	68	65	610	208	240	17.7
37										
38										
39										
40										
41										
42										
43										
44										
45										
46										
47										
48										
49										
50										
51										
52										
53										
54	2.7	4.9	<0.1	55	164	40	270	57	90	5.8
55										
56	2.6	3.2	<0.1	110	22	40	380	180	95	9.3
57										
58										
59										
60										
61										
62										
63										
64										
65										
66										
67										
68										

	%	µg/g								
	Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
69										
70										
71										
72										
73										
74										
75										
76										
77	5.2	17.9	<0.1	160	53	50	590	105	160	32.1
78										
79										
80										
81										
82										
83	4.5	4.5	<0.1	90	56	95	510	147	115	11.5
84	4.9	26	<0.1	89	693		570	1170	300	26[illegible]
85										
86	3.1	5.0	<0.1	70	54	55	530	103	100	8.1
87										
88										
89										
90										
91										
92										
93										
94	2.8	15	<0.1	90	44	60	410	146	100	14.6
95										
96										
97										
98										
99										
100										
101	2.7	<0.1	<0.1	20	15	40	1000	25	60	1.1
102	4.4	11.2	<0.1	140	71	90	600	255	140	18.5

July 1980

Sample	Tc	Pu	Np	Cs
	pico Cu/g			
2	40	0.43	0.03	18
101	20	0.17	<0.02	12
23	<20	0.03	0.13	<3
54	40	0.11	0.33	<3
65	60	0.08	0.15	<3
83	20	<0.02	<0.02	<3
84	<20	0.02	0.07	<3
102	<20	0.03	0.05	4
94	<20	<0.02	<0.02	<3

July 1980

mple #	% Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
		μg/g								
1										
2	8.3	18.1	4	177	108	59	545	85	121	11.7
3										
4										
5										
6										
7										
8										
9										
10										
11	3.3	25.4	2	18	187	20	654	24	70	4.2
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	10.3	3.0	5	72	126	67	641	89	161	9.6
24										
25										
26										
27										
28										
29										
30										
31										
32										
33										
34										

	Sb Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
35										
36	6.0	14.8	3	176	63	41	725	108	176	19.9
37										
38										
39										
40										
41										
42										
43										
44										
45										
46										
47										
48										
49										
50										
51										
52										
53										
54	5.8	1.8	3	38	28	31	1273	39	81	3.6
55										
56	3.8	15.4	3	148	109	27	571	139	131	16.6
57										
58										
59										
60										
61										
62										
63										
64										
65										
66										
67										
68										

	%	µg/g								
	Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
69										
70										
71										
72										
73										
74										
75										
76										
77	2.8	11.8	2	40	29	26	472	53	26	5.7
78										
79										
80										
81										
82			~~2~~	~~3~~						
83	4.4	8.5	2	38	42	33	539	65	97	11.7
84	5.3	12.4	3	90	86	97	613	213	160	35
85										
86	3.3	6.0	2	27	25	28	652	34	63	3.4
87										
88										
89										
90										
91										
92										
93										
94	5.6	6.5	1	50	40	41	722	41	95	9.5
95										
96										
97										
98										
99										
100										
101	4.3	3.6	2	35	34	38	2409	37	83	1.4
102	1.5	0.9	1	14	11	12	391	14	32	0.9

November 1980

mple #	% Al	Mg/g Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
1										
2	7.9	13.7	3	130	95	57	653	99	85	8.1
3										
4										
5										
6										
7										
8										
9										
10										
11	5.8	14.8	1	32	105	38	707	39	101	4.7
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	7.9	2.6	3	61	77	52	516	64	115	5.9
24										
25										
26										
27										
28										
29										
30										
31										
32										
33										
34										

	Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
35										
36	5.2	8.1	2	31	37	29	640	55	108	9.8
37										
38										
39										
40										
41										
42										
43										
44										
45										
46										
47										
48										
49										
50										
51										
52										
53										
54	6.3	2.6	4	29	35	26	1106	39	92	5.6
55										
56	2.5	9.7	2	36	30	7	430	46	89	5.9
57										
58										
59										
60										
61										
62										
63										
64										
65										
66										
67										
68										

