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REPORT ON PRECIOUS METALS

ON THE

MOTHERLODE-GREYHOUND PROPERTY

OF

MASCOT MINES & PETROLEUMS LIMITED

BY

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OCTOBER 1974

INTRODUCTION

This report was written in order to correlate all the information on hand in respect to gold and silver values as they occur on the Motherlode-Greyhound property and on the various adjoining properties on which work was carried out during 1973 and 1974. The report is divided up into several sections as follows:

SECTION 1 - MANNER OF OCCURRENCE AND STATISTICAL DATA

A. MOTHERLODE-SUNSET AREA

B. GREYHOUND AREA

C. GOTCHA GROUP

D. SAN JACINTO GROUP

SECTION 2 - RECOVERABILITY

SECTION 3 - SUMMARY AND RECOMMENDATIONS FOR FUTURE WORK

Silver and gold are the two precious metals of interest on which we have data and of these gold is by far the most important. Mascot Mines & Petroleums Limited ('Mascot') carried out a certain number of assays for gold and silver and these are tabulated at the back of each respective subsection. In addition, we had access to assay data from work carried out by prior owners and operators and this data has also been tabulated.

A study was made of variations in the gold and silver values in relation to the copper content of the ore and variance curves drawn up for the Motherlode-Sunset area and for the Greyhound area. Although there is quite a scatter to the plotted values it was still possible by visual averaging to draw smooth curves which should be quite meaningful. These graphs are attached at the back of each subsection.

The precious metal content and the size and shape of the Sunset, Sulphide stope and Motherlode shaft area orebodies are all very similar, so that all three were conjectured to have originally been connected up and have formed part of the same mineral structure. The main Motherlode orebody had an overall average precious metal content which was also very similar to the other three so that, although we do not have any data in respect to the distribution of the values in the Motherlode pit, it is presumed to have been very similar. Average yearly production values from this area in the early days were used to help construct the grade variance curves.

Mineralization in the Greyhound basin is quite different from that in the Motherlode so that separate variance curves were drawn up for that orebody. On the Gotcha and San Jacinto groups the copper content and precious metal values were quite low and there was little variation of value so that the values were tabulated only.

SECTION 1 - MANNER OF OCCURRENCE AND STATISTICAL DATA

A. MOTHERLODE-SUNSET AREA

O.E. LeRoy in Memoir 19 published in 1913 (page 49) speaks of precious metals at the Motherlode as follows: "The copper, gold and silver values are mainly in the chalcopyrite." The year before, in 1912, in Memoir 21 (page 61) he spoke of precious metals at Phoenix in these words: "Chalcopyrite is the most important and valuable metallic mineral and contains not only all the copper, but the gold and silver values as well." On page 62 he says further: "The pyrite as a rule carries no values whatever in copper, gold or silver."

Inasmuch as the overall grade of ore at Phoenix is very similar to that of the Motherlode one might expect the pyrite at the Motherlode also to be barren of precious metals. This may be so as we do not have any knowledge of mineralogical studies in this area. However, we have assayed a number of high-pyrite, low-chalcopyrite samples which have given good values in gold and we have also noted good gold values in low-pyrite, low-chalcopyrite samples, so that we should keep on open mind in this regard. Some aspects of the occurrences may be different from those at Phoenix.

A study of the data appended at the end of this section will show that some quite high values in gold occur near the footwall of the Sulphide Stope orebody, and that the gold/copper ratio is also high here. This characteristic also appears to apply to a greater or lesser degree to the extension of the Sulphide zone as shown by the Surety Oils and Minerals Ltd. ('Surety') data, and to the Sunset orebody. We do not have any data available as to variations in the precious metal content in the Motherlode Shaft zone or in the Motherlode Main zone, but it is quite possible that these could be similar. In this respect the Motherlode could be similar to the Phoenix orebodies as variation in the gold/copper ratio apparently is a characteristic there as well. M.S. Hedley and K.D.P. Watson in 1945 in Bulletin No. 20, Part III, note that "some ore remaining in the Brooklyn and Knob Hill - Ironsides mines in Phoenix was found to have a considerably higher gold content than the average of the camp and was milled at Greenwood between 1936 and 1942."

So far we have been speaking of precious metal content in the orebodies themselves. Precious metals are, however, also found outside the orebodies and are frequently found in association with quite low copper values. One such area within the Motherlode limestone basin occurs at the Crown Silver adit where the following assay values were obtained from a channel sample of the northeast wall:

Copper %	Gold Oz. per ton	Silver Oz. per ton
.04	.002	.04
.08	.001	.05
.26	.007	.09
.32	.026	.10
.35	.037	.88
.08	Tr	.17

and two selected copper specimens from here assayed:

.56	.015	(not assayed for silver)
.36	.023	(not assayed for silver)

Some of the relatively high gold samples contained very little pyrite and discovery of the gold content came as a surprise.

In addition to precious metal values being found within the limestone basin, but outside the orebodies, they are also found fairly consistently in the underlying Knob Hill rocks. Assays for gold and silver obtained from Mascot's drilling in the Knob Hill rocks are set out below:

Hole No.	Footage	Gold Oz/ton	Silver Oz/ton	Location
MS-3	31-61	.016	Tr	Sunset
MM-1	161-171	.006	Tr	Sulphide stope
"	171-181	.010	.04	" "
"	181-205	.004	.02	" "
MM-11	at 68'	.006	Tr	by Crusher building
"	at 88'	.004	.04	" "

Surety drilled two holes some distance northeast of the Sunset area and obtained the following assays:

Hole No.	Footage	Copper %	Gold Oz/ton	Silver Oz/ton
8	54-104	0.14	.003	.23
9	204-214	0.10	.005	Tr

Konrad B. Krauskopf in Introduction to Geochemistry shows the gold content of rocks as being normally less than .001 oz. per ton.

The Knob Hill rocks therefore appear to be carrying above average amounts of the precious metals, and, inasmuch as it is presumed that the overlying Brooklyn limestones are unconformable with the Knob Hill rocks, it could be reasonable to speculate that the soil and weathered bedrock of the old Knob Hill landscape could have contained placer and detrital accumulations. Carrying this speculation further, it could be reasonable to presume that, on subsidence of the Knob Hill land surface, the first sediments deposited could have consisted in large part of this detritus and, although now classified variously as sharpstone conglomerate, calcareous sandstone, etc., it could still contain the old placer and detrital metal values. If such a hypothesis is valid it could explain the higher gold values in places like the Crown Silver adit and it could spark a search for other occurrences in troughs or depressions at the bottom of the limestone basins. Because of a similarity in size and shape and a simiarity in metal content and distribution, it is

tempting to speculate that the present Motherlode shaft orebody, the Sulphide zone ore, the mineralization extending easterly from the Sulphide zone, and the Sunset orebody were once all part of an elongated zone of mineralization plunging northwest from the Sunset and more or less following the axis of the limestone basin. This mineralization could have been broken up and faulted out of position at the time or times of intrusive activity. A sketch attached hereto shows how this might have occurred. The Sunset orebody in cross-section is generally flat lying, and somewhat trough shaped, and has a linear plunge to the northwest. An extension of this plunge northwesterly from the last drill hole is clearly shown by the shape and direction of the magnetic anomaly whioh continues out under the old tailings pond for several hundred feet before turning sharply to the west, almost as if it had been swung around on a hinge. From this hinge point it continues westerly until joining up with the Sulphide Stope anomaly. The Sulphide Stope anomaly and the Motherlode Shaft anomaly are continuous except for a gap of some 200 feet. Interestingly enough, there are several small magnetic anomalies scattered about in the area northeast of this gap which could relate to scattered fragments of the original zone which had been rafted almost vertically upwards by the diorite intrusions.

Further exploration work in the Motherlode basin might be directed to examination of the Brooklyn-Knob Hill contact in order to further assess the potential for economic mineralization. The area northwest of the Motherlode pit in particular should be examined for depressions in the Knob Hill rocks which could have formed a loci for mineral deposition.

Motherlode Basin Assay Tabulations

(a) Sunset Area

		Assay Values		
Hole No.	Footage	% Copper	Gold Oz/ton	Silver Oz/ton
MS-2	10-21	1.26	.155	.38
MS-3	6-31	0.46	.029	.36
"	31-61	0.027	.016	Tr
MS-4	40-76	0.85	.025	.12
MS-5	31-36	0.18	.009	.08
PH-42	40-80	0.56	.018	.56
PH-44	70-100	1.02	.032	Tr

(b) Surety Oils & Minerals - Sunset to Sulphide Stope area

Hole No.	Footage	Assay Values % Copper	Gold Oz/ton	Silver Oz/ton
1	226-238.5	1.04	.050	.69
1	226-277	0.86	.029	.38
1	266-277	1.00	.035	.42
2	22-48	1.06	.010	.25
3	61.5-81.5	0.90	.010	.50
"	56.5-112	0.50	.017	.40
4	?	1.10	.050	1.95
6	?	0.12	.025	1.31
8	?	0.14	.003	.23
9	204-214	0.10	.005	Tr
10	150-160	0.40	.005	Tr
"	200-210	0.30	.010	.10

(c) Motherlode Pit Rim

MM-5	32-42	0.40	.009	.06
"	122-132	0.40	.015	.06
"	22-132	0.30	.009	.02
MM-6	10-20	0.58	.018	.06
"	20-30	0.54	.020	.07
MM-7	10-20	0.52	.020	.10
MM-12	711-736	0.19	.006	Tr
(Chip sample C715 - C719 Composite)	60 ft.	0.47	.009	.03

(d) Motherlode Shaft area

PH-40	150-160	0.30	.050	Tr
"	200-220			
"	160-200	0.78	.050	.06
PH-41	190-220	0.41	.020	Tr
MM-11	54-65	0.05	.005	.05
"	92-101	0.22	.004	.04
"	at 68'	0.01	.006	Tr
"	at 88'	0.01	.004	.04

(Tremaine estimates the grade of the assured reserves for the Shaft area from the Surety Oils & Minerals Drilling at 1.12% copper and .05 oz/ton of gold.)

(e) Motherlode Main Zone (broken ground)

Hole No.	Footage	Assay Values % Copper	Gold Oz/ton	Silver Oz/ton
R-1 & R-2	(69 feet)	0.82	.045	.13
R-3	(50 feet)	0.28	.004	Tr
R-3	(65 feet)	0.53	.026	.06
R-4	(64 feet)	0.98	.020	.09
R-5	(45 feet)	0.46	.020	.05
R-6 & R-7	(62 feet)	0.66	.021	.12
RP-1	0 - 68	0.25	.015	.16
"	68 - 138	0.97	.019	.17

(f) Sulphide Stope Area

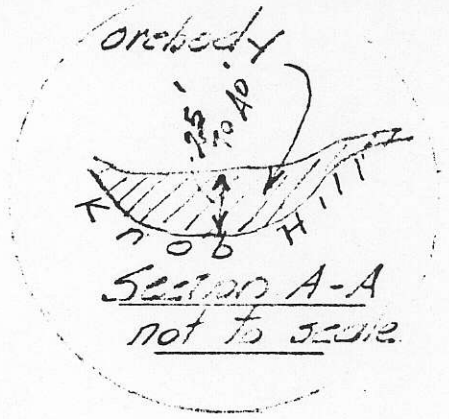
MM-1	108-113	1.55	.020	.19
"	113-117	0.15	.004	Tr
"	117-125	1.12	.023	.18
"	125-131	1.28	.045	.20
"	161-171	Not assayed	.006	Tr
"	171-181 "	"	.010	.04
"	181-205 "	"	.004	.02
MM-2	73-77	2.43	.101	.28
"	100-136	0.75	.035	.19
MM-8	73.5-118	0.39	.004	Tr
MM-9	17-77	0.23	.010	.03
"	77-117	0.67	.030	.21
PH-31	210-230	0.14	.036	.08
PH-33	110-140	0.15	.005	Tr
"	140-160	0.30	.005	.02
"	160-190	1.38	.064	.22
PH-34	90-100	0.41	.005	.08
Grab Sample (McCool)		0.98	.044	.13
" "	"	0.84	.012	.10
" "	NW stope	0.23	.072	.06
Composite-Air shaft dump & Primrose shaft dump		0.49	.038	.12
Composite Sulphide stope walls & pillars		0.73	.036	.16

