

ECHO BAY MINES LTD.

81-1270

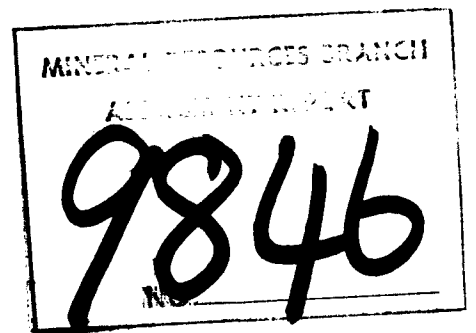
MIN4 MINERAL CLAIM

9846.

EXPLORATION - 1981

GOLDEN MINING DIVISION, BRITISH COLUMBIA

82 K / 8 W
50° 21' 116° 28'



Trigg, Woollett Consulting Ltd.

December, 1981

R.K. Johnston
A.H. Grant
R.A. Olson

ECHO BAY MINES LTD.

MIN4 MINERAL CLAIM

EXPLORATION - 1981

GOLDEN MINING DIVISION, BRITISH COLUMBIA

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ECHO BAY MINES LTD.

MIN4 MINERAL CLAIM

EXPLORATION - 1981

GOLDEN MINING DIVISION, BRITISH COLUMBIA

SUMMARY

Exploration, comprising geological mapping, geochemical sampling and prospecting, was performed within MIN4 mineral claim during the period August 17 to August 24, 1981.

Mount Nelson Formation quartzite, dolostone, argillite and dolomitic argillite occupy the core of a tightly-folded, shallowly north-northwest plunging syncline. Geochemically high concentrations of lead, zinc, silver, cadmium and barium exist in a few soil samples. Some of the geochemical soil anomalies are near, but upslope from, known sulphide mineral occurrences; therefore the cause of some of the geochemical soil anomalies is uncertain.

Further exploration, comprising detailed prospecting, overburden stripping, geological examinations and geochemical sampling, is required to establish the cause of selected geochemical anomalies that exist within MIN4 mineral claim. This work will require a geologist, geological assistant and prospector for about one week. The estimated cost of the recommended exploration is \$5,000.

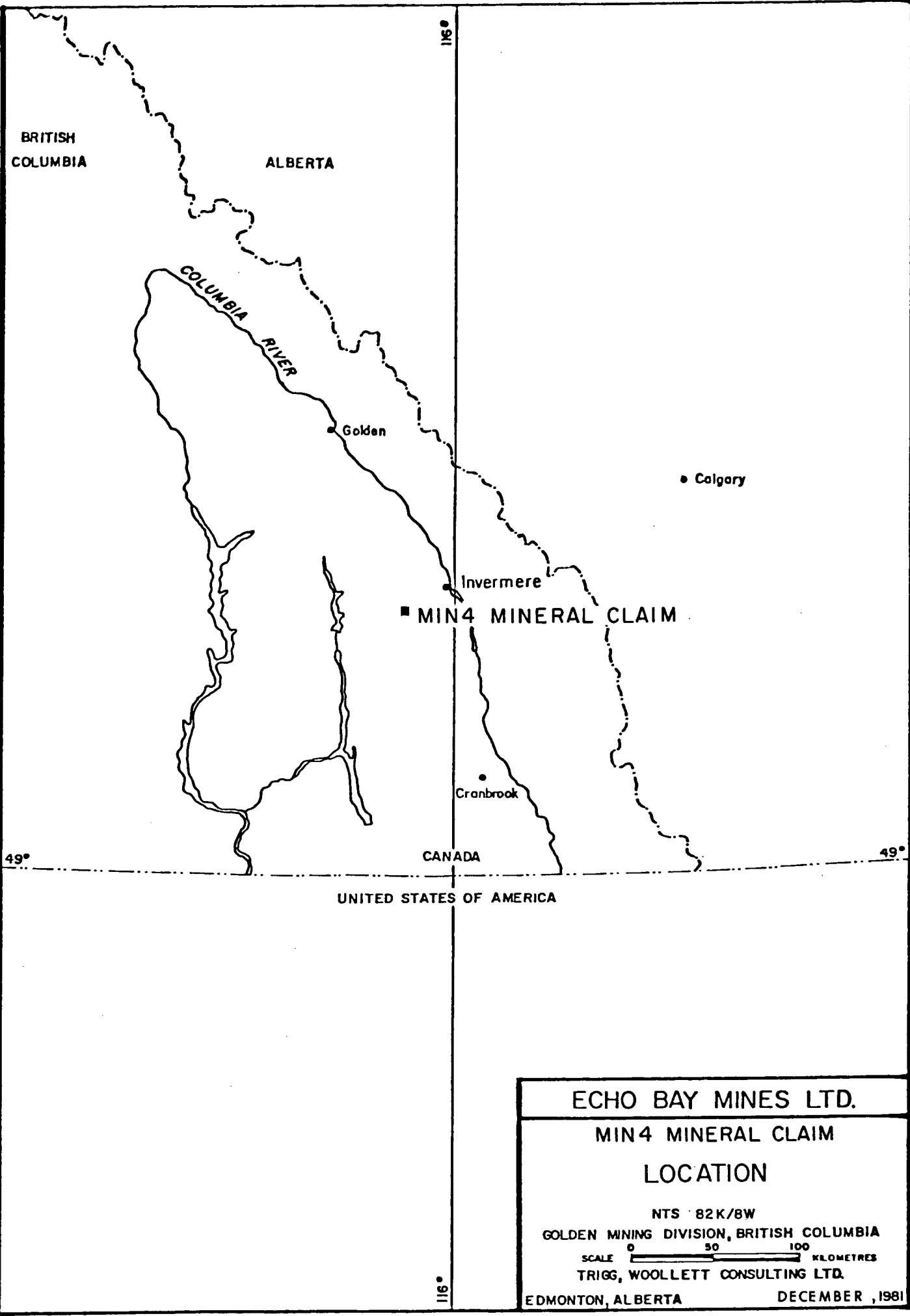
INTRODUCTION

Location and Access

MIN4 mineral claim is in the eastern Purcell Mountains, approximately 35 km southwest of Invermere, British Columbia (Dwg. 1101-16). The mineral claim is accessible by helicopter or by vehicle along the Toby Creek-Jumbo Creek road.

History

The area has been geologically mapped at various scales by government geological surveys (Walker, 1926; Reesor, 1957 and 1973; Fyles, 1959). Mineral King mine, a lead-, zinc-, silver-, copper-, and cadmium-bearing sulphide ore deposit which was mined between 1954 and 1967, is 2 km southeast of MIN4 mineral claim.



In 1979 Trigg, Woollett Consulting Ltd., on behalf of Echo Bay Mines Ltd., performed reconnaissance and detailed stream sediment sampling in parts of the area now covered by MIN4 mineral claim. Because of the existence of geochemical anomalies, the presence of geologically favourable Mount Nelson Formation dolostone and the proximity to the now closed Mineral King mine, MIN4 mineral claim, bearing record number 513, was staked in November 1979. MIN4 mineral claim is held by Echo Bay Mines Ltd.

In 1980 Trigg, Woollett Consulting Ltd. performed prospecting, geological mapping and geochemical sampling within and near MIN4 mineral claim (Jansen and Olson, 1981). Eleven sulphide mineral occurrences, comprising one or more of galena, tetrahedrite, sphalerite and chalcopyrite, were discovered in bedrock and boulders of Dutch Creek Formation argillite and dolostone, and in Mount Nelson Formation dolostone. The mineral occurrences are not, in themselves, economically important. Soil and stream sediment samples collected within MIN4 mineral claim in 1980 contain up to 360 parts per million (ppm) lead, 1,350 ppm zinc, 0.7 ppm silver, 2.2 ppm cadmium, 7,840 ppm barium and 650 parts per billion (ppb) mercury. A few geochemical soil anomalies are not near known sulphide mineral occurrences.

MIN4 mineral claim was grouped with adjacent MIN3 mineral claim in November 1981.

1981 Exploration

Eighteen man-days of field work, comprising grid establishment, geochemical soil and stream sediment sampling, prospecting and geological mapping, were performed within MIN4 mineral claim during the period August 17 to August 24, 1981 (Appendix I).

Geological mapping at a scale of 1 cm equals 100 m and prospecting were performed within a 66 ha area at the east side of MIN4 mineral claim. Forty-eight geochemical soil samples and three geochemical stream sediment samples were collected within the same area.

