

COMINCO LTD.

EXPLORATION

WESTERN DISTRICT

REPORT ON TRENCHING AND SOIL GEOCHEMISTRY

HAWK 1 CLAIM

Fort Steele Mining Division

Yahk Area

N.T.S. 82F/1

Lat: 49° 04'

Long: 116° 05'

OWNER

Cominco Ltd.

Kootenay Exploration
1051 Industrial Road No. 2
Cranbrook, B.C.
V1C 4K7

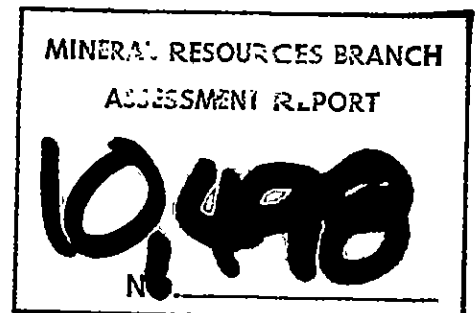
Work Performed during August & September, 1981

Report by:

P. Klewchuk
Geologist

Under the Supervision of:

D. Anderson
Project Geologist



COMINCO LTD.

EXPLORATION

WESTERN DISTRICT

TABLE OF CONTENTS

	Page
1.00 SUMMARY	1
2.00 INTRODUCTION	1
2.10 Property Definition	1
2.20 Location and Access	1
2.30 Topography and Vegetation	2
2.40 Objectives	2
3.00 GEOCHEMISTRY	2
3.10 Sampling Procedure	2
3.20 Analytical Procedures	2
3.30 Conclusions and Follow Up	3
4.00 TRENCHING	3
5.00 RESULTS - HISTOGRAM DATA AND CUMULATIVE PROBABILITY PLOT FOR Pb, Zn, Fe, Mn, As.	4-19
STATEMENT OF EXPENDITURES	20
AFFIDAVIT	21
AUTHOR'S QUALIFICATIONS	22
PLATE 1. Pb Soil sample grid	Attached
PLATE 2. Zn Soil sample grid	"
PLATE 3. Fe Soil sample grid	"
PLATE 4. Mn Soil sample grid	"
PLATE 5. As Soil sample grid	"
PLATE 6. Road & Trench Locations	"
LOCATION MAP IS INCLUDED ON EACH PLATE	

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EXPLORATION

WESTERN DISTRICT

REPORT ON TRENCHING AND SOIL GEOCHEMISTRY

HAWK 1 CLAIM

Fort Steele Mining Division

1.00 SUMMARY

The Hawk geochem grid covers a portion of the Hawk 1 claim (20 units). The claim is approximately 1.5 km S.E. of Yahk.

This report is concerned with the extension of the geochem grid sampled in 1980. Additional analytical work is also included as is trenching carried out as a result of the 1980 geochem work.

A total of 163 soil samples were collected and analyzed for Pb and Zn at Cominco's lab in Vancouver. A further 171 samples from the 1980 program were analyzed for Fe, Mn and As. Nine water samples, collected along the road crossing the property, were analyzed for Cu, Zn, Fe, Mn & SO₄.

Statistical analysis was performed on the soil geochemical values. The 1980 values for Pb and Zn were included in the calculations. Histogram data for Pb, Zn, Mn, Fe, As; log transform histograms and cumulative probability plots for Pb, Zn, Mn, Fe, As are included in this report.

Expenditures on this survey were \$3,163.50 for the geochem and \$2,540.30 for trenching; with \$836.50 from PAC \$6,000 will be applied to Hawk 1.

2.00 INTRODUCTION

2.10 Property Definition

The Hawk was staked in August 1980 and is 100% Cominco owned. The work was performed by Kootenay Exploration (Cominco Ltd.). The original geochem work was done in 1980.

2.20 Location and Access

The Hawk geochemical grid is located approximately 1.5 km S.E. of Yahk and highway 95. Access is via a good logging road up Hawkins Creek for approximately 3.6 km then by 4 wheel drive road to the property.

2.30 Topography and Vegetation

The survey grid is situated in an area of moderate relief at an elevation of 1,066 m to 1,371 m above sea level. The area is covered by medium to mature larch, lodgepole pine and low bush.

2.40 Objectives

The geochemical survey and trenching was undertaken to explore for Pb/Zn deposits in Precambrian rocks of the Aldridge formation.

3.00 GEOCHEMISTRY

3.10 Sampling Procedure

The base line was extended 200 metres to the S.E. and lines 16 and 17 were run for 800 metres S.W. Lines 0, 1, 2, 13, 14 & 15 were extended 300 metres to the S.W. Lines 3, 4 & 5 were extended 200 metres to the S.W. Sample spacing along all lines was 25 metres.

The samples were collected from the 'B' horizon at depths of 10 to 20 centimetres using a shovel.

The water samples were collected from seepages along the property road. The water was collected by means of a 60 c.c. syringe. The samples were filtered into acid rinsed plastic bottles; a few drops of concentrated HCl were added and the samples were sent to Vancouver for analysis.

3.20 Analytical Procedures

Soil Samples

One half gram of -80 mesh soil is weighed into a test tube, 5 mls of 20% HNO₃ is added. The samples are digested for 90 minutes in a water bath at 95° C (samples are shaken every 15 minutes). After digestion the sample is made up to 10 mls with deionised water shaken and run on the A.A. for Pb, Zn, Mn, Fe. Background correction is used for Pb determinations. Arsenic is determined using a dry pyrosulphate fusion, hydride generation and colorimetry.

Waters

Cu, Zn, Fe & Mn are determined by direct aspiration on the A.A.

SO₄ value is found by use of a barium sulphate gravimetric determination.

3.30 Conclusions

The extended grid added no new anomalous areas. The absence of any significant exposure of mineralization following the trenching, and high values for the hydro-geochem in the area of a soil anomaly suggests that the soil anomalies are hydromorphic in nature.

4.00 TRENCHING

Three trenches were dug at the Hawk property in September, 1981. Approximate physical dimensions are:

1. 18 m x 3 m x 2 m (108m³)
2. 25 m x 8 m x 2.5 m (500m³)
3. 20 m x 6 m x 1 m (120m³)

For a total of 728 cubic meters.

The trenching failed to reveal any significant mineralization that could give rise to the soil anomalies.

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Endorsed by: D. Anderson
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Chief Geologist
Kimberley

xc: Mining Recorder (2 copies)✓
Western District, Exploration
Kootenay Exploration

HAWK
HISTOGRAM DATA FOR LEAD

CLASS	LIMITS *	FREQ	ZFREQ	CUM	CUM%
1	LESS THAN 0.69	0	0.0	711	100.00
2	0.69 TO 0.80	0	0.0	711	100.00
3	0.80 TO 0.93	0	0.0	711	100.00
4	0.93 TO 1.08	0	0.0	711	100.00
5	1.08 TO 1.25	0	0.0	711	100.00
6	1.25 TO 1.45	0	0.0	711	100.00
7	1.45 TO 1.68	0	0.0	711	100.00
8	1.68 TO 1.94	0	0.0	711	100.00
9	1.94 TO 2.25	41	5.8	711	100.00
10	2.25 TO 2.61	0	0.0	670	94.23
11	2.61 TO 3.02	0	0.0	670	94.23
12	3.02 TO 3.49	0	0.0	670	94.23
13	3.49 TO 4.05	33	4.6	670	94.23
14	4.05 TO 4.69	0	0.0	637	89.59
15	4.69 TO 5.42	54	7.6	637	89.59
16	5.42 TO 6.28	57	8.0	583	82.00
17	6.28 TO 7.27	70	9.8	526	73.98
18	7.27 TO 8.42	60	8.4	456	64.14
19	8.42 TO 9.75	53	7.5	396	55.70
20	9.75 TO 11.28	99	13.9	343	48.24
21	11.28 TO 13.06	91	12.8	244	34.32
22	13.06 TO 15.12	35	4.9	153	21.52
23	15.12 TO 17.51	27	3.8	118	16.60
24	17.51 TO 20.27	28	3.9	91	12.80
25	20.27 TO 23.46	20	2.8	63	8.86
26	23.46 TO 27.16	17	2.4	43	6.05
27	27.16 TO 31.45	7	1.0	26	3.66
28	31.45 TO 36.40	7	1.0	19	2.67
29	36.40 TO 42.14	3	0.4	12	1.69
30	42.14 TO 48.79	2	0.3	9	1.27
31	48.79 TO 56.48	1	0.1	7	0.98
32	56.48 TO 65.38	2	0.3	6	0.84
33	65.38 TO 75.69	2	0.3	4	0.56
34	75.69 TO 87.62	0	0.0	2	0.28
35	87.62 TO 101.44	1	0.1	2	0.28
36	MORE THAN 101.44	1	0.1	1	0.00

PPM IN INTERVALS OF .063 LOG (BASE 10) UNITS
 THERE ARE 34 REGULAR CLASSES, AN OVERFLOW AND UNDERFLOW CLASS
 THE RANGE CONSIDERED IS 8 STD DEVIATIONS CENTRED ON THE GEOMETRIC MEAN
 THE CLASS INTERVAL IS APPROX ONE-QUARTER STD DEVIATION
 1980/1981 SOIL SERIES/REQUESTED BY P. KLENCHUK

HANK
HISTOGRAM DATA FOR ZINC

CLASS	LIKITS	x	FREQ	%FREQ	CUM	CUM%
1	LESS THAN	7.84	0	0.0	711	100.00
2	7.84TO	8.97	0	0.0	711	100.00
3	8.97TO	10.25	0	0.0	711	100.00
4	10.25TO	11.72	0	0.0	711	100.00
5	11.72TO	13.40	1	0.1	711	100.00
6	13.40TO	15.32	0	0.0	710	99.86
7	15.32TO	17.52	6	0.8	710	99.86
8	17.52TO	20.03	3	0.4	704	99.02
9	20.03TO	22.90	0	0.0	701	98.59
10	22.90TO	26.18	12	1.7	701	98.59
11	26.18TO	29.93	4	0.6	689	96.91
12	29.93TO	34.23	15	2.1	685	96.34
13	34.23TO	39.13	24	3.4	670	94.23
14	39.13TO	44.74	29	4.1	646	90.86
15	44.74TO	51.15	41	5.8	617	86.78
16	51.15TO	58.48	62	8.7	576	81.01
17	58.48TO	66.86	69	9.7	514	72.29
18	66.86TO	76.45	71	10.0	445	62.59
19	76.45TO	87.40	75	10.5	374	52.60
20	87.40TO	99.93	56	7.9	299	42.05
21	99.93TO	114.25	54	7.6	243	34.18
22	114.25TO	130.62	31	4.4	189	26.58
23	130.62TO	149.34	43	6.0	158	22.22
24	149.34TO	170.74	33	4.6	115	16.17
25	170.74TO	195.21	27	3.8	82	11.53
26	195.21TO	223.19	26	3.7	55	7.74
27	223.19TO	255.17	13	1.8	29	4.08
28	255.17TO	291.74	3	0.4	16	2.25
29	291.74TO	333.54	6	0.8	13	1.83
30	333.54TO	381.34	2	0.3	7	0.98
31	381.34TO	435.99	2	0.3	5	0.70
32	435.99TO	498.47	1	0.1	3	0.42
33	498.47TO	569.91	1	0.1	2	0.28
34	569.91TO	651.58	1	0.1	1	0.14
35	651.58TO	744.95	0	0.0	0	0.00
36	MORE THAN	744.95	0	0.0	0	0.00

