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10/88

GEOLOGICAL REPORT

&

WORK PROPOSAL

ON THE

DIORITE I MINERAL CLAIM

AT TEEPEE MOUNTAIN

EAST KOOTENAY AREA, S.E. B.C.

FORT STEELE M.D.

N.T.S. 82G/13E

49°~~52'~~ 51'42" 115°~~35'~~ 34'18"

Owner/Operator: D.F. Rainbow

BY

FILMED

EDWARD W. GROVE, Ph.D., P.Eng.

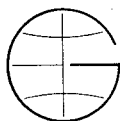
VICTORIA, B.C. OCTOBER 16, 1987

16,537

GEOLOGICAL BRANCH
ASSESSMENT REPORT

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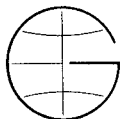


SUMMARY

The DIORITE I mineral claim has been staked around a pre-existing Two-post claim on which argentiferous galena-rich quartz veins have been partly explored since 1907. These veins comprise a relatively flat lying en echelon stratabound swarm localized near the top of the local Aldridge Formation below the overlying Creston Formation. Future work on the property should attempt to outline the extent of the sulfide bearing veins and test the silver, gold, and base metal potential of the local Aldridge Formation by conventional prospecting. The area can be easily accessed by helicopter and less easily by road and trail. Outcrop is obscured by extensive talus but the area generally enjoys a long work period during the summer and fall. A budget for the next prospecting phase is estimated at about \$11,400.

INTRODUCTION

The DIORITE I staked mineral claim lies on the east side of the Rocky Mountain Trench in the Hughes Range southeast of Skookumchuck between Wolf and Diorite creeks. The claim is recorded in the name of Donald F. Rainbow of Windermere, B.C. Access is easy by helicopter but possible by road and pack trail. Mineralization consists of silver bearing galena in bull quartz veins. These veins form a swarm in upper Aldridge Formation metasedimentary rocks and appear to be confined to the steep west slope of the DIORITE I claim. Since location of the veins about 1907 a limited amount of sampling and trenching has been performed by a number of prospectors and junior companies. The extent of these veins and the potential for base metals and gold-silver in the local Aldridge Formation remain to be evaluated.



