84-228-# 12146

GEOLOGICAL BRANCH
ASSESSMENT REPORT

12,146

GEOLOGICAL ASSESSMENT REPORT
BISMARK - GOLD CURE CLAIMS
SLOCAN MINING DIVISION
NTS 82 F/14
Lat: 49°53'N Long: 117°04'W

OWNED BY
GREENWICH RESOURCES, INC.

OPERATOR: GREENWICH RESOURCES, INC.

CONSULTANT CONTRACTOR: ROBERTSON RESEARCH CANADA LIMITED

BY

KEN KONKIN, Geological Assistant
and
DAVID S. EVANS, Ph.D., P. Geol.,
Consultant to
ROBERTSON RESEARCH CANADA LIMITED

FEBRUARY 1984

ROBERTSON RESEARCH

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1. SUMMARY

The Bismark Property is located in a promising geological environment and a favorable structural setting in the formerly productive Slocan Camp in southeastern British Columbia .

One hundred sixteen rock/ore samples, and 274 soil samples have been collected during 1983 as part of a follow-up survey to a geochemical reconnaissance survey completed during 1982. Reconnaissance mapping and orientation VLF EM surveys were also carried out in 1983.

Soil geochemical results continue to infer the presence of near surface sulphide mineralization. Dump sample analyses previously have confirmed the presence of encouraging values in silver, zinc, lead, and possibly cadmium.

It is concluded that further follow-up and detailed programs to include trenching, a vertical loop electromagnetic survey, additional geological mapping and ultimately, diamond drilling are warranted.

2. INTRODUCTION

2.1 LOCATION AND ACCESS

The Bismark Property (Table 1) is located 430 km east-northeast of Vancouver and 50 km north of Nelson in the West Kootenay District of southeastern British Columbia. The property is just north of the north boundary of Kokanee Glacier Provincial Park. (Figure 1).

The property is accessible by paved road from Kaslo to Keen Creek, and by gravel road along Keen Creek to Briggs Creek where a four-wheel-drive track provides access to the Bismark Group of Claims (Figure 2).

TABLE 1
MINERAL CLAIMS

Claim	Record No.	Month of Record	Owner of Record
Bismark	crown grant	-	Greenwich R.
Highland Laddie	crown grant		Greenwich R.
Mountain goat	crown grant		Greenwich R.
Bismark #1	1780	FEB.	Greenwich R.
Gold Cure	318	DEC.	Greenwich R.
Gold Cure Fr.	319	DEC.	Greenwich R.
Full Rig	320	DEC.	Greenwich R.
Crown Point	331	JAN.	Greenwich R.
Bismark Fr.	4100	SEP.	Greenwich R.