PPM IN INTERVALS OF .058 LOG (BASE 10) UNITS

THERE ARE 34 REGULAR CLASSES, AN OVERFLOW AND UNDERFLOW CLASS

THE RANGE CONSIDERED IS 8 STD DEVIATIONS CENTRED ON THE GEOMETRIC MEAN

THE CLASS INTERVAL IS APPROX ONE-QUARTER STD DEVIATION

1980/1981 SOIL SERIES/REQUESTED BY P.KLENCHUK

HAWK
HISTOGRAM DATA FOR IRON

CLASS	LIKITS*	FREQ	%FREQ	CUM	CUM%
1	LESS THAN 0.58	0	0.0	170	100.00
2	0.58 TO 0.61	1	0.6	170	100.00
3	0.61 TO 0.64	0	0.0	169	99.41
4	0.64 TO 0.68	1	0.6	169	99.41
5	0.68 TO 0.72	0	0.0	168	98.82
6	0.72 TO 0.76	0	0.0	168	98.82
7	0.76 TO 0.81	1	0.6	168	98.82
8	0.81 TO 0.85	1	0.6	167	98.24
9	0.85 TO 0.90	0	0.0	166	97.65
10	0.90 TO 0.95	2	1.2	166	97.65
11	0.95 TO 1.01	2	1.2	164	96.47
12	1.01 TO 1.07	2	1.2	162	95.29
13	1.07 TO 1.13	5	2.9	160	94.12
14	1.13 TO 1.19	2	1.2	155	91.18
15	1.19 TO 1.26	10	5.9	153	90.00
16	1.26 TO 1.33	16	9.4	143	84.12
17	1.33 TO 1.41	15	8.8	127	74.71
18	1.41 TO 1.49	13	7.6	112	65.88
19	1.49 TO 1.57	18	10.6	99	58.24
20	1.57 TO 1.66	21	12.4	81	47.65
21	1.66 TO 1.76	15	8.8	60	35.29
22	1.76 TO 1.86	11	6.5	45	26.47
23	1.86 TO 1.97	10	5.9	34	20.00
24	1.97 TO 2.08	5	2.9	24	14.12
25	2.08 TO 2.20	7	4.1	19	11.18
26	2.20 TO 2.32	7	4.1	12	7.06
27	2.32 TO 2.46	1	0.6	5	2.94
28	2.46 TO 2.60	3	1.8	4	2.35
29	2.60 TO 2.75	1	0.6	1	0.59
30	2.75 TO 2.90	0	0.0	0	0.00
31	2.90 TO 3.07	0	0.0	0	0.00
32	3.07 TO 3.25	0	0.0	0	0.00
33	3.25 TO 3.43	0	0.0	0	0.00
34	3.43 TO 3.63	0	0.0	0	0.00
35	3.63 TO 3.84	0	0.0	0	0.00
36	MORE THAN 3.84	0	0.0	0	0.00

% IN INTERVALS OF .024 LOG (BASE 10) UNITS
 THERE ARE 34 REGULAR CLASSES, AN OVERFLOW AND UNDERFLOW CLASS
 THE RANGE CONSIDERED IS 8 STD DEVIATIONS CENTRED ON THE GEOMETRIC MEAN
 THE CLASS INTERVAL IS APPROX ONE-QUARTER STD DEVIATION
 1980/1981 SOIL SERIES/REQUESTED BY P. KLENCHUK

HAWK
HISTOGRAM DATA FOR MANGANESE

CLASS	LIMITS *		FREQ	XFREQ	CUM	CUM%
1	LESS THAN	50.46	0	0.0	170	100.00
2	50.46TO	57.91	0	0.0	170	100.00
3	57.91TO	66.47	0	0.0	170	100.00
4	66.47TO	76.28	1	0.6	170	100.00
5	76.28TO	87.55	0	0.0	169	99.41
6	87.55TO	100.48	0	0.0	169	99.41
7	100.48TO	115.32	2	1.2	169	99.41
8	115.32TO	132.36	0	0.0	167	98.24
9	132.36TO	151.91	1	0.6	167	98.24
10	151.91TO	174.34	1	0.6	166	97.65
11	174.34TO	200.10	4	2.4	165	97.06
12	200.10TO	229.65	4	2.4	161	94.71
13	229.65TO	263.57	2	1.2	157	92.35
14	263.57TO	302.50	8	4.7	155	91.18
15	302.50TO	347.17	10	5.9	147	86.47
16	347.17TO	398.45	12	7.1	137	80.59
17	398.45TO	457.30	11	6.5	125	73.53
18	457.30TO	524.84	17	10.0	114	67.06
19	524.84TO	602.36	19	11.2	97	57.06
20	602.36TO	691.33	14	8.2	78	45.88
21	691.33TO	793.43	20	11.8	64	37.65
22	793.43TO	910.62	10	5.9	44	25.88
23	910.62TO	1045.12	9	5.3	34	20.00
24	1045.12TO	1199.48	9	5.3	25	14.71
25	1199.48TO	1376.64	7	4.1	16	9.41
26	1376.64TO	1579.96	1	0.6	9	5.29
27	1579.96TO	1813.31	3	1.8	8	4.71
28	1813.31TO	2081.13	3	1.8	5	2.94
29	2081.13TO	2388.51	1	0.6	2	1.18
30	2388.51TO	2741.28	0	0.0	1	0.59
31	2741.28TO	3146.15	1	0.6	1	0.59
32	3146.15TO	3610.83	0	0.0	0	0.00
33	3610.83TO	4144.13	0	0.0	0	0.00
34	4144.13TO	4756.20	0	0.0	0	0.00
35	4756.20TO	5458.67	0	0.0	0	0.00
36	MORE THAN	5458.67	0	0.0	0	0.00

PPM IN INTERVALS OF .059 LOG (BASE 10) UNITS

THERE ARE 34 REGULAR CLASSES ,AN OVERFLOW AND UNDERFLOW CLASS

THE RANGE CONSIDERED IS 8 STD DEVIATIONS CENTRED ON THE GEOMETRIC MEAN

THE CLASS INTERVAL IS APPROX ONE-QUARTER STD DEVIATION

1980/1981 SOIL SERIES/REQUESTED BY P.KLENCHUK

HAWK
HISTOGRAM DATA FOR ARSENIC

CLASS	LIMITS	*	FREQ	%FREQ	CUM	CUM%
1	LESS THAN	0.27	0	0.0	170	100.00
2	0.27 TO	0.30	0	0.0	170	100.00
3	0.30 TO	0.34	0	0.0	170	100.00
4	0.34 TO	0.39	0	0.0	170	100.00
5	0.39 TO	0.44	0	0.0	170	100.00
6	0.44 TO	0.50	0	0.0	170	100.00
7	0.50 TO	0.57	0	0.0	170	100.00
8	0.57 TO	0.65	0	0.0	170	100.00
9	0.65 TO	0.73	0	0.0	170	100.00
10	0.73 TO	0.83	0	0.0	170	100.00
11	0.83 TO	0.94	0	0.0	170	100.00
12	0.94 TO	1.07	34	20.0	170	100.00
13	1.07 TO	1.21	0	0.0	136	80.00
14	1.21 TO	1.38	0	0.0	136	80.00
15	1.38 TO	1.56	0	0.0	136	80.00
16	1.56 TO	1.77	0	0.0	136	80.00
17	1.77 TO	2.01	44	25.9	136	80.00
18	2.01 TO	2.28	0	0.0	92	54.12
19	2.28 TO	2.58	0	0.0	92	54.12
20	2.58 TO	2.93	0	0.0	92	54.12
21	2.93 TO	3.32	48	28.2	92	54.12
22	3.32 TO	3.76	0	0.0	44	25.88
23	3.76 TO	4.27	24	14.1	44	25.88
24	4.27 TO	4.84	0	0.0	20	11.76
25	4.84 TO	5.48	11	6.5	20	11.76
26	5.48 TO	6.22	7	4.1	9	5.29
27	6.22 TO	7.05	1	0.6	2	1.18
28	7.05 TO	7.99	0	0.0	1	0.59
29	7.99 TO	9.06	1	0.6	1	0.59
30	9.06 TO	10.27	0	0.0	0	0.00
31	10.27 TO	11.64	0	0.0	0	0.00
32	11.64 TO	13.19	0	0.0	0	0.00
33	13.19 TO	14.96	0	0.0	0	0.00
34	14.96 TO	16.96	0	0.0	0	0.00
35	16.96 TO	19.22	0	0.0	0	0.00
36	MORE THAN	19.22	0	0.0	0	0.00

PPM IN INTERVALS OF .054 LOG (BASE 10) UNITS

THERE ARE 34 REGULAR CLASSES, AN OVERFLOW AND UNDERFLOW CLASS

THE RANGE CONSIDERED IS 8 STD DEVIATIONS CENTRED ON THE GEOMETRIC MEAN

THE CLASS INTERVAL IS APPROX ONE-QUARTER STD DEVIATION

1980/1981 SOIL SERIES/REQUESTED BY P. KLENCHUK

HAWK
~~LOG TRANSFORM HISTOGRAM FOR LEAD~~

FREQUENCY (ARITHMETIC SCALE)
 SCALED FOR LARGEST CLASS =100

MID-POINT	FREQZ	0	20	40	60	80	100
> 101.49	0.1	*					
94.33	0.1	*					
81.49	0.0	*					
70.40	0.3	**					
60.82	0.3	**					
52.54	0.1	*					
45.39	0.3	**					
39.22	0.4	**					
33.88	1.0	****					
29.28	1.0	****					
25.30	2.4	*****					
21.86	2.8	*****					
18.89	3.9	*****					
16.32	3.8	*****					
14.11	4.9	*****					
12.19	12.8	*****					
10.54	13.9	*****					
9.11	7.5	*****					
7.87	8.4	*****					
6.81	9.8	*****					
5.89	8.0	*****					
5.09	7.6	*****					
4.40	0.0	*					
3.81	4.6	*****					
3.30	0.0	*					
2.86	0.0	*					
2.47	0.0	*					
2.14	5.8	*****					
1.86	0.0	*					
1.61	0.0	*					
1.40	0.0	*					
1.21	0.0	*					
1.05	0.0	*					
0.92	0.0	*					
0.80	0.0	*					
< 0.74	0.0	*					

PPM

NOTE : CONC SCALE IS LOGARITHMIC (INTERVAL = .063), VALUES ARE MID-POINTS OF CLASSES
 1980/1981 SOIL SERIES/REQUESTED BY P.KLENCHUK

ELEMENT	NO OF ANALYSES	RANGE	ARITH MEAN (M±2STD DEV)	GEO MEAN (M±2STD DEV)
LEAD	711 --	(4 TO	114 PPM 11.2 -(29)	9.0 -(32)

HAWK
~~LOG TRANSFORM HISTOGRAM FOR ZINC~~

		FREQUENCY (ARITHMETIC SCALE)					
		SCALED FOR LARGEST CLASS =100					
MID-POINT	FREQZ	0	20	40	60	80	100
) 745.00	0.0	*					
696.75	0.0	*					
609.43	0.1	*					
533.04	0.1	*					
466.24	0.1	*					
407.80	0.3	**					
356.69	0.3	**					
311.99	0.8	*****					
272.89	0.4	***					
238.69	1.8	*****					
208.78	3.7	*****					
182.62	3.8	*****					
159.73	4.6	*****					
139.72	6.0	*****					
122.21	4.4	*****					
106.90	7.6	*****					
93.50	7.9	*****					
81.79	10.5	*****					
71.54	10.0	*****					
62.58	7.7	*****					
54.74	8.7	*****					
47.89	5.8	*****					
41.89	4.1	*****					
36.65	3.4	*****					
32.06	2.1	*****					
28.05	0.6	***					
24.54	1.7	*****					
21.47	0.0	*					
18.78	0.4	***					
16.43	0.8	*****					
14.38	0.0	*					
12.58	0.1	*					
11.01	0.0	*					
9.64	0.0	*					
8.43	0.0	*					
(7.89	0.0	*					

