

**CUMBERLAND RESOURCES LTD.**  
**RECONNAISSANCE GEOLOGICAL SURVEY**

**SLATE LAKE PROPERTY**

**NTS: 52K/15**  
**NORTHWESTERN ONTARIO**

**THUNDER BAY, ONTARIO**  
**JULY 11, 1994**

**SUBMITTED BY:**

**M. P. LEWIS GEOLOGICAL SERVICES**



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## S U M M A R Y

The Slate Lake property is located 60 km northeast of the community of Ear Falls and 90 km east of the mining town of Red Lake in Northwestern Ontario. The property is comprised of nine(9) contiguous unpatented mining claims totalling 44 units covering 4.5 km of prospective base and precious metal stratigraphy. The property, which is owned 100% by Cumberland Resources Ltd of Thunder Bay ,Ontario, covers the eastern and western strike extension of a Cu-Zn rich massive sulphide horizon as well as untested HLEM and IP anomalies. The IP anomalies are in close proximity to known gold mineralization. The massive sulphide horizon, which was intersected by 4 closely spaced drill holes in 1979-80 (8.70% Cu, 7.05% Zn and 2.17 opt Ag/ 0.50 m), is defined by a 900 meter long HLEM anomaly. This anomaly is covered by six(6) leased mining claims that are currently held by Breakwater Resources Ltd. of Toronto.

A reconnaissance geological mapping and litho sampling program was carried out over Cumberland's Slate Lake property during the period June 16-22, 1994. The purpose of the survey was to confirm the presence of favourable VMS hosting stratigraphy and to define possible hydrothermal alteration associated with an area of known base metal mineralization and areas of untested HLEM anomalies. Hydrothermal alteration was not detected in areas of known outcrop exposure. However, the presence of a 900 meter long CU-ZN rich massive sulphide sheet that has been drill tested to a maximum depth of 140 meters, plus prime VMS hosting stratigraphy in the form of felsic bedded ash tuffs and lapilli tuffs, sulphide mineralization over a relatively large area, untested HLEM and IP anomalies, together warrant an aggressive base metal and precious metal exploration program in the Slate Lake area.

An all-out effort should be made to acquire Breakwater's six(6) leased mining claims. Pending the successful acquisition of the Breakwater property, a Phase 1 program of linecutting, DEEPEM geophysical survey and a Phase 2 program of diamond drilling should be carried out. The cost of both programs is estimated at approximately \$190,000.

## **1.0 INTRODUCTION**

During the period June 16-22, 1994 a reconnaissance geological survey was carried out over most of the southern half of Cumberland's Slate Lake property. This survey, which was carried out from a camp-site on Papaonga River (**PHOTO 1**), utilized old grid lines which were established by St. Joe Exploration in 1979. To the north of baseline 0+00 the fairly open jackpine-covered muskeg allows for grid lines to be followed easily. In the south toward Slate Lake a softwood (poplar) ridge (**PHOTO 2**) with impressive broad-leaf undergrowth have all but eliminated the 15 year old grid lines.

The purpose of the survey was to assess the base metal potential of the Slate Lake property by confirming the presence of favourable VMS hosting stratigraphy and to outline possible hydrothermal alteration probably associated with a known area of mineralization and untested HLEM conductors. During the course of the survey a total of 32 selected rock samples were collected for whole-rock analysis.

## **2.0 LOCATION, SIZE AND ACCESS**

The Slate Lake property is located 60 km northeast of the town of Ear Falls and 90 km east of the mining community of Red Lake in Northwestern Ontario (Figure 1).

The property is comprised of nine(9) contiguous unpatented mining claims, totalling 44 units, covering 4.5 km of prospective VMS and precious metal hosting stratigraphy.

Access to the property area is provided by an all-weather logging road to within 0.5 km to Slate Lake and then by motorized boat or snowmobile to the southern portion of the property.

# LEGEND

## NEO-ARCHEAN (2.5 to 2.9 Ga)

### SUPRACRUSTAL ROCKS

9 Coarse clastic metasedimentary rocks<sup>1</sup>; mainly coarse clastic metasedimentary rocks, with minor, mainly alkalic, mafic to felsic metavolcanic flows, tufts and breccias

## NEO- TO MESOARCHEAN (2.5 to 3.4 Ga)

### SUPRACRUSTAL ROCKS

8 Migmatized supracrustal rocks<sup>9a</sup>; metavolcanic rocks, minor metasedimentary rocks, mafic gneisses of uncertain protolith, granitic gneisses

7 Metasedimentary rocks<sup>9b</sup>; wacke arkose, argillite, slate, marble, chert, iron formation, minor metavolcanic rocks  
7a Paragneisses and migmatites<sup>8</sup>  
7b Conglomerate and arenite

6 Felsic to intermediate metavolcanic rocks<sup>9c</sup>; rhyolitic, rhyodacitic, dacitic and andesitic flows, tufts and breccias, chert, iron formation, minor metasedimentary and intrusive rocks, related migmatites

5 Mafic to intermediate metavolcanic rocks<sup>9d</sup>; basaltic and andesitic flows tufts and breccias, chert, iron formation, minor metasedimentary and intrusive rocks, related migmatites  
5a Andesitic flows, tufts and breccias with minor rhyolites<sup>10</sup>

4 Mafic to ultramafic metavolcanic rocks<sup>9e</sup>; mafic metavolcanic rocks with minor komatiite, minor metasedimentary and pyroclastic rocks

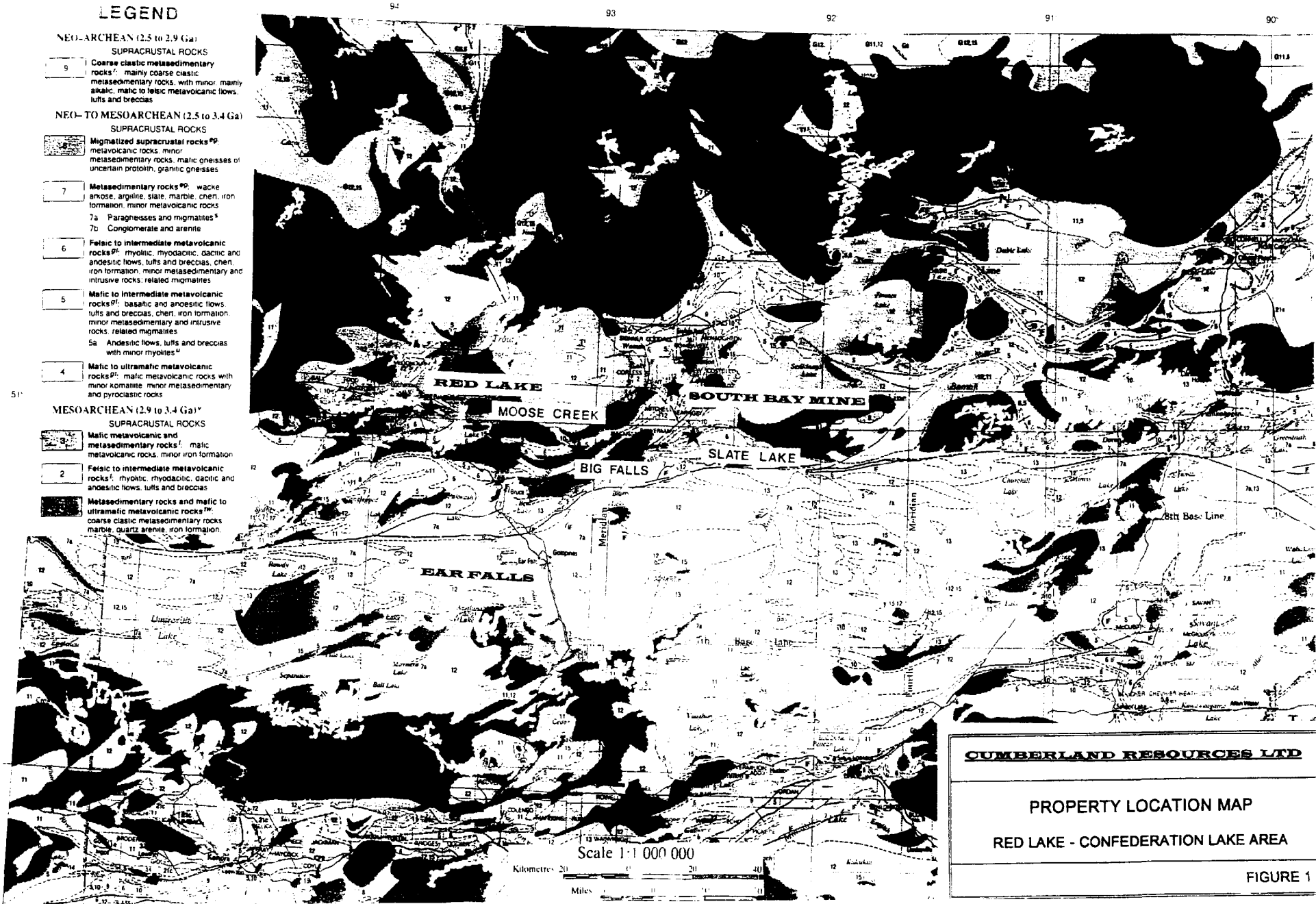
## MESOARCHEAN (2.9 to 3.4 Ga)<sup>11</sup>

### SUPRACRUSTAL ROCKS

3 Mafic metavolcanic and metasedimentary rocks<sup>1</sup>; mafic metavolcanic rocks, minor iron formation

2 Felsic to intermediate metavolcanic rocks<sup>1</sup>; rhyolitic, rhyodacitic, dacitic and andesitic flows, tufts and breccias

1 Metasedimentary rocks and mafic to ultramafic metavolcanic rocks<sup>12</sup>; coarse clastic metasedimentary rocks, marble, quartz arenite, iron formation



