

REPORT

on the



DIAMOND DRILLING OF THE

H.B. GROUP, NELSON MINING DIVISION

BRITISH COLUMBIA

- for -

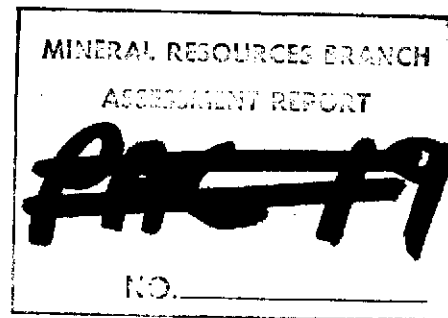
H.B. MINE

Salmo, B.C.

Covering:	Empire	(L12086)
	Bonner Fr.	(L14894)
	Fox	(L14895)
	Eagle	(L14896)
	Princess	(L14897)
	Lynx	(L14898)
	Cody Fr.	(L14899)
	Tim	(L14900)
	Dorrit	(L14901)
	Nicholas	(L14902)
	Dickens Fr.	(L14903)

Located: N.T.S. Map # 82F/3E
 Lat. 49° 05' Long. 117° 14'

Owned by: Cominco Ltd., Trail, B.C.



7618

Prepared by

P.J. Santos, P. Eng.
 Sr. Geologist, Mine Engineering
 Cominco Ltd.
 Trail, B.C.

January 22, 1979

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ILLUSTRATIONS

PLATE I INDEX MAP (Between Pg. 1 & 2)

PLATE II SURFACE PLAN OF H.B. GROUP (In pocket)

I. INTRODUCTION

The H.B. Group is located nine kilometers south east of the town of Salmo, B.C. of the Nelson Mining Division as shown on the Index Map, Plate I. The group lies on the north west slope of Nevada Mountain at an elevation of 3500-5500 feet (1036.3 - 1676.4 meters) above sea level.

Access to the property is via a dirt road on the south side of Sheep Creek that connects with Highway 6 from Canex Mine.

The H.B. Group of eleven mineral claims are listed below:

- | | | |
|-----|------------------|----------|
| 1. | Empire | (L12086) |
| 2. | Bonner Fraction | (L14894) |
| 3. | Fox | (L14895) |
| 4. | Eagle | (L14896) |
| 5. | Princess | (L14897) |
| 6. | Lynx | (L14898) |
| 7. | Cody Fraction | (L14899) |
| 8. | Tim | (L14900) |
| 9. | Dorrit | (L14901) |
| 10. | Nicholas | (L14902) |
| 11. | Dickens Fraction | (L14903) |

These claims were reverted crown-granted claims formerly held by Canadian Exploration Ltd. (Canex), that were acquired by Cominco Ltd. on November 12, 1974.

