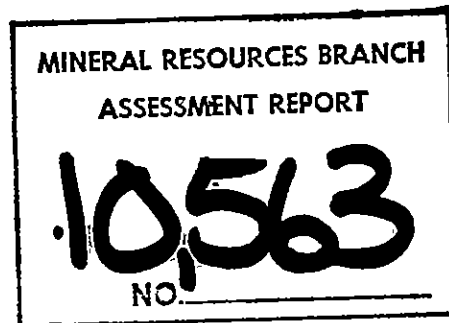


REPORT ON  
GEOLOGIC MAPPING PROGRAM  
ON  
MOUND 1 - 11  
OMINECA MINING DIVISION

54° 17' North Latitude  
126° 47' West Longitude  
93-L-7 West

FOR  
CHURCHILL ENERGY INC.



BY  
U. MOWAT  
POWER-CAN RESOURCES LTD.  
JUNE 22, 1982

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### INTRODUCTION

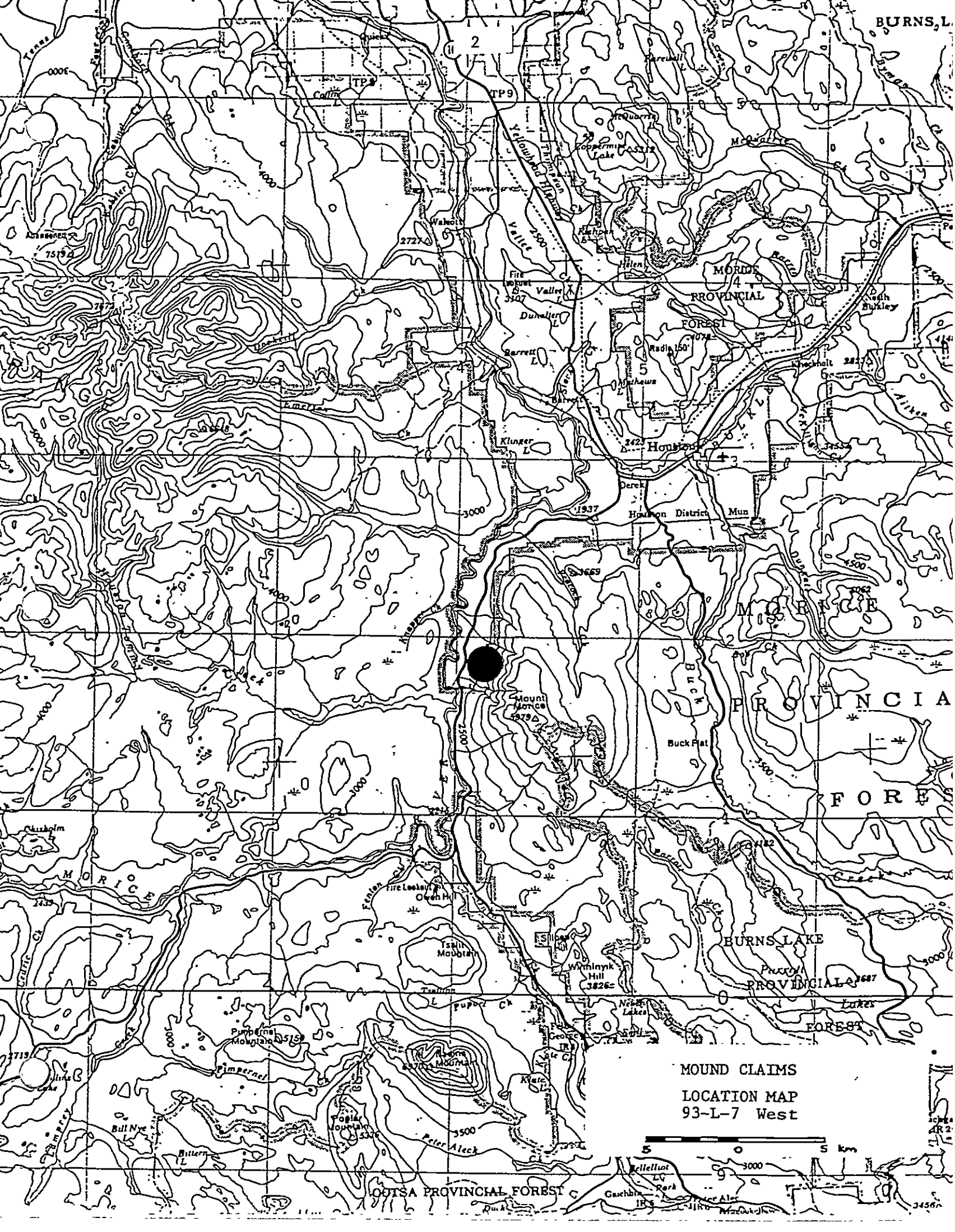
A program of geological mapping was conducted on the Mound Claims from June 7, 1982 to June 14, 1982. Approximately 150 hectares were mapped on a scale of 1 cm: 25 m by chain and compass.

