FAIRSERVICE OPTION

EXPLORATION FOR THE TANTALUM POTENTIAL OF THE MAVIS LAKE PEGMATITES

LITHIUM LITHOCHEMICAL SURVEY

MARCH, 1980

A.P. Pryslak.
D.A. Hutton.

RODUCTION

Diamond drilling on two of the known pegmatite zones located in Brownridge Township was carried out in the summer of 1979. The geological results were described by the author in a previous report, dated October, 1979. Quantitative results are presented and discussed below.

A reconnaissance lithogeochemical survey was carried out over the claims in the area that are either covered by overburden or lie at depth. The Russians have shown that the widest geochemical halos associated with pegmatite intrusions are formed by lithium, and therefore the survey involved sampling of bedrock and determination of lithium content.

DIAMOND DRILLING

The south zone pegmatite was penetrated by drill holes M-1 and M-2. The pegmatite intersected in each case was less than 10 feet thick and consisted essentially of wall-zone and mixed intermediate zone material. Minor aplitic material was encountered but this would appear to be of primary origin rather than a late replacement zone. Ta_2O_5, Nb_2O_5, SnO_2 and Li_2O content are below commercial grades (see certificate 48410, Appendix A).

2/....

The main pegmatite zone was intersected by drill holes M-3 and M-4. The pegmatites consisted of a wall zone and intermediate spodumene-bearing core zones. Minor primary aplite was encountered with the spodumene zones. Although rare tantalite crystals were identified in the core, the total tantalum-niobium content from assay results was disappointing. The Li_2O content for M-3 was 1.52% over a core length of 36.5 feet.

The main and south zone pegmatites appear to be deeply eroded as illustrated in Figure 4.

LITHOGEOCHEMICAL SURVEY RESULTS

A total of 313 bedrock samples was collected and analyzed for lithium content. The survey was controlled by chaining along claim lines and by running intermediate lines by compass and chain. Stations were established at 100-foot intervals along the lines and samples of bedrock, weighing 1-2 pounds, were collected as close to the stations as possible. Traverse lines were run north-south in the west part of the claim block and east-west in the east part of the claim block, approximately normal to the trend of the known pegmatite intrusions.

3/....

The main zone correlates with a relatively broad and highly contrasting lithium anomaly. This anomaly appears to extend northeast and is possibly the same as the anomaly associated with the NE zone. However, lack of outcrop in between the two pegmatite zones makes this correlation more assumed than defined.

A number of anomalies have been identified which have no correlation with known pegmatite. The strongest anomaly lies midway betweeen the main zone and the south zone. Other anomalies lie in the east and southeast part of the claims. These anomalies will be the object of further exploration work proposed for 1980.

Geochemical results are appended to this report and are also shown on the contoured plan.

DISCUSSION

Deposits of spodumene-albitic and lepidolite-albitic pegmatites are the most promising as to tantalum-bearing capacity. The Russians report that lithium is the most useful element for geochemical exploration for these pegmatites. It forms the widest and strongest geochemical aureole areas and is little effected by weathering of the bedrock.

4/....

The Mavis Lake geochemical survey was successful in that known spodumene-albitic pegmatite zones all show excellent correlation with lithium halos. The survey also identified new anomalies, as mentioned previously. They indicate that the pegmatite field is much larger than previously known. These pegmatites may not reach surface and represent excellent potential for tantalum mineralization.

The tantalum-bearing pegmatite fields reported by the Russians show strong zoning both vertically and horizontally with respect to the parent granite bodies. This zoning is as follows:-

PARENT GRANITOID

↓

barren pegmatites

Be, Cb - pegmatites

lithium pegmatites

(increasing secondary albitization)

Tantalum-bearing pegmatites

High temperature Sn-W-bearing quartz veins.

The Mavis Lake lithium-bearing pegmatites appear to have been deeply eroded, and the upper or apical portions of these pegmatites, which normally contain the tantalite-bearing replacement zones, have been removed. This interpretation is

illustrated in Figure 4, taken from a Russian publication (Beus, 1968).

The lithium anomaly situated midway between the main and south zones probably represents a sub-surface pegmatite intrusion. The apical portion of this pegmatite represents an excellent target for tantalum mineralization (Figure 5).

