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Summary Report
on the
NAHWITTI COPPER PROPERTY
for
KODIAK MINES LTD.
Agilis Exploration
Services Ltd.

Jan. 1970

SUMMARY REPORT
ON THE
NAHWITTI COPPER PROPERTY
for
KODIAK MINES LTD

Pages 9 & 10 Word West should be located
Colours. Geology Map Location of D. 11. 11. 11.
485 should be located on the side of the
Fault in Cr.

No 6 Hole should be to the right of fault.

Page 10 L.S. exposed in the cut on the
By Volcanic. The hole in the 1909
Anomaly could be associated with a contact
between the two rock and should probably
Map in the contact.

SUMMARY REPORT

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Agilis Exploration Services Ltd.,

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MAPS

DRILL SECTIONS NO: R 1 - R 6

Scale: 1" = 10 feet

LOCATION SKETCH FOR DRILL
HOLES NO: R 1 - R 6

Scale: 1" = 200 feet

SUMMARY REPORT
ON THE
NAHWITTI LAKE COPPER PROPERTY
KODIAK MINES LTD

INTRODUCTION

The Nahwitti Lake Copper Property has been optioned by Kodiak Mines Ltd from Mr. F. T. Russell. The property was geologically mapped and a magnetometer -, and geochemical survey have been carried out under the direction of Mr. W. G. Stevenson, the consulting engineer for Kodiak Mines Ltd., during the 1968 field season. In 1969 Mr. F. T. Russell prospected the eastern part of the property, followed by trenching and a limited amount of diamond drilling with a pac sack drill.

This report summarizes information obtained from government reports, from private reports of two mining companies and Mr. W. G. Stevenson's report of July 15, 1968. The writer spent August the 29th, 1969 in the company of Mr. F. T. Russell on the property.

SUMMARY

The Nahwitti Lake Copper Property of Kodiak Mines Ltd, lies along the North and West side of Nahwitti Lake approximately 20 miles by logging roads from Port Hardy.

Slopes rise steeply from the lake to the north and become gentler at higher elevations. Forest cover is dense and underbrush thick over the greater part of the claim group.

The climate is moderate and rainfall is heavy during most of the year. The Nahwitti Lake Copper Property was first staked in 1936.

In 1965 Mr. F. T. Russell restaked the property and made a short term option agreement with Falconbridge Nickel Mines Ltd. The Company initiated a comprehensive exploration program on what is known as the Lake Zone. This program proved a skarn zone approximately 200 feet long, 6 feet wide with an estimated average grade of 1.4% copper.

Kodiak Mines Ltd optioned the claim group in 1968, and initiated a detailed exploration program under supervision of Mr. W. G. Stevenson, which was carried out during the period of March - June, 1968.

The claim group is underlain by rocks of the Vancouver Group consisting of andesitic to basaltic volcanics, minor shales and argillites and a massive limestone unit.

Several igneous bodies intrude the members of the Vancouver Group. Acidic to basic dykes or sills are abundant.

A large gentle folded syncline is the major regional structure. Faulting and block faulting are common.

Several types of mineralization occur on the claim group, the most important consists of skarn carrying chalcopyrite and magnetite along a limestone-volcanic contact. The other type is disseminated chalcopyrite associated with rhyolite and a latite dyke.

The geochemical survey outlined several anomalous areas high in copper.

Geophysical survey consisted of a magnetic and self-potential survey. A detailed magnetometer survey on the Lake Zone indicated several magnetic highs coinciding with the skarn zone. The results obtained from the S. P. survey were inconclusive. A reconnaissance magnetometer survey over the whole claim group gave inconclusive results.

A pac sack drill program initiated by Falconbridge Nickel Mines outlined a skarn zone approximately 200 feet long with an average width of about 6 feet on the Lake Zone. An educated guesstimate by Falconbridge, arrived at by considering surface and core samples, indicates a grade of about 1.4% copper.

Drilling done by Kodiak Mines on the Raven zone indicated a length of 200 feet with an indicated true width in excess of 7 feet. The average grade from core samples is in the order of 1.5 - 2% copper and .5 - 1.8 ounces silver.

The results from all surveys, trenching and limited diamond drilling, done up to date indicate a good potential for the presence of economic grade and size. More work is definitely necessary to confirm this potential.

PROPERTY

The claim group optioned from Mr. F. T. Russell consists of a block of 40 contiguous mineral claims on the north and west side of Nahwitti Lake. During the property examination none of the claim posts were investigated. For all pertinent information to ownership and record dates the reader is referred to Mr. Stevenson's report dated July 15, 1968.

LOCATION AND ACCESS

The claim group is located along the west and north side of Nahwitti Lake, northern Vancouver Island. Access to Nahwitti Lake can be gained by motor vehicle over a logging road connecting Port Hardy and Holberg, a distance of 20 miles. On the property a good foot trail leads to the different areas of trenching.

An alternate way of access is by float plane from Port Hardy airport to Nahwitti Lake and then by foot trail to the showings. Air distance from the airport to the property is approximately 25 miles.

PHYSIOGRAPHY

The claim group straddles an east-west trending ridge forming the northern shore line of Nahwitti Lake. Slopes rise steeply from the lake level at approximately 600 feet elevation to 1250 feet elevation and then more gently to a maximum elevation of 1500 feet.

Forest cover is dense and consists of balsam, fir and cedar. Underbrush is thick over the greater part of the claim group and windfalls are abundant.

Overburden ranges from 2 to 20 feet along the hillsides and to as much as 200 feet in the main valley.

Rainfall is heavy during the larger part of the year and snowfall is generally light but can be heavy in some years.

HISTORY

The first discovery of lead, zinc, copper, silver and iron mineralization in the Nahwitti Lake area was by Mr. Hepler and associates in 1936 along the south shore of the lake. During this year the H. P. H., the Southshore, and Northshore properties were staked. The last mentioned coincides with the western part of the Nahwitti Copper property of Kodiak Mines Ltd. (For detailed description see Minister of Mines Report 1936). A few pits and open cuts were put in by Mr. Hepler and Associates at this time.