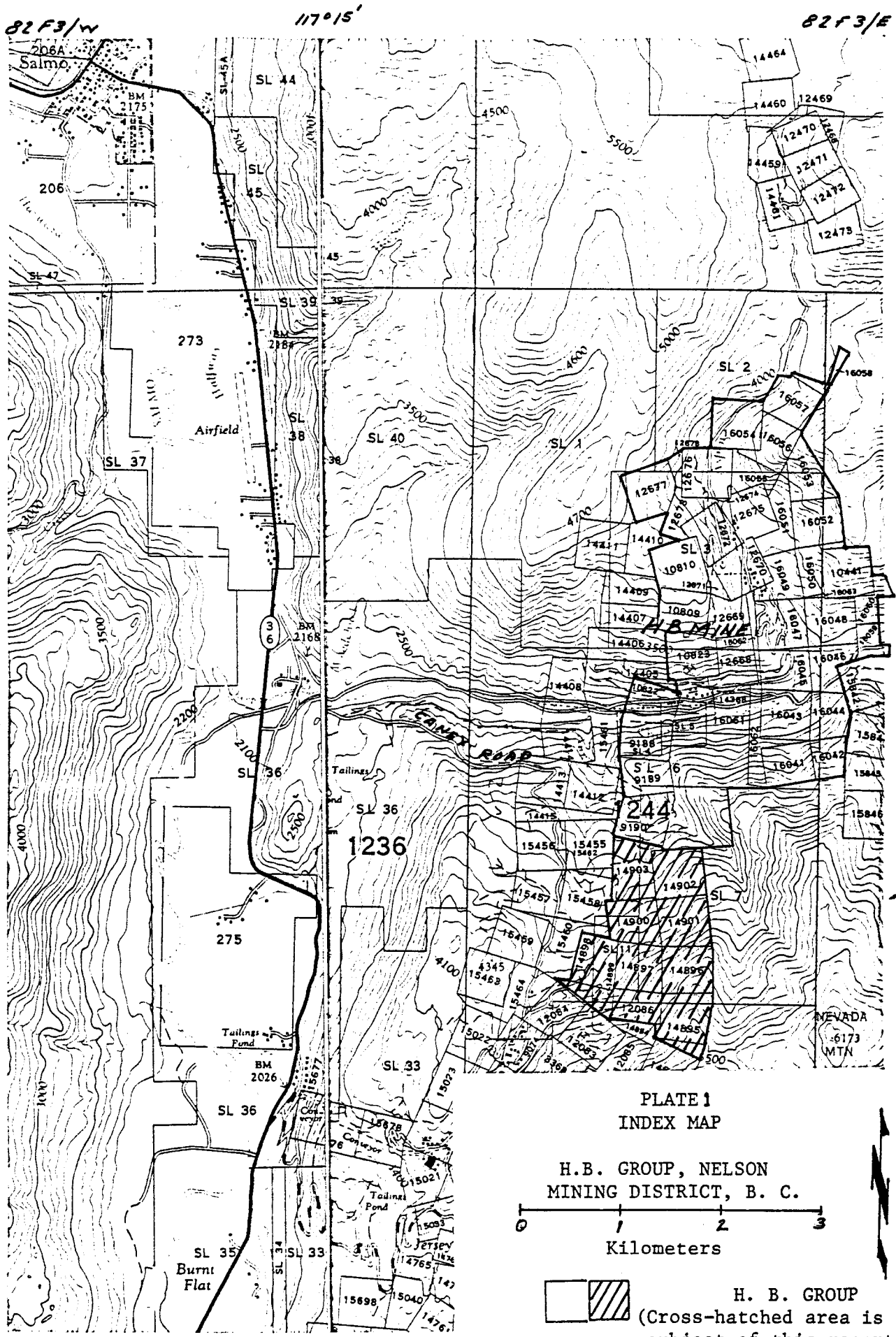
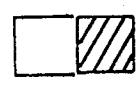
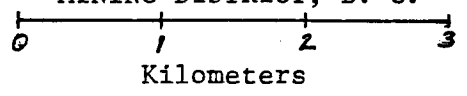


PLATE I
INDEX MAP

H. B. GROUP, NELSON
MINING DISTRICT, B. C.



H. B. GROUP
(Cross-hatched area is
subject of this report)



This ground is considered geologically favourable in that a projection of the ore bearing structures at H.B. Mine lay on this area. A projection of the ore bearing structure at Canex's ground also lay on this area. A row of diamond drill holes were drilled to test the area in 1975 and continued in 1977. The footage drilled in 1975 was used for assessment purposes to keep the group in good standing until 1979. The footage drilled in 1977 is being used to keep the ground in good standing until 1982.

One hole was drilled in 1977 for a length of 352 feet (107.3 meters). The hole is A.Q. wire line (core diameter 27 mm). The log, interpretation and conclusion from this drilling are found elsewhere in this report. The collar elevation, inclination, azimuth of the drill holes are listed on the drill logs, including the assay result. The drill cores are stored in a shed at the mine site in H.B., Salmo, B.C.

This report was written in close consultation with George Warning, then Mine Geologist of H.B. Mines, who logged the drill core of DDH No. S-311. The drilling was done under his direct supervision.

