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RECONNAISSANCE GEOLOGICAL AND  
GEOCHEMICAL INVESTIGATION  
OF THE  
OLYMPUS MINERAL CLAIM  
SLOCAN MINING DIVISION  
KASLO, B.C.  
NTS 82 K/3  
LATITUDE 50°05'N, LONGITUDE 117°10'W

Prepared for  
HELENA RESOURCES LTD.

ARCTEX ENGINEERING SERVICES

Paul Kallock  
Geologist

Norman C. Davidson, P.Eng.  
Consulting Engineer

**GEOLOGICAL BRANCH**  
**ASSESSMENT REPORT**  
January 30, 1984

12.167

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RECONNAISSANCE GEOLOGICAL AND  
GEOCHEMICAL INVESTIGATION  
OF THE  
OLYMPUS MINERAL CLAIM  
SLOCAN MINING DIVISION  
KASLO, B.C.

SUMMARY

Geological mapping and preliminary rock geochemical surveys have been undertaken on the Olympus mineral claim and environs on September 22, 1983. The claim is underlain by intermediate volcanics and ultramafics (serpentinite) of the Kaslo Group. Sulphide mineralization, including sphalerite, galena and chalcopyrite is exposed in old workings which have been developed on two subparallel vuggy, quartz and hematite veins. The veins occur within greenstones of the Kaslo Group near the serpentinite contact. Additional geological mapping and geophysical surveys are recommended. A cost of \$400,150 in three Phases is estimated.

## INTRODUCTION

The Olympus mineral claim is located in the Slocan Mining Division 30 km northwest of Kaslo, B.C. The claim is situated 1 km east of Whitewater Mountain and is bisected by southeastward-flowing Whitewater Creek. Elevations on the property range from 2073-2408 m (6800-7900 ft). The claim crosses co-ordinates N50°05' latitude and W117°10' longitude, and lies within the east half of NTS map sheet 82 K/3.

As can be seen from the accompanying claim map the property is comprised of four units or approximately 100 hectares. Statistics of the claim are as follows:

<u>Claim Name</u>	<u>Record No.</u>	<u>Size (Units)</u>	<u>Record Date</u>
Olympus	3827(4)	4	April 25, 1983

Access to the property is best accomplished by helicopter. Services are available in Nelson or Nakusp, B.C. The Kaslo-New Denver Highway (31A) is 3 km south of the property, and unimproved roads extend up the Whitewater Creek drainage to about 1525 m (5000 ft) elevation.

The 1983 programme included one day of geological mapping and rock sampling by a geologist.

There is no recorded history of mineral production from the Olympus claim. A 15-metre adit, a partially caved shaft, and numerous pits and trenches attest to concentrated exploration in years past. An abandoned pipeline aqueduct in the northern part of the claim remains an enigma; it may have supplied water for mining activities.

## GENERAL GEOLOGY

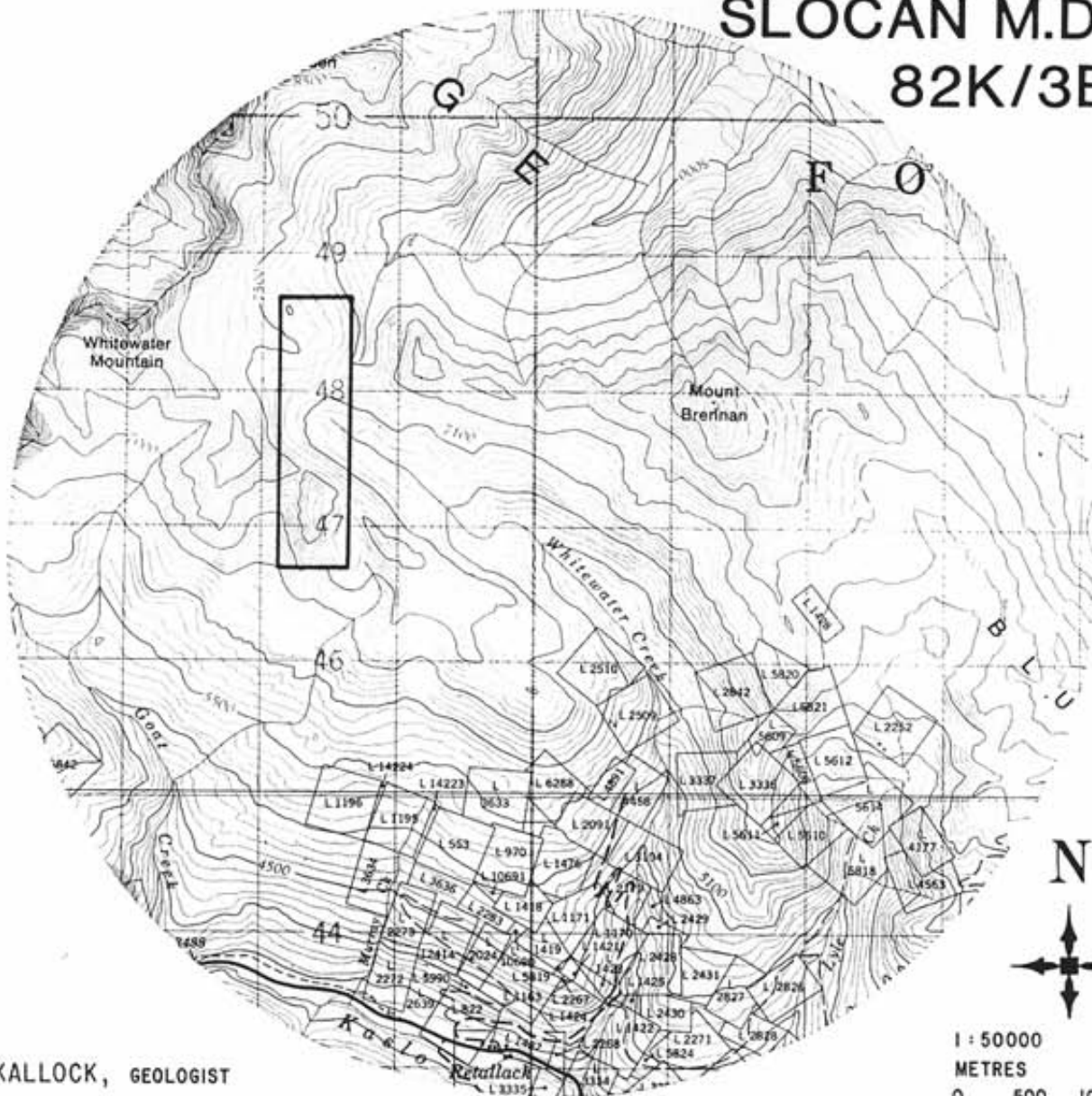
The Olympus claim lies near the west-central margin of the Kootenay Arc, an arcuate belt of structurally deformed, primarily Paleozoic sediments stretching from Washington State to Revelstoke, B.C. Recent studies by Monger (1982) and Klepacki (1983) have indicated that volcanic and related rocks (greenstones) of the Kaslo Group may have formed the leading edge of terranes including