The property lay dormant until Mr. F. T. Russell restaked it in 1965. In late 1965 Silver Standard made a quick property examination. Information gained from this examination was presented to Falconbridge Nickel Mines Ltd. by Mr. F. T. Russell. In early 1966, Falconbridge Nickel Mines Ltd took an option on the claim group and executed an exploration program, which lasted from early February until May. Work consisted of establishing a grid, topographical, geological mapping, geochemical survey and geophysical surveys, consisting of a magnetometer, with a Sharpe MF1 instrument and limited self potential work. Five pac sack drill holes totalling 193 feet were completed. The drilling was designed to obtain more detailed information about true grade and width, which was impossible from the poor mineralization exposures.

All the work was carried out on the Lake Claims and this zone is known as the Lake Zone. The option was terminated by May 1966, because no continuity of mineralization in the trenches could be established.

The announcement by officials of Utah Construction and Mining Co. made on November 21, 1967 that they had developed 80 million tons of material grading over 0.5% copper and 0.025% MoS₂ on the Bay claims in the Port Hardy area sparked new interest in the area. Since then hundreds of mineral claims have been located and numerous mining companies have initiated exploration programs.

Kodiak Mines Ltd took an option on the Nahwitti Copper property from Mr. F. T. Russell in early 1968 and Mr. W. G. Stevenson, consulting engineer supervised the exploration program carried out from March 15th, 1968 to June 30, 1968.

The program consisted of geochemical, geological, topographical and magnetometer surveys with a Sharpe MF1 instrument. The surveys covered the greater part of the claim group.

In 1969 Mr. and Mrs. F. T. Russell spent several months prospecting, trenching and diamond drilling on the Raven Zone discovered in 1968.

REGIONAL GEOLOGY

General:

The general area in the vicinity of Nahwitti Lake is underlain by a west trending belt of Triassic volcanics and sediments. These rocks have been intruded by several intrusive bodies, acidic to intermediate in composition, of Jurassic and Tertiary age. In a few small areas Cretaceous and Tertiary sediments and volcanics overlay the older rocks.

The youngest Triassic rocks are referred to as the Bonanza Sub-group. These are underlain by Quatsino Limestone with which numerous mineralized skarn zones are associated, and in turn by Karmutsen volcanics composed mainly of andesitic and basaltic flows. A thin discontinuous limestone band occurs in several locations along the upper part of the Karmutsen.

The various units occupy a north-west trending open syncline. Numerous faults cut the belt, the major directions being west, northwest and northeast. A major, nearly east-west trending fault zone passes through Nahwitti Lake.

Drag folding is usually present where major faulting cuts the more incompetent sedimentary beds.

Mineralization present in the area belongs to two distinct types.

- 1) Skarn zones carrying copper, magnetite, lead and zinc along the limestone volcanic contacts close to intrusive bodies. Known deposits of this type are concentrated in the Nahwitti Lake area and north west and east of Quatse Lake.
- 2) Disseminated copper in the Karmutsen and Bonanza volcanics. Concentrations are generally associated with shearing and/or granitic intrusions. Utah Construction and Mining is exploring a deposit of this type on their Hep Claim Group, as well as their major Bay Lake ore body.

Stratigraphy:

Dr. J. E. Muller's terminology was used to break down the Vancouver Group into distinct formations or sub-groups.

Lower Cretaceous: Sandstone, conglomerate, siltstones, silty shales.

Vancouver Group:

Upper Triassic and (?) Jurassic:

Bonanza Sub group: andesite flows, breccia, felsite, tuff greywacke.

Upper Triassic:

Quatsino Formation: Limestone

Katmutsen volcanics: massive and amygdaloidal volcanic flows, breccia, pillow lava tuff of andesitic and basaltic composition; thin limestone beds.

Late Jurassic to Tertiary (?):

Intrusive rocks: quartz diorite, andesitic to rhyolitic dykes and sills.

Local Geology:

The Nahwitti Lake copper property of Kodiak Mines Ltd is underlain by the Katmutsen Formation of Upper Triassic Age, cut in the northern and southern part by late Jurassic to Tertiary (?) intrusions.

Stratigraphy and Description of Rock Types:

Limestone: A dark grey to black limestone band outcrops along the northern shoreline of Nahwitti Lake. It is aphanitic and contains black carbonaceous nodules and streaks in the topographically lower outcrop areas. In the topographically higher part towards its contact with the underlying volcanics it becomes lighter colored and more crystalline.

The outcrop pattern along the steep hillside suggests a dip slope, hence a moderate dip to the south is indicated, and a nearly westerly strike.

At two locations a V-shaped downhill trace of the limestone is indicated. In both cases, a strong skarn zone carrying copper-magnetite mineralization is exposed. This downward movement of the outcrop trace along a fully uniformly east-west trending hillside can only be explained by faulting or drag folding. The presence of a regional east-west fault trending through Nahwitti Lake can account for both features.

Drag folding observed on the base of the Bonanza Sub-group to the west of this area shows faults having offsets up to 15 feet, terminating in the core of steeply plunging drag folds.

A second limestone band outcrops at the top of the hill. Attitudes taken at its contact with the volcanics indicates an east-west strike and a dip of 45° N. Its relation to the topographically lower limestone band could not be determined.

Volcanics

Andesitic to basaltic, aphanitic, often amygdaloidal, dark green to greyish black volcanics underly the limestone. Epidote and chlorite alteration is widespread.

Along the contact between volcanics and intrusives amphibolite alteration is present.

INTRUSIVE ROCKS

Rhyolite and Latite Dykes: Both limestone and volcanics are intruded by rhyolitic dykes. The dyke rock is light-coloured, aphanitic and has a flinty appearance. Pyrite and chalcopyrite occurs as irregular disseminations within it.

A latite dyke intruding the limestone is soft, light yellowish to olive green and altered.

Granitic Intrusions:

Two masses of granitic intrusions occur within the claim area, one to the north and the other to the south of Nahwitti Lake. The intrusion ranges from quartz monzonite to dioritic in composition.

