5797

A GEOCHEMICAL REPORT

on the

OXIDE M.C. GROUP

3 MILES EAST OF YMIR, B.C.
PORCUPINE CREEK AREA
NELSON MINING DIVISION
BRITISH COLUMBIA

MINERAL CLAIM MAP N.T.S. 82-F/6East

LATITUDE: 49° 16'N
LONGITUDE: 117° 09'W

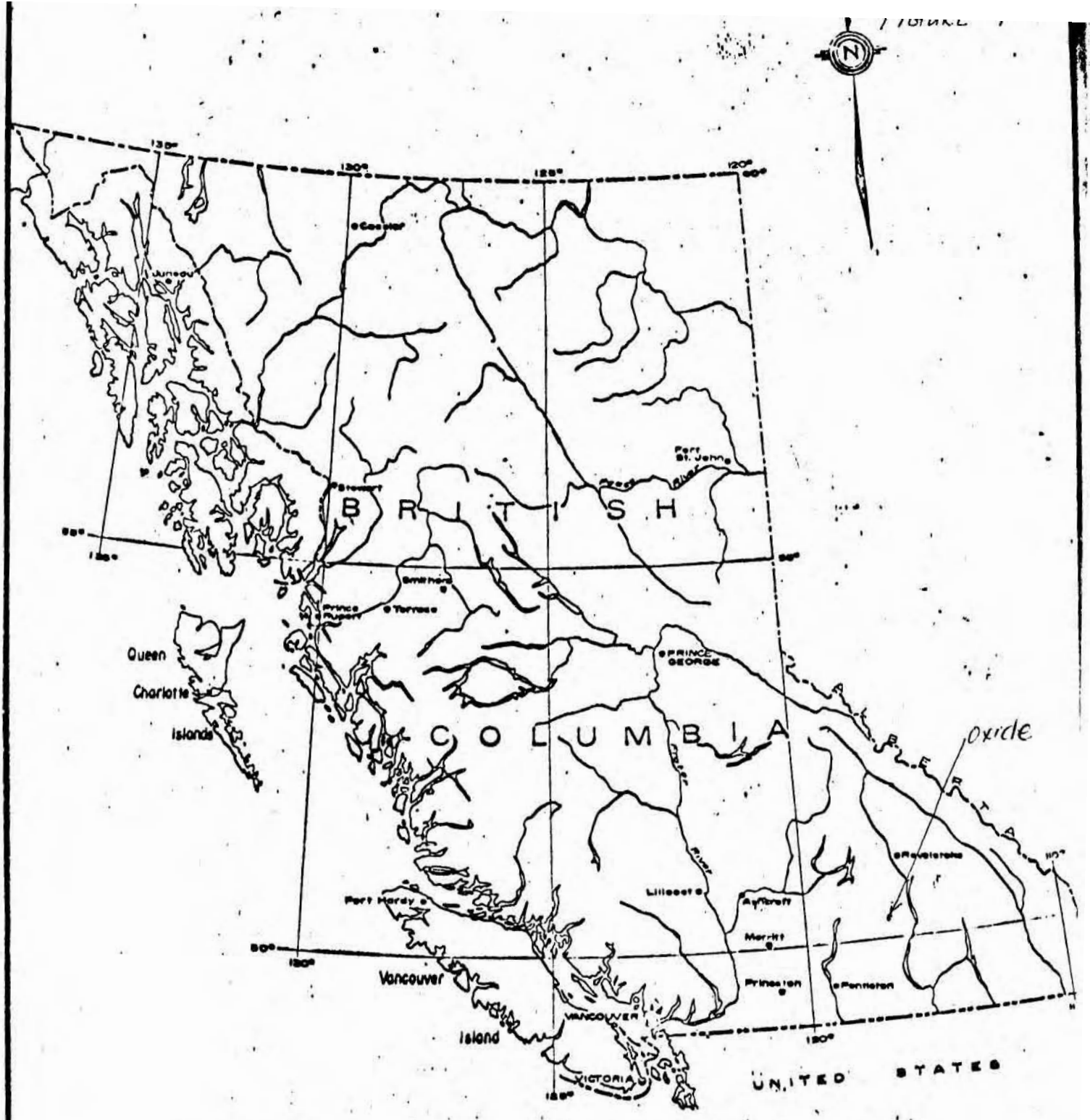
for

JACK BUTULA

by

PETER F. TEGART
Geologist

FIELD WORK: September-October 1975
REPORT: February 1976



5797 M-1

SEREM LTD.