# OLYMPUS PROJECT

## KASLO AREA, B.C.

## SLOCAN M.D.

## 82K/3E



P. KALLOCK, GEOLOGIST  
 N.C. DAVIDSON, P. Eng.  
 CONSULTING ENGINEER

OCTOBER, 1983

### LOCATION MAP

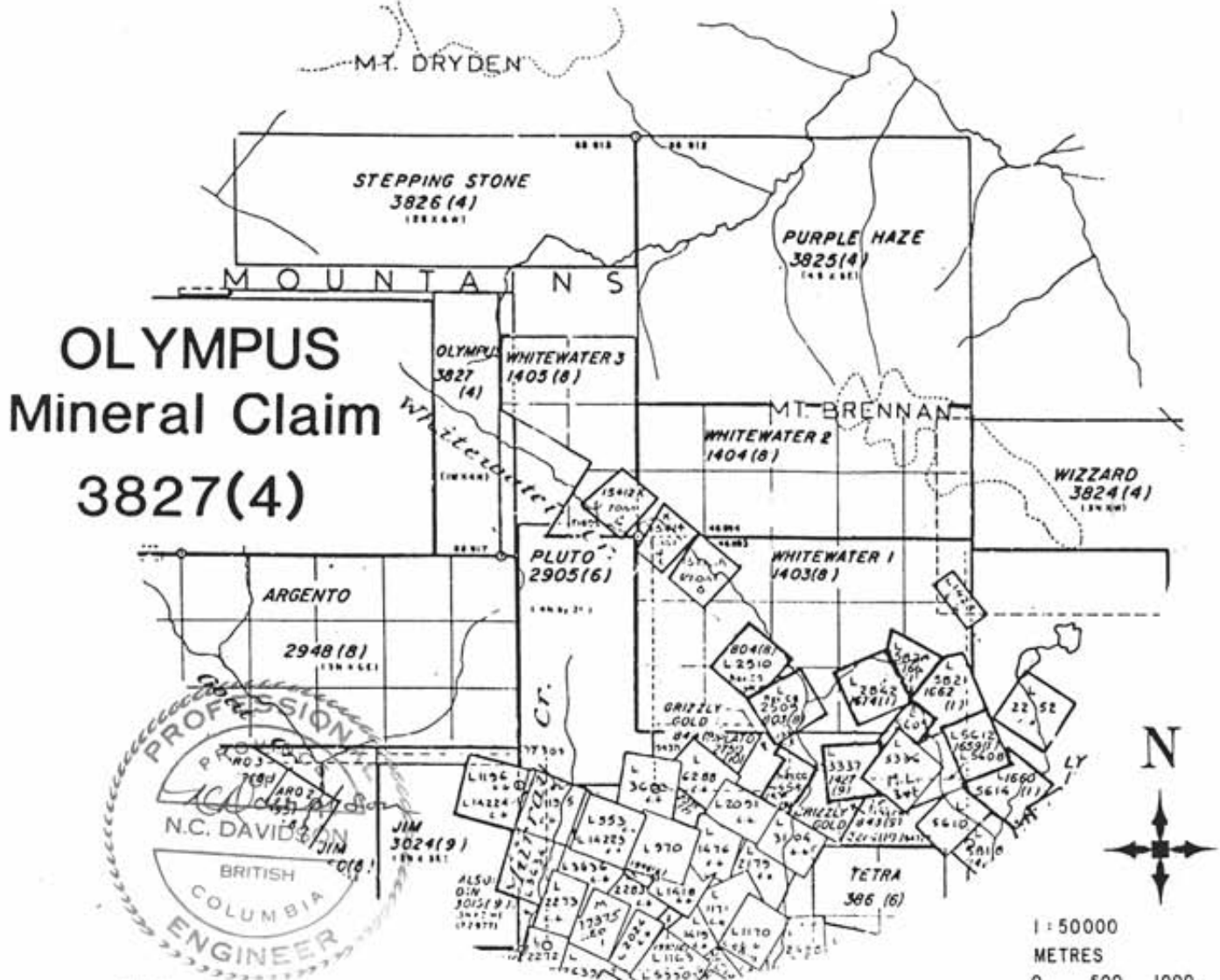
# HELENA

## RESOURCES LIMITED



EXPIRY DATE JULY 15, 1984

# HELENA RESOURCES LIMITED



**OLYMPUS  
Mineral Claim  
3827(4)**

EXPIRY DATE JULY 15, 1984  
**CLAIM MAP**

**OLYMPUS PROJECT  
KASLO AREA, B.C.  
SLOCAN M.D.  
82K/3E**

P. KALLOCK, GEOLOGIST  
N. C. DAVIDSON, P. Eng.  
CONSULTING ENGINEER

OCTOBER, 1983

younger calcareous flysch of the Slocan Group, as they accumulated on the ancient margin of North America (which included the Carbonaceous Milford Group), and were subsequently telescoped.

In the Whitewater Mountain-Blue Ridge area the Paleozoic and Mesozoic rock units have a general northwest trend with dips moderate to steeply north and south. The Olympus claim spans part of the Kaslo Group including an ultramafic (serpentinite) belt contained within the Group.

## GEOLOGY OF THE CLAIM AREA

On September 22, 1983, the Olympus claim was inspected and an initial geology map was drawn and is included in the pocket of this report. Mapping confirmed the presence of intermediate volcanics (greenstones) and a broad belt of serpentinite which trends northwesterly parallel with the drainage pattern of upper Whitewater Creek. Outcrops are abundant in the southern half of the claim. Extensive unconsolidated glacial deposits obscure bedrock in parts of the valley and cirque basin in the northern half of the claim.

### Stratigraphy

The entire Olympus claim appears to be underlain by rocks belonging to the Kaslo Group which is of upper Mississippian to Permian age. For the most part the Kaslo Group is composed of andesitic volcanics and may locally be fragmental or tuffaceous.

Within the Kaslo Group is a distinct unit of dark green to black serpentinite. It varies in texture from dark, hard, angular-fracturing serpentinite to soft, light green serpentine with abundant although irregular slickensides. Asbestiform minerals are locally present. It is also strongly magnetic. Within the Olympus claim serpentinite appears to span Whitewater Creek, however exposures are most abundant on the steep, south wall of the valley.

A small outcrop of very coarse-grained hornblende porphyry was noted in the central part of the claim. Its relation to the Kaslo Group is not known but it appears to be part of a younger dyke.

## Structure

Extensive fault movement appears to have taken place within and adjacent to the serpentinite unit. From the southeast corner of the claim a north  $30^{\circ}$  west-trending shear zone was traced into the central part of the claim. Several serpentinite pods with characteristic brown to light brown weathered surface are present along this fault which appears to intersect the main serpentinite near Whitewater Creek.

