

REPORT ON

HOPE GROUP

&

EMANCIPATION MINE

New Westminster M.D.

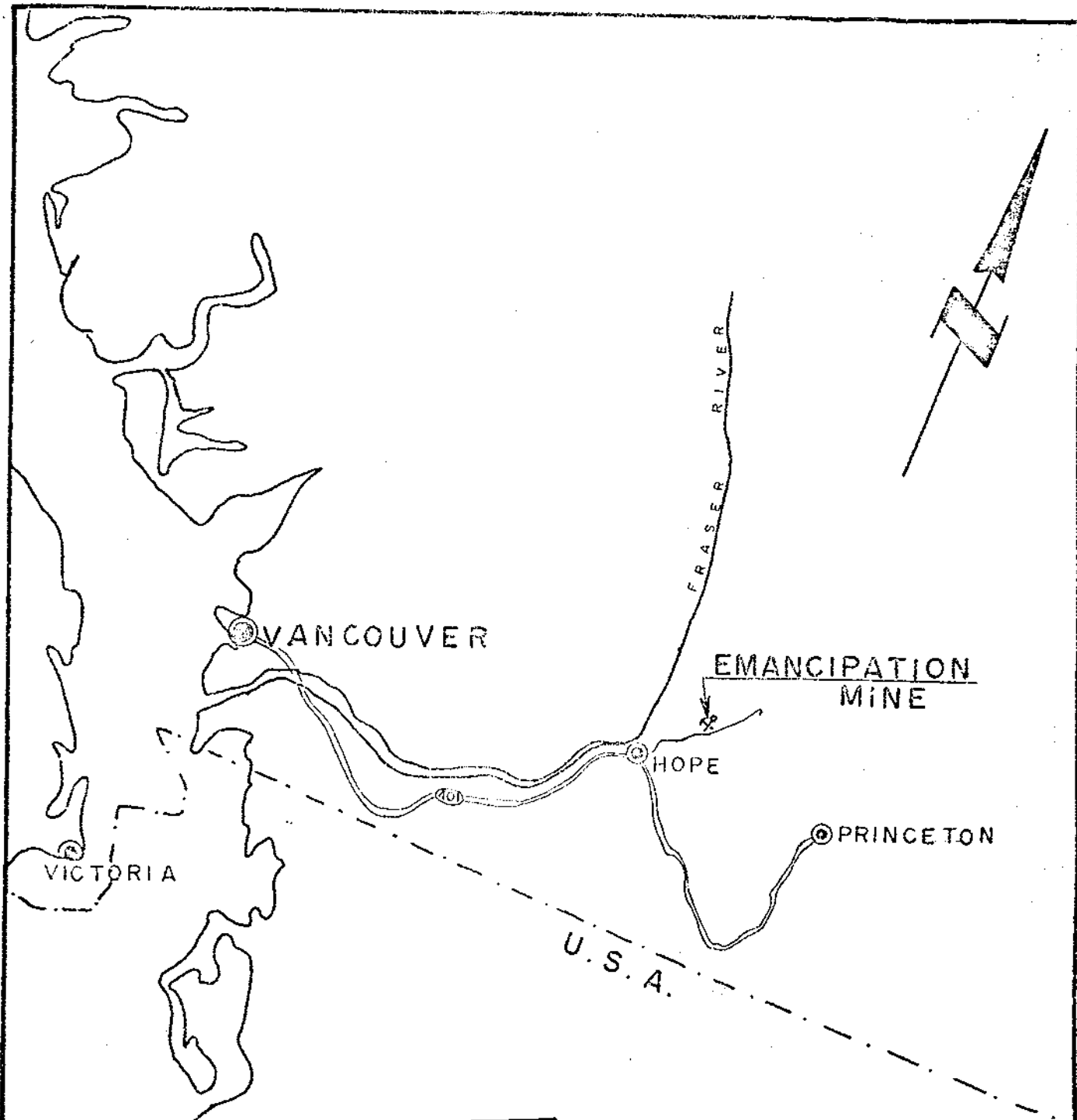
by

A. R. Bullis, P.Eng.

8th Nov. 1974

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT

NO. 5440 MAP



Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 5440 MAP 1

**LOCATION MAP**  
EMANCIPATION MINE  
**5440**  
SCALE 1" = 34 MILES  
**MAP 1**

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Longbar Minerals Ltd.

