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Copper Horn

812393

REPORT

ON

COPPER HORN MINING COMPANY LIMITED (N.P.L.)

YMIR CLAIMS

NELSON MINING DIVISION

BRITISH COLUMBIA

BY

D.C. Malcolm, P. Eng.
Consulting Geologist

February 3, 1969
Vancouver, B. C.

YMIR CLAIMS
COPPER HORN MINING LIMITED









SUMMARY

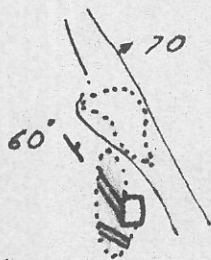
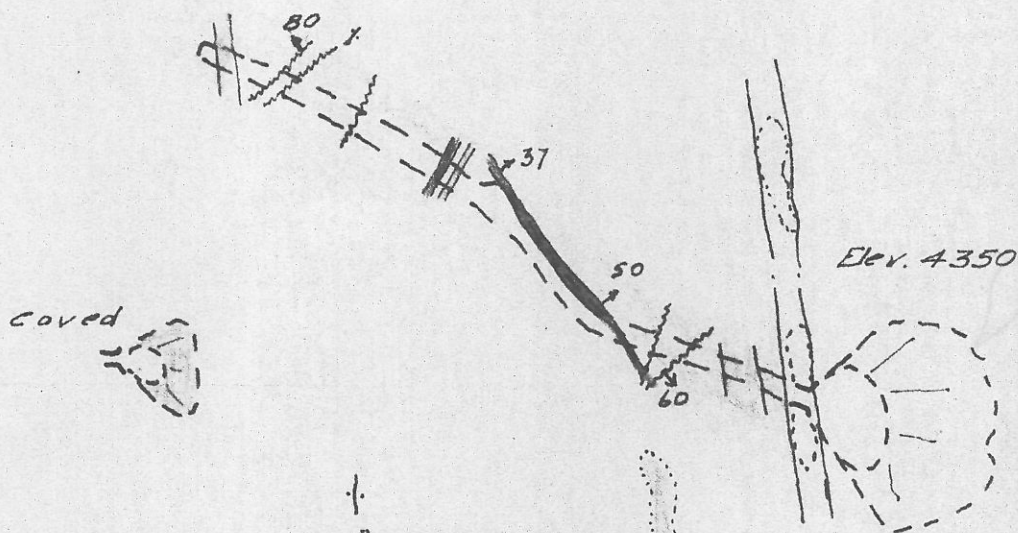
The Ymir claims cover the contact between Hall Series sediments and Rosslund Volcanic augite porphyries and agglomerates. The rocks are intruded by a complex of crystalline rocks and mineralization is varied and extensive. Deposits of scheelite and sphalerite occur on Stewart Creek, silver and galena bearing veins occur on Boulder Creek, molybdenum occurs in a pulaskite intrusive on Quartz Creek and molybdenum disseminated in a silicified sediment uniformly over a 156 foot width averaged 0.166% MoS₂ on the Mayday deposit. Similar mineralization outcrops over a larger area on the surface above this deposit.

The claims have been partly mapped and some geochemical and geophysical work has been done. Extensive prospecting using a small bulldozer together with a plugger and compressor uncovered some deposits.

The work has been successful and should be continued. The Mayday discovery should be diamond drilled to outline tonnages and grades near the surface.

LEGEND

-  Mineralized Sediments
-  Puloskite
-  Granite Porphyry
-  Porphyritic Monzonite
-  Lamprophyre
-  Aplite
-  Vein
-  Fault or shear