**CUMBERLAND RESOURCES LTD**

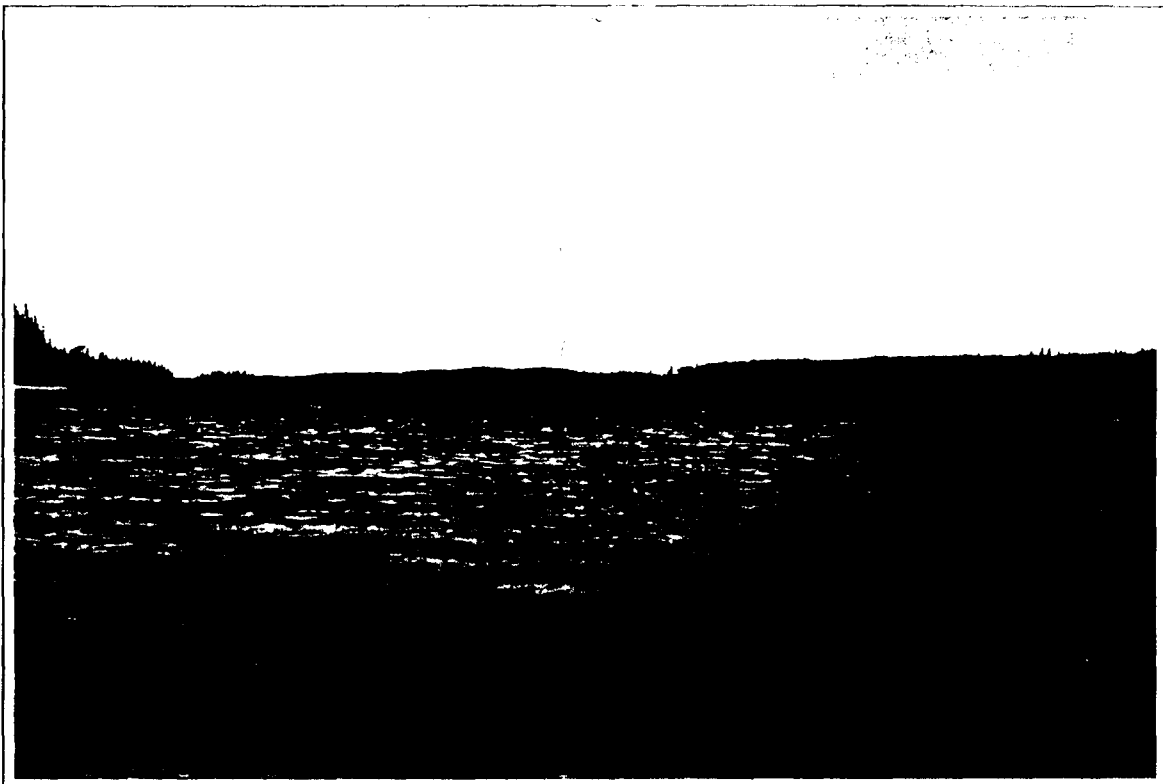
PROPERTY LOCATION MAP

RED LAKE - CONFEDERATION LAKE AREA

FIGURE 1



**PHOTO 1: CAMPSITE NEAR PAPAONGA RIVER**



**PHOTO 2: TYPICAL TOPOGRAPHY ALONG THE NORTH SHORE OF SLATE LAKE. CUMBERLAND'S SLATE LAKE PROPERTY IN THE BACKGROUND.**

### 3.0 PROPERTY SUMMARY AND CLAIM DISPOSITION

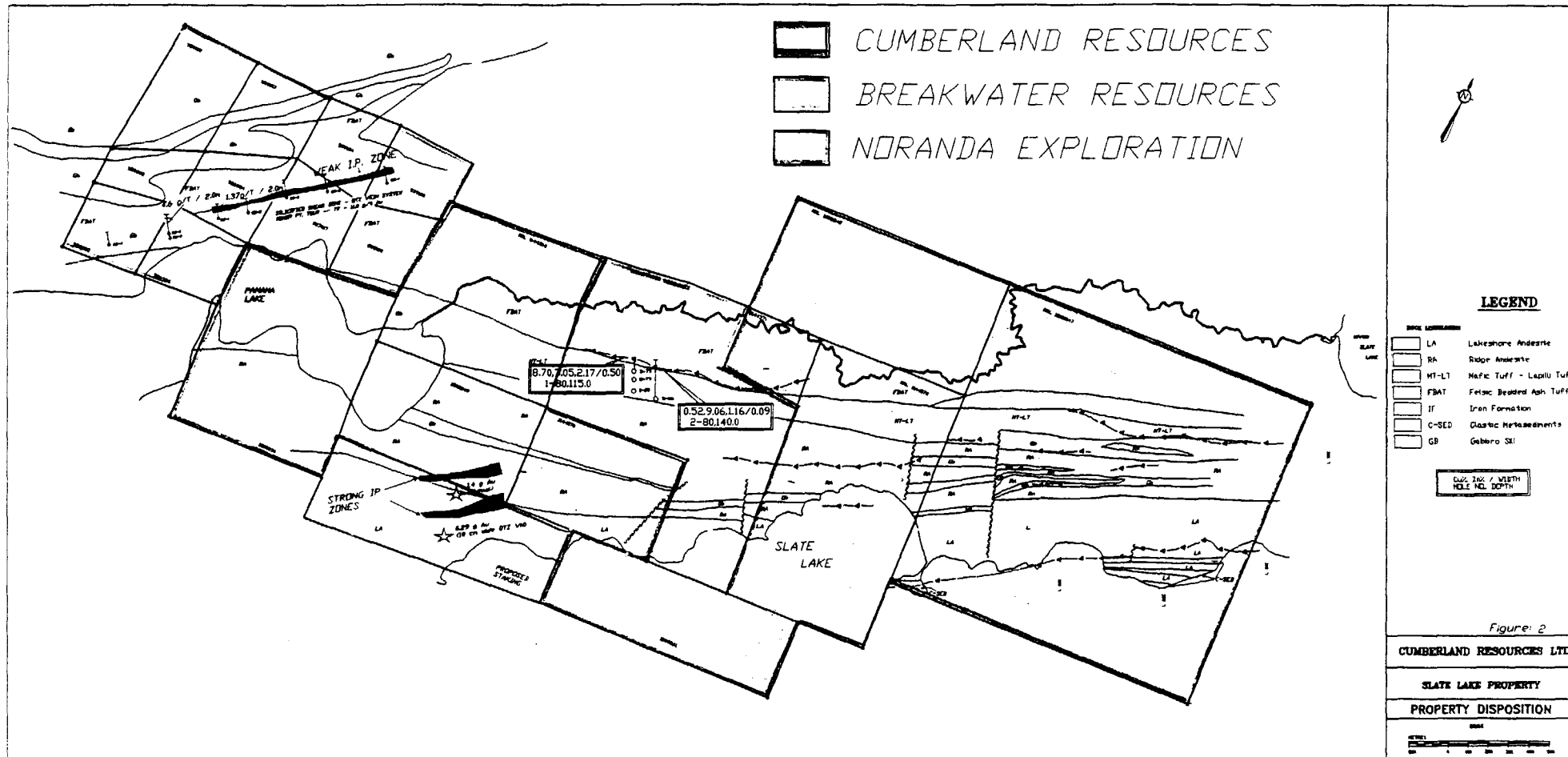
The Slate Lake property is 100% wholly owned by Cumberland Resources Ltd. of Thunder Bay, Ontario subject to certain royalty and non-royalty conditions to M.P. Lewis Geological Services. The claims are located in the Slate Lake Area, Map Sheet G-1884 and consists of 9 contiguous mining claims (Figure 2). I.

TABLE I: SCHEDULE OF CLAIMS

CLAIM BLOCK	NO. OF UNITS	RECORDING DATE
1144369	4	March 16, 1994
1144370	2	March 16, 1994
1144371	1	March 16, 1994
1144372	6	March 16, 1994
1202247	16	March 18, 1994
1202248	6	March 18, 1994
1202249	2	March 18, 1994
1202250	4	March 18, 1994
1209261	3	June 22, 1994
TOTAL	44	

The claims were initially acquired to cover the eastern and western strike extension of a known massive sulphide horizon currently held by Breakwater Resources. Also obtained during the course of the staking was a number of untested HLEM anomalies which are located some 2.5 km to the east of the main area of interest.





CUMBERLAND RESOURCES  
 BREAKWATER RESOURCES  
 NORANDA EXPLORATION



**LEGEND**

- ROCK LEGEND**
- LA Lakeshore Andesite
  - RA Ridge Andesite
  - MT-L1 Mafic Tuff - Laplu Tuff
  - FBAT Felsic Beaded Ash Tuff
  - IF Iron Formation
  - C-SED Quartz Metasediments
  - GB Gabbro Sill

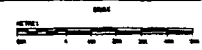
0.52 9.06 1.16 / 0.09  
2=80,140.0

Figure 2

CUMBERLAND RESOURCES LTD.

SLATE LAKE PROPERTY

PROPERTY DISPOSITION



### 3.0 RESULTS OF PREVIOUS WORK:

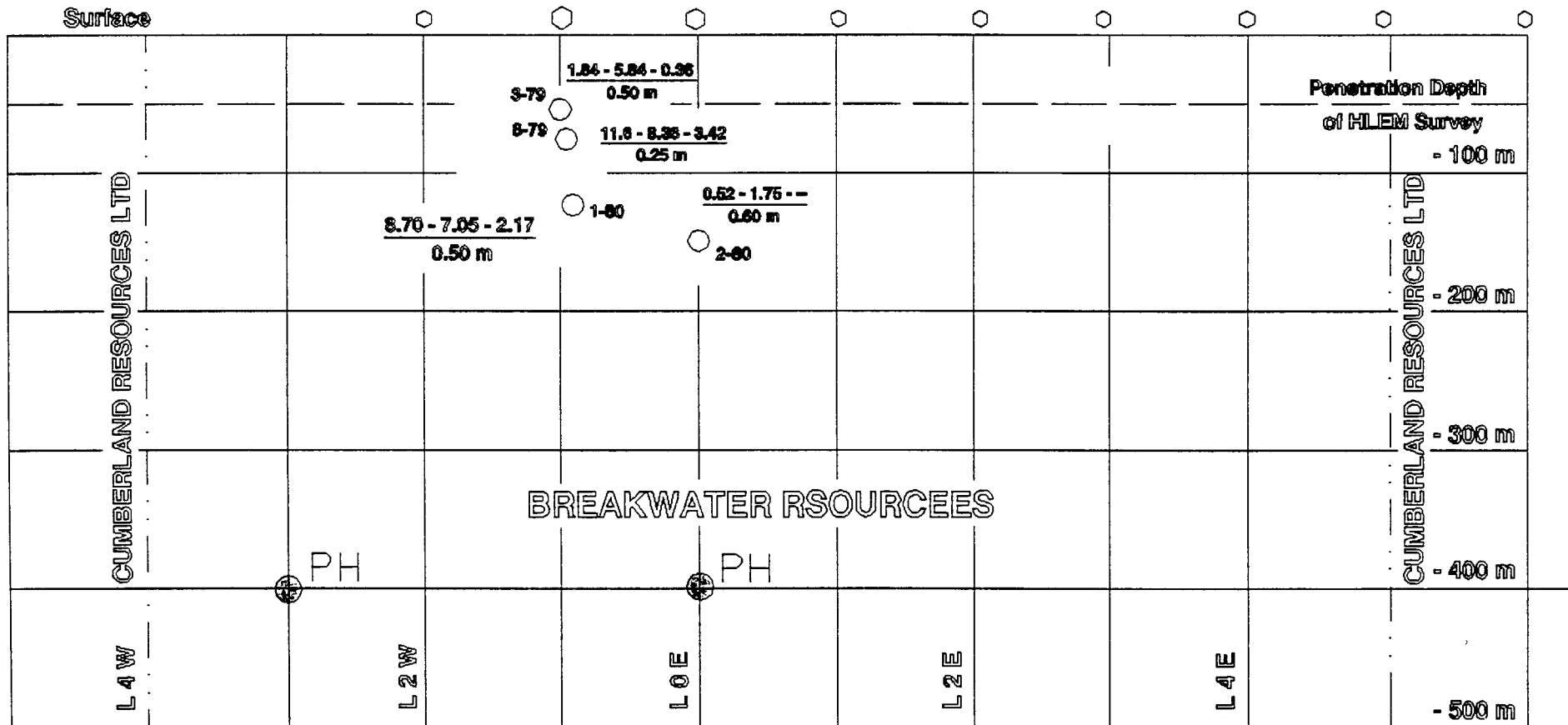
In 1979 St. Joseph Exploration Ltd., the predecessor to Breakwater Resources, carried out a regional airborne survey over the Slate Lake area. Subsequent ground follow-up, which included geological mapping, magnetometer and HLEM survey and diamond drilling, resulted in the discovery of a high-grade massive sulphide horizon immediately east of Panama Lake and north of Slate Lake.