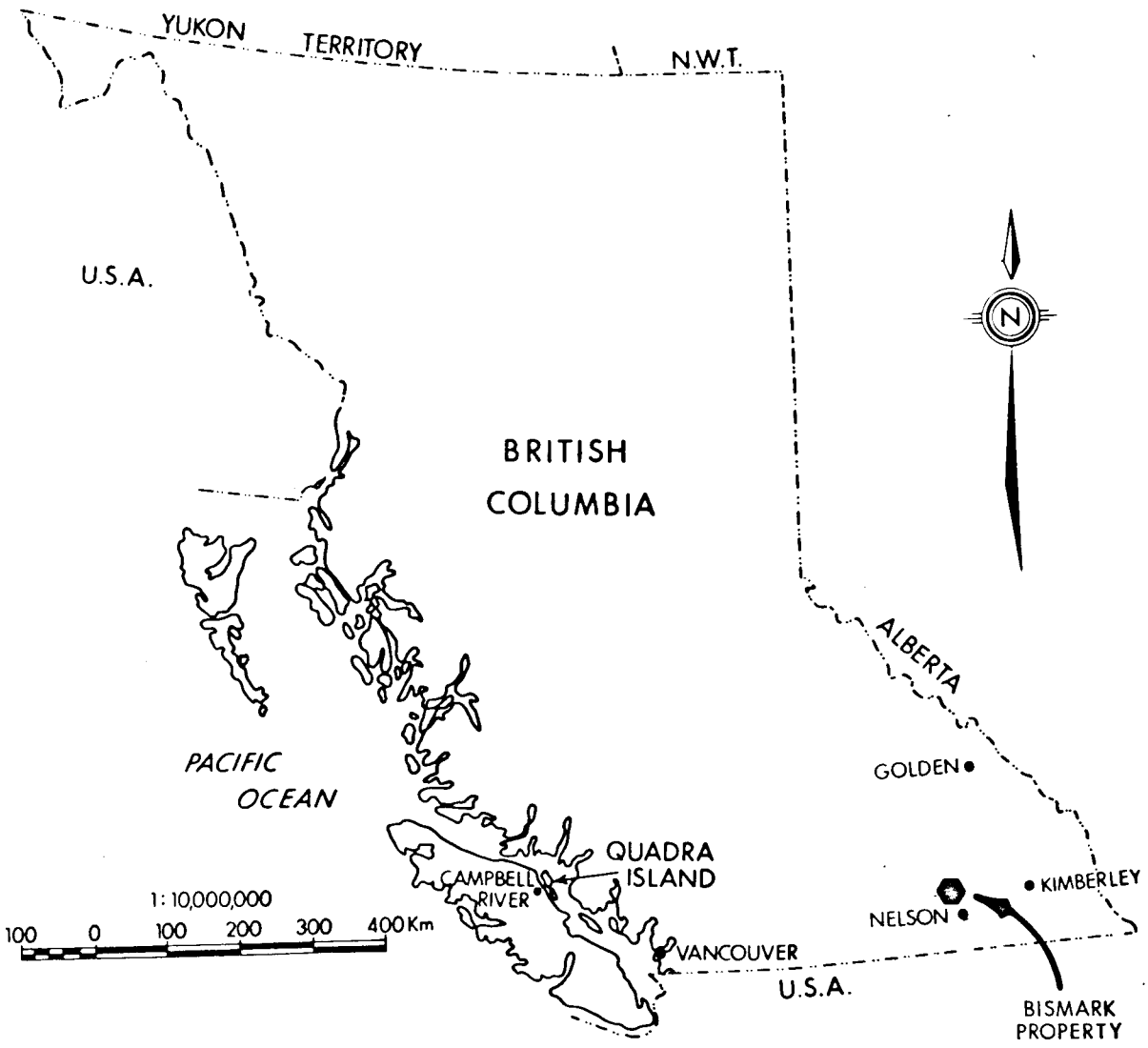

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FIGURE 1

PROPERTY INDEX MAP

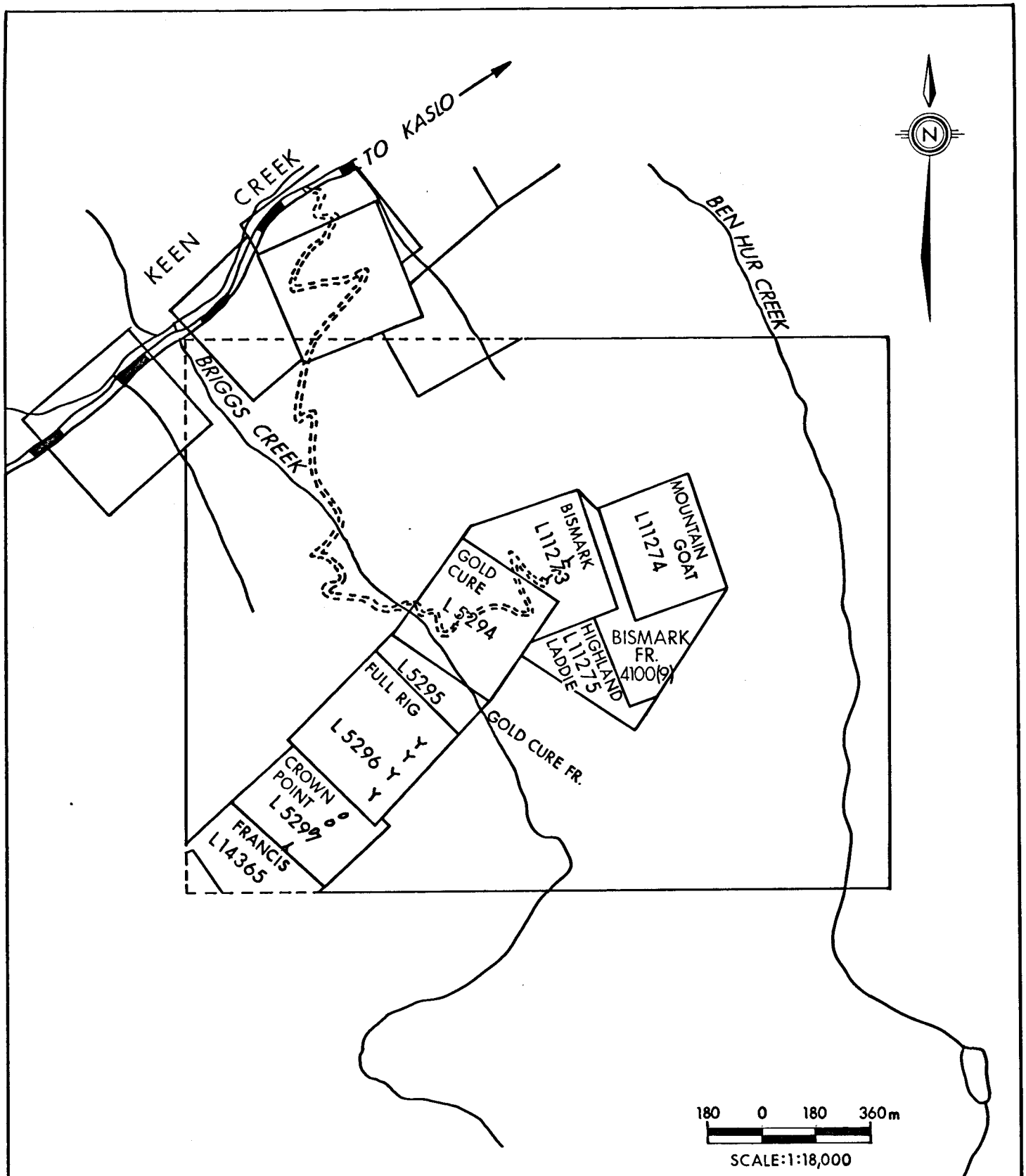

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FIGURE 2

BISMARK CLAIM AREA

2.2 PHYSIOGRAPHY AND CLIMATE

The physiography is rugged mountainous terrain. The Bismark - Gold Cure Group lies at elevations ranging from 6000 to 7000 ft. ASL (1830 to 2130 m). The vegetation is subalpine and alpine variety and environment. Timber is in short supply and a plentiful water source is limited and, possibly, restricted to Spring runoff.

3. GEOLOGY & MINERAL DEPOSITS

3.1 GENERAL

The property is underlain by a synclinal wedge of Triassic Slocan Series rocks. Sedimentary units and have been folded and faulted, sheared and metasomatized by a major Cretaceous Nelson plutonic intrusive event which appears responsible for and directly related to the formation of replacement lead-zinc-silver-cadmium mineral deposits (after Cairnes, 1934). Numerous old trenches, adits, tunnels and other mine workings are located on the claims. Previous production is estimated at 137,800 lb. Pb, 19,600 lb. Zn and 107,000 oz. Ag during intermittent mining activity extending from 1898 to 1955.

3.2 REGIONAL AND LOCAL GEOLOGY

The Slocan Group consists primarily of argillites, limestones, quartzites and minor schists. This group generally strikes N 50°W and dips 70°NW.

1) Argillites. These dark, fine-grained rocks are composed of thinly bedded silty and sandy layers. They are well indurated, have a predominate slatey cleavage and show a slight calcareous nature near the limestone contact. Phyllic surfaces are due to flexural slips. The argillites are iron stained in some areas and contain minor limestone inclusions.

2) Crystalline Limestone/Marble. This rock unit is characterized by coarse granular rhombic crystals of calcium carbonate formed by recrystallization. The limestone is grey on a weathered surface and white on fresh surfaces and hosts iron stained pods of argillite. Stratigraphically, the limestones underly the argillite unit.

3) Quartzite. A grey, fine-grained, well-indurated rock of apparently little economic significance.

4) Schist and phyllites. A mixture of metamorphic and sedimentary rocks consisting of minor amounts of andalusite schist and phyllites has been observed.

The Nelson Plutonic Rocks underlay and flank the Slocan Group to the east, west and south. The Bismark property is located at the northern margin of a major batholithic complex of pinkish leucocratic, porphyritic and non-porphyritic Nelson granites and granodiorites. The pinkish color is due to the orthoclase alteration.

Granitic and aplite dykes intersect the Slocan Group as primary and subsequent intrusions of the Nelson Granite.

Dark Lamprophyre dykes. Dark green and black lamprophyre dykes are in evidence. A coarse granular appearance is due to intense weathering and decomposition. The dykes are of mafic to ultramafic composition containing hornblende, biotite and pyroxene and appear to be associated with the intrusive and, possibly, sulphide mineralizing events.

3.3 ECONOMIC GEOLOGY

The Slocan Group has been metamorposed into a doubly plunging syncline. A roof pendant of metasedimentary rocks has been formed within the Nelson Granite. The former mine workings are near the axial plane indicating a major structural control on sulphide localization and the potential for major ore deposition sites.

3.3.1 Bismark Group

The old Bismark workings (elevation 1950 metres) comprise three adits covering a vertical distance of 120 metres. The original chimney-shaped ore body extended from the uppermost adit to the lowermost adit. It is not known if the body extends below this point as the lowermost adit portal has collapsed.

The Bismark deposit shows evidence as a replacement to and association with a well-defined fault/fracture/fissure system.

Sulphide mineralization also occurs in breccia zones and along joint fractures. Mineralization consists of sphalerite, galena and pyrite found in association with calcite, quartz and argillaceous rock gangue fragments. The replacements show evidence of brecciation during emplacement of the Nelson Batholith in the Slocan Group.

3.3.2 Gold Cure Group

The original workings comprise of five or six sloughed in adits and at least six opencuts and trenches. Dump material is primarily of argillite composition.

Mineralization is predominately pyrite with sphalerite and minor galena. Gangue minerals are quartz, and calcite. The "vein" shows evidence of brecciation and exhibits replacement type ore textures.

The original replacement of sulphide mineralization appears to have been along a plane of weakness parallelling the bedding and lithologic layering. The plane of weakness is now a shear zone at the conformable contact between the argillaceous rocks and the

recrystallized coarse limestone of the Slocan Group.

Sulphide mineralization on the Gold Cure Group and Bismark claims is believed to be of a brecciated, replacement, composite vein-lode system. Evidence to date indicates that the mineralizing event occured during the late stages of intrusion and hydrothermal events of the Nelson Batholith.

Structural and lithological controls are primary ore search parameters. Mineralization is found within and along well defined fault and fracture systems and is located along or near the argillaceous - carbonate contact or facies change.

4. GEOCHEMISTRY

4.1 GENERAL

Sixty-seven rock samples, 274 soil samples have been collected from the Bismark - Gold Cure Property and analyzed for Ag, Pb, Zn, Cd (Appendix 2). Soil sampling has been particularly effective in identifying areas with good potential for near surface sulphide mineralization. In addition, analyses of old dumps has confirmed the presence of promising levels in silver, lead, zinc and, possibly, cadmium (Evans, 1982).

4.2 ROCK GEOCHEMISTRY

As indicated above, 67 surface rock samples were collected in a preliminary attempt to assess the potential use of lithogeochemistry as an aid to identify favourable strato-structural settings and/or locate near surface expressions of primary dispersion haloes. With the possible exception of Cd, the results of this work have been extremely disappointing and appear to indicate little, if any direct/indirect use for this exploration technique on the Bismark property.