HOPE GROUP

New Westminster Mining Division

PART 1

INTRODUCTION

The author has been retained by Longbar Minerals Ltd. to review the Emancipation Property and to recommend a program of exploration. The author prepared a report for Aquarius Mines in January 1973, based on underground mapping (and limited sampling) of the Emancipation workings; the author reviewed the history of the area, the published reports and recommended additional work.

The property was optioned to Emancipation Mine Ltd. in 1973, and Alrae Engineering, under the supervision of Dr. G.C. Stephens, carried out a program of geological mapping and soil sampling. The program was described in the report prepared by Dr. Stephens, and dated July 1973.

CONCLUSIONS

1. Gold is associated with the Vein system, with the contact and, with certain replacement zones with the sediments as shown by the production from the Emancipation Vein system, the Aurum Mine and, more recently, by the results of the drill program conducted by Carolin Mines on the Idaho Zone of the old Aurum property. Here, one million tons of rock, that contains 0.10 oz. gold per ton, has been indicated by core drilling. (Release to Northern Miner, October 10th, 1974).
2. The Idaho Zone is located within the Lander Slates in a geological setting similar to the Emancipation Mine. The Idaho Zone and the Emancipation Mine both lie close to the Hozameen Fault and are within three miles distance of each other.
3. A replacement body, containing gold and sulfides, similar to the Idaho Zone, could exist on the Hope Group.

## RECOMMENDATIONS

Many of the recommendations for the exploration of the property made by the author (January 1973) and Dr. G.C. Stevens (July 1973) have now been completed by the Alrea Engineering Ltd. surveys for Emancipation Mines Ltd. in 1973 and by the work program of Longbar Minerals Ltd. in 1974.

The author recommends additional exploration and development.

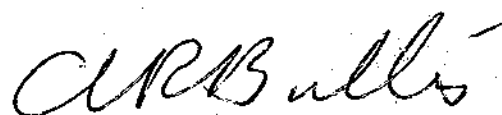
1. The Hope Group should be re-mapped with all known geology and data correlated with the geological units used by Carolin Mines.
2. The "grid" should be extended to cover most of the "Hope Group".
3. A magnetometer survey should be conducted over the contact and vein zones to locate faults, veins, formational and facies changes and, possibly, "replacement" zones.
4. A soil sampling program should be undertaken over the entire grid with all samples analysed by the A.A. method for gold, only.
5. A drilling program should be planned to test any zones found by the above outlined exploration program.

COST OF RECOMMENDED PROGRAM

#5440

1. Extension of Grid ---- 20 miles @ \$150.00 per line mile	-	-	\$ 3,000.00
2. Magnetometer Survey ---- 8 miles @ \$200.00 per line mile plotted			1,600.00
3. Soil Sampling program ---- 25 miles @ \$400.00 per line mile analysed and plotted			10,000.00
4. Re-map and re-plot geology to correlate to "Carolin Mines"			4,000.00
5. Initial Drilling Program 8,000 feet @ \$20.00 per foot			160,000.00
			<hr/>
Sub Total			\$ 178,600.00
Contingency 15%			26,400.00
			<hr/>
Total			\$ 205,000.00
			<hr/> <hr/>

Respectfully Submitted



A. R. Bullis, P.Eng.

8th Nov. 1974  
DELTA, B.C.

PART TWO

-----

PROPERTY

The property is situated wholly within the New Westminster Mining Division. Thirty-two mineral claims and Mineral Lease M-35 (lots #1299 and #1300) are contained within the perimeter of the property.

The claims are registered in the Mining Recorder's Office, at New Westminster, as follows:

<u>CLAIM NAME</u>	<u>RECORD NUMBER</u>
Hope 1 to 9	25391 to 25399
Hope 10	27779
Hope 11 to 18	28472 to 28479
Hope 19	28529
Hope 20 to 28	26578 to 26586
Hope 29 to 32	28530 to 28533

LOCATION & ACCESS

Access to the property is from the village of Hope, via a good gravel road that leads up the Coquihalla River valley past Kawkawa Lake. The road is situated on the north side of the river and is built, in part, on the abandoned Kettle River



railroad right-of-way. The distance from Hope to the south-end of the property is approximately fifteen miles. The claims are situated in the Cascade Mountains, north and west of the abandoned village of Jessica. A logging road branches from the Coquihalla River road to follow Ladner Creek and provides access to the north end of the property. All access roads and logging roads are passable by two-wheel drive vehicles and portions of the old road which leads to the Emancipation Mine workings are passable by four-wheel drive vehicles.