(g) B.C. Copper Co. Production Data (from Frederick)

Year	Grade of Ore: Copper %	Grade of Ore: Gold Oz/ton
1903	1.34	.042
1904	1.32	.048
1905	1.27	.057
1906	1.21	.050
1907	1.21	.050
1908	1.20	.047
1909	1.20	.049
1910	1.20	.055
1911	1.07	.045
1912	0.98	.034
1913	0.84	.032
1914	0.87	.024
1915	0.95	.040
1916	1.02	.041
1917	1.11	.048
1918	1.11	.052

(h) Crown Silver Adit

	% Copper	Gold Oz/ton	Silver Oz/ton
Northeast wall chip	0.038	.002	.04
"	0.079	.001	.05
"	0.26	.007	.09
"	0.32	.026	.10
"	0.35	.037	.08
"	0.083	Tr	.17
Specimen samples	0.56	.015	(not assayed)
"	0.36	.023	(not assayed)



Section A-A
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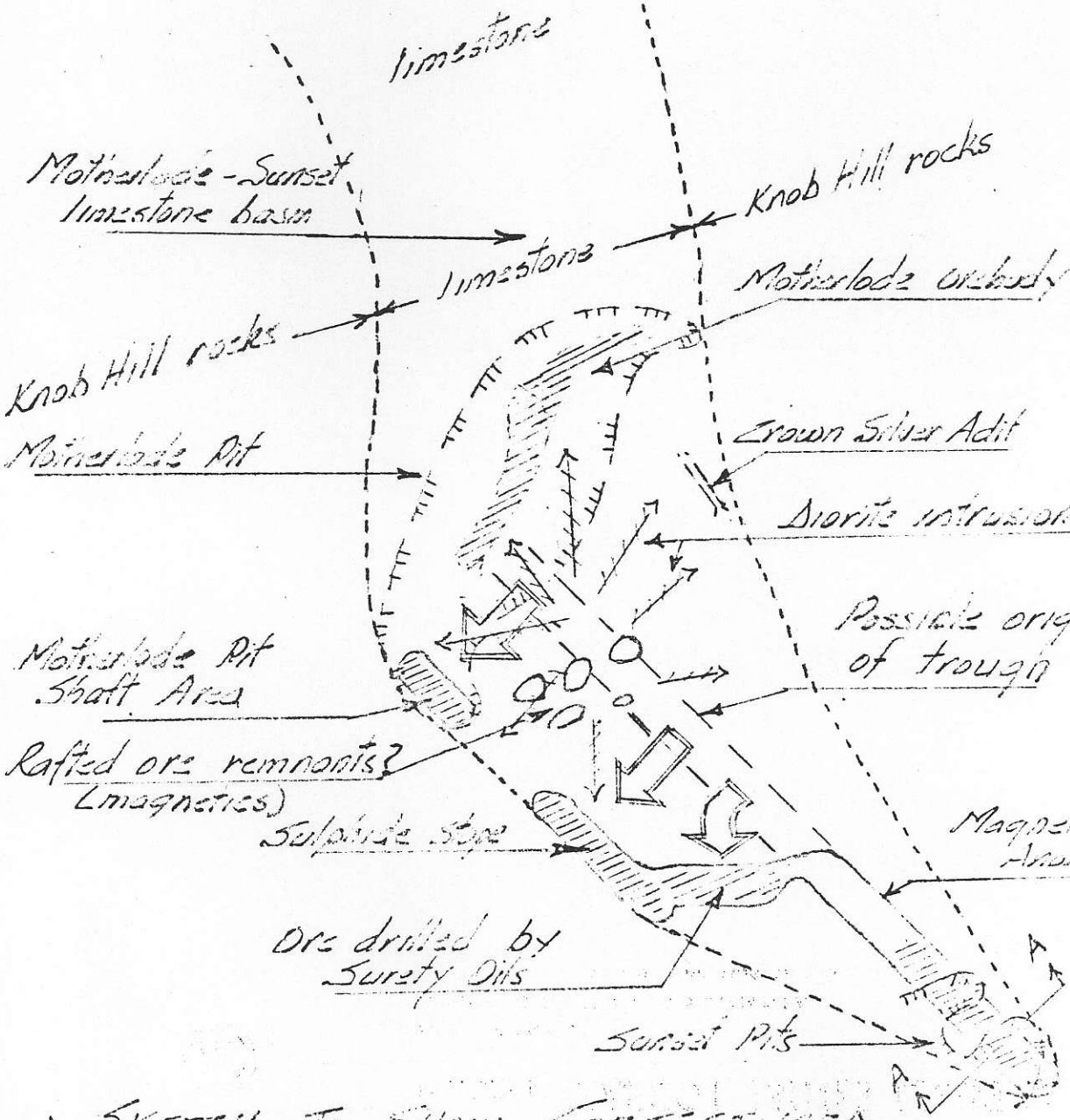
Sharpsteen Conglomerate & limestone



Oct/74 - SKETCH TO SHOW CONJECTURED RELATIONSHIP OF SUNSET-SUNRISE STOPE-SHAFT AREA OREBODIES

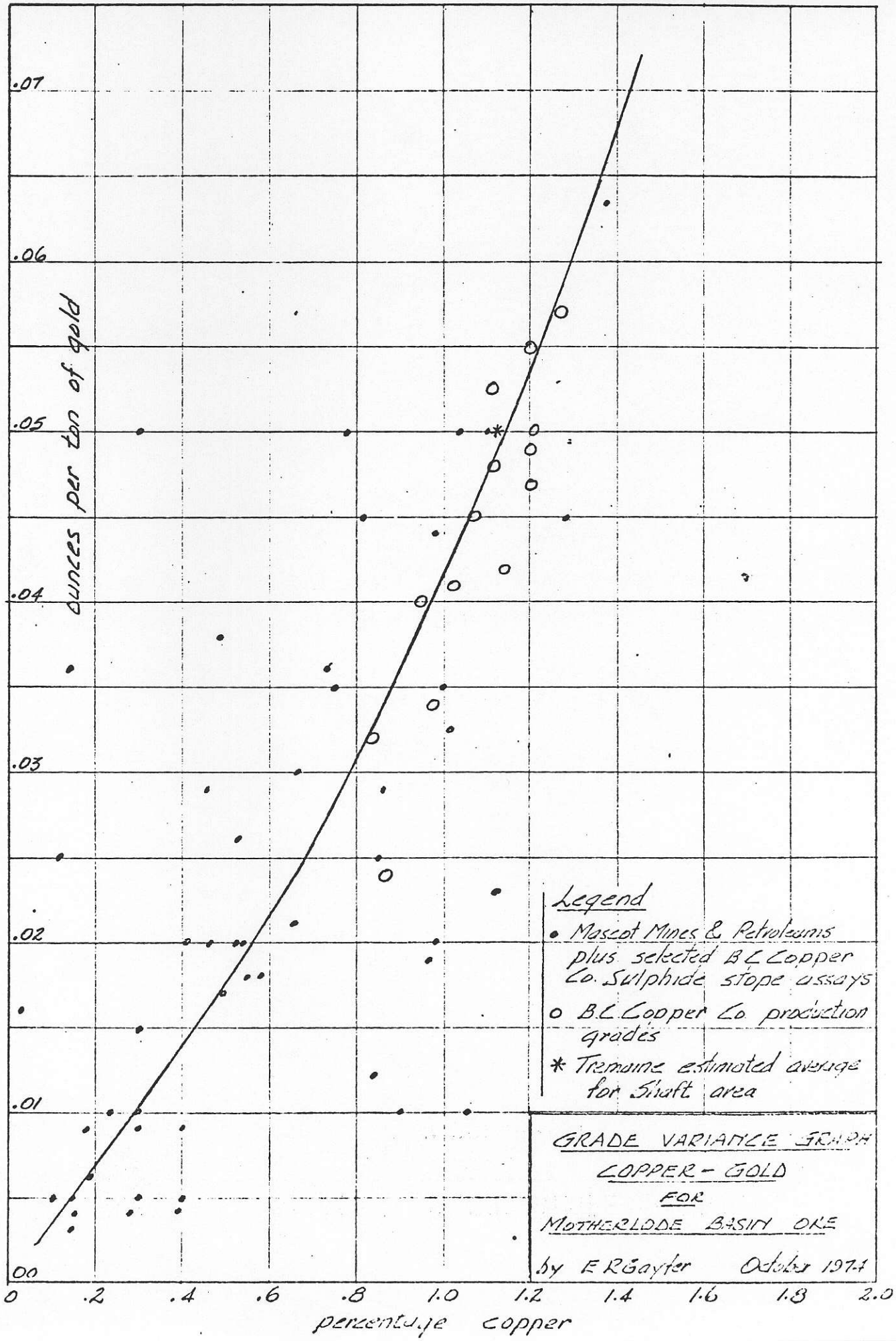
(c) BRITISH COLUMBIA COPPER CO. DRILLING

MAGNETITE SULPHIDE AREA

HOLE NO.		Copper	Silver	Gold	Silica	Iron	Lime	Sulphur
100 Dips 45	60-65'	2.00	.21	.07				
	65-70'	2.05	.20	.06				
	70-74'	1.95	.20	.06				
	74-79'	2.45	.28	.06				
	79-84'	2.00	.31	.07				
	84-88'	3.45	.54	.16				
	88-95'	1.60	.29	.05				
	95-103'	.60	.10	.02				
	103-108'	.13	.05	.01				
	108-112'	Tr	.05	.01				
	163-171'	1.13	.23	.05				
	171-175'	.61	.16	.02				
	175-185'	.82	.19	.01				
	185-191'	1.41	.29	.05				
	191-198'	Tr	.05	.01				
	198-203'	Tr	.05	.03				
120 Vertical	113½-117'	.18	Tr	.10		15.8		.6
	117-121'	.25	Tr	Tr		32.0		.4
	121-129½'	.98	.02	.18		31.7		1.2
	130½-132'	.16	Tr	Tr		19.0		.2
	135-141½'	1.07	.02	.18		27.1		2.1
	141½-142½'	1.41	.03	.25		32.3		1.7
	142½-143½'	.15	.01	.14		11.6		.3
	143½-150'	.58	.02	.16		28.5		1.1
	150-157½'	1.47	.04	.32		16.1		2.2
	157½-160'	1.85	.06	1.10		9.8		8.1
	160-163½'	1.10	.01	.91		19.7		12.3
	163½-167½'	.45	.10	.16		53.5		1.9
	167½-173½'	.50	.03	.33		37.6		3.0
121 Dips 70	116½-118'	.09	Tr	Tr				
	118-127'	1.19	.19	.03				
	127-140'	1.03	.21	.05				
	140-153'	1.55	Tr	Tr				
	154-158'	1.70	Tr	Tr				
	158-161½	.50	.13	.03				
	168-170'	.38	.13	.01				
122 Vertical	99-105'	.67	.16	.075				
	109-115'	.69	.38	.34				
	115-119'	.57	.14	.04				
	119-126'	.92	.19	.03				
	126-132'	.22	Tr	Tr				
	132-134'	.94	.42	.06				
	134-140'	1.11	.18	.14				
	140-146'	1.00	.17	.05				
	146-150'	1.24	.22	.12				
	150-155'	1.07	.22	.06				
	155-159'	1.26	1.43	2.02				
	159-163'	1.49	.28	.06				
	164½-168	.51	.14	.02				
	168-172'	.70	.42	.14				
123 Dips 70	209-210'	.15	Tr	.01				
	210-211'	.20	Tr	Tr				
	211-212'	.36	.12	.045				
	212-216'	.18	Tr	.01				
	216-219'	.13	.03	.01				