All phases are massive with granitic texture, medium grained and greyish in color.

Structural Geology:

Bedding in the area is very obscure hence no definite attitudes could be obtained. At one place the contact between the upper limestone bed and the overlying volcanics is exposed and indicates a westerly strike and a dip at 45° to the north. The lower limestone bed outcrops along a fairly uniformly east-west trending hillside and indicates a southerly dip. From this a general west trend for the rock formations in the area can be assumed. The V-shaped down hill trace of the limestone volcanic contact at two locations indicates local faulting or drag folding. More detailed information is needed to clarify this point.

Small scale faulting is abundant within the area and is indicated by crushed and gouge zones.

The trace of a large regional fault cuts the southern boundary of the property and passes through Nahwitti Lake.

Mineralization:

Mineralization occurring on the claim group belongs to three different types:

1) Lead-Zinc-Silver in limestone as veins and irregular pods. The original discovery was of this type. All early work done prior to 1965 was concentrated on veins and pods of galena and sphalerite carrying erratic high values in silver up to 130 ounces per ton.

2) Copper-Magnetite in skarn zones:

a) Lake Zone:

Mr. F. T. Russell and Falconbridge conducted all their exploration work on this zone.

The Lake Zone lies along the west end of Nahwitti Lake and consists of a skarn zone formed along the lower limestone-rhyolite (?) contact. The skarn is chiefly epidote, with garnet, diopside, magnetite, chalcopyrite and minor amounts of other sulphides and crops out over an apparent width of 200 feet and a length of 700 feet.

Five pac sack drill holes put down on this zone by Falconbridge indicated an average width of 6 feet over a 200 foot length.

Average grade estimated from surface and core samples would be about 1.4% copper.

b) The Raven Zone:

The Raven Zone is located on the Jean # 3 mineral claim approximately 350 feet above water level, and approximately 1600 feet ~~west~~ ^{East} of the Lake Zone.

Here a strong skarn zone, as exposed in several trenches, follows the limestone-volcanic contact for an estimated length of approximately 250 feet. No estimate of width was possible since the skarn as exposed in trenches is repeated by a north-south trending fault.

Six pac sack drill holes put down by Kodiak Mines Ltd on this zone gave intersections of garnet-epidote skarn carrying magnetite and chalcopyrite from 14 feet to a maximum of 34 feet wide. The indicated true width is in excess of 7 feet, average grade from core samples is in the range of 1.5 to 2% copper, and 0.5 to 1.8 ounces silver.

Because of poor core recovery, these samples are only an indication of the grade. A combination of core and sludge samples will be necessary to obtain the true grade present.

Mineralization is variable but a definite relationship between magnetite and chalcopyrite exists, i. e. Increase in magnetite-increase of chalcopyrite.

c) Skarn also occurs along the base of the upper limestone. No work has been done on this occurrence to date.

3) Disseminated chalcopyrite in rhyolite and latite:

a) Latite Zone:

Chalcopyrite has been found over a large area approximately 1200 feet ~~west~~ ^{East} of the Raven Zone in a latite dyke. In general, the grade as indicated appears subcommercial and more work will be necessary to delineate the extent and grade of the mineralized area.

b) Chalcopyrite in rhyolite:

In several places, chalcopyrite occurs as disseminations in rhyolite. The grade of this mineralization appears to be better than in the latite zone but more work is needed to evaluate the potential.

4) Disseminated Chalcopyrite and small veinlets of chalcopyrite in limestones:

The limestone west of the Raven Zone and overlying the skarn zone carries low copper values as disseminations, but mainly in small fractures. Similar material was intersected in the lower part of the drill hole. From indications copper values are most likely to be in the 0.1 to 0.2% range.

It appears as if copper bearing solutions followed the limestone-volcanic contact and penetrated along small fractures into the limestone.

GEOCHEMICAL SURVEY

The geochemical survey carried out under supervision of Mr. W. G. Stevenson during the summer of 1968, outlined several areas anomalous in copper, zinc and lead, the strongest, extending over a length of 1300 feet and a width of 700 feet.

A close relationship between the position of geochemical anomalies and location of the favourable limestone-volcanic contact or position of the limestone is apparent.

The easternmost anomaly, just above a new extension of a logging road leading into the property from the east, is underlain by Karmutsen volcanics. This anomaly cannot be explained by available data.

GEOPHYSICAL SURVEYS

Self potential:

Falconbridge Nickel Mines Ltd conducted an S.P. survey in 1967 over the Lake Zone with inconclusive results. The anomalous readings obtained are in the area underlain by limestone. The only reasonable interpretation is the presence of finely divided argillaceous and possibly graphitic matter in the limestone causing the anomaly. No disseminated sulfides have been observed in the limestone here.

Magnetometer Survey:

A magnetic survey by Falconbridge indicates a general high associated with the limestone-volcanic contact on the Lake Zone, but the anomalous area is not continuous over the whole area of interest. Readings were taken and recorded on a 50 foot by 25 foot grid. A Sharpe MF1 Fluxgate Magnetometer was used for the survey.

In 1968 Mr. F. T. Russell conducted a magnetometer survey for Kodiak Mines on the property. The Sharpe MF1 instrument was used and readings were taken along a 400 foot by 100 foot grid. The results were inconclusive, with the only anomaly obtained being underlain by volcanics.

CONCLUSIONS

Work done on the Nahwitti Lake property shows the presence of widespread skarn-chalcopyrite-magnetite mineralization along a limestone-volcanic contact.

Several areas of lower grade disseminated chalcopyrite associated with latite and rhyolite dykes or with limestone are indicated.

A geochemical survey conducted over the area outlined several strongly anomalous areas, the largest being associated with the Raven Zone, extends over a length of 1300 feet and has a width of 700 feet.

Magnetic work indicates that a detailed survey with readings at 25 foot intervals should outline the presence of any skarn zone along the favourable contact.

Self potential work done by Falconbridge shows this geophysical survey is not applicable on the Nahwitti property.

