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CRANBROOK, B.C.  
MINING RECORDER

COMINCO LTD.

EXPLORATION DIVISION

WESTERN DISTRICT

REPORT ON GEOCHEMICAL SURVEY

GRID A

VINE CLAIM GROUP

Fort Steele Mining Division

82G/5

Submitted by:

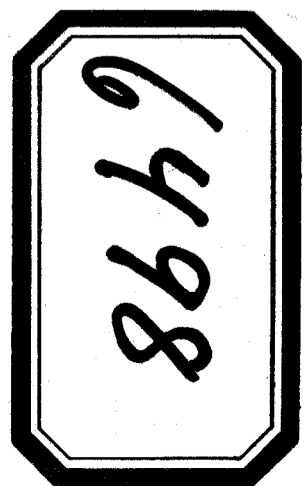
E.W. BATCHELOR

Cominco Ltd.  
Kootenay Exploration  
2450 Cranbrook Street  
Cranbrook, B.C.

Under the supervision of:

D.W. HEDDLE,  
P. Eng.

PART 2 of 5



EXPLORATION DIVISION

COMINCO LTD.

WESTERN DISTRICT

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EXPLORATION DIVISION

WESTERN DISTRICT

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STATEMENT OF QUALIFICATIONS

PLATE 1. Location Map.

FIGURE 1. Cu - Cumulative Frequency Distribution

FIGURE 2. Pb - Cumulative Frequency Distribution

FIGURE 3. Zn - Cumulative Frequency Distribution

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1.00 SUMMARY

Grid "A" covers a portion of the Vine claims and is centered approximately 4 miles south of Cranbrook, B.C. A total of 931 reconnaissance soil samples were collected from the grid. The line spacing was 1000 feet and the sample spacing along lines was 500 feet.

The -80 mesh fraction of the samples were analyzed for Cu/Pb/Zn by atomic absorption at Cominco's Assay Lab in Kimberley, B.C. Threshold values were obtained by plotting percent cumulative frequency vs. concentration in ppm on log probability paper. The 97.5 percentile value was selected as a reasonable figure for threshold. Therefore, values above 62, 42 and 170 ppm for Cu, Pb and Zn respectively, are considered anomalous.

Total expenditures on this survey were \$8,589.30. An Affidavit including \$910.16 of this total was submitted, as assessment work, to the Mining Recorder, in Cranbrook, B.C., on September 1, 1977. The remaining expenditures will be recorded on the appropriate claims as they come due for assessment work.

2.00 INTRODUCTION

2.10 Status of Ownership

Grid "A" covers all or part of Vine claims 1, 8, 9, 12, 13, 14, 16, 17, 18, 19, 21 and 22 which total 178 units. The Vine claims are 100% Cominco owned.

2.20 Location and Access

Reconnaissance soil geochemistry Grid "A" is centered approximately 4 miles SSW of Cranbrook. Access is via old bush roads from Highway 3/95 or the Jap Lake-Peavine Creek road. Plate 1 is a location map of the claim group showing the boundaries of Grid "A".

2.30 Topography and Vegetation

The grid is situated in an area of moderate relief at an elevation 3400 to 4500 feet above sea level. The majority of the area is covered by immature stands of lodgepole pine, fir and larch.

2.40 Objective

The survey was undertaken to explore for Cu/Pb/Zn deposits in Aldridge Formation sediments.

3.00 GEOCHEMISTRY

3.10 Sampling Procedure

A 32,000 ft. baseline, azimuth 032<sup>o</sup>, was established and sample lines at 1000 ft. intervals were extended 7000 ft. to the southeast and 8500 ft. to the northwest.

The sample interval along the lines was 500 ft. Sampling was carried out during October and November, 1976.

Samples were collected with a grub hoe. An attempt was made to consistently sample the "B" soil horizon. Difficulties were encountered in

separating "B" horizon from leached "A" horizon in low areas with thicker accumulations of organic material. Consequently, some "A" horizon soil may have been sampled in these areas. A total of 931 samples were collected.

### 3.20 Sample Preparation and Analysis

Samples were dried at atmospheric temperature and then sieved through a -80 mesh nylon screen. The -80 mesh fraction was shipped to Cominco's Assay Lab in Kimberley for analysis.

Two grams of the -80 mesh fraction were digested in concentrated NCl and HNO<sub>3</sub> by heating a hot plate. The sample was then taken up in 10% HCl, bulked to 100 ml with distilled water, and analyzed by atomic absorption methods.

### 4.00 INTERPRETATION AND RESULTS

Thresholds were derived by N. Szabo (Cominco Geochemist, Vancouver), from graphs of cumulative frequency vs. concentration in ppm (Figure 1, 2, 3).

In the case of lead and zinc, the cumulative frequency plots yield a straight line with slight upwards curves in the upper concentration range. The plot for copper yields a curve indicating at least two populations.

Szabo suggests that the 97.5 percentile represents a reasonable figure for threshold; thus yielding the following threshold values:

Cu	62 ppm
Pb	42 ppm
Zn	170 ppm

Plates 1, 2 and 3 show the distribution of Cu, Pb, and Zn in soils on Grid "A". Areas of elevated metal content should be further investigated by geological mapping and more detailed soil sampling.

### 5.00 STATEMENT OF EXPENDITURES

#### Salaries:

R.L. Hauser & I.D. McCartney, Geologists; (intermittent days, Oct., Nov. 1976) 46 man days @ \$44.30/day . . . . .	\$ 2,037.80
R. Shanks & N. Kaniak, Assistants; (intermittent days, Oct., Nov. 1976) 40 man days @ \$35.60/day . . . . .	1,424.00

Domicile: 86 man days @ \$10/day . . . . . 860.00

Transportation: 20 days rental of 4 x 4 @ \$32/day. . . . . 640.00

Materials: flagging, sample bags, etc. . . . . 250.00

Assays: 931 samples for Cu/Pb/Zn @ \$2.50/sample . . . . . 2,327.50

#### Supervision:

E.A.U. Parviainen, E.W. Batchelor; Geologists Planning, supervising and report preparation 7 man days @ \$150/day. . . . .	<u>1,050.00</u>
--	-----------------

\$ 8,589.30


An "Affidavit on Application for Certificate of Work" on Vine claims 1, 25 and 27 was filed with the Mining Recorder in Cranbrook, B.C., on September 1, 1977. The proportion of Grid "A" expenditures on these claims was \$910.16.

The remaining expenditures will be applied to the appropriate claims as they come due for assessment work.