LOCATION MAP

Scale: 1" = 100 miles

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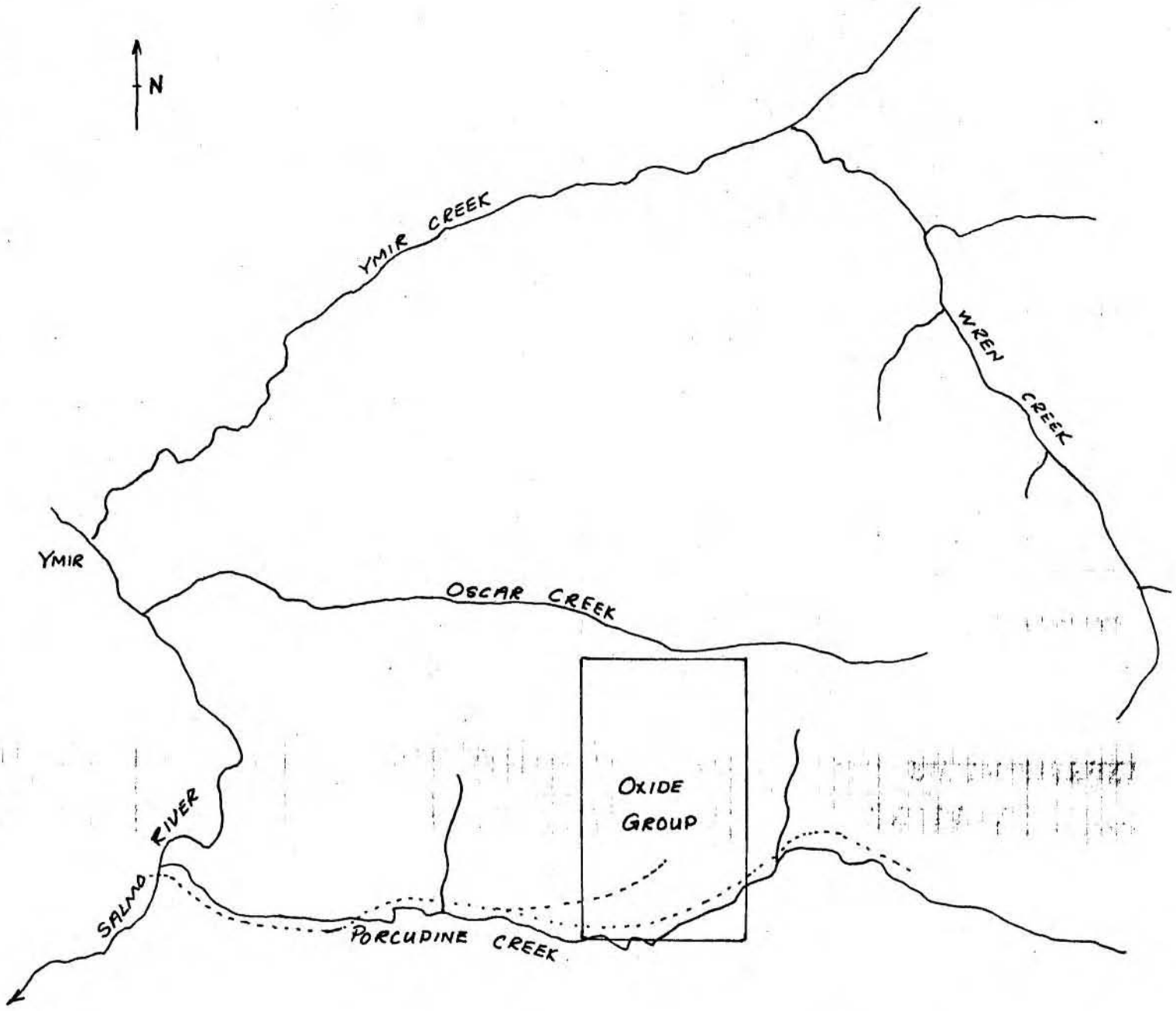
FIGURE # 2



MAP:- 82 F/6E

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I. INTRODUCTION

In September, 1975, Peter Tegart visited the Oxide Group on Porcupine Creek for the purpose of investigating and co-ordinating a geochemical soil survey on parts of the property.

The downward extension of the oxide showings was investigated by establishing a survey grid over the lower talus covered portions of the slope for the purpose of collecting soil samples.

These samples were collected by Jack Butula and sent to Vancouver Geochem Laboratories in Vancouver for analysis of lead and zinc.

This report describes the work done on the Oxide Group, discusses the results and presents conclusions and recommendations.

2. PROPERTY AND OWNERSHIP

Mineral Claim	Record No.	Date of Recording
Oxide (15)	2	March 26, 1975

The Oxide Group is owned by Mr. Jack Butula, 1423 Columbia Avenue, Trail, B.C.

3. LOCATION AND ACCESS

The Oxide Group is located three miles east of Ymir, British Columbia on the north side of Porcupine Creek, N.T.S. Map Sheet 82-F (Nelson)

The property lies on Mineral Claim Map 82F/6E at latitude 49° 16' North and longitude 117° 09' West.

Access to the property is by road three miles up Porcupine Creek from a turn-off on the Salmo-Nelson highway, six miles north of Salmo, B.C. A property access road traverses the property from the lower elevations on Porcupine Creek to the ridge at 5,100 feet elevation on the north end of the property.

4. PHYSIOGRAPHY

The Oxide Group straddles a high (elevation 5,500 feet) east-west striking ridge on the north side of Porcupine Creek (elevation 3,000 feet). However, the claims lie predominantly on the south facing slope of ridge which has gentle slopes near the bottom and steeper cliffs at the top.

Timberline is at 6,500 feet above sea level in the area so that whole claim block is covered with fairly dense underbrush.

Outcrops are scarce throughout the area at lower elevations but a few carbonate bluffs are evident on the upper slopes.

5. GEOCHEMICAL SURVEY OF SOILS

5.1. Survey Method

A 2,400 foot north-south base-line with cross-lines every 200 feet was chained and flagged. Cross-lines extended 1000 feet on either side of the base line making a total grid coverage of 2,000 feet by 2,400 feet.

Soil samples were taken at 100 foot intervals along the cross-lines. Stations were marked with flagging tape denoting the sample location.

5.2 Sampling Method

The soil samples were taken from the light brown weathering B horizon just below the humus and root level of the A horizon. The B horizon is well developed in the area, especially on the lower slopes.

Many small creek depressions were encountered during sampling but the soils were taken from higher up on the banks to avoid run-off contamination from above. Soil samples were put into brown manila envelopes and marked with the station number. Samples were dried prior to shipment to the North Vancouver laboratory.

5.3 Assay Method

Assays were run for Pb and Zn by Vancouver Geochemical Laboratories (Assay report #75 79013)

Samples were further dried in a hot air dryer, then sifted to -80 mesh. 0.50 g. portions of the -80 mesh fraction were weighted with a torsion balance.

Extraction was by hot $HClO_4$ and HNO_3 digestion and detection by using a Techtron AAS (Atomic Absorption Spectromphotometer).