Assuming that the parental granitoid underlies Mavis Lake then the horizontal differentiation trend, represented by the zoning stated above, would be in a south to southeast direction. The Li anomalies identified on claims situated in the southeast portion of the block are targets for further investigation for tantalum mineralization.

PROPOSED WORK

The reconnaissance lithium lithogeochemical survey will be followed up by detailed geological mapping and prospecting of the anomalous areas. Detailed sampling will also be carried out over these anomalies and analyzed for Li, Cs and Rb content. It is estimated that approximately 200 samples will be required to evaluate the known Li anomalies. Completion of the geological and geochemical surveys should define some drill targets.

A.P. Pryslak.
D.A. Hutton. D. A. Hutton

:fa

STATEMENT OF EXPENDITURE

Sample Collection and Preparation	
September - October, 1979 - (32 man days)	**$2,795**
Support	**2,042**
Supervision	**210**
Sample Analysis	**2,028**
	$7,075

REFERENCES

1. BEUS, A.A., et. al., 1968: Geochemical Prospecting for endogenous ore deposits of rare elements (e.g. for tantalum) (GSC Translation).

2. TRUEMAN, D.L., 1978: Exploration Methods in the Tanco Mine area of Southeastern Manitoba, Canada. Energy vol. 3, p. 293-297.

