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Molybdenum in Decayed Vegetation

at

Alike Lake

Desrosiers Township, Ontario

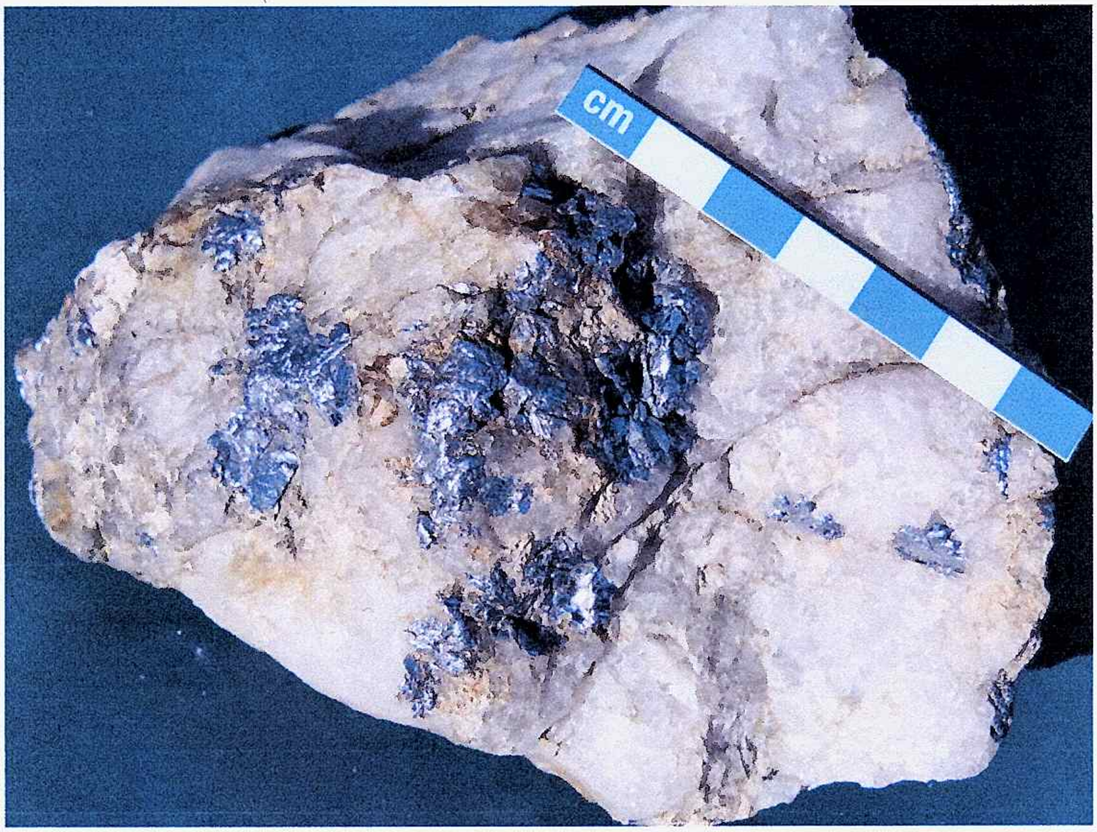
Cells:

41O16A094, 41O16A113, 41O16A114, 41O16A134.

Report by Hermann Daxl, M.Sc.(Minex), Claim Holder

29 March 2019

Desrosiers Molybdenite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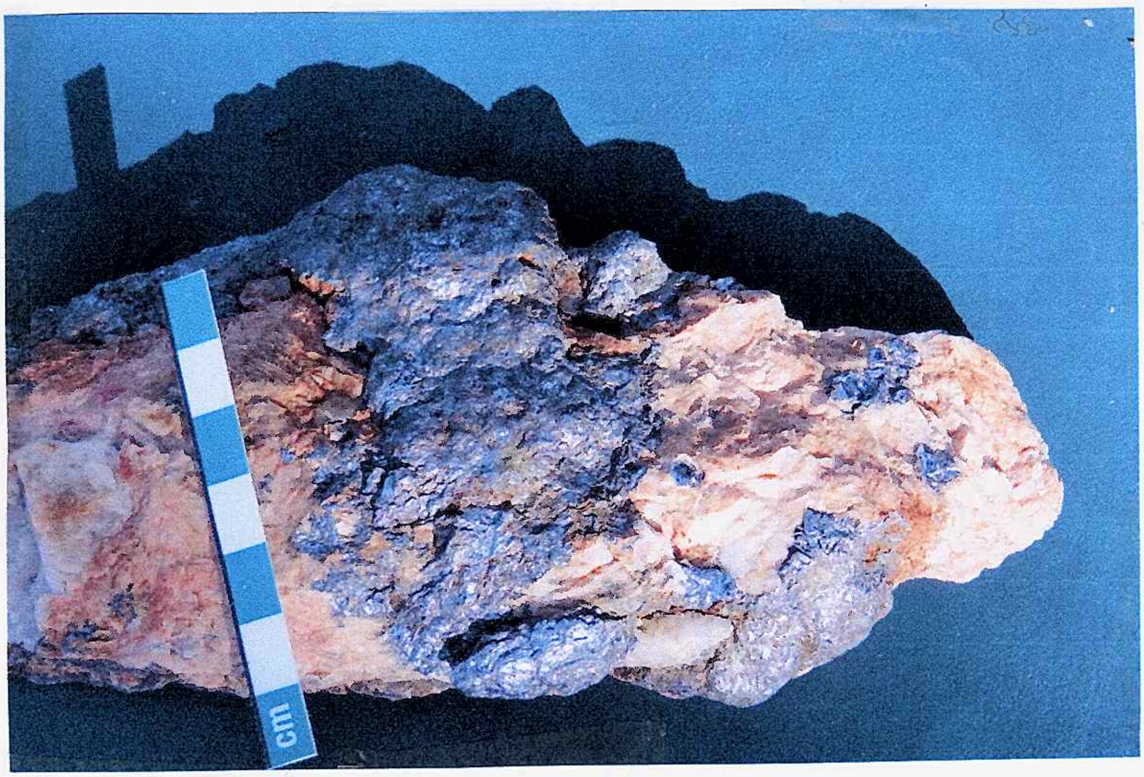
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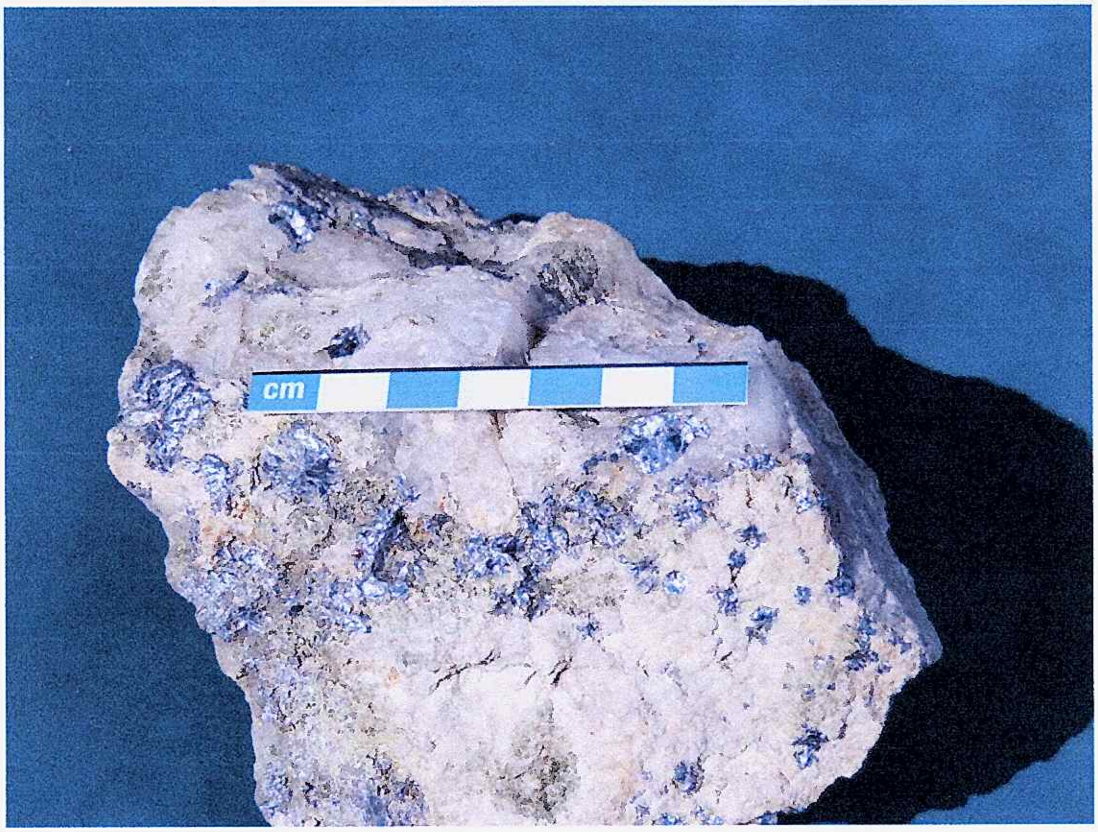
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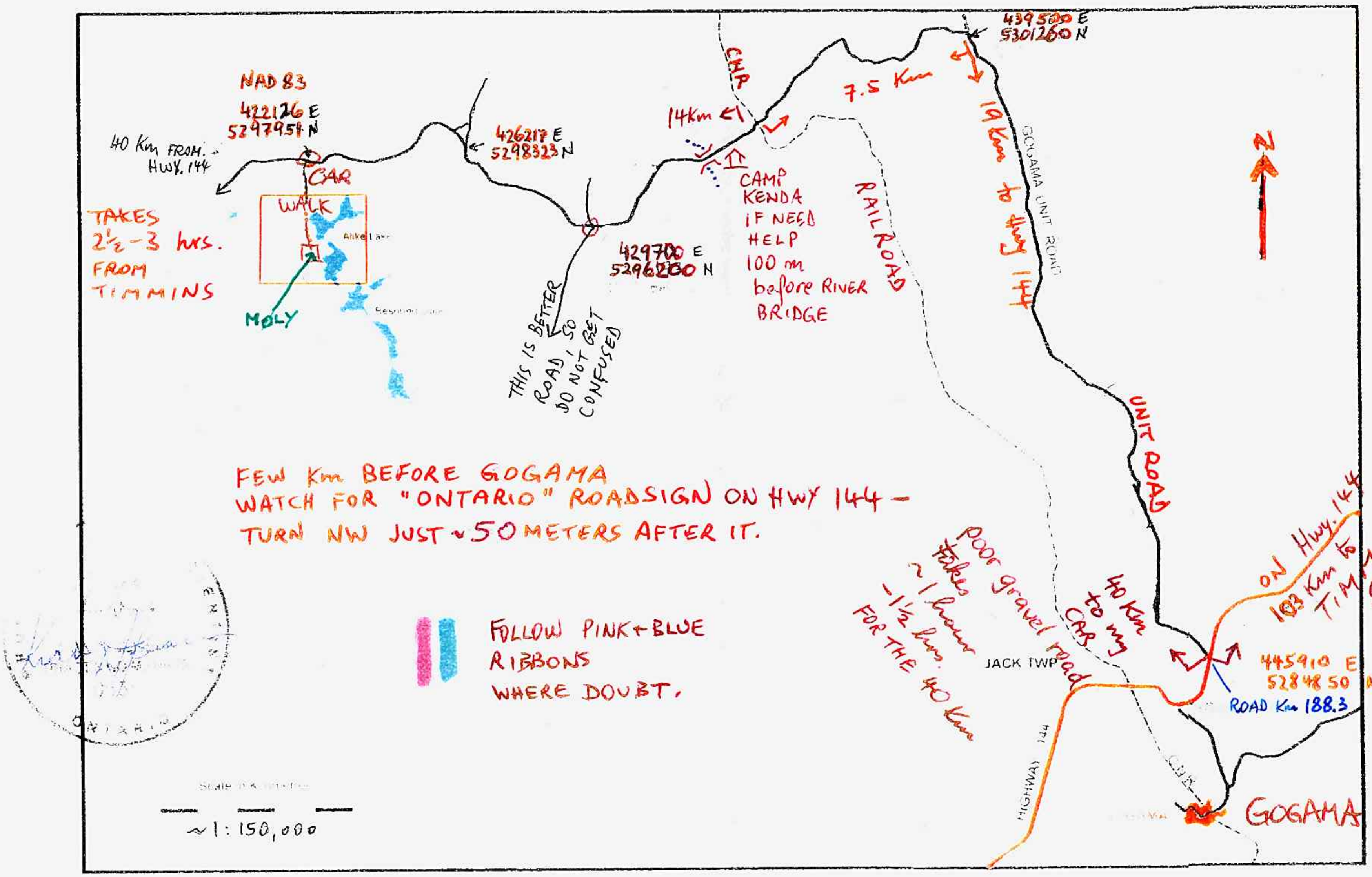