The total cost of exploration performed within MIN4 mineral claim during 1981 is \$3,742 (Appendix II).

GEOLOGY

Jansen and Olson (1981) have summarized the regional geology of the eastern Purcell Mountains and the stratigraphy and structure present within MIN4 mineral claim. Two formations, Dutch Creek Formation and Mount Nelson Formation of Helikian Purcell System, underlie the mineral claim. Dutch Creek Formation comprises argillite, siltstone, quartzite, calcareous argillite and dolostone. Mount Nelson Formation, which is the host for the Mineral King sulphide deposit, is present only within the eastern half of MIN4 mineral claim (Dwg. 1101-17). Mount Nelson Formation comprises a

basal quartzite that grades upward to dolomitic argillite, argillite and dolostone; the upper part of the formation is absent due to faulting. The western contact between Mount Nelson Formation quartzite and underlying Dutch Creek Formation argillite is conformable. Near the eastern boundary of MIN4 mineral claim Mount Nelson Formation is in fault contact with Dutch Creek Formation argillite. At the one outcrop discovered where the fault contact is exposed, Mount Nelson Formation quartzite is in contact with Dutch Creek Formation argillite (Dwg. 1101-17). It is uncertain whether this quartzite is the basal quartzite or a stratigraphically higher quartzite of Mount Nelson Formation. Fyles (1959) states that this fault is subvertical and that the west side is downthrown at least several hundred metres. Mount Nelson Formation occupies the core of a tight syncline which plunges shallowly to the north-northwest. This structure is similar to that which exists within MIN1, RED LEDGE 1 and RED LEDGE 2 mineral claims, approximately 5 km southeast of MIN4 mineral claim (Jansen and Olson, 1980).

Northerly-trending, dark green, chloritic, possibly dioritic, and, locally, calcite-rich dykes intrude Dutch Creek Formation argillite near the east boundary of MIN4 mineral claim. Although such dykes were not discovered within Mount Nelson Formation, similar dykes are known to intrude Mount Nelson Formation and rock units of Windermere System elsewhere within the eastern Purcell Mountains (Reesor, 1973).

GEOCHEMICAL SURVEYS

Forty-eight geochemical soil samples and three geochemical stream sediment samples were collected from 49 sites within the eastern part of MIN4 mineral claim (Dwg. 1101-18). A baseline 1,400 m long was established by compass and topofil, and was blazed and flagged near the east boundary of MIN4 mineral claim to provide control for geochemical soil sampling. Geochemical soil samples were collected, where possible, from B soil horizon, or in the absence of B soil horizon from A soil horizon, at 50 m intervals along cross lines spaced 200 m apart. The sampling depth at each site ranged between 5 cm and 30 cm (Appendix III). Geochemical stream sediment samples were collected from streams that cross the geochemical soil sample lines. All geochemical samples were dried and sieved for the -80 mesh fraction at the field base camp. All samples were analyzed for lead, zinc, silver, cadmium and barium by Bondar-Clegg & Company Ltd. of Vancouver, British Columbia (Appendix IV). Geochemical results for lead, zinc, silver, cadmium and barium in geochemical soil and stream sediment samples are compiled on drawing 1101-18. Results for samples that were collected prior to 1981, which include mercury in soil and stream sediment, are included on this drawing.

Metal concentrations in soil and stream sediment samples collected in 1981 range up to 440 ppm lead, 580 ppm zinc, 1.2 ppm silver, 2.1 ppm cadmium and 2,250 ppm barium. Maximum concentrations of zinc and cadmium are near, but upslope from, known sulphide mineral occurrences that are near the

north boundary of MIN4 mineral claim. Maximum concentrations of lead, silver and barium are not near known sulphide mineral occurrences.

CONCLUSIONS

Within and near the east boundary of MIN4 mineral claim, Mount Nelson Formation is in conformable- and fault-contact with Dutch Creek Formation argillite. Mount Nelson Formation occupies the core of a tight syncline which plunges shallowly to the north-northwest.

Maximum concentrations of zinc and cadmium in soil and stream sediment samples exist near, but upslope from, known sulphide mineral occurrences. Maximum concentrations of lead, silver and barium are not near known sulphide mineral occurrences. The cause of some of the high concentrations of lead, zinc, silver, cadmium and barium that exist in soil is uncertain. It is possible that the high concentrations are caused by undiscovered sulphide mineral occurrences in bedrock.

RECOMMENDATIONS

Further exploration is required within MIN4 mineral claim to evaluate geochemical anomalies. Detailed prospecting, hand-stripping of overburden, geological examinations and geochemical sampling upslope from selected geochemical anomalies should be performed within the area underlain by Mount Nelson Formation dolostone. If results of this work are encouraging, further exploration may be required.

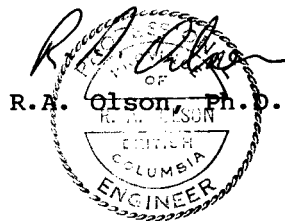
A geologist, geological assistant and prospector will be required for approximately one week to perform the recommended exploration at an estimated cost of \$5,000.

Trigg, Woollett Consulting Ltd.

R.K. Johnston

A. H. Grant

A.H. Grant, M.Sc., P.Geol.



R.A. Olson, Ph.D., P.Eng.

December, 1981
Edmonton, Alberta

THE ASSOCIATION OF
PROFESSIONAL ENGINEERS,
GEOLOGISTS and GEOPHYSICISTS
OF ALBERTA
PERMIT NUMBER
P 2374
TRIGG, WOOLLETT
CONSULTING LTD.

REFERENCES

- Fyles, J.T. (1959) Mineral King, Red Ledge; in Minister of Mines, British Columbia, Annual Report, p. 74-89.
- Jansen, J.G. and Olson, R.A. (1980) MIN1, MIN2, SMIN1, RED LEDGE 1 and RED LEDGE 2 Mineral Claims, Exploration - 1980, Golden Mining Division, British Columbia; unpublished report prepared for Echo Bay Mines Ltd. by Trigg, Woollett Consulting Ltd.
- _____ (1981) MIN3 and MIN4 Mineral Claims, Exploration - 1980, Golden Mining Division, British Columbia; unpublished report prepared for Echo Bay Mines Ltd. by Trigg, Woollett Consulting Ltd.
- Reesor, J.E. (1957) Geology, Lardeau, British Columbia, Sheet 82K (east half); Geol. Surv., Canada, Map 12-1957.
- _____ (1973) Geology of the Lardeau map-area, East-Half, British Columbia; Geol. Surv., Canada, Memoir 369.
- Walker, J.F. (1926) Geology and mineral deposits of Windermere map-area, British Columbia; Geol. Surv., Canada, Memoir 148.

CERTIFICATION

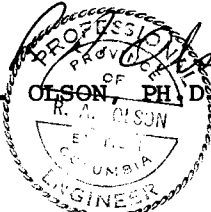
I, R.A. OLSON OF 8727 - 181 STREET, EDMONTON, ALBERTA CERTIFY AND DECLARE THAT I AM A GRADUATE OF THE UNIVERSITY OF BRITISH COLUMBIA WITH A B.SC. DEGREE IN GEOLOGY (1968), A GRADUATE OF THE UNIVERSITY OF WESTERN ONTARIO WITH A M.SC. DEGREE IN GEOLOGY (1971) AND A GRADUATE OF THE UNIVERSITY OF BRITISH COLUMBIA WITH A PH.D. DEGREE IN GEOLOGY (1977). I AM REGISTERED AS A PROFESSIONAL ENGINEER WITH THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF BRITISH COLUMBIA AND AS A PROFESSIONAL GEOLOGIST WITH THE ASSOCIATION OF PROFESSIONAL ENGINEERS, GEOLOGISTS AND GEOPHYSICISTS OF ALBERTA.

MY EXPERIENCE INCLUDES SERVICE AS AN EXPLORATION GEOLOGIST WITH TEXASGULF INC., VANCOUVER, BRITISH COLUMBIA. SINCE 1969 I HAVE CONDUCTED AND DIRECTED PROPERTY EXAMINATIONS, PROPERTY EVALUATIONS AND EXPLORATION PROGRAMS ON BEHALF OF COMPANIES AS A GEOLOGIST IN THE EMPLOY OF TRIGG, WOOLLETT & ASSOCIATES LTD. AND AS A PARTNER IN THE FIRM OF TRIGG, WOOLLETT CONSULTING LTD., EDMONTON, ALBERTA.