Analytical results are listed in Appendix 2 (Report 83-139) and the following statistical summary (Table 2) is presented to demonstrate the restrictive elemental ranges and distributions in bedrock lithologies around the Bismark workings. Comparative underground samples are also enclosed in Appendix 2 (Report 83-139)

TABLE 2

STATISTICAL ANALYSIS, ROCK SAMPLES

	Ag	Cd*	Zn	Pb
$\bar{x}$	0.38	0.88	59.3	9.1
Sd	0.34	2.3	57.2	5.9
Cv	0.89	2.6	0.96	0.65

* includes two values of 15.5 and 10.7 ppm Cd with corresponding weakly anomalous levels of zinc. Anomaly unexplained.

$\bar{x}$ = Mean
Sd = Standard deviation
Cv = Coefficient of variation

4.3 SOIL GEOCHEMISTRY

Two hundred and seventy-four soil samples were collected from a reconnaissance grid established in 1982 and extended during 1983 (Figures 5 and 6). All samples were collected from near surface (20 cm) horizons approximating A_1 soil development. This material was sought as soil development is poor and maximum anomaly contrast is anticipated in partially to fully humified sections of the profile where heavy metal chelations and retention is active (Evans, op. cit).

Soil geochemistry has proved to be an effective exploration aid on the Bismark - Gold Cure property and has previously identified at least two anomalous trends in Pb/Ag data compiled by Evans. Anomalous threshold levels 2.4 ppm Ag, 80 ppm Pb, 180 ppm Zn and 4.7 ppm Cd define and confirm the apparent trend of near-surface sulphide mineralization evidenced by old adit sites (Figures 5 and 6).

No attempt has been made to contour selected levels as the sample station spacings (5 m and 10 m) are not compatible with the line spacings (100 m to 150 m).

The geochemical patterns and response levels are regarded as extremely promising indications of near-surface subcrop exposures of semi-massive replacement and/or breccia mineralization as observed in the Bismark tunnel and on the Gold Cure dump sites.

4.4 BEN HUR RECONNAISSANCE SAMPLING

Reconnaissance stream sediment and soil sampling was carried out along Ben Hur Creek in an attempt to indentify potential northern extensions of mineralization from the Bismark lode (Figure 7).

One stream sample (BH#2) resulted in an anomalous value of 37.2 ppm Ag. This site was resampled and correspondingly similar values were found. The soil horizon is poorly developed due to the rugged nature of the terrain and the anomaly may reflect downslope dispersion and/or seepage accumulations from upper elevations.

Data is listed in Appendix 2 (Reports 83-206, 83-329).

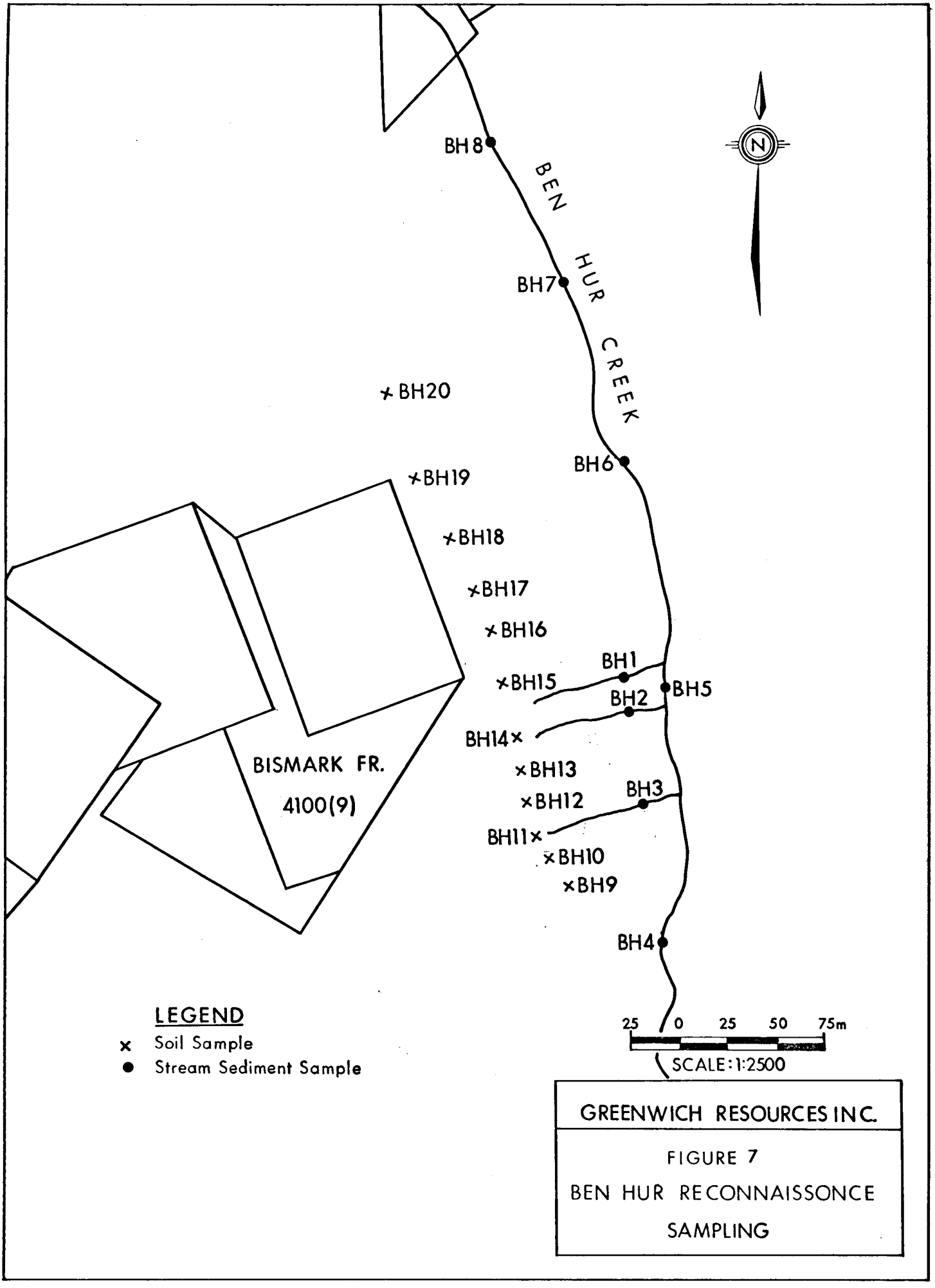

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FIGURE 7

BEN HUR RECONNAISSONCE SAMPLING

5. GEOPHYSICS

An orientation VLF EM (EM-16) geophysical survey was carried out over the Bismark - Gold Cure property to assess the usefulness of this technique. Results are plotted on Figure 6.

Weak, moderate and strong conductivites are evidenced in the area of the Gold Cure dumps and geochemical anomalies; but, fail to confirm the presence of a continuous "zone".

Responses over the Bismark lode are less definitive and fail to justify continued use of this method in this area.

In summary, orientation VLF EM results are sufficiently encouraging to recommend use of a more rigorous geophysical electromagnetic method, perhaps Vertical Loop, to assist in defining the trend of near-surface sulphide mineralization in the Gold Cure area. A magnetometer survey may provide useful data on rock types and trends in the intrusive contact area.

6. CONCLUSIONS

1. Significant silver, lead, zinc and cadmium in soil values have been identified on the Bismark - Gold Cure property. These values infer the potential for near-surface high-grade silver-bearing lode mineralization.

2. Rock geochemistry has been ineffective in search for strato-structurally controlled sulphide mineralization.

3. VLF EM geophysical results have been partially successful in recognizing or confirming potential areas of sulphide mineralization in the Gold Cure area. More rigorous geophysical techniques are needed to improve orientation survey results and identify potentially favourable strata and structures.

4. A trenching program is required to expose apparent near-surface sulphide mineralization and open old workings in the Gold Cure area for evaluation.

5. Diamond drilling in the Gold Cure area is contingent upon a reasonable degree of success and progress attained in trenching and geophysical surveys.