PPM

NOTE :CONC SCALE IS LOGARITHMIC (INTERVAL=.05B), VALUES ARE MID-POINTS OF CLASSES
 1980/1981 SOIL SERIES/REQUESTED BY P.KLENCHUK

ELEMENT	NO OF ANALYSES	RANGE	ARITH MEAN (M+2STD DEV)	GEO MEAN (M+2STD DEV)
ZINC	711	-12 TO 586 PPM	97.5 (-228)	81.7 (-263)

HAWK
 LOG TRANSFORM HISTOGRAM FOR IRON
 FREQUENCY (ARITHMETIC SCALE)
 SCALED FOR LARGEST CLASS =100

MID-POINT	FREQ	0	20	40	60	80	100
) 3.89	0.0	*					
3.78	0.0	*					
3.58	0.0	*					
3.39	0.0	*					
3.21	0.0	*					
3.04	0.0	*					
2.87	0.0	*					
2.72	0.6	***					
2.58	1.8	*****					
2.44	0.6	***					
2.31	4.1	*****					
2.19	4.1	*****					
2.07	2.9	*****					
1.96	5.9	*****					
1.86	6.5	*****					
1.76	8.8	*****					
1.67	12.4	*****					
1.58	10.6	*****					
1.50	7.6	*****					
1.42	8.8	*****					
1.35	9.4	*****					
1.28	5.9	*****					
1.21	1.2	*****					
1.15	2.9	*****					
1.09	1.2	*****					
1.03	1.2	*****					
0.98	1.2	*****					
0.93	0.0	*					
0.88	0.6	***					
0.83	0.6	***					
0.79	0.0	*					
0.75	0.0	*					
0.71	0.6	***					
0.68	0.0	*					
0.64	0.6	***					
(0.63	0.0	*					

%
 NOTE : CONC SCALE IS LOGARITHMIC (INTERVAL = .024), VALUES ARE MID-POINTS OF CLASSES
 1980/1981 SOIL SERIES/REQUESTED BY P.KLENCHUK

ELEMENT	NO OF ANALYSES	RANGE	ARITH MEAN (M+2STD DEV)	GEO MEAN (M+2STD DEV)
IRON	170	.61 TO 2.6 %	1.58 (-2.32)	1.53 (-2.49)

HAWK
~~LOG TRANSFORM HISTOGRAM FOR MANGANESE~~
 FREQUENCY (ARITHMETIC SCALE)

SCALED FOR LARGEST CLASS =100

MID-POINT	FREQ%	0	20	40	60	80	100
) 5458.72	0.0	*					
5095.39	0.0	*					
4439.68	0.0	*					
3868.35	0.0	*					
3370.54	0.0	*					
2936.80	0.6	***					
2558.87	0.0	*					
2229.58	0.6	***					
1942.66	1.8	*****					
1692.67	1.8	*****					
1474.85	0.6	***					
1285.06	4.1	*****					
1119.69	5.3	*****					
975.60	5.3	*****					
850.06	5.9	*****					
740.67	11.8	*****					
645.36	8.2	*****					
562.32	11.2	*****					
489.96	10.0	*****					
426.91	6.5	*****					
371.98	7.1	*****					
324.12	5.9	*****					
282.41	4.7	*****					
246.07	1.2	*****					
214.41	2.4	*****					
186.83	2.4	*****					
162.79	0.6	***					
141.85	0.6	***					
123.60	0.0	*					
107.70	1.2	*****					
93.84	0.0	*					
81.77	0.0	*					
71.26	0.6	***					
62.09	0.0	*					
54.11	0.0	*					
(50.51	0.0	*					

PPM

NOTE :CONC SCALE IS LOGARITHMIC (INTERVAL=.059), VALUES ARE MID-POINTS OF CLASSES
 1980/1981 SOIL SERIES/REQUESTED BY P.KLENCHUK

ELEMENT	NO OF ANALYSES	RANGE	ARITH MEAN (M+2STD DEV)	GEO MEAN (M+2STD DEV)
MANGANESE	170	69 TO 2890 PPM	668.4 (1508)	562.2 (1876)

HAWK
~~LOG TRANSFORM HISTOGRAM FOR ARSENIC~~

FREQUENCY (ARITHMETIC SCALE)
 SCALED FOR LARGEST CLASS =100

MID-POINT	FREQZ	0	20	40	60	80	100
) 19.27	0.0	*					
18.10	0.0	*					
15.97	0.0	*					
14.10	0.0	*					
12.44	0.0	*					
10.98	0.0	*					
9.69	0.0	*					
8.56	0.6	**					
7.55	0.0	*					
6.67	0.6	**					
5.89	4.1	*****					
5.20	6.5	*****					
4.59	0.0	*					
4.06	14.1	*****					
3.58	0.0	*					
3.17	28.2	*****					
2.80	0.0	*					
2.47	0.0	*					
2.19	0.0	*					
1.94	25.9	*****					
1.71	0.0	*					
1.52	0.0	*					
1.34	0.0	*					
1.19	0.0	*					
1.06	20.0	*****					
0.94	0.0	*					
0.83	0.0	*					
0.74	0.0	*					
0.66	0.0	*					
0.58	0.0	*					
0.52	0.0	*					
0.46	0.0	*					
0.42	0.0	*					
0.37	0.0	*					
0.33	0.0	*					
(0.32	0.0	*					

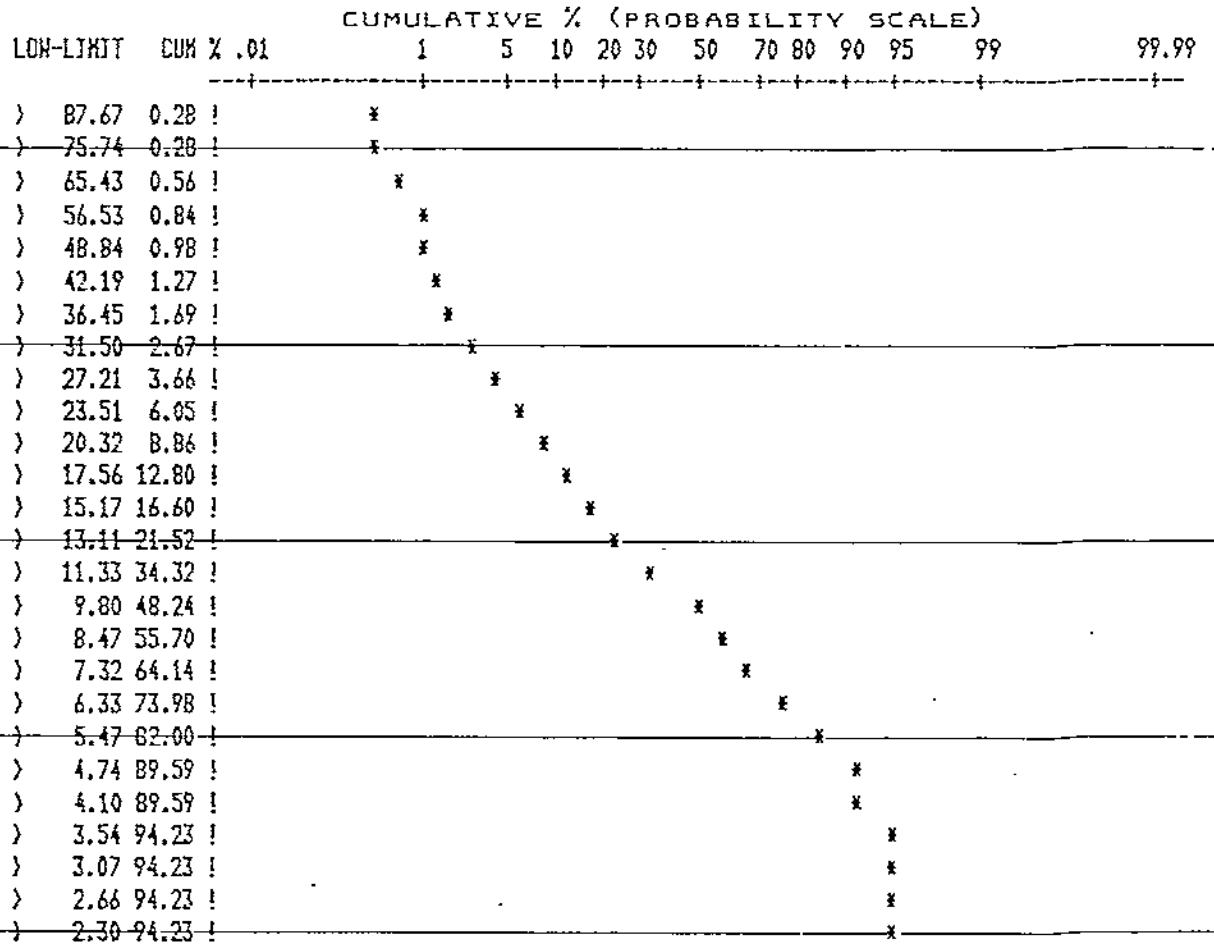
PPM

NOTE : CONC SCALE IS LOGARITHMIC (INTERVAL=.054), VALUES ARE MID-POINTS OF CLASSES
 1980/1981 SOIL SERIES/REQUESTED BY P.KLENCHUK

ELEMENT	NO OF ANALYSES	RANGE	ARITH MEAN (N+2STD DEV)	GEO MEAN (N+2STD DEV)
ARSENIC	170	<2 TO - 9 PPM	2.8 -- (-5)	2.4 -- (-7)

HAWK

CUMULATIVE PROBABILITY PLOT FOR LEAD



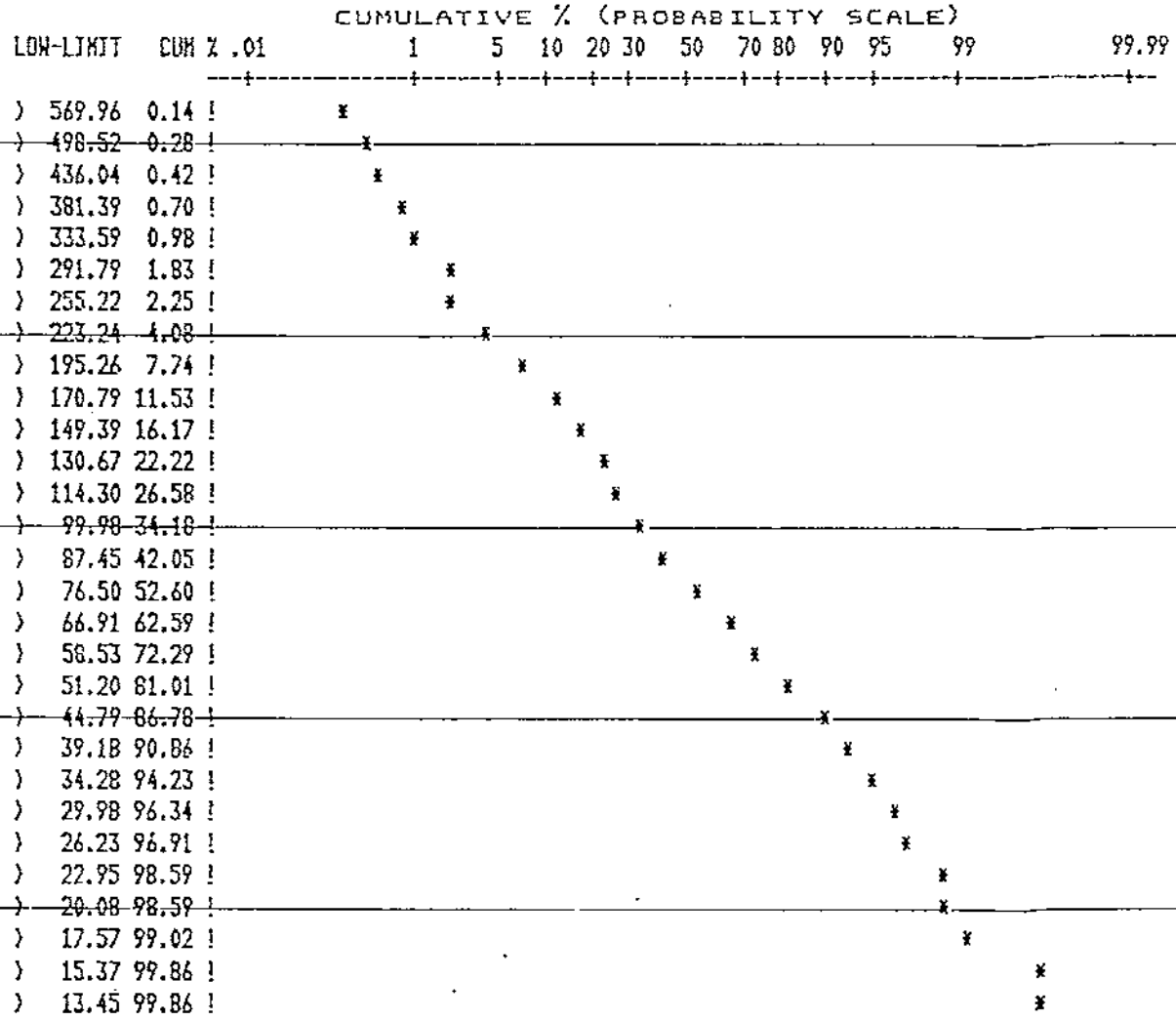
PPM

NOTE: CONCENTRATION SCALE IS LOGARITHMIC (INTERVAL=.063), VALUES ARE CLASS LOWER LIMITS
1980/1981 SOIL SERIES/REQUESTED BY P.KLENCHUK