Elevations vary from 1,000 feet to 4,000 feet and much of the property is located on steep mountainsides that are densely covered by forest and undergrowth.

The co-ordinates of the centre of the property are approximately:

49 degrees 29 mins North Latitude

121 degrees 16 mins West Longitude

The area is shown on N. T. S. Sheet 92H/o

#### RECENT HISTORY

A short history of the district and the property is given in the author's report prepared for Aquarius Mines, dated 2nd January, 1973. Dr. G.C. Stevens, in a report on the Hope Claims prepared for Emancipation Mines Ltd., dated July 1973,

has recapitulated the history and brought it up to date.

Additional surface exploration has been carried out in 1974 under the direction of J. Stewart and the author. A detailed account of the recent work is contained in the following sections of this report.

#### 1974 Program

The author mapped the Upper Adit in October and reviewed the soil sampling program conducted by Jon Stewart.

A compass-and-chain survey was run between the Upper Adit and the 2nd Level to complete the survey of the underground workings. The geology of the upper adit was mapped and five chip samples were taken from the veins and crushed zones exposed in the Upper Adit. In addition, three samples were taken in the #3 Level from the hanging-wall and foot-wall zones of the Main (or Boulder Vein). The assays of the samples are shown on the accompanying plan of the workings and detailed in a following section.

The surface program was conducted by Jon Stewart and two assistants under the supervision of Dr. K.W. Geiger and the author. A Base-Line was cut and picketed on a bearing of 340 degrees from the old C.P. Railway grade to the N.W. corner of Hope #30 M.C. The length of the Base-Line is 10,800 feet.

Cross-lines were cut and picketed at intervals of four hundred feet normal to the base-line . Soil-samples were taken at stations spaced at one-hundred foot intervals along the cross-lines and along the Base-line. Rock outcrops were marked on the plan of the grid. Sixteen rock (chip) samples were taken from outcrops, pits and old workings; these have been assayed and the results are shown on the plan of the property and are tabulated in a following section.

#### RESULTS OF PROGRAM

The mapping underground shows the Footwall (Boulder) Vein has been explored for a strike length of two hundred sixty feet; the adit intersected the vein about sixty feet from the portal and follows the vein to the face of the drift. The Boulder Vein exposed in the Upper Adit, is very similar to the exposures in the lower levels. The vein varies in width from five feet at the face to twelve feet near the portal. The vein is composed of glassy, white quartz that has been broken and shattered by faulting and shearing parallel to the vein. Both the foot-wall and hanging-wall show evidence of shearing and several easterly striking cross-faults displace the vein several feet. At least one easterly dipping fault cuts the vein but the displacement on this fault is not apparent underground. The vein forms the (fault) contact between the Ladner slates in the foot-wall and the Cache Creek rocks in the hanging-wall, as

is the case on the other Levels. The Cache Creek rocks are comprised of "greenstone", near the portal, and graywacke closer to the face. The vein penetrates the Ladner Slate near the face of the drift and both walls are in slate. The Boulder Vein appears to be displaced twenty to thirty feet to the east of the Upper Adit but no faults were noted underground which would explain the apparent displacement. The Hanging-Wall Vein is exposed for about forty feet along the Adit near the portal before it disappears into the west wall; three short cross-cuts were driven into the hanging-wall of the Boulder Vein but all failed to intersect the Hanging-Wall Vein.

The surface program was designed to trace the contact between the Ladner Slate and the Cache Creek formation and to search for the mineralized zones and veins which are associated with the contact. The Emancipation Veins were traced for one thousand feet north of the mine and for six hundred feet south of the mine. The Veins closely follow the contact between the two formations for the entire sixteen hundred feet. The veins diverge from the contact to the south; quartz is exposed in greenstone and serpentine in Camp Creek about two thousand feet south of the Emancipation Mine and can be traced along strike in the direction of the Emancipation Mine. The contact is exposed east of Camp Creek, on the access road to the mine, and here it

is mineralized with copper and iron sulfides.

The Base-Line crosses the contact on Lot 1300, approximately 3500 feet north of the Emancipation Mine. Many old workings expose vein quartz in place close to the contact; the mineralized zone may be two hundred to three hundred feet wide on Lots 1299 and 1300 where the old shafts, pits and open cuts expose quartz and sulfide mineralization in serpentine and "greenstone" rocks.