### LOCATION AND ACCESS

The Mound Claims are located on the western flank of Morice Mountain, approximately 16.5 km southwest of Houston, B. C. Access to the property is via the Morice River Forestry Road. An old logging road would provide access right onto the property but at the present, this road is severed by a drainage ditch right at the junction with the Morice River Forestry Road.

### TOPOGRAPHY

The topography of the property ranges from being almost flat on the western portion of the claims to being very rugged and cliff-like on the eastern portions. The southern border of the claims terminates in a precipitous drop into a creek. Elevations range from 732 meters on the western portion of the claims to at least 1,807 meters on the eastern side.



BURNS, L.

2

TP9

MORICE

PROVINCIAL

FOREST

MORICE

PROVINCIAL

FOREST

BURNS LAKE

PROVINCIAL

FOREST

MOUND CLAIMS

LOCATION MAP

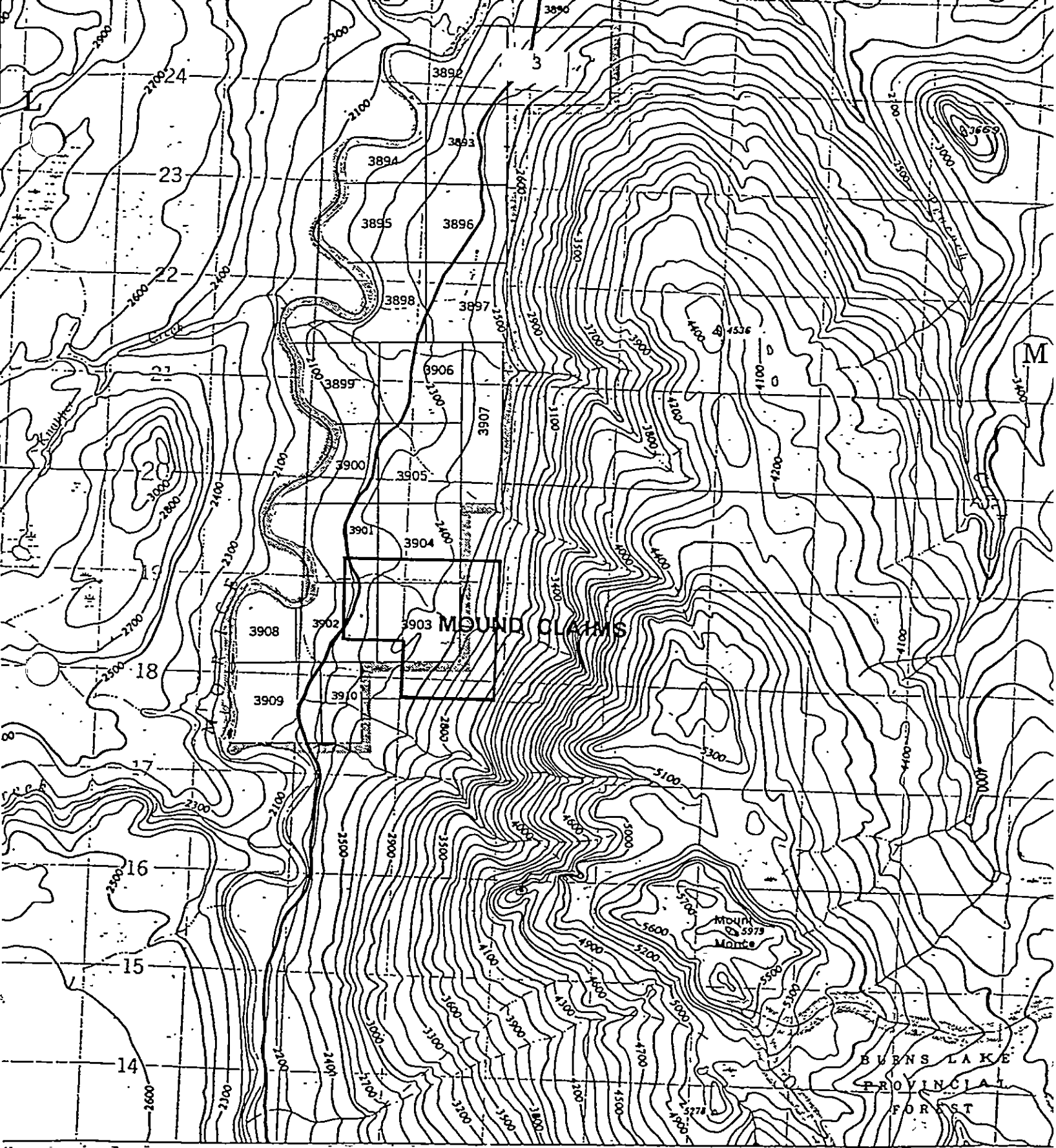
93-L-7 West

5 0 5 km

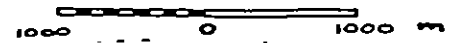
MOOSE PROVINCIAL FOREST

Scale 1:250,000

3456A



DETAILED LOCATION MAP  
93-L-7 West



CLAIM DATA

<u>CLAIM NAME</u>	<u>NO. OF UNITS</u>	<u>TAG NO.</u>	<u>RECORD NO.</u>	<u>DATE STAKED</u>	<u>DATE RECORDED</u>	<u>STAKED BY</u>
Mound 1	1	53334	2836	June 14/80	June 17/80	A. Salo
Mound 2	1	53335	2837	June 15/80	June 17/80	A. Salo
Mound 3	1	53336	2838	June 16/80	June 17/80	A. Salo
Mound 4	1	53337	2839	June 14/80	June 17/80	A. Salo
Mound 5	1	53338	2840	June 16/80	June 17/80	A. Salo
Mound 6	1	4105	4015	June 13/81	June 24/81	A. Salo
Mound 7	1	4106	4016	June 13/81	June 24/81	A. Salo
Mound 8	1	4104	4017	June 23/81	June 24/81	A. Salo
Mound 9	1	4107	4018	June 23/81	June 24/81	A. Salo
Mound 10	6	64359	4303	Sept 24/81	Sept 28/81	R. E. Reid
Mound 11	8	64360	4304	Sept 25/81	Sept 28/81	R. E. Reid

The Mound claim group consists of 23 units.

HISTORY

