GSA Data Repository Item # 9001

Title of article Geochemical Evidence for a Revised Precambrian Sequence in the Northwest Adirondacks, New York

Author(s) James D. Carl, William F. deLorraine, Douglas G. Mose & Yuch-Ning Shieh

see **Bulletin** v. 102, p. 182 - 192

Contents

Tables 2 - 8 (15 pg.) Appendix (3 pg.)

TABLE 2

ROSSIE GRANITOID GNEISSES

Gneiss Unit:	Gn_6	Gn_3	Gn_6	Gn_3	Gn_3	Gn_6	Gn_3	Gn_3
Spl. No:	15-1	16-1	17	19A	21	22A	24	26
SiO_2 wt. %	67.4	67.85	71.66	69.65	63.07	71.25	71.37	67.16
Al_2O_3	15.2	15.20	14.82	14.77	14.80	14.41	14.95	15.99
Fe_T (as +3)	4.03	4.64	2.77	4.12	8.68	3.15	1.96	4.94
MgO	1.06	1.08	0.54	0.75	1.41	0.56	0.77	1.21
CaO	2.89	2.33	1.91	1.91	2.87	1.54	1.85	2.67
Na_2O	4.22	3.99	3.91	3.29	2.77	3.70	3.32	4.17
K_2O	3.05	3.12	3.88	4.62	4.41	4.37	4.88	3.20
TiO_2	0.58	0.56	0.28	0.37	0.96	0.24	0.33	0.52
P_2O_5	0.18	0.11	0.05	0.08	0.51	0.08	0.06	0.21
MnO	0.03	0.03	0.03	0.03	0.09	0.02	0.02	0.03
Total %	*98.6*	*98.92*	*99.86*	*99.64*	*99.57*	*99.36*	*99.51*	*100.12*
Rb ppm	120	90	120	100	140	90	120	100
Sr	590	430	340	360	380	360	390	620
Ba	720	650	460	640	930	610	780	790
Y	10	20	10	10	50	10	20	10
Zr	310	240	130	170	470	180	210	250
Nb	20	50	10	10	10	10	10	10

Table 2

Gn_6 27A	- 29-2	Gn_3 40	- 43	- 49A	- 50A	Gn_6 54A	Mean and Std. Dev. (15 spls.)
67.59	66.60	65.84	66.7	65.3	67.8	66.6	67.7+/-2.3
15.55	15.99	15.21	15.3	14.7	15.4	14.9	15.2+/-0.4
4.00	4.27	4.96	3.11	6.12	4.38	4.46	4.37+/-1.51
1.25	1.02	1.04	1.04	1.84	0.87	1.08	1.03+/-0.32
2.70	2.86	2.56	3.28	2.97	2.74	2.49	2.50+/-0.48
4.46	3.85	3.39	4.29	3.64	4.12	3.75	3.79+/-0.44
2.95	4.23	4.90	3.45	3.56	3.83	4.51	3.93+/-0.66
0.46	0.53	0.69	0.35	0.82	0.46	0.65	0.52+/-0.19
0.14	0.26	0.30	0.11	0.22	0.15	0.17	0.18+/-0.11
0.03	0.04	0.05	0.04	0.06	0.04	0.06	0.04+/-0.02
99.17	*99.65*	*98.96*	*97.7*	*99.2*	*99.8*	*98.7*	
130	120	150	150	140	110	210	130+/-30
520	650	400	570	490	420	310	460+/-110
730	790	950	740	650	670	670	720+/-120
10	10	40	10	50	10	40	20+/-20
240	280	360	160	450	210	360	270+/-100
10	20	10	20	20	50	20	20+/-10

Samples were analyzed either at the Department of Geology, University of Ottawa, or by X-ray Assay Laboratories, Inc., formerly of Don's Mills, Ontario (presently Irving, Texas).