NAD 83
422126 E
5297951 N
40 Km FROM HWY. 144
CAR
WALK
TAKES 2½-3 hrs. FROM TIMMINS
MOLY
426217 E
5298323 N
429700 E
5296200 N
THIS IS BETTER ROAD, SO DO NOT GET CONFUSED
CNR
14Km
7.5 Km
439500 E
5301260 N
CAMP KENDA IF NEED HELP 100 m before RIVER BRIDGE
RAILROAD
19 Km to Hwy 144
GOGAMA UNIT ROAD
N
UNIT ROAD
FEW Km BEFORE GOGAMA
WATCH FOR "ONTARIO" ROADSIGN ON HWY 144 -
TURN NW JUST ~50 METERS AFTER IT.
FOLLOW PINK+BLUE RIBBONS WHERE DOUBT.
poor gravel road takes ~1 hour -1½ hrs. FOR THE 40 Km
40 Km to my CAR
ON Hwy. 144 103 Km to TIMMINS SQUARE
445910 E
5284850 N
ROAD Km 188.3
JACK TWP
HIGHWAY 144
GOGAMA
~1:150,000

[Francais]

Ontario

MINISTRY OF NORTHERN DEVELOPMENT AND MINES

MLAS

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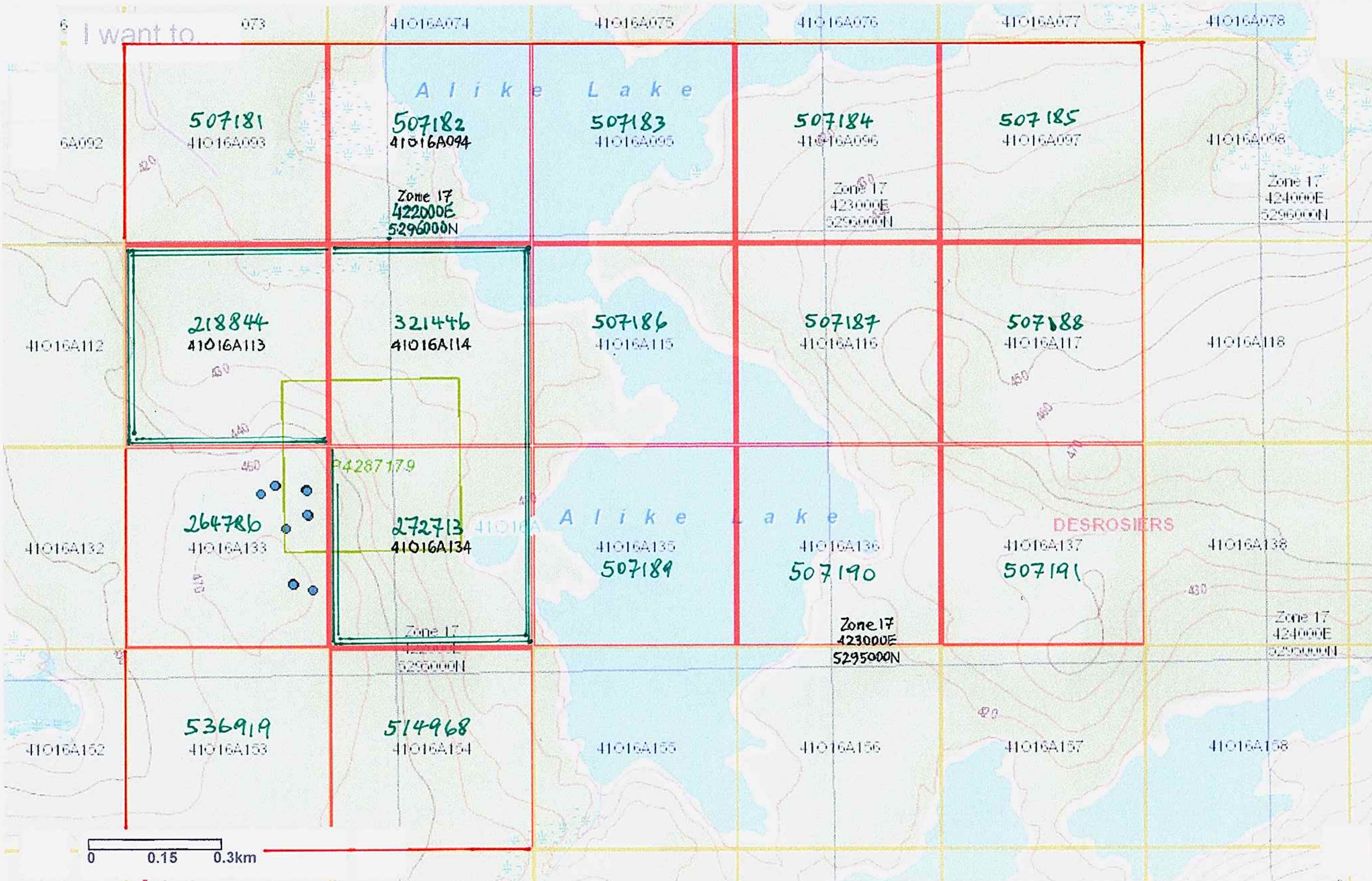


Introduction

The present successful orientation study confirmed anomalous molybdenum, bismuth, cesium, silver, in decayed vegetation, namely the top layer of soil from 0 - 6 cm depth, over the high-grade molybdenum occurrences west of Alike Lake, Desrosiers township, Ontario. Exploration is therefore no longer limited to outcrops but the areas between the numerous showings in this survey area or region can be evaluated with this new method. In contrast, the local and regional MAG and MaxMin II surveys by Moly Made Inc. (T-5427, AFRO 2.33027) in 2006 and by 1691063 Ontario Ltd. (T-6112) in 2009 had no chance to find molybdenite which is neither magnetic nor conductive.

I collected the 32 samples of decayed vegetation from 13 October to 4 November 2018 on claims 218844, 321446, 272713, held by myself and Patrick Gryba and Kian Jensen. The attached map shows sample locations relative to drilling and bulk sampling of 1960 (T-2073) by Jonsmith Mines Limited (2 x near samples 7908 and 7925), namely 50 tons estimated at 1 % molybdenite (MoS_2) from a flat-lying pegmatite (N-pit) and 165 tons at 2.25 % molybdenite (S-pit). Molybdenite contains 60 % molybdenum. The 100 x 100 m drilled area at these pits is misplaced on MLAS due to a mixup of NAD27 and NAD83.

From the attached 6 photos of the various habits of molybdenite found here, it becomes obvious that the 4 cm diameter drill core, or even the recent 5 cm core, was inadequate to calculate tonnage and grade, when molybdenite pockets often are much larger than the core diameter. The soft and slippery mineral easily and completely disintegrates in water and cannot even be panned as it stays suspended and floats away as shiny clouds similar to soap. Molybdenite in sheared contact zones or brittle quartz pegmatite would cause the core to spin and grind off. The 3 core racks at 422540 E - 5295530 N collapsed to <50 cm high piles.

The 35 showings described and mapped in T-2073 are within my map area including the also drilled contact zone in the south where I took no samples. T-2073 also contains drill projection maps in color (instead of sections), logs of the 1376 m drilled in 20 holes, reports, and a sketch of a molybdenite-bearing pegmatite dike trending 600 m towards NE from the eastern lakeshore at about 423000E - 5295500N. Molybdenite-rich grab samples also contained minor bismuth and silver, but Mo-Bi-Ag in them do not correlate. Cesium was probably not analyzed. The Mineral Deposit Inventory for Ontario shows a brief summary (MDI41O16SE00009), with a link to black and white maps and drill logs (41O16SE0003).

This occurrence can be reached by SUV on poorly maintained logging roads NW of Gogama, as shown on the attached map, and a one-hour walk through rough bush, or by helicopter to a clearing around a casing (beware!) at NAD 83 17T 422040E - 5295445N. The local terrain is hummocky with mature forest including very sparse huge white pine, like most of our larger claim group.

Present Work

Only 7919 of the 32 samples 7901 - 7932 is from black swamp muck (M) at 70 cm depth in one auger hole, all others are decayed vegetation (K) compiled from several surface spots from 0 - 6 cm depth over 30 - 40 m large dry wooded areas. I dried and sieved all samples to <250 micron, removed the original minor sand or silt of samples 7902, 06, 07, 08, 16, 24, 25, 29 by dry-swirling in a plastic gold pan and skimming off the organics, noting any remaining traces for correction of excessive dilution, which finally was not necessary for any as the remaining highest 6 volume percent of 7909 is not significant.

Such a residue of sample 7908, namely 7933 containing 60 % sand and silt, probably drill sludge, compared as follows (all in ppb):

7908	Mo	1120	Bi	290	Cs	1690	Ag	46
7933		1400		430		830		36

Any contamination is therefore not significant from drill sludge either, not even of the two prevailing ore elements Mo-Bi, especially as remaining sand and silt were estimated below 6 volume percent in any aliquots analyzed. Also the decayed vegetation sampled would be on top and much younger than the time of drilling in 1960.

All samples were analyzed by ICP-ICP/MS Ultratrace 2 - Aqua Regia - 0.5 g aliquots for 63 elements with the necessary very low detection limits by Activation Laboratories Ltd., Ancaster, Ontario. The results are annotated and anomalies circled to match the maps. I plotted the results of molybdenum, bismuth, cesium, silver, all in ppb on separate element maps. The correlation between these elements is obvious and the highs agree with known molybdenite occurrences. However, only 7925 was especially chosen, so it is not surprising that it has the highest values of (in ppb) 9300 Mo, 4220 Bi, 7550 Cs, with 317 Ag nearby. Samples of black swamp muck (M) like 7919 versus decayed vegetation (K) have to be treated as different populations for some elements, which seems to be the case only for bismuth and cesium here.

This new soil method is further described in my attached lecture handout. The improvements are careful selection of like material and removal of inorganics to avoid dilution or contamination. No statistics are necessary as elements reflect bedrock.