The area now known as the Mound claims was first staked in 1966 by Amax (B. C. Report of Minister of Mines and Petroleum Resources, 1966, p. 103).

The claims were known as VAN, WID, GERRY, and totalled 50 claims.

According to the literature, molybdenite and chalcopyrite mineralization was found to occur in a quartz vein stockwork and as disseminations in a quartz porphyry and granodiorite. Work consisted of geological mapping, geophysics and geochemistry. Six hundred feet of trenching were done by bulldozer and 3232 feet of diamond drilling were done in 4 holes. Details of the IF survey are reported in assessment report 797.

No further reports on the property appear until 1970 (GEM, p. 155). At this time the claims consisted of 17 VAN, 4 WYK, plus GERRY, BEVERLY, WID, POT and MOUNT claims totalling 101 claims. The owner is listed as being

J. Van der Wijk. The property was operated by Falconbridge Nickel Mines Ltd., and is listed as being a silver, copper, molybdenum show. Activity on the claims centered on two chalcopyrite shows located to the north and northeast of a small quartz porphyry stock and the old Amax campsite. Work consisted of geological mapping, and included 6 line miles of EM surveys and 3 line miles of magnetometer surveys. Four hundred and fifty soil samples were also collected and analyzed. Eight hundred and sixty feet were trenched.

The geology of the west side of Morice Mountain is reported as consisting of a thick section of Early Mesozoic maroon dacitic tuff breccias, lahar deposits, and a few intercalated rhyolite flows and some rhyolite dykes. Thin seams of chalcopyrite, pyrite and quartz are found filling fractured dacitic volcanics in an upper showing. The lower showing consists of a shear zone near a dacite-andesite contact, which strikes about 165 degrees. This zone is mineralized over a distance of 120 feet. One sample is reported to have assayed 0.3 oz/ton silver and 2.8 percent copper.