ELEMENT	NO OF ANALYSES	RANGE	ARITH MEAN (N+2STD DEV)	GEO MEAN (N+2STD DEV)
LEAD	711	4 TO 114 PPM	11.2 (29)	9.0 (32)

HAWK

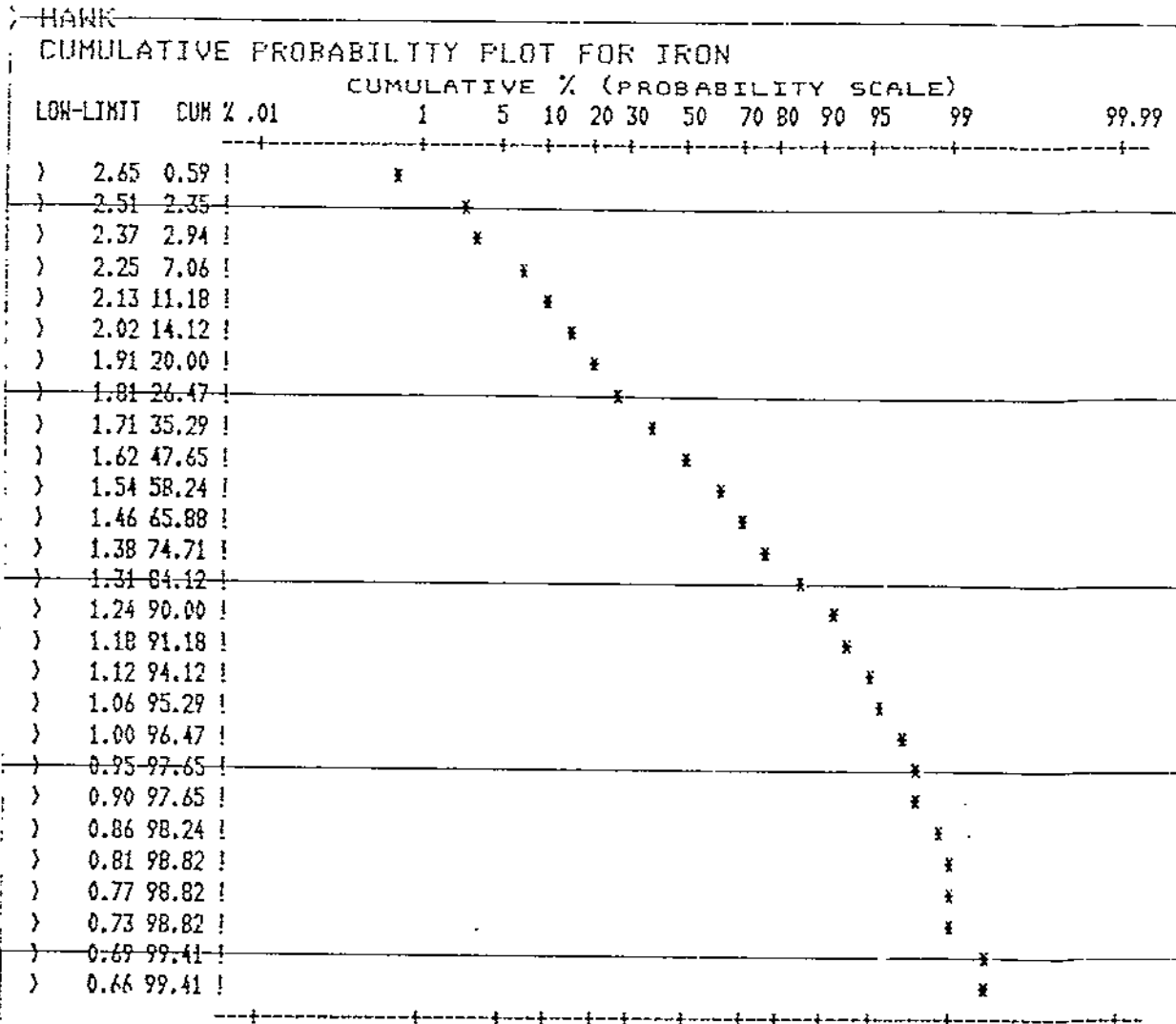
CUMULATIVE PROBABILITY PLOT FOR ZINC



PPM

NOTE: CONCENTRATION SCALE IS LOGARITHMIC (INTERVAL=.058), VALUES ARE CLASS LOWER LIMITS
1980/1981 SOIL SERIES/REQUESTED BY P.KLENCHUK

ELEMENT	NO OF ANALYSES	RANGE	ARITH MEAN (M+2STD DEV)	GEO MEAN (M+2STD DEV)
ZINC	711	12 TO	586 PPM 97.5 (228)	81.7 (263)

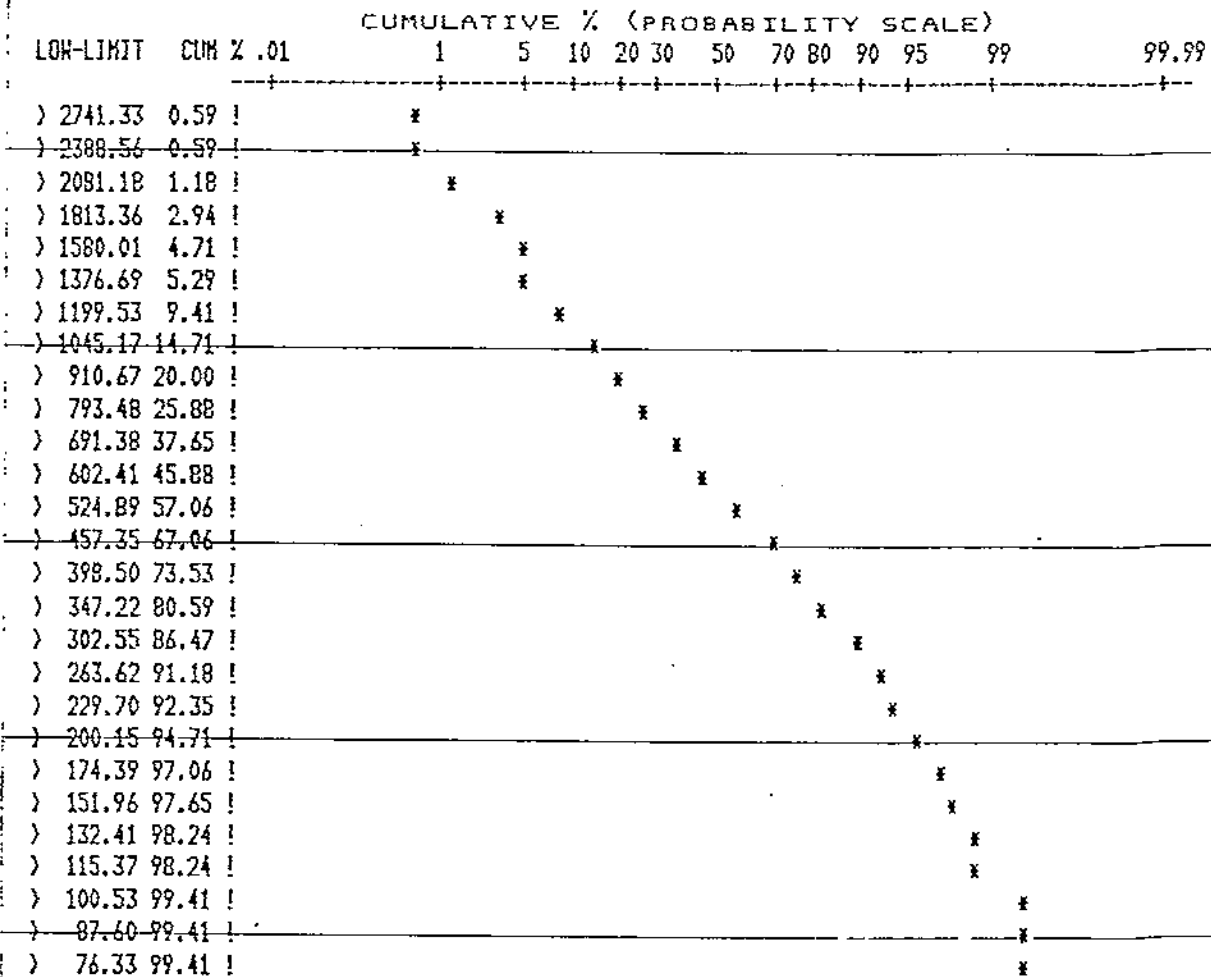


%
 NOTE: CONCENTRATION SCALE IS LOGARITHMIC (INTERVAL=.024), VALUES ARE CLASS LOWER LIMITS
 1960/1981-SOIL-SERIES/REQUESTED-BY-P-KLENCHUK

ELEMENT	NO OF ANALYSES	RANGE	ARITH MEAN (M+2STD DEV)	GEO MEAN (M+2STD DEV)
IRON	170	.61 TO 2.6 %	1.58 (2.32)	1.53 (2.49)