HOLE NO.		Copper	Silver	Gold	Silica	Iron	Lime	Sulphur
123 Cont.	220-222'	.09	Tr	Tr				
	222-229'	.20	.06	.01				
	229-232'	.34	.04	Tr				
	232-237'	1.59	.47	.09				
	237-243'	.26	.04	.01				
124 Dips 70	123-127½'	1.31	.13	.03				
	127½-128½	.42	.07	.01				
	128½-133'	1.86	.20	.04				
	133-140'	.44	.09	.01				
	140-146'	.08	Tr	.01				
	146-152'	.32	.05	.01				
	152-159½'	.27	Tr	.02				
	159½-165'	.06	.03	.09				
	165-172'	.09	.03	.07				
	172-182'	.13	.02	.06				
	182-184'	.45	.13	.11				6.3
	184-192'	2.00	.61	1.03				20.9
	182-198'			Tr				
	198-208'	.07	Tr	Tr				
125 Vertical	51-55½'	.11	.08	.01				
	55½-59'	.89	.23	.03				
	59-64'	.12	.06	Tr				
	66-69½'	.73	.20	.02				
	69½-74'	1.01	.27	.03				
	74-84'	1.03	.21	.03				
	91-92½'	1.59	.24	.04				
	92½-96½'	.19	Tr	.01				
	96½-100'	2.40	.65	.09				11.0
	100-104'	.94	.35	.07				
	126-128'	.20	.19	.03				
	128-131½	.26	.24	.04				
	131½-137'	.82	.73	.17				
	137-141'	.52	.36	.08				
	141-145½	.10	.09	.03		55.0		2.9
126 Dips 70	47-52½'	.25	.09	.01				
	52½-58½'	.03	Tr	Tr				
	58½-61½'	1.36	.31	.09				
	61½-62½'	.07	Tr	Tr				
	62½-64'	1.28	.28	Nil				
	64-65'	.37	.76	Tr				
	65-70'	2.79	.46	.12				
	70-73'	1.54	.21	.07				
	90-93½'	3.00	.40	.14				
	111-115'	.51	.18	.10				
	115-120'	.21	.14	.10				
	120-122'	1.73	.57,	.11				
	122-127'	1.67	.65	.11		39.2		5.8
	127-131'	.70	.33	.05				
	131-136'	.45	.15	.07				
127 Dips 70	127-131'	.14	.10	.02				5.4
	131-136'	.22	.15	.05				19.1
128 Vertical	54½-60½'	.15	.11	.015		3.3		
	60½-64½'	Tr	.06	.005		1.7		
	64½-70'	.48	.20	.04		3.9		
	70-72½'	.48	.18	.03		3.7		
	72½-76½'	.10	.07	.01		1.1		
	76½-85'	1.10	.46	.10		23.4		
	85-91'	1.01	.49	.07		6.9		

HOLE NO.		Copper	Silver	Gold	Isol.	Iron	Lime	Sulphur
128 Cont.	91-93'	.40	.28	.06		12.0		
	93-100'	.05	Tr	.01		2.7		
	100-118'	.36	.24	.04		14.7		
129 Dips 30		No Ore						
130 Dips 45	106-124'	.61	.22	.05				
132 Dips 70	81-83½'	.15	Tr	.01	43.8	13.5		3.4
	83½-86'	.20	.10	.01	35.0	20.6		5.1
	87-102'	1.22	.25	.06	33.0	23.1		1.8
	102-104½'	1.01	.23	.03	65.9	6.3		.9
	104½-113'	.76	.12	.02	55.2	7.9		1.3
	114-116'	.46	.11	.01	42.8	17.5		.8
	116-120½'	1.80	.23	.04	34.8	29.5		3.0
	120½-128½'	1.51	.20	.02	30.8	31.4		2.3
	128½-131'	2.24	.28	.07	29.0	36.4		3.4
	131-133½'	1.37	.45	.03	39.8	27.3		1.9
	133½-140'	.78	.09	.02	42.1	26.8		1.1
	140-141'	1.84	.30	.03	44.0	25.6		3.0
	141-144'	2.88	.27	.05	24.6	38.7		4.5
	144-148'	.70	.16	.02	63.6	10.3		1.2
	148-153'	.30	.12	.01	60.8	7.4		2.2
	153-165'	.47	.25	.03	15.9	34.9		19.8
133 Dips 70	64½-70'	.05	Tr	Tr		14.1		.3
	70-72½'	.03	Tr	Tr		11.1		1.0
	72½-76½'	.03	Tr	Tr		35.6		.1
	86-93'	1.07	.20	.01		32.1		1.1
	93-96½'	.25	.12	.01		33.9		.3
	96½-106½'	.50	.22	.02		37.3		1.2
	106½-114½'	.23	Tr	.01		26.6		1.9
	114½-117'	.65	.10	.04		22.9		1.8
	118-123½'	.97	.40	.02		35.0		2.6
	123½-125'	.64	.30	.01		20.2		3.2
	125-130½'	.96	.42	.01		21.5		1.2
	130½-135'	.74	.10	.02		18.9		1.2
	135-141'	2.87	.48	.07		26.4		4.7
	141-143'	1.22	.20	.07		29.7		3.8
	143-145'	.10	Tr	.01		8.7		2.6
	145-151½'	.60	Tr	.01		6.5		3.7
	151-161½'	.71	.20	.03		12.1		2.5
	185-195½'	.15	.10	.06		15.1		10.6
134 Vertical								
135 Vertical								
136 Dips 45 Deg.								
138 Vertical								
139 Vertical		No Ore						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ounces per ton of gold
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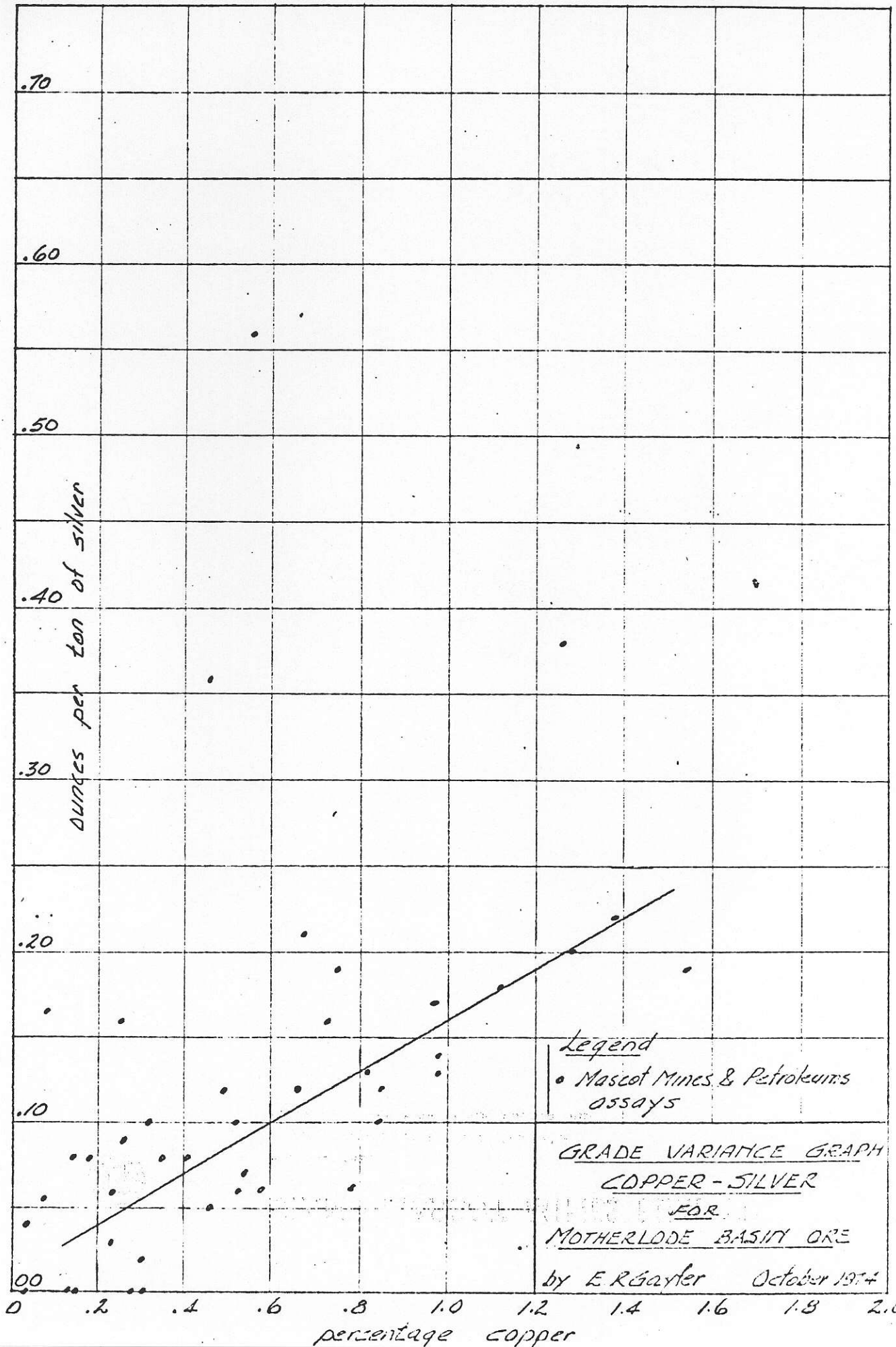
1.2
1.4
1.6
1.8
2.0
percentage copper
Legend
• Mascot Mines & Petroleums plus selected B.C. Copper Co. Sulphide stope assays
o B.C. Copper Co. production grades
* Tremaine estimated average for Shaft area
GRADE VARIANCE GRAPH
COPPER - GOLD
FOR
MOTHERLODE BASIN ORE
by E.R. Gayfer October 1974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.20
.10
.00
ounces per ton of silver
0
.2
.4
.6
.8
1.0
1.2
1.4
1.6
1.8
2.0
percentage copper
Legend
• Mascot Mines & Petroleums assays
GRADE VARIANCE GRAPH
COPPER - SILVER
FOR
MOTHERLODE BASIN ORE
by E.R Gayler October 1974

B. GREYHOUND AREA

The Greyhound mineralization has a considerably lower precious metal content than that of the Motherlode. Although the scatter to the values plotted on the graph attached hereto appears to be greater than that for the Motherlode, this is due at least in part to some of the values being quoted only to the nearest second place of decimals. Most of the gold and silver assays performed on Mascot samples were performed on samples grading less than 1% copper. Although the bulk of the known orebody is of such a grade, nevertheless there are higher grade areas outside the quoted reserves where copper values will run between 1% and 3% copper and where gold values are roughly four times the reserve average. These high grade areas are located in the neighbourhood of the old shaft and were the showings which Cominco drilled in the early days. These old workings were resampled and redrilled to some extent by Salamet in 1956. Both Cominco and Salamet results have been tabulated and some data was selected from them to assist in extrapolating the copper-gold and copper-silver curves into the upper range of values. A marked increase in the gold/copper ratio above 1% copper can be noted but the absolute values still remain well below those of the Motherlode area.

The Greyhound ore horizon as presently known occurs largely in a specific horizon of the limey skarn material and is not in direct contact with Knob Hill chert. This positioning may have some bearing on the lower precious metal content.

An area with heavy pyrite mineralization but with low copper content lies to the southwest of Greyhound ore. Gold assays from Mascot's percussion drilling in this area showed values of 0.005 oz. gold and Tr silver to the ton. San Jacinto reported 0.020 oz. gold with 0.20% associated copper over 10 feet from its SJ8 diamond drill hole in the same area. Most of the drilling to date in this high pyrite area has not penetrated the zone very far because of the deep overburden and in some places a capping of relatively recent sediments. It is not possible, therefore, to set up any hypothesis to explain the mineralization and accordingly it is not possible to properly assess the potential for economic mineralization. Certainly the high values which were worked on in the area of the shaft in the early days as well as the very heavy sulphur content of the skarned formations west of the shaft offer some encouragement.

GREYHOUND ASSAY TABULATIONS

(a) Pit Drilling

Hole No.	Footage	Assay Values % Copper	Gold Oz/ton	Silver Oz/ton
MG-1	144.5 - 153.5	0.42	.006	.11
"	162.5 - 171.5	0.52	.005	.08
"	171.5 - 180.5	0.94	.016	.22
"	180.5 - 190	0.86	.015	.17
"	210 - 216	1.25	.010	.22
"	268.5 - 276	0.52	.005	.18
"	276 - 286	0.96	.006	.28
"	286 - 296	0.96	.004	.29
MG-4	5 - 79	0.75	.004	.12
MG-6	220 - 245	1.23	.005	.29
MG-7	40 - 105.5	0.68	.003	.17

(b) Pulp Samples

Average of 52 Greyhound Mines Ltd. pulps of January 4 to January 7th, 1971 (Sample numbers 3478 - 3500 inclusive and 3651 to 3679 inclusive):

	0.42	.003	0.13

(c) Selected samples from Cominco Drilling in 1916 (?)