7. RECOMMENDATIONS

1. Surface trenching across the trend of the Gold Cure trenches and soil anomalies is recommended as a priority exploration objective.

2. Reopening of the sloughed Gold Cure adits with attendant mapping and sampling is recommended as a supplemental activity to surface trenching.

3. Vertical Loop electromagnetic and magnetometer surveys should be undertaken at optimum measurement stations and distributions to define promising and favourable subcropping lithologies and structures in the Gold Cure area.

4. Diamond drilling is recommended as a contingent activity based on favourable trenching results and identifiable geophysical targets.

5. Further follow-ups mapping, sampling, prospecting and orientation geophysics is recommended to trace the source of the Ben Hur Creek reconnaissance anomalies.

6. No further work is recommended in the area of the Bismark workings at this time.

8. SELECTED REFERENCES

Cairnes, C.E., 1934.
Slocan Mining Camp, British Columbia, G.S.C. Memoir 173, 137 pp.

Evans, D. S. 1982.
Bismark Property, Preliminary Evaluations, unpublished internal document prepared for Greenwich Resources, 19p and Appendices.

Little, H. W., 1960.
Nelson Map-Area, West Half, British Columbia (82 F W1/2), G.S.C. Memoir 308, 205 pp.

Starck, L.P. and Hill, H.L., 1965.
Report on Daybreak Mining Corporation (1957) Ltd. Ainsworth Mining Division, Kaslo, B.C.

CERTIFICATE

I, Ken Konkin currently residing at 5959 Student Union Mall, Gage Towers, University of British Columbia, Vancouver, British Columbia hereby certify that:

1. I am a 4th year student in Geology at the University of British Columbia, Vancouver, British Columbia.

2. I have been employed by Robertson Research Canada Limited for three consecutive field seasons (1981-1983) as a geological assistant in base and precious metals exploration in British Columbia and Alaska.

3. I carried out the preliminary evaluation and sampling program on the Bismark Property from June 19 through August 29, 1983.

March 1, 1984
Date

Ken Konkin
Ken Konkin

CERTIFICATE

David S. Evans, currently residing at 5232 Viceroy Drive N.W., Calgary, Alberta T3A 0V7, hereby certify that:

1. I am a mining exploration geologist and have practised my profession since 1966.

2. I am a graduate of the University of British Columbia with a B.Sc. (1966) in Chemistry and Geology, and a graduate of the Royal School of Mines, University of London, U.K. with a Ph.D. (1971) in Applied Geochemistry.

3. I am a registered Professional Geologist with the Association of Professional Engineers, Geologists and Geophysicists of Alberta, a Member of the Association of Exploration Geochemists, and a Fellow of the Geological Association of Canada.

4. I visited the Bismark property on June 19, 1983.

5. The work in this report was carried out under my supervision.

April 6/84
Date

David S. Evans
David S. Evans, Ph.D., P. Geol.

APPENDIX 1

ANALYTICAL INFORMATION

Laboratory:	TerraMin Research Labs Ltd. Calgary, Alberta
Mesh Size:	-80/soils, -100/rocks
Extraction:	For Ag/Pb/ Zn/Cd: Nitric-perchloric dissolution to dryness, taken up in dilute HCI.
Analysis:	Atomic Absorption

APPENDIX 2

GEOCHEMICAL DATA

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ANALYTICAL REPORT

Job # 83-139 | Robertson Research | Date July 27,1983

Dave S. Evans

Client Project Bismark | Page 1/3

Sample No.	Pb ppm	Zn ppm	Cd ppm	Ag ppm
BM-1	16	15	-0.1	-0.1
2	21	25	-0.1	0.6
3	9	25	0.4	0.1
4	7	20	0.1	0.1
5	9	19	0.1	0.3
6	9	108	-0.1	0.6
7	4	89	-0.1	-0.1
8	5	92	-0.1	-0.1
9	4	28	-0.1	0.1
10	5	97	-0.1	0.2
11	4	99	-0.1	-0.1
12	13	75	-0.1	0.2
13	5	119	-0.1	-0.1
14	25	90	-0.1	0.4
15	7	28	0.4	0.4
16	10	80	-0.1	0.3
17	4	32	0.1	0.3
18	6	30	0.6	-0.1
19	3	4	-0.1	-0.1
20	9	8	-0.1	0.1
21	3	43	0.8	0.2
22	4	39	2.9	-0.1
23	6	27	-0.1	0.5
24	3	55	1.2	-0.1
25	3	34	1.0	-0.1

Note: Minus sign indicates less than figure given.

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ANALYTICAL REPORT

Job # 83-139 Date

Client Project Bismark Page 2/3

Sample No.	Pb ppm	Zn ppm	Cd ppm	Ag ppm
BM-26	10	62	1.9	1.4
27	4	330	15.5	0.9
28	4	260	10.7	1.2
29	9	42	0.4	-0.1
30	6	87	0.8	-0.1
31	10	72	-0.1	-0.1
32	9	57	5.4	0.4
33	5	42	-0.1	0.7
34	4	22	0.3	0.6
35	4	18	0.1	-0.1
36	10	115	1.0	0.4
37	8	11	0.1	0.7
38	9	29	0.7	0.7
39	28	34	0.2	1.0
40	9	69	0.3	1.0
41	14	106	-0.1	0.1
42	13	56	-0.1	0.6
43	11	7	-0.1	-0.1
44	9	217	2.5	1.3
45	8	72	-0.1	0.6
46	2	92	-0.1	-0.1
47	9	21	-0.1	0.6
48	10	84	-0.1	-0.1
49	18	31	0.2	0.8
50	26	9	0.1	0.2

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ANALYTICAL REPORT

Job # 83-139 Date

Client Project Bismark Page 3/3

Sample No.	Pb ppm	Zn ppm	Cd ppm	Ag ppm
BM-51	11	11	0.4	0.9
52	8	29	0.6	0.3
53	7	11	0.1	0.1
54	10	19	-0.1	0.6
55	20	17	0.3	0.5
56	8	17	0.1	0.5
57	8	82	1.2	0.4
58	8	52	-0.1	0.2
59	16	125	0.1	0.7
60	2	111	0.5	0.6
61	13	54	2.1	0.3
62	4	21	0.3	-0.1
63	21	27	-0.1	0.5
64	17	41	0.9	0.7
65	3	27	0.8	-0.1
66	5	56	1.1	0.4
67	4	46	1.2	0.4
BM-UG-1	7	123	0.3	0.6
2	630	840	8.3	34.8
3	84	870	16.0	9.6
4	1980	5900	73.0	79.6
5	39	840	9.2	9.9
6	27	193	1.5	3.1
7	17	83	1.1	0.5
8	2200	58000	665.	833.

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ANALYTICAL REPORT

Job # 82-191

Date Oct. 14, 1982

Robertson Research

Client Project Bismark

Page 1/1

Sample No.	Pb ppm	Zn %	Cd ppm	Ag ppm	Hg ppb
Gold Cure Dumps	9700	3.90	340	598	30
Bismark Zinc Veins		22.0	2900	2560	20

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ANALYTICAL REPORT

Job # 83-329 Robertson Research Date Oct. 17, 1983

Client Project Bismark Page 1/3

Sample No.		Ag ppm	Pb ppm	Zn ppm	Cd ppm
L 320 N	325 W	0.3	7	113	0.1
	300	0.3	18	149	1.2
	275	0.9	10	124	0.5
	250	-0.1	8	94	0.2
	225	-0.1	10	124	0.3
	200	0.7	11	107	0.9
	175	0.5	9	67	0.7
	150	0.4	3	62	0.3
	125	0.4	9	133	0.6
	100	0.4	7	118	0.8
	075	0.3	8	92	0.5
	050	0.4	11	125	1.0
	025	1.6	74	240	1.3
	000	1.2	15	177	1.6
	025 E	0.8	15	120	0.6
	050	0.4	7	79	0.5
	075	1.3	25	155	1.3
	100	6.3	410	1480	6.0
	125	110.	3200	6100	60.5
	150	2.5	39	230	5.6
	175	0.2	13	410	9.4
	200	0.2	10	390	10.0
	225	0.1	10	870	22.3
	250	0.5	7	126	1.5
	275	0.4	2	51	1.3