TABLE 3

ANTWERP GRANITOID GNEISSES

Spl. No:	1-1	1-2	2-1*	3-1	4-1*	5-1*	10-1	12-3
SiO_2 wt. %	70.0	69.96	73.0	69.2	69.0	68.9	70.6	65.3
Al_2O_3	14.7	14.77	13.1	15.0	14.9	14.9	14.4	15.3
Fe_T (as +3)	2.73	2.87	2.91	2.83	3.35	3.81	2.12	4.31
MgO	0.73	0.96	0.30	0.82	0.66	0.87	0.37	1.60
CaO	2.36	2.43	1.20	2.16	2.21	1.96	1.60	2.99
Na_2O	4.72	4.60	3.62	4.09	4.44	4.08	4.96	4.98
K_2O	3.22	2.45	4.58	3.94	3.39	3.06	3.69	2.68
TiO_2	0.42	0.45	0.13	0.34	0.32	0.34	0.12	0.65
P_2O_5	0.11	0.11	0.01	-	0.10	0.08	0.05	0.18
MnO	0.03	0.02	0.03	0.02	0.02	0.02	0.01	0.02
Total %	*99.0*	*98.62*	*98.9*	*98.4*	*98.7*	*98.0*	*98.0*	*98.0*
Rb ppm	80	50	100	100	80	60	50	130
Sr	610	460	200	610	640	590	420	670
Ba	840	570	540	1160	1000	730	580	780
Y	20	10	10	10	10	10	10	10
Zr	110	170	90	180	160	160	70	310
Nb	50	10	20	20	40	60	30	20

Table 3

13-1	14-1	14-2	41*	Mean and Std. Dev. (12 spls.)
71.43	69.1	71.03	72.17	70.0+/-1.9
14.70	14.8	14.85	15.02	14.7+/-0.5
2.37	3.06	2.50	2.44	2.94+/-0.60
0.54	0.84	0.72	0.53	0.75+/-0.32
1.85	2.14	2.00	1.94	2.07+/-0.42
3.96	4.04	3.98	4.69	4.35+/-0.42
3.85	3.90	3.37	2.83	3.41+/-0.59
0.30	0.41	0.42	0.26	0.35+/-0.14
0.06	0.11	0.09	0.07	0.09+/-0.04
0.02	0.01	0.02	0.02	0.02+/-0.01
99.1	*98.4*	*98.98*	*99.97*	
110	110	90	60	90+/-30
390	520	370	390	490+/-140
640	960	570	490	740+/-200
10	10	20	10	10+/-0
180	160	170	140	160+/-60
10	50	40	10	30+/-20

*Samples from Moss Ridge-Battle Hill

Samples were analyzed either at the Department of Geology, University of Ottawa, or by X-ray Assay Laboratories, Inc., formerly of Don's Mills, Ontario (presently Irving, Texas).

TABLE 4

RARE EARTH ELEMENTS (ppm)

	ANTWERP GRANITOID GNEISSES				ROSSIE GRANITOID GNEISSES			
Spl	1-1	2-1	3-1	14-1	22	27A	29-2	40
La	26.0	34	30.0	40.0	24.9	71	59.4	68.9
Ce	47	47	56	65	44	126	112	138
Nd	20	19	22	32	17	43	47	55
Sm	3.8	3.6	4.1	5.1	3.46	6.37	7.43	10.6
Eu	1.2	0.77	1.01	1.20	0.93	1.19	1.51	1.89
Tb	0.40	0.30	0.40	0.40	0.3	0.3	0.8	1.3
Yb	0.74	0.28	0.59	0.78	0.51	1.05	0.60	3.15
Lu	0.10	0.04	0.07	0.10	0.11	0.20	0.10	0.40

	HYDE SCHOOL GNEISS						*Trondhjemitic*
	Alaskitic Gneiss						*Gneiss*
Spl #	27	28	30	35	38	40	31
La	85.6	88.3	71.9	78.6	62.1	73.5	19.0
Ce	175.0	177.0	172.3	192.0	130.4	157.2	31.9
Nd	-	-	-	-	-	-	-
Sm	26.2	26.5	17.9	22.3	20.0	17.0	4.8
Eu	2.56	1.99	3.39	0.99	1.75	1.41	0.79
Tb	3.01	2.84	2.29	3.23	2.21	3.27	0.42
Yb	12.30	11.05	9.37	14.72	9.33	8.96	1.97
Lu	1.82	1.43	2.39	1.83	1.31	1.23	0.34

Table 4

ROCKPORT GRANITE GNEISS

Spl #	1A	10	18A	27B	Ch2*
La	41.8	28.3	41.4	53.0	50.9
Ce	96.3	57.5	70	104.9	120
Nd	-	-	15	-	52.6
Sm	9.02	3.96	3.08	6.05	10.8
Eu	0.87	0.63	0.67	0.89	1.02
Tb	0.97	-	0.6	0.64	1.35
Yb	5.48	1.03	1.92	3.66	2.81
Lu	0.78	0.22	0.47	0.46	0.57