Also in the southern part of the claim subsidiary fissures have been developed in Kaslo Group volcanics. Trend of these quartz-filled (and locally base metal sulphide-filled) fissures is at right angles to the serpentinite belt.

Weak metamorphic foliation which may conform to original bedding in the volcanics was observed at one location. North of the head of Whitewater Creek a  $N40^{\circ}W70^{\circ}S$  trend appears to reflect the regional pattern.

## Mineralization and Rock Geochemistry

Two subparallel veins, 175 metres apart, were noted in the southern part of the claim. The more southerly vein at 2225 m (7300 ft) elevation trends  $N75^{\circ}E$  and dips from  $70^{\circ}$  to  $90^{\circ}$  northward. On its eastern end where it intersects a  $N20^{\circ}W$  shear zone, the vein is composed of quartz and hematite and is 3-5 cm wide. Approximately 150 metres to the west a 7-metre deep, partly caved shaft explores the same vein. The vein at this location is 10 to 20 cm wide and composed of crystalline quartz with intergrowth of hematite. Scattered cubes of galena on the dump indicate the local presence of sulphides within the vein. Several trenches which are west of the shaft display quartz and hematite mineralization within the host andesitic volcanics.

At elevation 2262 m (7420 ft) approximately 175 m north-northwest of the shaft is another quartz vein which trends  $N48^{\circ}E60^{\circ}S$  and is developed by a 15-metre adit. The vein is approximately 10 cm wide and composed primarily of quartz and hematite although dump material from the adit contains traces of galena and pyrite. The vein is hosted in dark grey andesite although locally a quartz-feldspar porphyry dyke with dark grey to purple matrix appears to coincide with the vein.



Six to eight metres vertically above the adit the vein is exposed in an open excavated trench. Quartz and hematite are the principal constituents of the vein; sulphide concentrations may reach 10 % sphalerite, 2% galena and 2% chalcopryrite. A select sample of some of the best material from this trench contained 6.56 oz Ag/ton, 0.95% Cu, 3.90% Pb and 9.32% Zn. Andesite and a mafic dyke host the vein at surface.

Several samples were gathered from areas typical of the serpentinite. Sample P-2 represents serpentinite conglomerate and contained 0.11% nickel. Sample P-6 represents soil and talus fines which have sloughed down from the higher bluffs. It contained 560 ppm nickel. Sample P-7 is representative of serpentinite containing carbonate veins and disseminated magnetite; it contained 0.14% Pb, 0.12% Zn, 620 ppm Ni and 5.1 ppm Ag.

Sample P-8 is a stream sediment sample from Whitewater Creek, elevation 2088 m (6850 ft). It contained 280 ppm Cu, 460 ppm Ni and 20 ppb Au.