Conclusions and Recommendations

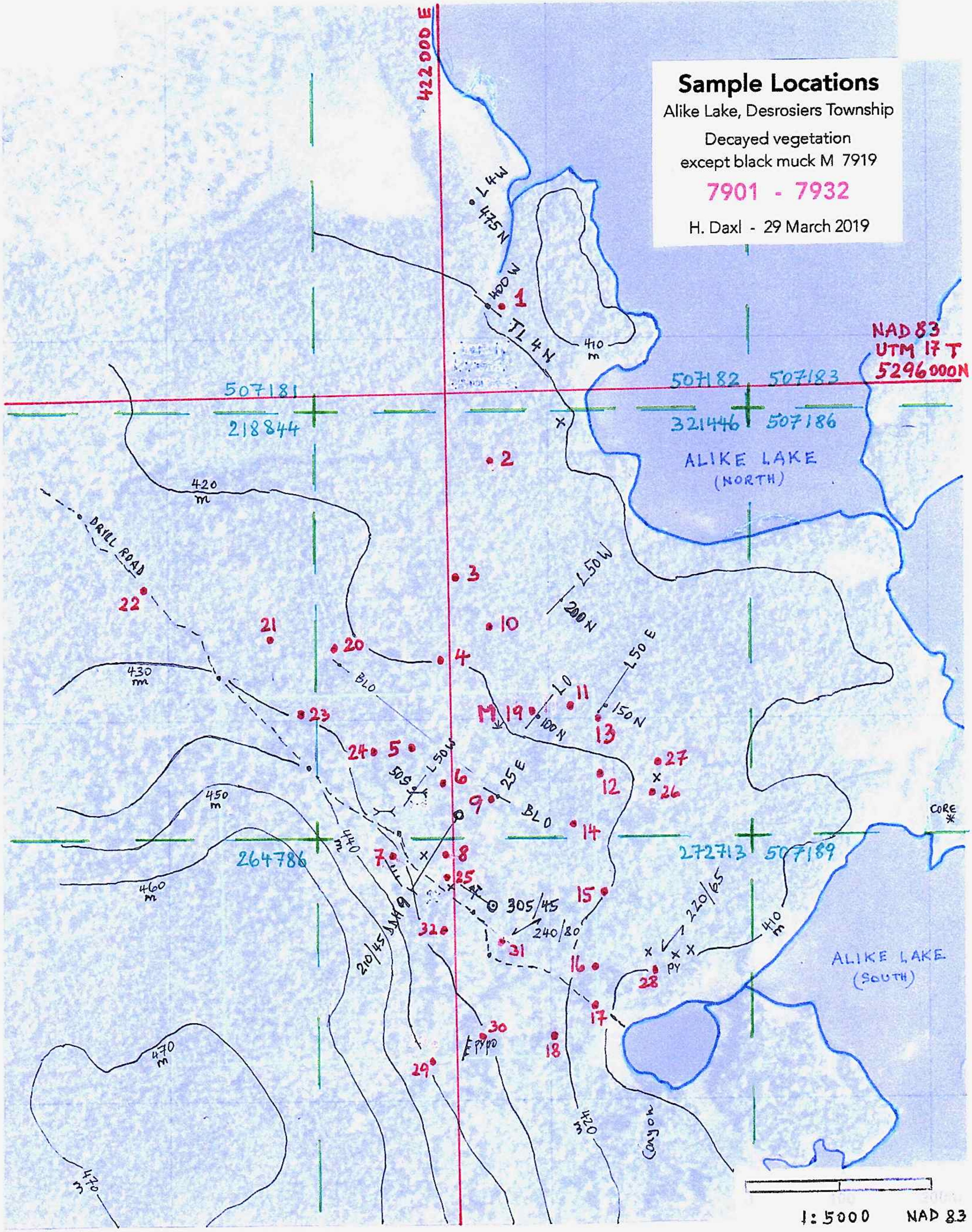
This prospecting through decayed vegetation has been proven for gold, copper, zinc, cadmium, silver, nickel, chromium, and herewith also for molybdenum, bismuth, cesium. It is surprising that even the relatively low values compared to base metals reflect so well, thanks to the low detection limits for Mo, Bi, Cs, Ag. The recommended analysis for molybdenite in rocks is by 4-acid digestion, but here the interest is in molybdenum ions that have accumulated by direct migration or through the plant cycle, for which aqua regia works.

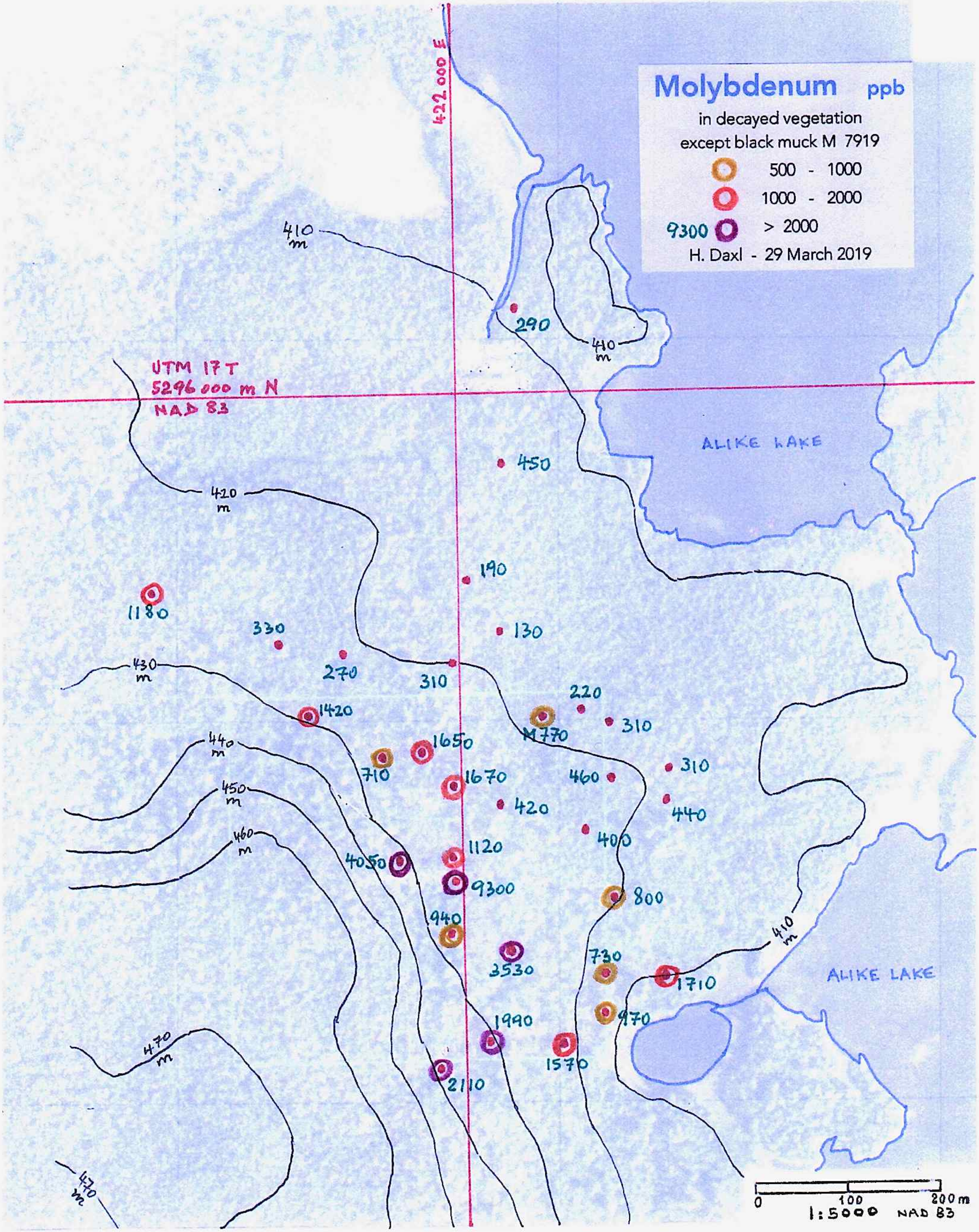
Further discovery of any probably larger and richer concentrations between the many known molybdenite showings in the wider area or region here would be well possible, despite failed geophysics which of course had no chance with the nonconductive nonmagnetic molybdenite. Prospecting is no longer limited to outcrops.

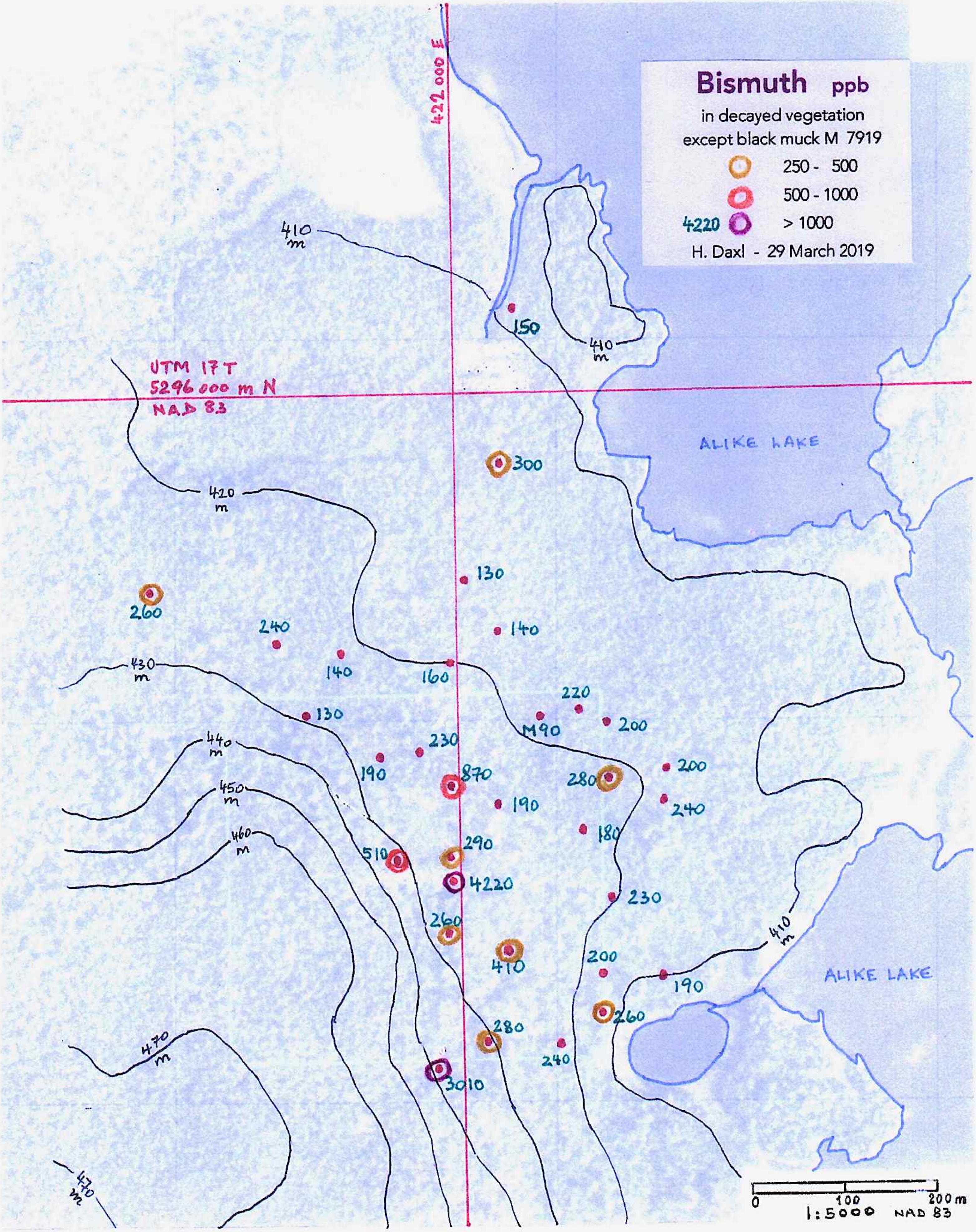
Although the single sample of black swamp muck (7919) may not prove it yet for molybdenum, such samples work very well for copper, nickel, chromium, so that such prospecting should include swamps and even lake bottom sludge, where geophysics also do not work.