Sampling and a minimum amount of drilling on the Lake Zone indicates a possible grade of 1.24% copper over an average width of about 6 feet and a possible length of 200 feet.

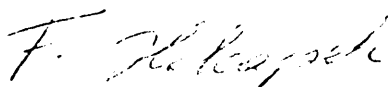
Drilling on the Raven Zone indicates the presence of a strong skarn zone. The estimated average grade from drill core samples is about 1.50 to 2% over an indicated true width in excess of 7 feet. Outcrop exposure shows a minimum length of 200 feet.

Several other skarn occurrences are present but have not been investigated at this time.

RECOMMENDATIONS

1. Detailed geological mapping of the favourable limestone-volcanic contact. Special attention should be paid to structural conditions.
2. Detailed magnetometer survey with a Sharpe MF1 instrument at 100 foot line spacings and 25 foot stations to trace the contact.
3. Follow-up work with an Electromagnetic Survey, Crone vertical loop instrument, using the shootback method to correct for slope effects.
4. Trenching and sampling to establish the limits of the mineralized zones.
5. Drilling, initially with X-ray diamond drill.

Respectfully submitted,



F. Holcapek, Geologist

REFERENCES

- Stevenson, W. G. 1968 Geological, Geochemical and Geophysical Report on the Mineral Claims held by Kodiak Mines Ltd in the Nanaimo Mining Division.
- McDougall, J. J. 1967 Report on Nahwitzi Copper, Nahwitzi Lake, British Columbia.
- Naylor, H. 1965 Property Examination Report for Silver Standard.
- Minister of Mines Report, 1935, page F 51, North Shore Group.

APPENDIX I

DRILL LOGS - KODIAK MINES LTD

DIAMOND DRILL HOLES - KODIAK MINES - RAVEN ZONED. D. H. No: R 1 dip - 48°; bearing N20° E; depth 43 feet

Cored in skarn.

Depth (feet)

0 - 4	Epidote skarn - strongly weathered - sulphide chalcopyrite - bornite? Recovery about 15%
4 - 8	Epidote skarn - no visible sulphides Calcite present in minor amounts.
8 - 24	Epidote - minor garnet skarn. Core lost 5%.
24 - 34	Epidote - garnet skarn Poor recovery; core lost about 50% (Chalcopyrite about 10% in places quite erratic)
34 -	Skarn - lost contact
34 - 43	Limestone - dark grey, fine. Banding perpendicular to core - possible bedding 37 - 41 minor chalcopyrite disseminated and fracture filling about 1%.
	Core lost
	31.4 - 32
	32 - 33.8
	34.8 - 35.8

D. D. H. No: R 2 dip - 38°; bearing N20° E; depth 50 feet

Cored in skarn.

Depth (feet)

0 - 14	Skarn - epidote with magnetite and chalcopyrite Chalcopyrite about 10% (less?) Magnetite about 25%
14 - 29.6	Volcanic - dark grey green, very fine grained andesite? fractures show calcite healing. No sulphides. 15-16 - pyrite and slightly skarnitized (epidote)
29.6-32.6	Volcanic slightly skarnitized. Limy. (acid test)
32.6-34.6	Skarn - epidote - contact at footwall? Gradational (small amount altered volcanic fragments)
34.6-38	Limy - introduction of calcite? Volcanic same as above.

D. D. H. No: R 2 (continued)

- 38 - 40 Epidote skarn - no visible sulphides.
 40 - 50 Limestone same as in R 1.
 minor chalcopyrite along fractures
 banding perpendicular to core.

D. D. H. No: R 3 dip - 41°; bearing N18° E; depth 60 feet**Depth (feet)**

- 0 - 21.25 Skarn. Epidote minor garnet, magnetite about 20-25%.
 Chalcopyrite - erratic (the core will have to be split)
- 21.5 - 32 Epidote - skarn - minor garnet. No magnetite. Chalcopyrite
 present.
- 32 - 34.4 No core.
- 34.4 - 60 Limestone - same as other hole
 Minor chalcopyrite along fractures.
 Core lost - 1/8 of total.
 Banding perpendicular to core.

D. D. H. No: R 4 dip - 45°; bearing 325°; depth 36 feet

Cored in skarn.

Depth (feet)

- 2 - 8 Skarn epidote - garnet minor chalcopyrite
 No magnetite.
 70% core lost
- 8 - 24 Limestone light blueish dense fractured
 50% recovered.
- 24 - 28 Skarn-limestone, 50% skarnitized, chalcopyrite
 50% recovery
- 28 - 30 Lost core
- 30 - 32 Skarn same as at 24 feet
 70% core lost
- 32 - 36 Limestone, same as at 3 feet, minor chalcopyrite along
 fractures.

D. D. H. No: R 5

dip - 30°; bearing 325°; depth 35 feet

Cored in skarn.

Depth (feet)

0 - 16	• Epidote - minor garnet skarn, chalcopyrite minor magnetite. 14-16 more epidote. Core lost 60%
16 - 18	Core lost
18 - 24	Skarn along fractures in andesite (epidote) no sulfides, 18 feet - 2 inches gauge
24 - 35	Andesite broken, core lost 50%