*data from Lepak (1983)

TABLE 5

OXYGEN ISOTOPE ANALYSES

ROCKPORT GRANITE GNEISS

Spl No.	$\partial^{18}O$ o/oo
1A	13.1
6	10.0
10	9.4
12A	10.6
13A	12.7
18A	12.3
18B	11.6
21A	12.5
23B	12.0
24	11.1
811-28	13.9
811-29	14.9
812-7	14.8
812-9A	10.8
812-9B	10.6
812-13	13.3

ROSSIE GRANITOID GNEISSES

Spl. No	$\partial^{18}O$ o/oo
17	12.1
19A	14.2
22A	13.7
24	13.3
26	10.7
27A	11.8
29-2	11.6
40	12.9

Table 5

ANTWERP GRANITOID GNEISSES

Spl. No.	$\partial^{18}O$ o/oo
1-1	11.2
2-1	13.5
4-1	10.0
10-1	12.3
14-1	10.4
41	10.6

HYDE SCHOOL GNEISS

Spl. No	$\partial^{18}O$ o/oo
27	9.3
28	9.1
30	8.4
31	9.0
32	8.8
33	8.8
38	9.6
39	8.2
40	8.5
41	8.3

Oxygen isotope analyses of 40 samples were performed by Shieh at Purdue University. Oxygen was extraced from silicates using the BrF_5 method and subsequent conversion to CO_2 with red hot graphite. Isotopic analysis was performed on CO_2 gas using a Nuclide 3-60-RMS isotope ratio mass spectrometer. Isotopic ratios are reported in the conventional $\partial^{18}O$ notation in per mil relative to the standard mean ocean water (SMOW). Analytical error is about 0.1 to 0.2 per mil. The silicate reference sample NBS-28 yielded an average $\partial^{18}O$ value of 9.6 per mil.

TABLE 6

Rb-Sr ISOTOPE DATA

Spl. No.	^{86}Sr *ppm*	^{87}Rb *ppm*	$^{87}Rb/^{86}Sr$	$^{87}Sr/^{86}Sr$
Rossie granitoid gneisses			*(atomic ratios)*	
1	54.910	25.492	0.459	0.7108
2	41.911	16.726	0.395	0.7103
3	40.150	28.907	0.712	0.7158
4	63.098	23.758	0.372	0.7094
5	37.549	41.821	1.101	0.7214
6	46.870	26.716	0.563	0.7136
7	56.512	9.923	0.174	0.7066
8	61.010	25.370	0.411	0.7101
9	37.301	31.258	0.828	0.7173
Antwerp granitoid gneisses				
1	42.183	30.037	0.704	0.7155
2	40.101	27.719	0.683	0.7154
3	59.575	17.332	0.291	0.7082
4	53.543	30.216	0.558	0.7132
5	38.627	28.795	0.737	0.7157
6	36.307	29.645	0.807	0.7167
8	66.892	14.595	0.216	0.7068
9	36.460	22.963	0.623	0.7150
10	34.819	33.278	0.945	0.7179

Rb-Sr isotopic data was obtained by Mose using the method described in Mose and Nagel (1984) and the mass spectrometer described in Russell and others (1985). The one standard deviation experimental error was estimated to be +/- 2% for $^{87}Rb/^{86}Sr$ and 0.05% for $^{87}Sr/^{86}Sr$, inclusive of sample splitting errors.

TABLE 7

ROCKPORT GRANITE GNEISS

Spl. No:	1A	3F	6	8	10	13A	17	18A
SiO_2 wt. %	73.21	66.37	74.16	72.87	70.72	75.33	72.09	74.70
Al_2O_3	13.53	14.42	13.56	14.20	14.73	13.30	13.27	13.08
Fe_T (as +3)	2.60	4.29	1.87	2.25	3.41	1.94	4.22	2.19
MgO	0.25	0.42	0.31	0.36	0.41	0.22	0.30	0.15
CaO	0.87	1.39	0.95	1.16	1.45	0.82	1.08	0.69
Na_2O	3.33	4.24	3.47	3.79	4.21	4.21	3.39	3.47
K_2O	5.19	5.45	5.23	5.00	4.40	4.36	5.18	5.21
TiO_2	0.15	0.45	0.18	0.17	0.23	0.07	0.27	0.10
MnO	0.02	0.07	0.02	0.03	0.04	0.02	0.03	0.02
Total %	*99.15*	*99.10*	*99.75*	*99.83*	*99.60*	*100.27*	*99.83*	*99.61*
Rb ppm	150	110	160	160	190	190	180	200
Sr	100	180	110	250	320	60	150	110
Ba	460	470	640	680	880	130	350	250
Y	60	50	50	10	30	30	50	20
Zr	130	570	160	140	160	40	250	100
Nb	10	10	10	10	10	10	20	10