5.4 Results and Interpretation

The analyses were interpretted based on the assumption that the concentrations of lead and zinc in the soil samples follow a log-normal distribution. For each of the two elements a logarithmic interval was chosen so as to include the logarithms of the lowest and highest values for its concentration in PPM. The logarithmic intervals were divided into "cells", each cell having a logarithmic "width" of 0.07 (this figure was chosen arbitrarily so as to give a convenient number of cells). For each element, the samples were assigned to cells according to the concentration of the element, and using the groupings thus determined frequencies, cumulative frequencies and cumulative percent frequencies were calculated (see Tables 1 and 2). The results were plotted on logarithmic-probability graph paper as Cumulative Percent Frequency vs. PPM.

The method outlined above is similar to that described by Lepeltier (1969), although Lepeltier's suggestions have not been followed rigorously.

Lead (see Figure 1)

With the exception of the uppermost and lowermost concentrations of lead (26 PPM and 730 PPM respectively), the graph of Cumulative Percent Frequency vs. PPM Lead forms reasonable approximations of straight lines. Each of the straight lines is considered to define a group of samples (the word population is avoided as two groups could actually be part

of the same population), and at least two groups for concentration of lead in the soils exist. The lower group, which probably represents background values, contains concentrations up to about 66.1 PPM lead. The upper group contains concentrations from 66.1 PPM to the highest one, 730 PPM.

The upper group may be divisible into two smaller ones, with the division at 125.9 PPM Lead, as has been done on Figure 1, although the data are inconclusive in that respect.

The change of slope of the graph above 66.1 PPM lead, and particularly above 125.9 PPM lead, indicates that there is an excess of high concentrations of lead in the soil samples.

With this type of data, it is common procedure to consider those results which fall within the upper 2.5 percentile as being anomalous, and such results are indicated on Figure 4. However, in this case so few results fell within that percentile that the author has decided to study the groups defined by the breaks in slope on Figure 1 instead.

In Figure 3 the concentrations of lead in the soils have been plotted on a plan view of the sampling grid, and those values above 66.1 PPM and 125.9 PPM lead indicated. In Figure 4 the areas on the grid containing concentrations of lead above 66.1 PPM and 125.9 PPM lead have been outlined. The outlines should not be viewed as contours, and are only approximate.

They could, however, be guides to mineralized areas. A comparison with the geology of the grid area, and checking in the field would be necessary to determine their significance.

Zinc (See Figure 2)

The graph of Cumulative Percent Frequency, vs. PPM Zinc is somewhat inconclusive. The lower zinc concentrations, below 976 PPM, define a straight line representative of a population. Zinc concentrations above 976 PPM are somewhat scattered and do not clearly define a line. It does, however, appear that there is a slight excess of high zinc concentrations. Somewhat arbitrarily, 976 PPM has been chosen as the division between a lower (background) group of zinc concentrations and an upper group that could be a guide to zinc mineralization.

In Figure 3 the concentrations of zinc in the soils have been plotted below the lead concentrations, and those zinc concentrations above 976 PPM are indicated. In Figure 5, the areas containing concentratons of zinc above 976 PPM have been outlined. As in Figure 4, the outlines should not be viewed as contours and are only approximate.

Comparison of Lead and Zinc

A comparison of Figures 4 and 5 show only one readily identifiable correlation between high concentrations of lead and zinc in the soils. This is in the area bounded by E3 on the east, W4 on the west and S7 on the north. Within that area, the largest zone of zinc concentrations above 976 PPM approximately coincides with the largest zone of lead concentrations above 125.9 PPM. These two zones are elongated in a north-south direction, and their southern boundaries are unknown as the sampling grid does not extend far enough south.

6. CONCLUSIONS AND RECOMMENDATIONS

The author has limited information concerning the geology of the area in which the soil samples were collected, nor any concerning the geomorphology and the types of soils collected. This necessarily limits the scope of the conclusions that can be reached.

It has been possible to outline some areas of high lead concentrations in the soils and a few of high zinc concentrations (Figures 4 and 5). These outlines should be compared with geological and geomorphological information and the areas checked in the field for mineralization in order to determine their significance.

The most interesting area outlined is that described under "Comparison of Lead and Zinc." Part of the apparent north-south alignments in Figures 4 and 5 are due to the longer interval between samples in a north-south direction, but this interesting area has a definite north-south elongation. Soil sampling should be extended to the south in order to determine its limits.

Many of the other areas of higher lead concentrations are bounded on one or more sides by the limits of the sampling grid, and it would also be useful to extend the grid to the north, and, less important, to the east and west.

Reference:

Lepeltier, Claude: "A Simplified Statistical Treatment of Geochemical Data by Graphical Representation", Economic Geology, Vol. 64, 1969, pp. 538-550

TABLE I

CALCULATIONS FOR CUMULATIVE FREQUENCY

LEAD

Cell Boundaries Logarithmic	PPM Lead	Frequency	Cumulative Frequency	Cumulative % Frequency
1.40	25.1			
		1	1	0.05
1.47	29.5			
		8	9	4.64
1.54	34.7			
		14	23	11.86
1.61	40.7			
		28	51	26.29
1.68	47.9			
		36	87	44.85
1.75	56.2			
		30	117	60.31
1.82	66.1			
		24	141	72.68
1.89	77.5			
		13	154	79.38
1.96	91.2			
		15	169	87.11
2.03	107.2			
		9	178	91.75
2.10	125.9			
		2	180	92.78
2.17	147.9			
		6	186	95.88
2.24	173.8			
		3	189	97.42
2.31	204.2			
		1	190	97.94

Cell Boundaries Logarithmic	PPM Lead	Frequency	Cumulative Frequency	Cumulative % Frequency
2.38	239.9			
		1	191	98.45
2.45	281.9			
		1	192	99.48
2.52	331.2			
		1	193	
2.59	389.1			
2.66	457.1			
2.73	537.0			
2.80	631.0			
		1	194	100.00
2.87	741.3			