SUBMITTED BY:

  
E.W. RATCHELOR

ENDORSED BY:

  
D.W. HEDDLE, P. Eng.,  
Assistant Manager, Exploration  
Western District

APPROVED BY:

  
G. HARDEN  
Manager, Exploration  
Western District

September 19, 1977

EXHIBIT "A"

STATEMENT OF EXPENDITURES

Geochemical Survey - Vine Group (Grid A)

Salaries:

R.L. Hauser & I.D. McCartney, Geologists:  
(intermittent days, Oct., Nov. 1976)  
46 man days @ \$44.30/day . . . . . \$ 2,037.80

R. Shanks & N. Kaniak, Assistants:  
(intermittent days, Oct., Nov. 1976)  
40 man days @ \$35.60/day . . . . . 1,424.00

Domicile:

86 man days @ \$10/day . . . . . 860.00

Transportation:

20 days rental of 4 x 4 @ \$32/day . . . . . 640.00

Materials:

Flagging, sample bags, etc. . . . . 250.00

Assays:

931 samples for Cu/Pb/Zn @ \$2.50/sample . . . 2,327.50

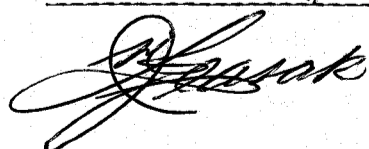
Supervision:

E.A.U. Parviainen, E.W. Batchelor; Geologists:  
Planning, supervising and report preparation  
7 man days @ \$150/day . . . . . 1,050.00

TOTAL EXPENSES . \$8,589.30

SIGNED:   
E.W. BATCHELOR

This is Exhibit "A" to the Statutory  
Declaration of E.W. Batchelor declared  
before me this 28 day of  
SEPTEMBER, 1977.



IN THE MATTER OF THE

B.C. MINERAL ACT

AND

IN THE MATTER OF A GEOCHEMICAL PROGRAMME

CARRIED OUT ON THE VINE MINERAL CLAIMS (GRID A)

in the Fort Steele Mining Division of the  
Province of British Columbia

More Particularly N.T.S. 82G/5

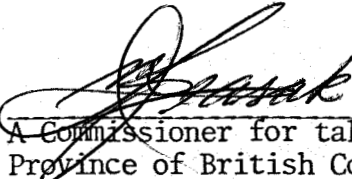
A F F I D A V I T

I, E.W. BATCHELOR, of the City of Cranbrook in the Province of British Columbia, make Oath and say:

1. That I am employed as a Geologist with Cominco Ltd. and as such, have a personal knowledge of the facts to which I hereinafter depose;
2. That annexed hereto and marked as Exhibit "A" to this my Affidavit is a true copy of expenditures incurred on a geochemical survey program, on the Vine Group of mineral claims.
3. That the said expenditures were incurred between the 1st day of October, 1976 and the 30th day of November, 1976, for the purpose of mineral exploration on the above noted claims.

Sworn Before Me at CRANBROOK  
in the Province of British Columbia, this  
28 day of SEPTEMBER, 1977.

  
E.W. BATCHELOR

  
A Commissioner for taking Affidavits in the  
Province of British Columbia.



COMINCO LTD.

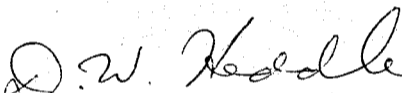
EXPLORATION DIVISION

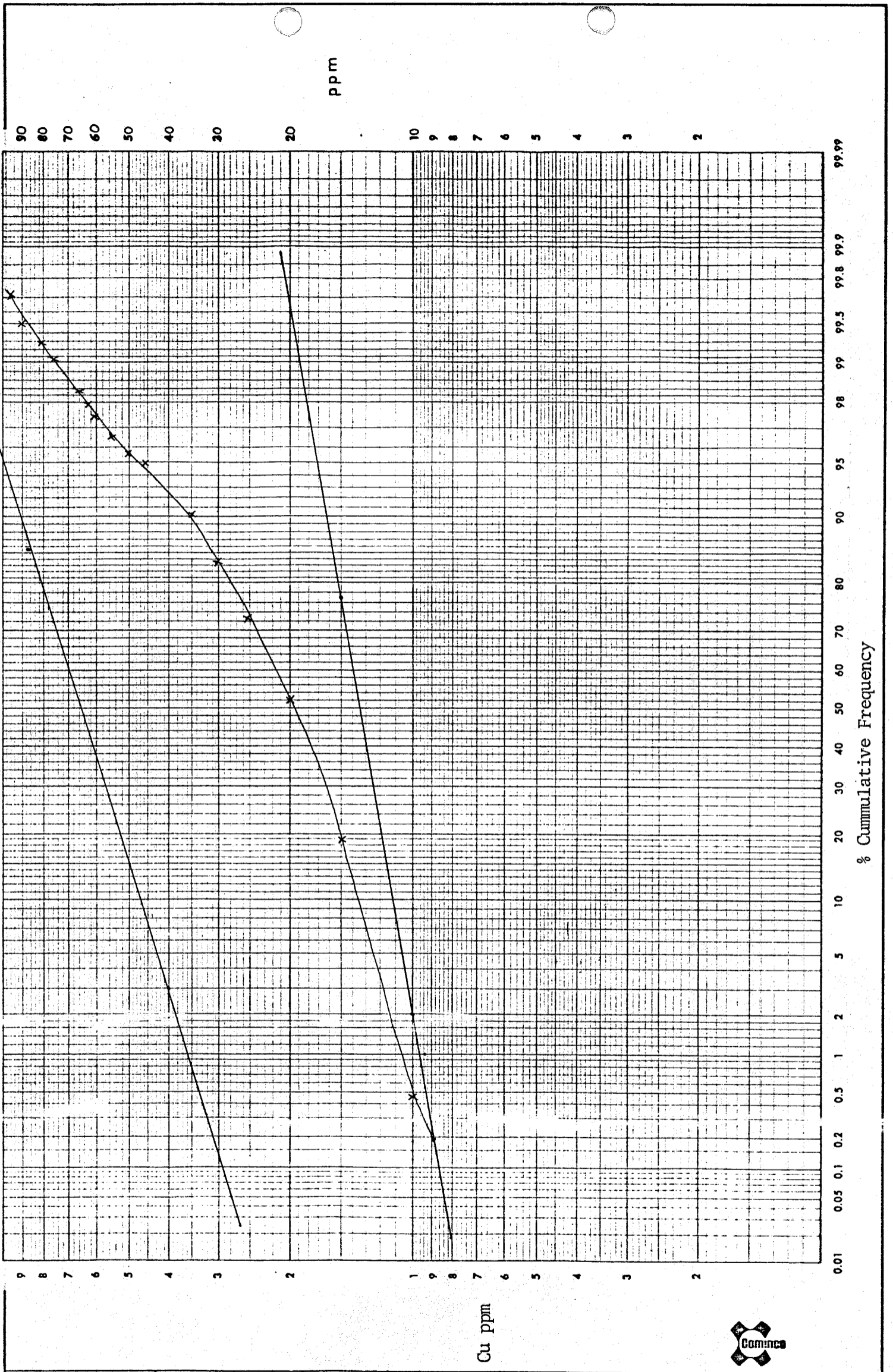
WESTERN DISTRICT

STATEMENT OF QUALIFICATIONS

E.W. BATCHELOR graduated from U.B.C. during 1966 with a B.A.Sc. degree in Geological Engineering.

Since that time he has been employed in various phases of base metal exploration.