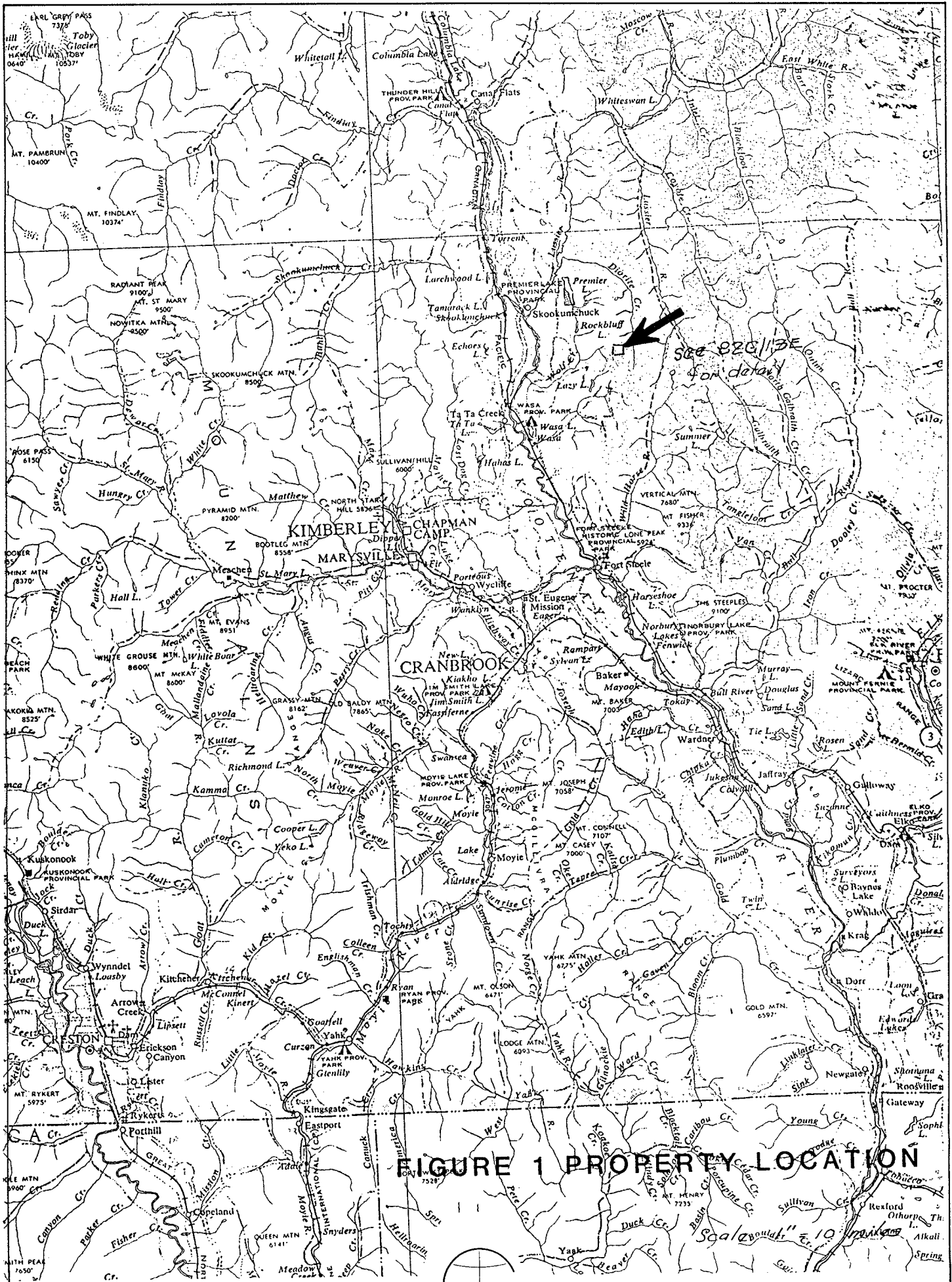


FIGURE 1 PROPERTY LOCATION

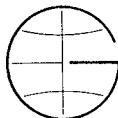
Scale 1:10,000

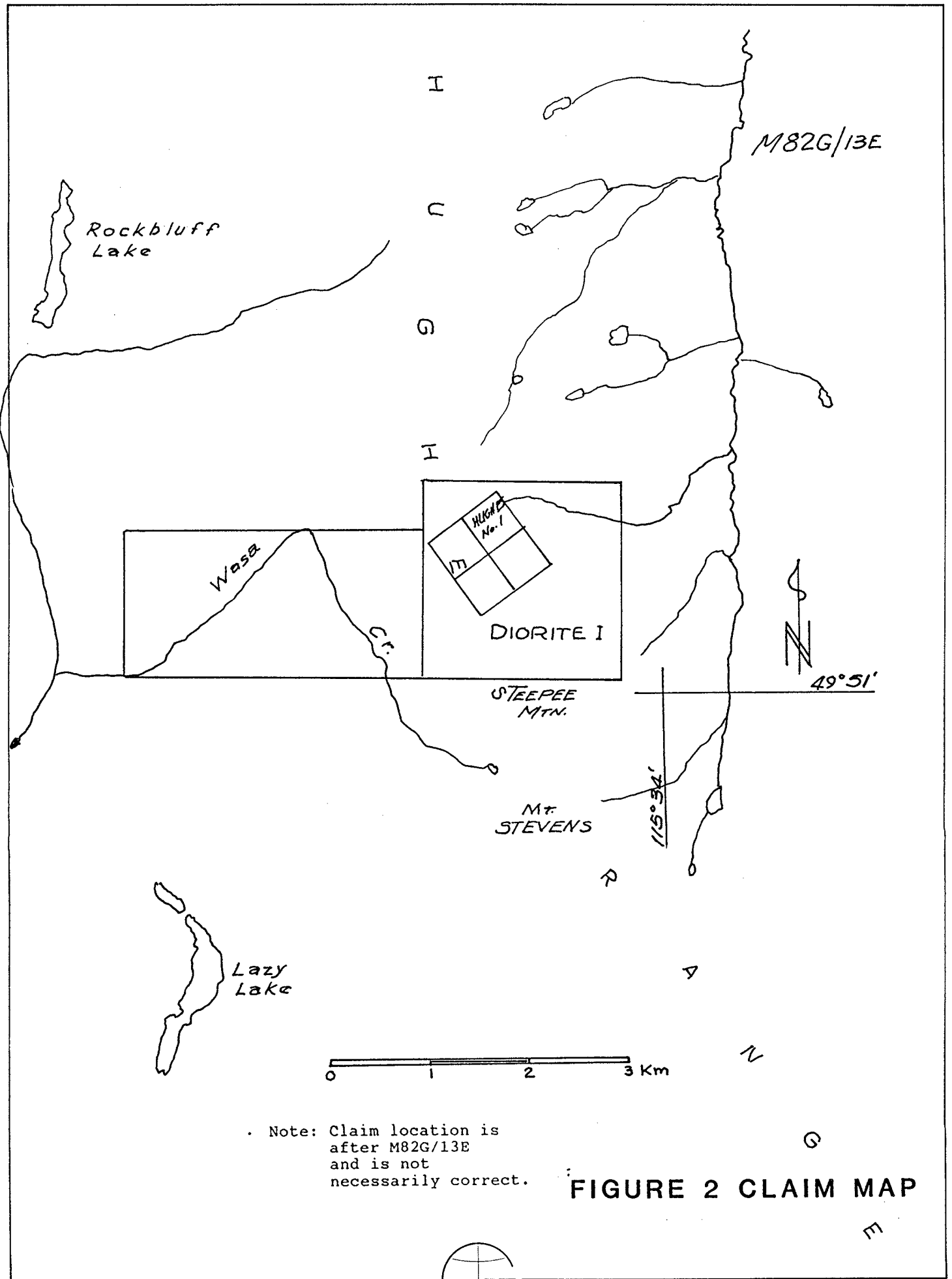
The writer has worked in the Kootenay area at various times and was requested by Mr. Mike Moroney to examine the prospect and write this report. The writer examined the property on September 11 through 13th, 1987.