DURATION OF PROGRAM & PERSONNEL INVOLVED

The surface and underground surveys were carried out between 22nd September and 12th October 1974.

The surface program employed four persons:

K.W. Geiger, Ph.D. Rocky Mtn. House, Alberta. Supervisor.

Jon Stewart, Black Point, B.C., Foreman

George Beyko, Surrey, B.C., Helper

Dave Murphy, Texada, B.C., Helper

The underground survey was made by A.R. Bullis, P.Eng., assisted by A.M. Bullis, Delta, B.C.

SAMPLING & ASSAY RESULTS

The author took eight samples from underground at the Emancipation Mine. Five of these were taken in the Upper Level and three were taken on the Third Level. The samples were, essentially, "chip" samples taken at waist height across the "vein" (quartz) and the mineralized hanging wall (crushed wallrock). None of the samples taken from the Upper Level contained significant amounts of gold or silver. One sample from the Third Level, Sample #8, contained 0.06 ozs. per ton Gold (fire assay by Bondar-Clegg & Co. Ltd.).

The surface samples were taken by Jon Stewart from outcrops and trenches in mineralized areas. Sixteen samples were taken in total and, of these, fifteen did not contain significant amounts of gold or silver. The sample taken at 72-00S and 6-00E assayed 0.24 ozs. Gold per ton, (fire assay by Bondar-Clegg).

The samples were first submitted to the Vangeochem Lab. Ltd. in North Vancouver, where they were assayed by the "atomic absorption" method. The samples were then checked (for gold only) by Bondar-Clegg & Co. Ltd. of North Vancouver, using the fire-assay method.

The "Certificates of Assay" are enclosed. The samples, with assays and widths, are plotted on the underground plan and the one significant sample, taken on surface, has been

plotted on the surface map. The locations of all surface samples are listed by grid reference on the "Certificate of Assay"

#### SOIL SAMPLING PROGRAM

The geochemical program was carried out between 22nd September and 10th October by the personnel listed on Page 10; the work was supervised by Jon Stewart and K.W. Geiger. Soil samples were submitted to N. Morrison, Calgary, Alberta, who analysed them for total heavy metal (T.H.M.) content and reported the results in parts per million (P.P.M.).

The field crew cut and cleared the Base Line on a bearing of 340 degrees and the side lines were cut normal to the Base Line at intervals of four hundred feet. The soil samples were taken from the "B" layer, placed in soil envelopes and marked with the co-ordinate location.

A total of 248 samples were gathered from the side lines, base line and along the old road leading from the Emancipation workings. The samples are shown (plotted) on the accompanying plan of the property.

COMMENTS ON SOIL SAMPLING PROGRAM

The overburden on the Hope Claims is varied; much of the area is covered by a "hybrid" soil which is comprised, mainly, of residue soil found at higher elevations above the Emancipation Mine and over the plateau north and west of the mine; the balance of the area along the lower slopes of Ladner Creek and the Coquihalla Valley is underlain by glacial "till". The till is usually much deeper than the residue soil and has a slight masking effect on the migration of metal ions. The soil sampling program conducted by Carolin Mines, for example, did show a difference between the two types of soil using only gold, in parts per billion, as determined by the A.A. method. The masking effect of the till did not present a major problem during the Carolin exploration program because the effect can be "biased" out when the location of till and residual soil are known.



COST STATEMENT

The cost of the program conducted in 1974, and herein described, was \$9,071.31 according to the statement of W.S. Gilmour, Secretary of Aquarius Mines Ltd.

The costs were:

1.	Chemical Analysis - N. Morrison	\$ 500.00
2.	Consulting Engineer, Fees & Expenses	2,118.91
3.	Field Labor Costs (Stewart, Geiger, Boyko & Lyons)	3,859.47
4.	Travel & Subsistance Costs	1,115.00
5.	Vehicle Costs	627.69
6.	Supplies & Claim Costs	800.24
	Total	<hr/> \$9,071.31

Respectfully Submitted



A. R. Bullis, P.Eng.

8th Nov. 1974

DELTA, B.C.