In 1979 two holes were drilled 100 m apart to test a 900 m long HLEM anomaly. The first hole 3-79 encountered a banded massive sulphide horizon at a vertical depth of 50 m which assayed 1.84% Cu and 5.84% Zn over 0.50 m. The second hole (8-79) was drilled just 20 m below hole 3-79 and intersected 11.6% Cu, 8.36% Zn and 3.42 opt Ag over 0.25 m. In 1980 an additional two holes were drilled to test the narrow but high grade massive sulphide sheet at depth. Hole 1-80 was drilled 45 m below hole 8-79 and encountered 8.70% Cu, 7.05% Zn and 2.17 opt Ag over 0.50 m. The second hole of 1980 (2-80) is located 100 m west and intersected 0.52 % Cu and 1.75 % Zn over 0.60 m (Figure 3). Although Breakwater Resources continue to hold the six(6) leased mining claims that cover most of the 900 meter long conductor, no further work has been carried out since 1980.

West and adjoining Cumberland's Slate Lake property, Noranda Exploration holds 10 claims in good standing. A much larger property position, including the area of Cumberland's three westerly claims, were staked by Noranda in 1986 to cover a known gold occurrence. Over a two year period (1986-1988) Noranda carried out geological mapping, magnetometer, VLF-EM and IP surveys, humus sampling and diamond drilling (8 holes).

The 8 -hole diamond drilling program tested a weak IP anomaly which defined a 800 m long auriferous and pyritized quartz flooded shear zone. Surface sampling returned erratic gold values which ranged from trace to 14.4 g/t with the best channel sample result being 10.3 g/t Au over 1.1 meters. Best drill results were obtained in hole PL88-3 and consist of 2.8 g/t over 4.5 meters. A hole drilled beneath 88-3 failed to encounter similar results.

Also included as part of Noranda's exploration program was reconnaissance regional humus sampling and prospecting. One humus sample located 400 meters north of Slate Lake contained 1400 ppb Au. Subsequent prospecting in the general area uncovered a narrow quartz vein (10 cm wide) which assayed 6.3 g/t Au. An IP survey followed which detected two sub-parallel strong anomalies. These IP anomalies, hosted by carbonatized and sheared (fissile) mafic volcanics, are separated by a distance of 150 meters and are open at both ends. The results of the IP survey, which was carried out over three lines are appended as Appendix 1. The northern anomaly is partially covered by Cumberland claim 1202249 with the south anomaly on open ground. Neither of the two anomalies have been drill tested.



% Cu - % Zn - opt Ag  
Interval in metres

8.70 - 7.05 - 2.17  
0.50 m

hole  
location

1-80  
DDH

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VERTICAL LONGITUDINAL SECTION

ST. JOE HORIZON

SCALE: 1 : 5000

○ = HLEM Conductor

⊗ PH  
PROPOSED DDH

Figure 2A

## 5.0 REGIONAL GEOLOGY:

The Slate Lake property is situated in the southern part of the Archean Birch Lake - Uchi Lake Greenstone Belt, an east-trending assemblage of metavolcanics and metasedimentary rocks. The metavolcanics-metasedimentary rocks of the immediate Slate Lake area are correlated with Cycle I and Cycle II volcanics of the Confederation Lake assemblage. The geology map produced by the Ontario Geological Survey in 1980 indicates the Slate Lake property is underlain by northeast - southwest trending, south dipping and south facing, 1000 m thick succession of felsic to intermediate pyroclastic rocks which are overlain to the north by mafic volcanics.

The fissile and carbonatized nature of the mafic volcanics adjacent to Slate Lake strongly suggest that a major structure controls the topography and the emplacement of the large bodies of water in the area.

## 6.0 PROPERTY GEOLOGY AND MINERALIZATION

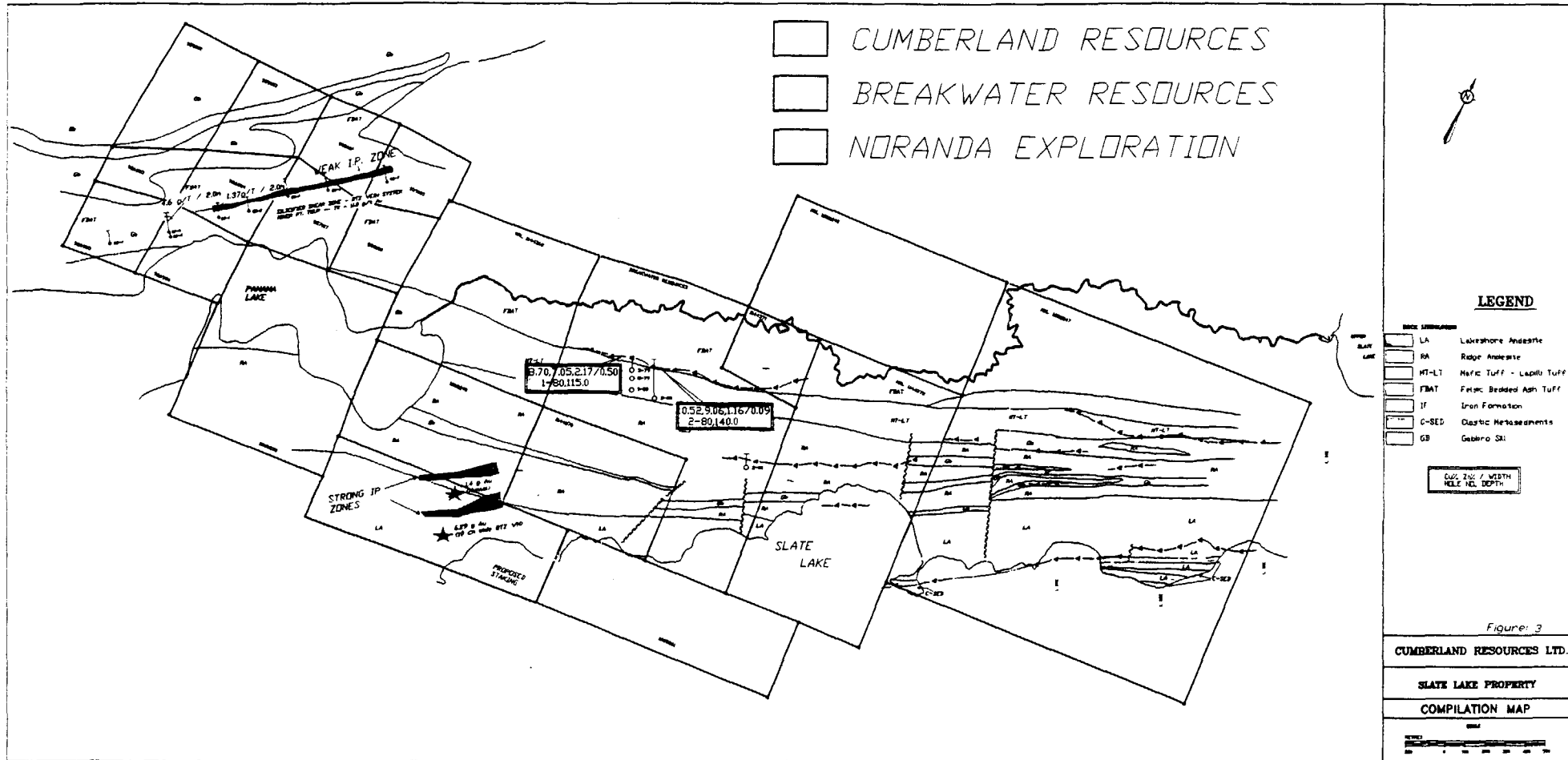
A variety of major rock types were recognized on the Slate Lake property during the course of the reconnaissance mapping program (Figure 3).

### DESCRIPTION OF LITHOLOGIES

#### 6.1 LAKESHORE ANDESITE (LA)

This particular unit is at least 500 meters in thickness and is exposed along the entire strike length of the north shore of Slate Lake. The most common characteristic of all exposures of the LA is its strongly developed schistosity which result in the unit being extremely fissile. The rock is typically fine-grained, dark green, with well-developed chlorite and carbonate alteration.

Chemically the Lakeshore andesite averages 45.90% SiO<sub>2</sub>, 1.33% TiO<sub>2</sub> and 2.43% Na<sub>2</sub>O.



**LEGEND**

- LA Lakeshore Andesite
- RA Ridge Andesite
- MT-LT Mafic Tuff - Lapilli Tuff
- FBAF Felsic Bedded Ash Tuff
- IF Iron Formation
- C-SED Clastic Metasediments
- GB Gabbro Srt.

0.00 2000 / WIDTH  
MILE N.E. DEPTH

Figure: 3

CUMBERLAND RESOURCES LTD.  
 SLATE LAKE PROPERTY  
 COMPILATION MAP  
 1988

## 6.2 RIDGE ANDESITE (RA)

Stratigraphically below the Lakeshore andesite is a second mafic volcanic unit that is being termed the Ridge andesite. This unit, which extends across the entire strike length of the property, is characteristically massive, fine to medium grained and is a lime green in colour. Personal communications with a ex-employee of St. Joe Exploration pinpointed the location of a rock formation that had previously been named the Pea Rhyolite. This outcrop is located on the shoreline of Slate Lake and consists of well -developed spherules in chloritized Ridge Andesite. These spherules are generally clustered, are a light grey in colour and range up to 1 cm in diameter (PHOTO 3).

Alteration is minimal with the possible exception of local chloritization and carbonitization.

The Ridge andesite is chemically different from the Lakeshore andesite in that its TiO<sub>2</sub> content is consistently less than 1.00% with SiO<sub>2</sub> averaging 46.90%.

## 6.4 MAFIC BEDDED ASH TUFF (MT-LT)

The only exposures of this unit are located in the most eastern claim immediately north of baseline 0+00. These rocks are being correlated with banded tuffs that are described in the ST. Joe 1979-80 drill holes. The MT-LT unit is finely bedded, generally fine grained and medium to dark green in colour. The weathered surface of outcrops display local stretched and elongated light and dark lapilli-sized fragments. These fragments are likely boudinaged portions of more silica rich beds.

The Mt-LT unit averages 47.65% SiO<sub>2</sub>, 1.93% TiO<sub>2</sub> and 2.57% Na<sub>2</sub>O.