3. OUCHINNIKOU, L.N., 1976: Lithochemical Methods of Prospecting Rare Metal Pegmatites (GSC Translation, 1977).

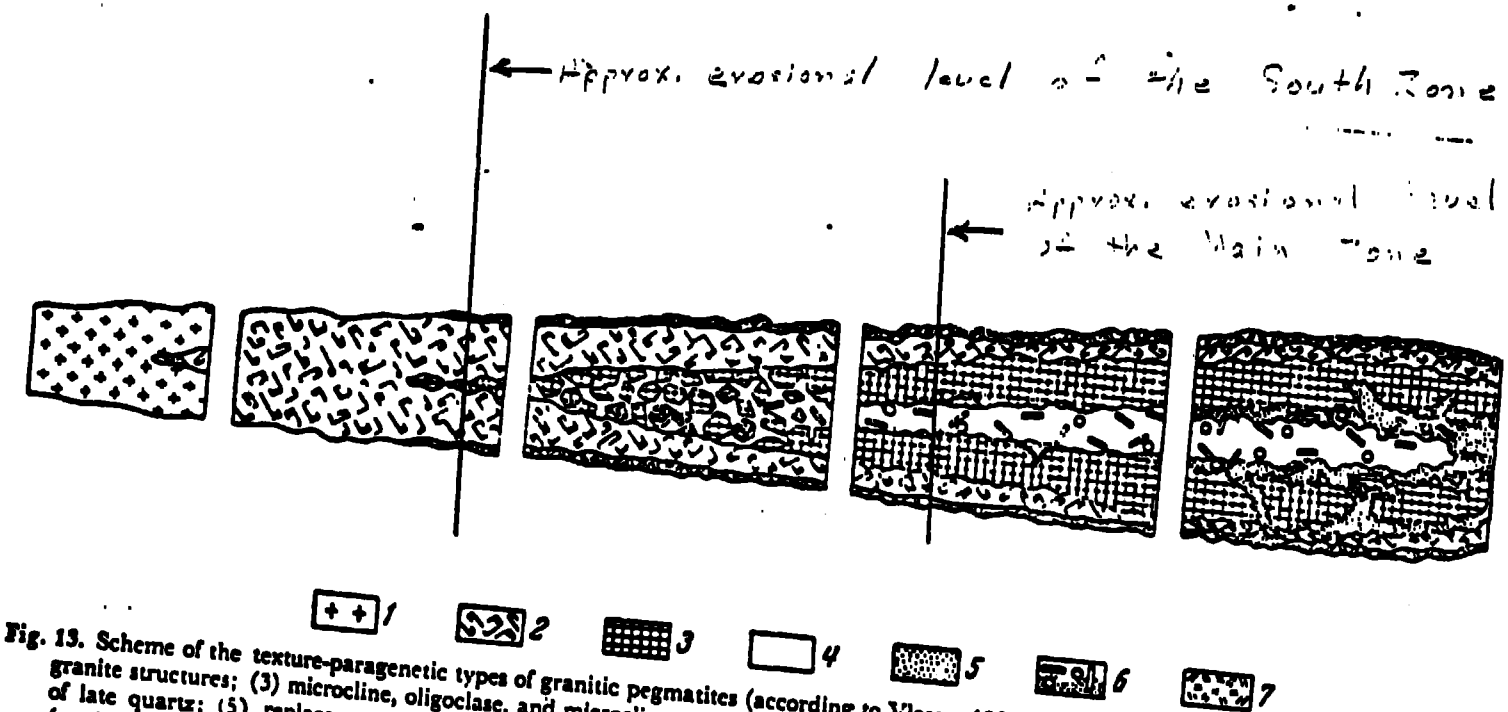

Fig. 13. Scheme of the texture-paragenetic types of granitic pegmatites (according to Vlasov, 1952). (1) Granite; (2) pegmatite of graphic and granite structures; (3) microcline, oligoclase, and microcline-spodumene zones, also blocks and crystals; (4) quartz blocks, cores, and belts of late quartz; (5) replacement zone (cleavelandite, muscovite, beryl tantalite, spodumene, etc.); (6) crystals of rare-metal minerals (spodumene, beryl, etc.); (7) muscovite-quartz-albite zones and fringes.

57

Figure 4 - Estimated erosional levels of the [illegible]