# AQUARIUS MINES LTD.

100 - 10975 - 124 Street  
Edmonton, Alberta T5M 0J2

April 8, 1975

Bullis Engineering Ltd.  
Ste. 206, 1318 - 56 Street  
Delta, B. C.

Attention: Mr. A. Bullis, P. Eng.

Re: HOPE GROUP CLAIMS

Dear Sir:

In response to Dr. Geiger's request the following are costs on the above claim.

Chemical Analysis Contract - N. Morrison	550.00
Consulting Engineer Fees and Expenses	2,118.91
Field Labor Costs (Stewart, Geiger, Beyko and Lyons)	3,859.47
Travel and Subsistence Costs (587.21, 527.79)	1,115.00
Vehicle Costs	627.69
Supplies and Claim Costs	<u>800.24</u>
 TOTAL COSTS	 <u>\$9,071.31</u>

Yours truly,

AQUARIUS MINES LTD.

  
W. S. Gilmour  
Secretary

/jh



100 - 10375 - 124th Street  
Edmonton, Alberta

**CERTIFICATE OF ASSAY**

Samples submitted: Nov. 7/74  
Results completed: Nov. 15/74

I hereby certify that the following are the results of assays made by us upon the herein described samples.

MARKED	GOLD		SILVER	Percent	Percent	Percent	Percent	Percent	Percent	Percent	TOTAL VALUE PER TON (2000 LBS.)
	Ounces per Ton	Value per Ton	Ounces per Ton								
	trace										
	0.005										
	trace	-----	Taken	on	Upper	Level					
	0.005										
	trace										
	0.005										
	trace	-----	Taken	on	Third	Level					
	0.005										
	0.005										
18707	trace	29	-00 S	-----							
18708	trace	39	-00 S	2-00 E							
18709	trace	85	-00 S	-----							
18710	trace	84	-00 S	-----							
18711	trace	24	-50 S	3-50 W							
18712	trace	76	-00 S	4-75 E	Face of old adit Right wall, old adit.						
18713	trace	76	-00 S	4-75 E							
18714	trace	24	-50 S	3-75 W							
	trace	67	-00 S	6-00 W							
18715	trace	68	-00 S	8-00 W							
18716	trace	68	-00 S	8-00 W							
18717	0.010	68	-00 S	6-00 W							
18718	trace	68	-00 S	8-00 W							
18719	trace	84	-00 S	6-00 E							
18720	trace	40	-00 S	1-00 E							
18721	trace	77	-00 S	5-00 E							
18722	0.24	72	-00 S	6-00 E							

cc **Dallis Engineering Ltd.**  
**Vancouver Labs Ltd.**

CERTIFICATE OF QUALIFICATIONS  
-----

I, Albert Ralph Bullis, do hereby certify that:

1. I am a practising geological engineer with residence at 5215 Saratoga Drive, Delta, B.C.
2. I am a graduate of the University of British Columbia and have been granted the degree of Bachelor of Applied Science.
3. I have been practising my profession as a geological engineer for twenty years.
4. I am a member of the Association of Professional Engineers of British Columbia.
5. The attached report is based on information contained in the publications listed under "References" and a personal examination of the property in October, 1974.
6. I have no interest, directly or indirectly, in Mineral Lease No M 28, or the Hope Claims, nor in the securities of Longbar Minerals Ltd., nor do I expect to receive any.