## 6.5 FELSIC BEDDED ASH TUFF (FBAT)

Felsic Bedded Ash Tuff occupy the footwall and possibly the host to the base metal-rich massive sulphide horizon discovered by St. Joe Exploration in 1979. These exposures are located south of Panama Creek and are the only rock exposures in the immediate vicinity of the St. Joe Horizon.

The FBAT consists of predominantly fine grained, finely laminated, waterlain ash tuff with local interbeds of fine chert laminae. The laminae range from mm's to cm's in size and are light grey to a very pale green in colour (PHOTOS 4 & 5).

The most easterly exposure contain a coarse fragmental texture comprised of block-size, chert-like fragments in a seemingly sericitic matrix (PHOTO 6). This in-situ type fragmentation is characteristic of the bedded ash tuffs which host Metall's Winston Lake deposit. Rare sulphide burns caused by patchy fine grained pyrite can be observed in most of the FBAT outcrop exposures (PHOTO 7).

Detailed mapping will undoubtedly define a number of internal stratigraphic units within the FBAT. Of the five samples collected for whole-rock analysis SiO<sub>2</sub> ranged from 68.10 to 78.90% (av. 72.86%), average TiO<sub>2</sub> is 0.27% ranging from 0.18 to 0.36%, with average Na<sub>2</sub>O in the order of 3.90%



**PHOTO 3: SPHERULITIC RIDGE ANDESITE. OUTCROP LOCATED AT L7+20-E, 3+80-S. SAMPLE # MSD-12931 SiO<sub>2</sub>= 43.60%, TiO<sub>2</sub>= 0.59%**



**PHOTO 4: FELSIC BEDDED ASH TUFF. FOOT WALL AND POSSIBLE HOST TO THE ST. JOE HORIZON. SAMPLE # MSD-12926. SiO<sub>2</sub>=75.60, TiO<sub>2</sub>= 0.25%**



**PHOTO 5: FELSIC ASH TUFF WITH LOCAL BEDS OF FINE CHERT LAMINAE. SAMPLE # MSD-12928 SiO<sub>2</sub>= 71.70%, TiO<sub>2</sub>= 0.35%**



**PHOTO 6: CHERTY FRAGMENTS IN A FINE GRAINED SERICITIC MATRIX. SAMPLE # MSD-12929 SiO<sub>2</sub>= 78.90%, TiO<sub>2</sub>= 0.18%**





**PHOTO 7: FAINT SULPHIDE BURNS IN A FELSIC ASH TUFF. SAMPLE SITE # MSD-12928**

## **6.6 INTRUSIVE ROCKS: GABBRO**

A number of gabbro sills intrude the eastern portion of the Ridge andesite. These discrete sills are massive, medium green and display a spotted texture caused by evenly disseminated sub 2mm porphyroblasts of dark green amphibole. Chemically these gabbro sills average 47.62% SiO<sub>2</sub>, and 1.08% TiO<sub>2</sub>.

Known mineralization on the Slate Lake property is confined to the St. Joe Horizon and adjacent patchy sulphide mineralization (fine-grained pyrite) in felsic bedded ash tuffs. Mineralization contained in the St. Joe horizon is described under section 3.0 **RESULTS OF PREVIOUS WORK**. A number of HLEM anomalies in the eastern half of the property have yet to be drilled tested but most likely define zones of sulphide mineralization.

## **7.0 WHOLE-ROCK GEOCHEMISTRY - ALTERATION**

During the course of the June, 1994 reconnaissance mapping survey, a total of 32 rock samples were collected for the purpose of whole-rock analysis. These samples were analyzed for various major, minor and trace elements by Chemex Labs of Vancouver, B.C. Analytical results are appended as Appendix 2.

No visual hydrothermal alteration was observed during the course of the mapping program. Whole-rock geochemistry confirmed the lack of such alteration on the Slate Lake property. A standard exercise of determining alteration scores or alteration indices failed to define any anomalous values (Table 2).

## **8.0 CONCLUSIONS:**

Combined base metal values (15% Cu-Zn) associated with the 900 m long HLEM anomaly on Breakwater's Slate Lake property are substantially higher than any other base metal prospect in the entire area of the Confederation Lake Assemblage. Favourable geology in the form of felsic bedded ash tuffs and cherty lapilli tuff, iron metasomatism (sulphide burns) and an exceptional high grade, relatively untested, 900 meter long, massive sulphide horizon combine to make the Slate Lake area a most exciting base metal play.

The Slate Lake area also holds considerable potential for significant gold mineralization. Untested IP anomalies in an area of sheared and carbonatized mafic volcanic rocks are located in close proximity to known gold mineralization. One 3-unit claim should be staked to cover these anomalies.

## CUMBERLAND RESOURCES LTD.

## SLATE LAKE PROJECT

PN: 602

## WHOLE - ROCK ANALYSIS

SAMPLE #	EASTING X	NORTHING Y	SI02 %	TIO2 %	AL2O3 %	FE2O3 %	MGO %	MNO %	CAO %	K2O %	NA2O %	LOI %	CU PPM	ZN PPM	AU PPB	AG PPM	HOSH	CHL	SER	SPITS
12919	420	-130	53.70	1.30	15.12	12.79	2.48	0.25	9.03	0.23	2.31	2.91	53	75	<5	<0.2	19	44	9	7
12920	-300	-320	58.10	1.27	13.73	7.79	3.29	0.14	8.24	0.06	3.38	4.96	73	83	<5	<0.2	22	42	2	4
12921	-295	-230	44.90	0.77	16.20	9.25	4.36	0.19	14.16	0.25	0.92	8.73	82	67	<5	<0.2	23	41	21	18
12922	-100	430	68.10	0.36	17.10	2.90	1.12	0.04	1.08	4.82	2.71	2.50	33	75	<5	<0.2	61	71	64	6
12923	-100	-220	46.30	0.67	16.26	10.91	8.15	0.17	11.24	0.10	1.58	4.04	75	53	<5	<0.2	39	49	6	10
12924	100	-380	63.10	0.72	16.22	6.88	1.93	0.10	3.96	1.20	4.29	1.68	27	892	<5	<0.2	28	52	22	4
12925	300	-465	43.50	1.56	12.65	13.78	4.00	0.30	9.62	0.06	2.40	9.82	62	108	<5	<0.2	25	41	2	5
12926	455	355	75.60	0.25	12.65	1.65	0.45	0.03	1.31	2.07	4.92	1.55	6	35	<5	<0.2	29	51	30	3
12927	445	345	70.00	0.35	14.18	3.16	0.84	0.04	2.32	3.76	3.13	3.07	40	50	<5	<0.2	46	58	55	5
12928	600	330	71.70	0.23	15.62	1.79	0.78	0.02	0.52	4.36	3.27	1.87	6	15	<5	<0.2	58	68	57	5
12929	625	320	78.90	0.18	11.15	1.29	0.45	0.02	0.82	1.43	5.46	1.08	6	29	<5	<0.2	23	48	21	2
12930	700	-220	48.00	0.93	15.38	11.73	4.25	0.23	11.09	0.14	2.30	4.71	108	59	<5	<0.2	25	42	6	7
12931	725	-385	43.60	0.59	14.37	11.73	12.13	0.16	11.10	0.04	0.85	4.14	68	43	<5	<0.2	50	53	4	17
12932	990	-240	46.10	0.88	16.18	12.33	8.79	0.17	9.01	0.08	1.99	4.06	35	56	<5	<0.2	45	53	4	8
12933	1015	-80	53.20	0.66	15.04	6.80	9.70	0.09	6.69	0.17	3.70	4.31	8	55	<5	<0.2	49	54	4	4
12934	1650	0	47.40	1.92	14.99	16.94	3.43	0.43	6.65	0.25	2.82	3.31	4	115	<5	<0.2	28	49	8	5
12935	1400	-210	47.60	0.89	15.47	12.03	6.85	0.18	9.81	0.11	2.06	5.77	103	68	<5	<0.2	37	48	5	8
12936	1400	-345	46.20	0.91	16.18	10.64	8.05	0.19	8.10	0.24	2.31	8.20	54	87	<5	<0.2	44	54	9	7
12937	1600	-280	43.92	0.66	16.73	10.64	10.05	0.13	8.68	0.10	2.52	5.87	88	46	<5	<0.2	48	54	4	7
12938	1600	-160	45.96	0.93	15.36	12.51	6.58	0.17	10.83	0.10	1.92	3.73	112	60	<5	<0.2	34	46	5	8
12939	1900	-265	47.47	0.89	17.22	11.14	5.60	0.15	11.63	0.19	2.40	3.69	72	61	<5	<0.2	29	45	7	7
12940	2000	-155	45.90	1.24	12.97	15.16	9.04	0.21	8.37	0.07	1.98	3.00	50	69	<5	<0.2	47	52	3	7
12941	2000	25	45.73	1.97	15.25	16.88	5.05	0.22	6.25	0.29	2.09	4.32	123	125	<5	<0.2	39	55	12	7
12942	2080	15	51.00	1.84	14.24	14.63	4.05	0.17	7.47	0.23	3.36	1.31	56	75	<5	<0.2	28	46	6	4
12943	2200	-10	47.56	1.01	14.93	13.24	8.04	0.16	7.31	0.09	2.96	2.90	125	60	<5	<0.2	44	53	3	5
12944	2200	75	46.24	1.98	14.49	17.15	5.10	0.22	6.68	0.19	2.28	2.80	66	114	<5	<0.2	37	52	8	6
12945	2205	-210	64.48	0.58	15.61	6.30	2.96	0.08	3.17	0.86	3.83	2.56	21	75	<5	<0.2	35	57	18	4
12946	2400	-330	48.31	1.11	14.82	13.41	6.46	0.19	6.40	0.31	2.47	4.04	92	89	<5	<0.2	43	55	11	6
12947	2400	-110	50.36	1.02	16.72	9.38	5.66	0.19	8.44	0.06	3.08	4.22	110	80	<5	<0.2	33	49	2	5
12948	2300	25	40.81	1.99	15.04	22.80	4.78	0.38	6.78	0.30	1.17	2.72	6	114	<5	<0.2	39	55	20	13
12949	2760	-10	49.31	0.99	14.32	12.93	7.75	0.20	8.99	0.18	3.10	1.87	108	49	<5	<0.2	40	48	5	5
12950	2700	15	46.79	0.60	15.65	10.80	11.00	0.14	8.57	0.09	2.46	3.28	106	44	<5	<0.2	50	55	4	6
12953	-700	-230																		

5(ASSAY)

HOSHIMOTO INDEX =  $MGO+K2O/MGO +K2O+NA2O+CAO * 100$ CHLORITE INDEX =  $MGO+FE2O3/MGO+FE2O3+2(NA2O+CAO) * 100$ SERICITE INDEX =  $K20/NA20+K20$ SPITS INDEX =  $AL2O3/NA20$

**9.0 PROPOSED EXPLORATION PROGRAM AND BUDGET:**

First and foremost recommendation is the acquisition of Breakwater's property position in the Slate Lake area. Pending this successful acquisition a Phase 1 and Phase 2 exploration program is recommended (Figure 4):

Phase 1 would consists of:

- 1) 30 km of linecutting that would cover the area of the St. Joe massive sulphide horizon and adjacent areas to the east and west. Total strike coverage of 2.5 km.
- 2) 25 km of DEEPEM survey
- 3) Staking of a 3-unit claim block that would provide total coverage of Noranda's IP anomalies.