HAWK

CUMULATIVE PROBABILITY PLOT FOR MANGANESE



PPM

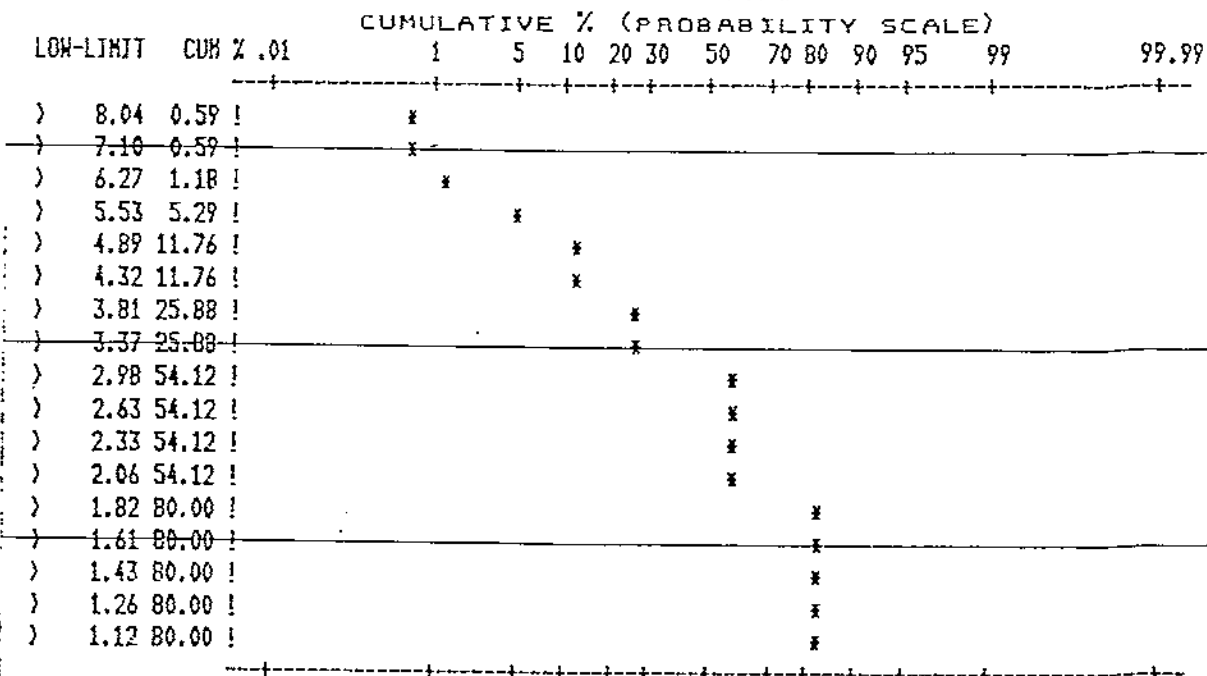
NOTE: CONCENTRATION SCALE IS LOGARITHMIC (INTERVAL=.059), VALUES ARE CLASS LOWER LIMITS

1980/1981 SOIL SERIES/REQUESTED BY P.KLENCHUK

ELEMENT	NO OF ANALYSES	RANGE	ARITH MEAN (M+2STD DEV)	GEO MEAN (M+2STD DEV)
MANGANESE	170	69 TO 2890 PPM	668.4 (1508)	562.2 (1876)

HAWK

CUMULATIVE PROBABILITY PLOT FOR ARSENIC



PPM

NOTE: CONCENTRATION SCALE IS LOGARITHMIC (INTERVAL=.054), VALUES ARE CLASS LOWER LIMITS
1980/1981 SOIL SERIES/REQUESTED BY P.KLENCHUK

ELEMENT	NO OF ANALYSES	RANGE	ARITH MEAN (M+2STD DEV)	GEO MEAN (M+2STD DEV)
ARSENIC	170	(2 TO	9 PPM 2.8 (5)	2.4 (7)

SUMMARY OF STATISTICS FOR HAWK

~~1980/1981 SOIL SERIES/REQUESTED BY P. KLENCHUK~~

ELEMENT	NO OF ANALYSES	RANGE	UNITS	ARITH MEAN (M+2STD DEV)	GEO MEAN (M+2STD DEV)
LEAD	711	114 TO	<4 PPM	11.2 (29)	9.0 (32)
ZINC	711	586 TO	12 PPM	97.5 (228)	81.7 (263)
IRON	170	2.63 TO	.6 %	1.58 (2.32)	1.53 (2.49)
MANGANESE	170	2890 TO	69 PPM	668.4 (1508)	562.2 (1876)
ARSENIC	170	9 TO	<2 PPM	2.8 (5)	2.4 (7)

EXHIBIT "A"
 STATEMENT OF EXPENDITURES
 TRENCHING AND SOIL GEOCHEMISTRY
 HAWK 1 CLAIM
 FORT STEELE MINING DIVISION

Salaries

L.J. Molnar	2 days @ \$60/day	\$	120.00
B.P. Smith	2 days @ \$60/day		120.00
H.G. Roesler	2 days @ \$60/day		120.00
P.T. Gilbert	2 days @ \$60/day		120.00
Domicile	5 man days @ \$25/day		125.00
Supervision	M. Waskett-Myers - 2 days @ \$130.00/day		260.00
Analysis	163 soils for Pb/Zn @ 3.05 per sample		497.15
	171 soils (1980) for Fe/Mn/As @ 5.60 per sample		957.60
	9 waters for Cu/Zn/Fe/Mn/So ₄ @ 13.75 per sample		123.75
Materials	Flagging, Sample bags etc.		100.00
Transportation	8 days @ \$25/day		200.00
Computer Time	Statistical package		30.00
Report Preparation	2 days - P. Klewchuk @ \$195/day		390.00
			\$ 3,163.50
	+ PAC		836.50

Trenching

Henderson Heavy Hauling	320.13
Johnson's Cat	1,050.00
Geologist Supervision - 6 days - P. Klewchuk @ 195/day	1,170.00
Total	\$2,540.00

Total to be applied \$6,000 - For 2 years

P. Klewchuk
 P. KLEWCHUK, Geologist

IN THE MATTER OF THE

B.C. MINERAL ACT

AND

IN THE MATTER OF A TRENCHING AND SOIL GEOCHEMISTRY PROGRAM

CARRIED OUT ON THE HAWK 1 MINERAL CLAIM

YAHK AREA

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

More Particularly N.T.S. 82F/1

A F F I D A V I T

I, P. Klewchuk, of the City of Kimberley, in the Province of British Columbia, make Oath and say:

1. That I am employed as a Geologist by 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 Trenching and Soil Geochemistry program, on the Hawk 1 Mineral Claim.
3. That the said expenditures were incurred between August and September 1981 for the purpose of mineral exploration on the above noted claim.

P. Klewchuk

P. KLEWCHUK
Geologist

COMINCO LTD.

EXPLORATION

WESTERN DISTRICT

AUTHOR'S QUALIFICATIONS

As author of this report I, Peter Klewchuk certify that:

I am employed by Cominco Ltd. as a geologist active in minerals exploration.

I am a graduate of the University of British Columbia with a degree of Bachelor of Science and a graduate of the University of Calgary with a degree of Master of Science.

I have been continuously engaged in geology and mineral exploration for 10 years.

I am a member of the Geological Association of Canada.

P. Klewchuk

P. KLEWCHUK
Geologist



● YAHK

M. DYK

3000

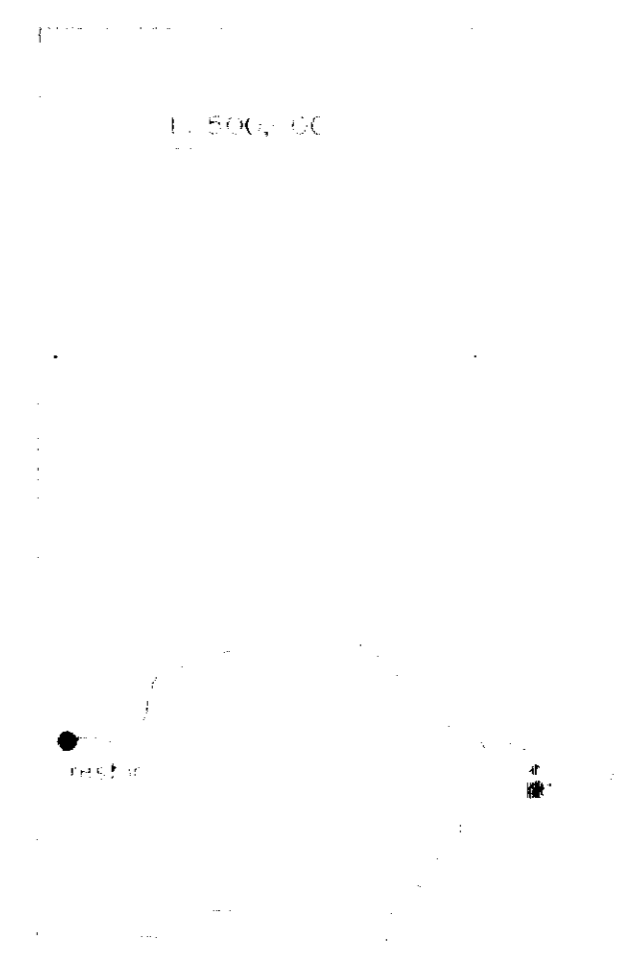
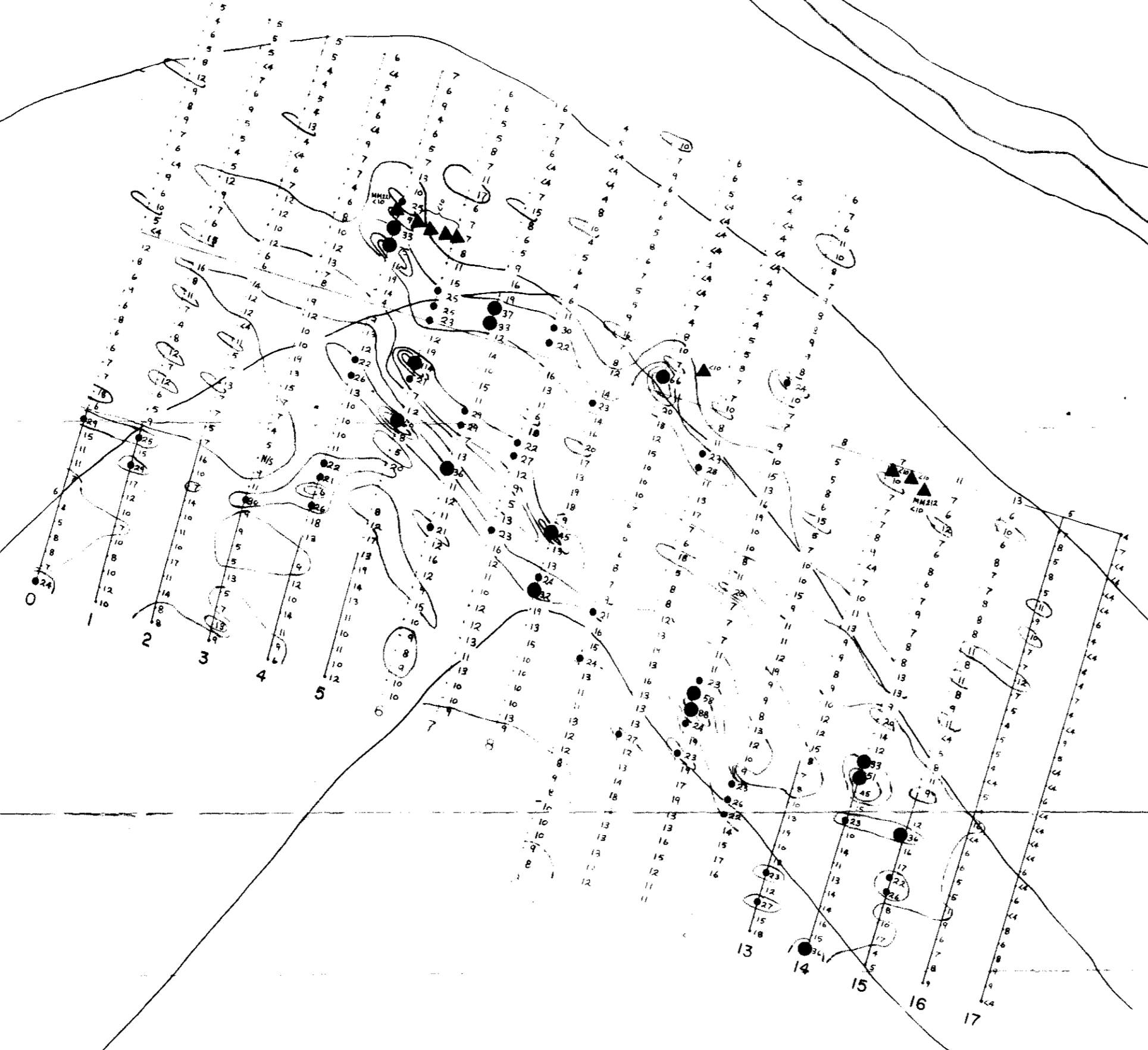
Stream boundary

3000

3500

4000

4500



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
10,498

LEGEND

- > 31 ppm
- 21-31 ppm
- < 4-20 ppm

CONTOURS (ppm LEAD)

- 10-19
- 20-39
- 40-59
- 60+

▲ Water sample
Cu ppb

HAWK PROPERTY		
Drawn by	Traced by	
Revised by	Revised by	SOIL SAMPLING GRID LEAD VALUES (ppm)
M.W.M. Oct 1981		
		1981



● YAHK

MUYE W.K.