TRIGG, WOOLLETT CONSULTING LTD. HAS A RETAINED INTEREST IN INVERMERE PROJECT OF ECHO BAY MINES LTD. I AM A PARTNER IN TRIGG, WOOLLETT CONSULTING LTD.

R.K. JOHNSTON'S AND A.H. GRANT'S REPORT ON MIN4 MINERAL CLAIM, EXPLORATION - 1981, IS BASED UPON FIELD WORK AND UPON STUDY OF PUBLISHED AND UNPUBLISHED DATA.

R.A. OLSON, PH.D., P.ENG.



DECEMBER, 1981

EDMONTON, ALBERTA

APPENDIX I

PERSONNEL

APPENDIX I

PERSONNEL

<u>Name and Address</u>	<u>Position</u>	<u>Dates in Field (1981)</u>	<u>Days</u>
<u>Trigg, Woollett Consulting Ltd.</u>			
Grant, A.H. 702, 8708 - 106 Street EDMONTON, Alberta	Geologist	August 18	1
Heidgerken, G.F. 2225 Ewart Avenue SASKATOON, Saskatchewan	Geological Assistant	August 17, 18, 19, 20, 22	5
Johnston, R.K. 2727 Assiniboine Avenue REGINA, Saskatchewan	Geologist	August 17, 18, 19	3
Russell, C. 250 Westridge Road EDMONTON, Alberta	Geological Assistant	August 17, 18, 19, 24	4
Seburn, J.A. 6097 Dixon Street NIAGARA FALLS, Ontario	Geological Assistant	August 17, 18, 19, 20, 21	5

APPENDIX II

COST STATEMENT

APPENDIX II

COST STATEMENT

MIN4 MINERAL CLAIM

(1)	<u>SALARY (Includes salary, fringe benefits and related charges):</u>		
	A. Grant	1 day @ \$183/day	\$ 183
	G. Heidgerken	3 days @ \$65/day	195
	R. Johnston	5 days @ \$87/day	435
	C. Russell	4 days @ \$65/day	260
	J. Seburn	5 days @ \$53/day	<u>265</u>
			\$1,338
(2)	<u>MEALS AND ACCOMMODATION (Includes accommodation, food and food preparation):</u>		
	18 man-days @ \$43/man-day		774
(3)	<u>TRANSPORTATION (Includes proportionate charge for truck rental, truck repairs, gas, insurance, etc):</u>		
	18 man-days @ \$26/man-day		468
(4)	<u>EQUIPMENT (Includes rental of technical and camp equipment and cost of maps, air photos, etc):</u>		
	18 man-days @ \$6/man-day		108
(5)	<u>GEOCHEMICAL (Includes analysis for lead, zinc, silver, cadmium and barium, sample preparation, shipping charges, sample bags and field drafting of sample location maps and geochemical results):</u>		
	51 samples @ \$8.15/sample		416
(6)	<u>REPORTING (Includes secretarial charges, drafting, reproduction and editing):</u>		<u>638</u>
		TOTAL COST	\$3,742

APPENDIX III

GEOCHEMICAL SAMPLE CARDS

APPENDIX III.A

GEOCHEMICAL SOIL SAMPLE CARDS

N T S YEAR INT NUMBER EAST NORTH EAST NORTH VEGETATION VEG

RELIEF SLOPE

Low Med High Mag Dir Work Comp Fuel Green

GEOCHEMICAL SOIL AND TILL SAMPLE CARD

TRIGG, WOOLLETT CONSULTING LTD

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
B2KB1CRS145					10+50W					24+00S					ARG L																								
Low	Med	High	Mag	Dir	Work	Comp	Fuel	Green	0.05	3.0	A	1	0	2	0	2																							
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

REMARKS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
B2KB1CRS146					11+00W					24+00S																													
Low	Med	High	Mag	Dir	Work	Comp	Fuel	Green	0.10	4.0	A	1	2	0	2	0																							
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
B2KB1CRS148					12+50W					24+00S																													
Low	Med	High	Mag	Dir	Work	Comp	Fuel	Green	0.05	3.0	A	1	0	2	1																								
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SAMPLE SITE ON TALIS SLOPE

SAMPLE TYPES: S-SOIL, T-TILL, C-CORR, R-ROCK, S-SAND, I-IRON, CR-CRACK

N T S YEAR INT NUMBER EAST NORTH EAST NORTH VEGETATION VEG

RELIEF SLOPE

Low Med High Mag Dir Work Comp Fuel Green

GEOCHEMICAL SOIL AND TILL SAMPLE CARD

TRIGG, WOOLLETT CONSULTING LTD

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
B2KB1CRS149					13+00W					24+00S																													
Low	Med	High	Mag	Dir	Work	Comp	Fuel	Green	0.15	3.0	B	2	1	0	3	0																							
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Low	Med	High	Mag	Dir	Work	Comp	Fuel	Green	0.10	3.0	B	1	2	0	2	0																							
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B2KB1CRS151					14+00W					24+00S																													
Low	Med	High	Mag	Dir	Work	Comp	Fuel	Green	0.05	3.0	B	1	0	3	0																								
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Low	Med	High	Mag	Dir	Work	Comp	Fuel	Green																															
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

SAMPLE TYPES: S-SOIL, T-TILL, C-CORR, R-ROCK, S-SAND, I-IRON, CR-CRACK

RELIEF			SLOPE			CONTAMINATION					DEPTH			THICKS HORIZ			SEDIMENT COLOUR				COMPOSITION			MOISTURE			ORIGINAL SAMPLE NO								
Low	Med	High	Mag	Dir	Dir	Work	Comp	Fuel	Gas

GEOCHEMICAL SOIL AND TILL SAMPLE CARD TRIGG, WOOLLETT CONSULTING LTD

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
82KB1CRS152					10+00W					10+00S					<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				
Low	Med	High	Mag	Dir	Work	Comp	Fuel	Gas	0.10	3.0	B	2	1	0	3	0	1	Wet	Med	Dry	72	73	74	75	76	77	78	79	80										
REMARKS																																							

82KB1CRS153					10+50W					10+00S					<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				
Low	Med	High	Mag	Dir	Work	Comp	Fuel	Gas	0.15	3.0	B	2	1	0	2	0	2	Wet	Med	Dry	72	73	74	75	76	77	78	79	80										
REMARKS																																							

82KB1CRS154					11+00W					10+00S					<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				
Low	Med	High	Mag	Dir	Work	Comp	Fuel	Gas	0.05	3.0	A	1	2	0	2	0	2	Wet	Med	Dry	72	73	74	75	76	77	78	79	80										
REMARKS																																							

82KB1CRS155					11+50W					10+00S					<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>						
Low	Med	High	Mag	Dir	Work	Comp	Fuel	Gas	0.05	3.0	A	1	0	1	0	3	Wet	Med	Dry	72	73	74	75	76	77	78	79	80											
REMARKS																																							

SAMPLE TYPES: S-Soil, T,U,V - peat, H, L, and H, etc. (not indicated, else - with first letter, X, Y, Z - other

RELIEF			SLOPE			CONTAMINATION					DEPTH			THICKS HORIZ			SEDIMENT COLOUR				COMPOSITION			MOISTURE			ORIGINAL SAMPLE NO															
Low	Med	High	Mag	Dir	Dir	Work	Comp	Fuel	Gas

GEOCHEMICAL SOIL AND TILL SAMPLE CARD TRIGG, WOOLLETT CONSULTING LTD

82KB1CRS156					10+00W					14+00S					<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				
Low	Med	High	Mag	Dir	Work	Comp	Fuel	Gas	0.20	0.5	A	1	1	0	1	0	3	Wet	Med	Dry	72	73	74	75	76	77	78	79	80										
REMARKS: B horizon not present																																							

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Low	Med	High	Mag	Dir	Work	Comp	Fuel	Gas	0.30	1.0	B	2	1	0	2	0	2	Wet	Med	Dry	72	73	74	75	76	77	78	79	80										
REMARKS																																							

82KB1CRS158					11+50W					14+00S					<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				
Low	Med	High	Mag	Dir	Work	Comp	Fuel	Gas	0.15	0.5	B	1	1	0	2	0	2	Wet	Med	Dry	72	73	74	75	76	77	78	79	80										
REMARKS																																							

82KB1CRS159					12+00W					14+00S					<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				
Low	Med	High	Mag	Dir	Work	Comp	Fuel	Gas	0.30	1.0	A	1	1	2	2	Wet	Med	Dry	72	73	74	75	76	77	78	79	80												
REMARKS: B not present																																							