In 1977, the Rain 1 - 10 claims which cover a portion of the Mound Claims were owned by John Bot (GEM 1977, p. E 193). Cities Service Minerals Corp. performed 11.2 km of linecutting, 14.2 km of IP surveys covering the Rain 3, 4, 7 - 9. A geochemical survey was also done. Four hundred and ninety-four soil samples were collected and analyzed for copper, molybdenum, zinc and silver (Assessment Report 6311). Detailed geologic mapping was done and 5 BQ holes were diamond drilled totalling

431 meters on the Rain 7 and 8. The property is documented as being a copper showing with chalcopyrite occurring in andesite tuffs and breccia and in granodiorite porphyry stocks and dykes.

On June 14 - 16, 1980, A. Salo of Vilna, Alberta staked the Mound 1 - 5 claims which were recorded on June 17, 1980 at Smithers. The Mound 6 and 7 were staked on June 13, 1981 and recorded June 24, 1981 also in Smithers. Mound 8 and 9 were staked on June 23, 1981 and recorded on June 24, 1981. The Mound 1 - 9 claims were optioned from A. Salo by Churchill Energy Inc. who subsequently staked the Mound 10 and 11 claims on September 24 and 25, 1981. The claims were staked by R. E. Reid as agent for Churchill Energy Inc. and recorded September 28, 1981 at Smithers.

#### GENERAL GEOLOGY

The geology of Morice Mountain consists of the Jurassic Telkwa Formation which has been intruded by several plugs of Nanika Intrusions. The Telkwa Formation is composed of variegated red, maroon, grey green breccia, tuff and flows of basaltic to rhyolitic composition. The Nanika Intrusions are of Cenozoic age (late Eocene) and are composed of quartz monzonite, felsite, in part porphyritic. Numerous fault controlled blocks of Cretaceous micaceous greywacke, black to dark grey shale with minor conglomerate and coals beds outcrop near Morice Mountain. As well, Cretaceous/Tertiary volcanic units of rhyolite and dacite flows, tuffs, and breccias, minor andesite and Tiptop Hill Volcanics of biotite-hornblende andesite and andesitic dacite flows and fragmental rocks occur in



close proximity to Morice Mountain. A chain of Late Cretaceous Bulkley Intrusions of porphyritic granodiorite and quartz monzonite runs along the east side of Morice Mountain.

#### PROPERTY GEOLOGY

Several rock types outcrop throughout the property. The western and northern portions of the claim group are totally covered by overburden. The eastern portion which includes Morice Mountain, is dominantly underlain by a massive, black, very fine grained basalt which is from time to time intercalated with a basaltic tuff-agglomerate. The tuff-agglomerate consists of the black basaltic matrix but contains irregular fragments and shards of white kaolinized acidic debris. This unit is found as irregular lenses within the black basalt. Kaolinization varies and the tuff-agglomerate takes on the appearance of a crude conglomerate in places.

The basalt is hornfelsed on the southeastern portion of the claims. Where this unit has been hornfelsed, it takes on a glassy appearance. Occasionally, the basalt displays a coarse grained phase consisting of well-developed hornblende crystals. The coarse grained phase resembles a gabbro and is also very erratic in its occurrence. This unit is called metabasalt on the geologic map attached to this report, and is located in the proximity of the black, very fine grained basalt and the massive epidote alteration associated with the Upper Showing.

Near the summit of Morice Mountain, a small plug of light pink granite has been located. The granite is totally textureless and almost glassy in

appearance. No alteration or mineralization has been observed in this unit. The granite has also produced a hornfels in the argillaceous sandstone into which it intrudes, forming a black, dense, cherty rock. Contacts appear to be highly disrupted by small amounts of movement.

The following units have been found in small and/or isolated occurrences:

1) Dacite

This unit is light grey, very fine grained with occasional fine grained, green chloritized hornblende laths. Near the Lower Showing silicification has altered the black basalt into a dacitic-appearing rock. It is not known whether the dacite is a real unit or simply just an alteration feature.

2) Sandstone

Rare occurrences of a white quartzite are found in the vicinity of the granite plug on Morice Mountain. This unit may be a siliceous alteration feature. No direct contact with the granite was observed.