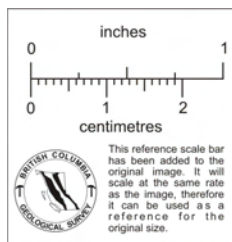
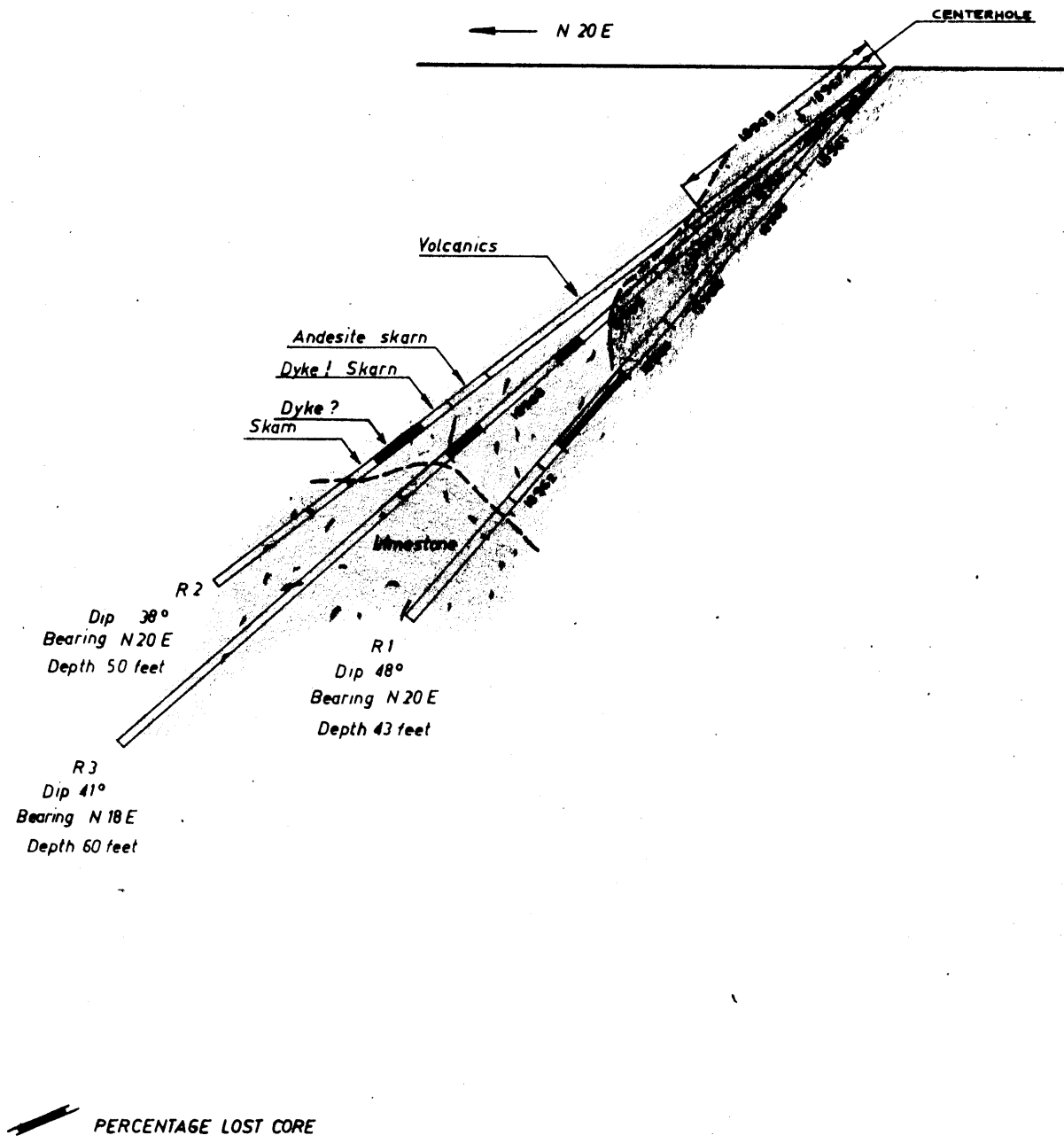
D. D. H. No: R 6

dip - 61°; bearing 360°; depth 60 feet

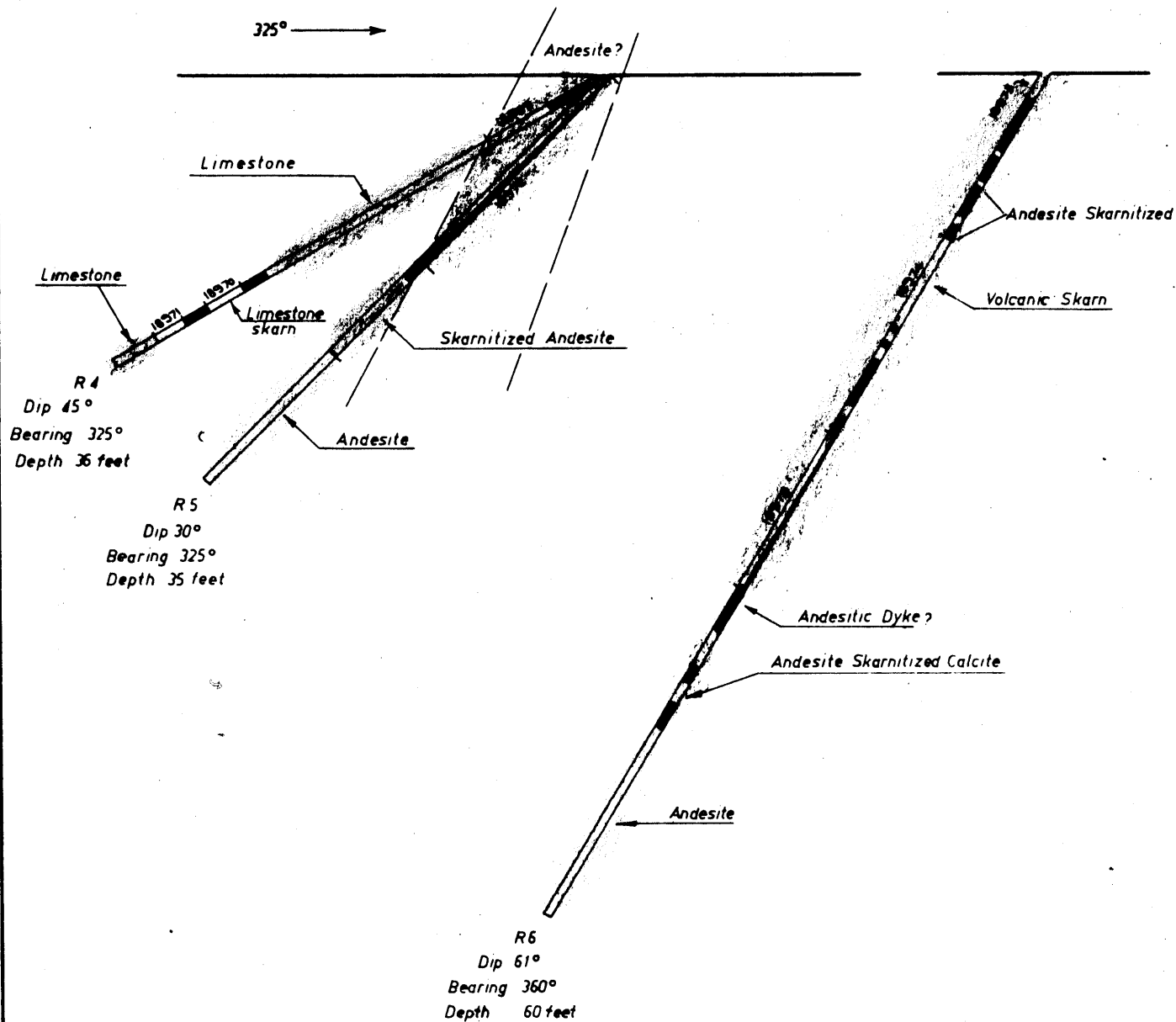
Cored in skarn.