Face of drift		1.10	.02	1.14
Hole 5	80 - 122	1.12	.01	.10
"	Specimen	3.12	.06	.70
"	"	1.90	.06	.60
"	159 - 173	1.05	.01	.21
"	195 - 212	0.67	Tr	.16
Hole 6	105 - 115	1.87	.02	.44
"	115 - 120	1.32	.01	.32
"	162 - 171	2.12	.02	.56
"	171 - 180	1.62	.02	.40
"	180 - 183	1.02	.01	.24
Hole 7	76.5 - 86.5	1.62	.01	.32
"	86.5 - 89	2.52	.02	Tr
"	89 - 93	2.75	.02	.60
"	104 - 109.5	2.62	.01	.47

Hole No.	Footage	Assay Values % Copper	Gold Oz/ton	Silver Oz/ton
Hole 10	180.5 - 184	1.50	.02	.44
"	184 - 187	0.97	.01	.36
"	195 - 202	1.85	.01	.30
Hole 16	197 - 199	2.22	.02	.14
"	232 - 237	1.40	.01	.06

(d) Assays from outside of pit area

SJ-8	33 - 43	0.20	.020	Tr
G-22	20 - 30	0.11	.005	Tr
"	30 - 40	0.19	.005	Tr
G-23	110 - 120	0.11	.005	Tr

(e) Greyhound blast hole sludge assays

Bench 4	0.70	.003	.22
"	0.57	.004	.13
"	0.58	.004	.12
"	0.96	.005	.21
"	0.40	.005	.10
	0.13	.004	.06
"	0.54	.005	.12
"	0.01	.002	.03
"	Tr	.001	.02
"	0.16	.003	.05
"	Tr	.001	.03
"	Tr	.001	.03
"	Tr	.002	.02
"	0.01	.001	.03

FROM 1916 COMITECO REPORT
GREYHOUND

	Hole 3				
	Hole 3				
	Hole 4				
	Hole 5				
Core No. 2.	Hole 5				
Special gleam of Ore Drum					
Core No. 2.	Hole No. 5				

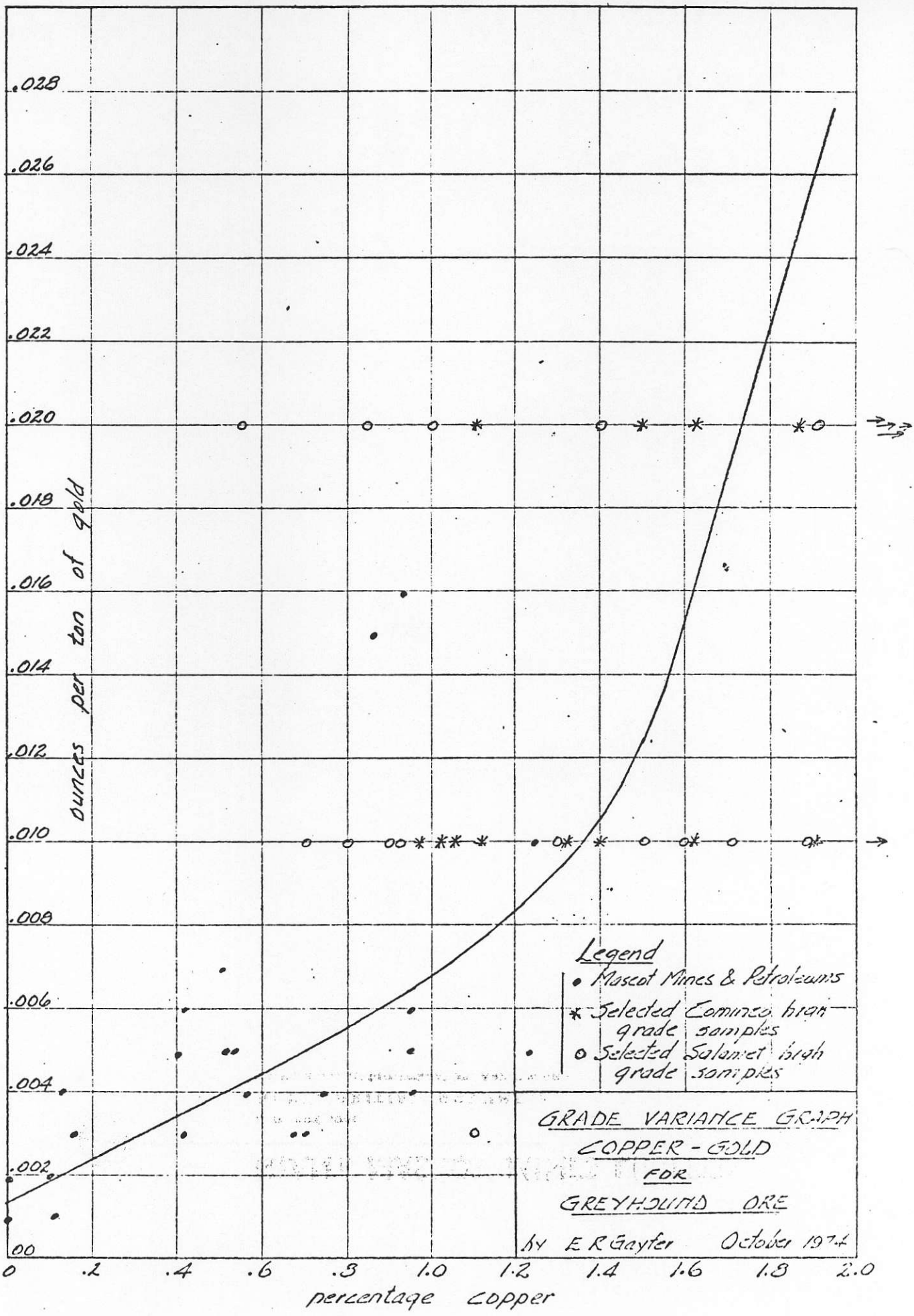
Bench 5 67 — 82

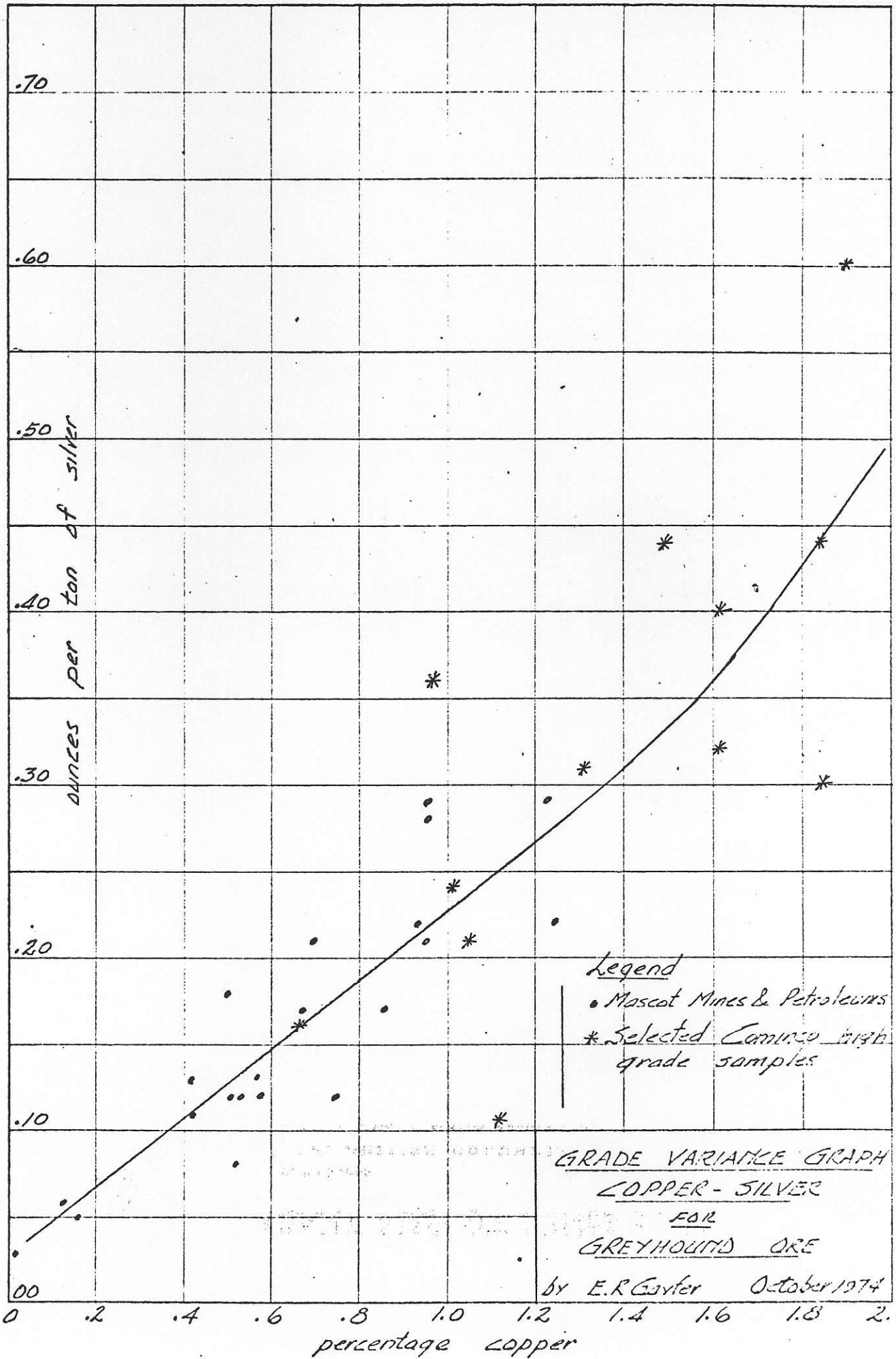
Bench 6 [illegible] = 1055

Bench 7 [illegible] = .52

Bench 8 [illegible] = .63

Bench 9 [illegible] = [illegible]
[illegible] = [illegible]


.028
.026
.024
.022
.020
.018
.016
.014
.012
.010
.008
.006
.004
.002
.00
ounces per ton of gold
0
.2
.4
.6
.8
1.0
1.2
1.4
1.6
1.8
2.0
percentage copper
Legend
• Moscot Mines & Petroleums
* Selected Commico high grade samples
o Selected Solomet high grade samples
GRADE VARIANCE GRAPH
COPPER - GOLD
FOR
GREYHOUND ORE
by E R Gayfer October 1974


.70
.60
.50
.40
.30
.20
.10
00
ounces per ton of silver
0
.2
.4
.6
.8
1.0
1.2
1.4
1.6
1.8
2.0
percentage copper
Legend
• Mascot Mines & Petroleums
* Selected Cominco high grade samples
GRADE VARIANCE GRAPH
COPPER - SILVER
FOR
GREYHOUND ORE
by E.R Gayfer October 1974

(2)