LOCATION, ACCESS & TOPOGRAPHY

The DIORITE I mineral claim, staked by Donald F. Rainbow, is located east of the Rocky Mountain Trench about 68 kilometers northeast of Cranbrook, B.C. in the Hughes Range between Wolf Creek and Diorite Creek just north of Teepee Mountain, and about 12.5 kilometers southeast of Skookumchuck, B.C. (Figure 1). Access to the claim is by helicopter from Cranbrook, or by one of the several roads and connecting pack horse trails that lead onto the ridge.

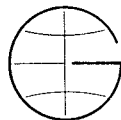
Elevations on the claim range from about 6,500 feet (1981 meters) on the steep talus covered west side of the ridge to over 8,700 feet a.s.l. (2652 meters) near the center of the claim. The main ridge area on the west runs north-south and leads to Teepee Mountain just off the claim to the south. The north, central, and south boundaries of the claim are marked by east-west trending rock ridges which together with the main ridge form an upright E. The two major cirque valleys lying between the ridges are relatively flat floored, marked by a number of shallow ponds and smaller lakes which drain easterly into the head of the north flowing Diorite Creek. Good camp sites are available in both cirques just within the upper part of the local tree line.





• Note: Claim location is after M82G/13E and is not necessarily correct.

FIGURE 2 CLAIM MAP



PROPERTY

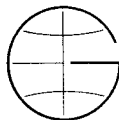
The DIORITE I staked mineral claim comprises 16 units, in the Fort Steele Mining Division, marked by surveyed boundary and Witness posts and iron pins. The claim is recorded in the name of Donald F. Rainbow. The DIORITE I claim surrounds the HUGHES staked 2-post claim group (Figure 2).

<u>Claim Name</u>	<u>Record No.</u>	<u>Units</u>	<u>Date Recorded</u>
DIORITE 1	2752	16	November 5, 1986

GENERAL GEOLOGY

The claim area is within the Fernie (West half) map sheet mapped by Leech (1960) at a regional scale and more recently mapped in good detail by Høy (1978, 1980) as part of a study of mineralization in the Aldridge Formation in southeastern British Columbia. Høy's general geology of part of the Hughes Range is included here as Figure 3.

The general area is underlain by strata of the Purcell Supergroup of Helikian and Early Hadrynian age. On the west side of the main ridge the base is underlain by the Fort Steele Formation comprising mainly quartzite. This is overlain by the Aldridge Formation, a thick gradational sequence comprising siltstone, quartzite, some carbonate and argillite. Høy divided this sequence into three units with the uppermost a dominantly quartz wacke overlain by an unusual buff colored dolomitic argillaceous sandstone. This unit stands out as a unique horizon on the local air photographs extending from Teepee Mountain along the ridge crest north beyond the DIORITE I claim boundary.