SAMPLE TYPES: S-Soil, T,U,V - peat, H, L, and H, etc. (not indicated, else - with first letter, X, Y, Z - other

SURVEY TYPE SOIL GRID EB1/1101 AREA & PHOTO MIN 4 COLLECTOR(S) CR,GH DATE AUG 19/98

NTS YEAR INIT... RELIEF SLOPE CONTAMINATION DEPTH TRANS HORIZ SEGMENT COLOUR COMPOSITION MOISTURE ORIGINAL SAMPLE NO

GEOCHEMICAL SOIL AND TILL SAMPLE CARD

TRIGG, WOOLLETT CONSULTING LTD

1 2 3 4 5... 8 2 K B 1 C R S 1 5 2... 10+00W... 10+00S... 4.0 N... 0.10 3.0 B... 2 1 0 3 0 1

1 2 3 4 5... 8 2 K B 1 C R S 1 5 3... 10+50W... 10+00S... 4.0 N... 0.15 3.0 B... 2 1 0 2 0 2

1 2 3 4 5... 8 2 K B 1 C R S 1 5 4... 11+00W... 10+00S... 4.0 N... 0.05 3.0 A... 1 2 0 2 0 2

1 2 3 4 5... 8 2 K B 1 C R S 1 5 5... 11+50W... 10+00S... 4.0 N... 0.05 3.0 A... 1 0 1 0 3

REMARKS SAMPLE TYPES S-S...

SURVEY TYPE: Soil CLIENT EB1 PROJECT 1101 AREA & PHOTO: Mint COLLECTOR(S) CR,GH DATE: Aug 19, 1998

NTS YEAR INIT... RELIEF SLOPE CONTAMINATION DEPTH TRANS HORIZ SEGMENT COLOUR COMPOSITION MOISTURE ORIGINAL SAMPLE NO

GEOCHEMICAL SOIL AND TILL SAMPLE CARD

TRIGG, WOOLLETT CONSULTING LTD

1 2 3 4 5... 8 2 K B 1 C R S 1 5 6... 10+00W... 14+00S... 4.0 NW... 0.20 0.5 A... 1 1 0 1 0 3

REMARKS: B horizon not present

1 2 3 4 5... 8 2 K B 1 C R S 1 5 7... 11+00W... 14+00S... 5.0 NW... 0.30 1.0 B... 1 0 2 0 2

1 2 3 4 5... 8 2 K B 1 C R S 1 5 8... 11+50W... 14+00S... 6.0 NW... 0.15 0.5 B... 1 1 0 2 0 2

1 2 3 4 5... 8 2 K B 1 C R S 1 5 9... 12+00W... 14+00S... 4.0 NW... 0.30 1.0 A... 1 1 0 2 0 2

REMARKS: B not present SAMPLE TYPES S-Soil, T,U,V...

SURVEY TYPE: Soil CLIENT & PROJECT: 1101 AREA: 644 PLOT: Min 4 COLLECTOR(S): GH, CR DATE: Aug 19, 1981

RELIEF		SLOPE		CONTAINER		DEPTH		HORIZ		ELEMENT		COLOR		COMPOSITION		MOISTURE		ORIGINAL SAMPLE NO																					
Low	Med	High	Mag	Dir	Wks	Comp	Fuel	Grass	Whi	Yel	Grn	Red	Brn	Blk	Sand	Silt	Clay	Org	Wet	Mid	Dry																		
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
82K		B1C		R51		60		12+50W		14+00S								✓ ✓ ✓																					
✓	3.0NW				0.20		0.5A				1		1		3																						0		
REMARKS: B horizon is poorly developed																																							

SURVEY TYPE: Soil CLIENT & PROJECT: EBI 1101 AREA: 644 PLOT: Min 4 COLLECTOR(S): GH, JS DATE: Aug 17, 1981

RELIEF		SLOPE		CONTAINER		DEPTH		HORIZ		ELEMENT		COLOR		COMPOSITION		MOISTURE		ORIGINAL SAMPLE NO																					
Low	Med	High	Mag	Dir	Wks	Comp	Fuel	Grass	Whi	Yel	Grn	Red	Brn	Blk	Sand	Silt	Clay	Org	Wet	Mid	Dry																		
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
82K		B1G		H51		34		10+00W		12+00S								✓ ✓ ✓																					
✓	2.5NW				0.25		0.5B				21		0103																								0		
REMARKS: no outcrop, deep organic layer ~ 20cm thick																																							
82K		B1G		H51		35		10+50W		12+00S								✓ ✓ ✓																					
✓	2.5NW				0.25		0.5A				12		1102																								0		
REMARKS: - Bhoriz not developed, no outcrop																																							
82K		B1G		H51		36		11+00W		12+00S								✓ ✓ ✓																					
✓	2.5NW				0.25		0.5A				12		1102																								0		
REMARKS: - Bhoriz not well developed, no outcrop																																							
82K		B1G		H51		37		11+50W		12+00S								✓ ✓ ✓																					
✓	3.0NW				0.30		0.5A				12		1102																								0		
REMARKS: - Bhoriz not well developed, no outcrop																																							

SURVEY TYPE: SOI CLIENT & PROJECT: 1101 AREA: Min 4 COLLECTOR(S): GH, JS DATE: Aug 17, 1981

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
N T S					YEAR			INIT.			NUMBER			ZONE			UTM			EAST			NORTH			ROCK TYPE			W T H F			VEGETATION			VEG INT.				
RELIEF					SLOPE			CONTAMINATION			DEPTH			THICK			HORIZ			COLOUR			COMPOSITION			MOISTURE			ORIGINAL SAMPLE NO.										
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

GEOCHEMICAL SOIL AND TILL SAMPLE CARD

TRIGG, WOOLLETT CONSULTING LTD

82K81GHS138 12+00W 12+00S

3.5 NW 0.20 1.0 B 21 1102

REMARKS

82K81GHS139 12+50W 12+00S

3.5 NW 0.15 0.8 B 21 1102

REMARKS: beside fault Hm - Dutch creek

82K81GHS140 12+50W 12+00S

B 1GHS1392

REMARKS

82K81GHS141 13+00W 12+00S

3.5 NW 0.40 1.0 B 21 1102

REMARKS

SAMPLE TYPE: S-SUB

SURVEY TYPE: SOI CLIENT & PROJECT: 1101 AREA: Min 4 COLLECTOR(S): GH, JS DATE: Aug 17, 1981

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
N T S					YEAR			INIT.			NUMBER			ZONE			UTM			EAST			NORTH			ROCK TYPE			W T H F			VEGETATION			VEG INT.				
RELIEF					SLOPE			CONTAMINATION			DEPTH			THICK			HORIZ			COLOUR			COMPOSITION			MOISTURE			ORIGINAL SAMPLE NO.										
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

GEOCHEMICAL SOIL AND TILL SAMPLE CARD

TRIGG, WOOLLETT CONSULTING LTD

82K81GHS142 13+50W 12+00S

4.0 NW 0.35 1.0 A 12 2102

REMARKS: no outcrop, B horizon poorly developed

82K81GHS143 14+00W 12+00S

4.0 NW 0.20 1.0 A 12 2101

REMARKS: sample is a bank sample (stream bank)

82K81GHS144 14+50W 12+50S

5.0 NW 0.30 1.0 A 12 1102

REMARKS: quartzite outcrop under sample - sample mostly A horizon, B poorly developed

82K81GHS145 15+00W 12+50S ARG L

6.0 NW 0.30 1.0 A 12 1102

REMARKS: dutch creek arg. outcrop under sample - No B horizon present.