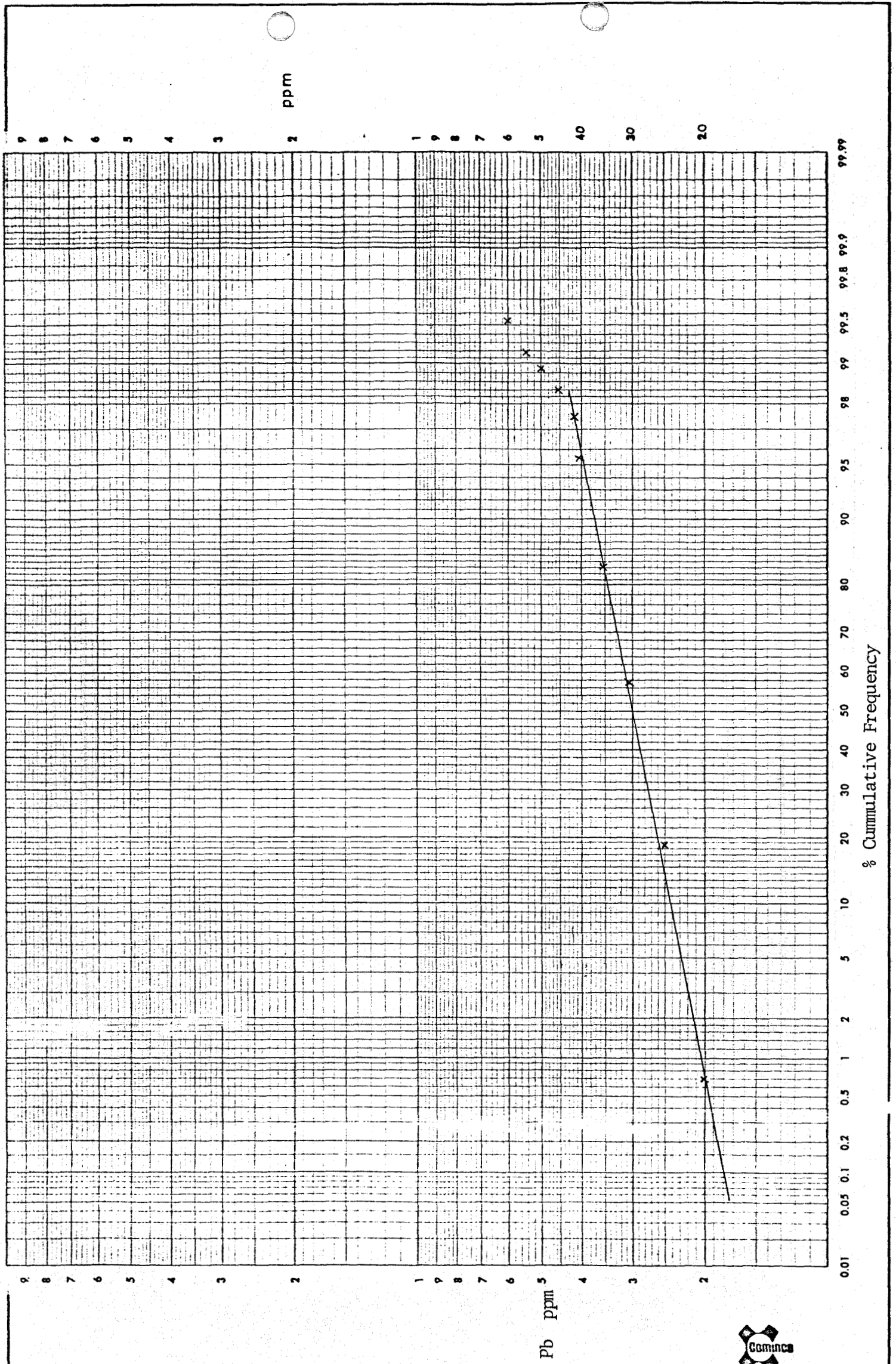
  
\_\_\_\_\_  
D.W. HEDDLE, P. Eng.,  
Assistant Manager, Exploration  
Western District



Drawn by:		Traced by:	
Revised by	Date	Revised by	Date

FIGURE 1  
Cu - Cumulative Frequency Distribution  
VINE PROPERTY - Grid "A"

Scale: \_\_\_\_\_ Date: Sept. 23, 1977 Plate: \_\_\_\_\_



Drawn by:		Traced by:	
Revised by	Date	Revised by	Date

FIGURE 2  
 Pb - Cumulative Frequency Distribution  
 vine property - GRID "A"

Scale: \_\_\_\_\_ Date: Sept. 23, 1977 Plate: \_\_\_\_\_

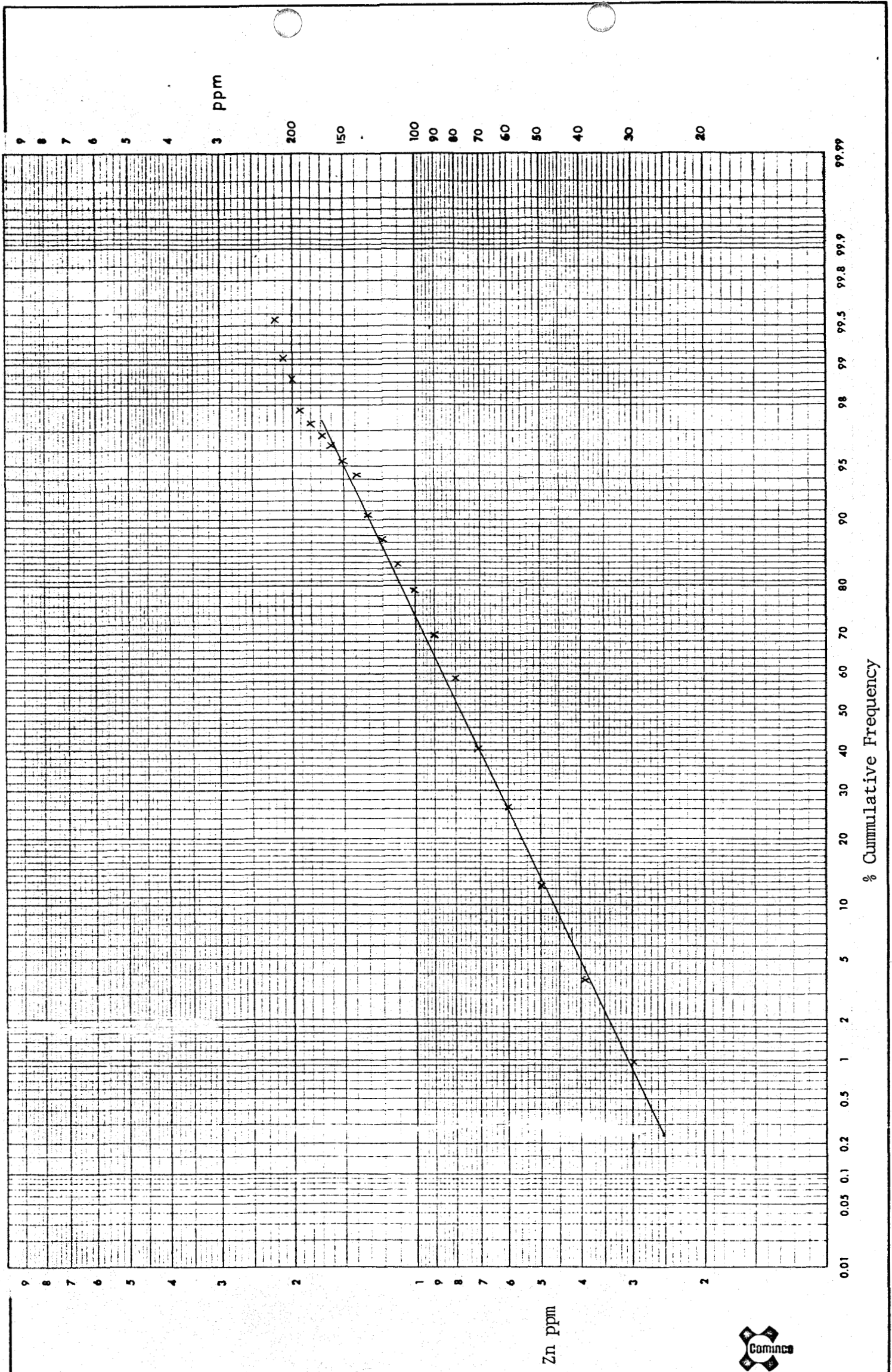


FIGURE 3

Zn - Cumulative Frequency Distribution  
VINE PROPERTY - GRID "A"