Sample P-9 represents chips of large float boulders in the valley above P-8. Three to five percent chalcopryrite and lesser pyrite was visible in an iron-stained andesitic (?) rock of the Kaslo Group (?). The angular nature of of the rock and presence of other iron-stained boulders may indicate a nearby source. Assay of the rock yielded 1.40 oz Ag/ton, 1.03% Cu, 0.98% Pb and 0.72% Zn.

## CONCLUSIONS

At least two base and precious metal veins are present in the south half of the Olympus claim. Although the veins appear to be primarily quartz and hematite, local accumulation of sulphides including galena, sphalerite and chalcopryrite are present as evidenced by development of an adit, shaft and several trenches. The veins occupy subsidiary fissures which extend at right angles from the main structural shear bounding the serpentinite belt.

The limited amount of past exploration indicates the sulphide enriched portions of the veins to be restricted. Furthermore, considering the extent of unmineralized bedrock exposures in this area, discovery of additional sulphides

at surface is unlikely. Therefore, the best potential for economic concentrations of sulphides appears to be at depth below the shaft and adit, or at depth between the serpentinite belt and the old workings.

Reconnaissance geological mapping and sampling in the remainder of the claim has revealed extensive areas of serpentinite within Kaslo Group volcanics. Chalcopyrite-bearing float boulders were found which may have a source within or near the Olympus claim; this volcanic-hosted base and precious metal mineralization has implications for a strataform-type of deposit.

## RECOMMENDATIONS

A more comprehensive geological survey of the Olympus claim should be undertaken. Alteration zones within or adjacent to the serpentinite belt should be sampled and analysed, particularly for gold.

Detailed geological mapping combined with a geophysical survey including magnetometer and VLF-EM should be initiated in the area of the old workings. The grid should be oriented to test sulphide bodies which may occupy fissures oriented perpendicular to the serpentinite belt.

Search should be made for the source of chalcopyrite-bearing float boulders found in the Whitewater Creek valley.

Depending upon favourable results from this phase of exploration, a programme of limited diamond drilling may be advisable. Due to the high altitude and rugged nature of the terrain all exploration at the Olympus claim will require the use of a helicopter for access.

## COST ESTIMATE

## Phase 1

Geological mapping and rock sampling	\$ 4,000	
Geophysical surveys including VLF-EM and magnetometer	2,000	
Assays	2,000	
Transportation including helicopter	2,000	
Food and camp	1,500	
Equipment and supplies	500	
Engineering and supervision	1,000	
Travel	1,000	
Reporting	2,500	
	<hr/>	
	16,500	
Contingencies @ 10%	1,650	
	<hr/>	
Total Phase 1	18,150	\$18,150

## Phase 2

Drill site geologist	\$ 5,000	
Diamond drilling, 500 m @ \$120/m	60,000	
Camp and supplies	15,000	
Helicopter	15,000	
Assays	3,000	
Equipment and supplies	5,000	
Engineering and supervision	3,000	
Travel	2,000	
Reporting	2,000	
	<hr/>	
	110,000	
Contingencies @ 20%	22,000	
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Total Phase 2	132,000	\$132,000

Phase 3

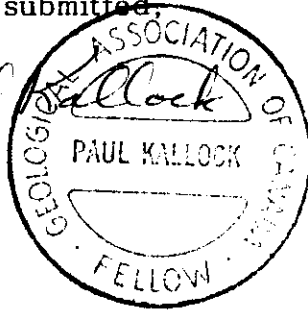
Diamond drill programme of approx. 1000 metres, allow	\$250,000	250,000
Total, Phases 1, 2, and 3		<hr/> \$400,150

Results of each Phase should be compiled into an engineering report; continuance to the subsequent Phase should be contingent upon receiving favourable conclusions and recommendations from an Engineer.

Respectfully submitted,

*Paul Kallock*

Paul Kallock  
Geologist

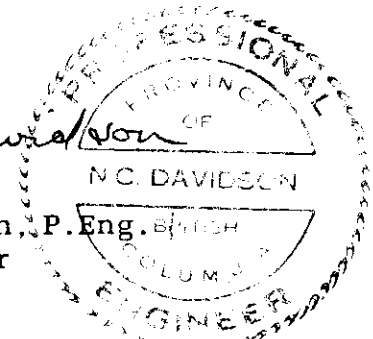


Vancouver, B.C.

January 30, 1984

*N.C. Davidson*

Norman C. Davidson, P. Eng.  
Consulting Engineer



EXPIRY DATE JULY 15, 1984

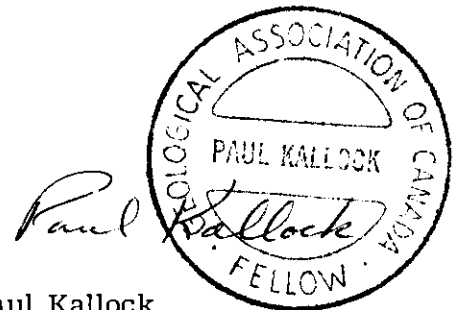
GEOLOGIST'S CERTIFICATE

PAUL KALLOCK

I, Paul Kallock, do state: that I am a geologist with Arctex Engineering Services, 301 - 1855 Balsam Street, Vancouver, B. C.