SAMPLE TYPE: S-SUB

GEOCHEMICAL SOIL AND TILL SAMPLE CARD

82K816HS146	10+00W	20+00S	✓	✓	✓
3.0 NW	0.20	1.0 B	12	11	2
REMARKS: not good B horizon but good soil development seen (better than A)					
82K816HS147	10+50W	20+00S	✓	✓	
3.0 NW	0.20	8.0 B	12	21	1
REMARKS:					
82K816HS148	11+00W	20+00S	✓	✓	✓
5.0 NE	0.20	7.0 B	12	21	1
REMARKS: near Quartzite outcrop					
82K816HS149	11+50W	20+00S	✓	✓	✓
3.0 NE	0.15	5.0 B	1	21	21
REMARKS:					

SURVEY TYPE Soil 1101 EBI MinA JS, GH Aug 18/1

82K816HS150	12+00W	20+00S	✓	✓	✓
9.0 NE	0.15	6.0 B	2	1	12
REMARKS:					
82K816HS151	12+50W	20+00S	✓	✓	✓
5.0 NE	0.20	6.0 B	2	1	12
REMARKS:					
82K816HS152	10+00W	22+00S	✓	✓	✓
5.0 NW	0.10	2.0 B	12	21	1
REMARKS:					
82K816HS153	10+50W	22+00S	✓	✓	✓
3.0 NW	0.06	6.0 B	1	21	2
REMARKS: taken on top of Dolomite outcrop, poor soil development					

Soil

1101 FBI

Min 4

J.S.G.H.

Aug 1981

GEOCHEMICAL SOIL AND TELL SAMPLE CARD

82K81GHS154 11+00W22+00S ✓ ✓

✓ 50NW 03060B 2 1 21 1 ✓

- has a small amount of water varying through it

82K81GHS155 11+50W22+00S ✓ ✓

✓ 50NW 02060B 2 1 21 1 ✓

82K81GHS156 12+00W22+00S ✓ ✓

✓ 6.0NW NO SAMPLE

- Very thick Ah horizon (Organic matter) No sample

82K81GHS157 12+50W22+00S ✓ ✓

✓ 40NW 02050B 12 21 1 ✓

SURVEY TYPE: Soil

1101 FBI

Min 4

J.S.G.H. 18/8

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40				
N T S				VEA				INT				CORNER				UTM				EASTING				NORTHING				CORNER				UTM				EASTING				NORTHING			
RELIEF				SLOPE				DEPTH				TEMP				WIND				CLOUD				MOON				STAR				PLANET				OTHER							
Low	Med	High	Mag	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

GEOCHEMICAL SOIL AND TELL SAMPLE CARD

TEARS, WOLLETT CONSULTING LTD

82K81GHS158 13+00W22+00S ✓ ✓

✓ 30NW 02599A 1 1 3 ✓

82K81GHS159 13+50W22+00S ✓ ✓

✓ 20NW 03070A 1 1/2 3 ✓

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40				
RELIEF				SLOPE				DEPTH				TEMP				WIND				CLOUD				MOON				STAR				PLANET				OTHER							
Low	Med	High	Mag	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40				
RELIEF				SLOPE				DEPTH				TEMP				WIND				CLOUD				MOON				STAR				PLANET				OTHER							
Low	Med	High	Mag	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

SAMPLE TYPE

SURVEY TYPE: Soil CLIENT PROJECT: 1101-ERF AREA: B/O PHOTO: Min 4 COLLECTOR(S): JS GH DATE: Aug 19/11

GEOCHEMICAL SOIL AND TILL SAMPLE CARD TRIGG, WOOLLETT CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
82K816HS160				10+00W/6+00S																✓				✓															
5.0 NE				0.25 6.0 B				1 1 1				2				✓																							
REMARKS:																																							

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
82K816HS161				10+50W/6+00S																✓				✓															
6.0 NE				NO SAMPLE																																			
REMARKS: No sample - only humus present																																							

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
82K816HS162				11+00W/6+00S																✓				✓															
5.0 NE				0.25 7.0 B				1 2 2 1				1				✓																							
REMARKS: mixture of A and B horizons																																							

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
82K816HS163				11+00W/6+00S																✓				✓															
5.0 NE				0.25 7.0 B				1 2 2 1				1				✓																							
REMARKS: mixture of A and B horizons																																							

SAMPLE TYPES: S-Soil, T.U.V-glacial till, undifferentiated, etc. W-forest floor, X, Z-other

SURVEY TYPE: Soil CLIENT PROJECT: 1101-FBI AREA: B/O PHOTO: Min 4 COLLECTOR(S): JS GH DATE: Aug 19/11

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40
 N T S YEAR INIT. NUMBER ZONE UTM EAST UTM NORTH ROCK TYPE WTHR VEGETATION VEG. INT.
 RELIEF SLOPE CONTAMINATION DEPTH THKNS HORIZ SEDIMENT COLOUR COMPOSITION MOISTURE ORIGINAL SAMPLE NO

GEOCHEMICAL SOIL AND TILL SAMPLE CARD TRIGG, WOOLLETT CONSULTING LTD.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
82K816HS164				11+50W/6+00S																✓				✓															
4.0 NE				0.25 6.0 A				1 1 3				✓																											
REMARKS:																																							

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
82K816HS165				12+00W/6+00S																✓				✓															
5.0 NE				0.20 7.0 A				1 1 3				✓																											
REMARKS:																																							

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
82K816HS166				12+50W/6+00S																✓				✓															
4.0 NE				0.30 6.0 A				1 1 3				✓																											
REMARKS:																																							

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
82K816HS167				13+00W/6+00S																✓				✓															
8.0 NE				0.20 7.0 B				1 2 1 1				✓																											
REMARKS:																																							

SAMPLE TYPES: S-Soil, T.U.V-glacial till, undifferentiated, etc. W-forest floor, X, Z-other

APPENDIX III.B

GEOCHEMICAL STREAM SEDIMENT SAMPLE CARDS

SURVEY TYPE **GEOCHEM GRAB PROJECT** CLIENT B PROJECT **EDT / 1101 AREA** EAST **MIN 4** COLLECTOR(S) **CR** DATE **AUG 18/81**

NTS			YEAR	INIT	NUMBER	ZONE	UTM	EAST	UTM	NORTH	ROCK TYPE	WTHR	WTR SURF OF FLOW	VEGETATION																									
RELIEF	CONTAMINATION			BOTTOM			AREA OF WIDTH	DEPTH	WATER COLOUR	SUSP	SEDIMENT COLOUR			COMPOSITION	ORIGINAL SAMPLE NO																								
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

GEOCHEMICAL SEDIMENT & WATER SAMPLE CARD TRIGG, WOOLLETT CONSULTING LTD

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
82K81CR011												10+00W								24+00S										Cl	Clay	Gr/S	Rp/M	Ch/F	Con	Dec	Gr	Moss	
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

REMARKS: **DRIED UP CK, BED**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
82K81CR012												12+00W								24+00S										Cl	Clay	Gr/S	Rp/M	Ch/F	Con	Dec	Gr	Moss	
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

SAMPLE TYPES A/B - lake sed/water, C/D - stream sed/water, E/F - bog sed/water, G/H - spring sed/water, I, J, K, L - other

SURVEY TYPE **Stream** CLIENT B PROJECT **1101 EDT** AREA EAST **MIN 4** COLLECTOR(S) **JS GH** DATE **Aug 18/81**

NTS			YEAR	INIT	NUMBER	ZONE	UTM	EAST	UTM	NORTH	ROCK TYPE	WTHR	WTR SURF OF FLOW	VEGETATION																									
RELIEF	CONTAMINATION			BOTTOM			AREA OF WIDTH	DEPTH	WATER COLOUR	SUSP	SEDIMENT COLOUR			COMPOSITION	ORIGINAL SAMPLE NO																								
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

GEOCHEMICAL SEDIMENT & WATER SAMPLE CARD TRIGG, WOOLLETT CONSULTING LTD

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
82K80GH026												11+60W								22+00S										Cl	Clay	Gr/S	Rp/M	Ch/F	Con	Dec	Gr	Moss	
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

REMARKS: **no water flow**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

SAMPLE TYPES A/B - lake sed/water, C/D - stream sed/water, E/F - bog sed/water, G/H - spring sed/water, I, J, K, L - other

APPENDIX IV

GEOCHEMICAL LAB REPORT



BONDAR-CLEGG & COMPANY LTD.

130 PEMBERTON AVE., NORTH VANCOUVER, B.C. V7P 2R5 PHONE: (604) 985-0681 TELEX: 04-352687

Geochemical Lab Report

REPORT: 121-2770

FROM: TRIGG, WOULLETT CONSULTING LTD.