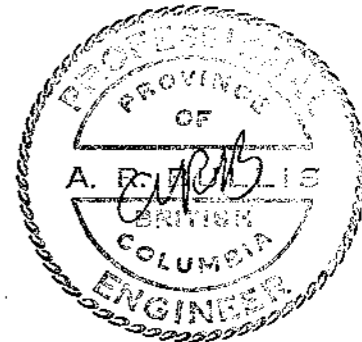
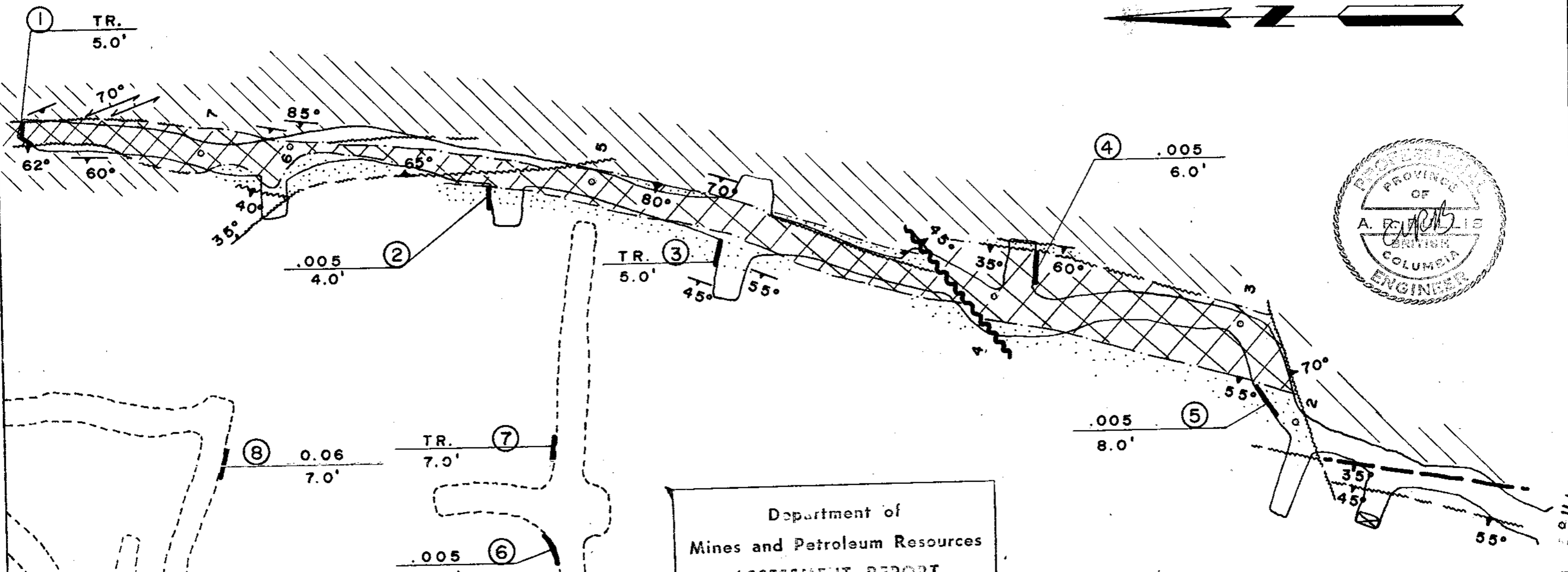


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Delta, B.C.

A. R. Bullis, P.Eng.

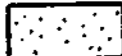


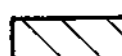
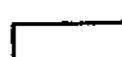
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2. Caires, C.E. (1924) G.S.C. Memoir 139
3. Caires, C.E. (1929) G.S.C. Summary Report, Part A.
4. Stephens, G.C. Report for Emancipation Mines Ltd.,  
July 1973, (Unpublished).
5. Bullis, A.R. (1973) Report on Hope Group.
6. Northern Miner Press, News release by Carolin Mines  
Ltd. on Idaho Zone, October 10th, 1974.



Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 5440 MAP 2

LEGEND

-  Gouge & Sheared Wallrock
-  Footwall (Boulder) Vein
-  Hangingwall Vein
-  Ladner Slate
-  Cache Creek Formation

Sample  
⑥ .005 (ozs. Gold per Ton)  
5.0' (width of sample)

UPPER LEVEL  
EMANCIPATION MINE

New Westminster Mining Division

LONGBAR MINERALS LTD.

5440

SCALE 1" = 20' MAP 2

Nov 74

B.E.L.

To Accompany Report by A.R. Bullis, P.Eng.



CAROLIN MINES

121° 15'

AURUM MINE



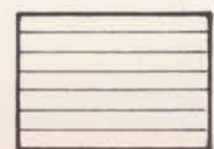
HOPE

LEASE

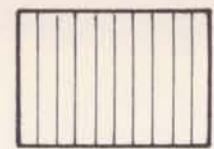
GROUP

49° 30'

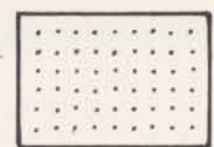
49° 30'



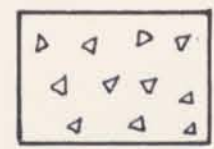
SHALE & SLATE



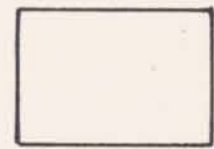
GREYWACKE & CONGLOMERATE



SERPENTINE



GRANITIC INTRUSIVE



GREENSTONE

BASE LINE

EMANCIPATION MINE

Access Road

(Abandoned)  
C. P. R.