Respectfully submitted,

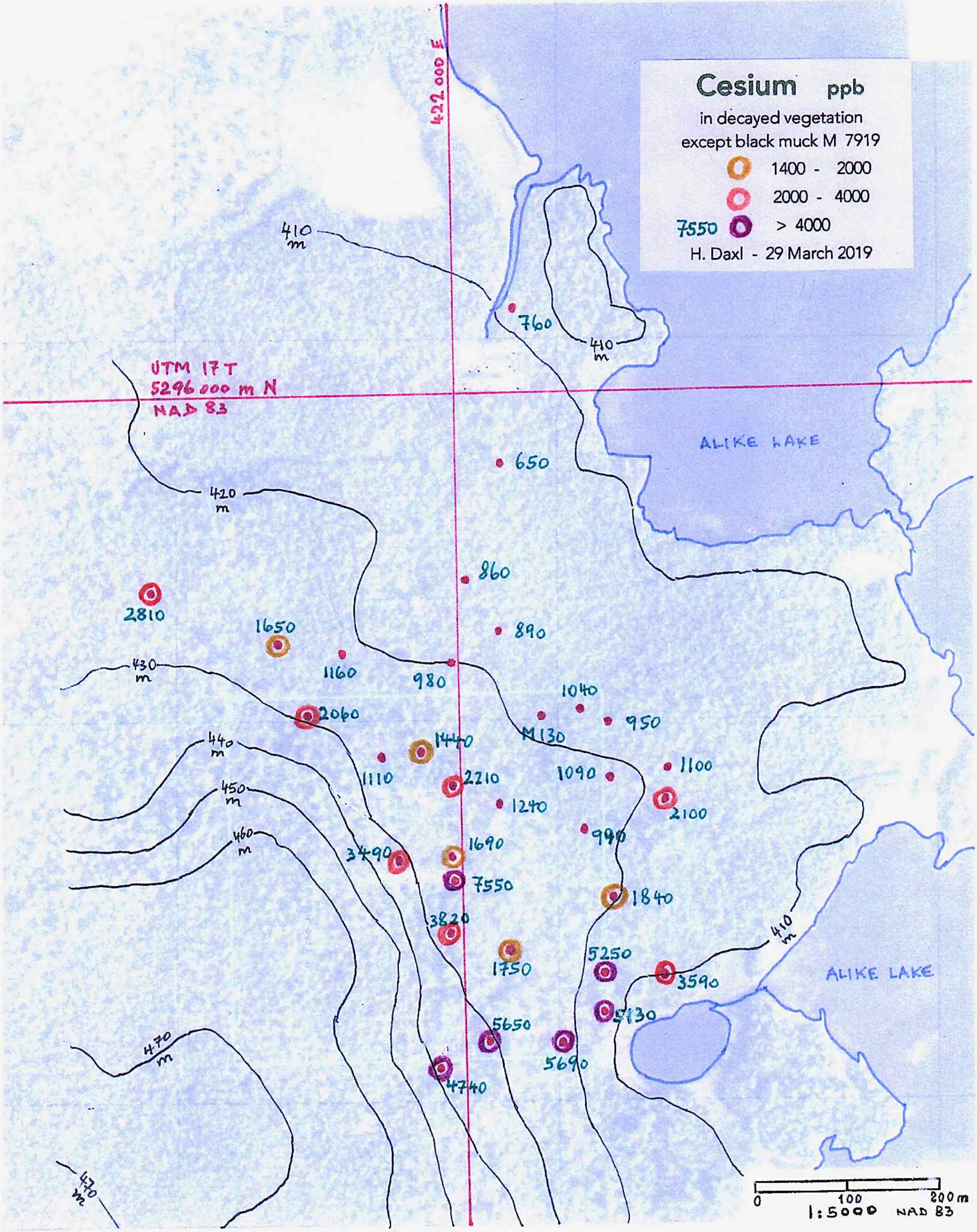
Timmins, 29 March 2019 Hermann Daxl, M.Sc.(Minex), Claim Holder.

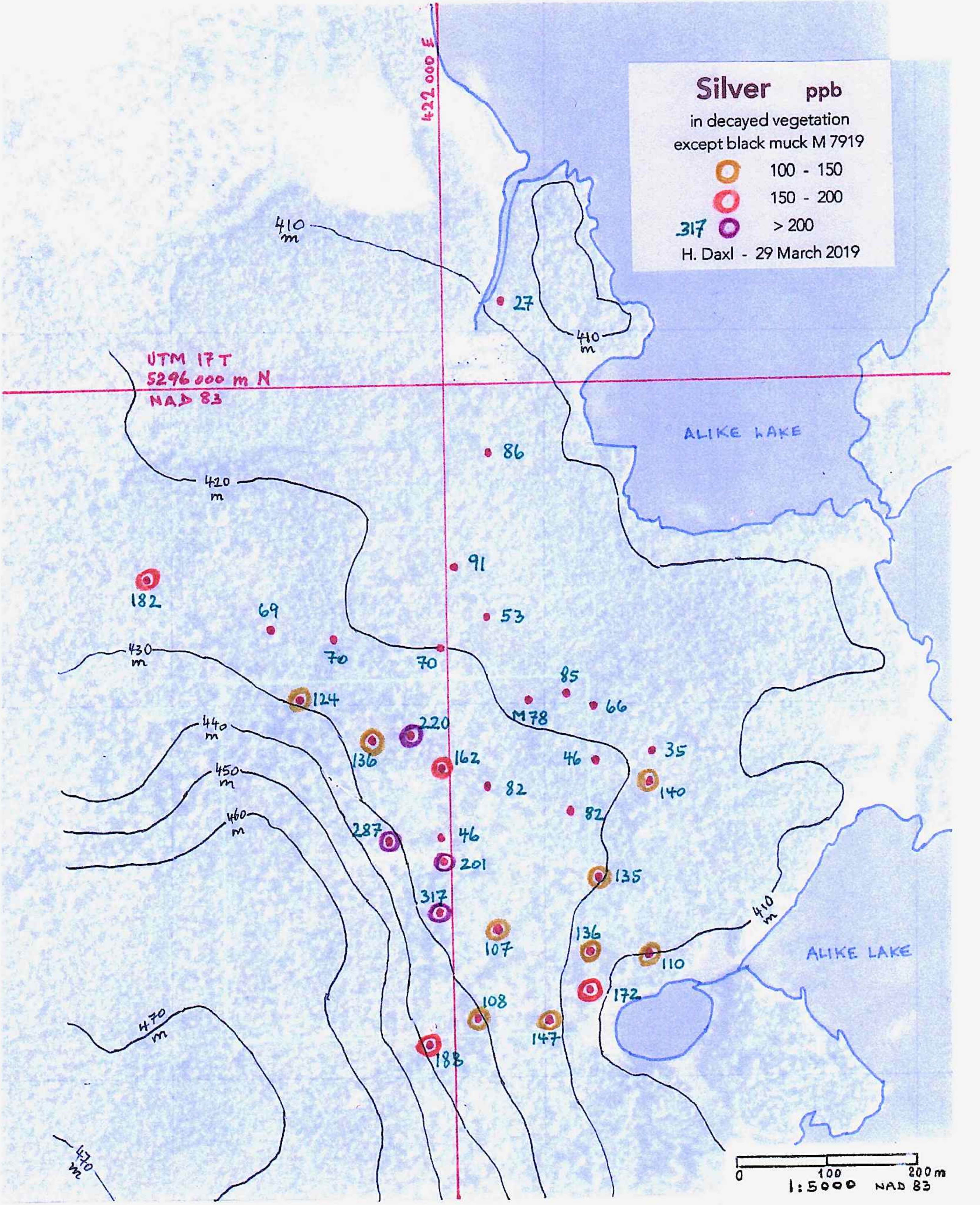

Sample Locations
Alike Lake, Desrosiers Township
Decayed vegetation
except black muck M 7919
7901 - 7932
H. Daxl - 29 March 2019
422000 E
NAD 83
UTM 17 T
5296000N
507181
218844
507182
507183
321446
507186
264786
272713
507189
ALIKE LAKE
(NORTH)
ALIKE LAKE
(SOUTH)
DRILL ROAD
L4W
475N
400W
TL 4N
L 50W
200N
L 50 E
150N
L0
100N
BLO
25E
50S
305/45
240/80
220/65
210/45
PY
CORE
420 m
430 m
450 m
460 m
470 m
410 m
Canyon
1:5000
NAD 83


Molybdenum ppb
in decayed vegetation
except black muck M 7919
500 - 1000
1000 - 2000
9300 > 2000
H. Daxl - 29 March 2019
422 000 E
UTM 17 T
5296 000 m N
NAD 83
ALIKE LAKE
ALIKE LAKE
410 m
420 m
430 m
440 m
450 m
460 m
470 m
290
450
190
130
1180
330
270
310
220
310
M770
1420
1650
710
1670
460
310
420
440
400
4050
1120
9300
800
940
3530
730
1710
970
1990
1570
2110
0
100
200 m
1:5000 NAD 83



Bismuth ppb
in decayed vegetation
except black muck M 7919
250 - 500
500 - 1000
4220 > 1000
H. Daxl - 29 March 2019
422 000 E
UTM 17 T
5296 000 m N
NAD 83
ALIKE LAKE
ALIKE LAKE
410 m
420 m
430 m
440 m
450 m
460 m
470 m
150
300
130
140
260
240
140
160
220
200
130
M90
230
190
870
280
200
190
240
180
510
290
4220
230
260
410
200
190
260
280
240
3010
0
100
200 m
1:5000 NAD 83


Cesium ppb
in decayed vegetation
except black muck M 7919
1400 - 2000
2000 - 4000
7550 > 4000
H. Daxl - 29 March 2019
422 000 E
UTM 17 T
5296 000 m N
NAD 83
ALIKE LAKE
ALIKE LAKE
410 m
420 m
430 m
440 m
450 m
460 m
470 m
760
650
860
890
2810
1650
1160
980
1040
950
M130
2060
1440
1110
2210
1090
1100
1240
2100
990
3490
1690
7550
1840
3820
1750
5250
3590
5130
5650
5690
4740
0 100 200 m
1:5000 NAD 83


Silver ppb
in decayed vegetation
except black muck M 7919
100 - 150
150 - 200
317
> 200
H. Daxl - 29 March 2019
422 000 E
UTM 17 T
5296 000 m N
NAD 83
ALIKE LAKE
ALIKE LAKE
410 m
410 m
410 m
420 m
430 m
440 m
450 m
460 m
470 m
470 m
27
86
91
53
182
69
70
70
85
66
M78
124
220
136
162
35
46
82
140
82
287
46
201
135
317
107
136
110
172
108
147
188
0
100
200 m
1:5000 NAD 83

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Date Submitted: 28-Nov-18
Invoice No.: A18-18421
Invoice Date: 12-Dec-18
Your Reference: MOLY-K1

Hermann Daxl
39-630 Riverpark Road
Timmins Ontario P4P 1B4
Canada

ATTN: Hermann Daxl

CERTIFICATE OF ANALYSIS

7901 - 7935, sieved < 250 μm, decayed vegetation except: 7919 Muck, 7933-35,

35 Vegetation samples were submitted for analysis.

Ultratrace 2

The following analytical package(s) were requested: Code UT-2-0.5g Aqua Regia ICP-ICP/MS

REPORT **A18-18421**

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Notes:

Assays are recommended for values above the upper limit. The Au from AR-MS is only semi-quantitative. For accurate Au data, fire assay is recommended.