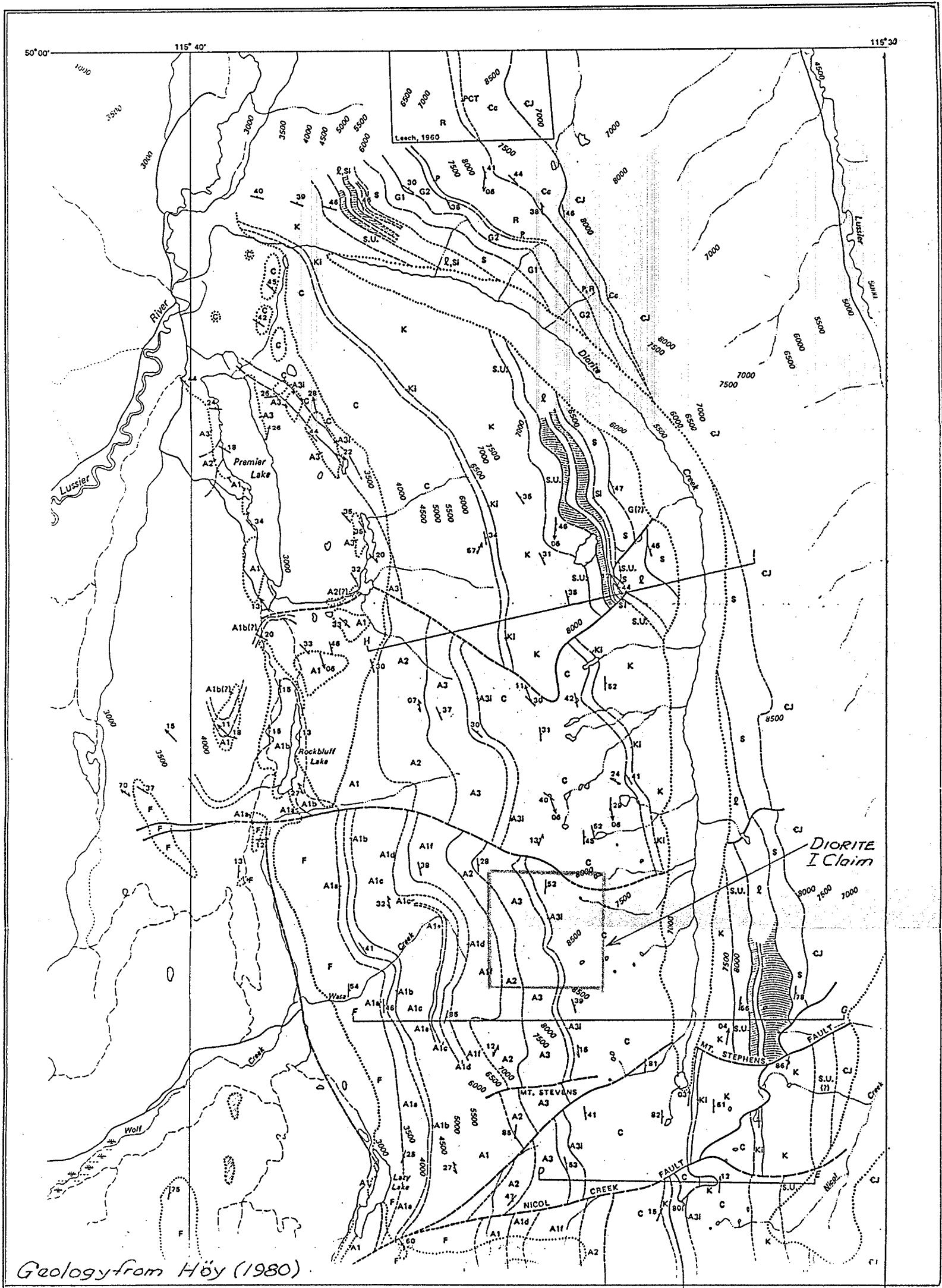


FIGURE 3

- HADRYNIAN**
- PCT** TOBY FORMATION: CONGLOMERATE, SILTSTONE, ARGILLITE
- HADRYNIAN/HELIKIAN**
- PURCELL SUPERGROUP**
- R** ROOSVILLE FORMATION: GREEN SILTSTONE AND ARGILLITE; MINOR STROMATOLITIC DOLOMITE AND OOLITIC LIMESTONE
 - P** PHILLIPS FORMATION: RED TO PURPLE ARGILLITE AND SILTSTONE
 - G** GATEWAY FORMATION: SILTSTONE, ARGILLITE; DOLOMITE, LIMESTONE
 - G1** SILTSTONE, ARGILLITE
 - G2** DOLOMITE, LIMESTONE, SILTSTONE
 - S** SHEPPARD FORMATION: DOLOMITE; MASSIVE, STROMATOLITIC, OOLITIC; SILTSTONE, QUARTZITE
 - SI** DOMINANTLY SILTSTONE
 - R** PURCELL LAVA: INTERLAYERED SILTSTONE, ARGILLITE, AND ANDESITIC LAVA
 - LAVA FLOWS**
 - S.U.** SILTSTONE UNIT: GREEN SILTSTONE AND ARGILLITE
 - K** KITCHENER FORMATION: DOLOMITE, SILTY DOLOMITE, LIGHT GREEN SILTSTONE; MINOR LIMESTONE
 - KI** INTERLAYERED SILTSTONE AND DOLOMITE
 - C** CRESTON FORMATION: GREEN AND PURPLE ARGILLITE AND SILTSTONE, WHITE AND GREEN QUARTZITE; MINOR DARK ARGILLITE
- ALDRIDGE FORMATION**
- A3** DARK GREY FINELY LAMINATED ARGILLITE; MINOR SILTSTONE
 - A3I** DARK GREY ARGILLITE WITH LENTICULAR BEDDING
 - A2** QUARTZITE, SILTSTONE; INTERLAYERED WITH DARK ARGILLITE
 - A1** FINELY LAMINATED ARGILLITE, SILTSTONE; MINOR DOLOMITE, QUARTZITE
 - i** MEDIUM TO DARK GREY SILTSTONE, ARGILLITE
 - d** THICK-BEDDED QUARTZITE; MINOR CONGLOMERATE
 - c** BUFF-COLOURED DOLOMITIC SILTSTONE, DOLOMITIC ARGILLITE; ABUNDANT LENTICULAR BEDDING AND RIPPLE CROSSBEDDING
 - b** GREY SILTSTONE, ARGILLITE; TAN SILTSTONE, BLACK GRAPHITIC ARGILLITE
 - a** SILTY DOLOMITE, DOLOMITIC SILTSTONE; MINOR LIMESTONE
 - f** GREY TO BLACK SILTSTONE AND ARGILLITE
- F** FORT STEELE FORMATION: WHITE CROSSBEDDED QUARTZITE, MUD-CRACKED SILTSTONE, ARGILLITE