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ANALYTICAL REPORT

Job # 83-329 Date

Client Project

Sample No.	Ag ppm	Pb ppm	Zn ppm	Cd ppm
L 320 N 300 E	0.5	9	194	1.5
L 220 N 350 W	0.4	10	180	1.1
325	0.1	7	104	0.4
300	-0.1	7	113	0.4
275	-0.1	12	207	0.7
250	-0.1	24	130	0.4
225	1.3	43	193	4.5
200	1.5	15	87	0.7
175	0.7	8	80	0.4
150	2.9	14	240	3.4
125	0.2	8	78	0.2
100	0.3	7	84	0.6
075	0.6	11	121	1.3
050	0.3	10	135	1.3
025	0.6	8	93	1.5
000	1.0	8	105	1.2
025 E	355.	3000	12900	113.
050	28.9	390	1900	27.7
075	2.7	29	670	18.9
100	1.4	21	1170	8.8
125	1.3	27	790	11.3
150	0.8	14	1250	12.3
175	0.8	13	300	5.8
200	0.3	12	165	4.6
225	0.1	12	500	16.7

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ANALYTICAL REPORT

Job # 83-329 Date

Client Project Page 3/3

Sample No.	Ag ppm	Pb ppm	Zn ppm	Cd ppm
L 220 N 250 E	0.8	24	230	3.7
275	0.2	10	300	7.8
300	0.4	12	410	11.6
325	0.4	9	440	17.9
350	0.4	10	390	10.3
375	0.2	16	940	31.4
400	-0.1	29	199	1.6
BH # 2A-1	0.4	19	590	10.3
2A-2	0.3	14	490	12.2
2A-3	0.2	15	860	12.2
2A-4	6.3	14	3300	13.4
2B	38.2	35	2600	7.9
2C	25.5	36	2150	11.4
3B	0.1	20	270	17.8
9	0.1	23	520	16.6
10	-0.1	11	400	10.5
11	-0.1	12	430	29.9
12	-0.1	12	240	3.5
13	-0.1	32	1180	9.6
14	0.3	9	103	1.0
15	0.2	18	183	2.0
16	1.2	9	84	0.5
17	0.5	25	105	0.6
18	0.2	9	79	0.7
19	0.5	11	134	0.9
20	0.5	9	101	1.3

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APPENDIX 3

BEN HUR RECONNAISSANCE
SOIL GRID
(Analytical Report 83-380)

TERRAMIN RESEARCH LABS LTD.

ANALYTICAL REPORT

Job # 83-380 Robertson Reaearch Date Nov.20, 1983

Client Project Bismark Page 1/1

Sample No.	Ag ppm	Pb ppm	Zn ppm	Cd ppm
50 S + 30 W	1.3	16	83	1.5
20	1.0	16	960	12.2
10	0.6	12	690	7.5
BL	0.4	14	570	11.2
10 E	0.5	13	1030	20.0
20	0.8	7	680	16.1
30	1.1	16	890	32.6
100 S + 20 W	0.4	15	142	1.6
10	0.5	12	152	1.7
BL	0.9	15	580	6.5
10 E	0.4	24	800	2.8
20	0.5	12	340	3.0
30	0.9	15	470	9.2
40	0.6	18	630	5.5
150 S + BL	0.5	16	208	2.1
10 E	0.4	13	280	1.7
20	0.4	14	440	1.9
30	0.7	13	260	0.9
40	0.2	14	290	2.3
50	0.6	10	208	2.3
	ppb	ppb	ppb	ppb
Water	0.4	106	228	2.7

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(403) 276-8668 Telex 03-821172 CGY

APPENDIX 4

STATEMENT OF EXPLORATION EXPENDITURES

ROBERTSON RESEARCH

STATEMENT OF 1983 EXPENDITURES
BISMARK CLAIMS

NAME/ADDRESS	DAYS WORKED	WAGES			SUBSISTENCE		
		Days Worked	Daily Rate	Total Wages	Total Days	Rate Per Day	Amount
Gordon W. Sinden Senior Technologist Robertson Research Canada Ltd. 300, 604 - 1st Street S.W. CALGARY, Alberta T2P 1M7	SEP 17,28	2	$155.00	$310.00	2	$25.00	$50.00
David S. Evans Exploration Manager/Geochemist 330, 604-1 Street, S.W. Calgary, Alberta. T2P 1M7	JUNE 19	1	$360.00	$360.000	1	$25.00	$25.00
R. Tim Joveski Geological Assistant R.R. #1 NELSON, British Columbia V1L 5P4	AUG 28,29	2	$110.00	$220.00	2	$50.00	$50.00
Ken Konkin Geological Assistant P.O. Box 52 NELSON, British Columbia V1L 5P7	JUNE 19, 21-24 AUG 1-6, 9-13, 17-20,22, 23,28,29	24	$110.00	$2,640.00	24	$25.00	$600.00
			TOTAL	$3,530.00		TOTAL	$ 725.00

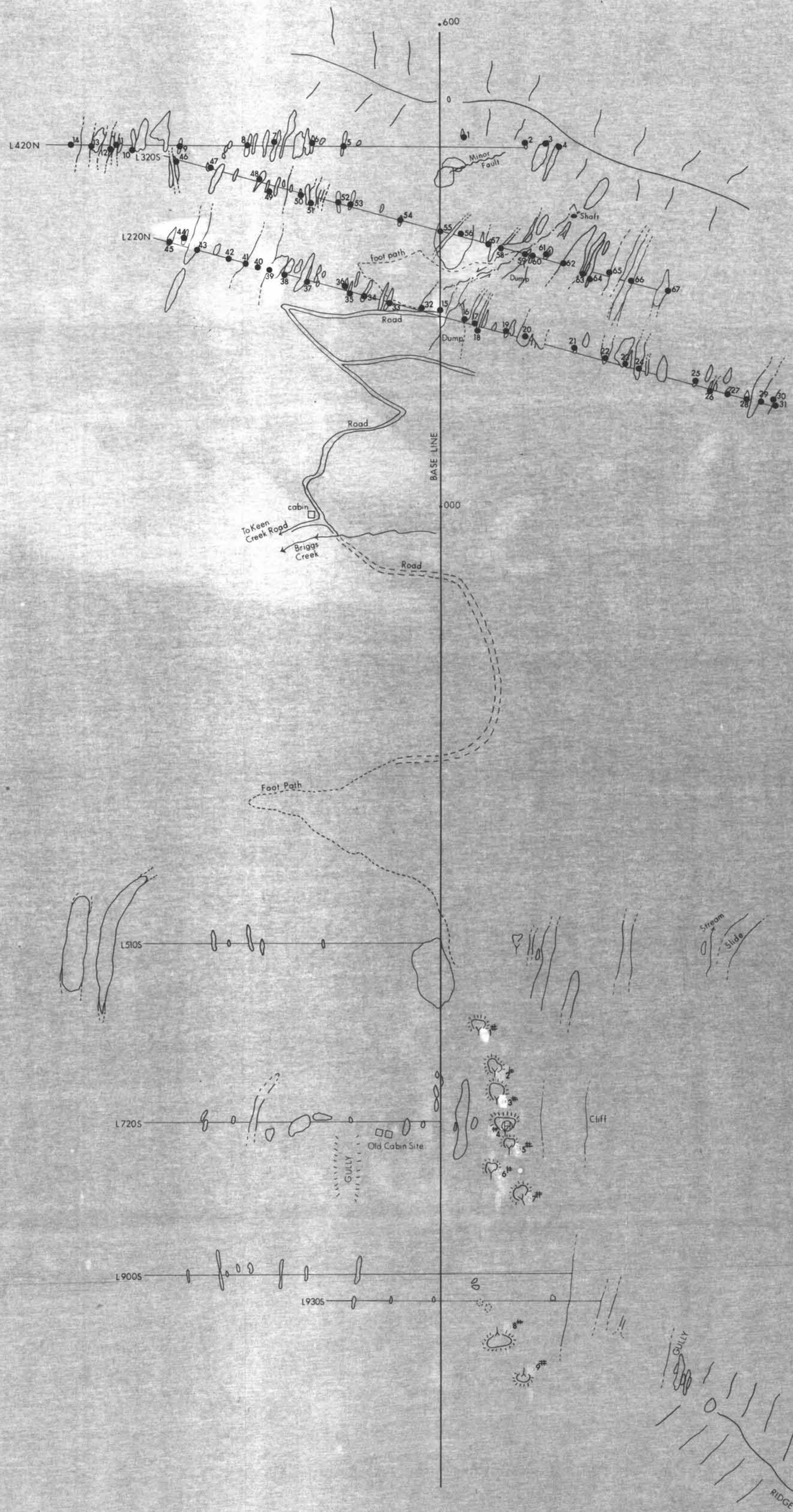
STATEMENT OF
1983 EXPENDITURES
BISMARK CLAIMS