I Further State That:

1. I have a B.Sc. degree in Geology from Washington State University, 1970. I am a Fellow of the Geological Association of Canada.
2. I have engaged in mineral exploration since 1970, both for major mining and exploration companies and as an independent geologist.
3. I have co-authored the report entitled, "Reconnaissance Geological and Geochemical Investigation of the Olympus Mineral Claim, Slocan Mining Division, Kaslo, B.C.". The report is based on my fieldwork carried out on the property and on previously accumulated geologic data.
4. I have no direct or indirect interest in any manner in either the property or securities of Helena Resources Ltd., or its affiliates, nor do I anticipate to receive any such interest.
5. I consent to the use of this report in a prospectus or in a statement of material facts related to the raising of funds.



Paul Kallock  
Geologist

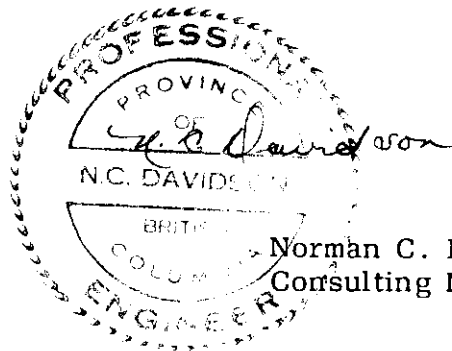
Vancouver, B. C.

January 30, 1984

## ENGINEER'S CERTIFICATE

NORMAN C. DAVIDSON

1. I, Norman C. Davidson, am a Registered Professional Engineer in the Provinces of British Columbia, Nova Scotia and Ontario. My address is P.O. Box 39, St. Andrews, Antigonish County, Nova Scotia BOH 1X0.
2. I am a graduate of Michigan Technological University, Houghton, Michigan, U.S.A., with a B.Sc. in Mining Engineering. I am a graduate of the Haileybury School of Mines as a Certified Mining Technician. I am registered as a Mine Manager under the Coal Mines Regulation Act of Nova Scotia. I am a member of C.I.M., A.I.M.E., and the Mining Society of Nova Scotia.
3. I have been engaged in mining exploration, development and mine production for 21 years.
4. A personal examination of the property was not undertaken. The completed report was reviewed and discussed with Arctex Engineering Services personnel, the competence of whom is known to the undersigned.
5. I have no interest either directly or indirectly in the claims named herein or Helena Resources Ltd., nor do I expect to receive any.
6. I consent to the use of this report in a prospectus or in a statement of material facts related to the raising of funds.



Norman C. Davidson, P. Eng.  
Consulting Mining Engineer

Vancouver, B.C.  
January 30, 1984

EXPIRY DATE JULY 15, 1984

## REFERENCES

- Goldsmith, L.B. and Kallock, P. 1983. Review of Base and Precious Metal Resources, Kaslo-Lardeau-Whitewater Area, B.C. For Rayrick Grubstaking Syndicate.
- Klepacki, D.W. 1983. Stratigraphic and Structural Relations of the Milford, Kaslo and Slocan Groups, Roseberry Quadrangle, Lardeau Map Area, B.C. In Current Research, Part A. G.S.C. Paper 83-1A.
- Monger, J.W.H. *et al.* 1982. Tectonic Accretion and the Origin of the Two Major Metamorphic and Plutonic Belts in the Canadian Cordillera. *Geology*, V, 10, pp. 70-75.
- Read, P.B. and Wheeler, J.O. 1976. Lardeau West Half Geology, Map 93E. G.S.C. Open File 432.

## ITEMIZED COST STATEMENT, 1983 PROGRAMME

## A. Wages

P. Kallock, geologist, Sept. 22, Jan. 16, 17, total 3 days @ \$300/day	\$ 900.00	
N.C. Davidson, engineer, ½ Jan. 29 @ \$400/day	<u>200.00</u>	
	1,100.00	\$1,100.00

## B. Food, Accommodation

Sept. 22, 1 man/day		33.59
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## C. Transportation

Helicopter	\$347.00	
Travel, pro-rated	<u>41.60</u>	
	388.60	388.60

## D. Analyses

15 samples cost \$242.55, = \$16.17/sample		242.55
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## E. Report

Drafting, typing, prints, photocopying, report materials		<u>842.20</u>
		\$2,606.94

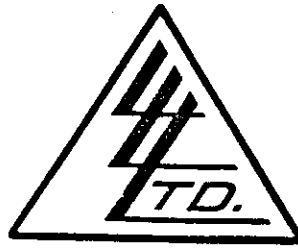


A P P E N D I X

## SAMPLE DESCRIPTIONS

- P-1 Rock chip sample of 5 cm quartz and hematite vein. Crystals of quartz intergrown with blades of orange-red hematite, abundant vugs. Vein trends N80°E near vertical (?), intersects N20°W shear 4 metres to east.
- P-2 Four-metre chip sample across part of 10-metre wide serpentinite zone, includes serpentinite conglomerate or rounded breccia (?) with 10 to 20 cm clasts, coarse grained mafic intrusive (?) rock, and serpentinite with rare asbestiform minerals. Outcrop weathers orange-tan to grey green.
- P-3 Rock chip sample of 10 cm quartz-hematite vein in face of 15-metre adit, elevation 7420 feet. Trace of galena and pyrite.
- P-4 Select grab sample from dump of surface trench above adit, 10% sphalerite, 2% galena, 2% chalcopryite in quartz-hematite gangue.
- P-5 Select grab sample from dump of 7-metre deep shaft. Quartz and hematite vein material has local abundant galena cubic crystals.
- P-6 Sample of soil and talus fines from area of 95% serpentinite, 5% greenstone, with traces of pyrite.
- P-7 Sample of serpentinite showing numerous calcite veinlets and 1% disseminated magnetite.
- P-8 Stream sediment sample of upper Whitewater Creek. Float = 75% serpentinite and 25% andesite and andesite breccia.
- P-9 Chips from subangular float boulder of andesite (?) with 3-5% chalcopryite; strong, dark brown limonite stain.