Table 7

19A	20B	21A	23B	24	25A	26	27B	30
73.80	72.66	75.48	74.19	73.84	71.30	69.20	70.80	65.90
13.20	13.70	13.65	13.78	13.40	14.30	16.10	13.60	15.50
2.06	2.56	1.16	1.66	2.44	2.60	2.33	3.72	4.68
0.22	0.25	0.25	0.21	0.20	0.18	0.27	0.27	0.76
0.79	1.18	1.79	0.75	0.94	1.08	2.22	1.22	1.88
3.91	3.60	5.57	3.34	3.31	3.56	6.00	3.59	3.34
5.29	5.02	2.08	5.73	5.33	5.66	2.53	5.28	6.34
0.13	0.15	0.11	0.05	0.15	0.15	0.17	0.22	0.49
0.02	0.02	0.01	0.02	0.02	0.03	0.03	0.03	0.04
99.42	*99.14*	*100.10*	*99.73*	*99.63*	*98.86*	*98.85*	*98.73*	*98.93*
320	210	70	150	150	160	40	130	250
50	180	260	100	150	90	500	430	320
250	490	170	200	330	390	450	720	750
60	30	20	10	10	10	10	50	10
90	140	90	20	170	120	140	200	510
30	10	30	0	10	10	10	10	40

Table 7

31	71A	Mean and Std. Dev. (19 spls)
70.70	73.64	72.26+/-2.45
14.30	13.62	13.96+/-0.77
3.42	1.94	2.70+/-0.95
0.37	0.10	0.29+/-0.14
1.41	1.07	1.20+/-0.40
3.98	3.49	3.88+/-0.72
4.75	5.17	4.91+/-0.99
0.22	0.15	0.19+/-0.11
0.03	0.03	0.03+/-0.01
99.18	*99.21*	
130	210	170+/-60
310	90	200+/-130
790	420	460+/-220
40	60	30+/-20
170	140	180+/-140
10	10	10+/-10

Samples were analyzed either at the Department of Geology, University of Ottawa, or by X-ray Assay Laboratories, Inc., formerly of Don's Mills, Ontario (presently Irving, Texas).

TABLE 8

HYDE SCHOOL GNEISS

	----------Alaskitic						
Body:	Canton	Hyde School			Gouverneur		Res. Hill
Sample No:	27	28	29	30	39	40	38
SiO_2 wt. %	74.64	75.60	73.11	74.81	76.01	75.76	72.93
Al_2O_3	11.62	11.93	14.61	10.91	12.27	11.70	14.26
Fe_T (as +3)	3.04	3.22	2.27	5.27	2.89	3.31	2.39
MgO	0.26	0.14	0.06	0.50	0.25	0.11	0.35
CaO	0.65	0.71	0.39	0.94	0.59	0.45	0.36
Na_2O	3.70	3.69	3.72	3.24	3.10	3.03	3.75
K_2O	4.32	4.49	4.61	4.10	4.80	5.19	5.00
TiO_2	0.24	0.25	0.13	0.34	0.28	0.22	0.31
MnO	0.04	0.03	0.01	0.01	0.06	0.01	0.04
Total %	*98.51*	*100.06*	*98.91*	*100.12*	*100.25*	*99.78*	*99.39*
Rb ppm	100	100	130	90	110	110	80
Sr	70	80	60	120	60	50	80
Ba	350	630	210	370	570	210	350
Y	110	110	160	100	100	80	100
Zr	550	560	440	740	520	580	490
Nb	30	20	30	20	20	20	20