Logarithmic Cell Intervals 0.07

TABLE II

CALCULATIONS FOR CUMULATIVE FREQUENCY

ZINC

Cell Boundaries Logarithmic	PPM Zinc	Frequency	Cumulative Frequency	Cumulative % Frequency
2.15	141			
		1	1	0.05
2.22	166			
		5	6	3.09
2.29	195			
		6	12	6.19
2.36	229			
		14	26	13.40
2.43	269			
		12	38	19.59
2.50	316			
		18	56	28.87
2.57	372			
		18	74	38.14
2.64	436			
		30	104	53.61
2.71	513			
		25	129	66.49
2.78	603			
		21	150	77.32
2.85	708			
		18	168	86.60
2.92	832			
		8	176	90.72
2.99	976			
		3	179	92.27
3.06	1148			
		10	189	97.42
3.13	1349			

Cell Boundaries Logarithmic	PPM Zinc	Frequency	Cumulative Frequency	Cumulative % Frequency
3.20	1584			
		2	191	98.45
3.27	1862			
		2	193	99.48
3.34	2188			
		-		
3.41	2571			
		-		
3.48	3020			
		1	194	100.00
3.55	3548			

ANNEXE I

STATEMENT OF EXPENDITURES

1. FIELD WORK

Personnel

P. Tegart	September 29 - October 1	
	3 days at $100/day	$300.00
J. Butula	SEPT 30 - OCT 15 - 76	
	5 days at $80/day	400.00

Food Expense

5 days at $10/day man)	50.00

Truck Rental

3 days at $25/day (P. Tegart)	75.00

Geochemistry

Vangeochem Laboratories
Invoice No. 3616
Job # 75 79 013 December 9 407.40

2. OFFICE WORK

Personnel

P. Tegart	5 days at $80/day	400.00

TOTAL 1632.40

ANNEXE II

STATEMENT OF QUALIFICATIONS

I, PETER F. TEGART, with business address in Vancouver, British Columbia, hereby certify that:

1. I am a graduate of the University of British Columbia with a degree of Geological Science.

2. I have practised as a Geologist since 1971 in British Columbia and Ontario.

3. I am employed by Serem Ltd #550-850 West Hastings Street, Vancouver, B.C.

4. I have personally participated in the field work and supervised all the completed work included in this report. I have interpretted the data resulting from this work.