II. DETAILED TECHNICAL DATA AND INTERPRETATION

(a) Geology

The property, H.B. Group, is located in the Salmo area of B.C. which lies on the southern part of what is known as the Kootenay Arc, "a structural belt of highly deformed rocks bent over the eastern margin of a batholithic area". The H.B. Group is underlain by rock units of the Emerald Member, Reeves Member, and the Truman Member of the Laib Formation (Paleozoic) intruded by granite stock (Mesozoic) of the Nelson Plutonic Rocks.

A substantial part of this area is covered by overburden which until 1974 was virtually unexplored. The H.B. Group lies between formerly Pb-Zn producing areas (H.B. Mine and Jersey Mine), essentially along the same structural trend and rock stratigraphic unit. In addition, this area offers a promising target for tungsten exploration in that the scheelite zone of the Emerald orebody in a contact metamorphic skarn of the Reeves limestone with the Emerald granite can be projected into this area.

A fence of drill holes oriented across the structural trend is thought to be the best method to test this area. Logs for drill hole No. S-306 to S-310 inclusive were submitted previously for assessment purposes. The log for D.D.H. S-311 is included under Section II (c) of this report.

(b) Drill Hole Data

The following are pertinent data for diamond drill hole No. S-311.

Diamond Drill Hole No. S-311

Drilled: June-July, 1977

Location: Dickens Fraction, H.B. Group

Collar Elevation: 3440' (1048.51 m) ASL

Azimuth: -70°

Dip Tests: None performed

Core Diameter: AQ wire line (27.0 mm)

Drill core storage: Core shed at H.B. Mine

(c) Drill Log

The diamond drill core of hole No. S-311 was logged by George F. Warning, who is a qualified geologist. His certificate of qualification is contained in this report. The drilling of this hole was done under his supervision while acting in his capacity as Mine Geologist for H.B. Mines.

(d) Results and Interpretation

D.D.H. S-311 intersected 227 feet (69.18 meters) of the Truman Member and 118 feet (35.97 meters) of the Reeves Member of the Laib Formation and 17 feet (5.18 meters) of granite of the Nelson Formation. The Truman consisted of argillite with short skarny sections and banded grey limestone lenses. The Reeves consisted of grey limestone with short sections of crackle dolomite. The hole bottomed in highly altered porphyritic granite. At 151'-155' (46.02-47.24 meters) in a skarny section of the Truman, a few flecks of scheelite were intersected. The four foot section (1.22 meters) assayed 0.09% WO_3 .

Scale

Colour Plot & Dip



Drill Hole Record

Property	H.B.	District	Salmo	Hole No.	S-311
Commenced	June, 1977	Location	Canex Hill, Dickens Fraction	Tests at	None
Completed	July, 1977	Core Size	AQ (27.0 mm)	Corr. Dip	-70°
Co-ordinates	Lat. 0425 N, Dep: 6560 E		True Brg.	270° Azimuth	
Objective	TO TEST CRACKLE DOLOMITE ON CANEX HILL		% Recov.	92	
				Hor. Comp.	
				Vert. Comp.	
				Logged by	G.F. Warning
				Date	July, 1978

Claim	Dickens Fraction
T Brg.	270° Az
Collar Dip	-70°
Elev.	3440
Length	352 feet
Hole No.	1131
Sheet	1 of 2

Footage		Description	Sample No.	Length	Analysis	
From	To				% WO ₃	
0	9.0	Casing.				
9.0	57.0	Brown Truman Argillites, short skarny sections, limestone (gray) at 31'-36'. Broken limestone at 49'-55' - pinkish. Banding 30°.				
57.0	60.0	Weathered limestone.				
60.0	77.0	Skarny Truman Argillite; considerable silica and epidote, 1" at 65'.				
77.0	115.0	Grey fine grained limestone; some pinkish sections - Truman. Reamed and cased to 99'.				
115.0	131.0	Greenish-grey argillite - short skarny sections. Banding 30°.				
131.0	134.0	Grey medium grained banded limestone.				
134.0	159.0	Skarny Truman Argillite, banding at 35° - 40°, 151'-155'. A few flecks of scheelite.	134761	4.0	.09	
159.0	170.0	Skarny limestone with much pink mottling.				
170.0	175.5	Skarny argillites, limey.				
175.5	192.0	Skarny limestone, pink mottling.				
192.0	227.0	Skarny argillite, banding 30°-60°.				
227.0	287.0	Limestone - some pink aplite. Dyke 245'-247'. Some dark grey sections. Weathered dyke at 276'-280' at 45°.				
287.0	324.0	Grey limestone, short crackle dolomite sections.				
324.0	325.0	Sand.				
325.0	327.0	Limestone.				
327.0	328.0	Cemented sand.				