Table 8

Gneiss								*Plagioclase*
Stalbird		California		Dodds Creek		Fish Creek		Hyde Sch.
35	36	64	68	88	89	85	87	31
75.06	78.05	74.81	75.89	74.83	76.66	76.03	68.88	76.52
12.04	10.91	11.88	11.91	12.17	11.47	11.90	15.54	10.68
3.29	2.47	3.64	2.93	1.98	3.16	2.29	3.83	2.04
0.15	0.02	0.02	0.00	0.12	0.00	0.07	0.83	1.92
0.29	0.25	0.56	0.60	1.71	0.40	0.35	2.44	3.98
3.05	2.61	3.90	3.57	3.74	3.46	3.74	4.80	3.28
5.46	4.95	3.98	4.47	3.90	4.43	4.67	3.20	2.05
0.23	0.14	0.23	0.17	0.19	0.15	0.15	0.35	0.42
0.03	0.02	0.04	0.03	0.03	0.04	0.03	0.04	0.07
99.60	*99.42*	*99.06*	*99.57*	*98.67*	*99.77*	*99.23*	*99.91*	*100.96*
180	200	90	90	80	90	120	60	50
50	50	50	40	60	30	40	370	440
280	60	1020	1070	220	140	380	820	550
140	60	50	40	70	80	70	20	30
200	270	440	410	490	550	250	200	70
30	30	0	0	10	0	0	0	10

Table 8

rich Gneisses			Mean and Std. Dev. of	Mean and Std. Dev. of
Hyde School		Gouv.	Alaskitic Gneiss	Plagioclase-rich
32	33	41	(14 spls.)	Gneisses (5 spls.)
66.55	66.61	78.67	75.30+/-1.27	71.45+/-5.74
16.12	15.63	10.93	12.11+/-1.03	13.78+/-2.73
3.59	4.35	3.89	3.01+/-0.78	3.54+/-0.88
1.18	1.94	0.29	0.15+/-0.14	1.23+/-0.71
2.58	3.11	2.38	0.59+/-0.36	2.90+/-0.67
5.80	4.46	3.36	3.45+/-0.37	4.34+/-1.05
2.89	2.37	0.53	4.60+/-0.44	2.21+/-1.04
0.67	0.50	0.20	0.22+/-0.06	0.43+/-0.17
0.05	0.02	0.04	0.03+/-0.01	0.04+/-0.02
99.43	*98.99*	*100.29*		
50	60	10	110+/-40	46+/-21
340	540	300	60+/-20	398+/-94
620	640	200	420+/-300	566+/-228
40	10	80	90+/-30	36+/-27
280	170	770	460+/-140	298+/-274
20	0	10	20+/-10	10+/-10

Samples were analyzed either at the Department of Geology, University of Ottawa, or by X-ray Assay Laboratories, Inc., formerly of Don's Mills, Ontario (presently Irving, Texas).

APPENDIX

SAMPLE LOCATIONS

7 1/2' Quadrangles

Hyde School Gneiss

27 Alaskitic, Canton body, route 87, ca. 1 mi SE DeKalb Junction, Bigelow quad.

28 Alaskitic, Hyde road near east edge of Hyde School body, Pope Mills quad.

29 Alaskitic, Hyde road in center of Hyde School body.

30 Alaskitic, Hyde road in center of Hyde School body.

31 Plag-rich, Hyde School body, 44^0 27' 56", 75^0 33' 19" Pope Mills quad.

32 Plag-rich, Hyde School body, 44^0 27' 57", 75^0 33' 19" Pope Mills quad.

33 Plag-rich, California road near center of Hyde School body, Pope Mills quad.

35 Alaskitic, Stalbird body, 44^0 23' 22", 75^0 12' 38" Hermon quad.

36 Alaskitic, Stalbird body, 44^0 23' 43", 75^0 12' 50" Hermon quad.

38 Alaskitic, Reservoir Hill body, 44^0 20' 17", 75^0 24' 40" Gouverneur quad.

39 Alaskitic, Gouverneur body, Rock Island road near White Creek, Gouverneur quad.

40 Alaskitic, Gouverneur body, Dailey road, ca. 2 mi north of Gouverneur, Gouverneur quad.

41 Plag-rich, Gouverneur body, Dailey road, ca. 2 mi north of Gouverneur, Gouverneur quad.

64 Alaskitic, California body, 44^0 13' 08", 75^0 26' 45" Lake Bonaparte quad.

68 Alaskitic, California body, 44^0 13' 27", 75^0 23' 17" Lake Bonaparte quad.

85 Alaskitic, Fish Creek body, 44° 32' 02", 75° 32' 20" Edwardsville quad.

87 Plag-rich, Fish Creek body, 44° 30' 47", 75° 35' 15" Edwardsville quad.

88 Alaskitic, Dodds Creek body, 44° 20' 35", 75° 39' 38" Muskellunge Lake quad.

89 Alaskitic, Dodds Creek body, 44° 19' 02", 75° 41' 48" Muskellunge Lake quad.

Rockport Granite Gneiss

1A 44° 27' 53", 75° 45' 32" Chippewa Bay quad.