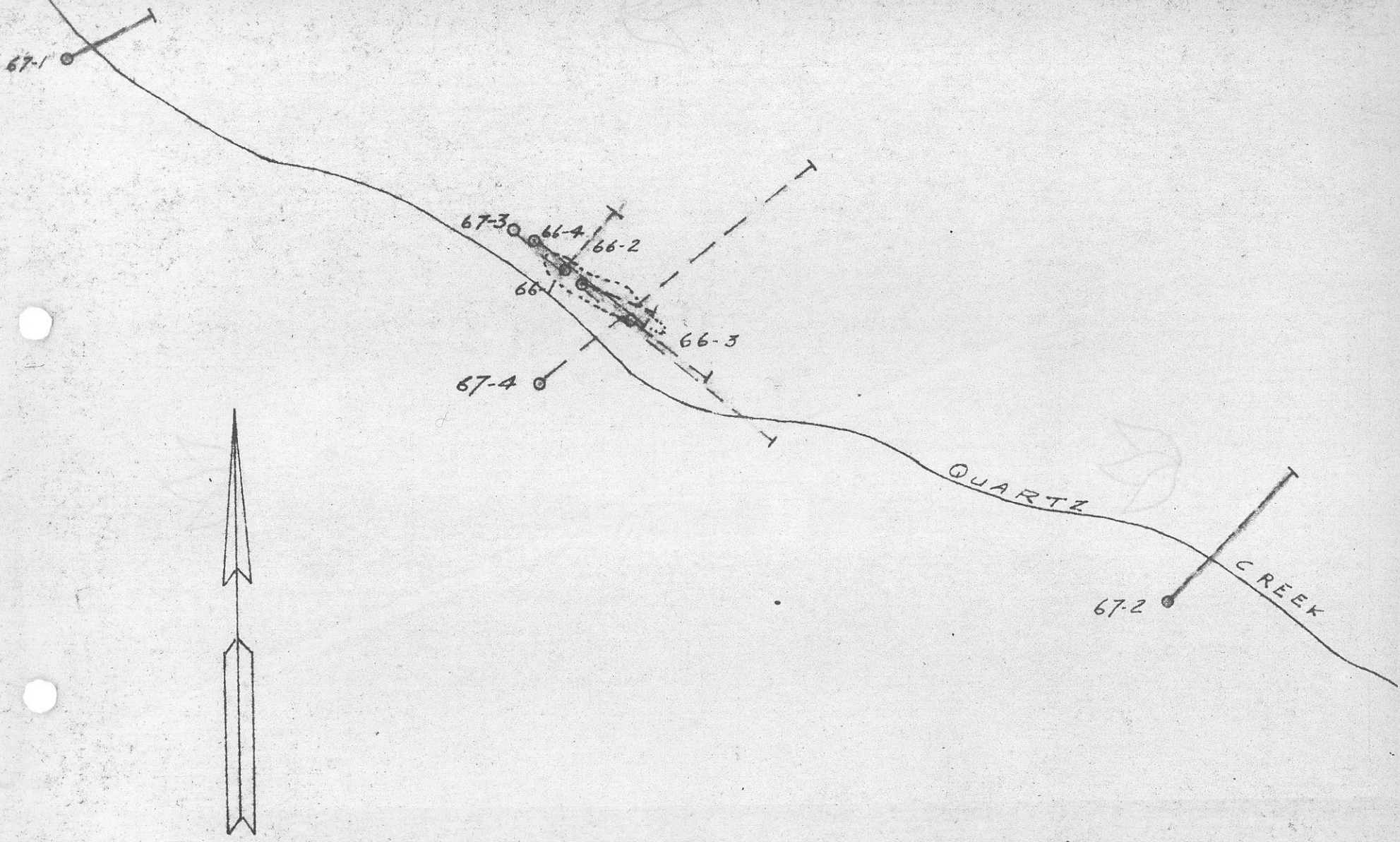


COPPER HORN MINING

MAYDAY

Scale 1"=100'

DATE 1,2,69



COPPER HORN MINING

FRESNU
DRILLING

Scale 1" = 100' DATE 1, 2, 69

PROPERTY

Nine optioned located claims as follows:

<u>Claim</u>	<u>Record No.</u>	<u>Date</u>
Fresno 1, 2, 3	7,818-7,820	Sept. 4, 1969
Fresno 4, 5	8,797-8,798	June 30, 1969
Ymir Boy 1, 2	8,804-8,805	
" " 3, 4	8,808-8,809	

One hundred and two located claims owned by COPPER HORN
MINING COMPANY LIMITED as follows:

<u>Claim</u>	<u>Record No.</u>	<u>Date</u>
Fresnu 6-13	8,973-8,980	Aug. 16, 1969
" 14-16	9,193-9,915	Sept. 7, 1969
" 22-33	9,201-9,212	Sept. 7, 1969
" 37	9,216	Nov. 14, 1969
" 40	9,621	"
" 42-79	9,622-9,652	"

LOCATION

Latitude 49°30' Longitude 117°15'

Elevation 2,000 to 5,000 feet

The claims are northwest and southwest of the town of Ymir, 18 miles south of Nelson along the Nelson-Salmo highway on tributaries of the Salmo River. Logging roads, mining trails and other access roads allow most parts of the claims to be reached by four-wheel drive vehicles.