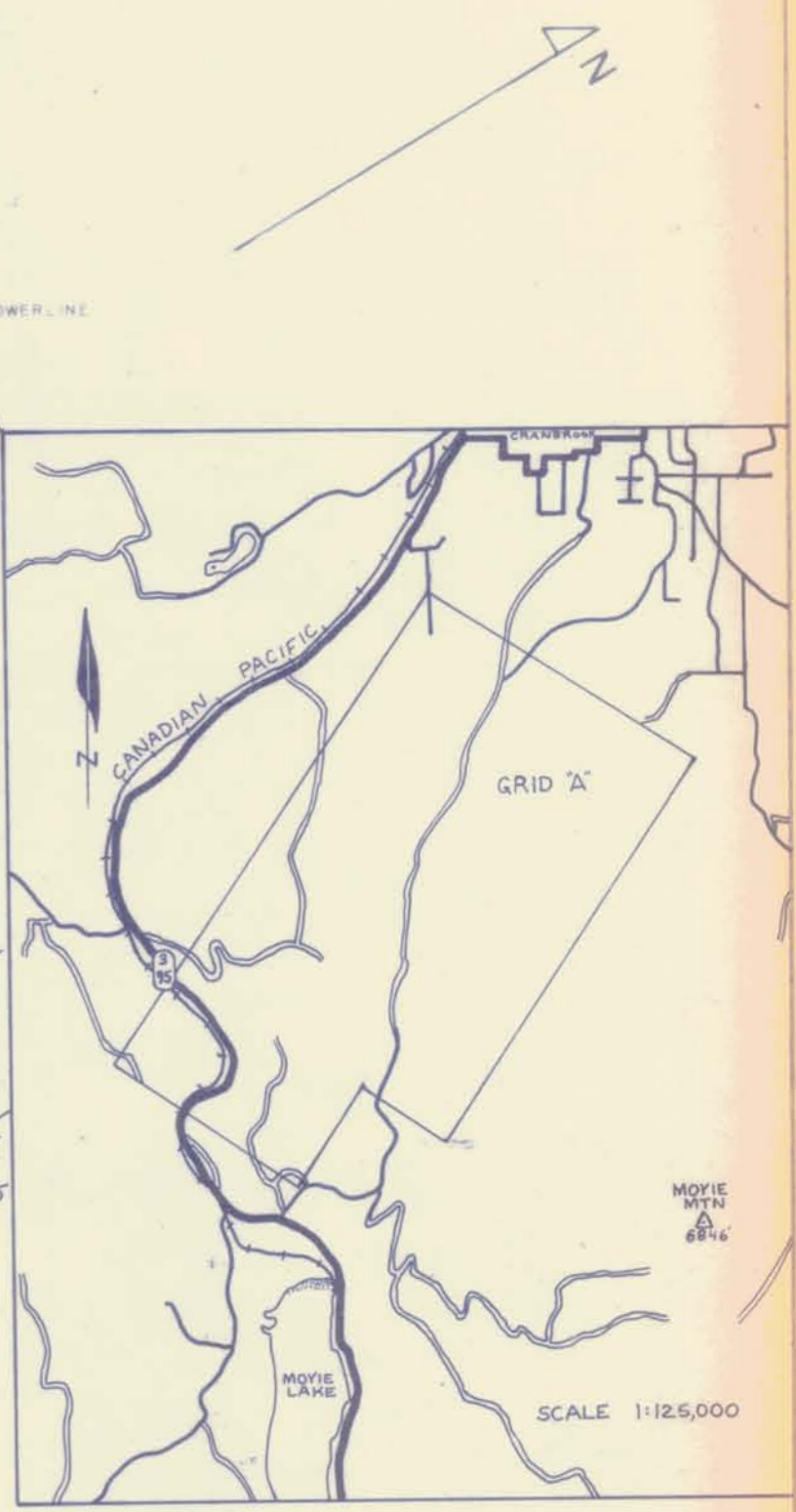
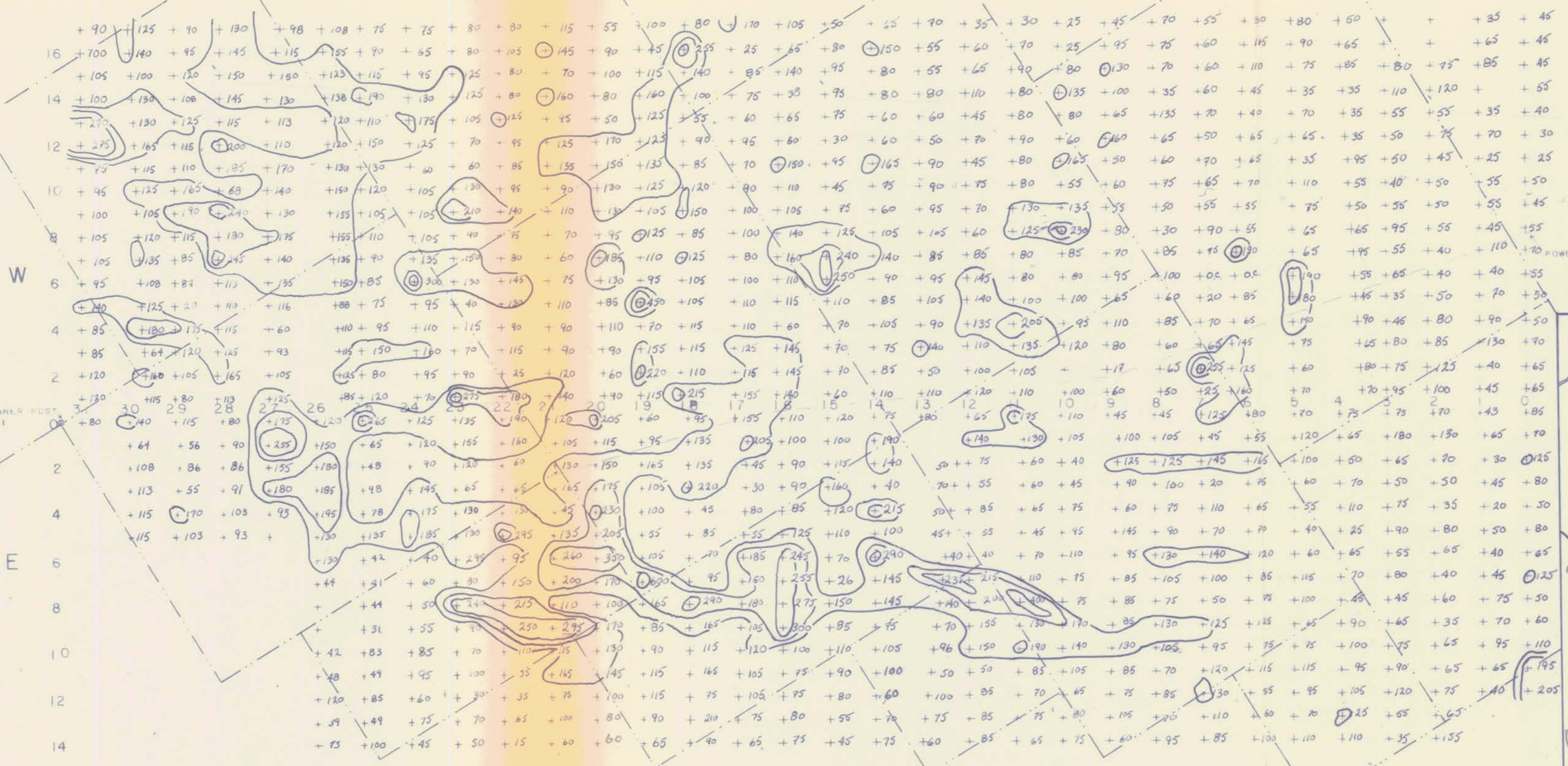
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Revised by	Date	Revised by	Date