To: MR. LOCKE B. GOLDSMITH  
 301, 1855 Balsam Street  
 Vancouver, B.C., V6K 3M3  
 cc: M. Izard  
 P. Kallock



File No. 25395  
 Date October 28, 1983  
 Samples Rock, Stream  
 Sediments

Certificate of  
**ASSAY** of  
**LORING LABORATORIES LTD.**

Page # 1

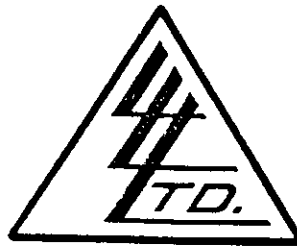
SAMPLE No.	OZ./TON GOLD	OZ./TON SILVER	% Cu	% Pb	% Zn	% Ni
<u>"Assay Analyses"</u>						
<u>Rock Samples</u>						
OLY-P-1-R				.19	.41	
OLY-P-2-R						.11
OLY-P-3-R				.12	.32	
OLY-P-4-R		6.56	.95	3.90	9.32	
OLY-P-5-R		15.34		12.9	4.10	
OLY-P-7-R				.14	.12	
OLY-P-9-R		1.40	1.03	.98	.72	
<p><b>I Hereby Certify</b> THAT THE ABOVE RESULTS ARE THOSE          ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES . . . .</p>						

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

*D. Evles*

Assaver

To: MR. LOCKE B GOLDSMITH  
 301, 1855 Balsam Street  
 Vancouver, B.C., V6K 3M3  
 cc: M. Iazard  
 P. Kallock



File No. 25395  
 Date October 28, 1983  
 Samples Rock  
 HENRY PROJECT/ROSSITER CREEK  
 PROJECT

Certificate of  
**ASSAY**  
**LORING LABORATORIES LTD.**

Page # 2

SAMPLE No.	PPM Cu	PPM Pb	PPM Zn	PPM Ni	PPM Ag	PPB Au
OLY-P-1-R	36	+1000	+1000	31	5.9	15
-P-2-R	46	145	189	+1000	1.0	Nil
-P-3-R	18	+1000	+1000	20	1.8	25
-P-4-R	+1000	+1000	+1000	16	+30	265
-P-5-R	460	+1000	+1000	15	+30	65
-P-7-R	82	+1000	+1000	620	5.1	15
-P-9-R	+1000	+1000	+1000	80	+30	20

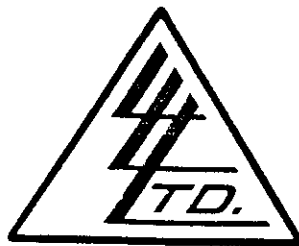
**I** **Hereby Certify** THAT THE ABOVE RESULTS ARE THOSE  
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES . . . .

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

*D. Enleas*

Assayer

To: MR. LOCKE B. GOLDSMITH  
 301, 1855 Balsam Street  
 Vancouver, B.C., V6K 3M3  
 cc: M. Iazard  
 P. Kallock



File No. 25395  
 Date October 28, 1983  
 Samples Stream Sediments  
 HENRY PROJECT/ROSSITER CREEK  
 PROJECT

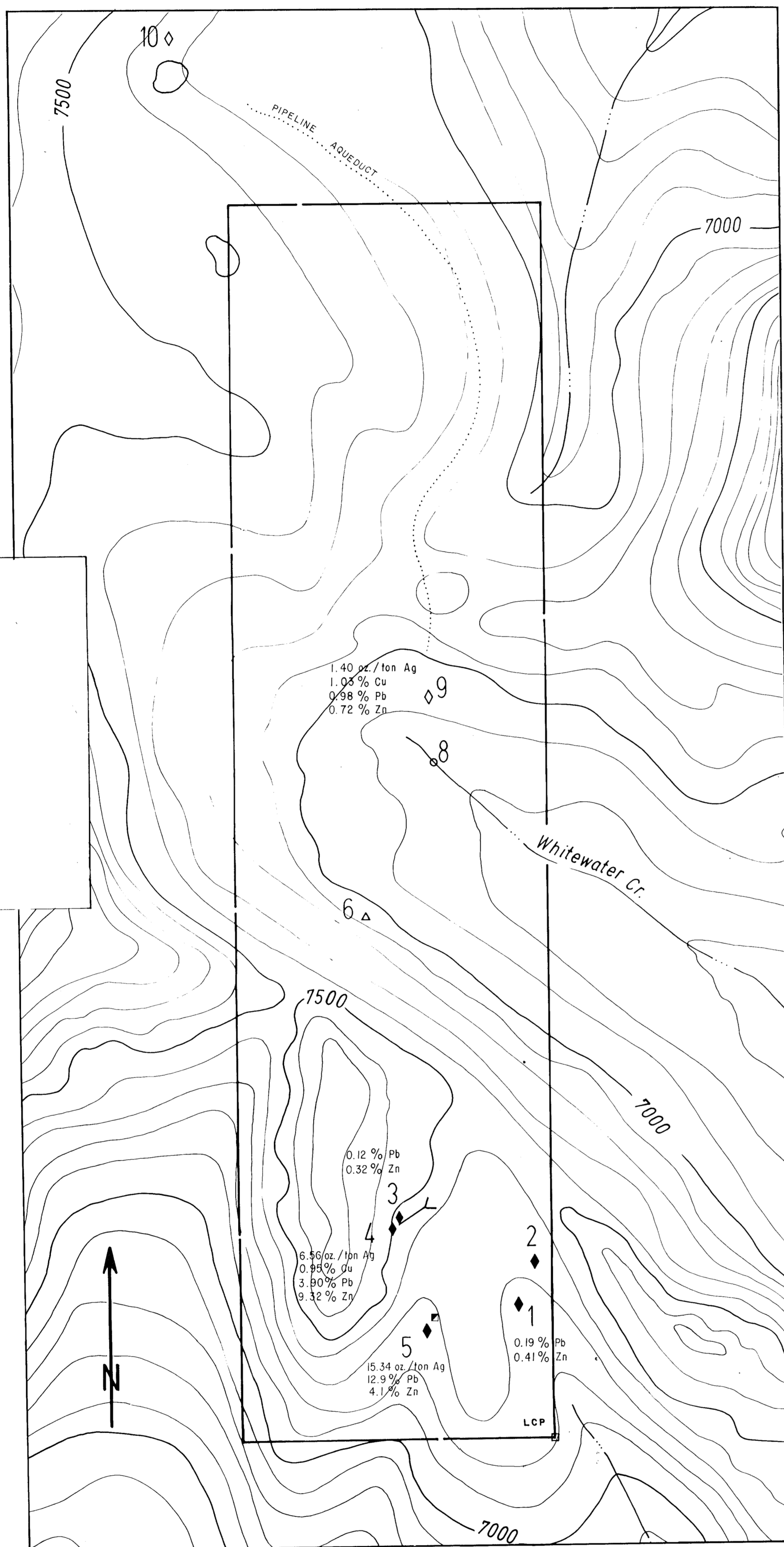
Certificate of  
**ASSAY** of  
**LORING LABORATORIES LTD.**  
 Page # 4