[illegible]		[illegible]	[illegible]	[illegible]
	[illegible]-1/2	Tr.	Tr.	[illegible]
	[illegible]-1/2-[illegible]	Tr.	Tr.	[illegible]
7?	[illegible]	Tr.	Tr.	Tr.
Cores D. D. Hole No. 6	[illegible]-1/2 - 10'	Tr.	Tr.	0.[illegible]
	[illegible]	0.01	.1[illegible]	.2[illegible]
	26-1/2-[illegible]-1/2	Tr.	Tr.	.[illegible]
	[illegible]-1/2-[illegible]-1/2	Tr.	Tr.	.35 [?]
	4[illegible]-1/2-55'	Tr.	.10	.78 [?]
	55-65	.01	.14	.87
	65-71	.01	.13	1.00
Cores D. D. Hole 7	70-76	.01	.1[illegible]	.87
	76-78-1/2	Tr.	.05	.[illegible]
	78-1/2-8[illegible]-1/2	.01	.08	1.[illegible]
	[illegible]-1/2-[illegible]	.0[illegible]	Tr.	[illegible]
bench 6, 78 - 103	[illegible]	.0[illegible]	.[illegible]	[illegible].75
bench 7 / 03 - 128 = .92	[illegible]	.02	.[illegible]	[illegible].07 [?]
	[illegible]-104	.0[illegible]	.[illegible]	[illegible].07
	104-[illegible]-1/2	.01	.[illegible]	[illegible]
	[illegible]-1/2-[illegible]	Tr.	.0[illegible]	[illegible]
	[illegible]-1/2	.01	Tr.	[illegible]
	[illegible]-1/2-[illegible]-1/2	Tr.	Tr.	Tr.
	[illegible]-1/2-[illegible]	Tr.	Tr.	Tr.
	[illegible]-1/2	.0[illegible]	Tr.	Tr.
Cores D. D. Hole 10	[illegible]-1/2	.0[illegible]	.[illegible]	1.[illegible]
	[illegible]-1/2-[illegible]	.03	.[illegible]	1.[illegible]
	[illegible]-1/2	.0[illegible]	.[illegible]	[illegible]
	14[illegible]-1/2-14[illegible]	.0[illegible]	[illegible]	[illegible]
	144-147	.0[illegible]	[illegible]	[illegible]
	147-1[illegible]-1/2	.02	.[illegible]	[illegible]
	[illegible]-1/2-[illegible]-1/2	.0[illegible]	.[illegible]	[illegible]
	[illegible]-1/2-[illegible]	.02	.[illegible]	[illegible]
	[illegible]	Tr.	Tr.	[illegible]
(129-134 = 1.37)	[illegible]	.0[illegible]	.[illegible]	[illegible]
bench 7 129-134	[illegible]	.0[illegible]	.[illegible]	[illegible]
	[illegible]	.0[illegible]	.[illegible]	[illegible]
bench 8 [illegible] 1.59	[illegible]-1/2-[illegible]	.[illegible]	.[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] = 1.14	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]-1/2-[illegible]	[illegible]	[illegible]	[illegible]
bench 9	[illegible]	[illegible]	[illegible]	[illegible]
bench 10 184 - 209 = .65	[illegible]	[illegible]	[illegible]	[illegible]
Bench 11 209 - 234 =	[illegible]	[illegible]	[illegible]	[illegible]
Bench 11 209-223.5 = 1.18	[illegible]	[illegible]	[illegible]	[illegible]
Cores D. D. Hole 12	[illegible]	[illegible]	[illegible]	[illegible]
158 - 177 = .54	[illegible]	[illegible]	[illegible]	[illegible]
bench 10, 168 - 193 = .41	[illegible]	[illegible]	[illegible]	[illegible]
bench 11, 193 - 218 = .81	[illegible]	[illegible]	[illegible]	[illegible]
195 - 211 = 1.35	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

(3)

	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	Tr.

(8)

Description				
Cross D. D. [illegible] 23	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	.03	.[illegible]	[illegible]
	[illegible]	.01	[illegible]	[illegible]
	[illegible]	.03	.[illegible]	.[illegible]
	[illegible]	.01	[illegible]	[illegible]
	[illegible]	.01	[illegible]	[illegible]
	213-220-1/3	.01	.86	1.30
	220-1/4-232	.01	.12	1.23
	232-237	.01	.00	1.23
	237-250-1/2	.01	.00	1.77
	250-1/2-267	.01	[illegible]	1.13

Bench 9 169 – 194 (183.5 – 194 = .99)
Bench 10 194 – 219 = 1.49
Bench 11 219 – 244 = 1.30

copied/DCB
Drill, no. 6,
Dec. 22/62.

SALAMET GREYHOUND ASSAYS

SAMPLE NO.	HOLE NO.	FOOTAGE FROM	FOOTAGE TO	WIDTH FT.	AU GOLD oz/ton	AG SILVER oz/ton	CU COPPER %	ZN ZINC %	NI NICKEL %
6501									
2									
3									
4									
5									
6									
7									
8									
9									
6510									
11									
12									
13									
14									
15									
16									
17									
18									
19									
6520									
21									
22									
23									
24									
25									
26									
27					TR	0.1	TR		
28					TR	0.1	TR		
29					.02	0.1	TR		
6530					.005	TR	TR		
31					.01	0.2	2.7		
32					.005	TR	TR		
33					TR	0.1	TR		
34					.005	0.2	0.15		
35					.01	0.2	0.30		
36					.005	0.1	TR		
37					.01	0.1	TR		
38					TR.	TR	TR		
39					TR.	0.1	TR.		
6540					TR.	0.2	0.30		
41					TR.	0.1	TR		
42					0.005	0.1	TR		
43					TR	0.1	TR.		
44					TR	TR	TR		
45					TR.	0.1	0.25		
46					TR.	0.1	0.15		
47					TR.	0.1	0.20		
48	22	218.0	221.0	3.0 (2)	.005	0.6	2.7		
49	22	221.0	223.5	2.5	.005	0.3	0.45		
6550	22	223.5	233.5	10.0	.005	0.3	1.6		

SAMPLE NO.	HOLE NO.	FOOTAGE FROM	FOOTAGE TO	WIDTH FT.	AU GOLD oz/ton	AG SILVER oz/ton	CU COPPER %	PB ZINC %	NI NICKEL %	
6551					TR.	0.2	TR.			
52							0.90			
53							0.05			
54							1.2			
55							1.2			
56							0.10			
57							TR.			sludge
58							0.30			"
59							0.30			"
6560							4.6			"
61							1.6			"
62							0.25			"
63							0.25			"
64							0.25			"
65							TR			"
66							TR.			"
67							TR.			"
68							0.20			"
69							TR.			"
6570										
71										
72										
73										
74										
75										
76	22	233.5	245.0	12.0(9)	TR.	TR	2.0			
77	23	5.0	14.0	9.0	0.005	0.1	0.45			
78	23	14.5	24.0	9.5	.01	0.2	0.30			
79	23	24.0	27.5	3.5(3)	.01	0.2	0.80			
6580	23	27.5	34.5	7.0	.005	TR.	0.15			
81	23	34.5	45.0	10.5	.005	0.1	0.30			
82	23	45.0	55.0	10.0	.005	0.2	TR			
83	23	55.0	65.0	10.0	.005	0.2	0.30			
84	22	200.0	210.0	10			TR.			sludge
85	"	210.0	220.0	10			0.05			"
86	"	220.0	230.0	10			0.50			"
87	"	230.0	240.0	10			1.1			"
88	"	240.0	250.0	10			0.55			"
89	"	207.0	217.0	10 (5)	.005	0.1	0.20			
6590	"	245.0	255.0	10(3)	.005	0.3	0.05			
91	23	65.0	77.0	12.0	.005	0.3	0.50			
92	24	27.0	45.0	18(7)	.005	TR.	TR			
93	24	45.0	52.0	7	.005	TR	TR.			
94	23	14.0	20.0	6			0.45			sludge
95	"	20.0	30.0	10			0.25			"
96	"	30.0	40.0	10			0.25			"
97	"	40.0	50.0	10			0.20			"
98	"	50.0	60.0	10			0.15			"
99	"	60.0	70.0	10			0.20			"
6600	25	8	15.0	7.0(4)	.005	0.2	0.50			

SAMPLE NO.	HOLE NO.	FOOTAGE FROM	FOOTAGE TO	WIDTH FT.	AU GOLD oz/ton	AG. SILVER oz/ton	CU COPPER %	ZN ZINC %	NI NICKEL %		
6601	25	62.0	67.0	5.0	.005	0.2	TR				
2	25	67.0	71.0	4.0(3)	TR	0.1	1.1				
3	25	71.0	80.0	9.0(6)	.005	0.2	0.20				
4	25	80.0	84.0	4.0(3)	.005	0.2	0.40				
5	25	84.0	94.0	10.0	.01	0.5	1.9				
6	25	94.0	101.0	7.0	.01	0.3	1.6				
7	25	101.0	104.5	3.5	TR	0.1	0.50				
8	25	104.5	106.5	2.0	.01	0.4	1.6				
9	25	106.5	111.5	5.0	TR	TR	0.05				
6610	11	64.0	75.0	11.0	0.005	0.1	0.20				
11	11	75.0	85.0	10.0	0.005	0.1	0.80				
12	11	88.0	96.0	8.0	0.01	0.2	0.55				
13	16	208.0	222.0	14.0	TR	TR	0.15				
14	11	222.0	235.0	13.0	0.005	0.1	0.30				
15	11	235.0	251.0	16.0	0.01	0.1	0.65				
16	11	251.0	264.0	13.0	0.005	0.1	0.15				
17	11	264.0	273.0	9.0	TR	0.1	TR				
18	26	61.0	76.0	15.0	0.005	0.1	TR				
19	16	279.0	303.0	24.0	0.005	0.1	0.10				
6620	26	76.0	86.5	10.5	0.01	0.1	TR				
21	11	86.5	97.0	10.5	TR	0.1	TR				
22	11	97.0	107.0	10.0	0.01	0.1	TR				
23	11	107.0	118.0	11.0	0.005	0.1	TR				
24	11	118.0	127.0	9.0	0.005	0.1	TR				
25	Clay & Rock sample (dump)				0.02	0.3	0.05				
26	Copper Leaf (1% Cu in Qtz vein mat'l				0.02	0.2	1.0				
27	21	170.0	180.0	10.0	0.01	0.2	0.85				
28	11	180.0	190.0	10.0	0.005	0.1	0.20				
29	face - Shyglum				TR	TR	0.10				Ore
6630	27	127.0	134.0	7.0	0.01	0.3	0.55				
31	11	134.0	144.0	10.0	0.01	0.1	TR				
32	11	144.0	154.0	10.0	0.005	0.2	TR				
33	11	154.0	164.0	10.0	0.005	0.1	TR				
34	11	164.0	174.0	10.0	0.005	TR	TR				
35	11	174.0	181.0	7.0	0.01	0.35	TR				
36	11	181.0	184.0	3.0	0.01	0.4	0.65				
37	11	184.0	194.0	10.0	TR	TR	TR				
38	11	194.0	197.0	3.0	0.01	0.4	1.3				
39	11	197.0	200.0	3.0	0.005	0.2	0.35				
6640	11	200.0	208.0	8.0	TR	0.1	0.05				
41	11	208.0	216.5	8.5	0.005	0.2	TR				
42	11	216.5	221.5	5.0	0.005	0.2	0.55				
43	11	221.5	230.0	8.5	TR	0.1	TR				
44	28	171.0	177.0	6.0	0.005	TR	TR				
45	11	177.0	184.0	7.0	0.005	0.1	TR				
46	11	184.0	194.5	10.5	0.005	0.1	0.30				
47	11	194.5	202.0	7.5	0.005	0.1	TR				
48	11	202.0	207.0	5.0	0.005	0.1	TR				
49					TR	0.2	0.25				
6650					TR	0.4	10				

6601 - 6650

~~PRODUCTION~~

ASSAY RESULTS

SAMPLE NO.	HOLE NO.	FOOTAGE FROM	FOOTAGE TO	WIDTH FT.	AU GOLD oz/ton	AG SILVER oz/ton	CU COPPER %	ZN ZINC %	NI NICKEL %		
6651					TR.	0.1	0.30				
52					TR	0.2	0.30				
53					TR.	0.1	1.1				
54					0.01	0.2	0.05				
55					0.01	0.4	0.95				
56					0.01	TR	TR				
57					TR	0.2	0.05				
58					TR	0.2	0.45				
59							0.05				sludge
6660							0.70				"
61							0.25				"
62							0.30				"
63							0.95				"
64							0.30				"
65							TR.				"
66							0.20				"
67							0.50				"
68							0.25				"
69							TR.				"
6670							TR				"
71							TR				"
72							0.30				"
73	30	153.0	158.0	5.0	0.005	TR	TR.				
74	"	158.0	162.0	4.0	TR	0.1	.05				
75	"	162.0	174.0	12.0	0.01	0.2	0.90				
76	"	174.0	184.0	10.0	0.005	0.1	0.40				
77	"	184.0	194.0	10.0	0.005	0.1	0.15				
78	"	194.0	204.0	10.0	0.005	0.1	TR.				
79							TR.				
6680							TR				
81							TR				
82							TR				
83							TR				
84							TR				
85							TR.				
86							TR				
87							TR				
88							TR				
89							TR				
6690							TR				
91							TR				
92							TR.				
93							TR				
94							TR				
95							TR				
96							TR				
97							TR				
98							TR				
99							TR				
6700							TR				

6651-6700

Granisle Mines Ltd
Greenwood B.C.