Scale:

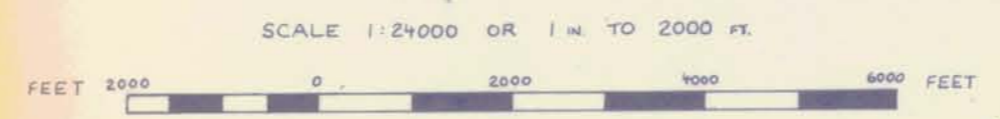
Date:

Sept. 23, 1977

Plate:



ZINC VALUES (PPM)  
 221+ ○  
 171-220 ○  
 121 170 ○

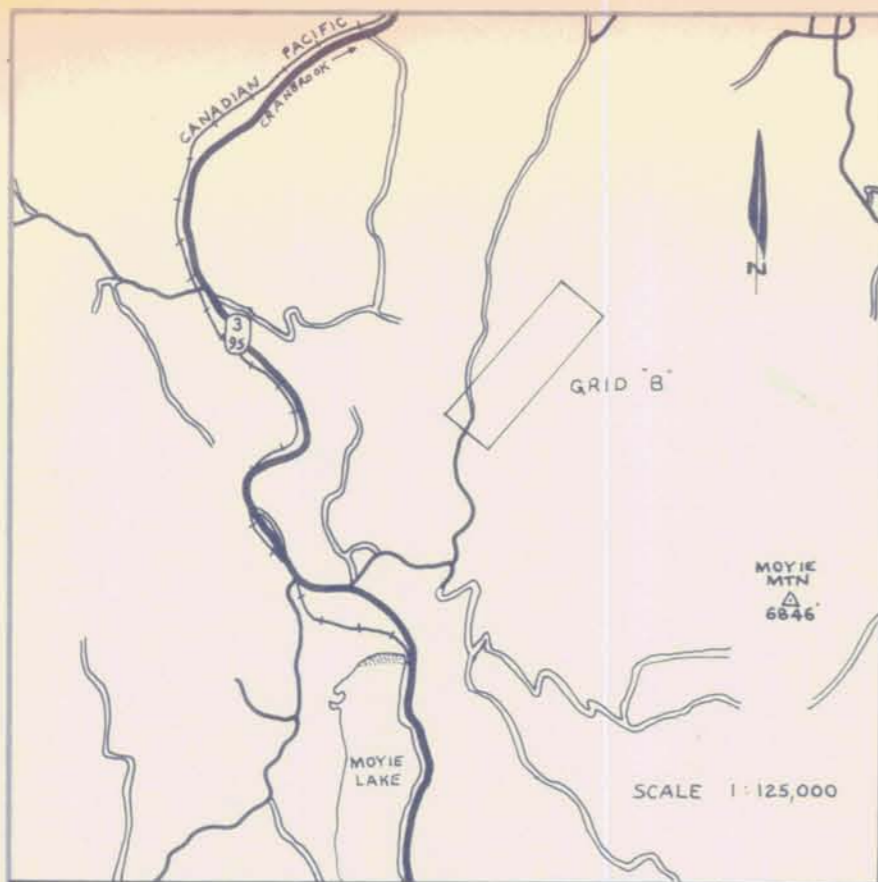


Part 2 of 5

MINERAL RESOURCES BRANCH  
 ASSESSMENT REPORT  
 6998  
 NO. \_\_\_\_\_

ZINC			
VINE RECONNAISSANCE		SOIL GEOCHEMISTRY - GRID 'A'	
Drawn by: R L H	Traced by:		
Revised by: JMF	Date: 17 SEPT 77	Revised by:	Date:
Scale 1" = 2000'		Date NOV 9, 1976	
		Plate 3	

898J



SCALE 1:12,000 OR 1 IN. TO 1000 FT.