Phase 2 would consists of the drilling of 5 holes for a total of 1600 meters . Two deep holes would test the St. Joe horizon at vertical depths of 400 meters, two holes to test HLEM anomalies in the most eastern part of the property and the remaining hole to test one of two strong IP anomalies in close proximity to known gold mineralization.

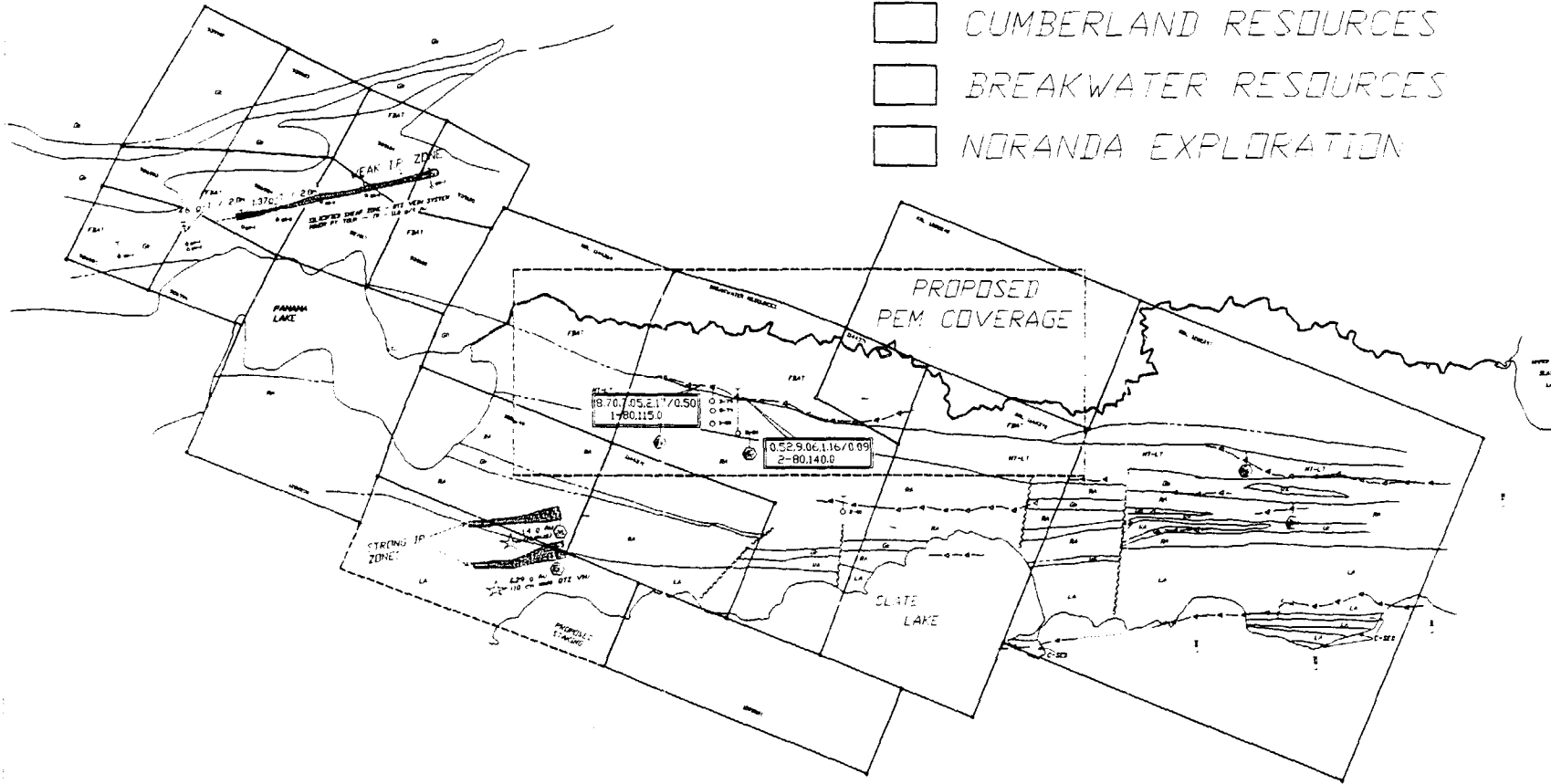
Cost of the above programs is estimated at \$190,000. A detailed proposed budget for Phase 1 and Phase 2 is provide in Tables III and IV.

Respectively submitted,



Patrick Lewis

-  CUMBERLAND RESOURCES
-  BREAKWATER RESOURCES
-  NORANDA EXPLORATION



**LEGEND**

**SOIL LITHOLOGY:**

	Classified Resource
	Major Resource
	Minor Resource
	Proposed Resource
	Other Resource
	Other Resource
	Other Resource
	Other Resource
	Other Resource
	Other Resource

**PROPOSED DE-**

Scale: 1:50,000  
N.E.T. No. 20,000

Figure 2

**CUMBERLAND RESOURCES LTD.**  
**SLATE LAKE PROPERTY**  
**PROPOSED EXPLORATION**





TABLE IV

PROPOSED BUDGET - 1994 PHASE 2

<b>PROJECT: SLATE LAKE PROJECT</b>		<b>PN:</b>	<b>602</b>
<b>GEOLOGY</b>			
		<i>Salaries</i>	_____
		<i>Travel Expenses</i>	_____
		<i>Contract Payments</i>	_____
		<i>Field Expenses</i>	_____
		<i>Analyses</i>	_____
<b>GEOPHYSICS</b>			
		<i>Salaries</i>	<u>\$1,000</u>
		<i>Travel Expenses</i>	<u>\$1,000</u>
BOREHOLE PEM (2 HOLES X\$3,000)		<i>Contract Payments</i>	<u>\$6,000</u>
		<i>Field Expenses</i>	<u>\$8,000</u>
<b>GEOCHEMISTRY</b>			
		<i>Salaries</i>	_____
		<i>Travel Expenses</i>	_____
		<i>Contract Payments</i>	_____
		<i>Field Expenses</i>	_____
		<i>Analyses</i>	_____
<b>DRILLING</b>			
	<u>\$7.50/m</u>	<i>Salaries</i>	<u>\$12,000</u>
	<u>\$1.88/m</u>	<i>Travel Expenses</i>	<u>\$3,000</u>
<u>1600 m</u>	<u>\$65.00/m</u>	<i>Contract Payments</i>	<u>\$104,000</u>
	<u>\$2.00/m</u>	<i>Field Expenses</i>	<u>\$3,200</u>
	<u>\$1.56/m</u>	<i>Analyses</i>	<u>\$2,500</u>
	<u>\$77.94/m</u>		<u>\$124,700</u>
		<i>Line Cutting</i>	_____
		<i>Property Aquisition</i>	_____
		<i>Option Payments</i>	_____
		<b>REPORT WRITING - DRAFTING</b>	<u>\$4,000</u>
		<b>TOTAL DIRECT</b>	<u>\$136,700</u>
		Administration 10%	<u>\$3,270</u>
		<b>TOTAL EXPENDITURE</b>	<u>\$139,970</u>
		<b>PARTNERS SHARE</b>	<u>_____</u>
		<b>CUMBERLAND SHARE 100%</b>	<u>\$139,970</u>

NOTE: 10% ADMIN FEE DOES NOT PRETAIN TO DRILLING CONTRACT COST.

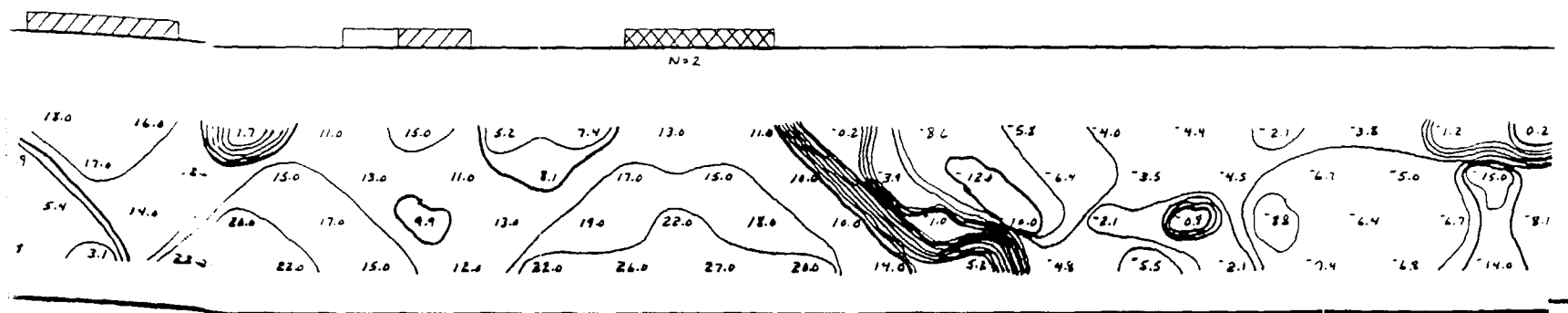
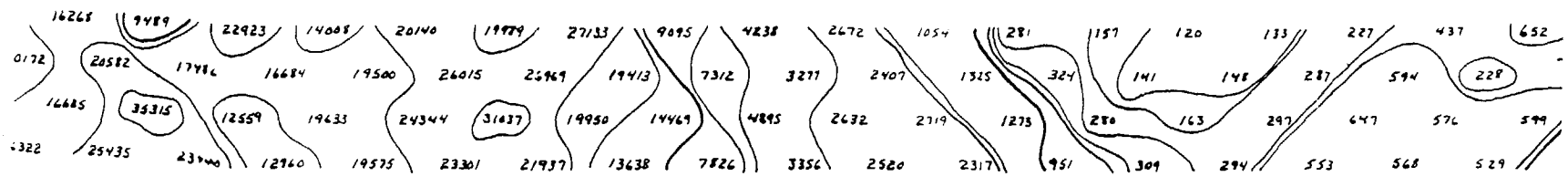
**APPENDIX 1**

**IP SURVEY - NORANDA, 1988**



13+255 13+100 17+185 17+505 17+255 17+005 16+785 16+505 16+285 16+005 15+725 15+505 15+285 15+005 14+785 14+505 14+285 14+005 13

> 15,000      }      2,000 - 4,000      }      < 500



NORANDA EXP  
PANAMA LAKE GRID,  
I.P. - TIME DOMAIN  
SCALE: 2CM = 25M  
LINE: 17+00E  
DATE: JAN/88  
MERTENS & MACNEIL

- : 30 mv/v
- : 20-30 mv/v
- : 10-20 mv/v
- : 10 mv/v
- : DEPTH ESTIMATE A
- : 2000 - 6000 APPARENT RESISTIVITY
- : POSSIBLE FAULT / CI
- : DISCRETE LOW RES