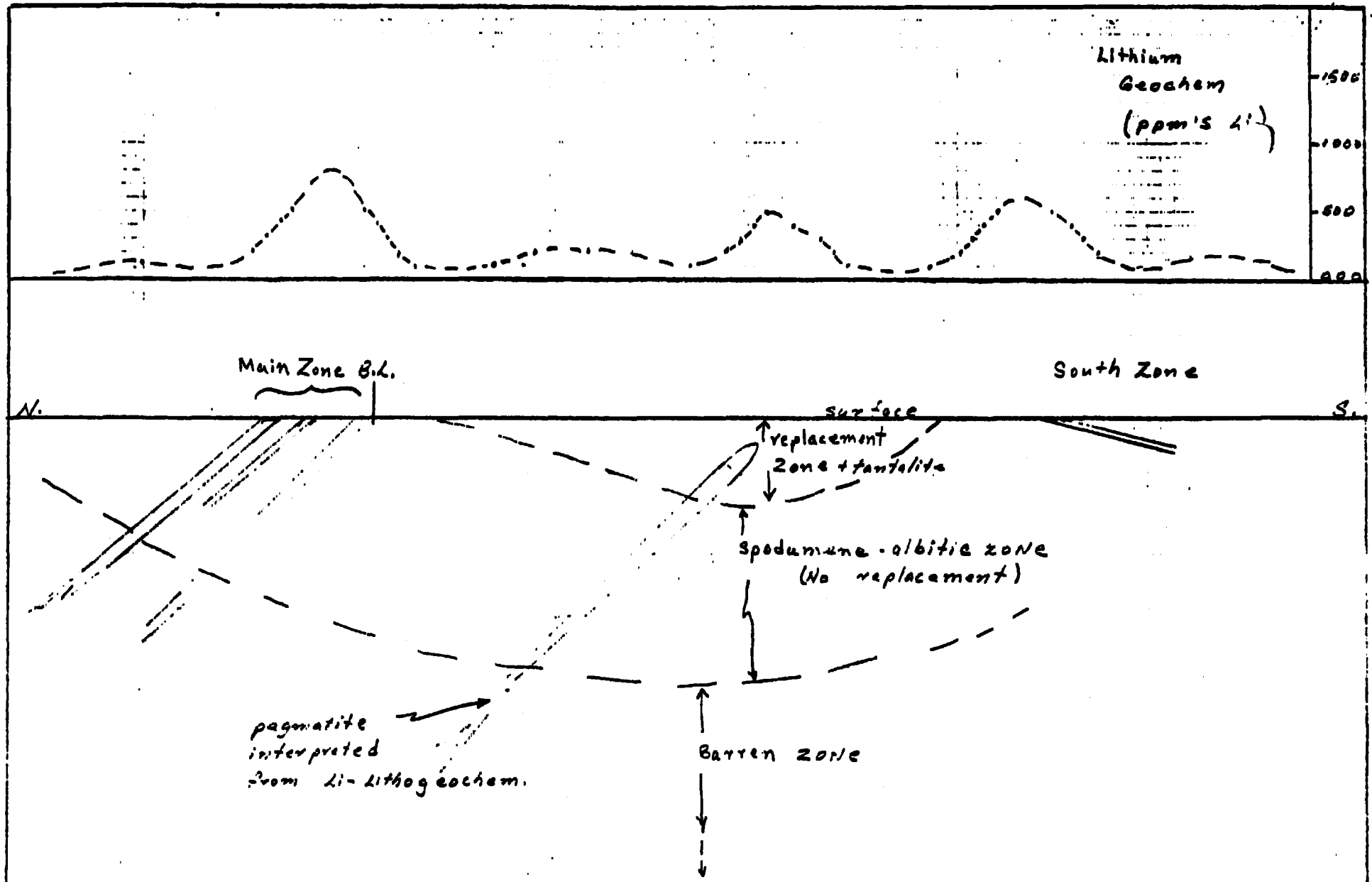

Figure 5

Brownridge Township
Pegmatite Project
Interpretive Zoning
Vertical Section along 3E.

view looking East
1" = 200'

A.P.P. / 3/80

Ontario

Ministry of Nat

GEOPHYSICAL – GEOLOC
TECHNICAL DAT

52F15SE0016 2.3306 BROWNRIDGE

900

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey(s) Geochemical
Township or Area M-1954 Brownridge Twp
Claim Holder(s) Selco Mining Corporation Limited
55 University Ave., Suite 1700, Tor.
Survey Company Selco Mining Corporation Limited
Author of Report A.P. Pryslak
Address of Author P.O. Box 100, Cochenour, Ontario
Covering Dates of Survey September, 1979 – March, 1980
(linecutting to office)
Total Miles of Line Cut 2.08 miles

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

	DAYS per claim
Geophysical	
–Electromagnetic	
–Magnetometer	
–Radiometric	
–Other	
Geological	
Geochemical	20

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer _____ Electromagnetic _____ Radiometric _____
(enter days per claim)

DATE: May. 20. 80 SIGNATURE: _____
Author of Report or Agent

Res. Geol. L.D Qualifications 63.2417

Previous Surveys

File No.	Type	Date	Claim Holder

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)	
K	533090	1/2
K	533091	1/4
K	533092	1/2
K	533093	✓
K	533094	✓

Area not covered
= 1 1/4 claims

100 days ÷ 6 = 16
days per
claim

TOTAL CLAIMS 5

If space insufficient, attach list

OFFICE USE ONLY

GEOCHEMICAL SURVEY – PROCEDURE RECORD

Numbers of claims from which samples taken _____

Total Number of Samples 313

Type of Sample Bedrock
(Nature of Material)

Average Sample Weight 2 lbs.

Method of Collection Chips

Soil Horizon Sampled Bedrock

Horizon Development Non-Applicable

Sample Depth Non-Applicable

Terrain Non-Applicable

Drainage Development Non-Applicable

Estimated Range of Overburden Thickness Non-Applicable

ANALYTICAL METHODS

Values expressed in: per cent ☐
p. p. m. ☒
p. p. b. ☐

Cu, Pb, Zn, Ni, Co, Ag, Mo, As,-(circle)

Others _____

Field Analysis (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Field Laboratory Analysis

No. (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

SAMPLE PREPARATION
(Includes drying, screening, crushing, sizing)

Mesh size of fraction used for analysis _____

Commercial Laboratory (_____ tests)

Name of Laboratory Swastika Lab. Ltd.