SYMBOLS

- GEOLOGICAL CONTACT:**
- DEFINED, APPROXIMATE, ASSUMED
- FAULT: DEFINED, APPROXIMATE, ASSUMED**
- ANTICLINE - AXIAL SURFACE
 - BEDDING (S_0): VERTICAL, INCLINED, OVERTURNED
 - FOLIATION, CLEAVAGE (S_1)
 - LINATION ($S_0 - S_1$ INTERSECTION)
 - FOLD AXIS
 - MINERAL DEPOSIT
 - LIMITS OF OUTCROP (OR MAPPING)
 - ROAD: HARD SURFACE, LOOSE SURFACE
 - CART TRACK; TRAIL
 - RAILROAD
 - SOURCES OF INFORMATION

0 1 2 3 4 5 KILOMETRES
CONTOUR INTERVAL 500 FEET

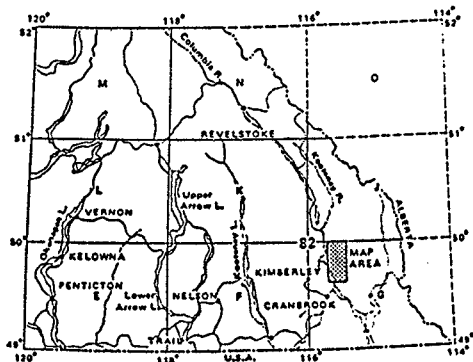
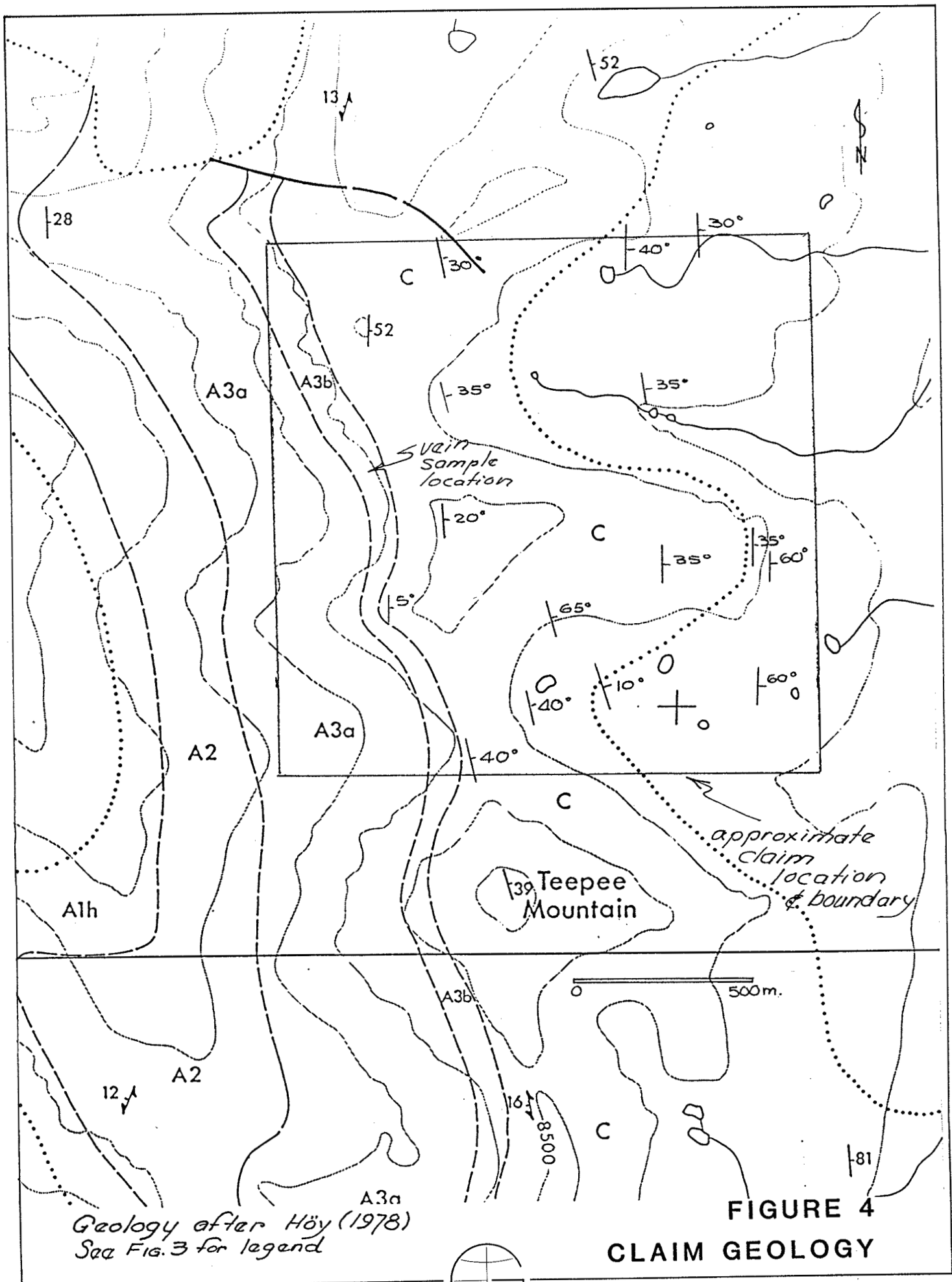