SUBMITTED BY: C. RUSSELL

DATE: 29-SEP-81 PROJECT: 1101

ELEMENT	LOWER DETECTION LIMIT	EXTRACTION	METHOD	SIZE FRACTION	SAMPLE TYPE	SAMPLE PREPARATIONS
Pb	2 PPM	HNO3-HCL HOT EXTR	Atomic Absorption	-80	PREPARED PULP	AS RECEIVED, NO SP
Zn	1 PPM	HNO3-HCL HOT EXTR	Atomic Absorption	-80		
As	.1 PPM	HNO3-HCL HOT EXTR	Atomic Absorption	-80		
Cd	.2 PPM	HNO3-HCL HOT EXTR	Atomic Absorption	-80		
Ba	20 PPM		X-RAY Fluorescence	-80		

REPORT COPIES TO: MR. A. GRANT
BONDAR-CLEGG & COMPANY

INVOICE TO: MR. A. GRANT



BONDAR-CLEGG & COMPANY LTD.

130 PEMBERTON AVE., NORTH VANCOUVER, B.C. V7P 2R5 PHONE: (604) 985-0681 TELEX: 04-352687

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PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Pb PPM	Zn PPM	As PPM	Cd PPM	Ba PPM	NOTES
82K81-CRC-011		24	44	0.5	0.2	720	
82K81-CRC-012		36	32	1.3	0.2	1810	
82K81-CRS-145		25	41	0.2	0.2	760	
82K81-CRS-146		24	42	0.2	0.2	750	
82K81-CRS-147		22	48	0.2	0.2	710	
82K81-CRS-148		56	119	0.2	0.2	2250	
82K81-CRS-149		39	55	0.2	0.2	920	
82K81-CRS-150		40	59	0.8	0.2	860	
82K81-CRS-151		70	176	0.2	0.3	1530	
82K81-CRS-152		104	60	0.3	0.2	1610	
82K81-CRS-153		24	38	0.2	0.2	790	
82K81-CRS-154		36	37	1.2	0.2	700	
82K81-CRS-155		26	55	0.6	0.2	630	
82K81-CRS-156		46	89	0.8	0.4	620	
82K81-CRS-157		72	125	0.3	0.2	800	
82K81-CRS-158		6	23	0.2	0.2	640	
82K81-CRS-159		8	15	0.2	0.3	500	
82K81-CRS-160		14	19	0.3	0.2	520	



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Geochemical Lab Report

REPORT: 121-2770

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SAMPLE NUMBER	ELEMENT UNITS	Pb PPM	Zn PPM	As PPM	Cd PPM	Ba PPM	NOTES
82K81-GHC-026		39	80	0.2	0.2	1020	
82K81-GHS-134		34	62	0.2	0.4	520	
82K81-GHS-135		17	107	0.2	0.5	580	
82K81-GHS-136		34	70	0.2	0.4	660	
82K81-GHS-137		5	10	0.2	0.8	100	
82K81-GHS-138		34	45	0.2	0.4	670	
82K81-GHS-139		168	180	0.5	0.6	890	
82K81-GHS-140		152	175	0.4	0.5	880	
82K81-GHS-141		171	580	0.2	2.1	950	



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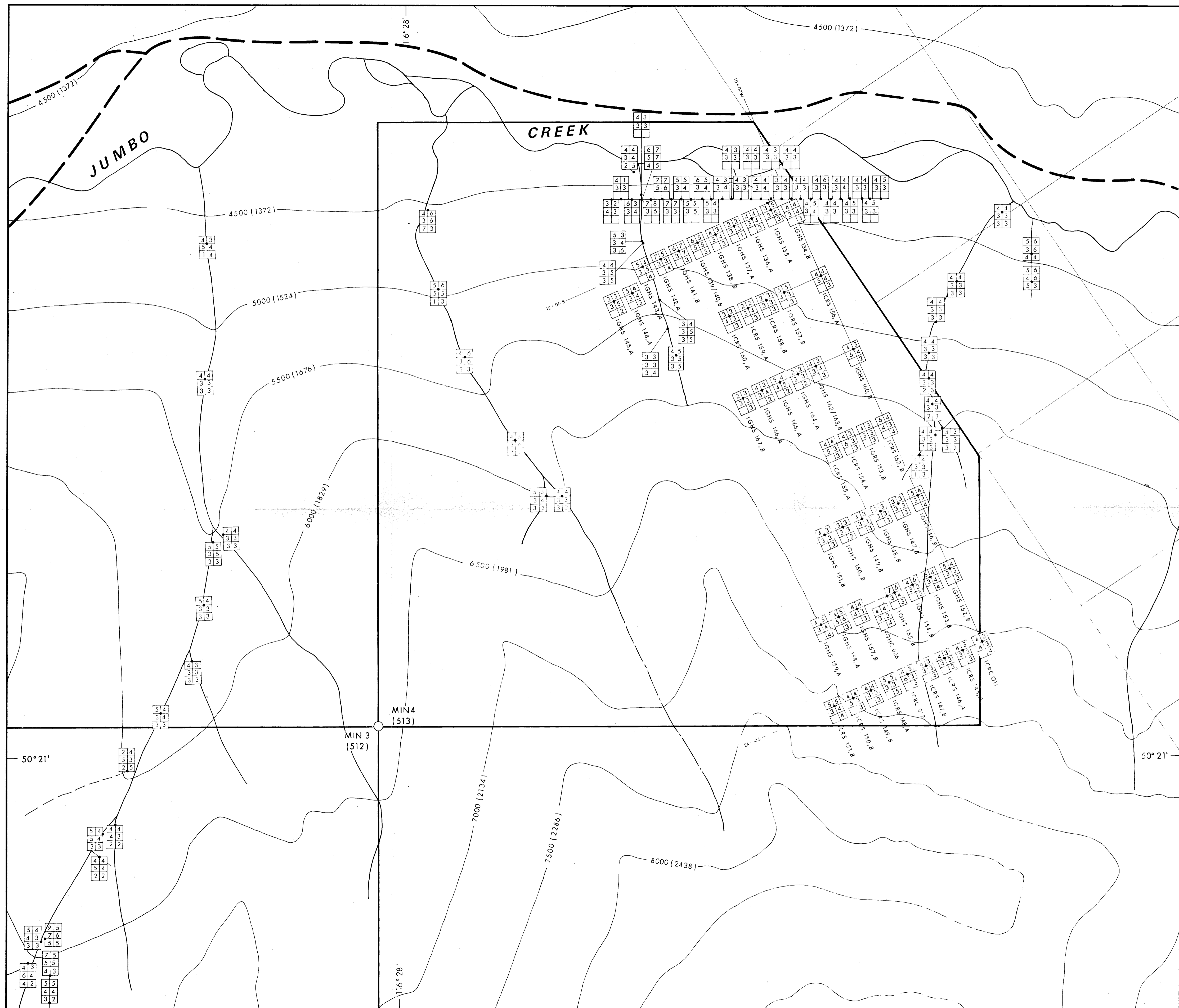
130 PEMBERTON AVE., NORTH VANCOUVER, B.C. V7P 2R5 PHONE: (604) 985-0681 TELEX: 04-352667