Extraction Method Total decomposition using hydrofluric acid

Analytical Method Atomic Absorption spectrometer

Reagents Used _____

General _____

General _____

SWASTIKA LABORATORIES LIMITED

P.O. BOX 10, SWASTIKA, ONTARIO P0K 1T0
TELEPHONE: (705) 642-3244
ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS

Certificate of Analysis

Certificate No. 48410 Date: November 19 1979

Received Oct.1/79 14 Samples of Split Core

Submitted by Selco Mining Corporation, Cochenour, Ontario -samples per:A.Prysle

	SAMPLE NO.		Ta_2O_5 %	Nb_2O_5 %	SnO_2 %	Li_2O %	P_2O_5 %	Total Fe %
M-1	0584	5.0	0.01	0.01	0.007	0.73		
	0585	4.9'	0.01	0.01	0.003	0.35		
M-2	0586		Trace	0.01	0.004	0.43		
	0587	5.0'	Trace	0.01	0.004	0.08		
	0588	4.1'	0.01	0.01	0.009	0.09		
M-3	0589	5'	Trace	0.01	0.013	0.78		
	0590	5'	Trace	0.01	0.008	1.46		
	0591	5'	0.01	0.01	0.006	2.33	0.45	0.10
	0592	5'	0.01	0.02	0.004	1.32	0.38	0.08
	0593	5'	0.01	0.02	0.006	1.45	0.40	0.08
	0594	5'	Trace	0.01	0.005	0.84	0.47	0.09
	0595	6.9'/36.9'	Trace	0.01	0.015	2.09		
M-4	0596	5.0	Trace	0.01	0.009	1.62		
	0597	3.8'	Trace	0.01	0.022	1.15		

NOTE: Samples pulverized with ceramic plates.

Per G. Lebel
G. Lebel - Manager

ESTABLISHED 1928

SWASTIKA LABORATORIES LIMITED

P.O. BOX 10, SWASTIKA, ONTARIO P0K 1T0
TELEPHONE: (705) 642-3244
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Certificate of Analysis

Certificate No. 48643 Date: December 21 1979

Received Nov.15/79 49 Samples of Ore

Submitted by Selco Mining Corporation, Cochenour, Ontario

SAMPLE NO.	Lithium PPM	SAMPLE NO.	Lithium PPM
2001	324	2026	81
2002	110	2027	263
2003	262	2028	153
2004	215	2029	190
2005	447	2030	203
2006	160	2031	53
2007	109	2032	4095
2008	255	2033	146
2009	195	2034	52
2010	263	2035	67
2011	187	2036	59
2012	98	2037	153
2013	1020	2038	166
2014	95	2039	110
2015	147	2040	500
2016	288	2041	186
2017	115	2042	168
2018	1290	2043	101
2019	169	2044	114
2020	253	2045	108
2021	190	2046	44
2022	900	2047	126
2023	620	2048	83
2024	4000	2049	133
2025	390		

Per G. Lebel
G. Lebel - Manager

SWASTIKA LABORATORIES LIMITED

P.O. BOX 10, SWASTIKA, ONTARIO P0K 1T0
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ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS

Certificate of Analysis

Certificate No. 48648 Date: December 21 1979

Received Nov.15/79 49 Samples of Ore

Submitted by Selco Mining Corporation, Cochenour, Ontario

SAMPLE NO.	Lithium PPM	SAMPLE NO.	Lithium PPM
2050	174	2075	127
2051	51	2076	221
2052	82	2077	128
2053	75	2078	93
2054	159	2079	109
2055	84	2080	126
2056	196	2081	63
2057	66	2082	73
2058	82	2083	101
2059	77	2084	95
2060	121	2085	143
2061	356	2086	136
2062	1188	2087	203
2063	69	2088	83
2064	73	2089	120
2065	40	2090	54
2066	28	2091	105
2067	90	2092	344
2068	121	2093	364
2069	39	2094	214
2070	61	2095	150
2071	26	2096	125
2072	73	2097	60
2073	144	2098	71
2074	139		

Per G. Lebel
G. Lebel - Manager

ESTABLISHED 1928

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ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS

Certificate of Analysis

Certificate No. 48649 Date: December 29 1979

Received Nov.15/79 50 Samples of Ore

Submitted by Selco Mining Corporation, Cochenour, Ont. per: A. Prysiak

SAMPLE NO.	LITHIUM PPM	SAMPLE NO.	LITHIUM PPM
2099	45	2124	101
2100	50	2125	96
2101	196	2126	80
2102	235	2127	104
2103	27	2128	165
2104	120	2129	65
2105	56	2130	112
2106	131	2131	234
2107	88	2132	59
2108	43	2133	79
2109	206	2134	80
2110	225	2135	52
2111	126	2136	132
2112	211	2137	165
2113	69	2138	281
2114	163	2139	117
2115	87	2140	167
2116	183	2141	119
2117	72	2142	99
2118	26	2143	117
2119	28	2144	95
2120	19	2145	15
2121	18	2146	10
2122	78	2147	26
2123	62	2148	18