Depth (feet)

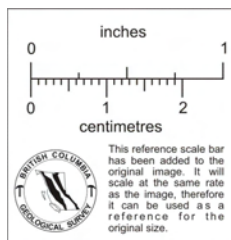
0 - 2	Epidote skarn, soft minor chalcopyrite
2 - 5.8	core lost
5.8 - 6	Epidote skarn, soft
7.6 - 8	Skarnitized volcanic, possible dyke? Epidote and chalcopyrite
8 - 10	Core lost
10 - 10.6	Some serpentinization along fractures
10.6 - 11.6	Core lost
11.6 - 17.6	Skarn - volcanic, some magnetite and chalcopyrite
18 - 18.9	Epidote skarn (diopside?) chalcopyrite
19.6 - 20.6	Epidote skarn (diopside?) chalcopyrite
23.8 - 24.8	Skarn, epidote and chalcopyrite, magnetite, soft
26 - 37.4	Skarn epidote minor chalcopyrite 30% core lost
38 - 38.6	Volcanic andesite, dark fine-grained
40 - 42.6	Volcanic, skarnitized, calcite stringers chalcopyrite.
44 - 45.4	skarnitized volcanics - chalcopyrite
47.2 - 60	Andesite dark to greyish fine-grained, broken Core lost 25%



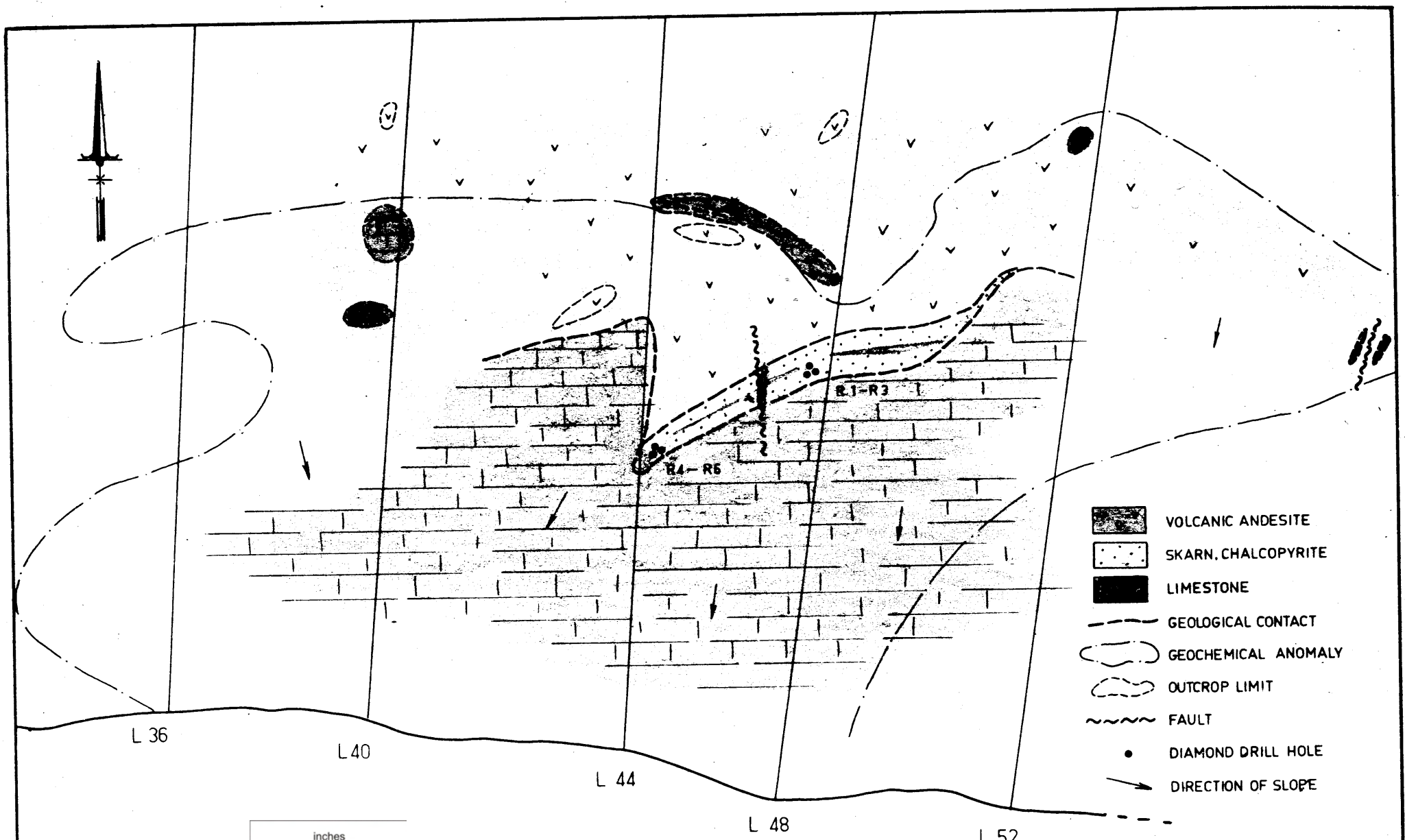
CROSS-SECTION OF D.D.H R1,2&3
 "RAVENZONE"
 KODIAK MINES LIMITED
 SCALE 1"=10'