CERTIFIED BY:

Emmanuel Eseme , Ph.D.
Quality Control

ACTIVATION LABORATORIES LTD.
41 Bittern Street, Ancaster, Ontario, Canada, L9G 4V5
TELEPHONE +905 648-9611 or +1.888.228.5227 FAX +1.905.648.9613
E-MAIL Ancaster@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

Decayed vegetation (K) except 7919, 7933-35 by ULTRATRACE 2 - aqua regia - 0.5g
sieved < 250 μm

Results **Activation Laboratories Ltd.** **Report: A18-18421**

Vol.% sand D silt T if any	Analyte Symbol	Li	Be	B	Na	Mg	Al	P	S	K	Ca	V	Cr	Ti	Mn	Fe	Co	Ni	Cu	Zn	Ga
	Unit Symbol	ppm	ppm	ppm	%	%	%	%	%	%	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm
	Detection Limit	0.1	0.1	1	0.001	0.01	0.01	0.001	0.001	0.01	0.01	1	1	0.01	1	0.01	0.1	0.1	0.2	0.1	0.02
	Analysis Method	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-ICP	AR-ICP	AR-MS	AR-MS	AR-MS	AR-MS	AR-ICP	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
	7901	0.4	< 0.1	3	0.014	0.04	0.12	0.105	0.142	0.09	0.41	2	2	< 0.01	182	0.10	0.4	6.7	7.7	47.4	< 0.02
1 D	7902	0.7	< 0.1	4	0.015	0.04	0.18	0.109	0.144	0.10	0.36	4	3	< 0.01	249	0.16	0.7	12.0	8.4	42.3	< 0.02
	7903	0.3	< 0.1	2	0.016	0.04	0.10	0.108	0.140	0.08	0.25	2	2	< 0.01	157	0.09	0.4	5.9	6.9	58.2	< 0.02
1 D	7904	0.5	< 0.1	4	0.016	0.05	0.13	0.113	0.149	0.11	0.59	2	2	< 0.01	686	0.11	0.8	8.7	9.6	93.8	< 0.02
	7905	0.5	< 0.1	4	0.017	0.05	0.17	0.082	0.130	0.08	0.44	4	2	< 0.01	182	0.15	1.2	8.3	9.2	65.1	< 0.02
	7906	2.7	< 0.1	4	0.015	0.06	0.38	0.098	0.126	0.06	0.37	13	7	0.03	436	0.52	1.0	10.8	11.2	54.4	1.51
	7907	1.0	< 0.1	5	0.014	0.10	0.15	0.144	0.179	0.11	0.80	4	7	< 0.01	2760	0.13	7.8	22.0	11.6	140.0	< 0.02
	7908	0.8	< 0.1	2	0.018	0.03	0.20	0.075	0.115	0.05	0.16	4	3	0.01	62	0.15	0.9	8.7	5.8	32.7	0.25
6 T	7909	0.7	< 0.1	4	0.017	0.06	0.16	0.097	0.155	0.09	0.56	3	2	< 0.01	277	0.14	1.1	8.6	7.7	56.3	< 0.02
	7910	0.3	< 0.1	3	0.016	0.05	0.09	0.086	0.152	0.07	0.47	2	1	< 0.01	163	0.07	0.4	6.8	7.6	45.1	< 0.02
	7911	0.4	< 0.1	2	0.016	0.04	0.16	0.095	0.146	0.08	0.41	2	2	< 0.01	147	0.13	0.7	9.0	7.8	42.0	< 0.02
5 T	7912	1.2	< 0.1	3	0.018	0.05	0.26	0.089	0.142	0.07	0.40	10	5	0.02	214	0.37	0.7	10.5	8.2	49.1	0.84
	7913	0.4	< 0.1	3	0.013	0.05	0.12	0.091	0.149	0.08	0.49	2	2	< 0.01	184	0.11	0.4	7.2	9.0	48.0	< 0.02
5 T	7914	0.4	< 0.1	3	0.017	0.04	0.21	0.105	0.146	0.08	0.39	3	2	< 0.01	299	0.15	1.1	8.9	7.1	58.0	< 0.02
2 DT	7915	0.8	< 0.1	3	0.015	0.05	0.17	0.103	0.149	0.08	0.40	5	3	< 0.01	219	0.17	0.8	10.7	7.8	48.4	0.11
	7916	0.9	0.1	4	0.016	0.09	0.15	0.122	0.154	0.09	0.54	4	7	< 0.01	636	0.15	3.7	26.2	7.7	60.2	< 0.02
3 D	7917	1.1	< 0.1	5	0.017	0.08	0.17	0.091	0.151	0.08	0.70	6	11	0.01	984	0.22	1.8	22.2	9.1	82.8	< 0.02
	7918	5.3	< 0.1	6	0.017	0.20	0.23	0.100	0.175	0.09	1.05	7	77	0.01	1280	0.44	3.3	50.9	14.0	93.8	< 0.02
	7919 M at 70 cm	0.1	0.2	< 1	0.017	0.03	0.51	0.041	0.180	< 0.01	0.31	4	3	< 0.01	6	0.04	0.7	3.8	13.0	2.8	< 0.02
	7920	0.3	< 0.1	3	0.015	0.05	0.10	0.095	0.165	0.08	0.45	2	2	< 0.01	159	0.09	0.9	7.6	8.3	55.9	< 0.02
	7921	0.5	< 0.1	4	0.015	0.05	0.20	0.121	0.163	0.09	0.40	3	2	< 0.01	271	0.14	1.0	12.5	9.9	66.7	< 0.02
2 D	7922	1.0	< 0.1	4	0.017	0.05	0.18	0.101	0.148	0.09	0.42	4	3	0.01	213	0.17	1.2	21.8	9.8	46.6	< 0.02
	7923	0.4	< 0.1	4	0.015	0.07	0.10	0.122	0.171	0.11	0.55	2	2	< 0.01	593	0.09	1.0	7.0	8.6	86.2	< 0.02
4 D	7924	0.6	< 0.1	4	0.015	0.05	0.14	0.112	0.160	0.10	0.46	4	4	< 0.01	491	0.14	0.5	7.4	8.2	63.0	< 0.02
2 D	7925	1.2	< 0.1	3	0.016	0.09	0.14	0.093	0.145	0.08	0.66	3	5	< 0.01	274	0.14	1.5	12.8	10.6	66.8	< 0.02
	7926	1.7	0.1	3	0.017	0.06	0.29	0.121	0.152	0.08	0.45	6	4	0.01	529	0.25	2.8	12.7	8.4	70.8	< 0.02
3 T	7927	0.7	< 0.1	3	0.016	0.04	0.19	0.095	0.144	0.05	0.45	4	2	< 0.01	416	0.15	0.6	9.3	7.2	52.5	0.33
	7928	0.4	< 0.1	4	0.016	0.07	0.11	0.108	0.171	0.09	0.74	2	4	< 0.01	801	0.10	2.2	24.7	9.5	79.9	< 0.02
	7929	2.8	0.1	6	0.017	0.14	0.36	0.151	0.156	0.12	0.75	8	16	0.01	3150	0.30	10.5	30.3	13.5	163.0	< 0.02
	7930	1.6	< 0.1	6	0.014	0.11	0.18	0.136	0.164	0.11	0.91	5	12	0.01	3780	0.18	3.9	26.7	11.1	145.0	< 0.02

Results **Activation Laboratories Ltd.** **Report: A18-18421**

Vol.% sand D silt T if any	Analyte Symbol	Ge	As	Se	Rb	Sr	Y	Zr	Sc	Pr	Gd	Dy	Ho	Er	Tm	Nb	Mo	Ag	Cd	In	Sn
	Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	Detection Limit	0.1	0.1	0.1	0.1	0.5	0.01	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.002	0.01	0.02	0.05
	Analysis Method	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
	7901	< 0.1	0.8	0.2	4.8	21.3	0.30	0.7	< 0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2	0.29	0.027	0.22	< 0.02	0.50
1 D	7902	< 0.1	1.2	0.4	5.9	24.1	0.39	1.0	0.3	0.2	< 0.1	0.1	< 0.1	< 0.1	< 0.1	0.2	0.45	0.086	0.29	0.03	1.04
	7903	< 0.1	0.2	0.3	5.0	11.7	0.25	0.6	0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.19	0.091	0.44	< 0.02	0.32
1 D	7904	< 0.1	0.6	0.3	5.4	32.8	0.35	0.8	0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1	0.31	0.070	0.44	< 0.02	0.59
	7905	< 0.1	1.1	0.4	5.0	29.7	0.76	0.9	0.2	0.8	0.4	0.2	< 0.1	< 0.1	< 0.1	0.3	1.65	0.220	0.26	< 0.02	0.64
	7906	< 0.1	1.9	0.6	4.9	11.5	0.69	1.1	0.4	0.4	0.3	0.2	< 0.1	< 0.1	< 0.1	0.7	1.67	0.162	0.33	0.03	0.96
	7907	< 0.1	0.5	0.3	5.9	33.7	0.46	0.6	0.2	0.3	0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1	4.05	0.287	1.23	< 0.02	0.70
	7908	< 0.1	0.6	0.3	4.9	15.4	0.43	0.8	0.3	0.3	0.2	< 0.1	< 0.1	< 0.1	< 0.1	0.3	1.12	0.046	0.51	< 0.02	0.44
6 T	7909	< 0.1	0.6	0.6	5.2	29.0	0.43	0.7	0.2	0.3	0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2	0.42	0.082	0.38	0.02	0.51
	7910	< 0.1	0.5	0.3	4.3	21.5	0.24	0.4	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.13	0.053	0.31	< 0.02	0.24
	7911	< 0.1	1.1	0.3	5.2	14.5	0.48	0.5	< 0.1	0.3	0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.22	0.085	0.26	< 0.02	0.46
5 T	7912	< 0.1	1.2	0.4	3.9	16.8	0.54	1.3	0.4	0.4	0.2	0.1	< 0.1	< 0.1	< 0.1	0.5	0.46	0.046	0.24	< 0.02	0.79
	7913	< 0.1	1.1	0.3	4.9	14.3	0.27	0.6	0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1	0.31	0.066	0.30	< 0.02	0.60
5 T	7914	< 0.1	0.6	0.3	4.7	22.7	0.64	0.6	0.2	0.4	0.2	0.1	< 0.1	< 0.1	< 0.1	0.1	0.40	0.082	0.47	< 0.02	0.57
2 DT	7915	< 0.1	0.5	0.5	5.1	18.1	0.42	0.9	0.3	0.3	0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2	0.80	0.135	0.40	< 0.02	0.65
	7916	< 0.1	0.8	0.1	8.6	31.4	0.81	0.5	0.2	0.7	0.3	0.2	< 0.1	< 0.1	< 0.1	0.2	0.73	0.136	0.49	< 0.02	0.52
3 D	7917	< 0.1	0.5	0.4	7.0	26.8	0.41	0.7	0.3	0.3	0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2	0.97	0.172	0.54	< 0.02	0.42
	7918	< 0.1	0.7	0.5	7.8	42.8	0.41	1.0	0.4	0.4	0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2	1.57	0.147	0.55	< 0.02	0.43
	7919 M at 70 cm	< 0.1	< 0.1	< 0.1	0.2	16.9	3.79	0.6	0.6	3.5	1.4	0.8	0.2	0.3	< 0.1	< 0.1	0.77	0.078	0.04	< 0.02	< 0.05
	7920	< 0.1	< 0.1	0.2	4.6	23.4	0.35	0.2	< 0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.27	0.070	0.36	< 0.02	0.24
	7921	< 0.1	0.5	0.5	5.6	21.2	0.50	0.7	0.2	0.4	0.2	0.1	< 0.1	< 0.1	< 0.1	0.1	0.33	0.069	0.47	< 0.02	0.70
2 D	7922	< 0.1	1.0	0.6	6.6	16.9	0.60	0.9	0.2	0.5	0.2	0.1	< 0.1	< 0.1	< 0.1	0.2	1.18	0.182	0.24	0.03	0.94
	7923	< 0.1	0.6	0.5	6.1	27.9	0.25	0.4	< 0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.42	0.124	0.44	< 0.02	0.51
4 D	7924	< 0.1	0.6	0.4	5.1	25.6	0.44	0.6	0.2	0.4	0.2	0.1	< 0.1	< 0.1	< 0.1	0.2	0.71	0.136	0.33	< 0.02	0.54
2 D	7925	< 0.1	0.2	0.2	14.3	25.3	0.48	1.0	0.3	0.3	0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.4	9.30	0.201	0.58	< 0.02	0.29
	7926	< 0.1	0.6	0.3	6.4	27.2	0.65	1.0	0.4	0.5	0.2	0.1	< 0.1	< 0.1	< 0.1	0.4	0.44	0.140	0.48	< 0.02	0.49
3 T	7927	< 0.1	1.0	0.3	4.1	12.3	0.41	0.8	0.2	0.3	0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2	0.31	0.035	0.37	< 0.02	0.55
	7928	< 0.1	< 0.1	0.3	8.4	31.5	0.34	0.4	< 0.1	0.3	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.71	0.110	0.55	< 0.02	0.29
	7929	< 0.1	0.6	0.4	8.5	34.0	1.34	0.4	0.3	0.9	0.4	0.3	< 0.1	0.1	< 0.1	0.3	2.11	0.188	1.21	< 0.02	0.91
	7930	< 0.1	0.7	0.6	8.9	38.5	0.49	0.8	0.3	0.3	0.1	0.1	< 0.1	< 0.1	< 0.1	0.2	1.99	0.108	1.24	0.03	0.63