Geochemical Lab Report

REPORT: 121-2770

PAGE 3

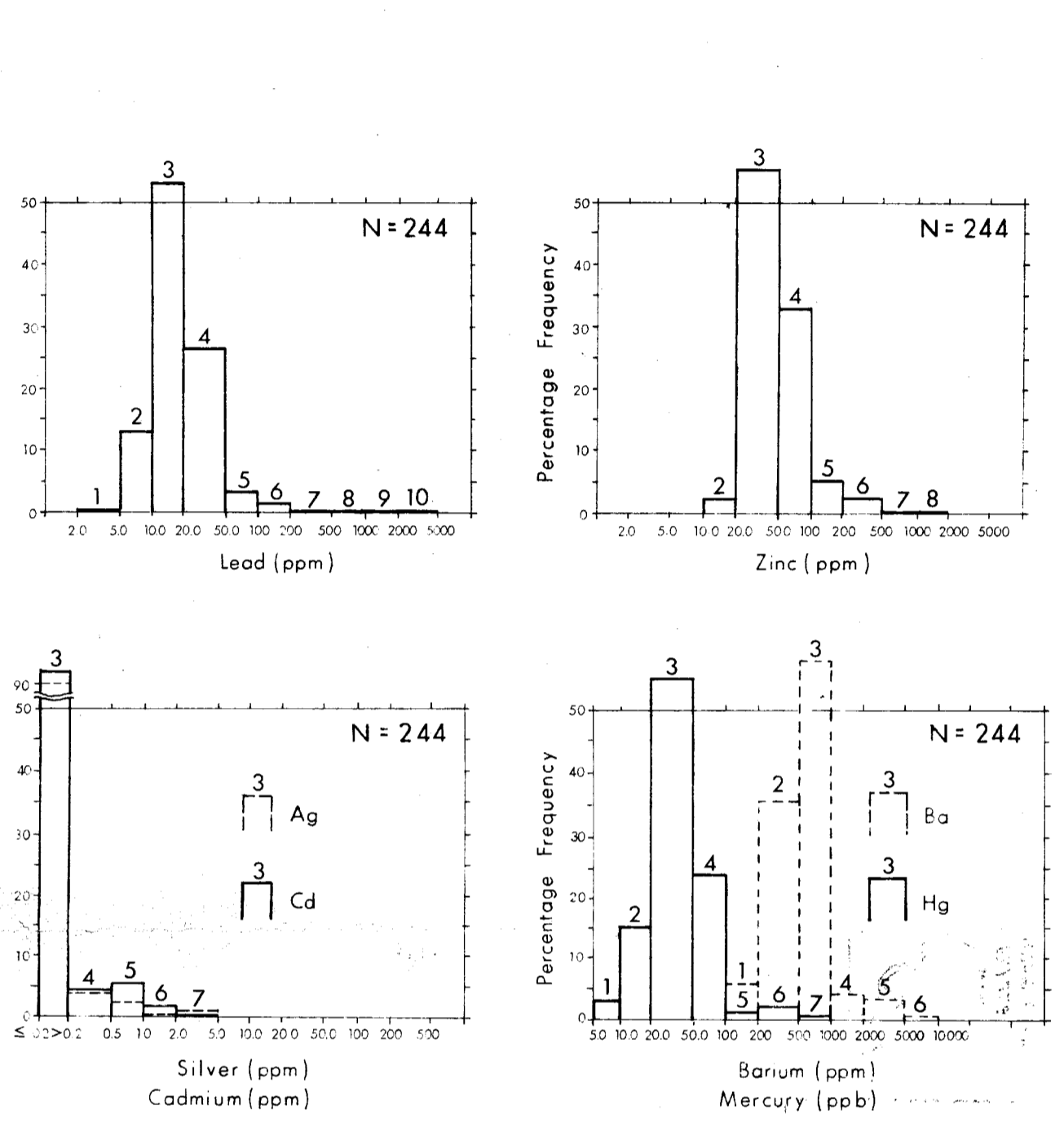
SAMPLE NUMBER	ELEMENT UNITS	Pb PPM	Zn PPM	As PPM	Cd PPM	Ba PPM	NOTES
82K81-GHS-142		290	150	0.2	0.2	1590	
82K81-GHS-143		72	61	0.2	0.5	1700	
82K81-GHS-144		76	91	0.2	0.4	560	
82K81-GHS-145		16	20	0.2	0.5	350	
82K81-GHS-146		62	97	0.2	0.2	1060	
82K81-GHS-147		14	30	0.2	0.2	600	
82K81-GHS-148		12	26	0.2	0.2	760	
82K81-GHS-149		28	30	0.2	0.2	820	
82K81-GHS-150		18	28	0.2	0.2	720	
82K81-GHS-151		20	28	0.2	0.2	970	
82K81-GHS-152		85	74	0.2	0.2	520	
82K81-GHS-153		66	82	0.2	0.4	1000	
82K81-GHS-154		30	475	0.2	0.2	780	
82K81-GHS-155		440	420	0.2	0.3	890	
82K81-GHS-157		36	72	0.4	0.2	830	
82K81-GHS-158		48	143	0.7	1.7	950	
82K81-GHS-159		34	105	0.2	0.4	1200	
82K81-GHS-160		28	30	1.0	0.4	480	
82K81-GHS-162		20	35	0.2	0.3	700	
82K81-GHS-163		22	38	0.2	0.3	770	
82K81-GHS-164		7	10	0.2	0.2	310	
82K81-GHS-165		54	74	0.4	0.5	440	
82K81-GHS-166		26	20	0.2	0.3	350	
82K81-GHS-167		7	28	0.2	0.2	660	



SYMBOLS

• ICRS 145, A SAMPLE SITE: Identifier (prefix 82K/8 omitted), soil horizon, S in 4th digit from left denotes a soil sample; C in 4th digit denotes a stream sediment sample
 Sample sites with no identifier indicate samples collected prior to 1981

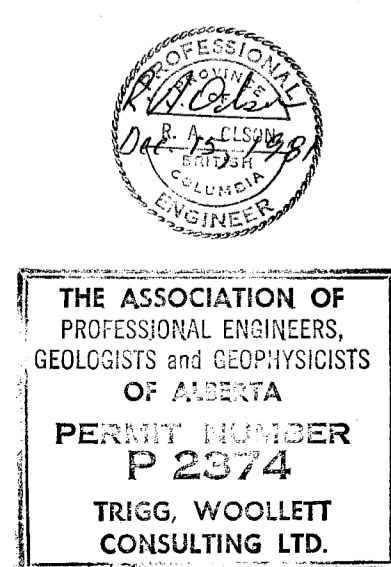
GEOCHEMICAL RESULTS: numbers correspond to the range of values defined by the following histograms (a blank box denotes element was not analyzed for)



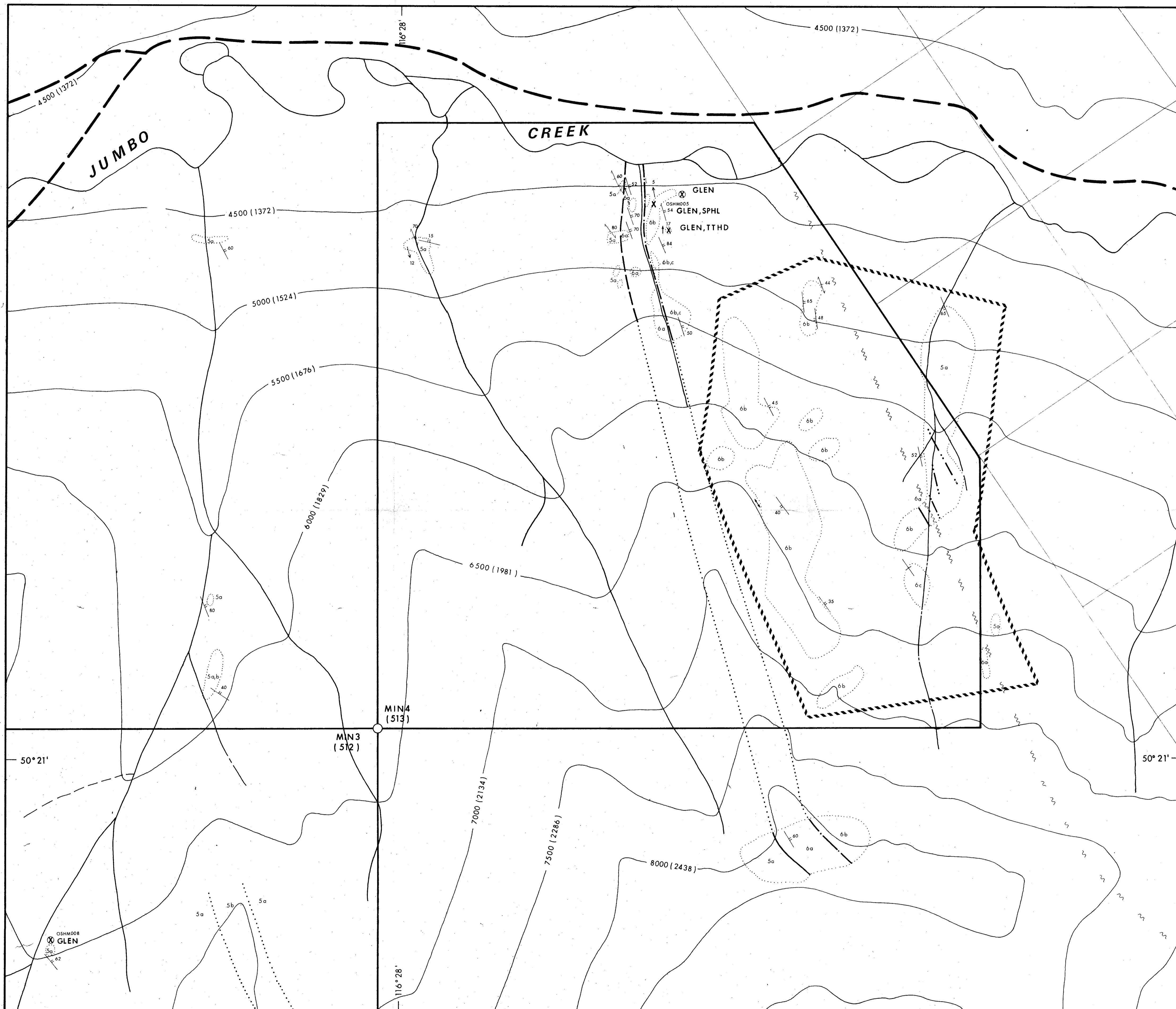
NOTE: Pb denotes lead
 Zn denotes zinc
 Ag denotes silver
 Cd denotes cadmium
 Hg denotes mercury
 Ba denotes barium
 ppm denotes parts per million
 ppb denotes parts per billion
 > denotes greater than
 ≤ denotes less than or equal to