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 5440 MAP 4

HOPE GROUP  
LEASE M-28

NEW WESTMINSTER MINING DIVISION

LONGBAR MINERALS LTD.

SCALE 1" = 500'

5440  
MAP 4

GEOLOGY MAP 2

121° 15'

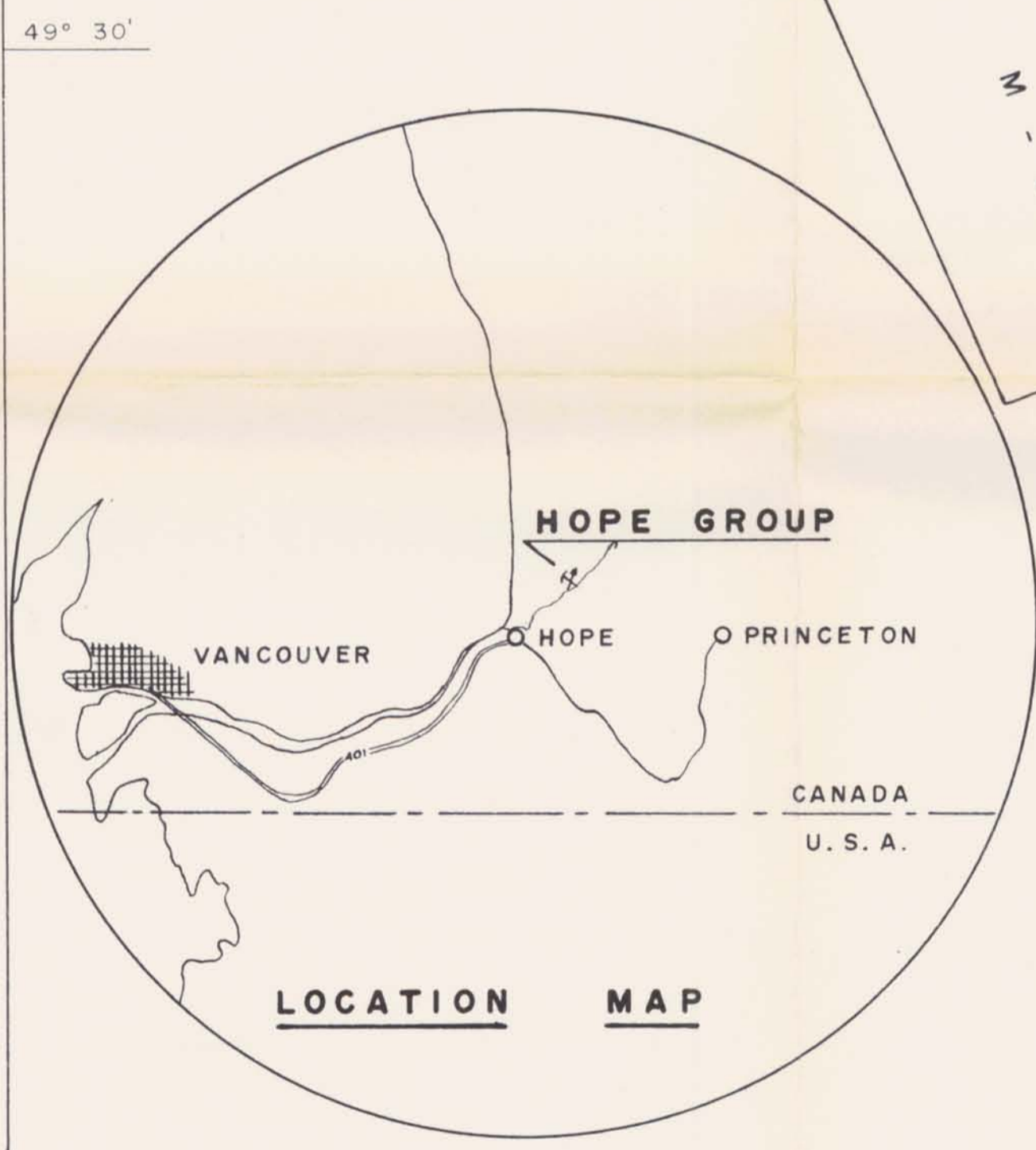
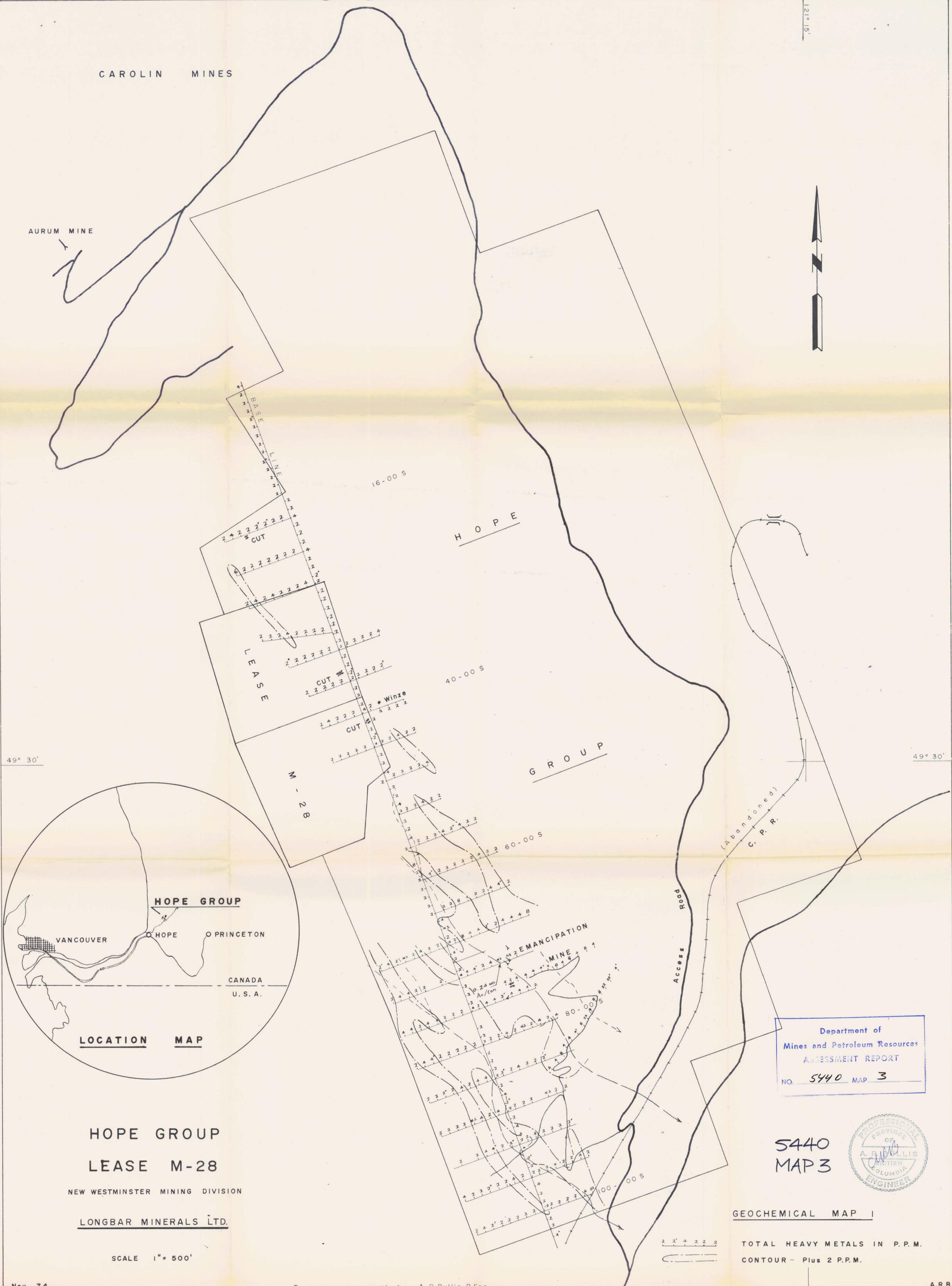




CAROLIN MINES

AURUM MINE

121° 15'



**HOPE GROUP  
LEASE M-28**  
NEW WESTMINSTER MINING DIVISION  
**LONGBAR MINERALS LTD.**

SCALE 1" = 500'

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 5440 MAP 3



**GEOCHEMICAL MAP 1**  
TOTAL HEAVY METALS IN P.P.M.  
CONTOUR Plus 2 P.P.M.