**APPENDIX 2**

**ANALYTICAL RESULTS - CHEMEX LABS**



# Chemex Labs Ltd.

Analytical Chemists \* Geochemists \* Registered Assayers  
 5175 Timberlea Blvd., Mississauga,  
 Ontario, Canada L4W 2S3  
 PHONE: 905-624-2806

To: LEWIS, M.P. GEOLOGICAL SERVICES \*\*

269 CHERCOVER DR.  
 THUNDER BAY, ON  
 P7G 1A2

Project:  
 Comments: ATTN: PAT LEWIS

Page Number : 1  
 Total Pages : 1  
 Certificate Date: 05-JUL-9  
 Invoice No. : 1941867  
 P.O. Number :  
 Account : LVP

## CERTIFICATE OF ANALYSIS A9418673

SAMPLE	PREP		Al2O3	CaO	Cr2O3	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	SiO2	TiO2	LOI	TOTAL	Ba	Rb	Sr	Nb	Zr	Y
	CODE		%	%	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm
12919	205	226	15.12	9.03	< 0.01	12.79	0.23	2.48	0.25	2.31	< 0.01	53.70	1.30	2.91	100.15	20	< 5	170	< 10	70	20
12920	205	226	13.73	8.24	< 0.01	7.79	0.06	3.29	0.14	3.38	< 0.01	58.10	1.27	4.96	101.00	< 10	< 5	80	< 10	60	20
12921	205	226	16.20	14.16	< 0.01	9.25	0.25	4.36	0.19	0.92	< 0.01	44.90	0.77	8.73	99.75	< 10	5	120	< 10	30	10
12922	205	226	17.10	1.08	< 0.01	2.90	4.82	1.12	0.04	2.71	0.24	68.10	0.36	2.50	101.00	1030	135	500	< 10	140	10
12923	205	226	16.26	11.24	< 0.01	10.91	0.10	8.15	0.17	1.58	0.02	46.30	0.67	4.04	99.45	10	< 5	130	< 10	30	10
12924	205	226	16.22	3.96	< 0.01	6.88	1.20	1.93	0.10	4.29	0.12	63.10	0.72	1.68	100.20	300	35	110	< 10	140	10
12925	205	226	12.65	9.62	< 0.01	13.78	0.06	4.00	0.30	2.40	0.10	43.50	1.56	9.82	97.80	30	< 5	100	< 10	90	30
12926	205	226	12.65	1.31	< 0.01	1.65	2.07	0.45	0.03	4.92	0.11	75.60	0.25	1.55	100.60	560	40	470	< 10	90	< 10
12927	205	226	14.18	2.32	< 0.01	3.16	3.76	0.84	0.04	3.13	0.13	70.00	0.35	3.07	101.00	720	100	430	< 10	120	< 10
12928	205	226	15.62	0.52	< 0.01	1.79	4.36	0.78	0.02	3.27	0.09	71.70	0.23	1.87	100.25	1330	105	360	< 10	150	< 10
12929	205	226	11.15	0.82	0.01	1.29	1.43	0.45	0.02	5.46	0.14	78.90	0.18	1.08	100.95	560	35	360	< 10	120	< 10
12930	205	226	15.38	11.09	0.02	11.73	0.14	4.25	0.23	2.30	0.06	48.00	0.93	4.71	98.84	30	< 5	100	< 10	40	20
12931	205	226	14.37	11.10	0.07	11.77	0.04	12.13	0.16	0.85	< 0.01	43.60	0.59	4.14	98.83	20	< 5	130	< 10	30	10
12932	205	226	16.18	9.01	0.03	12.33	0.08	8.79	0.17	1.99	0.04	46.10	0.88	4.06	99.66	20	< 5	130	< 10	40	10
12933	205	226	15.04	6.69	0.06	6.80	0.17	9.70	0.09	3.70	0.32	53.20	0.66	4.31	100.75	50	< 5	180	< 10	130	10
12934	205	226	14.99	6.65	< 0.01	16.94	0.25	3.43	0.43	2.82	0.14	47.40	1.92	3.31	98.29	190	< 5	80	< 10	100	40
12935	205	226	15.47	9.81	0.03	12.03	0.11	6.85	0.18	2.06	0.07	47.60	0.89	5.77	100.85	20	< 5	130	< 10	40	10
12936	205	226	16.18	8.10	0.03	10.64	0.24	8.05	0.19	2.31	0.06	46.20	0.91	8.20	101.10	50	< 5	90	< 10	50	20

CERTIFICATION: \_\_\_\_\_



# Chemex Labs Ltd.

Analytical Chemists \* Geochemists \* Registered Assayers  
 5175 Timberlea Blvd., Mississauga,  
 Ontario, Canada L4W 2S3  
 PHONE: 905-624-2806

To: LEWIS, M.P. GEOLOGICAL SERVICES  
 269 CHERCOVER DR.  
 THUNDER BAY, ON  
 P7G 1A2

Project:  
 Comments: ATTN: PAT LEWIS

Page number : 1  
 Total Pages : 1  
 Certificate Date: 07-JUL-94  
 Invoice No. : 19419022  
 P.O. Number :  
 Account : LVP

## CERTIFICATE OF ANALYSIS

A9419022

SAMPLE	PREP		Al2O3	CaO	Cr2O3	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	SiO2	TiO2	LOI	TOTAL	Ba	Rb	Sr	Nb	Zr	Y
	CODE		%	%	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm
12937	208	226	16.73	8.68	< 0.01	10.64	0.10	10.05	0.13	2.52	0.01	43.92	0.66	5.87	99.32	30	< 5	140	< 10	20	10
12938	208	226	15.36	10.83	< 0.01	12.51	0.10	6.58	0.17	1.92	0.03	45.96	0.93	3.73	98.13	40	< 5	130	< 10	30	20
12939	208	226	17.22	11.63	< 0.01	11.14	0.19	5.61	0.15	2.40	0.07	47.47	0.89	3.69	100.45	90	< 5	170	< 10	40	20
12940	208	226	12.97	8.37	< 0.01	15.16	0.07	9.04	0.21	1.98	0.09	45.90	1.24	3.00	98.04	20	< 5	110	< 10	50	20
12941	208	226	15.25	6.25	< 0.01	16.88	0.29	5.50	0.22	2.09	0.16	45.73	1.97	4.32	98.67	230	10	280	10	110	50
12942	208	226	14.24	7.47	< 0.01	14.63	0.23	4.05	0.17	3.36	0.15	51.00	1.84	1.31	98.46	60	< 5	130	< 10	100	40
12943	208	226	14.93	7.31	< 0.01	13.24	0.09	8.04	0.16	2.96	0.04	47.56	1.01	2.90	98.25	20	< 5	130	< 10	40	20
12944	208	226	14.79	6.68	< 0.01	17.15	0.19	5.10	0.22	2.28	0.14	46.24	1.98	2.80	97.58	60	< 5	120	< 10	100	50
12945	208	226	15.61	3.17	< 0.01	6.30	0.86	2.96	0.08	3.83	0.09	64.48	0.58	2.56	100.55	180	10	180	< 10	120	10
12946	208	226	14.82	6.40	< 0.01	13.41	0.31	6.46	0.19	2.47	0.07	48.31	1.11	4.04	97.60	120	< 5	130	< 10	50	20
12947	208	226	16.72	8.44	< 0.01	9.38	0.06	5.66	0.19	3.08	0.07	50.36	1.02	4.22	99.21	30	< 5	130	< 10	40	20
12948	208	226	15.04	6.78	< 0.01	22.80	0.30	4.78	0.38	1.17	0.18	40.81	1.99	2.71	96.95	120	< 5	90	< 10	80	50
12949	208	226	14.32	8.99	< 0.01	12.93	0.18	7.75	0.20	3.10	0.09	49.31	0.99	1.87	99.74	50	< 5	120	< 10	30	20
12950	208	226	15.65	8.57	0.05	10.80	0.09	11.00	0.14	2.46	0.06	46.79	0.60	3.28	99.49	70	< 5	170	< 10	20	20

CERTIFICATION: *[Signature]*



# Chemex Labs Ltd.

Analytical Chemists \* Geochemists \* Registered Assayers  
5175 Timberlea Blvd., Mississauga,  
Ontario, Canada L4W 2S3  
PHONE: 905-624-2806

To: LEWIS, M.P. GEOLOGICAL SERVICES

269 CHERCOVER DR.  
THUNDER BAY, ON  
P7G 1A2

Project:  
Comments: ATTN: PAT LEWIS

Page Number : 1  
Total Pages : 2  
Certificate Date: 11-JUL-94  
Invoice No. : I9419374  
P.O. Number :  
Account : LVP

## CERTIFICATE OF ANALYSIS A9419374

SAMPLE	PREP CODE	Au ppb FA+AA	Cu ppm	Zn ppm	Ag ppm Aqua R						
12901	244 238	< 5	146	20	0.2						
12902	244 238	< 5	73	30	< 0.2						
12903	244 238	< 5	45	25	< 0.2						
12904	244 238	< 5	17	15	< 0.2						
12905	244 238	< 5	5	212	0.2						
12906	244 238	< 5	2	106	< 0.2						
12907	244 238	< 5	28	38	< 0.2						
12908	244 238	< 5	1	71	< 0.2						
12909	244 238	< 5	4	51	< 0.2						
12910	244 238	< 5	36	31	0.2						
12911	244 238	< 5	2	29	< 0.2						
12911	244 238	< 5	10	44	< 0.2						
12912	244 238	< 5	1	24	< 0.2						
12913	244 238	< 5	16	40	< 0.2						
12914	244 238	< 5	13	66	< 0.2						
12915	244 238	< 5	16	32	< 0.2						
12916	244 238	< 5	2	34	< 0.2						
12917	244 238	< 5	< 1	65	< 0.2						
12918	244 238	< 5	2	73	< 0.2						
12919	244 238	< 5	53	75	< 0.2						
12920	244 238	< 5	73	83	< 0.2						
12921	244 238	< 5	82	67	< 0.2						
12922	244 238	< 5	33	75	0.2						
12923	244 238	< 5	75	53	< 0.2						
12924	244 238	< 5	27	892	< 0.2						
12925	244 238	< 5	62	108	< 0.2						
12926	244 238	< 5	6	35	< 0.2						
12927	244 238	< 5	40	50	0.2						
12928	244 238	< 5	6	15	< 0.2						
12929	244 238	< 5	6	29	< 0.2						
12930	244 238	< 5	108	59	< 0.2						
12931	244 238	< 5	68	43	< 0.2						
12932	244 238	< 5	35	56	< 0.2						
12933	244 238	< 5	8	55	< 0.2						
12934	244 238	< 5	4	115	< 0.2						
12935	244 238	< 5	103	68	< 0.2						
12936	244 238	< 5	54	87	< 0.2						
12937	244 238	< 5	88	46	< 0.2						
12938	244 238	< 5	112	60	< 0.2						
12939	244 238	< 5	72	61	< 0.2						

CERTIFICATION:

*Paul Bickler*



# Chemex Labs Ltd.

Analytical Chemists \* Geochemists \* Registered Assayers  
5175 Timberlea Blvd., Mississauga,  
Ontario, Canada L4W 2S3  
PHONE: 905-624-2806