FIGURE 3 GENERAL GEOLOGY



Geology after Höy (1978)
See FIG. 3 for legend

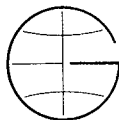
FIGURE 4
CLAIM GEOLOGY

The Aldridge Formation strata are overlain to the east by the thick Creston Formation which underlies the eastern two thirds of the claim area. These rocks are mainly thinly laminated graphitic argillite, siltstone and quartzite well marked by cross-bedding, current ripples, rip-up clasts, mud cracks and occasional salt casts. East of the DIORITE I claim the Creston Formation is overlain along Diorite Creek by the largely carbonate rich Kitchener Formation.

The overall structure of the above sequence in the DIORITE I claim area appears to be a relatively simple north trending, gently to moderately east dipping sequence. Høy has mapped a number of easterly trending steep faults both north and south of the mineral claim.

LOCAL GEOLOGY

The more detailed local geology, shown here as Figure 4, follows Høy's (1978) stratigraphy with addition of some structural data. Unit A36 represents a buff weathering pyritic, 'flaggy' to shaly dolomitic sandstone dipping about 50-55° east and forming a northerly trending sinuous ridge across the claim. Rocks west of the ridge (A3a & A2) form a steep, largely talus covered slope underlying the western part of the claim. The upper part of this sequence comprises dark weathering, thinly bedded, dolomitic sandstone, siltstone, and current marked cross bedded quartzite. Both the upper part of this sequence (A3a) and the lower part of the ridge member (A3b) contain a large number of bull quartz and quartz-sulfide veins. These veins were seen to occur through a 100 meter thick section and were mainly parallel to the local bedding. Thick bull quartz veins were also observed by Høy (personal communication) cutting across the strata below Teepee Mountain.



Creston Formation strata underlie the main part of the DIORITE I claim east of the key A3b ridge forming unit. These rocks comprise thinly intercalated ribbon quartzite, graphitic siltstone and fine grained sandstone marked by current ripples, mud cracks, cross bedding and occasional salt casts forming a relatively uniform northerly trending, moderately east dipping sequence. No significant unconformity was noted between the upper Aldridge and the overlying Creston Formation suggesting a regular transition between units. No major intrusive units were recognized on the claim.

Although uniform overall, rock structure on the mineral claim shows local steepening with attendant local faulting. Strata in both the upper Aldridge and parts of the Creston also show flat to undulating secondary foliation along restricted zones but these were not related to any major structures. No major faults were noted on the claim.

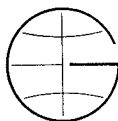
MINERALIZATION

GENERAL

Two important galena, sphalerite and pyrite deposits, as well as numerous lead-zinc-copper showings, have been found in the general area. The Estella and Kootenay King deposits located south of Teepee Mountain were both mined between 1951 and 1964 and produced significant lead, zinc, and silver from the lower part of the local Aldridge Formation.

LOCAL

It has been reported that the property now covered by the HUGHES NO. 1 claim and surrounded by the DIORITE I was first staked about 1907. Claim tags dating from 1970 and later attest to recent work which has apparently consisted mainly of



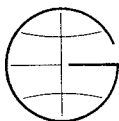
trenching across one galena rich bull quartz vein and testing several others. These quartz veins form part of a zone at least 100 meters thick in which numerous quartz veins from a few centimeters to several meters thick and up to 100 meters long occur. This zone lies along most of the main ridge (Figure 4) in the transition zone between units A3a and A3b but appears to be concentrated in the central part of the claim. Most of these veins lie parallel to local bedding and a few contain coarse grained galena and pyrite. Many are marked by rusty weathered out pyrite pockets. Selected samples from the dumps near one vein have been assayed several times and contained from 33 to 46.6 opt Ag, from trace to 0.02 opt Au, 0.03 to 0.04% Cu, from 68 to 84% Pb, and traces of Zn (Appendix 1).

In addition to these stratabound veins much of both the Aldridge and Creston strata have been cut by quartz stockworks and occasionally by ankerite veins. However no sulfides other than in the ridge zone were noted.

The horizontal and vertical extent of the galena bearing bull quartz veins on the DIORITE I claim was not determined during the writer's brief visit.

CONCLUSION

The DIORITE I claim lies north of two significant lead, zinc, silver producers in somewhat similar rocks. Silver bearing, galena rich quartz veins have been found and partly explored within the claim limits but are currently covered by a pre-existing 2-post claim. These quartz veins lie along the main north-south ridge within the thick upper part of the Aldridge Formation which as yet has not been prospected in detail.



It is recommended that future work on the DIORITE I claim concentrate on prospecting and exploring the steep slope west of the main ridge down to the claim limits. This will involve mainly talus chasing, scree sampling, and some stream sampling. Cost of this work is estimated at about \$11,400.