SAMPLE NO.	HOLE NO.	FOOTAGE FROM	FOOTAGE TO	WIDTH FT.	AU GOLD oz/ton	AG SILVER oz/ton	CU COPPER %	ZN ZINC %	NI NICKEL %		
6701					0.005	0.1	TR				
2	534	11.0	18.0	7.0(4)	0.01	0.3	0.70				
3		18.0	28.0	10.0 (4)	0.005	0.2	0.30				
4		28.0	60.0	32.0(9)	0.005	0.2	0.45				
5		60.0	68.0	8.0(3)	0.01	0.2	0.45				
6		68.0	75.0	7.0(4)	0.005	0.1	0.20				
7		75.0	85.0	10.0	0.005	0.2	0.55				
8		85.0	90.5	5.5(3)	0.005	0.2	0.90				
9	532	25.0	35.0	10.0	TR	TR	TR				
6710	"	163.0	163.0	10.0	0.005	0.1	0.25				
11	"	163.0	172.0	9.0	0.01	0.7	TR				
12	"	206.0	210.0	4.0	0.005	0.2	0.20				
13	533	93.0	98.0	5.0(2)							
14		98.0	103.0	5.0(2)							
15		103.0	113.0	10.0(8)							
16		113.0	123.0	10.0 (6)							
17		123.0	133.0	10.0 (4)							
18		133.0	143.0	10.0(3)							
19		143.0	153.0	10.0(3)							
6720		153.0	163.0	10.0(3)							
21		163.0	173.0	10.0 (9)							
22		173.0	183.0	10.0(9)							
23		183.0	188.0	5.0(3)							
24	534	75.0	85.0	10	0.005	0.2	0.65				
25	534	85.0	90.5	5.5(5)	0.005	0.2	1.2				
26											
27											
28											
29											
30											
31											
32											
33											
34											
6735											
36											
37											
38											
39											
6740											
41											
42											
43											
44											
6745											
46											
47											
48											
49											
6750											

6701 - 6750

SAMPLE NO.	HOLE NO.	FOOTAGE FROM	FOOTAGE TO	WIDTH FT.	AU OZ/TON	AG OZ/TON	CU %	ZN %	PB %		
8901											
2											
3											
4											
5											
6											
7											
8											
9											
8910											
11											
12											
13											
14											
15											
16											
17											
18											
19											
8920											
21											
22											
23											
24											
25											
26								TR.			
27								TR.			
28								0.20			
29								TR			
8930								TR			
31								TR			
32								0.15			
33								0.40			
34								0.40			
35								0.80			
36								0.55			
37								0.85			
38								0.40			
39								0.65			
8940								0.30			
41								0.65			
42								0.45			
43								TR			
44								TR			
45								TR.			
46								0.15			
47								TR			
48								0.10			
49								0.05			
8950								0.20			

8901 – 8950

SAMPLE NO.	HOLE NO.	FOOTAGE FROM	FOOTAGE TO	WIDTH FT.	AU GOLD oz/ton	AG SILVER oz/ton	CU COPPER %	ZN ZINC %	NI NICKEL %	
8951							0.55			
52	Grayhound Adit			5.0			0.70			face sample
53	"	"		6.0			0.40			Rt. Wall
54	"	"		5.0			0.25			Back.
55	+Hand Spec.				TR	0.8	0.30	2.1		
56	532	35.0	40.0	5.0(3)	0.01	0.2	0.70			
57	"	40.0	51.0	11.0	0.01	0.4	1.3			
58	"	51.0	56.0	5.0	0.01	0.2	1.3			
59	"	56.0	66.0	10.0	0.01	0.3	0.55			
8960	"	66.0	76.0	10.0	0.005	0.2	0.40			
61	"	76.0	81.0	5.0(2)	0.005	0.1	0.20			
62	"	81.0	96.0	15.0(5)	0.01	0.3	1.6			
63	"	96.0	101.0	5.0(2)	0.005	0.1	0.65			
64	"	101.0	111.0	10.0(6)	0.005	0.1	0.65			
65	"	111.0	125.0	14.0	0.005	0.1	0.30			
66	"	125.0	130.0	5.0(4)	0.02	0.8	3.3			
67	"	130.0	140.0	10.0(8)	0.005	1.0	1.1			
68	"	140.0	160.0	10.0(8)	0.01	0.6	1.5			
69	"	150.0	153.0	3.0(2)	0.01	0.6	1.7			
8970	532	172.0	177.0	5.0	TR	0.3	0.65			
71	"	177.0	187.0	10.0	0.02	0.4	1.9			
72	"	187.0	197.0	10.0	0.05	0.2	2.7			
73	"	197.0	206.0	9.0	0.02	0.6	2.4			
74					0.005	0.2	0.30			
75					0.005	0.1	0.50			
76										
77										
78										
79										
8980										
81										
82										
83										
84										
85										
86										
87										
88										
89										
8990										
91										
92										
93										
94										
95										
96										
97										
98										
99										
9000										

8951-9000

JALHINET MINES LTD
GREENWOOD B.C.

SAMPLE NO.	HOLE NO.	FOOTAGE FROM	FOOTAGE TO	WIDTH FT.	AU GOLD oz/ton	AG SILVER oz/ton	CU COPPER %	ZN ZINC %	NI NICKEL %		
11001											
2											
3											
4											
5											
6											
7											
8											
9											
11010											
11											
12											
13											
14											
15											
16											
17											
18											
19											
11020											
21											
22											
23											
24											
25											
26	533	90.0	100.0	10.0							SAME
27		100.0	110.0	10.0							"
28		110.0	120.0	10.0							"
29		120.0	130.0	10.0							"
11030		130.0	140.0	10.0							"
31		140.0	150.0	10.0							"
32		150.0	160.0	10.0							"
33		160.0	170.0	10.0							"
34		170.0	180.0	10.0							"
35		180.0	190.0	10.0							SAME
36	535	78.0	83.0	5.0							
37		83.0	93.0	10.0							
38		93.0	107.0	14.0							
39		107.0	112.0	5.0							
11040											
41											
42	536	42.0	52.0	10.0	.005	02	0.55				
43		52.0	62.0	10.0	.005	TR.	025				
44		62.0	72.0	10.0	.005	0.1	0.65				
45		72.0	82.0	10.0	.005	TR.	0.45				
46		82.0	92.0	10.0	.01	0.2	0.80				
47		92.0	102.0	10.0	.005	TR.	0.45				
48		102.0	112.0	10.0	.01	0.1	0.60				
49		112.0	122.0	10.0	.01	0.2	0.85				
11050		122.0	125.0	6.0	.01	0.1	0.65				
51		128.0	138.0	10.0	.01	0.2	1.0				
52		138.0	148.0	10.0	.01	0.6	1.3				

11001 To 11050

SALAMET

SAMPLE NO.	HOLE NO.	FOOTAGE FROM	FOOTAGE TO	WIDTH FT.	AU GOLD oz/ton	AG SILVER oz/ton	CU COPPER %	ZN ZINC %	NI NICKEL %		
11053	S36	148.0	158.0	10.0	.01	0.9	1.3				
11054	S36	158.0	173.0	15.0	.005	0.3	1.4				
11055	S36				.005	TR.	0.20				
11056	S36				.005	0.3	TR.	1.6.			
11057	S37	28.0	41.0	13.0	.01	0.1	0.25				
11058	S37	41.0	51.0	10.0	.31	0.6	0.85				
11059	S37	51.0	55.0	4.0	.01	1.0	0.40				
11060	S37	55.0	67.0	12.0	TR.	0.1	0.85				
11061	S37	67.0	77.0	10.0	.005	0.2	TR.				
11062	S37	77.0	87.0	10.0	.005	TR.	TR.				
11063	S38	51.0	59.0	8.0	0.01	0.1	0.70				
11064	S38	59.0	62.0	3.0	0.01	0.7	4.0				
11065	S38	62.0	72.0	10.0	0.01	TR.	0.20				
~~11073~~	~~S38~~	~~72.0~~	~~82.0~~	~~10.0~~							
11066	S38	82.0	92.0	10.0	0.01	TR.	1.2				
11067	S38	92.0	102.0	10.0	TR.	0.1	0.85				
11068	S38	102.0	112.0	10.0	0.01	0.2	1.0				
11069	S38	112.0	122.0	10.0	0.01	0.2	1.3				
11070	S38	122.0	132.0	10.0	0.01	0.2	1.2				
11071	S38	132.0	142.0	10.0	0.01	0.3	1.2				
11072	S38	142.0	147.0	5.0	0.01	TR.	TR.				
11073	S38	72.0	82.0	10.0	0.01	0.1	0.20				
11074	S40	40.0	50.0	10.0	0.01	0.4	1.2				
11075	S40	50.0	60.0	10.0	0.01	0.2	0.75				
11076	S40	60.0	70.0	10.0	0.01	0.4	0.80				
11077	S40	70.0	80.0	10.0	0.005	0.2	0.65				
11078	S40	80.0	90.0	10.0	0.005	0.2	TR.				
11079	S40	90.0	100.0	10.0	0.01	0.1	TR				
11080	S40	100.0	106.0	6.0	0.02	0.3	1.6				
11081	S40	106.0	111.0	5.0	0.01	0.2	0.45				
11082	S?				0.01	0.2	0.20	2.1			
11083	S?				0.005	0.1	0.10	1.9			
11084	S41	112.0	122.0	10.0	0.005	0.1	TR				
11085	S41	122.0	125.0	3.0	0.02	0.5	0.55				
11086	S41	125.0	135.0	10.0	0.02	0.3	0.30				
11087	S41	135.0	144.0	9.0	0.01	0.2	0.10				
11088	S41	144.0	147.5	3.5	0.02	0.4	0.75				
11089	S42	34.0	44.0	10.0	0.01	0.1	0.10				
11090	S42	44.0	54.0	10.0	0.01	0.3	1.0				
11091	S42	54.0	75.0	21.0	0.01	0.1	0.25				
11092	S42	75.0	85.0	10.0	0.01	0.2	0.50				
11093	S42	85.0	95.0	10.0	0.01	0.1	0.40				
11094	S42	95.0	105.0	10.0	0.01	0.1	0.25				
11095	S42	105.0	115.0	10.0	0.02	0.5	2.5				
11096	S42	115.0	125.0	10.0	0.01	0.1	0.40				
11097	S42	125.0	138.0	13.0	0.01	0.1	0.20				
11098	S42	138.0	148.0	10.0	0.02	0.3	1.4				
11099	S42	148.0	153.0	5.0	0.005	0.1	0.25				
11100	S38	46.0	51.0	5.0	0.01	0.1	0.25				
11101	S42	153.0	160.0	7.0	0.01	0.1	0.90				
11102	S42	35.0	40.0	5.0			0.10				SLUDGE
11103	S42	40.0	50.0	10.0			0.20				"