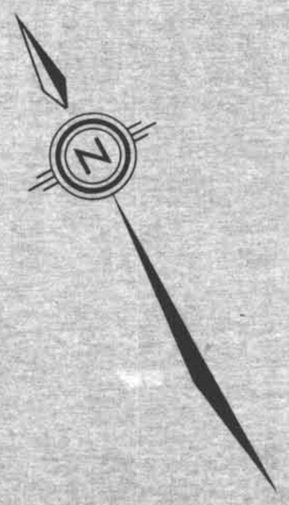
OTHER EXPENDITURES

Field Office Rental	$ 300.00
Supplies & Equipment	195.00
Truck Rental (incl. gas, oil, maintenance)	750.00
Mileage and Expenses	450.00
Freight	110.00
Communications - Telephone	60.00
Analyses	1828.55
Drafting	400.00
Contract Labour	2280.00
	6,373.55

SUMMARY

Total Wages	3530.00
Total Subsistence	725.00
Total Other Expenditures	6373.55
Total Project Costs	10628.55
Report Preparation	1350.00
Total 1983 Expenditures	11978.55





LEGEND

- Argillaceous Siltone-Fine Sandstone; Thinly Bedded, Phyllite, Calcareous, Black-Light Brown Fresh Surface, Well Laminated.
- Crystalline Limestone; Coarse Crystalline, Medium Grey Weathered Surface, Light Grey Fresh Surface May Contain Lenses Of Black Oxidized Schistose Argillite
- Quartzite; Medium Grey, Well Indurated, Massive.
- Schistose Argillite; Black, Well Laminated, Thinly Bedded Very Fine Grained.
- Oxidized Black Schistose Argillite, Heavy Iron Staining And Alteration, Black, Well Laminated, Thinly Bedded Very Fine Grained, Occurs Within Crystalline Limestone; Unit As Lenses.
- Transition Zone; Interbedded Schist, Crystalline Limestone, Limey Schist, Phyllite, Schistose Argillite, Highly Oxidized Zone, Friable, Generally Recessive.

INTRUSIVES

Post Intrusives Dykes

- Lamprophyre Dyke: Dark Green, Coarse Grained Mafics.
- Aplitic/Feldspar Porphyry Dyke; Buff Coloured
- Granitic Dyke; Large Feldspar Phenocrysts (3-7mm) Large Biotite Flakes (2mm), Foliated.

Triassic Slocan Group

Cretaceous Nelson Plutonics

- Porphyritic Granodiorite Large (3cm) K-Spar Phenocrysts, Very Coars Grained, Grey Weathered Surface, Light Buff Fresh Surface Slight Iron Staining.

SYMBOLS

- Open Cut, Adit And Dump
- Large Inferred Major Fault
- Small Defined Minor Fault
- Helipad
- ●9 Rock Geochem Sample Locations

25 0 25 50 75 100 125m
SCALE: 1:2500

GREENWICH RESOURCES INC.

BISMARK GOLD CURE

OUTCROP MAP

ROCK GEOCHEM

COMPILED BY: KEN. KONKIN	DATE: FEB. 1984
DRAWN BY: C. GARBER	PROJ. NO.:

LEGEND

4 - DYKES
- a - granitic - gneissic, augen prominent (k-spar)
- b - feldspar qtz porphyry - aplitic
- c - lamprophyre dyke - dark green, coarse granular

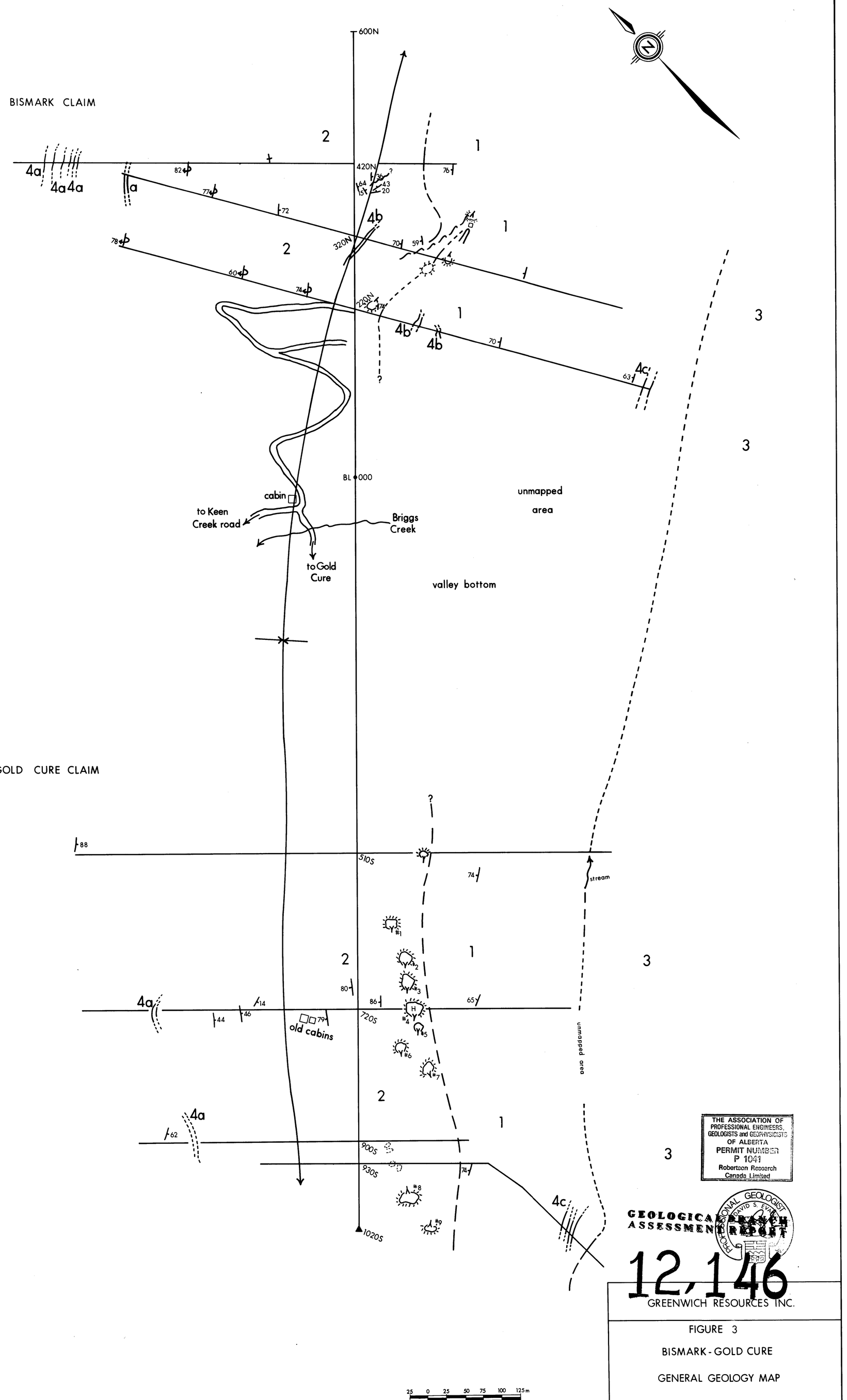
3 - NELSON INTRUSIVES
- porphyritic granodiorite
- large (to 2 cm.) k-spar phenocrysts.