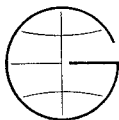
MINERAL EXPLORATION PROPOSAL - 1988

DIORITE I MINERAL CLAIM

1. Prospecting	
2 men @ \$125/man/day	\$2,500
Accommodation & meals @ \$45/man/day	900
Stream silt samples @ \$22.00	330
Rock and scree samples @ \$12.75	640
2. Transportation	
To field	600
Helicopter @ \$530/hour	2,400
3. Camp cost/equipment	800
Materials	400
Freight/sundries	250
4. Documentation	1,500
Contingencies @ 10%	<u>1,050</u>
	TOTAL \$11,370
	=====

REFERENCES

- Høy, T.(1978): Geology of the Estella-Kootenay King Area, South eastern B.C., B.C. Min. En., Mines & P.R., Prelim Map #28.
(1980): Geology of the Estella-Kootenay King Area, South eastern B.C., B.C. Min. En., Mines & P.R., Prelim Map #36.
Leech, G.B. (1958): Fernie Map-Area, West Half, B.C.; Geol. Surv. Can., Paper 58-10.



ITEMIZED STATEMENT OF COSTS
DIORITE I - MINERAL EXPLORATION EXPENSES - 1987

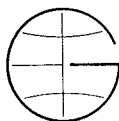
PROSPECTING

- Field personnel - J. Keshen & M. Moroney Sept. 11, 12 & 13 - 4 days @ \$112/day	\$448.00
- Food & miscellaneous supplies	253.12
- Travel to Cranbrook airport from Windermere & return Sept. 11 & 13, 2 men	160.00
- Helicopter - 1.5 hrs @ \$530/hr Cranbrook to claim & return, Sept 11 & 13	<u>795.00</u>
	\$1,656.12

GEOLOGICAL

- Consultant - Edward W. Grove, Ph.D., P.Eng. Field - 3 days @ \$500, Sept. 11, 12, 13 Report - 1.5 days @ \$500 Airfare, expenses, disbursements	\$2,717.39
--	------------

TOTAL 1987 EXPENDITURES - PROSPECTING + GEOLOGICAL	\$4,373.51 =====
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CERTIFICATE

I, Edward W. Grove, of the Municipality of Central Saanich, do hereby certify that:

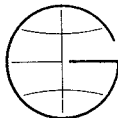
1. I am a consulting geologist with an office at 6751 Barbara Drive, Victoria, British Columbia.
2. I am a graduate of the University of British Columbia (1955) with a Master's degree, Honours Geology (M.Sc. Hon. Geol.) and a graduate of McGill University (1973) with a doctorate in Geological Sciences (Ph.D.).
3. I have practiced my profession continuously since graduation while being employed by such companies as the Consolidated Mining and Smelting Co. of Canada Ltd., British Yukon Exploration Ltd., the Quebec Dept. of Natural Resources, and the British Columbia Ministry of Energy, Mines and Petroleum Resources. I have been in corporate consulting practice since January 1981.
4. I have no direct or indirect interest in the DIORITE I claim, nor do I expect to acquire any such interest.
5. I personally examined the claim area on September 11 through 13, 1987.
6. I am a member in good standing of the Association of Professional Engineers of the Province of British Columbia.
7. I consent to the use of this report in connection with a geological and physical work proposal and for filing as assessment work.

October 16, 1987

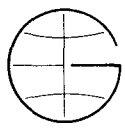
Victoria, B.C.



Edward W. Grove, Ph.D., P.Eng.



APPENDIX I



APPLICATION TO RECORD A MINERAL CLAIM.

DONALD F. RAINBOW AGENT FOR
Box 236 WINDERMERE BR. NOB 240
 VALID SUBSISTING F.M.C. NO. 272646

STATE THAT I COMMENCED LOCATING THE DIORITE I MINERAL CLAIM

ON THE 2 DAY OF Nov 1986 AT 12:30 PM. AND COMPLETED THE LOCATION

ON THE 2 DAY OF Nov. 1986 AT 15:30 CONSISTING OF

4 UNIT LENGTHS NORTH AND 4 UNIT LENGTHS WEST. AND I HAVE IMPRESSED ALL THE REQUIRED INFORMATION ON METAL TAGS NO. 25302 WHICH HAS BEEN SECURELY FASTENED TO THE POSTS AS REQUIRED UNDER THE REGULATIONS.

IDENTIFICATION POST(S) NOT PLACED WERE 3 + 4 ALL POSTS EXCEPT 1W AND 2N.
DUE TO TERRAIN. LEGAL BEARINGS LOCATED ON 2N3W MT. PEAK NORTH OF EEL PT.