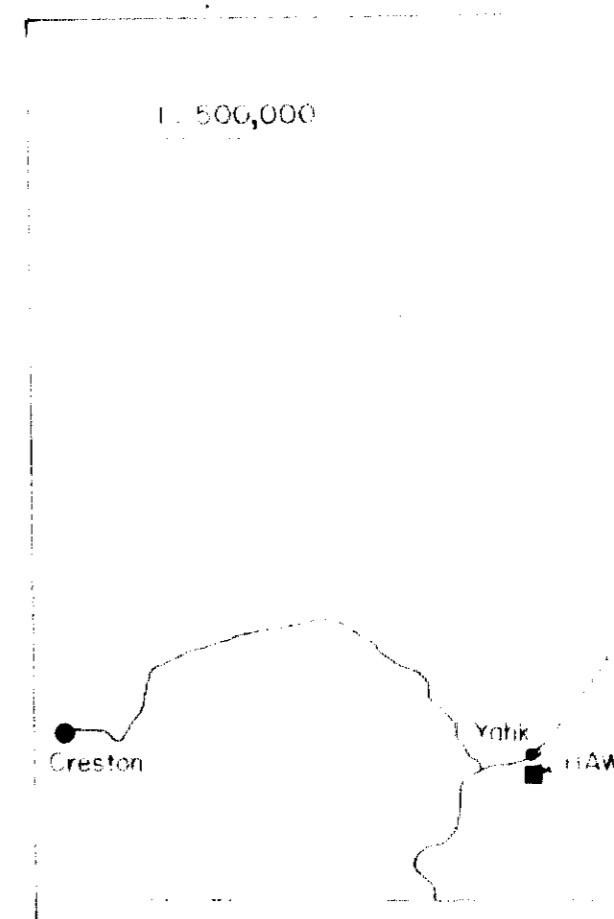
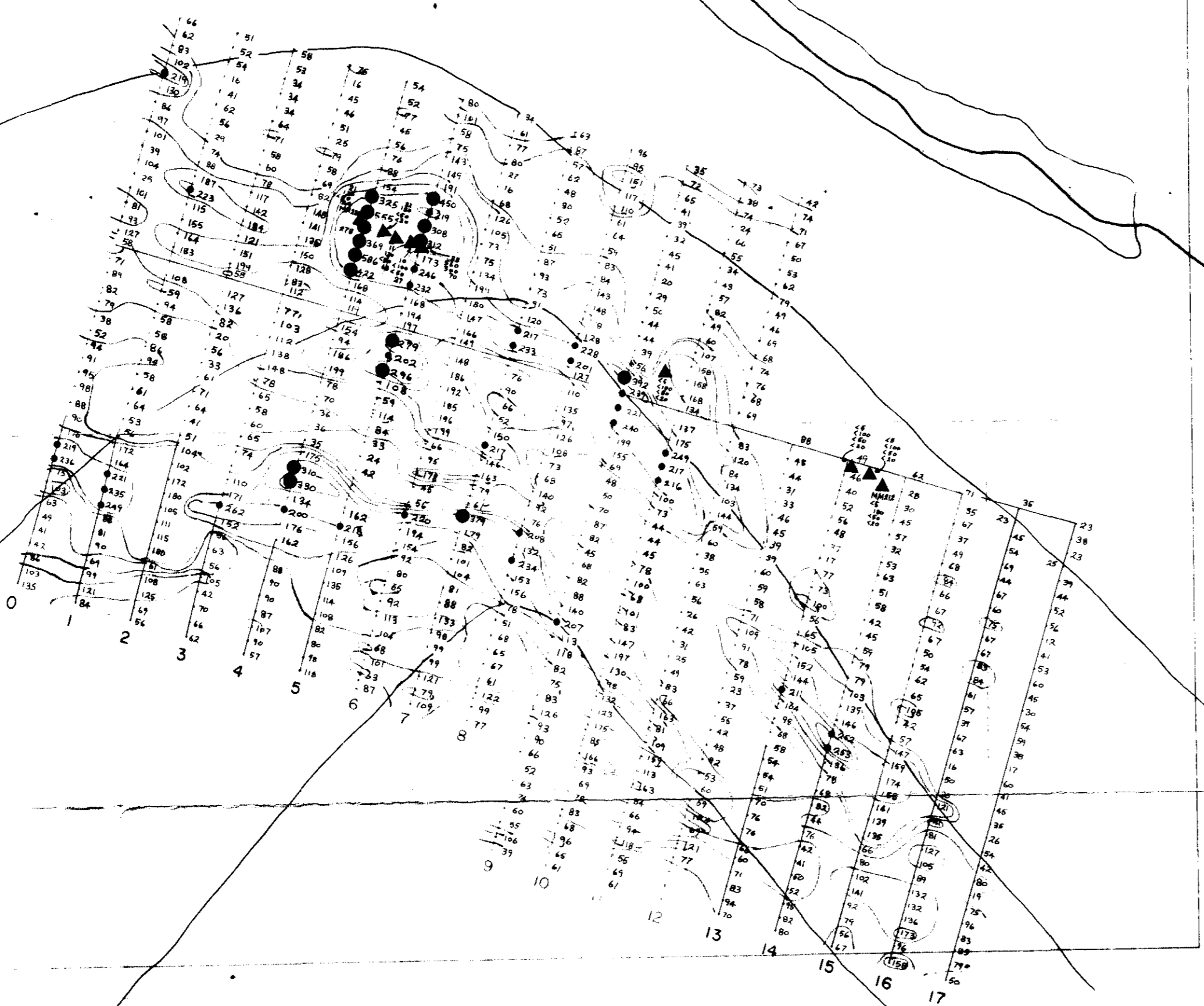
3000

HAWKINS CK

Claim Boundary

3000

3500



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT

10498
NO.

LEGEND

- > 266 ppm
- 200-266 ppm
- 5-199 ppm
- ▲ Water sample
- Zn } ppb
- Fe } ppb
- Mn } ppb
- S₀₄ mg/L

CONTOURS (ppm ZINC)

- 70-99
- 100-149
- 150-199
- 200-249
- 250 +

Scale 1:200 300m

HAWK PROPERTY, YAHK B.C.

Drawn by	Traced by
Revised by	Revised by
Date	Date

SOIL SAMPLING GRID
ZINC VALUES (ppm)

Scale 1:7500 Date SEP 1981 Page 2





● YAHK

MOYIE RIVER

3000
HAWKINS CK

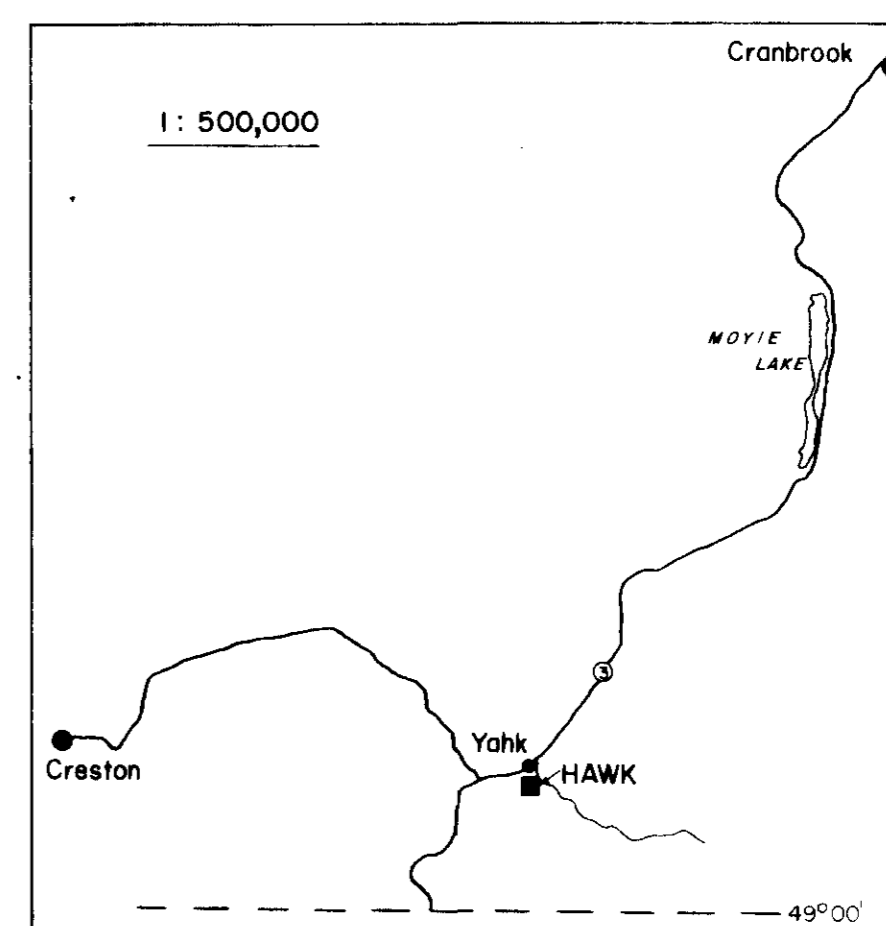
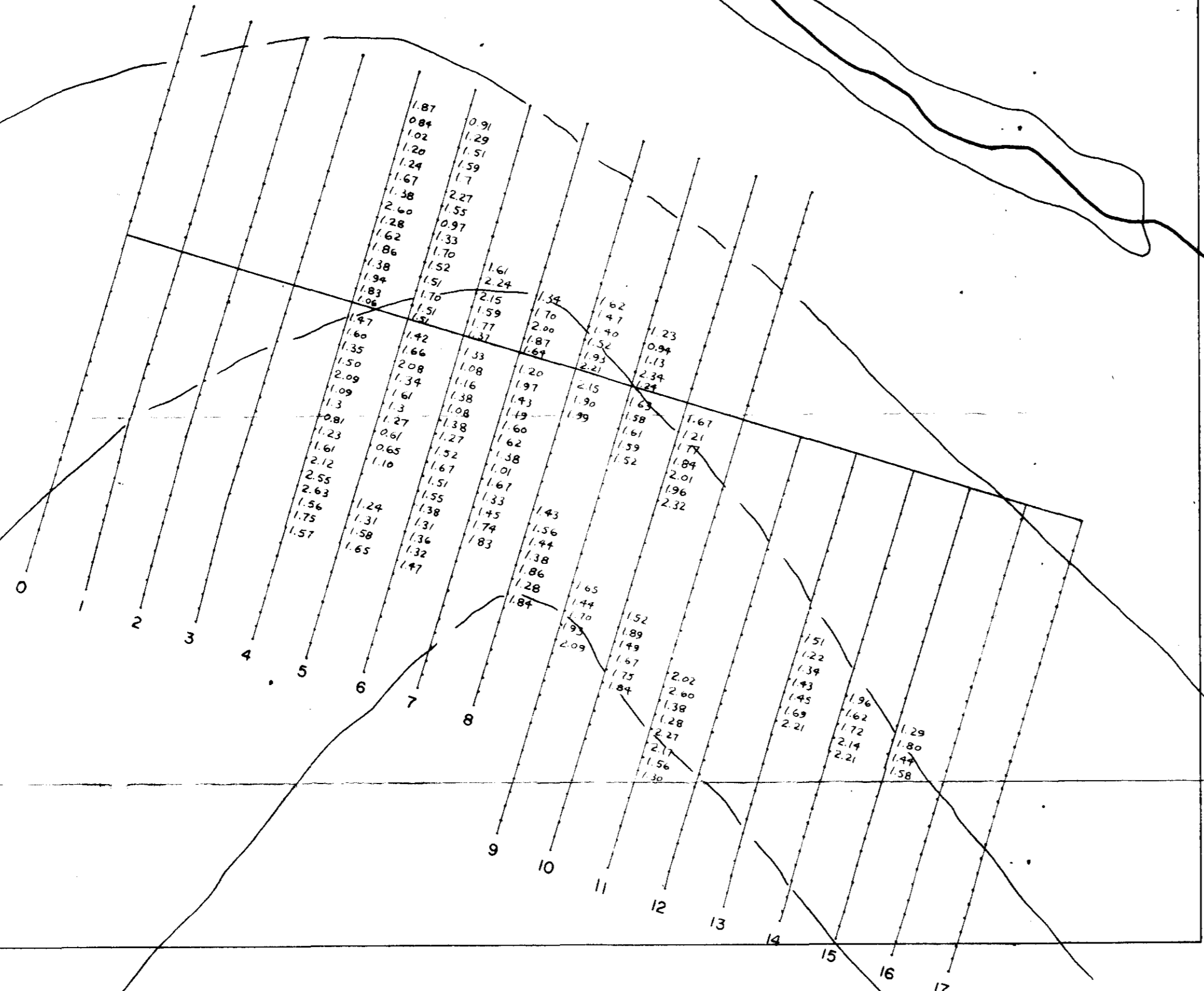
Claim Boundary