Another sandstone unit outcrops in the vicinity of the granite plug. This unit is dark grey, fine grained and argillaceous. This unit contains variable amounts of volcanic debris consisting of kaolinized acidic volcanic fragments and hence appears to grade into a grey-wacke.

3) Diorite?

This peculiar appearing rock was noted in only one spot, near the Upper Showing. The outcrop was light whitish grey with hazy black mafic? shapes. The whole occurrence was extremely hazy in appearance

with no distinct contacts.

4) Andesite

This unit is purple to reddish in colour and occurs on the southeastern portion of the claim group. It appears to be overlain by the very fine grained, black basalt unit and appears to be dipping to the southwest. This unit is also hornfelsed on the southern portion of the claim group and where so hornfelsed, takes on a glassy appearance. This unit also contains fragments of kaolinized volcanic debris and almost has a conglomeratic appearance in places.

5) Orbicular Rock

One occurrence of this unit was noted in the vicinity of the Upper Showing. It consists of a light grey rock containing a large number of elongated ovoidal features having a dark grey rim with a medium grey center. This unit has the distinct appearance of a crinoidal limestone, but is however silicified and hornfelsed? The ovoids are on the average 3 cm long and are aligned.

6) Feldspar Porphyry Dyke

This unit is found in the vicinity of the Upper Showing and trends  $160^{\circ}$  and dips  $65^{\circ}$  to the north. The unit is light grey with white 1 cm feldspar crystals and thin, .5 cm laths of black hornblende.

MINERALIZATION

Upper Showing

The mineralization is exposed in a trench and several pits on the upper and southern portion of the claim group. The mineralization consists of chalcopyrite with some pyrite in a zone of massive epidote in the black

basalt. The chalcopyrite occurs as irregular clots and is exposed for 25 meters in the trench. The black basalt appears to be recrystallized in the vicinity of the mineralization with black hornblende? crystals becoming fairly evident.

#### Lower Showing

The Lower Showing consists of a silicified, brecciated zone in the black basalt. The mineralization which consists of dominantly pyrite, with chalcopyrite and bornite is exposed over 20 meters. The mineralization occurs as irregular clots associated with quartz and as a filling between breccia fragments. Breccia fragments are healed with quartz which occasionally forms up to 5 cm long euhedral crystals.

Minor malachite and possibly chalcocite was noted on the upper portions of the claim group. The malachite was noted in the argillaceous sandstone/greywacke unit.

#### ALTERATION

Alteration on the Mound Claim group consists mainly of two types. The alteration associated with the Upper Showing consists of the development of calc-silicates including epidote, garnet, tremolite-actinolite, and with minor coarsely crystalline calcite. The development of the coarse grained black hornblende? crystals within the zone of mineralization may also be an alteration feature. Epidote occurs as ovoids ranging in size from 5 cm to 30 cm and also as massive zones which are found in very close proximity to the mineralization.

The alteration associated with the Lower Showing consists of quartz and pyrite. The silicification has produced a bleaching effect on the black basalt, altering it to a dacitic appearing rock. The quartz forms a matrix to the brecciated, altered basalt and is vuggy with up to 5 cm long euhedral quartz crystals.

Small amounts of chloritization of mafic minerals, kaolinization of acidic volcanics and chalcedony veining have been noted from various parts of the property but constitute a very minor portion of the alteration picture.

#### STRUCTURE

A study of air photographs in the immediate area of the Mound Claims indicates a pronounced radial fault pattern emanating from the vicinity of the light pink granite plug.

On the property itself, there is no pronounced jointing or trends or noticeable faulting. However, all rocks save for the hornfelsed units, exhibit evidence of severe shattering. All rocks have however, been consequently annealed.

#### CONCLUSIONS

Mapping on the Mound 1 - 11 claims has indicated the presence of copper mineralization in two and possibly three locations on the property. It is intended that further mapping and prospecting in the areas of outcrop as well as soil sampling in the overburden covered areas will be carried out to give full coverage to the property.