<u>Claim</u>	<u>Record No.</u>	<u>Date</u>
Fresnu	74-76	Nov. 14, 1969
"	78-79	"
"	81-90	"
"	135	"
"	137	"
"	139	"
"	141	"
"	157-159	"
"	161	"
"	163-165	"
"	167	"
"	168-174	"
Joy	1-5	10,705, 10,706 11,301, 11,302 11,305
Joy Fr.		11,306
Horn	3-8	11,329, 11,332
<u>Mineral Leases</u>		
<u>Joker</u>	M116	Lot 5,348
Ruby	M114	Lot 2,904
Consolidated Alabama and Atlanta		
	M115	Lots 2,279 and 2,280

TOPOGRAPHY, CLIMATE, WORKING CONDITIONS

The claims cover the eastern slopes of a rounded mountain range about 5,500 to 6,000 feet high. They cover two spurs which extend between Stewart, Quartz and Boulder Creeks to the Salmo River, at elevation 2,400 feet. The area is heavily wooded with small trees and dense brush. Many cliff like outcrops with a northerly direction occur intermittently across the claims. The slopes are steep but not precipitous and access is difficult in a minor way where no roads exist.

The snowfall on the claims is fairly heavy between late November and late February and the summers are generally hot and dry.

HISTORY

The area was originally prospected shortly after the discovery of the Rossland Camp and the mines near Nelson about 1900. Prospecting for gold, silver, tungsten, lead, zinc, copper and molybdenum has been done off and on since then. Some silver-lead deposits have produced ore.

The present work was started late in 1966 and in 1967 when a molybdenum showing was explored on Quartz Creek with soil sampling and a magnetometer survey in the heavily overburden covered area. Drilling was done on a negative magnetic anomaly but the work failed to locate an ore body.

WORK DONE 1968

In 1968 a small tractor was purchased. The whole claim area was prospected and partly mapped and roads were built or rebuilt up Boulder and Quartz Creeks. Trenching was done on silver-lead showings on Boulder Creek, on the molybdenum deposits on Quartz Creek and a number of copper and molybdenum deposits were trenched south of Quartz Creek. A geochemical traverse was made from Stewart Creek to the headwaters of Quartz Creek and late in the season the deposit on the Mayblossom and Mayday claims was discovered and one of three tunnels was re-opened.

At the present time a road is being plowed for access to these workings.

GENERAL GEOLOGY

The Ymir area lies in a north trending belt of volcanics and sediments, west and north of the Kootenay Arc. The bedded rocks are in ascending age schists and argillites of the Ymir Group, augite porphyry and agglomerates of the Rossland Volcanics and chert, argillites and limy rocks of the Hall formation. These rocks are in a mountain septa between two tongues of Nelson granodiorite and are wrapped around the Trail Nelson Batholyth. The septa is 10 miles wide and at least 50 miles in length and is folded and extensively faulted and intruded by many sills, dikes and

plugs of Cretaceous and Tertiary intrusives. Mineralization and alteration are associated with most of these intrusives and the general area is one of the most productive of British Columbia. The mines of Ymir are primarily gold producing although important amounts of silver, lead and zinc have also been produced. The Rossland Mines were gold-copper producers from veins in the Rossland volcanics and in a monzonite chonolyth. The Silver King Mine produced silver-copper ores from zones in a porphyritic intrusive.

CLAIM GEOLOGY

The claims are generally overburden covered to varying degrees but outcrops are plentiful along the creeks and on the tops of ridges.

The Ymir Group schists, argillites, limy argillites, argillaceous quartzite and limestones outcrop along the Salmo River. These rocks are overlain by augite porphyry flows and agglomerates and cherts of the Rossland Volcanics which underly most of the eastern part of the claim group. West of these volcanics a belt of argillites, cherts, quartzites and limestone of the Hall Formation crosses the claims as a north striking series 1 to 2 miles in width. These rocks are highly metamorphosed.

Outcrops of all the layered rocks are poor and their internal structures are not known but it is suspected they are nearly vertical and isoclinally folded.

The intrusive geology is complex with plugs and dikes of Nelson porphyritic granite, fine and medium grained granodiorite, micro granites, diorites and quartz diorites of Jurassic to Cretaceous ages. There are rounded plugs of monzonite and porphyritic monzonite of about the same age and a series of Tertiary intrusives of several ages. North striking dikes 10 to 100 feet in width of granite porphyry related to the Shepherd intrusives are common, aplite dikes and pulaskite plugs and dikes occur in many places. These are related to the Coryell intrusives. Quartz feldspar porphyry, syenite, lamprophyre and other basic dikes have been mapped. In general the detailed geology is too complex to map with the few outcrops available and only a generalized geological understanding is at present possible.