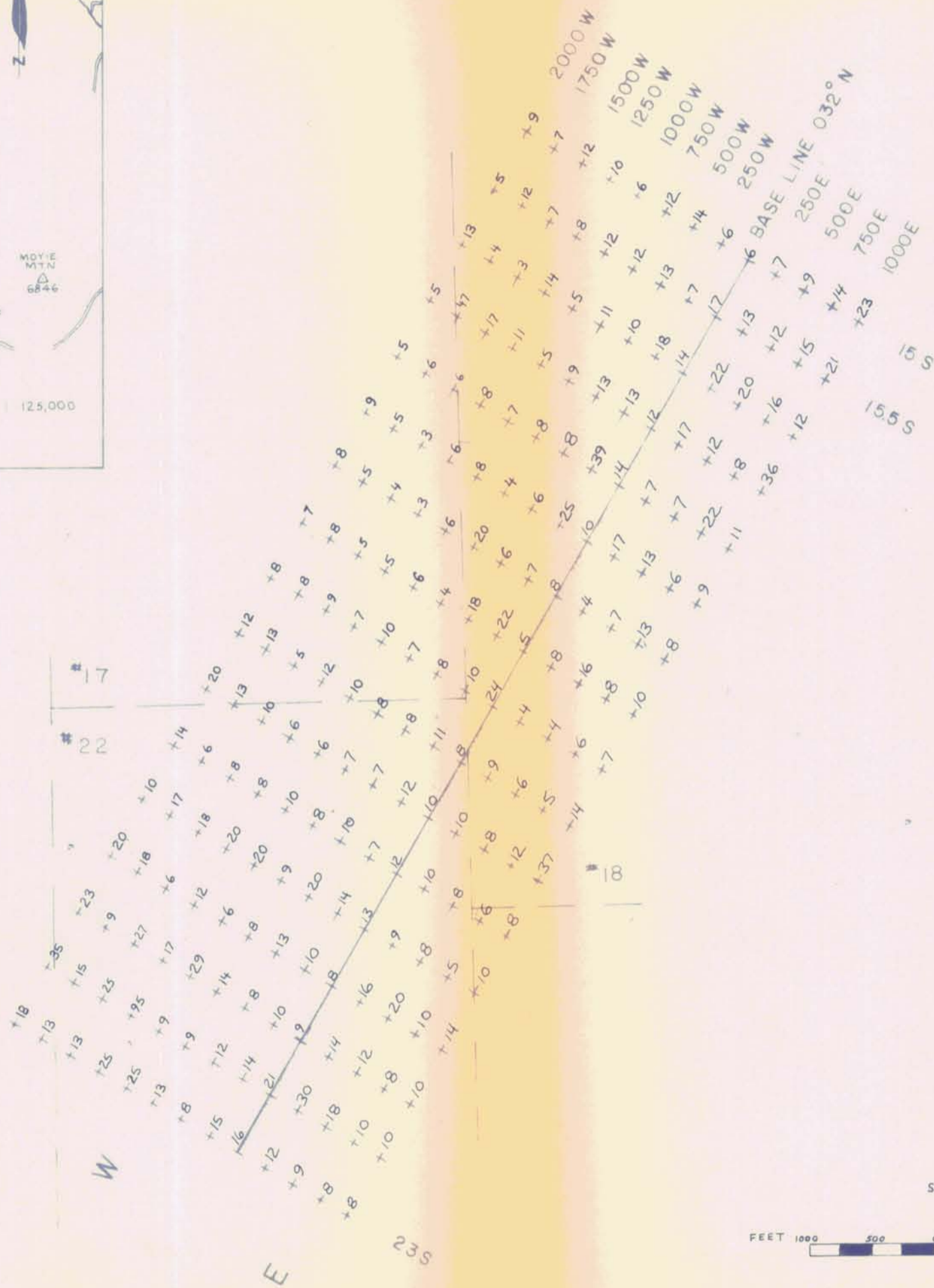
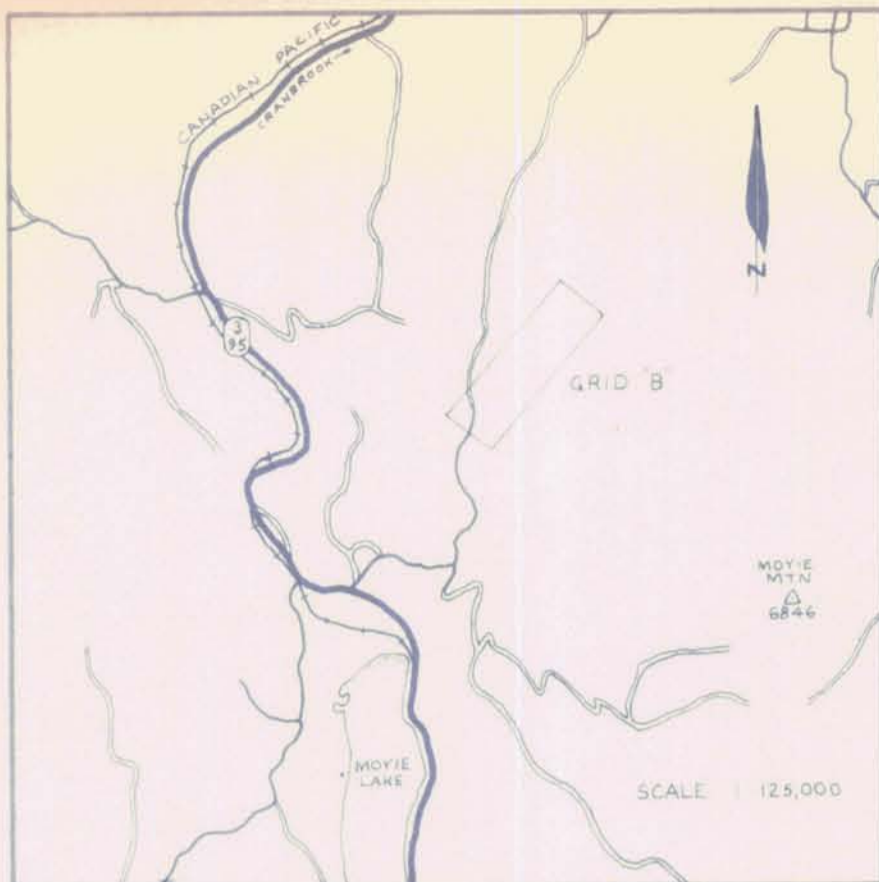


MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
NO. **6998**

Part  
3 of 5

GRID "B" VINE 17,18,22 ZINC			
Drawn by: GMM	Traced by:	VINE SOIL GEOCHEMICAL SURVEY. "B" HORIZON	
Revised by: JMF	Date: 19 SEPT 77		
Scale 1" = 1000'		Date: APRIL 15, 1977	Plate: V-3-77