Respectfully submitted,

*U. Mowat*

U. Mowat

Power-Can Resources Ltd.  
#201-1401 Lonsdale Avenue  
North Vancouver, B. C.  
V7M 2H9

June 22, 1982

Airfare		\$ 261.36
Taxi		29.00
Truck Rental		
1 week at \$200.00/week	200.00	
768 km at \$0.18/km	138.24	
Tax and insurance	60.69	398.53
Gas		83.00
Geologist		
8 days at \$250.00/day		2,000.00
Assistant		
71.5 hours at \$10.00/hour		715.00
Food		
June 7	37.41	
June 8	38.35	
June 9	39.30	
June 10	50.23	
June 11	47.45	
June 12	57.35	
June 13	19.80	
June 14	52.35	
		342.24
Accommodation		
Two rooms at \$29.00/day (Houston)		433.68
One room (Smithers)		41.34
Drafting		
4 hours at \$20.00/hour		<u>80.00</u>
	TOTAL	\$4,384.15

AUTHOR'S QUALIFICATIONS

I, Ursula G. Mowat, do hereby certify that:

- 1) I am a geology graduate of U.B.C. having graduated in 1969 with a B. Sc. in geology.
- 2) I have practiced my profession as a geologist for 11 (eleven) years in all phases of geologic exploration (oil and gas, coal and minerals).
- 3) I have no interest or holdings in Churchill Energy Inc.

Dated in Vancouver, B. C. this 22nd (twenty second) day of June, 1982

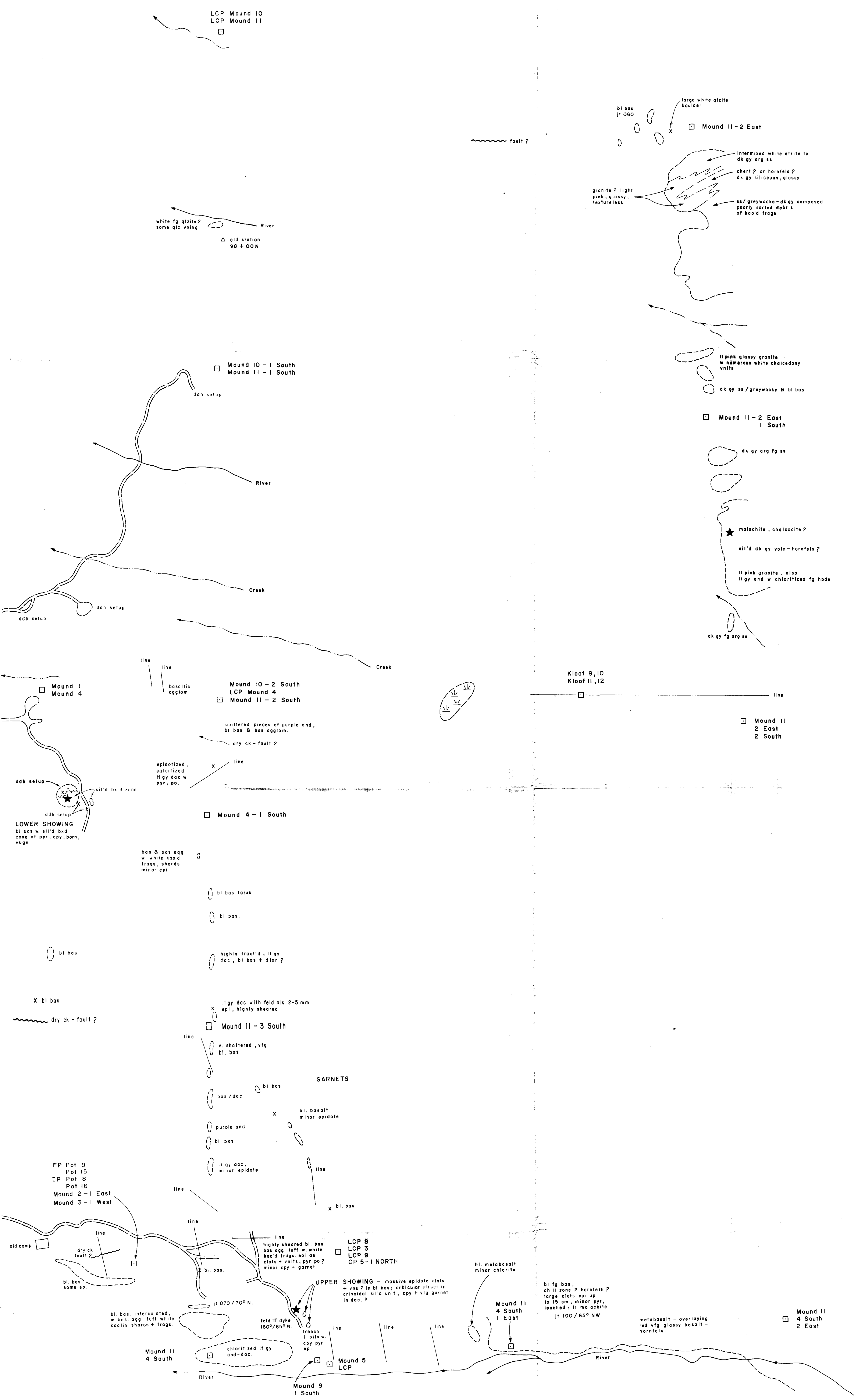
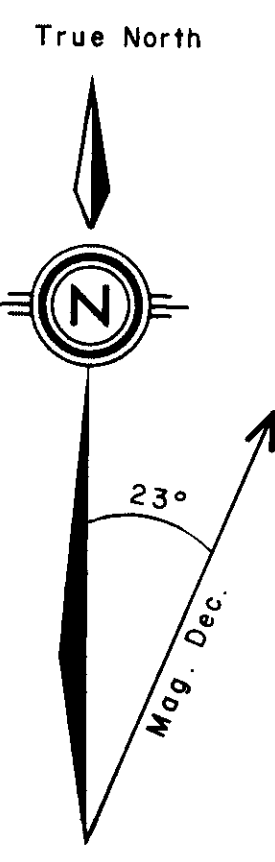
Respectfully submitted,