2 - SLOCAN METAMORPHOSED SEDIMENTS
- argillaceous silstone, sandstone, contains 1st. lenses.
- grey quartzite
- schistose argillite: schists

1 - SLOCAN CARBONATES
- recrystallized coarse granular limestone (marble); white-grey
- contains lenses of argillite; dark and oxidized

SYMBOLS

- Contacts (defined, approx, assumed)
- 70 ϕ 70 / + Strike: dip (overturned, inclined, vertical)
- Syncline - doubly plunging (defined, assumed)
- Fault (defined, assumed)
- adit: dump with number (mineralization PY, SL, GN.)



THE ASSOCIATION OF PROFESSIONAL ENGINEERS, GEOLOGISTS and GEOPHYSICISTS OF ALBERTA
PERMIT NUMBER P 1041
Robertson Research Canada Limited

PROFESSIONAL GEOLOGIST DAVID S. EVANS

GEOLOGICAL BRANCH ASSESSMENT REPORT

12,146

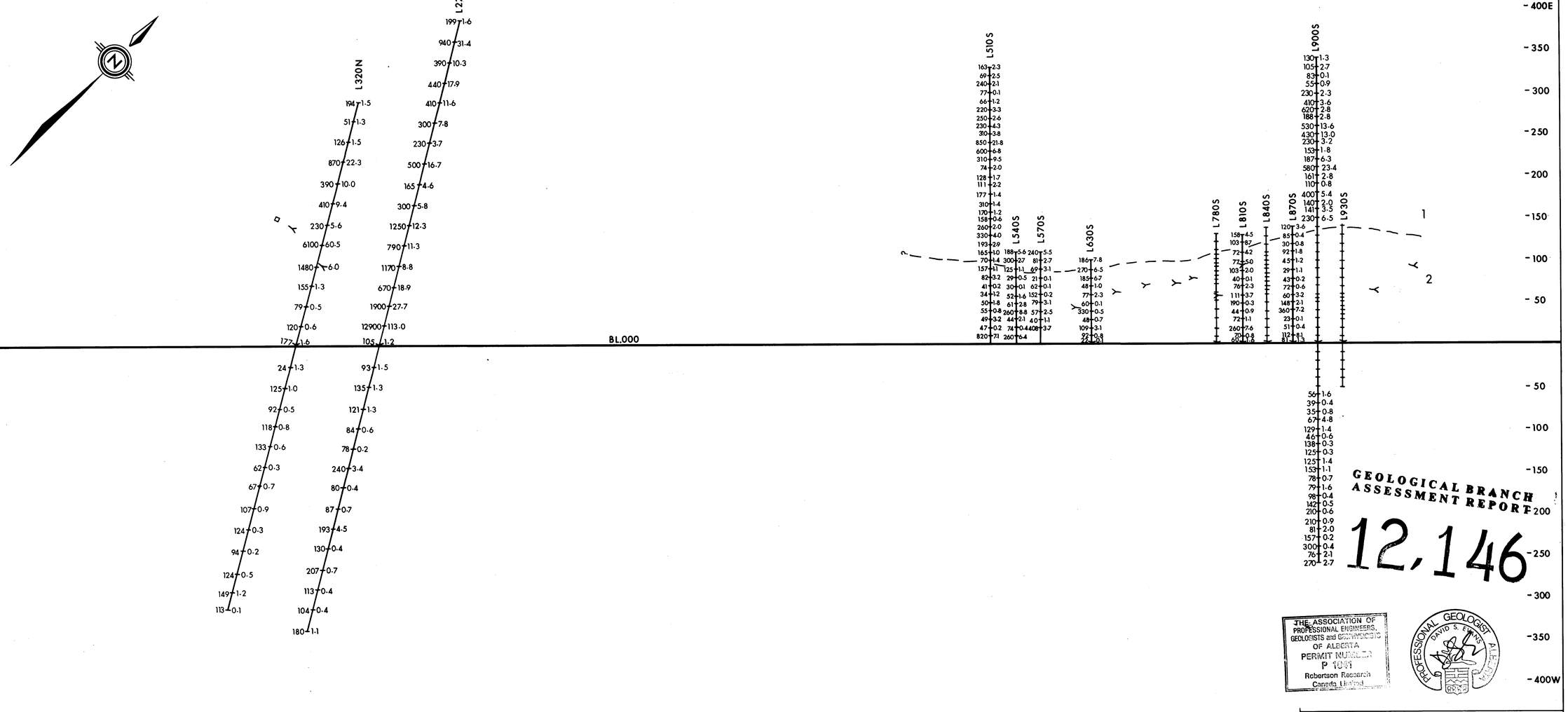
GREENWICH RESOURCES INC.

FIGURE 3

BISMARK - GOLD CURE

GENERAL GEOLOGY MAP

COMPILED BY: KEN KONKIN	DATE:
DRAWN BY: C. GARBER	PROJ. NO.:



GEOLOGICAL BRANCH
ASSESSMENT REPORT

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THE ASSOCIATION OF PROFESSIONAL ENGINEERS, GEOLOGISTS and GEOPHYSICISTS OF ALBERTA
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Robertson Research Canada Limited

PROFESSIONAL GEOLOGIST ALBERTA
DAVID S. EVANS

LEGEND

50 1.0 Zn(ppm)/Cd(ppm)

Adits

Carbonate(1)/Sediment(2) Contact

Zn Threshold 180 ppm (Evans 1982)

Cd Threshold 4.7 ppm (Evans 1982)