To: LEWIS, M.P. GEOLOGICAL SERVICES

269 CHERCOVER DR.  
THUNDER BAY, ON  
P7G 1A2

Project :  
Comments: ATTN: PAT LEWIS

Page Number : 2  
Total Pages : 2  
Certificate Date: 11-JUL-94  
Invoice No. : 19419374  
P.O. Number :  
Account : LVP

## CERTIFICATE OF ANALYSIS

A9419374

SAMPLE	PREP CODE	Au ppb FA+AA	Cu ppm	Zn ppm	Ag ppm Aqua R						
12940	244 238	< 5	50	69	< 0.2						
12941	244 238	< 5	123	125	< 0.2						
12942	244 238	< 5	56	75	< 0.2						
12943	244 238	< 5	125	60	< 0.2						
12944	244 238	< 5	66	114	< 0.2						
12945	244 238	< 5	21	75	< 0.2						
12946	244 238	< 5	92	89	< 0.2						
12947	244 238	< 5	110	80	< 0.2						
12948	244 238	< 5	6	114	< 0.2						
12949	244 238	< 5	108	49	< 0.2						
12950	244 238	< 5	106	44	< 0.2						

CERTIFICATION:

*Pat Lewis*



# Chemex Labs Ltd.

Analytical Chemists \* Geochemists \* Registered Assayers  
5175 Timberlea Blvd., Mississauga,  
Ontario, Canada L4W 2S3  
PHONE: 905-624-2806

To: LEWIS, M.P. GEOLOGICAL SERVICES

269 CHERCOVER DR.  
THUNDER BAY, ON  
P7G 1A2

Project :  
Comments: ATTN: PAT LEWIS

Page Number : 1  
Total Pages : 1  
Certificate Date: 30-JUN-94  
Invoice No. : I9419023  
P.O. Number :  
Account : LVP

## CERTIFICATE OF ANALYSIS

A9419023

SAMPLE	PREP CODE	Au ppb FA+AA																		
12953	205 226	< 5																		

*Adriana Rodriguez*  
CERTIFICATION

**APPENDIX 3**

**STATEMENT OF QUALIFICATIONS**



## STATEMENT OF QUALIFICATIONS

I, M.P. Lewis, hereby certify that:

1. I am a practicing Geologist and sole proprietor of M.P. (Pat) Lewis Geological Services, with an office at 269 Chercover Drive, Thunder Bay, Ontario.
2. I am a graduate of Memorial University of Newfoundland (1976) with a Bachelor of Science Degree – Major in Geology.
3. I have practiced my profession as an Exploration Geologist continuously for the past 17 years.
4. I have an indirect interest in the Properties described in this report.

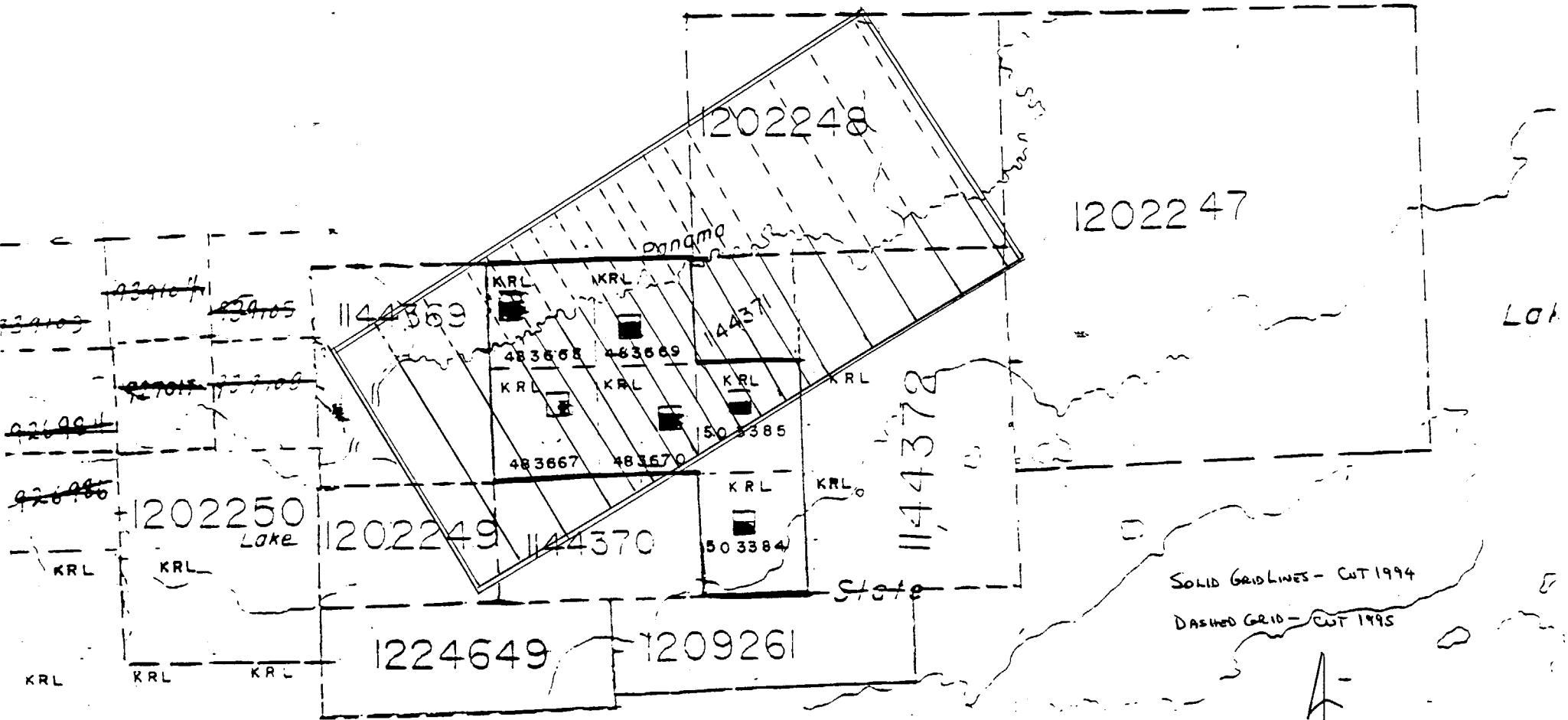
Signature: *Pat Lewis*  
M.P. Lewis

Date: \_\_\_\_\_

**REFERENCES**

- Degagne, Paul 1987: Report of Work. Panama Lake Property -  
Noranda Exploration Company Ltd.
- Degagne, Paul 1988: Report on Diamond Drilling - Panama Lake  
Property. Noranda Exploration.
- Fitzpatrick, Dennis 1989: Report of Work on Panama Lake Property.  
Noranda Exploration.
- Rayner, Wally, 1979: Geology Map. St. Joe Exploration

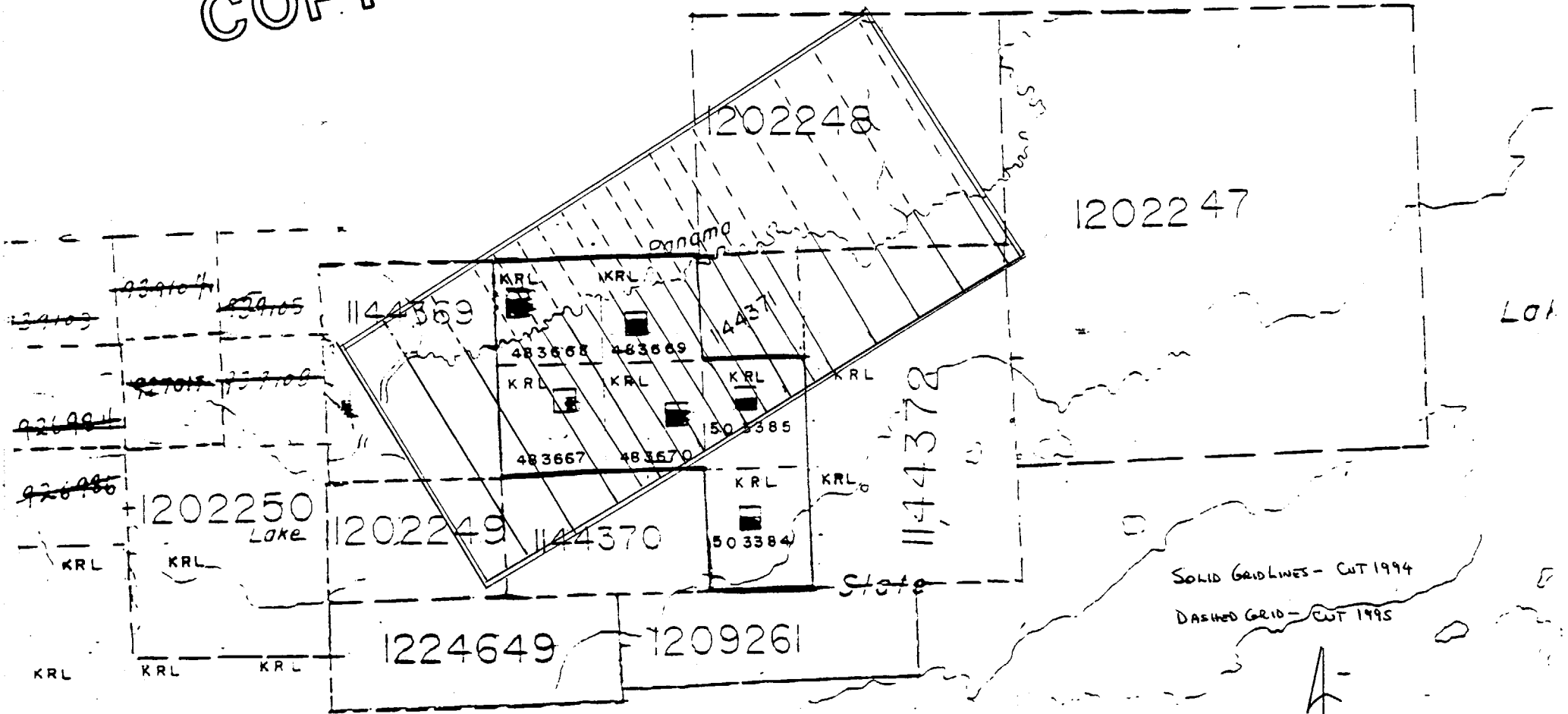
COPY



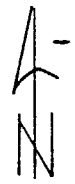
CUMBERLAND RES. LTD.  
 SLATE LAKE PROPERTY  
 GRID MAP.