Respectfully submitted,

Peter F. Tegart

Peter F. Tegart

Fig. 3

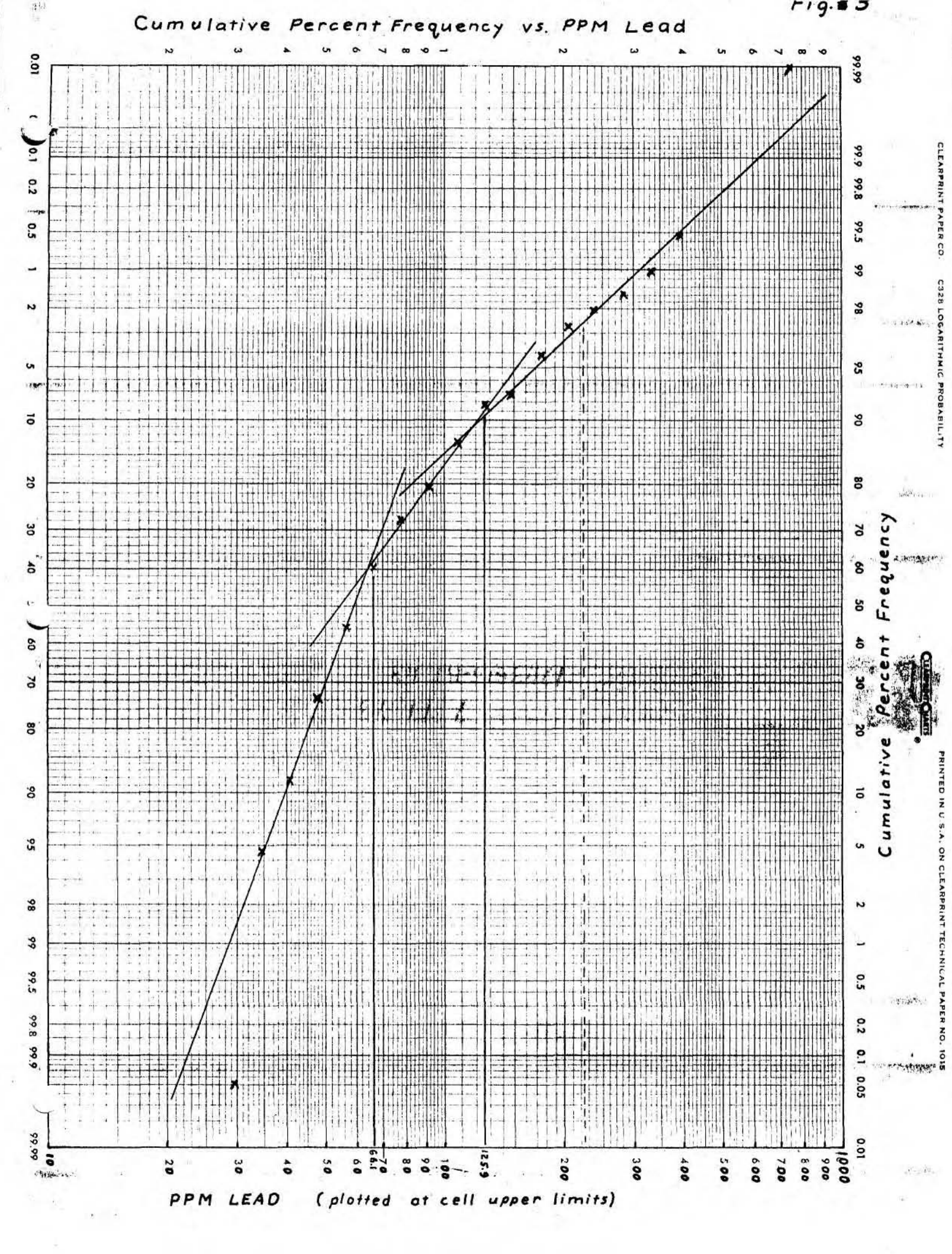
Cumulative Percent Frequency vs. PPM Lead
Cumulative Percent Frequency
PPM LEAD (plotted at cell upper limits)
66.1
125.9
CLEARPRINT PAPER CO. C328 LOGARITHMIC PROBABILITY
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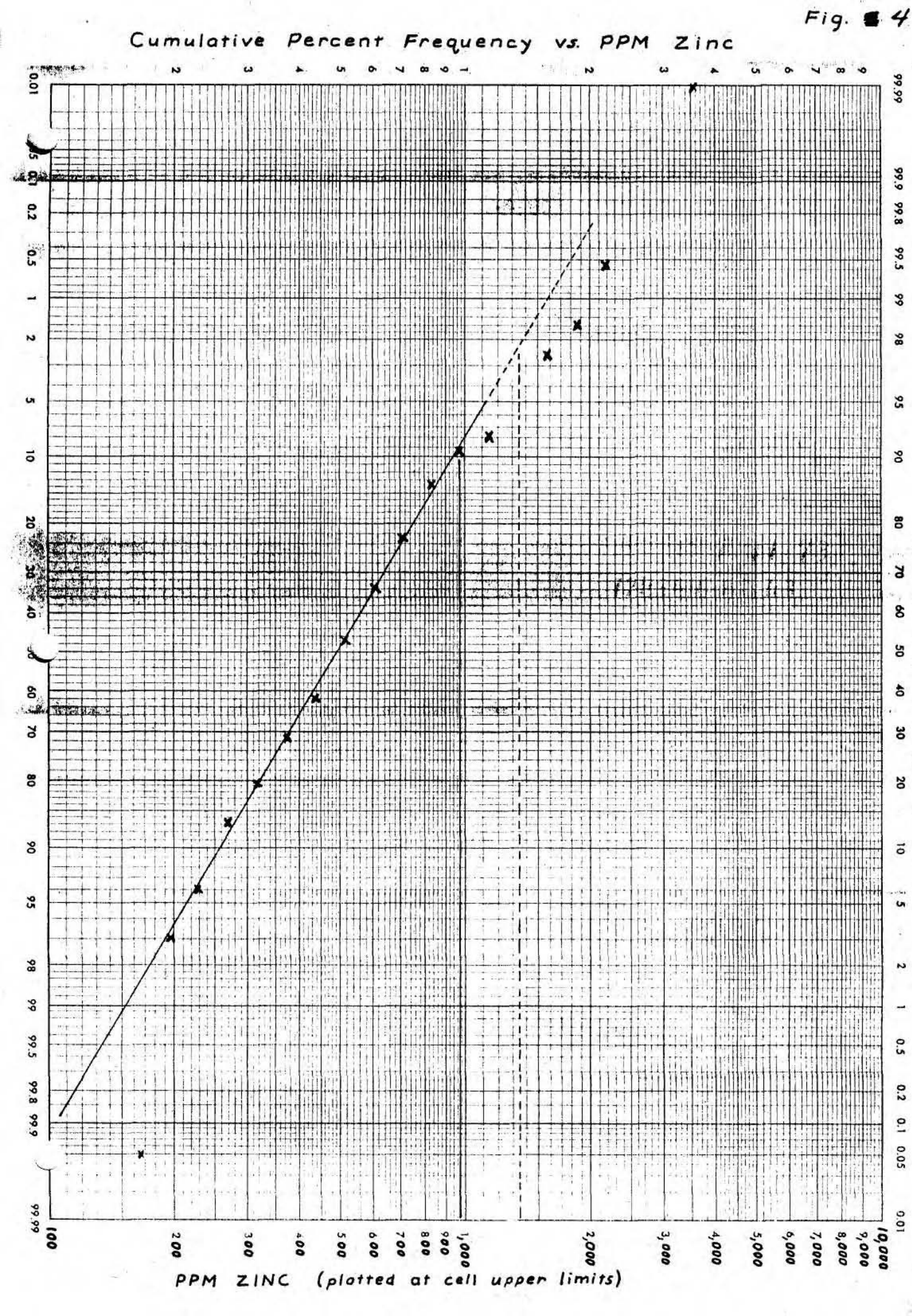
Fig. 4


Cumulative Percent Frequency vs. PPM Zinc
Cumulative percent frequency
PPM ZINC (plotted at cell upper limits)
100
200
300
400
500
600
700
800
900
1,000
2,000
3,000
4,000
5,000
6,000
7,000
8,000
9,000
10,000
0.01
0.05
0.1
0.2
0.5
1
2
5
10
20
30
40
50
60
70
80
90
95
98
99
99.5
99.8
99.9
99.99

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–IN ACCOUNT WITH–

Serem Ltd.,
505 - 850 West Hastings Street,
Vancouver, B. C.,
Attention: V6C 1E1

Report No: 75 79 013 Page 1 of 5
Samples Arrived: December 9, 1975
Report Completed: December 12, 1975
For Project: Oxide
Analyst: E. T.
Invoice # 3616 Job # 75-271

Sample Marking	Pb ppm	Zn ppm				
1 - S 1 E	45	665				
2 E	116	950				
3	93	925				
4	148	810				
1 - S 5 E	70	510				
1 - S 6 W	53	555				
7	98	1060				
8	80	550				
9	46	650				
10	45	400				
11	55	350				
12	54	760				
13	70	800				
14	55	250				
1 - S 15 W	125	260				
2 - S -	44	350				
1 E	46	350				
2	35	400				
3	47	675				
2 - S 4 E	66	590				
2 - S 5 E	32	310				
2 - S 1 W	301	970				
2	30	400				
3	30	600				
4	55	670				
5	32	420				
6	106	570				
7	180	600				
8	57	630				
9	48	470				
10	60	690				
11	82	600				
12	55	430				
13	85	520				
14	123	370				
2 - S 15 W	106	360				
3 - S 1 E	62	270				
2	44	450				
3 - S 3 E	37	480				

REMARKS:

Signed:

% Mo x 1.6683 = % MoS_2 1 Troy oz./ton = 34.28 ppm 1 ppm = 0.0001% nd = none detected ppm = parts per million

All values are believed to be correct to the best knowledge of the analyst based on the method and instruments used.