826/5

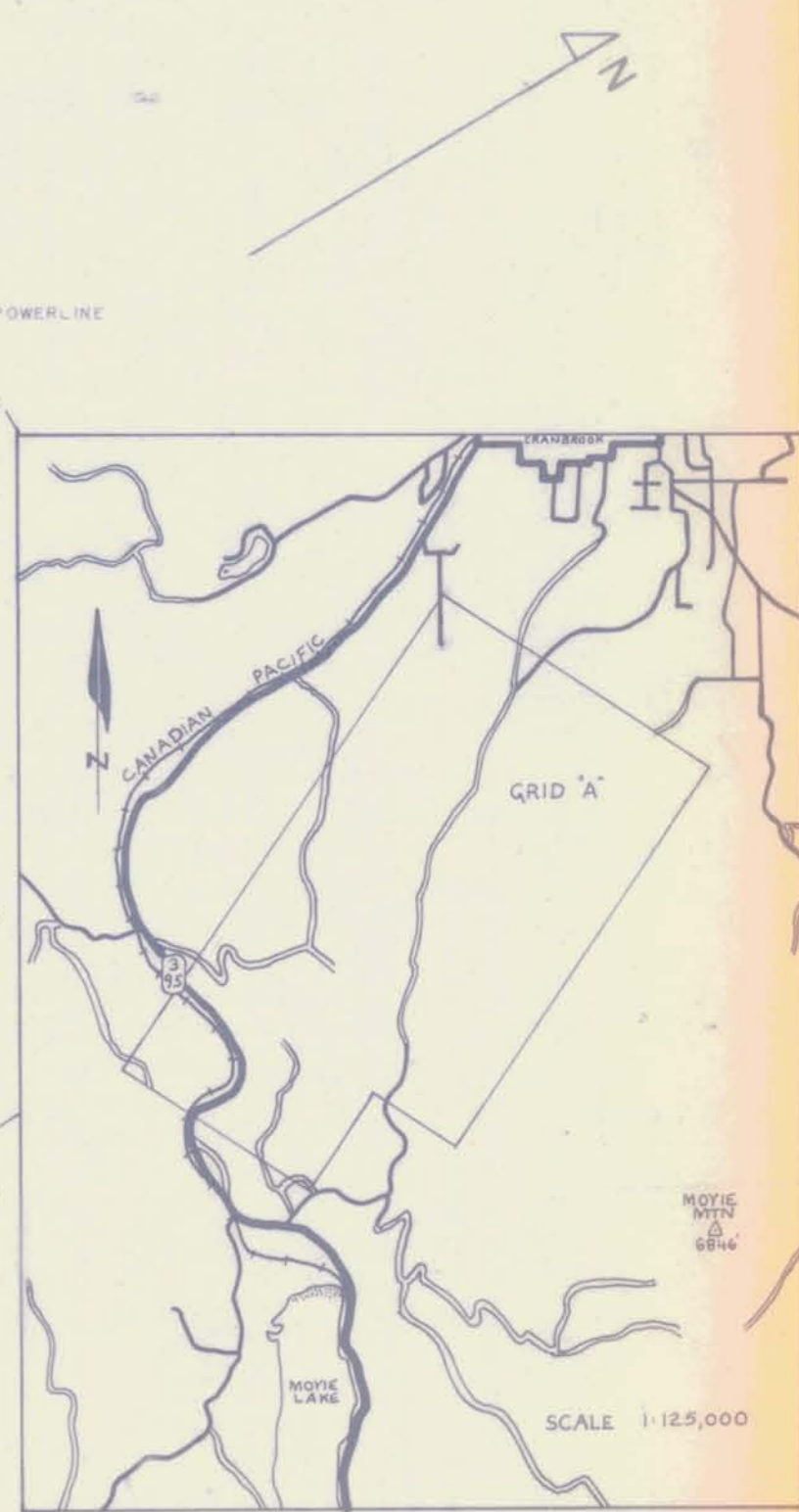


MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
NO. **6498**

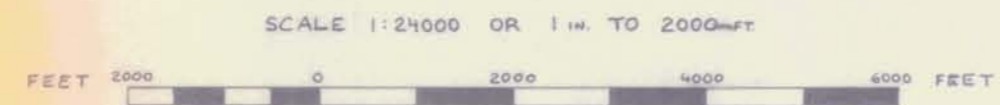
**Part 3 of 5**

GRID "B" VINE 17, 18, 22 COPPER		Cominco
Drawn by GMM	Traced by	
Reviewed by JMF	Date 16 SEPT 77	VINE SOIL GEOCHEMICAL SURVEY "B" HORIZON
Scale 1" = 1000'		Date APRIL 15, 1977
		Page V-3-77

	+15	+10	+24	+23	+31	+56	+11	+17	+13	+13	+31	+85	+10	+9	+21	+16	+15	+13	+18	+10	+7	+7	+6	+9	+9	+9	+8	+8	+5	+9				
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COPPER VALUES (PPM)  
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 41-50 O  
 30 40 O