3000

3500

4000

4500



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
10,498
NO.

0 100 200 300m

HAWK PROPERTY, YAHK B.C.



Drawn by: Y.W.M.		Traced by:	
Revised by	Date	Revised by	Date

SOIL SAMPLING GRID
IRON VALUES (%)

Scale: 1:7500 Date: SEP 1980 Plate: 3



● YAHK

MOYIE RIVER

3000

HAWKINS CK

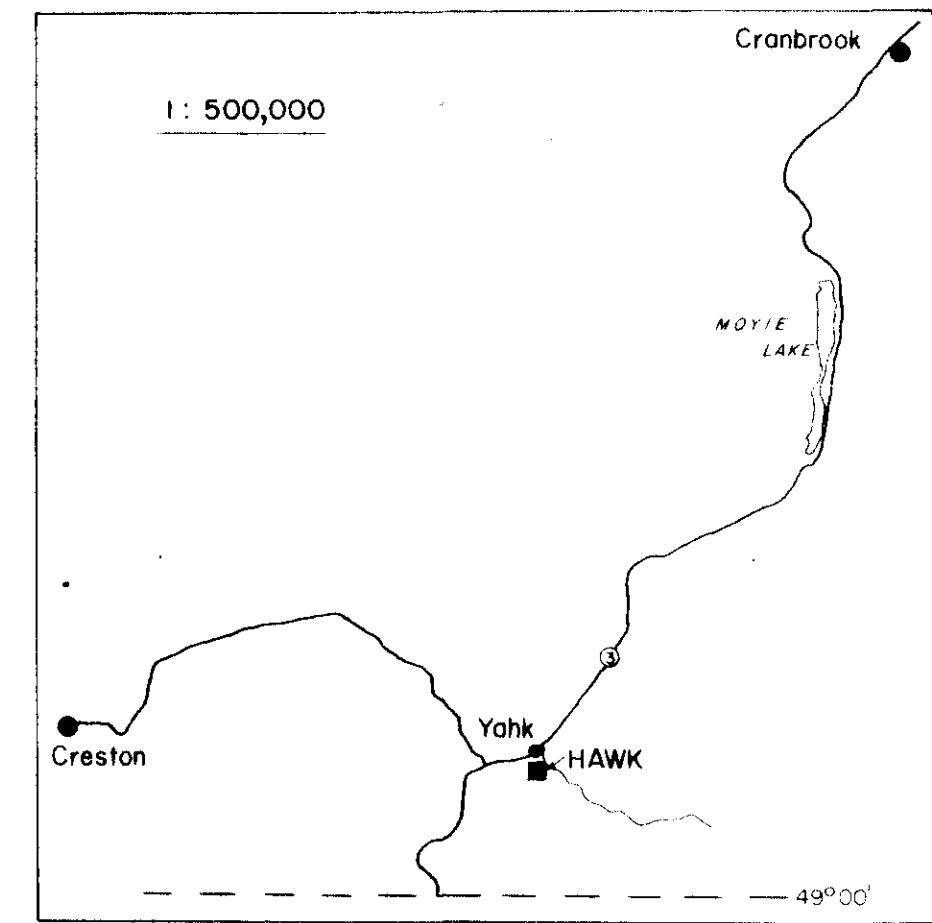
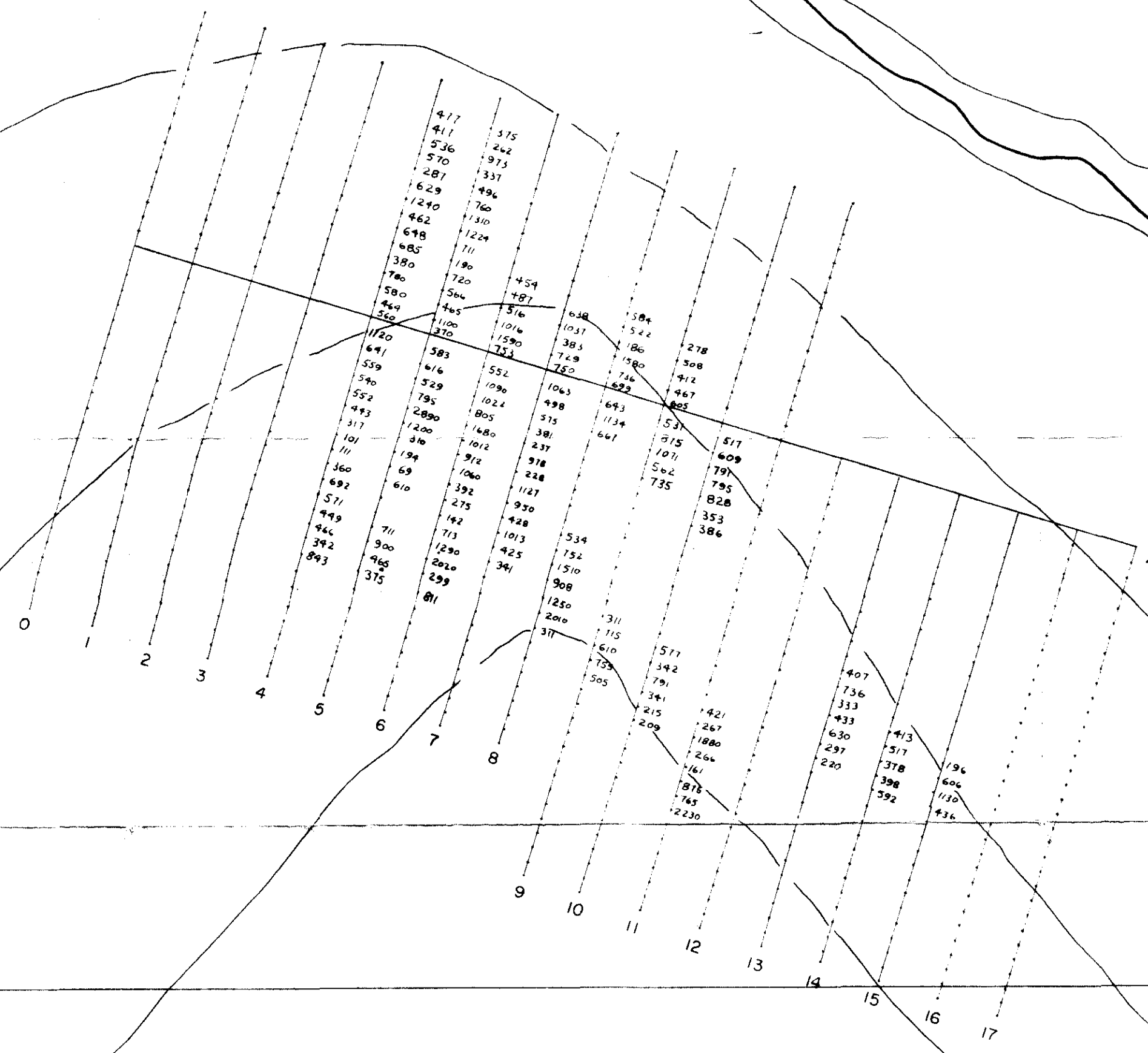
Claim Boundary

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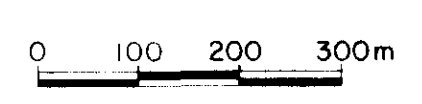
3500

4000

4500



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
10,498



HAWK PROPERTY, YAHK B.C.				
Drawn by: H.W.M.	Traced by:			
Revised by: []	Date: []	Revised by: []	Date: []	SOIL SAMPLING GRID MANGANESE VALUES (ppm)
Scale: 1:7500				Date: SEP 1980
				Plate: 4



● YAHK

MOYIE RIVER

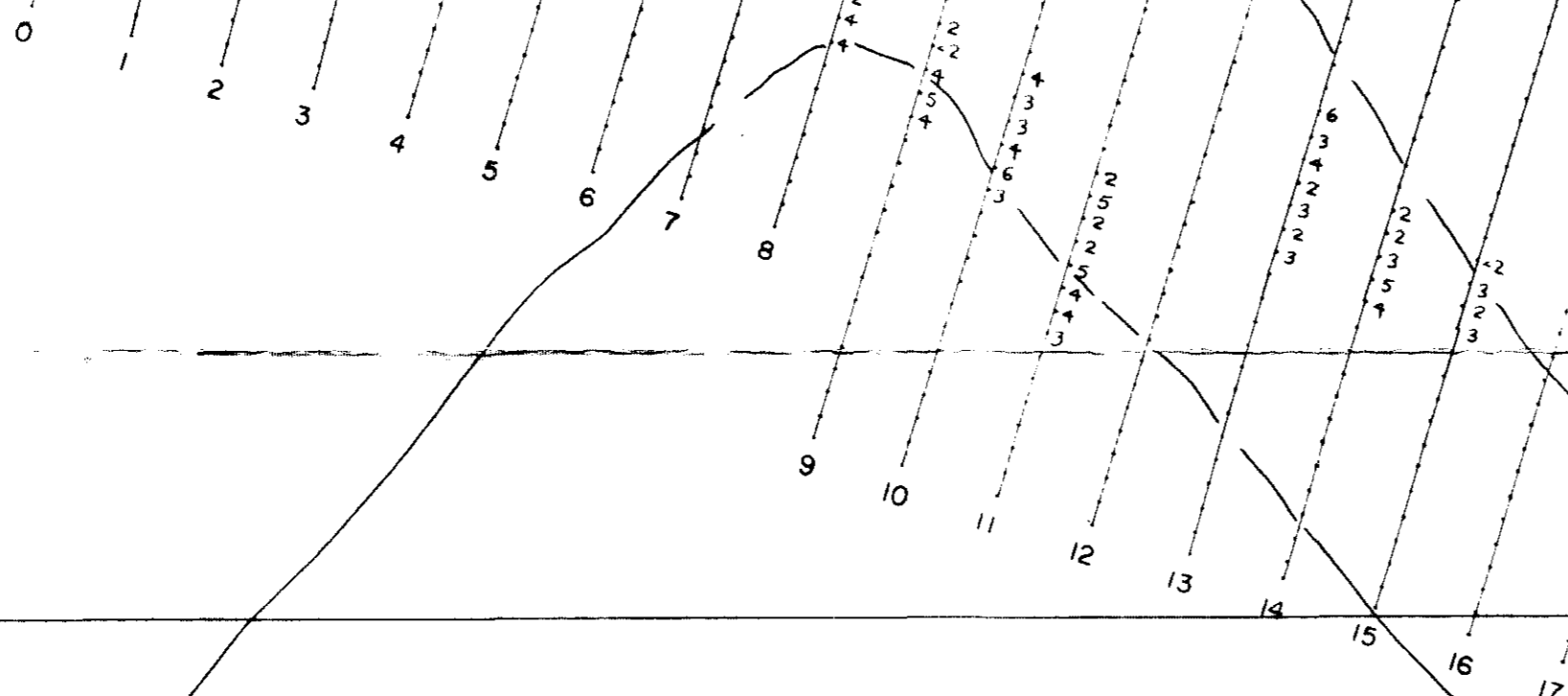
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HAWKINS CK