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Attention:

Report No: 75 79 013 Page 2 of 5
Samples Arrived:
Report Completed:
For Project:
Analyst:

Sample Marking	Pb ppm	Zn ppm				
3 - S 4 E	116	420				
3 - S 5 E	360	300				
3 - S -	66	790				
3 - S 1W	53	500				
2	60	410				
3	72	500				
4	100	570				
5	123	500				
6	73	400				
7	99	820				
8	63	750				
9	64	450				
10	56	630				
11	48	550				
12	42	450				
13	47	450				
14	63	250				
3 - S 15 W	43	180				
4 - S 1 E	195	710				
2 E	32	210				
3 E	56	1030				
4 E	50	490				
4 - S 5 E	50	890				
4 - S -	58	310				
1 W	54	1270				
2	87	760				
3	97	620				
4	82	550				
5	66	450				
6	58	520				
7	65	820				
8	56	570				
9	40	490				
10	46	470				
11	48	480				
12	52	470				
13	50	230				
14	36	230				
4 - S 15 W	36	240				

REMARKS:

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Samples Arrived:
Report Completed:
For Project:
Analyst:

Sample Marking	Pb ppm	Zn ppm				
S - 5 E 1	88	710				
2	102	650				
3	42	470				
4	47	780				
S - 5 E 5	110	900				
S - 5 -	100	580				
S - 5 W 1	70	620				
2	61	360				
3	50	850				
4	100	1330				
5	45	700				
6	37	270				
7	40	200				
8	45	400				
9	45	380				
10	61	370				
11	56	350				
12	34	350				
13	65	290				
14	69	370				
S - 5 W 15	114	180				
S - 6 E 1	55	310				
2	153	450				
3	37	500				
4	72	440				
S - 6 E 5	42	250				
S - 6 -	54	430				
S - 6 W 1	50	590				
2	75	400				
3	63	710				
4	45	800				
5	45	530				
6	53	470				
7	60	620				
8	35	480				
9	50	410				
10	45	270				
11	52	310				
S - 6 W 12	60	250				

REMARKS:

Signed:

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Attention:

Report No: 75 79 013 Page 4 of 5
Samples Arrived:
Report Completed:
For Project:
Analyst:

Sample Marking	Pb ppm	Zn ppm				
S - 6 W 13	87	320				
14	67	250				
S - 6 W 15	61	260				
S - 7 E 1	82	750				
2	70	570				
3	117	300				
S - 7 E 4	83	450				
S - 7 -	35	420				
S - 7 W 1	34	480				
2	68	500				
3	105	1170				
4	43	640				
5	45	570				
6	48	430				
7	52	560				
8	74	460				
9	73	320				
10	52	200				
11	74	350				
12	46	167				
13	55	250				
14	70	400				
S - 7 W 15	60	520				
S - 8 E 1	100	1200				
2	66	500				
3	64	790				
4	220	910				
S - 8 E 5	90	460				
S - 8 -	152	1930				
S - 8 W 1	126	650				
2	192	1940				
3	150	1300				
4	70	750				
5	75	1260				
6	60	1600				
7	64	1170				
8	50	200				
9	46	180				
S - 8 W 10	46	280				

REMARKS:

Signed:

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Attention:

Report No: 75 79 013 Page 5 of 5
Samples Arrived:
Report Completed:
For Project:
Analyst:

Sample Marking	Pb ppm	Zn ppm				
S - 8 W 11	52	320				
12	51	450				
13	57	660				
14	40	620				
S - 8 W 15	30	210				
S - 10 -	152	940				
S - 10 E 1	107	1640				
2	85	1100				
3	55	550				
4	66	780				
5	62	520				
S - 10 E 6	100	600				
S - 10 W 1	172	1220				
2	127	720				
3	72	520				
4	72	370				
5	61	370				
6	730	320				
7	100	230				
8	80	210				
9	71	400				
10	46	350				
11	35	190				
12	26	150				
13	40	420				
14	40	240				
S - 10 W 15	43	235				
S - 12 E 1	116	1260				
S - 12 2	75	1200				
3	25	680				
4	70	620				
S - 12 E 5	66	500				
S - 12 -	276	3100				
S - 12 W 1	85	630				
2	75	650				
3	45	300				
4	54	340				
S - 12 W 5	56	630				

REMARKS:

Signed:

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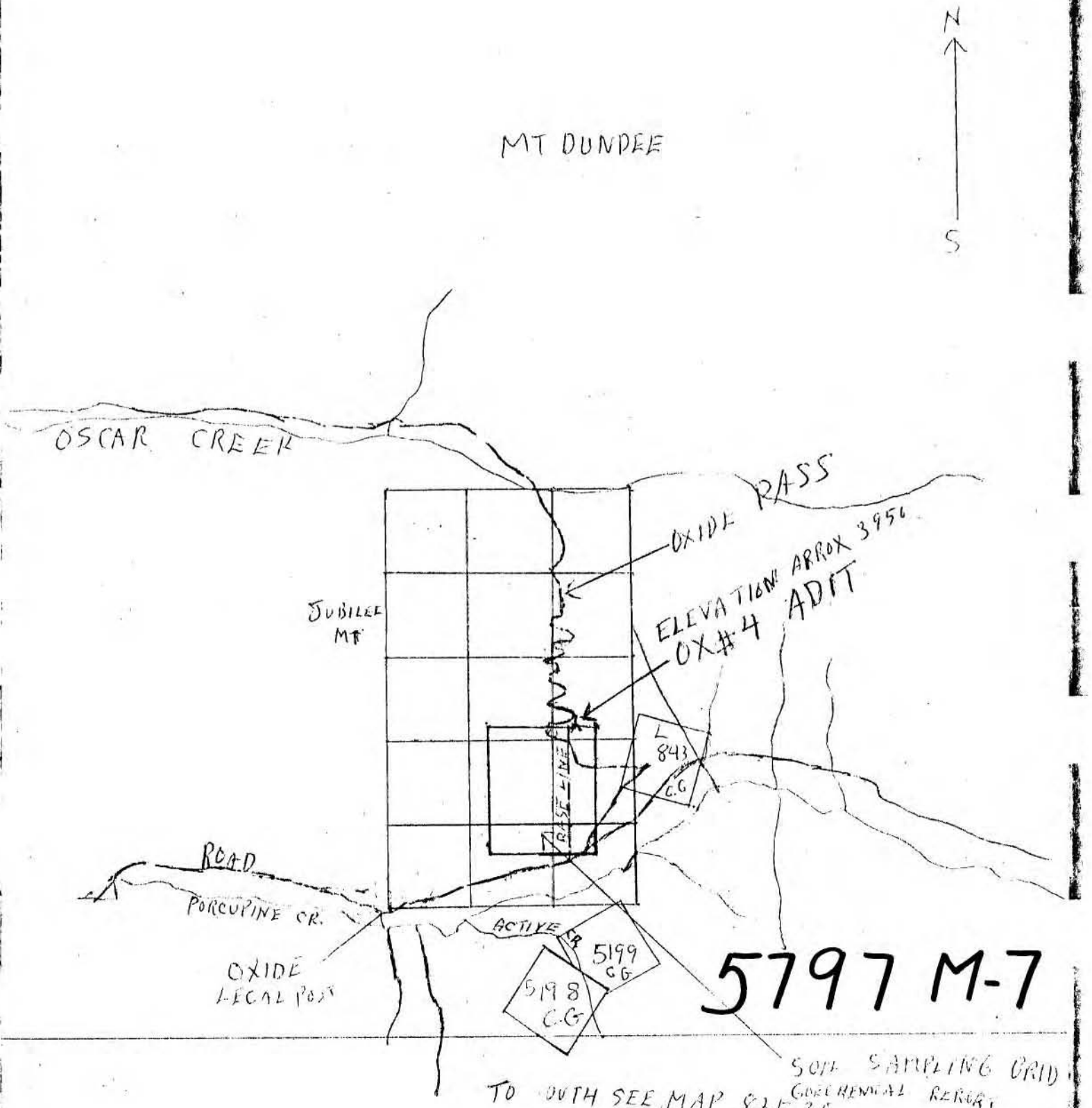
DEPARTMENT OF MINES AND PETROLE

VICTORIA, B.C.

MINERAL CLAIM MAP 82F



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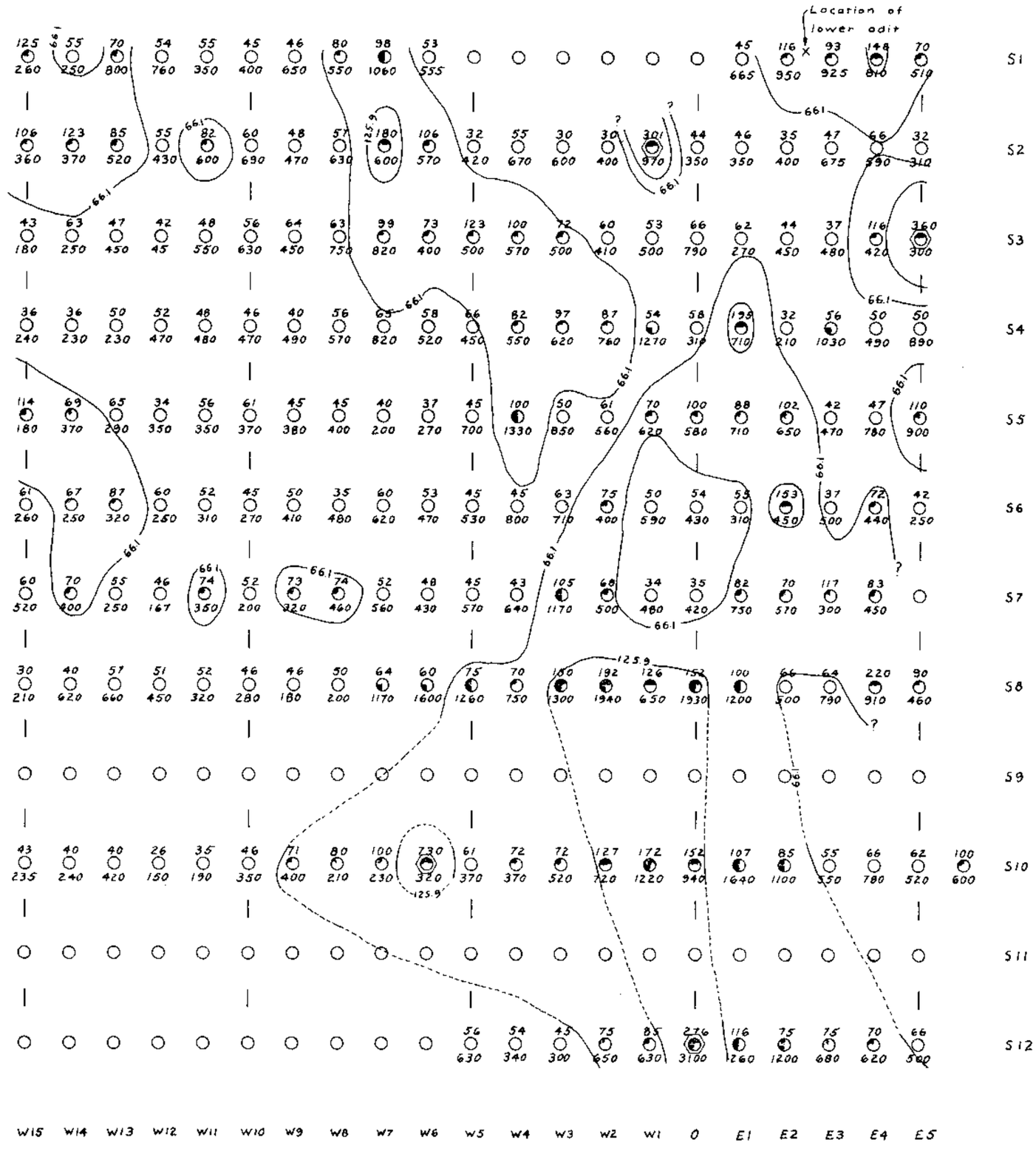