SALAMET MINES LIMITED

Assay Results

SAMPLE NO.	HOLE NO.	FOOTAGE FROM	FOOTAGE TO	WIDTH FT.	AU GOLD oz/ton	AG SILVER oz/ton	CU COPPER %	ZN ZINC %	NI NICKEL %		
11104	S42	50.0	60.0	10.0			0.20				
5	S42	60.0	70.0	10.0			0.20				
6	S42	70.0	80.0	10.0			0.10				
7	S42	80.0	90.0	10.0			0.25				
8	S42	90.0	100.0	10.0			0.15				
9	S42	100.0	110.0	10.0			0.70				
11110	S42	110.0	120.0	10.0			0.50				
11	S42	120.0	130.0	10.0			0.10				
12	S42	130.0	140.0	10.0			0.25				
13	S42	140.0	150.0	10.0			0.30				
14	S42	150.0	160.0	10.0			0.35				
11115	S43	15.0	26.0	11.0	0.01	0.2	1.5				
16	S43	26.0	36.0	10.0	0.01	0.2	0.50				
17	S43	36.0	46.0	10.0	0.01	0.1	0.50				
18	S43	46.0	56.0	10.0	0.01	0.1	0.45				
19	S43	56.0	66.0	10.0	0.005	0.1	0.20				
20	S43	66.0	76.0	10.0	0.005	0.1	0.20				
21	S43	76.0	86.0	10.0	0.01	0.1	0.05				
22	S43	86.0	98.0	12.0	0.01	0.2	0.30				
23	S43	98.0	102.0	4.0	0.01	0.1	0.50				
24	S43	102.0	107.0	5.0	0.005	0.1	0.10				
25	S44	53.0	63.0	10.0	0.02	0.2	0.35				
26	S44	63.0	73.0	10.0	0.02	0.2	0.85				
27	S44	73.0	83.0	10.0	0.01	0.2	0.70				
28	S44	83.0	93.0	10.0	0.02	0.2	0.70				
29	S44	93.0	103.0	10.0	0.02	0.2	0.10				
30	S44	103.0	115.0	12.0	0.005	TR	TR.				
111 31	S46	10.0	20.0	10.0	TR	TR.	0.25				
32	S46	20.0	30.0	10.0	TR.	TR	0.30				
33	S46	30.0	40.0	10.0	TR.	TR.	TR.				
34	S46	40.0	50.0	10.0	TR.	TR.	TR.				
35	S45	15.0	25.0	10.0	TR.	TR.	TR.				
36	S45	25.0	35.0	10.0	0.01	TR.	TR.				
37	S45	35.0	45.0	10.0	TR	TR	TR.				
38	S45	45.0	55.0	10.0	TR.	TR.	TR,				
39	S45	55.0	65.0	10.0	TR	TR	TR				
40	S45	65.0	75.0	10.0	0.02	TR.	TR				
41	S45	75.0	85.0	10.0	TR	TR.	TR.				
42	S45	85.0	95.0	10.0	TR.	TR	TR				
43	S45	95.0	105.0	10.0	TR.	TR.	TR.				
44	S45	105.0	115.0	10.0	TR.	TR.	TR.				
45	S45	115.0	125.0	10.0	TR.	TR.	TR.				
46	S45	125.0	135.0	10.0	TR.	TR.	0.05				
47	S45	135.0	145.0	10.0	TR.	TR.	0.55				
48	S45	145.0	155.0	10.0	TR.	TR.	0.80				
49	S45	155.0	165.0	10.0	TR	TR.	1.20				
50	S45	165.0	172.0	10.0	TR	TR.	0.50				
51											
52					0.06	0.1	0.15				
53					0.01	0.2	0.15				
54											
55					0.02	TR.	0.30				

SAMPLE NO.	HOLE NO.	FOOTAGE FROM	FOOTAGE TO	WIDTH FT.	AU GOLD oz/ton	AG SILVER oz/ton	CU COPPER %	ZN ZINC %	NI NICKEL %		
11156					0.02	0.1	0.50				
57					0.01	TR.	0.15				
58					0.02	0.3	0.40				
59					TR	TR.	0.50				
60					0.02	0.1	0.20				
61					0.08	0.8	1.4				
62					0.04	0.3	0.55				
63					0.02	TR.	0.20				
64					0.02	TR.	0.30				
65					TR.	TR.	0.20				
66					0.02	0.1	0.55				
67					0.02	0.2	0.30				
68					0.01	TR.	0.30				
69	45	15.0	30.0	15			0.05				
70		30.0	40.0	10			TR.				
71		40.0	50.0	10			TR				
72		50.0	60.0	10			TR.				
73		60.0	70.0	10			TR.				
74		70.0	80.0	10			TR.				
75		80.0	90.0	10			TR				

SAMPLE NO.	HOLE NO.	FOOTAGE FROM	FOOTAGE TO	WIDTH FT.	AU GOLD oz/ton	AG SILVER oz/ton	CU COPPER %	ZN ZINC %	NI NICKEL %		
12.121	45	90.0	100.0	10.0			TR.				
12102		100.0	110.0	10.0			TR.				
12103	47	86.0	89.0	3.0	0.01	0.2	0.10				
12104		114.0	120.0	6.0	0.01	0.1	0.05				
12105	49	61.0	70.0	9.0	0.005	0.1	0.05				
12106		70.0	80.0	10.0	0.005	0.1	0.10				
12107		80.0	85.0	5.0	0.005	0.1	TR.				
12108	48	68.0	80.0	12.0	TR.	TR.	TR.				
12109		80.0	90.0	10.0	TR.	TR.	TR.				
12110		90.0	100.0	10.0	0.005	0.1	TR.				
12111		100.0	110.0	10.0	TR.	0.1	TR.				
12112		110.0	120.0	10.0	TR.	0.1	TR.				
12113		120.0	130.0	10.0	0.005	TR.	0.20				
12114		130.0	140.0	10.0	0.01	0.1	0.70				
12115		140.0	150.0	10.0	0.01	0.1	0.65				
12116		150.0	160.0	10.0	0.01	0.2	0.90				
12117		160.0	170.0	10.0	0.01	0.3	1.0				
12118		170.0	180.0	10.0	0.01	0.2	1.1				
12119		180.0	190.0	10.0	0.01	0.3	1.4				
12120		190.0	200.0	10.0	0.01	0.2	0.75				
12121		200.0	210.0	10.0	0.005	0.1	0.70				
12122		210.0	220.0	10.0	0.005	0.2	0.65				
12123		220.0	225.0	5.0	0.005	0.2	0.70				
12124		70.0	80.0	10.0			TR.				SLUDGE
12125		80.0	90.0	10.0			TR.				"
12126		90.0	100.0	10.0			TR.				"
12127		100.0	110.0	10.0			TR.				"
12128		140.0	150.0	10.0			0.20				"
12129	49	60.0	70.0	10.0			0.15				
12130	51	31.0	43.5	12.5	0.01	0.3	0.30				
12131		43.5	48.5	5.0	0.005	0.1	0.10				
12132	50	30.0	40.0	10.0	0.005	TR.	TR.				
12133		40.0	50.0	10.0	TR.	TR.	TR.				
12134		50.0	60.0	10.0	0.01	0.4	1.0				
12135		60.0	70.0	10.0	0.01	0.3	0.65				
12136		70.0	80.0	10.0	0.005	TR.	0.05				
12137		80.0	90.0	10.0	0.005	TR.	0.10				
12138		90.0	100.0	10.0	0.01	0.1	0.45				
12139		100.0	110.0	10.0	TR.	TR.	0.10				
12140		110.0	120.0	10.0	0.005	0.1	0.25				
12141		120.0	130.0	10.0	0.005	0.1	0.50				
12142		130.0	140.0	10.0	0.005	TR.	0.30				
12143		140.0	150.0	10.0	0.01	TR.	0.65				
12144		150.0	160.0	10.0	0.01	0.1	0.25				
12145		160.0	170.0	10.0	0.005	0.1	0.05				
12146		170.0	180.0	10.0	0.01	0.2	TR.				
12147		180.0	190.0	10.0	0.005	0.1	TR.				
12148		190.0	200.0	10.0	0.005	TR.	TR.				
12149		200.0	210.0	10.0	0.005	0.1	TR.				
12150	550	110.0	120.0	10.0			0.40				
12151	550	180.0	190.0	10.0			TR.				
12152	550	190.0	200.0	10.0			TR.				

SAMPLE NO.	HOLE NO.	FOOTAGE FROM	FOOTAGE TO	WIDTH FT.	AU GOLD oz/ton	AG SILVER oz/ton	CU COPPER %	ZN ZINC %	NI NICKEL %	PB LEAD	
12153	S50	110.0	120.0	10.0			TR.				
12154	S52	28.0	56.0	28.0	0.005	0.2	TR.				
12155	S52	100.0	102.0	2.0	0.12	2.8	0.30				
12156	S52	28.0	40.0	12.0			TR.				
12157	S52	40.0	50.0	10.0			TR.				
12158	S52	50.0	60.0	10.0			TR.				
12159	S15	11.0	20.0	9.0	TR.	TR.	TR.				
12160	S15	20.0	30.0	10.0	0.005	TR.	0.10				
12161	S15	30.0	40.0	10.0	0.005	TR.	TR.				
12162	S15	40.0	50.0	10.0	0.005	TR.	0.10				
12163	S15	80.0	90.0	10.0	0.005	TR.	TR.				
12164	S15	90.0	100.0	10.0	0.005	TR.	0.10				
12165	S15	100.0	110.0	10.0	0.005	TR.	0.05				
12166	S15	110.0	120.0	10.0	0.005	TR.	TR.				
12167	S18	20.0	30.0	10.0	TR.	TR.	TR.				
12168	S15	40.0	50.0	10.0	0.005	TR.	0.15				
12169	S18	50.0	60.0	10.0	TR.	TR.	0.20				
12170	S18	60.0	70.0	10.0	TR.	TR.	0.10				
12171	S18	80.0	90.0	10.0	TR.	TR.	TR.				
12172	S18	115.0	125.0	10.0	TR.	TR.	TR.				
12173	S18	125.0	135.0	10.0	TR.	TR.	TR.				
12174	S18	135.0	145.0	10.0	TR.	TR.	TR.				
12175	S18	150.0	160.0	10.0	TR.	TR.	TR				
12176	S18	183.0	187.0	4.0	TR.	TR.	TR.				
12177	S18	220.0	230.0	10.0	TR.	TR.	TR.				
12178	S18	232.0	236.0	4.0	TR.	TR.	TR.				
12179	S18	243.0	245.0	2.0	TR.	TR.	TR.				
12180	S19	50.0	60.0	10.0	TR.	TR.	TR.				
12181	S19	70.0	80.0	10.0	TR.	TR.	TR.				
12182	S19	80.0	85.0	5.0	TR.	TR.	TR.				
12183	S19	97.0	107.0	10.0	TR.	TR.	0.05				
12184	S19	114.0	116.0	2.0	TR.	TR.	TR.				
12185	S19	147.0	150.0	3.0	TR.	TR.	TR.				
12186	S19	153.0	160.0	7.0	TR.	TR.	TR.				
12187	S19	176.0	178.0	2.0	TR	TR	TR				
12188	S20	105.0	110.0	5.0	0.005	TR	TR.				
12189	S20	170.0	180.0	10.0	0.005	TR.	TR.				
12190	S20	184.0	187.0	3.0	0.005	TR.	0.10				
12191	S20 Garrison	39.0	40.5	1.5	0.005	TR.	TR.				
12192	S53	60.0	70.0	10.0	0.005	TR.	0.55				
12193	S53	70.0	75.0	5.0	0.01	TR.	0.40				
12194	S53	135.0	145.0	10.0	0.01	TR.	0.45				
12195	S53	145.0	156.0	11.0	0.01	0.1	0.50				
12196	S56	91.0	96.0	5.0	0.02	0.4	1.1				
12197	S59	17.0	27.0	10.0	0.02	0.2	0.45				
12198	S59	27.0	37.0	10.0	0.01	0.2	0.65				
12199	[illegible]				0.005	1.9	0.05		0.02		
12200	[illegible]				0.005	2.2				2.0	2.9 (Au-Zn)
12201	S[illegible]	153.0	163.0	10.0	0.01	1.2	0.15				
12202	S[illegible]	163.0	171.0	5.0	0.01	1.1	0.75				
12203	S65	147.0	152.0	5.0	0.005	TR.	TR.				
12204	S65	152.0	162.0	10.0	0.005	0.1	0.40				