MINERALIZATION AND ALTERATION

The deposits on Copper Horn are widespread and varied with sulphides associated with several ages of mineralization as follows:

(A) The Nelson Intrusives form plugs and north striking dikes in volcanics and sediments and the following deposits were worked:

1. On the Joker Claim a breccia zone in Ymir Group argillites sealed with quartz is mineralized by pyrite and contains gold values.

2. Disseminated pyrite, with minor chalcopyrite and galena occurs in silicified Ymir Schists along the Salmo-Ymir Highway south of Ymir.

(B) Sulphide zones near Nelson and later intrusives:

1. On the summit between Boulder and Quartz Creeks a series of Nelson granodiorite, porphyritic monzonite, granite porphyry, pulaskite and several lamprophyre and aplite dikes intrude sediments which are intensely metamorphosed silicified and contain disseminated pyrrhotite, molybdenite and traces of chalcopyrite. The sulphides are in part related to the Coryell and Shepherd Intrusives.
2. On Stewart Creek similar zones occur in siliceous sediments near Nelson intrusives and along quartz feldspar porphyry dikes of unknown age.
3. These same dikes intrude limestones and contain garnet skarns with molybdenite and scheelite as well as chalcopyrite, galena and sphalerite.

4. Pyrrhotite bearing skarns occur in augite porphyry south of Quartz Creek and contain chalcopyrite and molybdenite.

(C) Mineralization is associated with pulaskites and syenites of the Coryell Plutonic rocks as follows:

1. In Quartz Creek several isolated outcrops are kaolinized and contain fracture plane and disseminated molybdenite associated with pyrite and fluorite.
2. South of Quartz Creek narrow pulaskite dikes have disseminated pyrite, chalcopyrite and molybdenite in altered volcanics along their contacts.

(D) Granite porphyry dikes of the Shepherd Intrusives have quartz veins along their contacts which contain silver-lead-zinc values in several areas in sediments.

Shear zones believed associated with these dikes contain silver-lead-zinc mineralization in porphyritic monzonite and pyrite, chalcopyrite and arsenopyrite in siliceous skarn zones along its contacts.

(E) In addition several quartz veins have been found with pyrite arsenopyrite and molybdenite and others occur with silver and gold values with galena similar to the producing Ymir Mines.

MINERAL ZONES

1. The Fresnu showing in Quartz Creek was a single outcrop of pulaskite 75 feet in length and 10 feet in height. It contained fracture plane and disseminated molybdenite with pyrite in a kaolinized sericitized rock with fluorite. Values averaged 0.01% MoS_2 over 75 feet in the surface cut. Two small diameter holes were drilled one of which averaged 0.005 oz. gold/ton, and 0.07% MoS_2 across 70 feet. Two additional 100 foot holes averaged 0.042% and 0.026% MoS_2 . Sludge samples were 2 to 6 times higher than the core samples.

Four shallow B wire line holes were drilled on magnetic lows near the surface showing. Drill Hole 67-1 400 feet northwest of the showing drilled at -54° for 137 feet showed fine grained disseminated molybdenite and pyrite in volcanics with some K feldspar alteration. It was not sampled. Drill Hole 67-2--400 feet south east of the showing was drilled northeast at -45° to 203 feet and showed disseminated molybdenite and pyrite and some K feldspar alteration. One 8 foot granite porphyry dike was intersected. The core was not sampled. Drill Hole 67-3 on the outcrop was drilled at -43° for 336 feet southeast showed pulaskite throughout with pyrite and molybdenite mineralization. Drill Hole 67-4 was drilled on the showing northeast at about -45° to 350 feet. It was entirely in pulaskite with pyrite and molybdenum mineralization.

The work was insufficient to give all the answers to the deposit. The geologists did report an increase in mineralization in depth but not the changes in alteration with depth or the attitude of the intrusive. It is thought to be a continuation of a dike striking northwest and dipping 45 to 60° to the northeast. It has not been traced along strike although outcrops of similar rocks may be connected. One of these was trenched in 1968 and showed similar low grade disseminated sulphides. A search for high grade float to the southeast along the extension was made but the source was not located.

2. The Mayday showing is exposed in a trench, in several outcrops, in a caved tunnel and in a tunnel 344 feet in length. North striking steep dipping sediments are metamorphosed and altered siliceous hornfels and impregnated with pyrrhotite and very fine molybdenite. There are at least three north striking dikes through the area.

In the tunnel the north striking sediments are crosscut by the workings and samples over a width of 156 feet averaged 0.166% MoS_2 . The zone is near the contact of a granodiorite intrusive and near the sediment-augite porphyry contact.