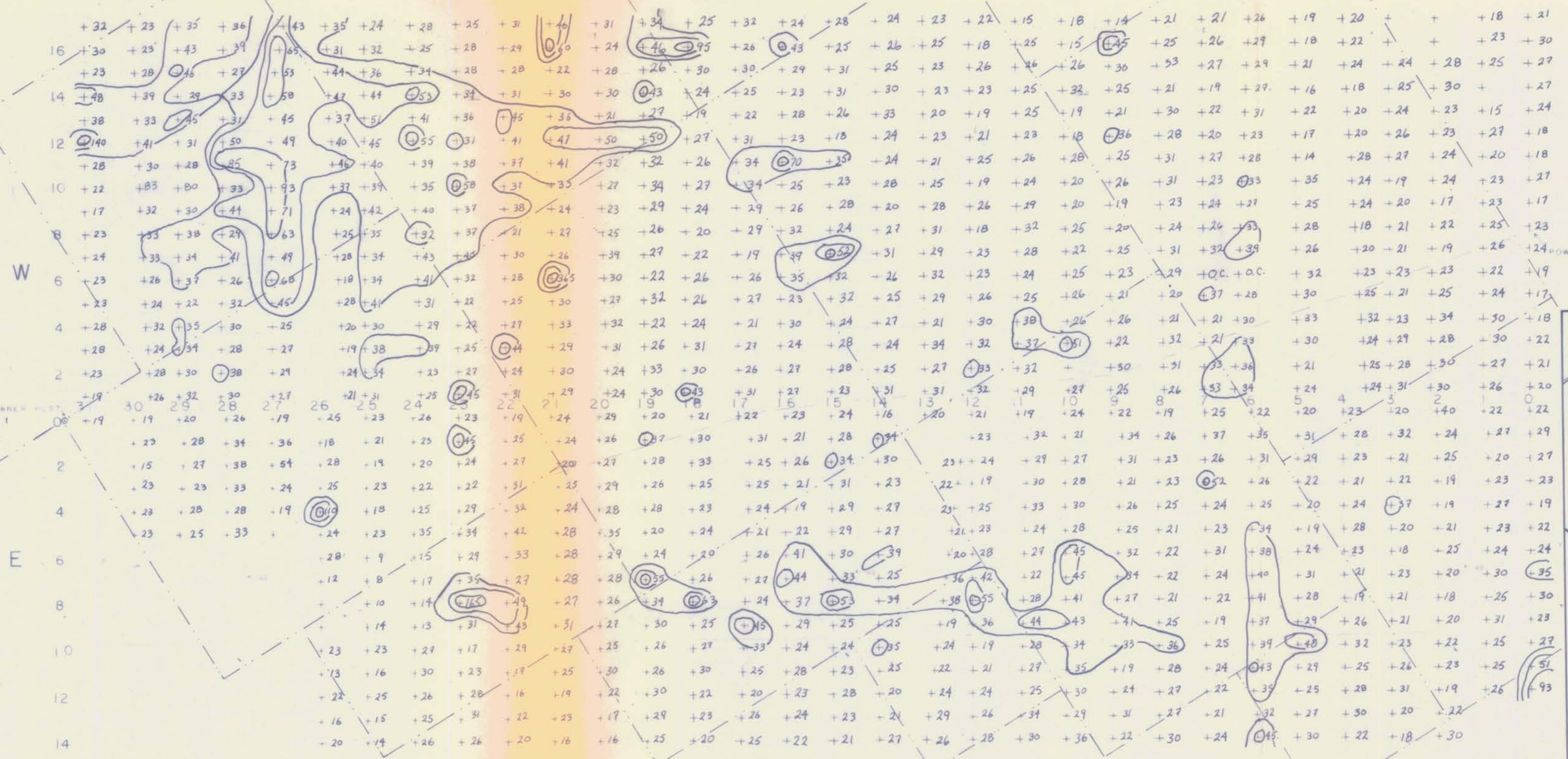


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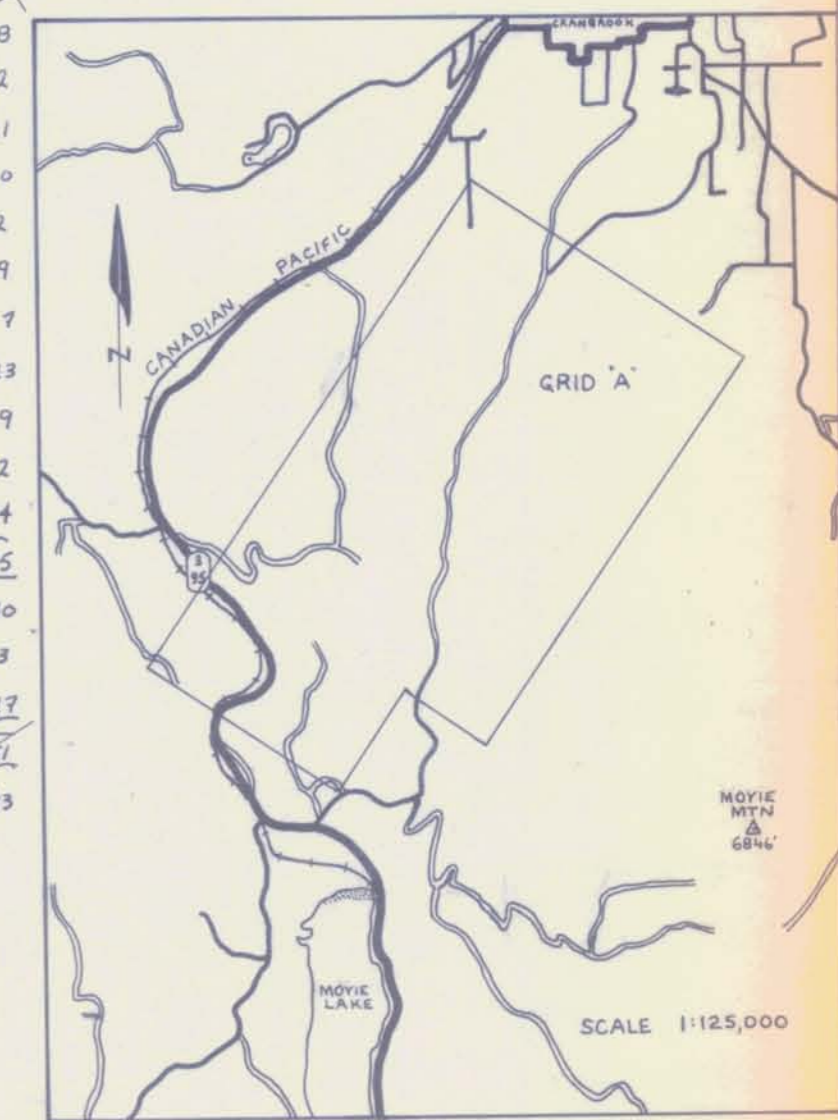
MINERAL RESOURCES BRANCH  
 ASSESSMENT REPORT  
**6798**  
 NO.  
 Part 2 of 5

COPPER			
VINE RECONNAISSANCE			
SOIL GEOCHEMISTRY GRID 'A'			
Drawn by	RLH	Traced by	
Revised by	Date	Revised by	Date
JME	17 SEPT 77		
Scale 1" = 2000'		Date NOV. 9, 1976	
		Plate 1	





W  
6  
4  
2  
E  
6  
8  
10  
12  
14



LEAD VALUES (PPM)  
 53+ ○  
 43-52 ○  
 33-42 ○

SCALE 1:24000 OR 1 IN. TO 2000 FT.  
 FEET 2000 4000 6000 FEET

MINERAL RESOURCES BRANCH  
 ASSESSMENT REPORT  
 6898  
 NO. \_\_\_\_\_

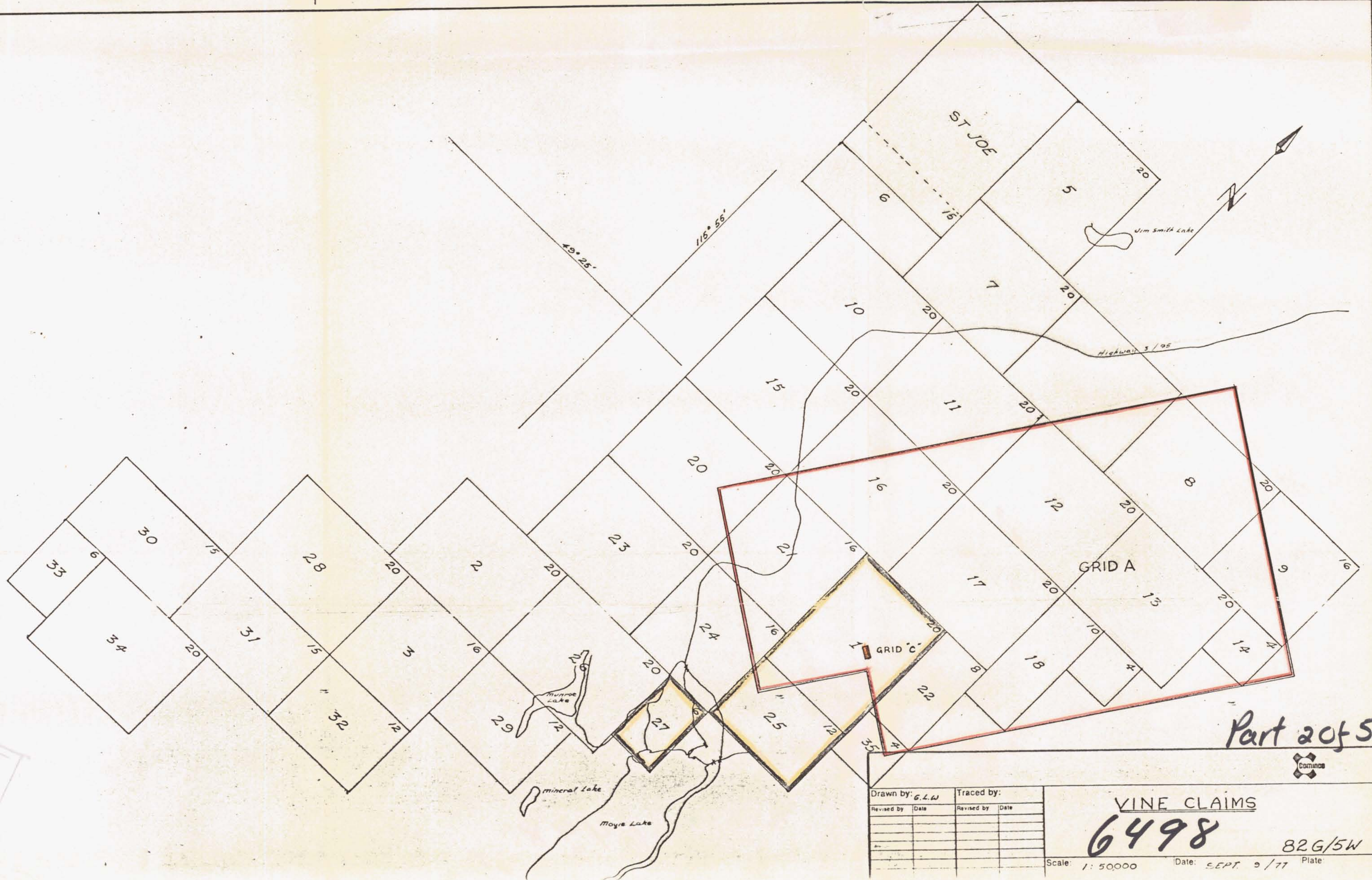
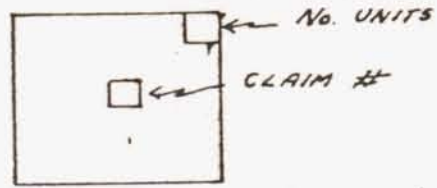
Part 2 of 5

Drawn by R.L.H.		Traced by	
Revised by	Date	Revised by	Date
JMF	17 SEPT 77		

LEAD  
 VINE RECONNAISSANCE  
 SOIL GEOCHEMISTRY GRID "A"

Scale 1" = 2000' Date NOV. 9, 1976 Plat 2

8998



Part 2 of 5



Drawn by: G.L.W.	Traced by:
Revised by: _____	Revised by: _____
Date: _____	Date: _____

VINE CLAIMS

6498

82G/5W

Scale: 1: 50000 Date: SEPT. 9 / 77 Plate:

NO  
 FEDERAL BUREAU OF  
 MINERAL RESEARCH SERVICE