Decayed vegetation (K) except 7919, 7933-35.
sieved < 250 μm

Results **Activation Laboratories Ltd.**

by ULTATRACE 2 - aqua regia - 0.5g
Report: A18-18421

Vol. % sand D silt T if any	Analyte Symbol	Sb	Te	Cs	Ba	La	Ce	Nd	Sm	Eu	Tb	Yb	Lu	Hf	Ta	W	Re	Au	Tl	Pb	Bi
	Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm
	Detection Limit	0.02	0.02	0.02	0.5	0.5	0.01	0.02	0.1	0.1	0.1	0.1	0.1	0.1	0.05	0.1	0.001	0.5	0.02	0.1	0.02
	Analysis Method	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
	7901	0.21	< 0.02	0.76	72.4	1.0	1.75	0.64	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.4	< 0.001	< 0.5	0.11	11.6	0.15
1 D	7902	0.36	0.03	0.65	87.1	1.3	2.61	0.98	0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.3	< 0.001	0.6	0.12	20.2	0.30
	7903	0.15	< 0.02	0.86	46.8	0.8	1.51	0.68	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.3	< 0.001	0.6	0.09	7.0	0.13
1 D	7904	0.23	< 0.02	0.98	106.0	1.2	2.14	0.82	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.3	< 0.001	< 0.5	0.12	12.1	0.16
	7905	0.27	< 0.02	1.44	98.1	3.9	6.83	3.25	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.3	< 0.001	1.4	0.13	18.7	0.23
	7906	0.31	0.03	2.21	67.2	2.3	4.64	1.88	0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.3	0.001	1.4	0.21	29.7	0.87
	7907	0.25	< 0.02	3.49	165.0	2.5	4.63	1.44	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.2	< 0.001	< 0.5	0.16	18.7	0.51
	7908	0.18	< 0.02	1.69	62.9	1.5	2.95	1.26	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.2	< 0.001	1.4	0.12	8.8	0.29
6 T	7909	0.21	< 0.02	1.24	84.0	1.8	2.87	1.26	0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.2	< 0.001	< 0.5	0.14	12.5	0.19
	7910	0.11	< 0.02	0.89	75.2	0.7	1.37	0.56	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.2	< 0.001	0.5	0.14	8.6	0.14
	7911	0.17	< 0.02	1.04	68.7	1.6	2.98	1.18	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.2	< 0.001	1.5	0.19	19.2	0.22
5 T	7912	0.29	0.02	1.09	76.0	2.2	4.14	1.76	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.2	< 0.001	< 0.5	0.14	20.3	0.28
	7913	0.28	0.03	0.95	59.9	0.9	1.69	0.70	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.2	< 0.001	0.6	0.15	13.5	0.20
5 T	7914	0.24	< 0.02	0.99	96.6	2.5	4.49	1.62	0.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.2	< 0.001	< 0.5	0.11	18.1	0.18
2 DT	7915	0.29	< 0.02	1.84	73.3	1.4	2.73	1.14	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.3	< 0.001	< 0.5	0.12	15.9	0.23
	7916	0.22	< 0.02	5.25	101.0	3.3	6.19	2.60	0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.2	< 0.001	< 0.5	0.19	13.2	0.20
3 D	7917	0.19	< 0.02	5.13	124.0	1.5	3.03	1.11	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.2	< 0.001	< 0.5	0.23	14.6	0.26
	7918	0.18	< 0.02	5.69	127.0	1.8	3.78	1.40	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.1	< 0.001	< 0.5	0.32	16.0	0.24
	7919 M at 70 cm	0.05	< 0.02	0.13	53.4	17.7	29.80	13.60	2.2	0.5	0.1	0.3	< 0.1	< 0.1	< 0.05	0.1	< 0.001	< 0.5	< 0.02	2.4	0.09
	7920	0.08	< 0.02	1.16	71.8	1.3	2.17	0.94	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.2	< 0.001	0.8	0.12	12.6	0.14
	7921	0.33	< 0.02	1.65	77.8	2.3	4.12	1.62	0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.1	< 0.001	< 0.5	0.17	17.8	0.24
2 D	7922	0.36	0.02	2.81	92.6	2.6	4.61	1.75	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.2	< 0.001	< 0.5	0.17	19.0	0.26
	7923	0.28	< 0.02	2.06	101.0	0.9	1.66	0.61	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.2	< 0.001	1.7	0.13	8.1	0.13
4 D	7924	0.27	< 0.02	1.11	91.2	1.8	3.28	1.25	0.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.1	< 0.001	< 0.5	0.12	12.3	0.19
2 D	7925	0.17	< 0.02	7.55	112.0	1.8	3.20	1.50	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.1	< 0.001	< 0.5	0.29	9.9	4.22
	7926	0.22	< 0.02	2.10	116.0	2.7	5.21	2.04	0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.2	< 0.001	1.6	0.15	16.3	0.24
3 T	7927	0.23	< 0.02	1.10	49.8	1.6	3.09	1.15	0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.1	< 0.001	1.2	0.17	13.5	0.20
	7928	0.16	0.02	3.59	135.0	1.4	2.42	0.97	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.1	< 0.001	< 0.5	0.44	11.0	0.19
	7929	0.27	0.03	4.74	216.0	5.3	10.30	3.35	0.7	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.05	0.2	0.002	< 0.5	0.25	22.3	3.01
	7930	0.28	< 0.02	5.65	204.0	1.9	3.65	1.13	0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.2	< 0.001	< 0.5	0.39	25.4	0.28

Results **Activation Laboratories Ltd.** **Report: A18-18421**

Vol.% sand D silt T if any	Analyte Symbol	Th	U	Hg	
	Unit Symbol	ppm	ppm	ppb	
	Detection Limit	0.1	0.1	10	
	Analysis Method	AR-MS	AR-MS	AR-MS	
	7901	< 0.1	< 0.1	240	
1 D	7902	< 0.1	< 0.1	320	
	7903	< 0.1	< 0.1	240	
1 D	7904	< 0.1	< 0.1	280	
	7905	< 0.1	0.1	230	
	7906	< 0.1	0.2	250	
	7907	< 0.1	< 0.1	220	— over 40 m across lower NE-ward slope.
	7908	0.2	< 0.1	170	— 7933 removed by dry-panning
6 T	7909	0.1	< 0.1	250	
	7910	< 0.1	< 0.1	250	— clay at 50 cm in adjacent swamp
	7911	< 0.1	< 0.1	260	
5 T	7912	0.3	0.1	320	
	7913	< 0.1	< 0.1	230	
5 T	7914	< 0.1	< 0.1	260	
2 D T	7915	< 0.1	< 0.1	190	
	7916	< 0.1	0.2	210	
3 D	7917	0.3	< 0.1	240	
	7918	0.2	< 0.1	300	— rusty sheared basalt
	7919	0.2	0.6	130	black muck (M) in mossy swamp with few pine trees,
	7920	< 0.1	< 0.1	250	>1 m deep but sampled at 70 cm, from single spot.
	7921	< 0.1	< 0.1	300	
2 D	7922	< 0.1	0.1	310	
	7923	< 0.1	< 0.1	230	
4 D	7924	< 0.1	< 0.1	210	— depression east of big hill
2 D	7925	0.3	0.1	170	over 15 m along molybdenite zone
	7926	0.2	0.1	230	from S-Pit towards N-Pit.
3 T	7927	0.2	< 0.1	230	
	7928	< 0.1	< 0.1	290	
	7929	< 0.1	0.2	200	— 50 m E-W across valley on high plateau
	7930	0.2	< 0.1	250	

Topography: Frequent small outcrops, humps and gullies, mixed forest of pine, fir, birch, some huge white pine, some cedar where swampy.

Sampled decayed vegetation (K) from 0-6 cm depth composed from several spots within <30 m radius or <40 m along traverse, plotted in center.