 PERCENTAGE LOST CORE

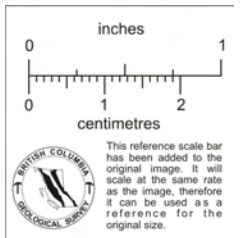


CROSS-SECTION OF DDH R4, 5 & 6
"RAVENZONE"
KODIAK MINES LIMITED
SCALE 1" = 10'



-  VOLCANIC ANDESITE
-  SKARN, CHALCOPYRITE
-  LIMESTONE
-  GEOLOGICAL CONTACT
-  GEOCHEMICAL ANOMALY
-  OUTCROP LIMIT
-  FAULT
-  DIAMOND DRILL HOLE
-  DIRECTION OF SLOPE

L 36 L 40 L 44 L 48 L 52



NAHWITTI LAKE

GENERALIZED GEOLOGY
 "RAVENZONE"
 KODIAK MINES LIMITED
 SCALE 1" = 200'

<u>Sample No</u>	<u>Footage</u>	<u>Length in Ft.</u>	<u>Cu, %</u>	<u>Cu, % X Ft.</u>	<u>Aq. Oz.</u>	<u>Aq. Oz. X Ft.</u>
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DRILL HOLE R1

18951	4 - 8	4.0	.96	3.84	.85	3.40
18953	8 - 14	6.0	.9	5.40	.2	1.20
18959	14 - 20	6.0	1.95	11.70	.15	.90
18960	20 - 24	4.0	8.15	32.60	2.10	8.40
18962	29.5 - 34	4.5	1.90	8.64	.5	2.25

Average 30 feet 2.07% .53 Oz.

2.77

.76

DRILL HOLE R2 - 30% Core Missing

18963	<u>0 - 12</u>	12.0	.58		.60	
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DRILL HOLE R3

18964	12 - 18	6.0	3.16	18.96	.85	5.10
18965	18 - 24	6.0	1.55	9.30	1.50	9.00
18966	6 - 12	6.0	.93	5.40	1.15	6.90
18967	0 - 6	6.0	1.80	10.80	.9	5.40
18968	26 - 34	8.0	1.22	9.76	.25	2.00

Average 34 Feet 1.59 .8350 Oz.

1.74

.93

DRILL HOLE R4 - Could be larger since too much core lost.

18969	4 - 8	4.0	2.06	8.24	.85	3.40
18970	26 - 28	2.0	6.10	12.20	1.95	3.90
18971	30 - 32	2.0	5.20	10.40	2.35	4.70

Average 6.0 Ft 3.766% 1.436 Oz

4.145%

1.71

DRILL HOLE R5 - 60% Core Lost

18972	0 - 17	17.0	2.30		.70	
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DRILL HOLE R6 - High % of Core Lost

18973	0 - 2	2.0	1.15		.20	
18974	11 - 18.4	6.8	.55		.05	
18975	26 - 37.6	11.6	.42		Tr.	

APPENDIX II

DRILL LOGS - FALCONBRIDGE MINES LTD

PROPERTY NAHWITTE COPPER

HOLE NUMBER _____

DIAMOND DRILL RECORD

SHEET NUMBER _____

SECTION FROM _____ TO _____

LOCATION: LAT _____

STARTED _____

DEP _____

COMPLETED _____

ELEVATION OF COLLAR _____

ULTIMATE DEPTH _____

DATUM _____

DIRECTION AT START: BEARING _____
DIP _____

PROPOSED DEPTH _____

DEPTH FEET	FORMATION	FROM	TO	WIDTH OF SAMPLE			
	Nahwitte Copper						
	Peckaseek Diamond Drilling February, 1966						
	Driller Schussler - Prelim. logging J.J.M.						
	<u>Abbreviations:</u>						
	Pyrrh = pyrrhotite						
	MCC = magnetite						
	CS = chalcopyrite						
	MS = manganese						
	EP = epidote						
	BY = pyrite						
		Yi = amygdaloidal basalt - altered					
		Pi = possible basic dyke rock - altered					
		SK = skarn					
		lms = limestone or marble					
		CR = core recovery					
		bdr 3 = banding attitude relative to core axis					
		fg = fine grained					
		cg = coarse grained					

PROPERTY NAHWITTI COPPER

HOLE NUMBER 1/66

SHEET NUMBER 1

DIAMOND DRILL RECORD

SECTION FROM _____ TO _____

LOCATION: LAT. approx. 1966 grid references: 03.0' S
 DEP. 700.00
 ELEVATION OF COLLAR 779.9 feet
 DATUM on mineralized outcrop near cut
 DIRECTION AT START: BEARING _____
 DIP -30°

STARTED February 14, 1966
 COMPLETED _____
 ULTIMATE DEPTH 25.0 ft.
 PROPOSED DEPTH _____

DEPTH FEET	FORMATION	FROM	TO	WIDTH OF SAMPLE	Au	Ag	Cu %	CR %
0-2.0	S08 mag. 3-48 op in op sk							
2.0-3.5	black spots (in S) in op sk	0-5.0		5.0 ft.	Tr	0.1	1.38	35%
3.5-8.0	gray fg. mottled silicified Vi sk - vsg pinpoints of white mineral scattered throughout	5.0-8.0		3.0'	Tr	Tr	0.15	70%
		8.0-20.0		12.0	Tr	Tr	0.04	70%
		20.0-25.0						20%
3-17.5	Rock resembling "oxidate porphyry" sk; scattered amygdale - like spots composed of garnet, quartz & S2 - ore on body @ 66° M4 - coarse black "pickles" in op porph - body @ 52°							
17.5-25.0	Siliceous gray to green op sk; occasionally porphyritic -- may be altered volcanic or basic sill or dyke? (end) Hole drilled on hi grade section of ore							