*Ursula S. Mowat*

Ursula G. Mowat  
Power-Can Resources Ltd.  
#201-1401 Lonsdale Avenue  
North Vancouver, B. C.  
V7M 2H9



LCP Mound 10  
LCP Mound 11



LOWER SHOWING  
bl bas w silic'ed band  
zone of pyr, cpy, born,  
vugs

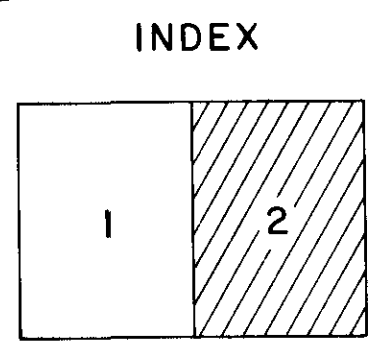
Mound 4-1 South

Mound 11-3 South

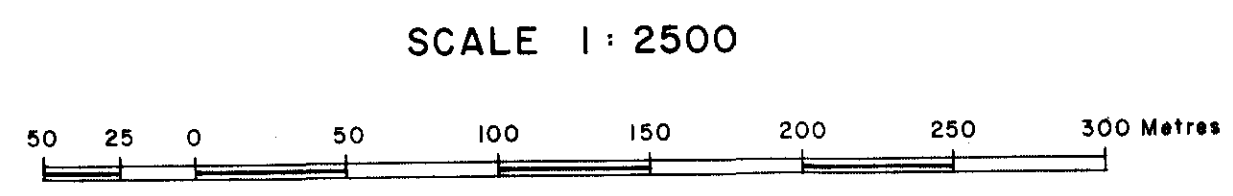
GARNETS

UPPER SHOWING - massive epidote clots  
+ vns? in bl bas; orbicular struct in  
crinoidal silic' unit; cpy + vfg garnet  
in dac?

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**10563**  
NO.



- LEGEND:**
- Creek
  - Road
  - Claim Post
  - Outcrop
  - Fault
  - Mineralization