G.F. Warning
G.F. Warning

Continued 2



Drill Hole Record

Property	District	Hole No. S-311	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Footage		Description	Sample No.	Length	Analysis					Hole No.	Sheet
From	To				Claim	T Brg.	Collar Dip	Elev.	Length		
328.0	335.0	Grey dolomite limestone.									
335.0	352.0	Highly altered porphyritic granite. Fresh at 338-339' and 347'-348'. Remarkably good recovery but driller had much trouble "mudding" - hole stopped at 352'. May be large fault zone or rotten granite.									

Handwritten notes:
 312 M
 312 M

III. ITEMIZED COST STATEMENT

- (a) Diamond Drilling (by contract, Logan Diamond Drilling Co. Ltd.,
Box 10, Salmo, B.C.)

352 feet AQ core drilling @ \$9.50/foot	\$ 3,344.00
8 man hours (reaming casing) @ \$36.00/foot	288.00

Note: Driller and Helper's wages, bonuses, food and accommodation charges, transportation costs and equipment rentals are included in the above contract charges.

- (b) Core Storage (H.B. Mine) 50.00
(core boxes, shed etc.)

- (c) Core logging 250.80
Eight man hours @ \$31.35

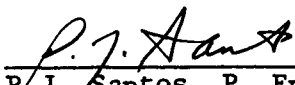
- (d) Report Preparation 1,881.00
Sixty man hours @ \$31.35

Total Cost	\$ 5,813.80
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IV. CONCLUSIONS AND RECOMMENDATIONS

The drilling done in 1975, 1976 and 1977 in this property has shown that it has poor potential for lead and zinc. The 1977 drilling however, has indicated a tungsten potential. A few flecks of scheelite were intersected by DDH S-311 at 151-155' (.09% WO_3) in skarny Truman Argillites. The tungsten orebodies of Canex in the south can be projected into this area. So far, no drilling has been done on the southern part of this area which is covered by overburden.

It is therefore recommended that Cominco Ltd. retain ownership of this part of the H.B. Group for consideration in future exploration programs, particularly for tungsten.


P.J. Santos, P. Eng.

Sr. Geologist, Mines Engineering

January 23, 1979

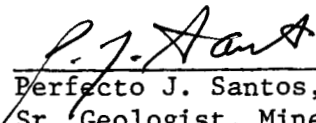
cc: Mining Recorder, Nelson, B.C. (2)

G. Harden, Exploration Western District, Vancouver
Files, Trail

CERTIFICATE OF QUALIFICATION OF AUTHOR

I, Perfecto J. Santos, of Castlegar, B.C. hereby certify that:

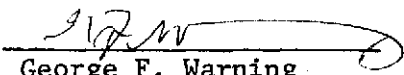
- (1) I am a geologist residing at 626 - 3rd Avenue N., Castlegar, B.C. and employed as Senior Geologist of Cominco Ltd. in Trail, B.C.
- (2) I am a graduate of the University of the Philippines with the degree of Bachelor of Science in Mining Engineering (Geology Option) in 1959, and a member of the Association of Professional Engineers of B.C. I have practiced my profession for nineteen years, twelve of it in Canada.
- (3) I am the author of this report which is based on a drilling program on the H.B. Group in the Nelson Mining Division of B.C. I have intimate knowledge that the drilling was done on the Dickens Fraction mineral claim of the H.B. Group.


Perfecto J. Santos, P. Eng.
Sr. Geologist, Mines Engineering
Cominco Ltd.