Per G. Lebel
G. Lebel - Manager

SWASTIKA LABORATORIES LIMITED

P.O. BOX 10, SWASTIKA, ONTARIO P0K 1T0
TELEPHONE: (705) 642-3244
ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS

Certificate of Analysis

Certificate No. 48650 Date: December 29 1979

Received Nov.15/79 50 Samples of Ore

Submitted by Selco Mining Corporation, Cochenour, Ont. - per: A. Pryslak

SAMPLE NO.	LITHIUM PPM	SAMPLE NO.	LITHIUM PPM
2149	30	2174	78
2150	57	2175	62
2151	76	2176	22
2152	188	2177	61
2153	77	2178	129
2154	66	2179	92
2155	84	2180	143
2156	27	2181	84
2157	33	2182	71
2158	62	2183	92
2159	56	2184	23
2160	64	2185	187
2161	20	2186	60
2162	21	2187	39
2163	107	2188	40
2164	71	2189	45
2165	26	2190	13
2166	69	2191	38
2167	655	2192	29
2168	71	2193	55
2169	64	2194	65
2170	91	2195	76
2171	92	2196	27
2172	106	2197	51
2173	38	2198	32

Per G. Lebel
G. Lebel - Manager

ESTABLISHED 1928

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Certificate of Analysis

Certificate No. 48651 Date: Dec.29/79

Received Nov.15/79 50 Samples of Ore

Submitted by Selco Mining Corporation, Cochenour, Ont.— per: A. Pryslak

SAMPLE NO.	LITHIUM PPM	SAMPLE NO.	LITHIUM PPM
2199	21	2224	81
2200	38	2225	63
2201	69	2226	28
2202	12	2227	706
2203	28	2228	50
2204	66	2229	69
2205	35	2230	38
2206	199	2231	57
2207	31	2232	77
2208	51	2233	19
2209	37	2234	88
2210	55	2235	58
2211	167	2236	87
2212	288	2237	30
2213	119	2238	44
2214	100	2239	183
2215	72	2240	128
2216	62	2241	48
2217	23	2242	20
2218	22	2243	7
2219	51	2244	31
2220	65	2245	28
2221	68	2246	77
2222	33	2247	42
2223	35	2248	114

Per G. Lebel
G. Lebel - Manager

SWASTIKA LABORATORIES LIMITED

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TELEPHONE: (705) 642-3244
ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS

Certificate of Analysis

Certificate No. 48652 Date: December 29 1979

Received Nov.15/79 50 Samples of Ore

Submitted by Selco Mining Corporation, Cochenour, Ont. - Per: A. Pryslak

SAMPLE NO.	LITHIUM PPM	SAMPLE NO.	LITHIUM PPM
2249	279	2275	157
2250	44	2276	21
2251	27	2277	92
2252	31	2278	124
2253	34	2279	1075
2254	41	2280	79
2255	132	2281	45
2256	127	2282	57
2257	17	2283	31
2258	38	2284	40
2259	32	2285	87
2260	128	2286	61
2261	16	2287	262
2262	11	2288	700
2263	40	2289	95
2264	45	2290	357
2265	61	2291	44
** 2266	940	2292	97
2268	213	2293	94
2269	129	2294	102
2270	110	2295	76
2271	14	2296	44
2272	10	2297	74
2273	46	2298	45
2274	38	2299	32

** NOTE: Sample 2266 also contained tag #2267.

Per G. Lebel
G. Lebel - Manager

SWASTIKA LABORATORIES LIMITED

P.O. BOX 10, SWASTIKA, ONTARIO P0K 1T0
TELEPHONE: (705) 642-3244
ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS

Certificate of Analysis

Certificate No. 48653 Date: December 29 1979

Received Nov.15/79 14 Samples of Ore

Submitted by Selco Mining Corporation, Cochenour, Ont. - Per: A. Pryslak

SAMPLE NO.	LITHIUM PPM
2300	29
2301	19
2302	119
2303	35
2304	25
2305	27
2306	56
2307	19
2308	15
2309	15
2310	26
2311	19
2312	40
2313	27