COPY



SOLID GRIDLINES - CUT 1994  
DASHED GRID - CUT 1995

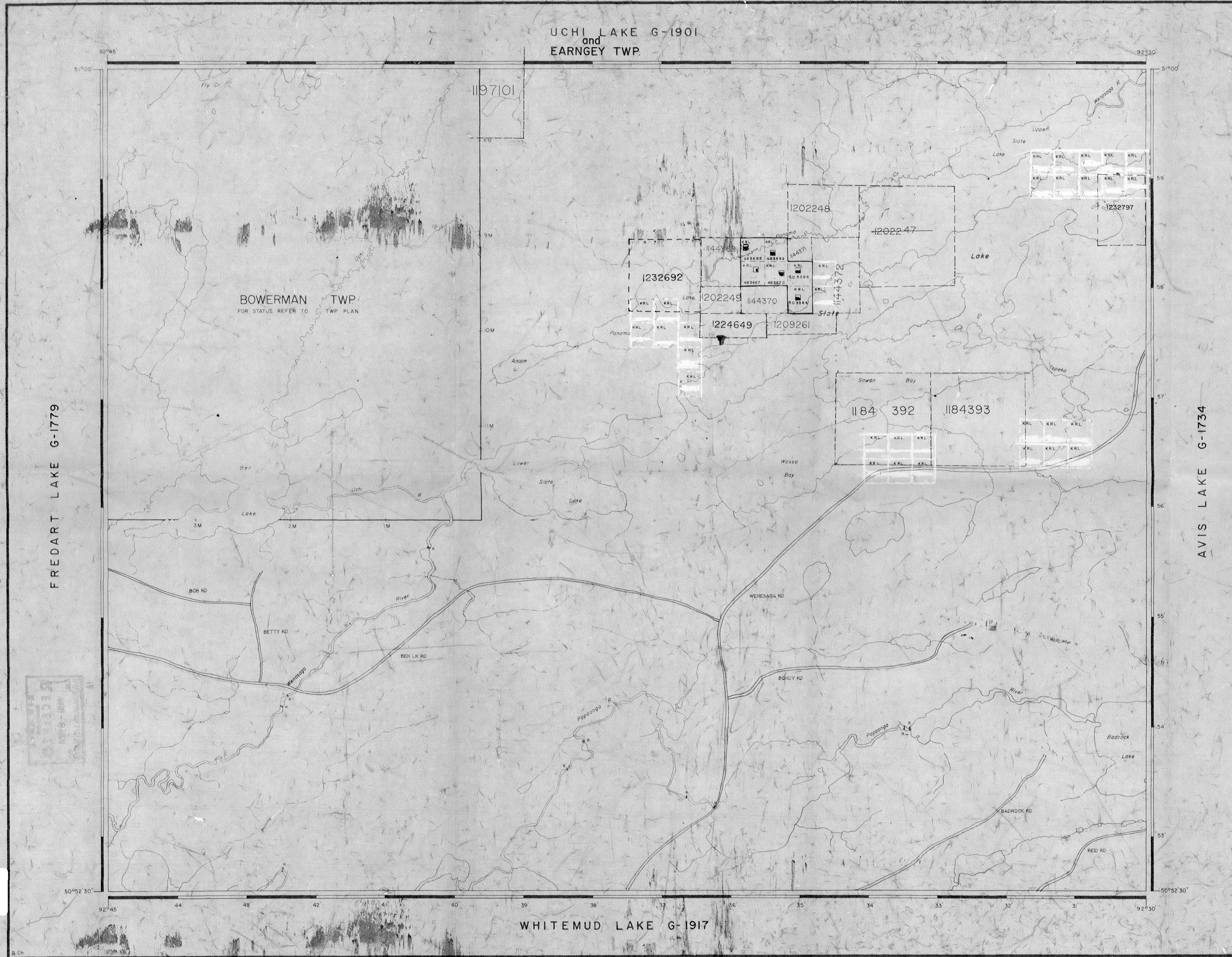


CUMBERLAND RES. LTD.  
SLATE LAKE PROPERTY  
GRID MAP.

4881-C

4881-C

UCHI LAKE G-1901  
and  
EARNGEY TWP.



REFERENCES

AREAS WITHDRAWN FROM DISPOSITION

- M.R.O. - MINING RIGHTS ONLY
- S.R.O. - SURFACE RIGHTS ONLY
- M.+S. - MINING AND SURFACE RIGHTS

FOREST ACTIVITY INFORMATION

THIS TOWNSHIP/AREA FALLS WITHIN THE  
**TROUT LAKE FOREST**  
AND MAY BE SUBJECT TO FORESTRY OPERATIONS.  
THE M.N.R. UNIT FORESTER FOR THIS AREA CAN BE  
CONTACTED AT:  
P.O. BOX 5003  
RED LAKE, ONTARIO P0V 2M0  
(807) 727-2253

DATE OF ISSUE

JUN 18 1998

PROVINCIAL RECORDING  
OFFICE - SUDBURY

THE INFORMATION THAT  
APPEARS ON THIS MAP  
HAS BEEN COMPILED  
FROM VARIOUS SOURCES  
AND ACCURACY IS NOT  
GUARANTEED. THOSE  
WISHING TO STAKE MIN-  
ING CLAIMS SHOULD CON-  
SULT WITH THE MINING  
RECORDER, MINISTRY OF  
NORTHERN DEVELOP-  
MENT AND MINES, FOR AD-  
DITIONAL INFORMATION  
ON THE STATUS OF THE  
LANDS SHOWN HEREON.

LEGEND

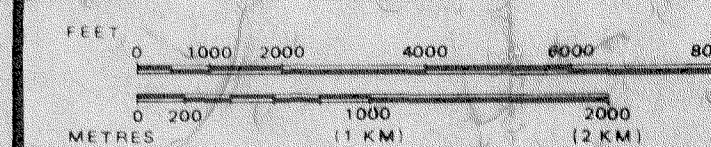
- HIGHWAY AND ROUTE No.
- OTHER ROADS
- TRAILS
- SURVEYED LINES: TOWNSHIPS, BASE LINES, ETC.
- LOTS, MINING CLAIMS, PARCELS, ETC.
- UNSURVEYED LINES
- LOT LINES
- PARCEL BOUNDARY
- MINING CLAIMS ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION OR COMPOSITE PLAN
- RESERVATIONS
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES
- TRAVERSE MONUMENT
- REMOTE TOURISM SITE

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	
ORDER-IN-COUNCIL	
RESERVATION	
CANCELLED	
SAND & GRAVEL	

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6,  
1913, VESTED IN ORIGINAL PATENTEE BY THE PUBLIC  
LANDS ACT, R.S.O. 1970, CHAP. 380, SEC. 63, SUBSEC. 1.

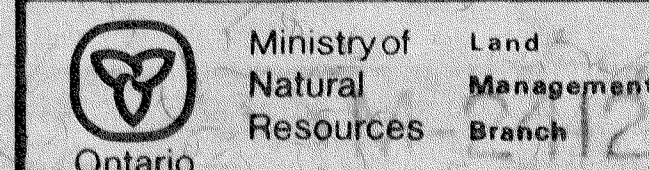
SCALE: 1 INCH = 40 CHAINS



AREA

SLATE LAKE

M.N.R. ADMINISTRATIVE DISTRICT  
**RED LAKE**  
MINING DIVISION  
**RED LAKE**  
LAND TITLES / REGISTRY DIVISION  
**KENORA/PATRICIA**



Date FEB. 1993

Number

G-1884

C-1884

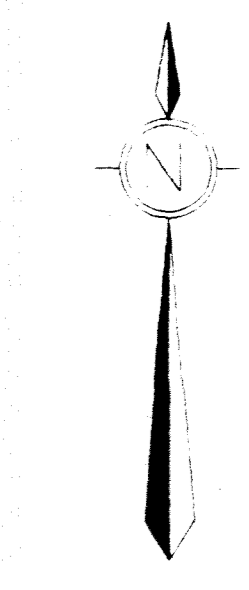
C-1884



52K15N2003 cm94-059 SLATE LAKE 200



COPY



**LEGEND**

**ROCK LITHOLOGIES**

LA	Lava
RA	Rhyolite
MT-LT	Metasedimentary
FBAT	Felsic Basaltic andesite
IF	Iron Formation
CFD	Clastic Metasediments
GB	Gabbro

**MINERALOGY**

ser	sericite	sl	slidstone	cpy	chlorite
mus	muscovite	cal	calcite	sph	sphalerite
sil	silicite	act	actinolite	py	pyrite
and	andalusite	car	caranite	qd	quartz
ep	epidote	gph	garnet	gln	glaucophane
qtz	quartz	chl	chlorite	gpn	gypsum
zsp	zircon	prp	pyrope	cal	calcite

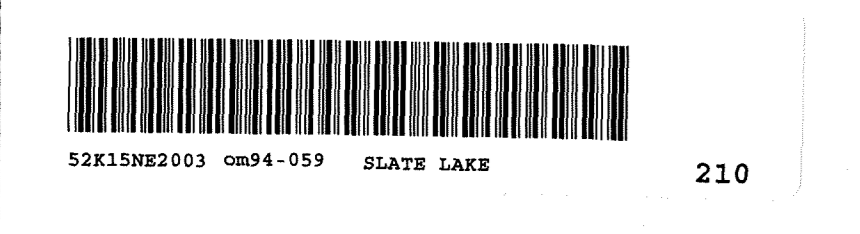
**SYMBOLS**

Geology		Structural	
---	Geological Contact	---	Foliation
---	Lineament	---	S <sub>1</sub> Foliation
---	Property Boundary	---	S <sub>2</sub> Foliation
---	Fault	---	Fracture
---	Dike/Trap	---	Lineation
---	Supracrustal Boundary	---	L <sub>1</sub> Lineation
---	Basal Unit	---	Unknown
---	HLEM Conductor	---	Folia trend & plunge of hinge line

CUMBERLAND RESOURCES LTD.

**SLATE LAKE PROPERTY  
GEOLOGY  
COMPILATION MAP**

<b>GEOLOGY:</b>	PLANS	DATE	SCALE
<b>DRAWN:</b>		JUL 1994	1 : 5000
<b>Revisions:</b>		JUL 1994	
<b>DIR:</b>	PN:		
<b>PLAN:</b>	<b>NTS:</b>		



COPY

COPY

COPY

### LEGEND

#### ROCK LITHOLOGIES

LA	Lake Shore Annesite
FA	Fogge Annesite
MT-LT	Min. Tuff - Lapilli Tuff
FBAT	Faded Backed Ash Tuff
SI	Siltification
CL-SET	Clastic Metasediments
GB	Gabbro Sill

#### MINERALOGY

ser	sericite	sil	siliceous	cpy	chalcopyrite
mus	muscovite	cal	calcite	sph	sphalerite
illm	illite	act	actinolite	py	pyrite
and	andalusite	cor	corundum	ps	pyrrhotite
ep	epidote	amb	amphibole	gal	galena
gnt	garnet	chl	chlorite	gsk	gskatite
soap	soapstone	prhg	pyrographite	calc	calcite

#### SYMBOLS

Geology		Structural	
---	Geological Contact	~	Foliation
---	Lineament	~	Foliation
---	Property Boundary	~	Foliation
---	Fault	~	Foliation
---	Dike/Trap	~	Bedding
△	Dip-slope Boundary	~	Lineation
○	Structure 2nd hole	~	Lineation
→	HLEN Conductor	~	Lineation
		~	Pillows (top known, unknown)
		~	W. Fold axial trace
		~	S. Fold axial trace
		~	Fold, trend & plunge of hinge line

COPY