3F 44° 24' 24", 75° 47' 22" Chippewa Bay quad.

6 44° 23' 17", 75° 49' 22" Chippewa Bay quad.

8 44° 20' 43", 75° 52' 36" Alexandria Bay quad.

10 44° 19' 12", 75° 55' 45" Alexandria Bay quad.

13A 44° 18' 28", 75° 59' 13" Alexandria Bay quad.

17 44° 19' 16", 76° 01' 23" Thousand Island Park quad.

18A 44° 19' 55", 75° 59' 46" Alexandria Bay quad.

19A 44° 18' 42", 75° 59' 55" Alexandria Bay quad.

20B 44° 20' 02", 75° 59' 31" Alexandria Bay quad.

21A 44° 20' 27", 75° 58' 43" Alexandria Bay quad.

23B 44° 19' 08", 76° 04' 28" Thousand Island Park quad.

24 44° 21' 51", 76° 30' 55" Thousand Island Park quad.

25A 44° 22' 03", 76° 03' 47" (approx.) Gananoque map 31C/8.

26 44° 22' 43", 76° 00' 33" (approx.) Gananoque map 31C/8.

27B 44° 22' 38", 76° 00' 33" (approx.) Gananoque map 31C/8.

30 Ca. 1 mi west of Waterton, Ontario, hiwy 2, Mallorytown map 31B/5.

31 44° 23' 35", 76° 01' 00" (approx.) Gananoque map 32C/8.

71A 44° 28' 30", 75° 43' 25" Hammond quad.

Antwerp Granitoid Gneisses

1-1 44° 18' 46", 75° 27' 20" Gouverneur quad.

1-2 44° 18' 46", 75° 27' 20" Gouverneur quad.

2-1 44° 20' 23", 75° 24' 15" Gouverneur quad.

3-1 44° 19' 03", 75° 25' 30" Gouverneur quad.

4-1 44° 24' 54", 75° 20' 37" Bigelow quad.

5-1 44° 23' 30", 75° 20' 43" Bigelow quad.

10-1 44° 15' 33", 75° 34' 42" Natural Dam quad.

12-3 44° 14' 12", 75° 35' 58" Antwerp quad.

13-1 44° 13' 52", 75° 36' 15" Antwerp quad.

14-1 44° 13' 03", 75° 36' 47" Antwerp quad.

14-2 44° 13' 03", 75° 36' 47" Antwerp quad.

41 44° 26' 02", 75° 19' 32" Bigelow quad.

Rossie Granitoid Gneisses

15-1 44° 20' 43", 75° 38' 25" Muskellunge Lake quad.

16-1 44° 21' 18", 75° 38' 59" Muskellunge Lake quad.

17 44° 20' 33", 75° 37' 49" Muskellunge Lake quad.

19A 44° 24' 38", 75° 35' 19" Pope Mills quad.

21 44° 23' 22", 75° 38' 28" Hammond quad.

22A 44° 21' 03", 75° 38' 46" Muskellunge Lake quad.

24 44° 24' 48", 75° 37' 10" Pope Mills quad.

26 44° 22' 25", 75° 39' 17" Muskellunge Lake quad.

27A 44° 20' 32", 75° 38' 29" Muskellunge Lake quad.

29-2 ca. 1 mi NE of Rossie near Bostwick Creek, Hammond quad.

40 44° 22' 48", 75° 39' 17" Hammond quad.

43 44° 21' 13", 75° 40' 02" Muskellunge Lake quad.

49A 44° 21' 50", 75° 40' 08" Muskellunge Lake quad.

50A 44° 22' 11", 75° 40' 55" Muskellunge Lake quad.

54A 44° 20' 50", 75° 37' 31" Muskellunge Lake quad.