Decayed vegetation (K) except 7919, 7933-35. sieved < 250 µm

by ULTRATRACE 2 - aqua regia - 0.5g

Results **Activation Laboratories Ltd.** **Report: A18-18421**

Analyte Symbol	Li	Be	B	Na	Mg	Al	P	S	K	Ca	V	Cr	Ti	Mn	Fe	Co	Ni	Cu	Zn	Ga
Unit Symbol	ppm	ppm	ppm	%	%	%	%	%	%	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.1	0.1	1	0.001	0.01	0.01	0.001	0.001	0.01	0.01	1	1	0.01	1	0.01	0.1	0.1	0.2	0.1	0.02
Analysis Method	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-ICP	AR-ICP	AR-MS	AR-MS	AR-MS	AR-MS	AR-ICP	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
7931	0.3	< 0.1	5	0.013	0.07	0.09	0.109	0.194	0.06	0.76	1	2	< 0.01	746	0.08	2.9	20.2	10.6	101.0	< 0.02
7932	0.5	< 0.1	5	0.014	0.07	0.13	0.142	0.158	0.12	0.60	3	9	< 0.01	1840	0.12	1.5	17.6	8.5	89.7	< 0.02
7933 60% DT of 7908	0.9	< 0.1	1	0.016	0.02	0.15	0.031	0.050	0.02	0.15	6	5	0.03	36	0.17	0.6	3.8	3.1	14.0	0.65
7934 OREAS H3	2.0	7.3	15	0.095	0.05	3.13	0.009	0.054	0.03	0.09	73	119	0.08	41	4.59	20.0	21.6	385.0	2010.0	10.80
7935 ALS BLANK	0.5	< 0.1	4	0.014	0.03	0.13	0.002	0.031	0.08	0.08	< 1	4	< 0.01	38	0.40	0.3	1.9	2.7	7.3	0.27

Analyte Symbol	Ge	As	Se	Rb	Sr	Y	Zr	Sc	Pr	Gd	Dy	Ho	Er	Tm	Nb	Mo	Ag	Cd	In	Sn
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.1	0.1	0.1	0.1	0.5	0.01	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.002	0.01	0.02	0.05
Analysis Method	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
7931	< 0.1	< 0.1	0.3	4.6	31.8	0.52	0.4	< 0.1	0.3	0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	3.53	0.107	0.67	< 0.02	0.27
7932	< 0.1	0.6	0.3	7.9	24.4	0.32	0.4	< 0.1	0.2	0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1	0.94	0.317	0.46	< 0.02	0.67
7933 60% DT of 7908	< 0.1	< 0.1	0.3	2.4	9.1	0.76	1.2	0.4	0.4	0.2	0.2	< 0.1	< 0.1	< 0.1	0.5	1.40	0.036	0.21	< 0.02	0.33
7934 OREAS H3	0.2	5.4	13.4	2.1	4.3	1.66	19.4	5.9	0.6	0.4	0.4	< 0.1	0.2	< 0.1	< 0.1	17.30	4.600	0.36	0.18	28.00
7935 ALS BLANK	< 0.1	0.3	< 0.1	2.3	8.1	0.82	3.6	< 0.1	0.6	0.3	0.2	< 0.1	< 0.1	< 0.1	< 0.1	0.45	0.044	< 0.01	< 0.02	< 0.05

Analyte Symbol	Sb	Te	Cs	Ba	La	Ce	Nd	Sm	Eu	Tb	Yb	Lu	Hf	Ta	W	Re	Au	Tl	Pb	Bi
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm
Detection Limit	0.02	0.02	0.02	0.5	0.5	0.01	0.02	0.1	0.1	0.1	0.1	0.1	0.1	0.05	0.1	0.001	0.5	0.02	0.1	0.02
Analysis Method	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
7931	0.16	0.02	1.75	137.0	1.7	3.17	1.28	0.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.1	< 0.001	0.5	0.16	12.3	0.41
7932	0.29	< 0.02	3.82	139.0	1.6	2.85	1.18	0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.2	< 0.001	< 0.5	0.22	11.6	0.26
7933 60% DT of 7908	0.10	< 0.02	0.83	29.8	2.4	4.56	1.87	0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	< 0.5	0.06	4.6	0.43
7934 OREAS H3	5.63	10.50	0.26	28.2	3.2	6.46	2.27	0.6	0.1	< 0.1	0.2	< 0.1	0.6	< 0.05	1.9	0.002	2410.0	0.07	127.0	0.73
7935 ALS BLANK	0.06	< 0.02	0.10	12.7	3.8	6.89	2.24	0.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	< 0.5	0.02	2.8	0.02

Analyte Symbol	Th	U	Hg	
Unit Symbol	ppm	ppm	ppb	
Detection Limit	0.1	0.1	10	
Analysis Method	AR-MS	AR-MS	AR-MS	
7931	< 0.1	< 0.1	200	– 20 m radius in flat swamp with young mixed trees.
7932	< 0.1	< 0.1	230	– 20 m E-W across gully.
7933 60% DT of 7908	0.4	0.1	60	– sand-silt part of 7908, probably drill-sludge, where Moly runs off suspended in water.
7934 OREAS H3	5.6	1.9	20	– Standard, but of 4-acid (ppm): 26.3 Mo, 443 Cu, 2083 Zn, 25 Ni, 4.95 Ag, 26 W.
7935 ALS BLANK	1.6	0.4	20	

2000 ppb Au. The molybdenite of this standard does not fully dissolve in aqua regia – 17.30 is OK. Unwanted molybdenite in soil has little effect by aqua regia.

Analyte Symbol	Li	Be	B	Na	Mg	Al	P	S	K	Ca	V	Cr	Ti	Mn	Fe	Co	Ni	Cu	Zn	Ga
Unit Symbol	ppm	ppm	ppm	%	%	%	%	%	%	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.1	0.1	1	0.001	0.01	0.01	0.001	0.001	0.01	0.01	1	1	0.01	1	0.01	0.1	0.1	0.2	0.1	0.02
Analysis Method	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-ICP	AR-ICP	AR-MS	AR-MS	AR-MS	AR-MS	AR-ICP	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
GXR-4 Meas							0.117	1.663					0.12							
GXR-4 Cert							0.120	1.770					0.29							
GXR-6 Meas	22.3	0.9	4	0.073	0.36	7.93	0.035	0.014	1.30	0.15	176	72		1110	5.75	14.0	25.0	68.8	124.0	10.60
GXR-6 Cert	32.0	1.4	10	0.104	0.61	17.70	0.035	0.016	1.87	0.18	186	96		1010	5.58	13.8	27.0	66.0	118.0	35.00
OREAS 45d (Aqua Regia) Meas	15.0			0.039	0.15	6.29	0.033	0.041	0.13	0.10	185	407		348	13.40	24.7	207.0	323.0	35.9	16.60
OREAS 45d (Aqua Regia) Cert	11.9			0.031	0.14	4.86	0.035	0.045	0.10	0.09	201	467		400	13.65	26.2	176.0	345.0	30.6	17.90
Oreas 621 (Aqua Regia) Meas							0.034	4.556												
Oreas 621 (Aqua Regia) Cert							0.034	4.500												
7910 Orig	0.3	< 0.1	3	0.016	0.05	0.09	0.087	0.153	0.07	0.47	2	1	< 0.01	163	0.07	0.5	7.1	7.7	45.5	< 0.02
7910 Dup	0.3	< 0.1	3	0.016	0.05	0.09	0.085	0.150	0.08	0.47	2	1	< 0.01	163	0.08	0.4	6.4	7.4	44.7	< 0.02
7923 Orig	0.4	< 0.1	4	0.015	0.07	0.09	0.124	0.173	0.11	0.54	2	2	< 0.01	594	0.09	0.9	7.2	8.8	87.9	< 0.02
7923 Dup	0.4	< 0.1	5	0.016	0.06	0.10	0.119	0.169	0.11	0.56	2	2	< 0.01	591	0.09	1.0	6.8	8.3	84.5	< 0.02
7935 Orig	0.5	< 0.1	4	0.014	0.03	0.13	0.002	0.033	0.08	0.08	< 1	4	< 0.01	38	0.41	0.3	2.0	2.7	7.7	0.31
7935 Dup	0.5	< 0.1	4	0.014	0.03	0.13	0.002	0.029	0.08	0.08	< 1	4	< 0.01	38	0.40	0.3	1.7	2.6	7.0	0.24
Method Blank							< 0.001	< 0.001					< 0.01							
Method Blank	< 0.1	< 0.1	< 1	0.011	< 0.01	< 0.01	< 0.001	< 0.001	< 0.01	< 0.01	< 1	< 1	< 0.01	< 1	< 0.01	< 0.1	0.2	0.4	< 0.1	< 0.02

Quality Control **Activation Laboratories Ltd.** **Report: A18-18421**

Analyte Symbol	Ge	As	Se	Rb	Sr	Y	Zr	Sc	Pr	Gd	Dy	Ho	Er	Tm	Nb	Mo	Ag	Cd	In	Sn
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.1	0.1	0.1	0.1	0.5	0.01	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.002	0.01	0.02	0.05
Analysis Method	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
GXR-4 Meas																				
GXR-4 Cert																				
GXR-6 Meas		285.0	< 0.1	61.1	28.8	6.06	14.2	23.1		1.9	1.4				< 0.1	1.21 ✓	0.322	0.10	0.08	1.07
GXR-6 Cert		330.0	0.9	90.0	35.0	14.00	110.0	27.6		3.0	2.8				7.5	2.40 ✓	1.300	1.00	0.26	1.70
OREAS 45d (Aqua Regia) Meas		4.6		21.9	13.4	4.13		41.9								A.R. vs.			0.06	1.86
OREAS 45d (Aqua Regia) Cert		6.5		20.9	11.0	5.08		41.5								4-ACID			0.09	1.95
Oreas 621 (Aqua Regia) Meas																				
Oreas 621 (Aqua Regia) Cert																				
7910 Orig	< 0.1	0.3	0.3	4.3	21.7	0.23	0.4	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.16	0.051	0.33	< 0.02	0.26
7910 Dup	< 0.1	0.7	0.2	4.3	21.3	0.24	0.4	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.11	0.056	0.29	< 0.02	0.23
7923 Orig	< 0.1	0.4	0.4	6.2	28.1	0.25	0.4	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.43	0.131	0.37	< 0.02	0.50
7923 Dup	< 0.1	0.7	0.5	6.1	27.8	0.24	0.3	< 0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.41	0.118	0.50	< 0.02	0.53
7935 Orig	< 0.1	0.4	< 0.1	2.3	8.2	0.84	3.8	< 0.1	0.6	0.3	0.2	< 0.1	0.1	< 0.1	< 0.1	0.46	0.045	0.03	< 0.02	0.07
7935 Dup	< 0.1	0.3	< 0.1	2.3	7.9	0.79	3.5	< 0.1	0.6	0.3	0.2	< 0.1	< 0.1	< 0.1	< 0.1	0.44	0.044	< 0.01	< 0.02	< 0.05
Method Blank																✓				
Method Blank	< 0.1	< 0.1	0.1	< 0.1	< 0.5	< 0.01	0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.09	< 0.002	< 0.01	< 0.02	< 0.05

Quality Control **Activation Laboratories Ltd.** **Report: A18-18421**

Analyte Symbol	Sb	Te	Cs	Ba	La	Ce	Nd	Sm	Eu	Tb	Yb	Lu	Hf	Ta	W	Re	Au	Tl	Pb	Bi
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm
Detection Limit	0.02	0.02	0.02	0.5	0.5	0.01	0.02	0.1	0.1	0.1	0.1	0.1	0.1	0.05	0.1	0.001	0.5	0.02	0.1	0.02
Analysis Method	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
GXR-4 Meas																				
GXR-4 Cert																				
GXR-6 Meas	1.19	0.05	3.93	906.0	12.2	34.20	10.70	2.3	0.5	0.2	0.8	0.1	0.3	< 0.05	< 0.1		131.0	2.00	99.7	0.17
GXR-6 Cert	3.60	0.02	4.20	1300.0	13.9	36.00	13.00	2.7	0.8	0.4	2.4	0.3	4.3	0.49	1.9		95.0	2.20	101.0	0.29
OREAS 45d (Aqua Regia) Meas				95.8	12.5	27.70											21.4		16.7	0.25
OREAS 45d (Aqua Regia) Cert				80.0	10.0	24.80											21.0		17.0	0.30
Oreas 621 (Aqua Regia) Meas																				
Oreas 621 (Aqua Regia) Cert																				
7910 Orig	0.12	< 0.02	0.87	77.5	0.7	1.35	0.57	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.2	< 0.001	0.5	0.14	8.6	0.14
7910 Dup	0.11	< 0.02	0.92	73.0	0.7	1.39	0.55	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.2	< 0.001	0.5	0.14	8.7	0.14
7923 Orig	0.28	< 0.02	2.14	102.0	0.9	1.67	0.64	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.2	< 0.001	1.4	0.13	8.1	0.13
7923 Dup	0.27	< 0.02	1.98	101.0	0.9	1.66	0.57	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	0.2	0.001	1.9	0.13	8.1	0.13
7935 Orig	0.05	0.04	0.08	11.5	3.8	6.83	2.28	0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	< 0.5	0.02	2.0	0.02
7935 Dup	0.06	< 0.02	0.12	13.8	3.8	6.96	2.20	0.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	< 0.5	0.02	2.1	0.02
Method Blank																				
Method Blank	< 0.02	< 0.02	< 0.02	7.8	< 0.5	< 0.01	< 0.02	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	< 0.5	< 0.02	< 0.1	< 0.02