SAMPLE No.	PPM Cu	PPM Pb	PPM Zn	PPM Ni	PPM Ag	PPB Au
OLY -P- 8	280	22	55	460	.7	20
<p><b>I</b> <b>Hereby Certify</b> THAT THE ABOVE RESULTS ARE THOSE          ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES . . . .</p>						

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

  
 \_\_\_\_\_  
 Assayer

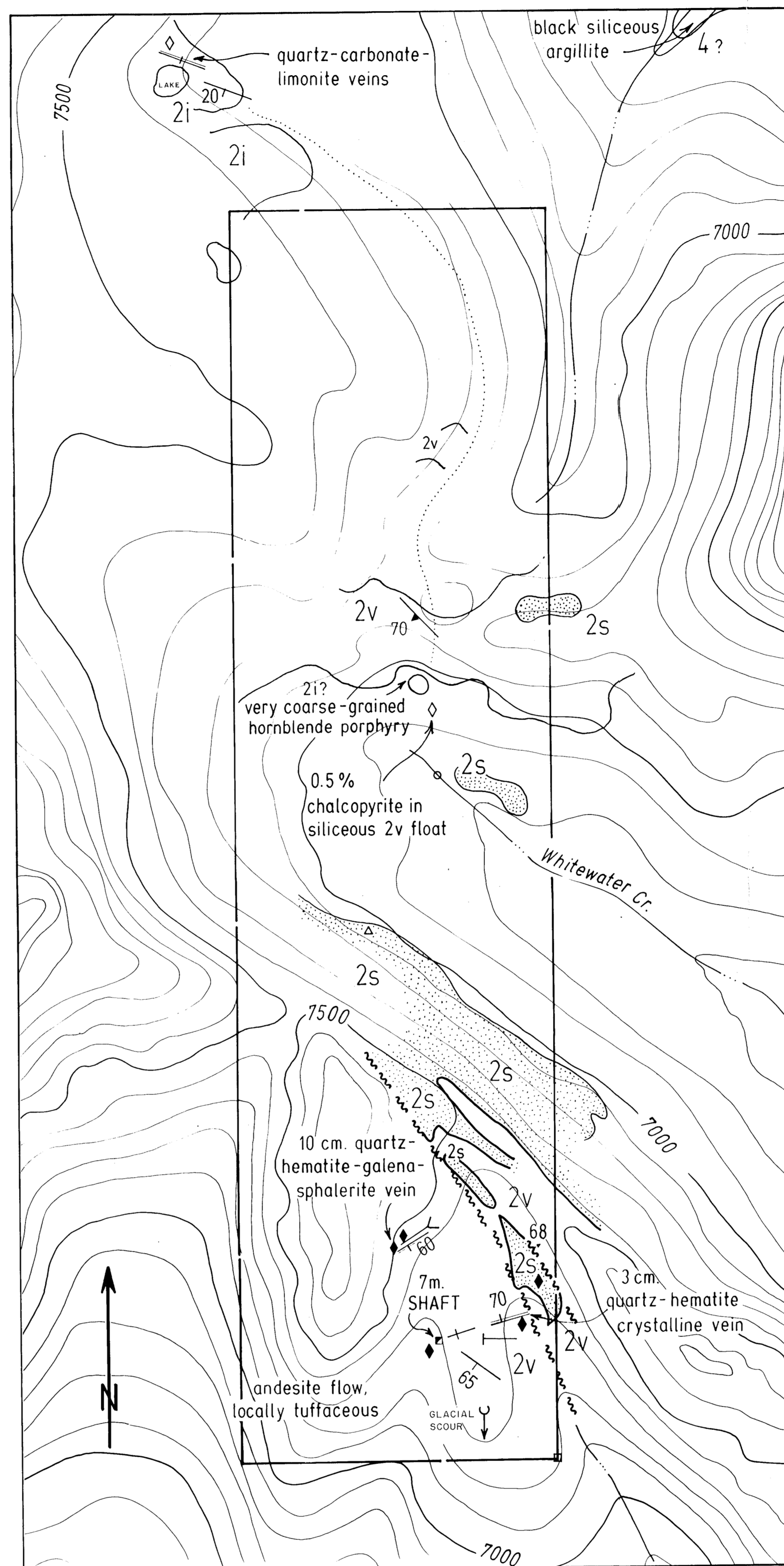
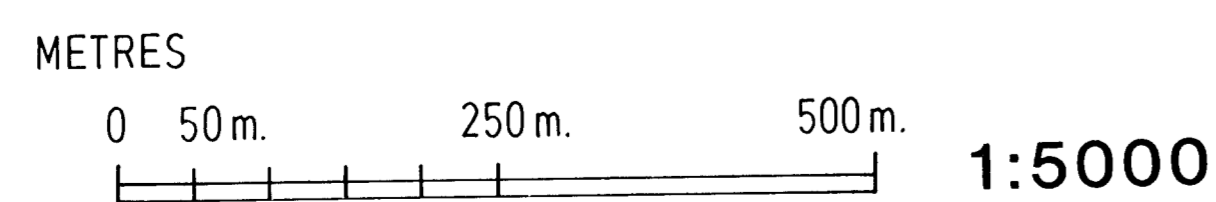
SAMPLE NUMBER	ppm Cu	ppm Pb	ppm Zn	ppm Ni	ppm Ag	ppb Au
OLY - P - 1	36	>1000	>1000	31	5.9	15
2	46	145	189	>1000	1.0	nil
3	18	>1000	>1000	20	1.8	25
4	>1000	>1000	>1000	16	>30	265
5	460	>1000	>1000	15	>30	65
6	77	48	48	560	0.2	nil
7	82	>1000	>1000	620	5.1	15
8	280	22	55	460	0.7	20
9	>1000	>1000	>1000	80	>30	20
STEP ST-P-10	152	198	152	66	1.4	5