Claim Boundary

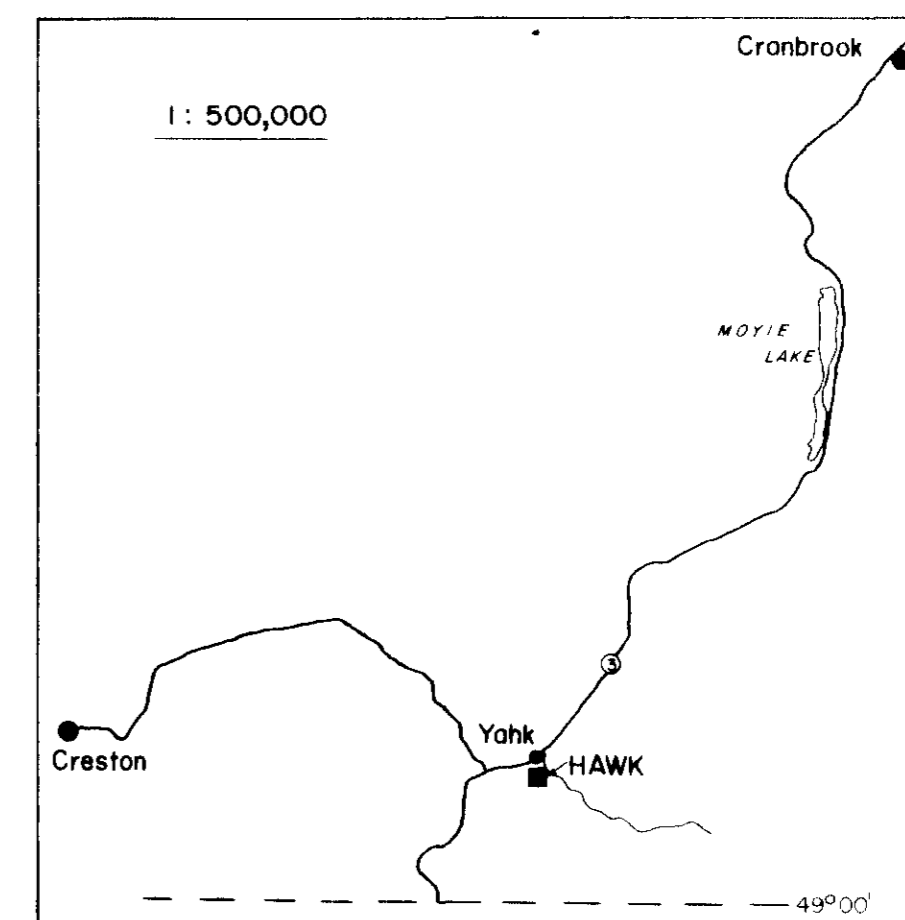
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3500



4000

4500



MINERAL RESOURCES DIVISION
ASSESSMENT REPORT
10,498
No.

0 100 200 300m

HAWK PROPERTY, YAHK B.C.				
Drawn by: H.W.M.	Traced by:			
Revised by: _____	Date: _____	Revised by: _____	Date: _____	SOIL SAMPLING GRID ARSENIC VALUES (ppm)
Scale: 1:7500		Date: SEP 1980		Plate: 5



● YAHK

MOYIE RIVER

3000

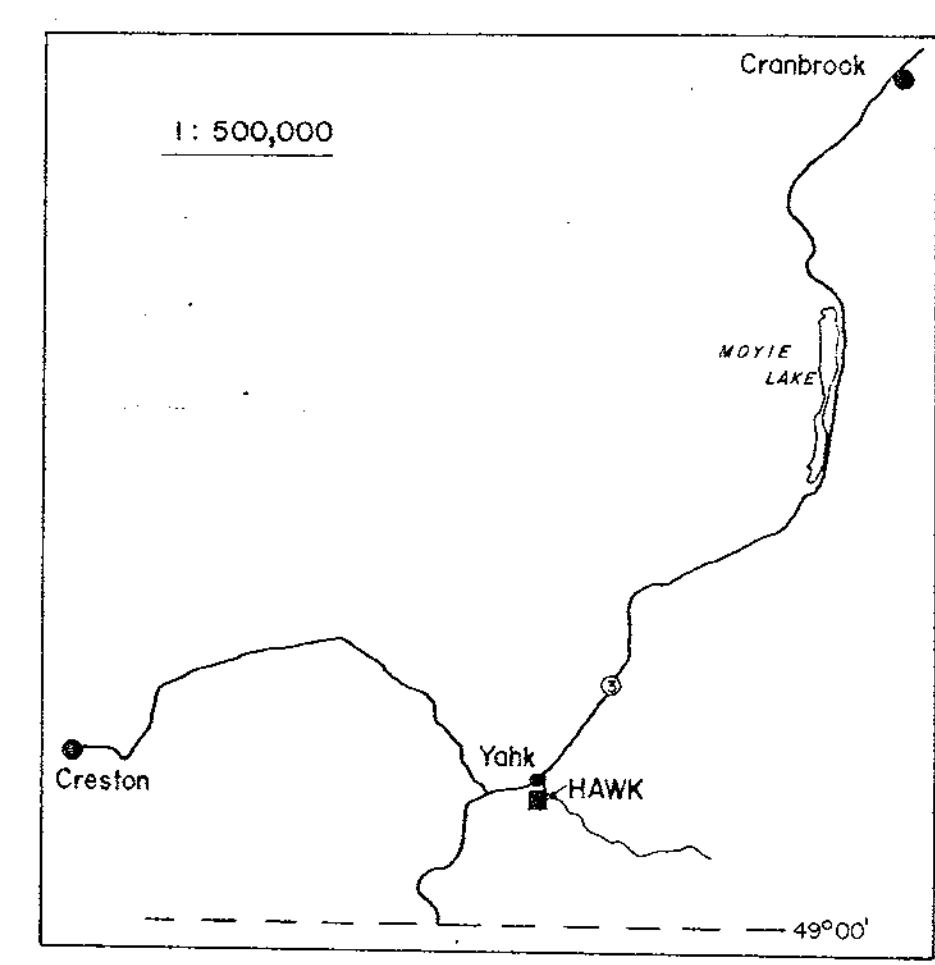
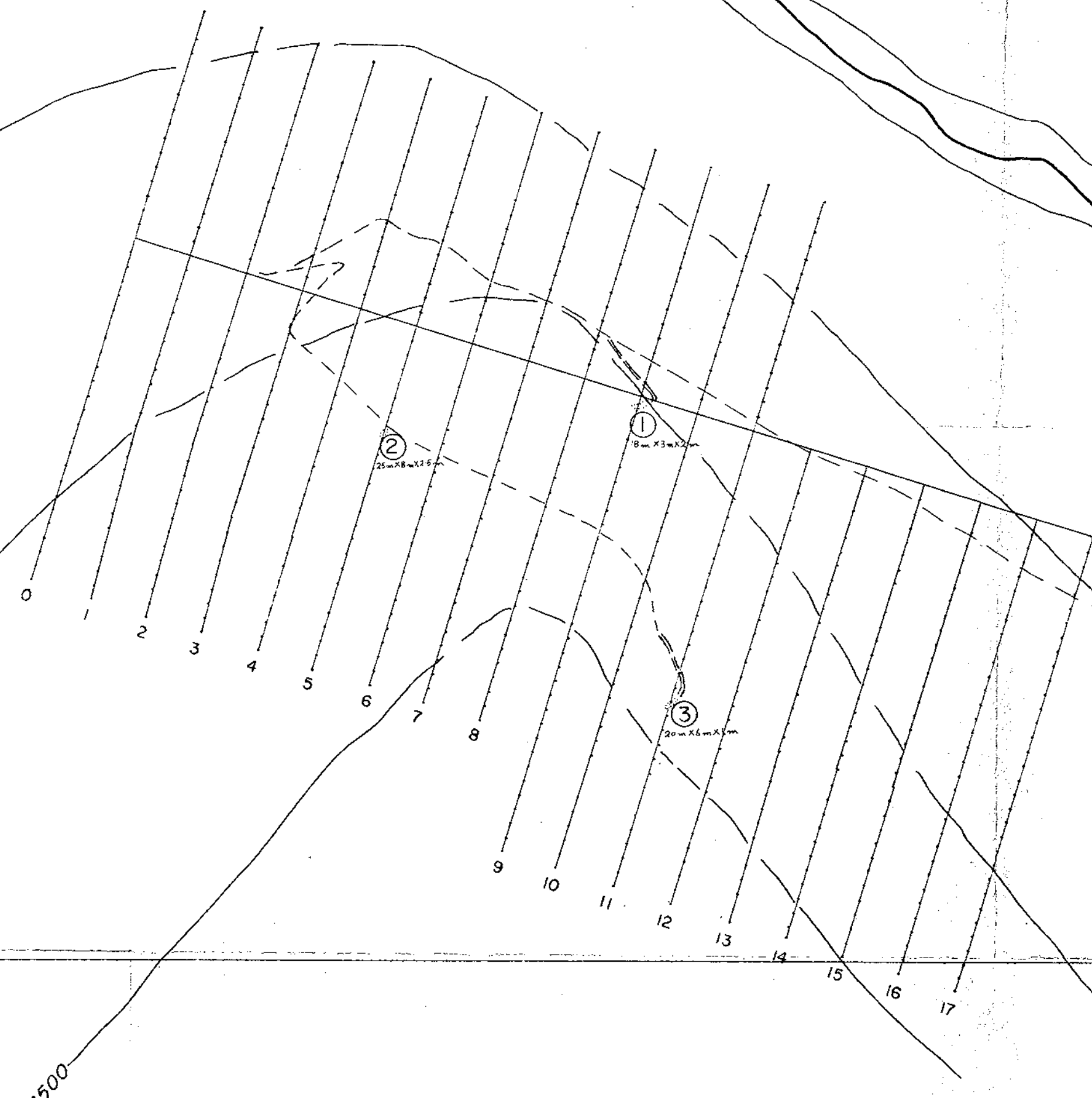
HAWKINS CK

Claim Boundary

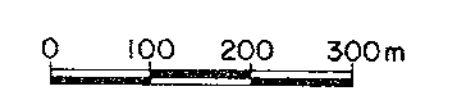
LEGAL CORNER POST

3000

3500



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
10,498



HAWK PROPERTY, YAHK B.C.				
Drawn by: J.W.M.	Traced by:			
Revised by:	Date:	Revised by:	Date:	
SOIL SAMPLING GRID				
ROAD AND TRENCH LOCATIONS				
Scale: 1:7500		Date: SEP 1980	Plate: 6	