Analyte Symbol	Th	U	Hg
Unit Symbol	ppm	ppm	ppb
Detection Limit	0.1	0.1	10
Analysis Method	AR-MS	AR-MS	AR-MS
GXR-4 Meas			
GXR-4 Cert			
GXR-6 Meas	4.2	0.8	70
GXR-6 Cert	5.3	1.5	68
OREAS 45d (Aqua Regia) Meas	10.9	1.6	
OREAS 45d (Aqua Regia) Cert	11.3	1.6	
Oreas 621 (Aqua Regia) Meas			
Oreas 621 (Aqua Regia) Cert			
7910 Orig	< 0.1	< 0.1	260
7910 Dup	< 0.1	< 0.1	240
7923 Orig	< 0.1	< 0.1	210
7923 Dup	< 0.1	< 0.1	250
7935 Orig	1.6	0.4	30
7935 Dup	1.6	0.5	10
Method Blank			
Method Blank	< 0.1	< 0.1	10

Grab some dirt - find a mine

Yes, you can find a mine on one claim unit in a few days work, if there is one !

You can also qualify and prioritize your drill targets.

This lecture is not about the vast science of soil sampling, but about the very specific method of **decay sampling that works for gold and base metals in the Timmins region.** I would not completely rule out gold, if there is none in a sample, but if there really is, it can only be from rock within 50 m horizontally. Therefore 30 chosen samples can adequately cover a claim unit in just two days. I have tested the method, which I learned during my M.Sc. studies at Queen's University (Neil O'Brian), over six gold occurrences, also zinc and copper, and perfected it to work extremely well. However, to convince yourself, try it yourself over your known zones, gold or base metals, whereby you can also test your work. If it does not work for you, I would like to hear about it.

The scientific name of the **decayed vegetation** I sample is mor, which I had never heard before. I call it the **decay horizon** or **K,** because that is were most decay of organics happens. It is quite apparent in the forests around Timmins, where the humus usually rests on fine sand. On clay it may be very thin, so greater care is necessary. After brushing aside the loose debris, there is an interwoven carpet of rootlets, mold, decayed leaves and needles, from 0 to 6 cm depth, which you just grab and rip up. One such small handful from each of 5 - 10 selected dry spots within a 10 - 20 m radius make a good-size sample. Avoid sand, silt, clay, charcoal, sticks, or greens, but seeds can stay in. There usually are no insects nor worms. Rings, watches, bracelets, or necklaces must never be worn when handling any samples.

This therefore is not a so-called humus sample, because humus has two more parts below it, moder and mull. Also true humus is jelly-like, amorphous organics that cannot decay further, e.g. some lake bottom sludge. But let's not get complicated. I have never had gold in the usually underlying enriched brown B-horizon below the white leached sand. As this is what other methods usually sample, I am not surprised of any ill repute.

It helps to envisage the hypothesis, that metal ions tend to migrate to surface, and also are taken up by rootlets and end up in leaves. This all fits my observations. Some metals (gold, zinc, copper, nickel, chromium, manganese, etc.) get therefore concentrated in these organics. I had repeated samples of <1500 ppb Au above a quartz-vein that ran 17000 ppb (17 g/t), which proves direct migration. This and other veins had a halo of 25m, <100 ppb Au, which can be attributed only to fallen leaves and needles, because the underlying swamp muck had no gold. This simple method can be used also for base metals. I have proven it for gold, copper, zinc.

Favourable sample spots are where water can evaporate, even some 2m wide humps, or higher ground around trees. Possibly small valley floors may be better than ridges, however, flowing groundwater may intercept and dissipate the migrating metal ions, and not allow later concentration. The center of a sample is plotted with GPS, as selected sites are preferable to systematic sampling at line pickets. No statistical treatment is required; gold is where you find it. Notes can be limited to peculiarities to remember the location, as discoveries need further work anyway.

Sample preparation requires special care and is best done inhouse. Even if a lab listens, and follows special instructions, you will have to live with short-cuts. So here is my method. I spread the samples without delay on paper towels on 10-inch square paper plates, which I change whenever they are getting too damp. The lower towels can be dried and re-used. This takes two days, which is less than in open paper envelopes even in a car in the sun, as air circulation is necessary. An oven would have to be less than 50 degrees Celsius, and likely is too small. Then a sample needs to be rubbed or rolled with a glass bottle in a glass bowl to loosen enough fine organics for sieving <250 micron with a 1/4 mm plastic coffee filter. This work is fine-dusty and needs to be done outside or with a good exhaust fan. Any obvious sand or charcoal must not be crushed but removed before by swirling the bowl.

After sieving, if still some sand is visible, further dry swirling in a plastic gold pan will bring the organics to the top like scum which can be skimmed off clean. The rest can be panned with water, but is pretty useless. Bracket sieving to 125-250 micron may also help to remove silt or clay, but clay dries very hard and even finely crushed it may not release the wanted organics. Maceration by a lab also needs special attention, but then how do you get the details for further adjustment in evaluation. Also coarser organics have somewhat lower values due to dilution with wood. The homogenized sievings need to be checked with a hand lens to estimate final sand and also silt content. Clay may show only as color and weight, but may not be so critical because its much higher surface area also adsorbs ions. Careful collection can usually safe such extra work.

It is also very important to homogenize the sievings by rolling and overlapping using a bent sheet of paper, like labs used to do with pulps on a mat. Tightly packed samples stay homogenized. Keep left-overs in sachets, do not shake them. Collecting a heaped double-handful of such decayed vegetation, will yield the necessary 5 - 10 g of sievings.

The only reliable analysis for gold in such samples is by neutron activation, which however is not suitable for some base metal anomalies (e.g. nickel), and does not show copper. As samples are basically organics, I use Actlabs INAA, code 2B, vegetation, but fill their medium vials (7cm3 like a pinkie finger) myself to press as much as possible into them. I submit the varying tara (vial, stopper, label) for each, and weigh also each full vial so I can check for mix-up. They report the net weight (mass) from which one also can estimate roughly, whether a sample is diluted by silt or clay. The method is usually for 15-g briquettes, so that special double irradiation time has to be ordered for vials, for which they charge extra. Sandy samples or low inorganic standards are recognized and tolerated by the lab. They use organic standards themselves. Even so, contamination may happen, but all values >10 ppb Au need to be investigated further anyway. Gold flakes may even grow in soils or swamp muck and cause sparse particle effects. For base metals in such samples I send 2 - 4 g densely packed in a sachet to Actlabs for Ultratrace 2 - aqua regia ICP-OES/MS, but any values for gold thereby are admittedly not reliable for various reasons.

Prospecting must include swamps and swampy areas where the described decayed vegetation may not exist. I therefore bring a Dutch auger in the bush, also useful as a walking stick, a weapon against bears, and to at least occasionally probe the deeper overburden. Bedrock often is surprisingly near and should then be scanned with a Beep Mat. I use the auger in swampy areas to sample the deeper dense black muck, which apparently works well for copper, nickel, chromium, but not so well for zinc and manganese. Gold may be a long shot there as I got only rare gold extremes and need to do more research. In deeper swamps I try for the deepest and densest muck, but stay clear above any sand or rock bottom. A closed two-handful from one auger hole will do, noting the sample depth. I wrap this ball with paper towels and squeeze out the water, before letting it dry with the decay samples.

Sampling the lake bottom sludge may be the only way to explore lakes, from a canoe or best on the ice in late March - early April in just above freezing weather. A 16 cm (6 inch) diameter hand ice auger will do. A bomb will not reach the dense sludge which works well for sulfur and base metals, but I had no occasion to test it for gold yet. A soil auger with extensions may be necessary, but water is usually shallow, so a dry 5m wooden pole makes it easier with less than 4 m of water. Sludge can be 10 m thick, but I got similar values throughout. I use a strong plastic bottle with the bottom cut off and a strong electric cable tied around near the bottom to pull on one side. I push it 1 m into the sludge, then remove the pole before pulling. The bottle will tilt and scoop up a good lump. I remove the stopper from the bottle to drain the water, then dump the lump on the snow to drain further and collect it on my return.

Decay, muck, and sludge, have different concentration levels, and must be plotted as such. I suggest to add K, M, L to the values. Sample preparation and analyses are the same for all three. Notes of consistency (woody, fibrous, grainy, sticky, smeary), crushablility, colour, of M and L may be revealing.

So before you drill, do your shareholders a favour. Or before you lose a claim, grab some dirt. It takes a week to get a batch to the lab, then it takes at least 3-4 weeks to get the results for gold. A follow up again takes as much time, but a report for assessment credit is simple (see map). The best time to sample is May and October-November, like any work in the bush. In summer you raise clouds of flies from humus, and visibility for choosing sample spots may be difficult. Allow for some drying after a rain, but I doubt that seasons affects the metals. The gardening claw is in your hand now, but you can still phone me for help or advice, for set-up, organizing, or training, including field work. Hermann Daxl, M.Sc. (Minex), 705-264-4929.

[redacted] (RE WORK REPORT 1338)

ALIKE LAKE MOLY 2018-2019 WORK LOG H. DAXL

12 OCT	Prepare field work, study maps of showings.		
13 OCT	SAMPLED 7901 – 7909	– 13 hours	
14 "	DRY and PLOT samples	– 5 hours	
18 "	SIEVED 9 sample		
27 "	SAMPLED 7910 – 7918	– 13 hours	
29 "	DRY and PLOT and plan	– 5 hours	
31 "	SAMPLED 7919, cleared access	– 13 hours	
1 NOV,	DRYING + SIEVING	– 5 hours	
2 "	SAMPLED 7920 – 7925	– 13 hours	
3 "	DRY and PLOT	– 4 hours	
4 "	SAMPLED 7926 – 7932	– 13 hours	
5 "	DRY and PLOT	– 4 hours	
11 "	SIEVE		
12 "	SIEVE, PAN		
22 "	P.O., PACK, SHIP, WRITE WITH LAB		
SAMPLING 15 Days	(5 field trips)	× $ 400	= $ 6,000

↑

2018	14 DEC.	ANNOTATE and PRINT LAB RESULTS	
2019	18-19 MAR	STUDY PAST WORK	
↓	20 – 23 "	ELEMENT MAPS, Study Results	
	24 – 28 "	WRITE REPORT, photos, copy, scan.	
REPORT	12 Days	× $ 400	= $ 4,800

LAB INVOICE	$ 1,056
300 Km × 5 field Trips = 1500 Km × 50¢	$ 750
Postage for samples	$ 14
Food, 5 × suppers	$ 90
Supplies, towels, paper, ink, bags, ribbons, envelopes	$ 90
	$ 12,800