### GEOCHEMISTRY & SAMPLE LOCATIONS

SHOWING ASSAY RESULTS

STREAM SEDIMENT SAMPLE LOCATION ○  
 ROCK SAMPLE ◆ SOIL SAMPLE ▲  
 FLOAT ◇



### GEOLOGY MAP

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

**12167**  
**HELENA**  
RESOURCES LIMITED

### OLYMPUS PROJECT

KASLO AREA, B.C.  
SLOCAN M.D.  
82K/3E

To accompany report by  
**P. Kallock**  
Geologist

and **N.C. Davidson, P.Eng.**  
Consulting Engineer,

**OCTOBER 1983**



### STRATIGRAPHY

6	TUFA GENERALLY CALCAREOUS LOCALLY WITH LIMONITE and/or MANGANESE OXIDE.
5	GRANITE MEDIUM-GRAINED QUARTZ MONZONITE TO ALASKITE LOCAL SILICIFICATION and PYRITIZATION
4	SLOCAN GROUP BLACK SHALE SLATE SCHIST ARGILLITE LOCAL INTENSE FOLDING
3	BASAL SLOCAN or interface between SLOCAN and KASLO GROUPS BROWN PHYLITE OR PHYLITIC SCHIST; SHEARED; CHLORITE and ANKERITE ALTERATION, POSSIBLY REPLACING INTERMEDIATE VOLCANIC LIMESTONE OR LIMY CONGLOMERATE SEE PETROGRAPHIC DESCRIPTION IN DECEMBER 1984 REPORT ON LOBO GROUP ----- DISCONFORMITY -----
	KASLO GROUP
2i	DYKES, SILLS and SMALL PLUGS of GABBRO or DIORITE, POSSIBLY INTRUSIVE EQUIVALENTS of KASLO GROUP VOLCANICS.
2s	ULTRAMAFIC UNIT: SERPENTINITE
2t/c	TALC and TALC / CARBONATE
2a	SEDIMENTS: TUFFACEOUS ARGILLITES.
2v	VOLCANICS: CHLORITE SCHIST GREENSTONE, DARK GREEN ANDESITE OR BASALT, IN PART META-ANDESITE.
2m	MAFIC UNIT: MAFIC VOLCANIC BRECCIA - FRAGMENTAL
1a	MILFORD (?) KASLO (?) GROUP ARGILLITE; GREENISH-BANDED, CHERT?, SILICEOUS LESSER FINE-GRAINED QUARTZITE MAY INCLUDE WEDGES of KASLO GROUP
1	MILFORD GROUP GREY PHYLITE, QUARTZITES and LIMESTONE
Lb	LARDEAU GROUP CALC-SILICATE and MARBLE
La	MICA SCHISTS, QUARTZITES and PHYLITE

### KEY TO SYMBOLS USED

BEDDING	showing attitude 40	vertical
FOLIATION	showing attitude 40	vertical
JOINTING	showing attitude 40	vertical
SHEAR	showing attitude 40	vertical
VEIN	70	
FAULT	showing attitude 68	vertical
OUTCROP BOUNDARIES		FLOAT
GEOLOGICAL CONTACT	observed	assumed
TRENCH		
ADIT		
SHAFT		
ABANDONED PIPELINE AQUEDUCT		
STREAMS, CREEKS, DRAINAGE		
CLAIM LINES	LCP	
CONTOUR LINES	100 ft. interval	