MINERAL RESOURCES BRANCH
 ASSESSMENT REPORT
9846

- 12.005 Grid
- Road
- Mineral claim held by other interests
- MIN 4 (513) Mineral claim held by Echo Bay Mines Ltd., claim name, record number, legal corner post shown
- 7500 (2286) Topographic contour after 1:50,000 NTS map sheet 82K/8: elevation in feet (metres)



ECHO BAY MINES LTD.
 MIN 4 MINERAL CLAIM
SAMPLE LOCATION AND IDENTIFIER, GEOCHEMICAL RESULTS
 NTS 82K/8W
 GOLDEN MINING DIVISION, BRITISH COLUMBIA
 SCALE 0 100 200 300 METRES
 TRIGG, WOOLLETT CONSULTING LTD.
 EDMONTON, ALBERTA
 DECEMBER, 1981



LEGEND

HELIKIAN

Purcell System

- 6 MOUNT NELSON FORMATION: 6a, massive or thin-to thick-bedded, fine- to medium-grained, white and pale green quartzite; 6b, massive to laminated, medium-to thick-bedded, buff- to brown-weathering grey dolostone; 6c, green, grey and black argillite, and dolomitic argillite
- 5 DUTCH CREEK FORMATION: 5a, thin bedded, grey, green, black and white argillite, siltstone, fine grained quartzite and calcareous argillite; 5b, massive to finely laminated, buff weathering cream dolostone

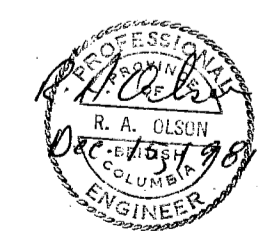
Intrusive Rocks

- Dark green chloritic dykes

SYMBOLS

- Boundary of area geologically mapped and prospected, 1981
- Outcrop or area of outcrop
- Geological boundary (defined, approximate, assumed, gradational)
- Fault (defined, approximate, assumed)
- Bedding, tops unknown (inclined, vertical)
- Foliation (inclined)
- Lineation (inclined)
- Minor fold axis (inclined, horizontal)
- Mineral occurrence in bedrock: identifier; GLEN denotes galena, SPHL denotes sphalerite, TTHD denotes tetrahedrite, CLCP denotes chalcopyrite
- Float mineral occurrence
- Road
- Mineral claim held by other interests
- MIN4 (513) Mineral claim held by Echo Bay Mines Ltd.: claim name, record number, legal corner post shown
- 7500(2286) Topographic contour after 1:50,000 NTS map sheet 82K/8 elevation in feet (metres)

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
9846



THE ASSOCIATION OF PROFESSIONAL ENGINEERS, GEOLOGISTS and GEOPHYSICISTS OF ALBERTA
PERMIT NUMBER P 2374
TRIGG, WOOLLETT CONSULTING LTD.

ECHO BAY MINES LTD.

MIN4 MINERAL CLAIM

**GEOLOGY,
MINERAL OCCURRENCES**

NTS 82K/8W
GOLDEN MINING DIVISION, BRITISH COLUMBIA
SCALE 0 100 200 300 METRES
TRIGG, WOOLLETT CONSULTING LTD.

NOTE: GEOLOGY, IN PART, AFTER FYLES (1959)

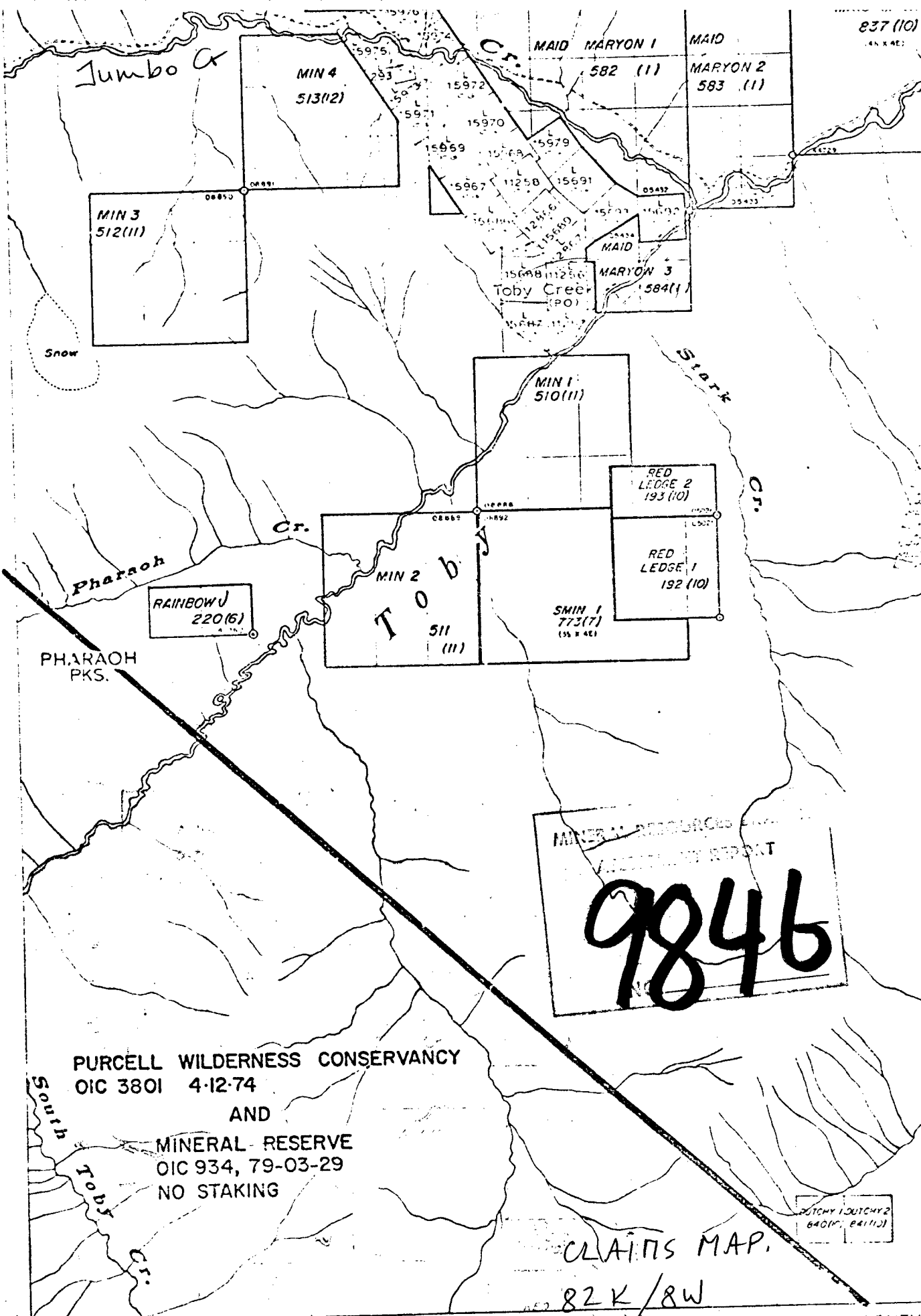
EDMONTON, ALBERTA

DECEMBER, 1981

TO

837 (10)
(AN. K. AE.)

3



2

1

PHARAOH PKS.

PURCELL WILDERNESS CONSERVANCY
OIC 3801 4-12-74

AND
MINERAL RESERVE
OIC 934, 79-03-29
NO STAKING

MINERAL RESOURCES
ASSESSMENT REPORT
9846

PITCHY DUTCHY 2
640 (M. B. 111)

CLAIMS MAP.
82K/8W

50° 15'

116° 30'

GOLDEN MINING DIVISION

1:50 000

TO SOUTH

DEPARTMENT OF MINES