PROPERTY

MARIETTI COPPER

HOLE NUMBER 2

SHEET NUMBER 1

DIAMOND DRILL RECORD

SECTION FROM TO

LOCATION: LAT. 02.0' N.
 DEP. 693.3, 2
 ELEVATION OF COLLAR 773.9
 DATUM
 DIRECTION AT START: BEARING 518°
 DIP -50°

February 15, 1957

STARTED
 COMPLETED " " "
 ULTIMATE DEPTH 41.0 feet
 PROPOSED DEPTH

DEPTH FEET	FORMATION	FROM	TO	WIDTH OF SAMPLE	Au	Ag	Cu	CR 3
0-10.0	Ep. porph as in hole #1							
10-22.0	Gray - dense fg. silic M epid sk Vsl S2							
	22.0 - suggestion of low angle ctct	15.0		3.0	Tr	Tr	0.14	75
	22.0-23.5 Dark spotted v. epid sk ¹ sl disc S2	25.0	27.0	4.0	Tr	0.1	0.56	90
	23.0 jutting @ 38°	27.0	30.0	3.0	Tr	Tr	0.05	85
	24.0 dark bndg @ 65°							
23.5-26.5	C.P. rich mag. ep. SK							
26.5-28.0	Mg silic. C.P. in sl epidotized, partly chloritic, dense M on basic silic							
29.0-31.0	Mg sil Y etc on pwr. but occ sl epidote patches resembling epidote (see 2477) (cont)							
	Hole drilled under M-grade section of cut							

PROPERTY MAINITA COPPER

HOLE NUMBER 3

SHEET NUMBER 1

SECTION FROM _____ TO _____

DIAMOND DRILL RECORD

LOCATION: LAT. 33.05
 DEP. 1250.0 E
 ELEVATION OF COLLAR 743.0 ft.
 DATUM on lower mineralized cut
 DIRECTION AT START: BEARING N 30° E
 DIP -17°

STARTED February 25, 1966
 COMPLETED "
 ULTIMATE DEPTH 25.0 ft.
 PROPOSED DEPTH --

DEPTH FEET	FORMATION	FROM	TO	WIDTH OF SAMPLE	As	Ag	Cu %	CR %
0-0.0	Oxidized (?) mag epid sk, pl CP as disseminations and as fracture coatings; amygdaloidal appearance	0-5.0		5.0	Tr	0.4	1.59	93
		5-10.0		5.0	Tr	Tr	0.10	75
		10.0-15.0		5.0	Tr	Tr	0.10	30
0-12.0	as 0-5 but decreasing ep, cp. 3.0 - cont'd 50° amygdalo → fg dense vein (V)?	15.0-25.0		10.0	Tr	Tr	0.08	90
10-25.0	previous type gradational (?) to Hq, amy siliceous li on sill; cns 50% - 60% stage - see nearby vein 21.0 - base of 10°							
	(cont)							
	Weld drilled from 5 feet within veinly vein mineralized low cut to cut across best section of mineral deposits							

PROPERTY MARSHETT COPPER

HOLE NUMBER 4
 SHEET NUMBER 1
 SECTION FROM _____ TO _____

DIAMOND DRILL RECORD

LOCATION: LAT. 68.0 S
 DEP. 1280.0 E
 ELEVATION OF COLLAR 375' ±
 DATUM _____
 BEARING N 10° E
 DIRECTION AT START: DIP -65°

STARTED February 26, 1966
 COMPLETED _____
 ULTIMATE DEPTH 63.0 ft.
 PROPOSED DEPTH _____

DEPTH FEET	FORMATION	FROM	TO	WIDTH OF SAMPLE	As	Ag	Cu	CR %
0-8.0	garnet - op sk; partly silicified sl mag. very sl. op.	0-8.0	8.0	8.0	Tr	0.1	0.41	59
8-17.0	light colored Vi op. garnet skarn, crystalline	8-16.0	16.0	10.0	Tr	Tr	0.14	65
	texture suggestive of Vi	16-25.0	25.0	7.0	Tr	Tr	0.02	70
	14.0 band. @ 52°	25-38.0	38.0	13.0	Tr	Tr	0.03	40
	18-25.0	38-50.0	50.0	12.0	Tr	Tr	0.04	75
	dark, fg. brecciated silic. garn-op skarn as 8-17							
	24.0 garnet band. @ 53°							
38-57.0	dense, hard black to grey spotted cherty rock; occ. black oxide string (Mn?) 20.0 - sl. band. and fracturing @ 40°							
57.5-46.0	of silic. sl brecciated filly grey matrix; rock fine gr.							
46.0-46.0	cherty skarn 46.0 - 2-57 400 yz. band @ 40°							
46.0-13.0	dense, fg. black-Vi or silic. or op. prev. occ. sl. sil. matrix of op. form.							

PROPERTY MALMITTI COPPER

HOLE NUMBER 6

SHEET NUMBER 1

SECTION FROM _____ TO _____

DIAMOND DRILL RECORD

LOCATION: LAT. 150.0 S

STARTED February 23, 1966

DEP. 1260.0 S

COMPLETED _____

ELEVATION OF COLLAR 1000.0 ft.

ULTIMATE DEPTH 14.0 ft.

DATUM _____

DIRECTION AT START: BEARING _____
DIP -30°

PROPOSED DEPTH _____

DEPTH FEET	FORMATION	FROM	TO	WIDTH OF SAMPLE	Au	Ag	Cu%	CR %
0-14	Very sl. mag in epid Vi	0-6		6.0	Tr	Tr	0.12	30%
	garnet skarn; many black (MnO2) spots							
	Recovery poor (30%) due to fractured nature of ground							
	(end)							
	Drilled to sample low grade, disc CP, MnO2 in this area							
	Core logs: (MnO2: 0-8, 15-25)							
	(MnO2: 25-27)							
	(MnO2: 2-5)							
	~ 14,300 - 14,400 ft. area							