Mg/g

	%	µg/g								
	Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
69										
70										
71										
72										
73										
74										
75										
76										
77	2.7	17	2	44	36	25	367	55	89	7
78										
79										
80										
81										
82										
83	4.9	16.6	3	54	51	45	545	65	144	12.7
84	3.8	5.3	1	17	29	26	467	32	67	3.8
85										
86	4.0	0.4	2	19	32	26	886	34	60	2.9
87										
88										
89										
90										
91										
92										
93										
94	2.9	11	1	18	27	30	404	33	75	5.8
95										
96										
97										
98										
99										
100										
101	3.1	1.2	2.0	16	35	22	1118	25	67	1.2
102	1.5	1.0	2.0	7	12	<5	364	12	30	1.0

July 1981

mple #	% Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
		µg/g								
1										
2	4.3	10	1	95	47	19	472	56	87	7.50
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	4.1	2.6	1	44	22	24	860	37	84	3.0
24										
25										
26										
27										
28										
29										
30										
31										
32										
33										
34										

	µg/g									
	Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
35										
36	5.0	14.8	2	295	54	36	668	81	202	13.7
37										
38										
39										
40										
41										
42										
43										
44										
45										
46										
47										
48										
49										
50										
51										
52										
53										
54	4.4	4.7	1	51	34	27	1920	53	101	3.9
55										
56	3.3	10.1	1	61	32	23	554	63	106	7.6
57										
58										
59										
60										
61										
62										
63										
64										
65										
66										
67										
68										

	%	µg/g								
	Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
69										
70										
71										
72										
73										
74										
75										
76										
77	5.0	7.3	1	75	65	90	1080	119	186	13
78										
79										
80										
81										
82										
83	5.2	7.4	1	90	82	51	1170	112	181	12.3
84	3.8	2.4	1	40	23	30	1820	54	77	3.9
85										
86	3.1	8.3	1	37	25	25	537	42	85	5.8
87										
88										
89										
90										
91										
92										
93										
94	3.4	11.1	2	63	43	32	629	32	91	15.1
95										
96										
97										
98										
99										
100										
101	3.4	0.6	1	34	20	26	1700	24	69	1.5
102	4.1	7.8	1	~~38~~ 24	~~64~~ 38	25	531	64	122	9.5

November 1981

mple #	% Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
		µg/g								
1										
2	7.8	1.7	4	124	109	61	688	84	154	5.9
3										
4										
5										
6										
7										
8										
9										
10										
11	6.7	2.9	2	104	117	52	558	71	142	6.8
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	6.1	5.1	3	123	57	50	790	77	168	9.4
24										
25										
26										
27										
28										
29										
30										
31										
32										
33										
34										

	μg/g									
	Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
35										
36	5.7	6.5	2	146	48	52	980	84	173	7.9
37										
38										
39										
40										
41										
42										
43										
44										
45										
46										
47										
48										
49										
50										
51										
52										
53										
54	4.2	1.2	1	46	27	33	1340	35	70	1.9
55										
56	2.8	9.7	2	43	33	25	450	50	112	28.4
57										
58										
59										
60										
61										
62										
63										
64										
65										
66										
67										
68										

	%	µg/g								
	Al	Hg	Cd	Cr	Cu	Pb	Mn	Ni	Zn	U
69										
70										
71										
72										
73										
74										
75										
76										
77	2.2	3.6	1	28	19	17	239	38	56	4.1
78										
79										
80										
81										
82										
83	6.4	11.5	3	96	95	57	930	112	180	20.1
84	3.8	4.1	2	53	54	39	697	140	130	22.1
85										
86	2.9	4.4	1	36	22	22	307	41	72	5.3
87										
88										
89										
90										
91										
92										
93										
94	5.1	6.5	2	63	53	44	880	47	128	8.9
95										
96										
97										
98										
99										
100										
101	3.8	0.2	2	34	22	33	2570	32	76	1.1
102	4.2	18.5	4	142	68	36	810	177	148	12