CERTIFICATE OF QUALIFICATIONS OF DRILL CORE LOGGER

I, George F. Warning of Salmo, B.C., hereby certify that:

- (1) I am a geologist residing at Salmo, B.C., and employed as Mine Geologist, H.B. Mine, Cominco Ltd., Salmo, B.C.
- (2) I am a graduate of the University of Saskatchewan, with a degree of Bachelor of Science in Geology (Honors) in 1939. I have practiced my profession for forty years.
- (3) I logged the drill core of Diamond Drill Hole No. S-311, which was drilled in July, 1977 on the Dickens Fraction Claim of the H.B. Group in the Nelson Mining Division of B.C., under my supervision while employed as Mine Geologist of the H.B. Mine of Cominco Ltd.


George F. Warning
Mine Geologist, H.B. Mine
Cominco Ltd.

REFERENCES

1. Cominco Ltd., H.B. Property Files, at H.B. Mine, Salmo, and Trail
2. Fyles, J.T. and Hewlet, C.G., 1959, Stratigraphy and Structure of the Salmo lead-zinc area, B.C. Dept. of Mines, Bulletin No. 41, 162p
3. Little, H.W. 1960, Nelson map-area, west half, B.C. (82 FW 1/2) GSC Memoir 308, 205p
4. Province of British Columbia, Mineral Act Regulations, B.C. Reg. 587/77, 43p
5. Skall, H. 1975, Kootenay Arc Study, 1974 field report, detailed mapping of the H.B Mine property and part of adjacent rock claims, Cominco Ltd. unpublished report, 9p
1974, Kootenay Arc Study 1973 field report, 11p
6. Warning, G.W. 1977, Diamond drill core log of DDH S-311, H.B. Mine, Cominco Ltd., 2p
1977, Plate V-40, Surface drilling geologic section, New Claims, Dodger area, 1"=100'

DRAWING NO.	REVISION
DATE	
BY	
CHECKED BY	
APPROVED	
THE CONSOLIDATED MINING AND SMELTING COMPANY OF CANADA LIMITED ENGINEERING DIV., TADANAC, B.C.	
SCALE: 1" = 1,000'	
DRAWING NO.	REVISION
H.B. SURFACE CLAIM GROUP	
V-36	