3. Bulldozer trenching uncovered a pyrrhotite replacement in volcanics 3,000 feet east of the Mayday tunnel on a dip slope and several molybdenite-chalcopryrite veins or replacements are poorly exposed in trenches between the showings. These appear to be fracture fillings and skarn zones.
4. East of these trenches a shaft in a quartz vein showed intense shearing and alteration with pyrite and some very good grade molybdenite rosettes.
5. A similar vein, not seen by the writer, 500 feet to the south showed arsenopyrite, pyrite and molybdenite.
6. At the headwaters of Quartz Creek, on the summit between Quartz and Stewart Creeks a number of workings in limy sediments and limestones intruded by feldspar porphyry dikes show scheelite, molybdenite, chalcopryrite, galena and sphalerite. These deposits have not been trenched by COPPER HORN MINING LIMITED.
7. On the Ruby claim a number of galena showings have been found by bulldozing. One showed intense shearing in altered sediments and a 3 foot sample assayed: 0.005 oz. gold/ton, 7.4 oz. silver/ton, 1.7% lead and 0.39% copper.

CONCLUSIONS

Work by the owners of COPPER HORN MINING LIMITED'S claims west of Ymir has uncovered a number of prospects which warrant extensive exploration. They are varied and the geology is complex.

RECOMMENDATIONS

The following work is recommended:

1. Mayday--a road should be completed to the tunnel and diamond drill sites prepared to test the deposit along strike and in depth.

Estimated Costs

Bulldozing	100 hours @ \$30/hr.	\$ 3,000
Drilling	5,000 feet @ \$10/ft.	50,000
Prospecting and Mapping		5,000
Camp Costs and Core Storage		5,000
Transportation		2,000
Geology and Consulting		5,000
Administration		10,000
Contingencies 10%		<u>8,000</u>
TOTAL		<u>\$88,000</u>

2. Further trenching, prospecting, mapping, road building and rehabilitation of old workings is advisable to

further assess the value of the property. The following is an estimate of the costs of this work.

Estimated Costs

Bulldozing	20 hours @ \$30/hr.	\$ 600
Bulldozing	200 hours @ \$10/hr.	2,000
Opening portals, 7 tunnels		7,000
Assessment work		2,000
Prospecting and Mapping		10,000
Camp Costs		4,000
Transportation		3,000
Contingencies		<u>2,400</u>
TOTAL		<u>\$30,000</u>

Report by

D.C. Malcolm

D.C. Malcolm, P. Eng.,
Consulting Geologist

February 3, 1969
Vancouver, B. C.

LOCATION

Latitude 49°30' Longitude 117°15'

Elevation 2,000 to 5,000 feet

The claims are northwest and southwest of the town of Ymir, 18 miles south of Nelson along the Nelson-Salmo highway on tributaries of the Salmo River. Logging roads, mining trails and other access roads allow most parts of the claims to be reached by four-wheel drive vehicles.

PROPERTY

Five optioned located claims as follows:

<u>Claim</u>	<u>Record No.</u>	<u>Expiry Date</u>
Fresno 1, 2, 3	7,818-7,820	Sept. 4, 1971
Fresno 4	8,797	June 30, 1970
Fresno 5	8,798	June 30, 1969

Eighty-five located claims owned by COPPER HORN MINING COMPANY LIMITED as follows:

<u>Claim</u>	<u>Record No.</u>	<u>Expiry Date</u>
Fresnu 6-7	8,973-8974	Aug. 16, 1970
" 8-13	8,975-8980	Aug. 16, 1969
" 14-16	9,193-9,195	Sept. 7, 1969
" 22-33	9,201-9,212	" " "
" 37	9,216	Nov. 14, 1969
" 40	9,621	Nov. 14, 1970
" 42-69	9,622-9,650	" " "
" 71,72	9,651,9,652	" " "

<u>Claim</u>	<u>Record No.</u>	<u>Expiry Date</u>
Fresnu	74-76	Nov. 14, 1970
"	79	" " "
"	135	Nov. 14, 1969
"	137	" " "
"	139	" " "
"	141	" " "
"	157-159	" " "
"	161	" " "
"	163-165	" " "
"	167	" " "
"	168-171	Nov. 14, 1970
Joy	1,2	Dec. 6, 1969
Joy	3-5	
	11,305	June 28, 1969
Joy Fraction	11,306	" " "
Horn	3-6	Oct. 27, 1969
	11,329-11,332	

Four Mineral Leases:

Joker	M116	Lot 5,388	Feb. 15, 1969
Ruby	M114	Lot 2,904	" " "
Consolidated Alabama and Atlanta			
	M115	Lots 2,279	" " "
		2,280	" " "
Royal		Lot 5,322	Oct. 26, 1969