Fig. 6

Oxide Property
Soil Geochemistry

Plan view of sampling grid showing results of geochemical analyses as parts per million (PPM) lead and zinc.

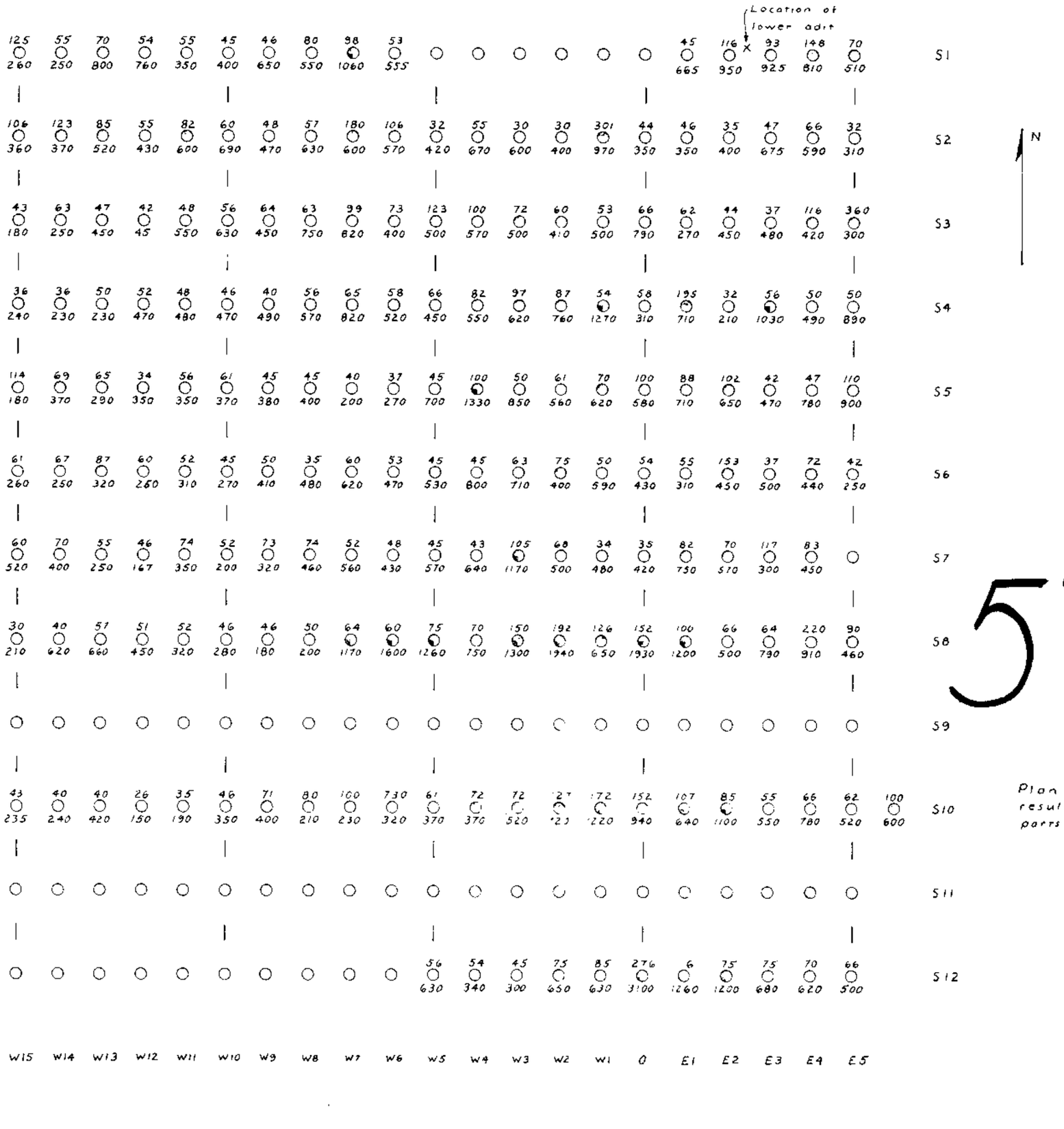
Scale - Feet

0 100 200 300 400

Sample populations for LEAD outlined

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. 5797 MAP 4



M-3

5797

Fig. 5

Oxide Property

Soil Geochemistry

Plan view of sampling grid showing results of geochemical analyses as parts per million (PPM) lead and zinc

Scale - Feet

0 100 200 300 400

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. 5797 MAP 3