Lines 780, 840, 900, 930 in Evans 1982

25 0 25 50 75 100 125 m

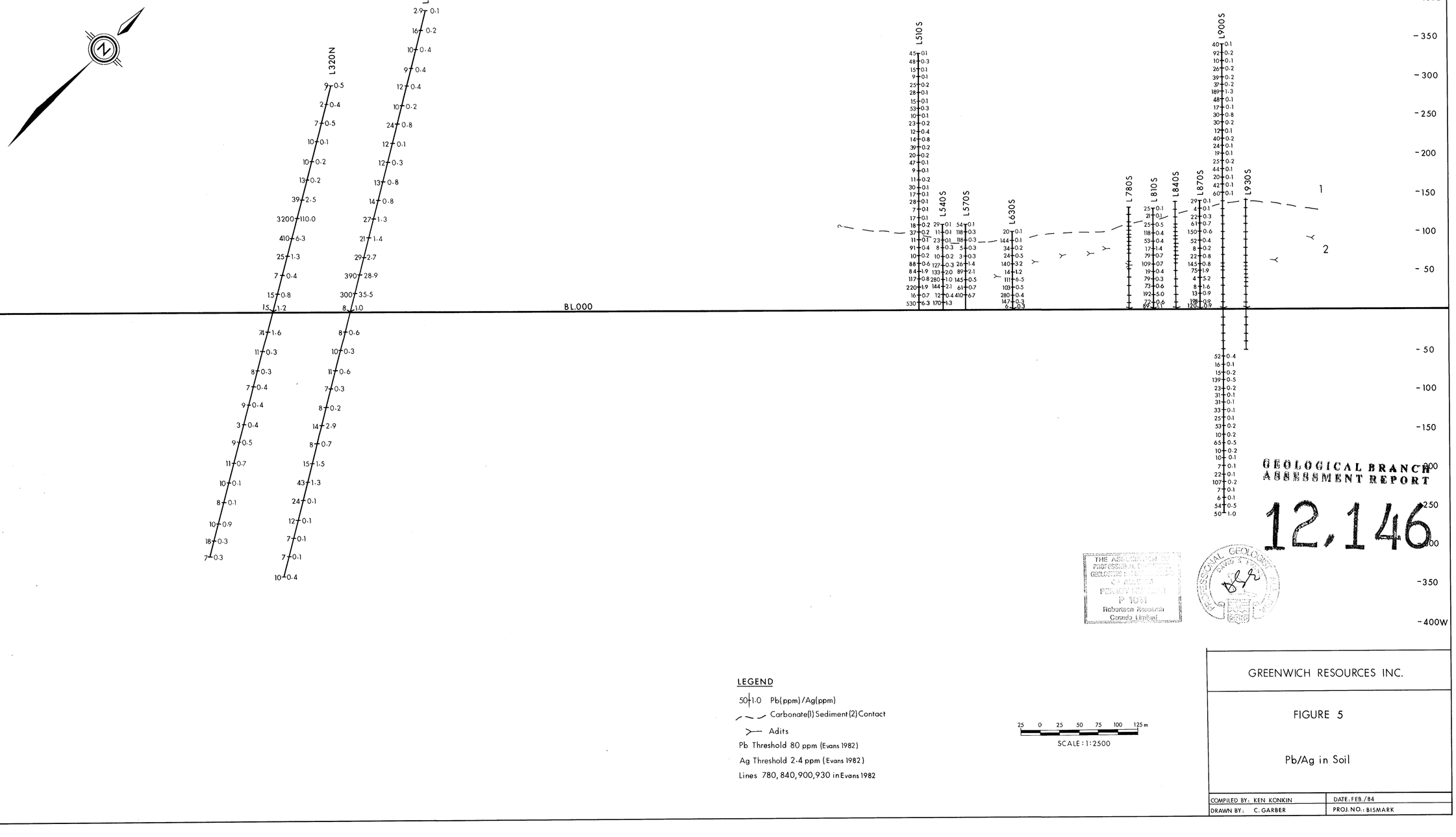
SCALE: 1:2500

GREENWICH RESOURCES INC.

FIGURE 4

Zn/Cd in Soil

COMPILED BY: KEN KONKIN	DATE: FEB./84
DRAWN BY: C. GARBER	PROJ. NO.: BISMARK



LEGEND

50|1.0 Pb(ppm)/Ag(ppm)

Carbonate(1) Sediment(2) Contact

Adits

Pb Threshold 80 ppm (Evans 1982)

Ag Threshold 2·4 ppm (Evans 1982)

Lines 780, 840, 900, 930 in Evans 1982

25 0 25 50 75 100 125m

SCALE: 1:2500

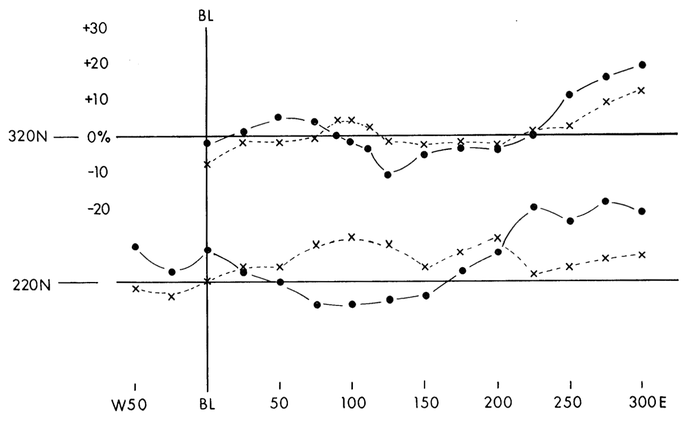
GREENWICH RESOURCES INC.

FIGURE 5

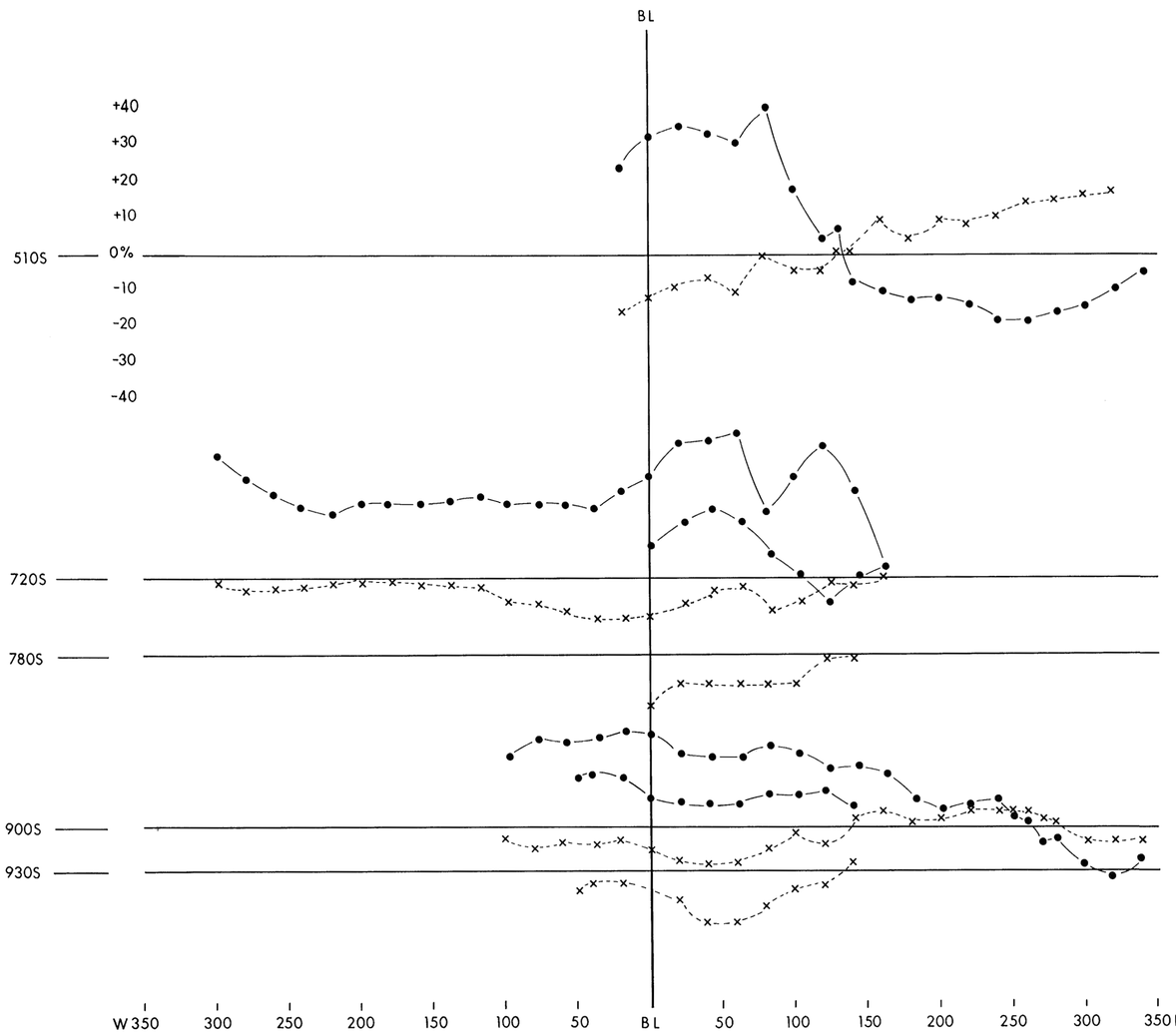
Pb/Ag in Soil

COMPILED BY: KEN KONKIN	DATE: FEB./84
DRAWN BY: C. GARBER	PROJ. NO.: BISMARK

BISMARK PROPERTY



GOLD CURE PROPERTY



LEGEND

Dip Scale 1cm=10 Degrees
— In Phase Readings
--- Quadrature Readings
Instrumemt Ronka EM16 Facing East
Positive Readings Above Line (North)

25 0 25 50 75 100 125m
SCALE: 1:2500

GREENWICH RESOURCES INC.

12,146 FIGURE 6

VLF - EM

COMPILED BY: G.W. SINDEN	DATE: SEPT. 1983
DRAWN BY: C. GARBER	PROJ. NO.: 5017