CHECK THE LEGAL CORNER POST
 THE WITNESS POST FOR THE LEGAL CORNER POST IS SITUATED: 500 METERS
WEST OF LCP LOCATIONS (BEARING N1 = 3,159,5000, E1 -
2,494,0000 TRAV AZ = 344.4100 HD = 1,057.0000

↑ BEARING AND DISTANCE TO TRUE POSITION OF LEGAL CORNER POST FROM THE WITNESS POST 594.6⁶ DUE E.
 BEARING AND DISTANCE FROM IDENTIFICATION POST TO WITNESS POST N2344.216 - E 2,730.215
614.6 m

I HAVE COMPLIED WITH ALL THE TERMS OF THE MINERAL ACT AND REGULATIONS PERTAINING TO THE STAKING OF MINERAL CLAIMS AND HAVE ATTACHED A PLAN, ACCEPTABLE TO THE GOLD COMMISSIONER OF THE LOCATION.

[Signature]
 SIGNATURE

VICTORIA COPY

RECEIVED
 231979E
 NOV 5 1986
 GOLD COMMISSIONER
 FORT STEELE MINING DIVISION
 CRANBROOK B.C.
 OFFICE STAMP

NO OF UNITS 16

UNIT NO.	DATE OF EXPIRY	REPORT WORKING	TRANSFERS (R.E.S. ASSIGNMENTS CONVEYANCES)	
			DATE	TO WHOM



CORE LABORATORIES - CANADA LTD.

P. O. Box 5670, Postal Station "A" Calgary 9, Alberta Phone 253-3391

Certificate of Analysis

Sample(s) from Mr. M. V. Moroney

Date: June 18, 1970

REPORT NO.

CAL-2-2209

AMPLE NO.	GOLD Troy ounces per ton	SILVER Troy ounces per ton	% Ni	% Fe	% Mn	%
Lead Ore			ND	0.25	ND	
ND - Not Detected						

PULPS RETAINED 3 MONTHS
REJECTS RETAINED 1 MONTH

SIGNED _____



CORE LABORATORIES - CANADA LTD.

P. O. Box 5670, Postal Station "A" Calgary 9, Alberta Phone 253-3391

Certificate of Analysis

Sample(s) from Mr. M. V. Moroney

Date: June 18, 1970

REPORT NO.

CAL-2-2209

AMPLE NO.	GOLD Troy ounces per ton	SILVER Troy ounces per ton	% Pb	% Cu	% Zn	% Mo
Lead Ore	Trace	0.125=36.5 oz/Ton	74.260	0.040	0.003	ND
ND - Not Detected						

PULPS RETAINED 3 MONTHS
REJECTS RETAINED 1 MONTH

SIGNED _____

LABORATORY REPORT

Telephone (619) 425-1993

Established 1928

CLARKSON LABORATORY AND SUPPLY INC.
350 Trousdale Dr. Chula Vista, Ca. 92010
ANALYTICAL AND CONSULTING CHEMISTS

Date: 04/28/86

Purchase Order Number: None

Account Code: CAS

To:

M.V. MORONEY

P.O. Box 606

Solana Beach, Ca. 92075

Laboratory Number: EE-263

Sample Designation:

One ore sample for the following analysis:

ANALYSIS:

	<u>Troy Ounces/Ton</u>
Gold	0.0
Silver	33
Platinum	* 0.02
Palladium	* 0.05
Lead	68%

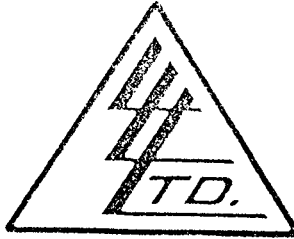
NOTE: * None detected less than.



Peter B. Stead

PBS/ltn

To: HEWITT OIL (ALBERTA) LTD.
 1600 Royal Bank Building
 335 - 8th Avenue S.W.
 CALGARY, ALBERTA
 ATTENTION: MR. T. B. HEWITT



File No. 5769
 Date September 8, 1972
 Samples CHIP

Certificate of
 ASSAY of
 LORING LABORATORIES LTD.

SAMPLE No.	OZ./TON Gold	OZ./TON Silver	% Cu	% Pb	% Zn
SAMPLE # 1	.020	41.10	.04	83.98	Trace
SAMPLE # 2	.040	38.80	.03	72.30	.01
SAMPLE # 3	.040	42.84	.04	82.97	.01

RECEIVED SEP 13 1972

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

Rejects Retained one month.
 Pulps Retained one month
 less specific arrangements
 made in advance.

A. L. M. Isaac

Licensed Assayer of British Columbia

ASSAYERS
CHEMISTS
GEOCHEMISTS



CORE LABORATORIES - CANADA LTD.

325 Howe Street Vancouver 1, B.C. Phone 688-3504

Certificate of Analysis

REPORT NO.
464

SAMPLE(S) FROM HEWITT OIL CO.

SAMPLE NO.	Au oz/T.	Pb %	Zn %	Mo %	Ag oz/T.	Cu %	Ni %	Dd %
1	<.005	82.17	<.01	<.001	45.9	.02	<.01	<.01
2	.005	80.00	<.01	<.001	46.6	.02	<.01	<.01

DATE August 18, 1972

SIGNED 

PULP AND REJECTS DISCARDED AFTER 3 MONTHS