**CHURCHILL ENERGY INC.**

GEOLOGY MAP OF  
MOUND 1-II CLAIMS  
93-L-7W

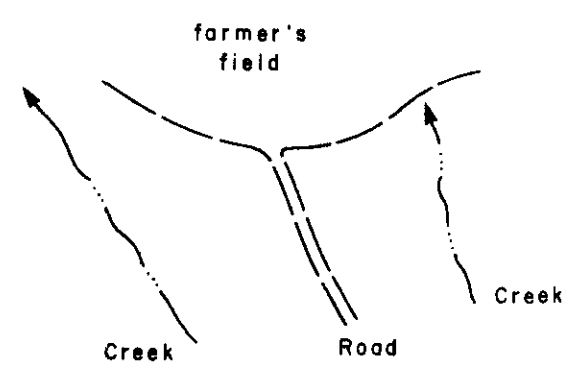
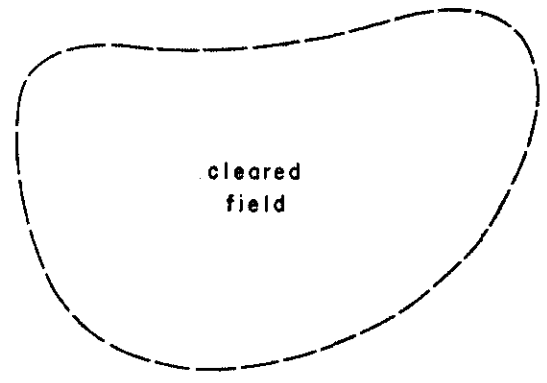
MAP 2

SCALE: 1:2500	SURVEY BY CHAIN
DATE: JUNE, 1982	8
DRAWN BY: EDCO LTD.	COMPASS

Mound IO  
3 West

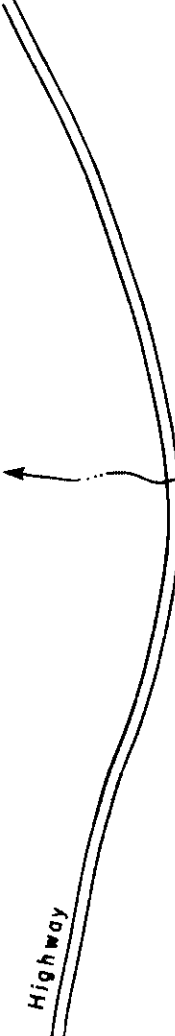
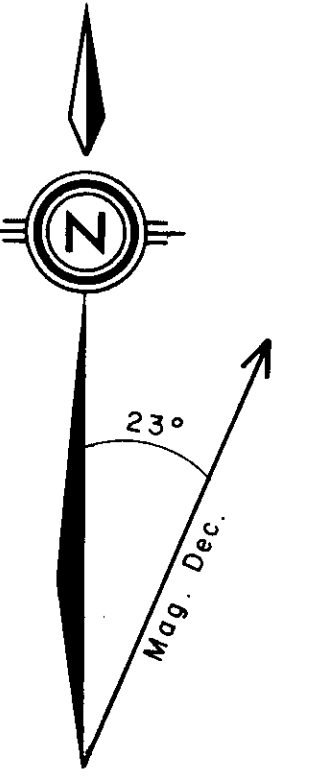
Road

Mound IO  
2 West



Mound IO  
1 West

True North



Mound IO  
3 West  
1 South

Area of no outcrop -  
all overburden covered

Mound IO  
2 South  
3 West

IP Bill 7 (78212) July/72  
Bill 9 (78215)  
FP Bill 6 (78211)  
Bill 8 (78214)

LCP Mound 1  
Mound 6

FP Mound 2  
FP Mound 7

FP Mound 3  
Mound 4

Mound 6  
Mound 1

LCP Mound 2

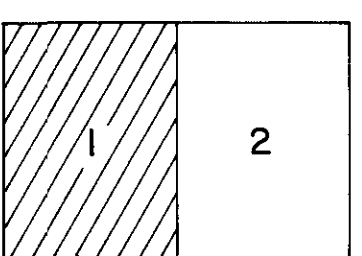
Claim line

Landing

Landing

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**10,563**  
NO.

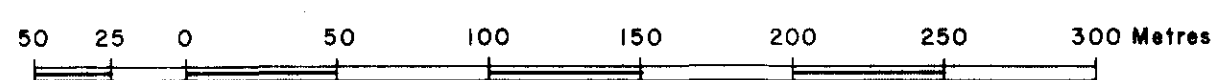
INDEX



LEGEND :

- Creek
- Road
- Claim Post
- Outcrop
- Fault
- Mineralization

SCALE 1 : 2500



CHURCHILL ENERGY INC.

GEOLOGY MAP OF  
MOUND I-II CLAIMS  
93-L-7W

MAP 1

SCALE : 1 : 2500  
DATE : JUNE, 1982  
DRAWN BY : EDCO LTD.

SURVEY BY CHAIN  
&  
COMPASS