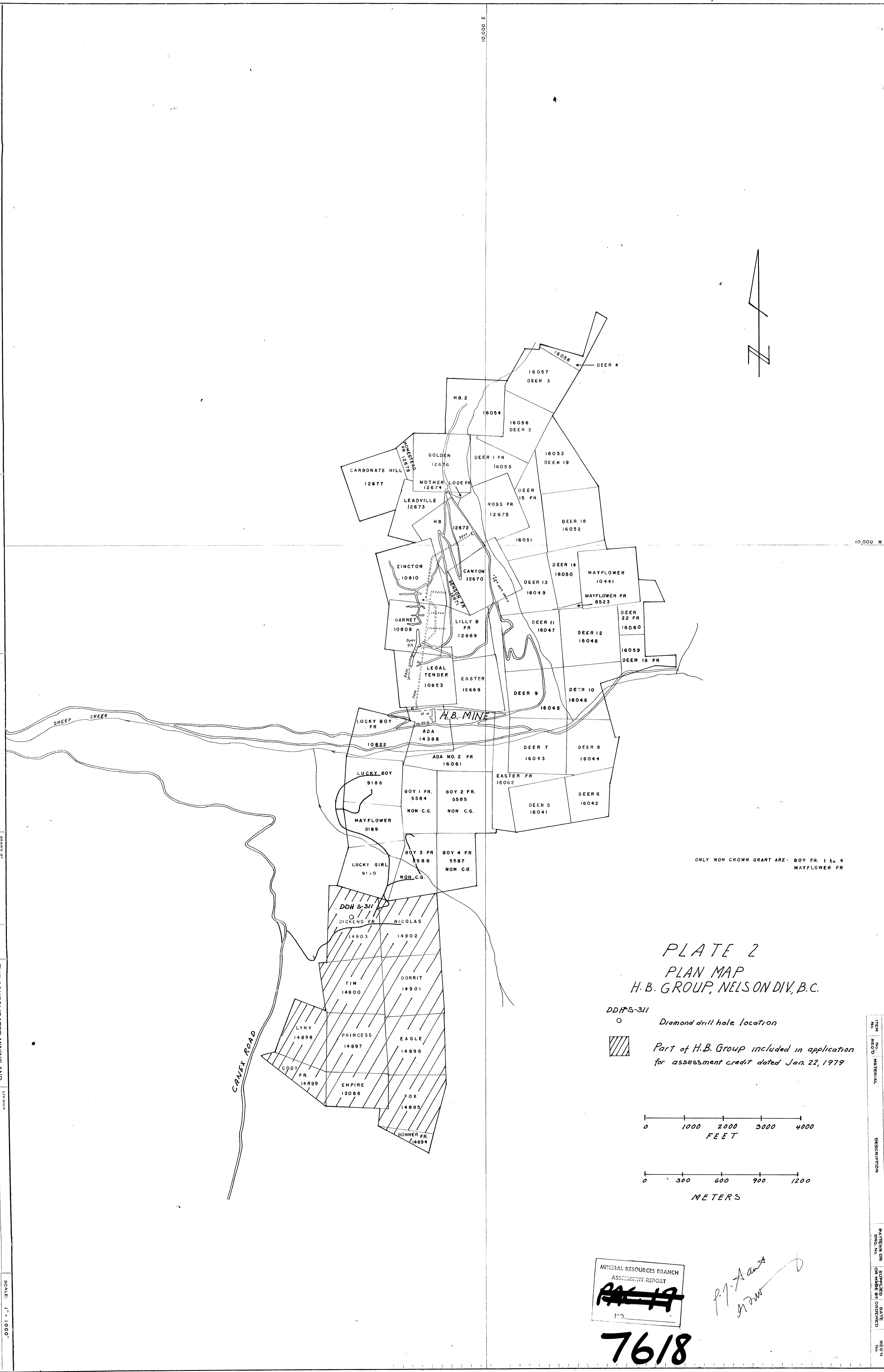
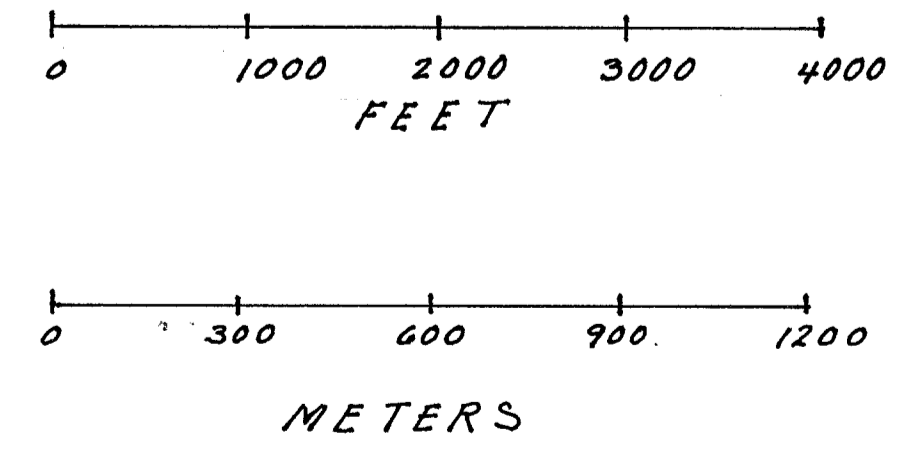


PLATE 2
 PLAN MAP
 H.B. GROUP, NELSON DIV., B.C.

DDH'S-311
 ◯ Diamond drill hole location

▨ Part of H.B. Group included in application for assessment credit dated Jan. 22, 1979



MINERAL RESOURCES BRANCH
 ASSESSMENT REPORT
 7618
 NO.

7618

P.P. A. Cant
 M.D.W.

ITEM NO.	PATTERN OR MADE BY	DATE	REVISION
NO.	NO.	NO.	NO.
MATERIAL	OR MADE BY	ORDERED	NO.
DESCRIPTION	NO.	DATE	NO.