Per G. Lebel
G. Lebel - Manager

NOTES

400' surface rights reservation along the shores of all lakes and rivers

SAND and GRAVEL

(G) GRAVEL File 159618

STOKES TP. M.1875

DROPE TP. M.1847

PROJECTED LINE

ZEALAND TP. M. 2061

LAVAL TP. M. 3370

CON. XII

CON XI

CON. X

CON IX

CON. VIII

CON. VII

LOT 15

1M

2M

3M

4M

5M

Gullwing Lake (Lindstrom Bay)

Gullwing Cr.

Ghost Lake

Mavis Lake

Rotter Lake

Lola Lake

PLAN M-600

PLAN M-384

PLAN M-364

ONT HYDRO FILE 145037 MOOSE LTS TO DRYDEN TS 100' R/W

Mk 932

SE CORNER co-ordinates
LAT 49° 47' 59"
DEP 92° 32' 39" Approx

C O N. VI

15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

ZEALAND TP. M. 2061

LEGEND

- HIGHWAY AND ROUTE No
- OTHER ROADS
- TRAILS
- SURVEYED LINES
  - TOWNSHIPS, BASE LINES, ETC
  - LOTS, MINING CLAIMS, PARCELS, ETC
- UNSURVEYED LINES
  - LOT LINES
  - PARCEL BOUNDARY
  - MINING CLAIMS ETC
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON-PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	●
" SURFACE RIGHTS ONLY	◒
" MINING RIGHTS ONLY	◒
LEASE, SURFACE & MINING RIGHTS	■
" SURFACE RIGHTS ONLY	◨
" MINING RIGHTS ONLY	◨
LICENCE OF OCCUPATION	▼
CROWN LAND SALE	CS
ORDER-IN-COUNCIL	OC
RESERVATION	⊛
CANCELLED	⊗
SAND & GRAVEL	(G)

SCALE : 1 INCH 40 CHAINS

FEET 0 500 1000 2000 4000 6000 8000

METRES 0 200 400 600 800 1KM 2KM

ACRES	HECTARES
40	16

TOWNSHIP 2.3306

BROWNRIDGE

DISTRICT
KENORA

MINING DIVISION
KENORA

Ministry of Natural Resources
Ontario Surveys and Mapping Branch

Date Nov '74
Whitney Block
Queen's Park, Toronto

Plan No M.1954

MAVIS

LAKE

498288

498289

498290

498291

498292

498308

489172

489173

489160

489176

489175

489174

MAIN

SOUTH

ZONE

M-1

M-2

M-3

ZONE

M-4

LINE 0

LINE 1E

LINE 2E

LINE 3E

LINE 4E

LINE 5E

LINE 6E

LINE 7E

LINE 8E

LINE 9E

489165

489163

489166

489164

NORTH EAST ZONE

LINE 11 N.

LINE 10N

LINE 8N

LINE 8N

LINE 7N.

LINE 6N.

LINE 5N.

LINE 4N.

LINE 3N.

LINE 2N.

LINE 1N

533095

533094

533092

533093

533090

533091

533086

533087

533088

089

0 200 400

FEET

LEGEND

PPM LITHIUM

- 0 - 100
- 100 - 200
- 200 - 300
- 300 - 400
- 400 - 500
- < 500

ALL SAMPLES ARE ROCK CHIPS

CLAIM POST - ASSUMED

PPM LITHIUM 28 X 2120 SAMPLE NUMBER

CLAIM LINES & SURVEY LINES BY COMPASS & CHAIN

CLAIM POST - DEFINED BY COMPASS AND CHAIN SURVEY

PEGMATITE - DEFINED BY OUTCROP & D.D.H. DATA

REGISTERED PROFESSIONAL ENGINEER D. A. HUTTON PROVINCE OF ONTARIO

D. A. Hutton

SELCO MINING CORPORATION
(EXPLORATION DIVISION) LIMITED

RAFTER AREA

FAIRSERVICE OPTION

LITHOGEOCHEM. SURVEY - LITHIUM

DRAWN BY	DATE	PLAN Nº RA.2881
TRACED BY	DATE	