SAMPLE NO.	HOLE NO.	FOOTAGE FROM	FOOTAGE TO	WIDTH FT.	AU GOLD oz/ton	AG SILVER oz/ton	CU COPPER %	ZN ZINC %	NI NICKEL %		
12205	S.65	162.0	172.0	10.0	0.01	0.2	1.1				
12206	S.65	172.0	182.0	10.0	0.01	0.1	0.40				
12207	S.65	182.0	192.0	10.0	0.005	0.1	0.20				
12208	S.65	192.0	202.0	10.0	0.005	0.1	0.70				
12209	S.65	202.0	207.0	5.0	0.005	TR.	0.10				
12210											
12211											
12212											
12213		JOHN	CHERNOFF								
12214											
12215											
12216	—	MORRISON									
12217											
12218											
12219											
12220											
12221		P. ZOTKI,	BEAVERDELL								
12222											
12223	S.74	122.0	132.0	10.0	TRACE	0.1	0.20				
12224		132.0	142.0	10.0	TRACE	0.1	0.15				
12225		142.0	156.0	14.0	TRACE	0.1	0.10				
12226		156.0	158.0	2.0	0.005	0.3	0.90				
12227		158.0	170.0	12.0	TRACE	0.1	0.10				
12228		170.0	180.0	10.0	TRACE	0.1	0.05				
12229		180.0	190.0	10.0	TRACE	0.1	0.35				
12230		190.0	200.0	10.0	TRACE	0.1	0.20				
12231		200.0	209.0	9.0	TRACE	0.1	TRACE				
12232											
33	—	MORRISON									
34											
35											
12236	S.77	100.0	105.0	5.0	TRACE	0.1	TRACE				
12237		126.0	137.0	11.0	TRACE	0.1	TRACE				
12238		232.0	237.0	5.0	0.01	1.3	0.20				
12239		237.0	242.0	5.0	0.005	TRACE	1.1				
12240		242.0	247.0	5.0	0.005	0.1	0.05				
12241		257.0	263.0	6.0	0.005	0.1	0.25				
12242											
12243	S.78	358.5	360.0	1.5	0.03	0.2	0.65				
12244											
12245	S.80	213.0	216.5	3.5	0.02	0.2	0.55				
12246	"	170.0	175.0	5.0	0.04	0.4	0.70				
12247	"	166.0	170.0	4.0	0.12	0.4	1.45				
12248	"	163.0	166.0	3.0	0.01	0.3	0.20				
12249	"	175.0	180.0	5.0	0.01	0.2	0.10				
12250	"	210.0	213.0	3.0	0.01	TR.	0.15				
12251	"	216.5	220.0	3.5	0.01	0.1	0.10				
12256											

SAMPLE NO.	HOLE NO.	FOOTAGE FROM	FOOTAGE TO	WIDTH FT.	AU GOLD oz/ton	AG SILVER oz/ton	CU COPPER %	ZN ZINC %	NI NICKEL %	PB LEAD	MN MANGANESE
12257											
12270											
71											
72											
73											
74											
12275											
76					0.005	0.5		24		2.8	
77					0.005	0.1		0.3		TR.	
78					0.005	TR.		0.2		TR.	
79					0.005	0.3		0.3		1.6	
12280					TRACE	TRACE		0.4		TRACE	
81					TRACE	TRACE		0.2		1.2	
82					0.005	1.4		0.3		9.7	
83					0.005	4.5		21.1		0.9	
84					0.005	0.4		0.1		2.9	
85					0.01	1.0		0.7		6.9	
86					0.005	0.7		7.1		0.1	
87					0.005	0.2		0.7		0.2	
88.					TRACE	TRACE		0.4		TRACE	
89.					TRACE	TRACE		0.3		TRACE	
12290					TRACE	TRACE		0.2		0.2	
12291					0.005	2.0		18.9		29.0	
12292					0.005	4.5		21.1		0.9	
12293					0.02	9.0		0.1		TR.	5.6
12294					0.02	32.9		8.6		5.6	
12295					0.01	0.4		TR.		TR.	
12296					TR.	0.4		TR.		TR.	
12297					0.10	50.1		0.3		TR.	
12298.					TR.	1.0		TR.		TR.	
12299.					0.01	3.2		3.3		TR.	

C. GOTCHA GROUP

In addition to copper, some of the better Gotcha drill hole samples were assayed for gold, silver and molybdenum sulphide. The values of all four metals turned out to be consistently low, however, and there did not appear to be any meaningful variation, one with the other. The average of the assays calculates out to be 0.12% copper, .005 oz/ton of gold, .013 oz/ton of silver and 0.006% MoS_2.

Tabulation:

Hole No.	Footage	Assay Values			
		Copper %	Gold Oz/ton	Silver Oz/ton	MoS_2 %
PH-13	0-60	0.17	.010	Tr	.002
"	60-120	0.14	.006	.004	.003
"	120-180	0.14	.008	Tr	.004
"	180-230	0.15	.005	.010	.004
PH-14	20-70	0.13	.004	Tr	.004
"	70-120	0.09	.008	Tr	.002
"	120-150	0.11	.006	Tr	.002
PH-15	0-50	0.24	.006	Tr	.002
"	50-110	0.29	.008	.02	.007
PH-16	5-50	0.14	.008	Tr	.004
"	50-110	0.18	.004	Tr	.005
G-7	20-60	0.06	Tr	Tr	.003
G-8	30-60	0.17	.004	Tr	.003
G-9	10-50	0.04	.005	Tr	.040
"	80-90	0.12	.005	Tr	.007
G-10	40-90	0.22	.008	Tr	.010
"	110-170	0.17	.006	Tr	.007
G-14	10-50	0.09	Tr	.06	.001
"	50-100	0.09	.010	.03	.001
"	100-150	0.08	.005	.10	.009

D. SAN JACINTO GROUP

Mascot did not have any assays for gold and silver carried out on the drill hole samples for this area. However, Mapletree Exploration Corporation in their report of June, 1973, reported several gold assays of 0.005 oz. per ton and these gold values were associated with copper assays of 0.10% to 0.20%. The precious metal content here, therefore, is very similar to that on the adjoining Gotcha Group.

SECTION 2 - PRECIOUS METAL RECOVERIES

There is not a great deal of information available as to the percentage recovery which might be expected for gold and silver. In the early days the ore was all direct smelted and the recovered precious metal content when plotted against the recovered copper falls very close to a plot of the precious metal content of the ore in place.

In the production of a copper concentrate, however, a sizeable proportion of the gold and silver appears to report to the tails. It is understood that the recovery at Phoenix is in the order of 55% for gold and 65% for silver, while some rather sketchy data from the Greyhound Mines operation on the Greyhound ore shows a recovery of only some 36% for gold and 46% for silver.

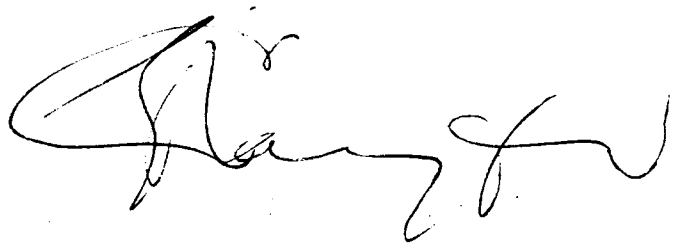
There does not appear to be much data available in respect to the mineralogy of the gold and silver occurrences and this gap in knowledge should be filled in if maximum recovery can be looked for. This is all the more important inasmuch as the gold/copper ratios near the footwall of the Motherlode basin orebodies are frequently quite high, and, should some of the gold here be of detrital origin, the extent to which it can be successfully recovered would have a bearing on the establishment of footwall assay cutoffs.

The 1971 Greyhound recovery calculations were made as follows:

	General Testing Assay Values for		
	Copper %	Gold Oz/ton	Silver Oz/ton
Rod Mill discharge Jan. 4, 1971	0.49	.007	.12
" " " Jan. 9, 1971	0.52	.007	.12
Average discharge	0.51	.007	.12
Final tails Jan. 4, 1971	0.09	.005	.07
" " Jan. 9, 1971	0.12	.004	.06
Average tails	0.11	.0045	.065
Percentage Recovery	80%	36%	46%

(d) Further drilling should be done in the region of the very high pryite concentrations in the Greyhound basin in order to determine the structure of the basin and to search for high copper and gold concentrations.

(e) The Marguerite limestone basin should be checked for precious metals.



REPORT OF WORK ON THE

MOTHERLODE-GREYHOUND PROPERTY

GREENWOOD, B.C.

1973/1974

for

MASCOT MINES & PETROLEUMS LIMITED
Suite 900 - 837 West Hastings Street
Vancouver, B.C.
V6C 1C2

by

H.H. Shear, P.Eng.
Geologist

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INTRODUCTION

Mascot Mines & Petroleums Limited ('Mascot') acquired the Motherlode-Greyhound property, along with related mill and equipment, in early August, 1973. An exploration program was initiated immediately thereafter to test areas both on the property and adjoining it which, on the basis of geological and geophysical data, was considered to be favourable for the deposition of copper mineralization, and, further, to test the potential of the Motherlode and Greyhound pits where the previously developed copper-gold mineralization had been re-estimated by the Company at some 400,000 tons.

The exploration program lasted from August, 1973, to August, 1974, with a shutdown for the winter from January through April. Several drill programs were completed. Several areas were covered with magnetometer and geochemical surveys. Much time was devoted to analyzing old data and preparing new maps and cross sections.

The purpose of this report is to summarize information gathered to date, to present conclusions with regard to the potential of the various areas of interest and to offer recommendations for further exploration. It is presented as an "in office" report with the assumption made that the large number of supporting maps and cross sections are available to the reader in office files.

DESCRIPTION OF MAPS AND CROSS SECTIONS

The maps and cross sections which pertain to the information in this report are listed below by zone in order to avoid numerous references throughout the text.

General Geology and Claims 1" = 400' (included at back)

Motherlode Plans (includes Shaft and Sulphide zones)
- Geologic Map 1"=50'
- Magnetometer Survey (2 sheets) 1"=50'

Motherlode Pit Cross Sections (includes Crown Silver zone)
- MM3 and MM4 1"=50'
- MM5, MM6 and MM7 1"=50'

Shaft Zone Cross Sections
S1-3 1"=50'
S5, X1-2 1"=50'
U 14-16 1"=50'

Crown Silver Plan

Sulphide Stope Plan (includes Shaft Zone) 1"=50'
Sulphide Stope Cross Sections
U1-4 1"=50'
U5-8 1"=50'
U9-10 1"=50'
V1-4 1"=50'

Sunset Plans
Geologic Map 1"=50'
Magnetometer Survey 1"=50'
Sunset Cross Sections T4-11 1"=50'

Peacock Mineral Claim Magnetometer and Soil Sample Surveys 1" = 100'

Greyhound Pit Plan 1" = 50'
Greyhound Pit Cross Sections
11830E 1"=50'
11870E, 11958E, 112018E, 112068E 1"=50'
12118E, 12168E, 12218E, 12268E, 1"=50'
12318E, 12365E, 1"=50'

LOCATION AND ACCESS

The property is located one to two miles northwest of Greenwood, British Columbia, and centered at longitude 118°43', latitude 49°06'. Greenwood is 300 road miles east of Vancouver and six miles north of the International Border. The property is located in what is known as the Boundary District and lies in Deadwood Camp.

Elevations range from 2800 ft. at Deadwood Flat on the south end of the property to 3800 ft. on the north. Topography is moderate with few steep slopes. A major portion of the property lies on southern facing slopes. The few streams on the property are small and intermittent.

Access to the property is by good graveled road from Greenwood. The Canadian Pacific Railway's Kettle Valley Line and B.C. Highway #3 pass through Greenwood.

CLAIMS

The claims, referred to as the Motherlode-Greyhound Property in this report, lie within the Greenwood Mining Division and are located on map sheet 82E/2E. There are a total of 46 claims which include Crown Grants, Mineral Leases, and mineral claims as follows:

Crown Grants:

Motherlode	L. 704	
Crown Silver	L. 789	
Florence Fr.	L. 1470	
Don Julie Fr.	L. 1283	
Offspring	L. 1254	
St. Lawrence	L. 1255	
Greyhound	L. 1014	(held under option)
Ten Brock	L. 1221	
Primrose	L. 927	
Sunset	L. 788	
Sunflower	L. 916	
C.O.D.	L. 928	
Great Hopes	L. 602	

Mineral Leases:

St. Eugene Fr.	L. 2321	M-294
Gold Bug	L. 895	"
Peacock	L. 1243	M-122
Plutonia	L. 884	M-306
S.F. Fraction	L. 832	M-315
Hill Fraction	L. 2945	"

Mineral Claims:

Ragma Rock Fr.	22451
Butte City	36746
Toronto	36747
Birthday Fr.	14997
Hardscrabble Fr.	19473
Hound #1 Fr.	22643
N.M. #1	21994
N.M. #6 Fr.	21998
M.T. #1 Fr.	26832
M.T. #2	26833
M.T. #3	26834
M.T. #4 Fr.	27036
M.T. #5 Fr.	27154
M.T. #6 Fr.	27155
M.T. #11 Fr.	27220
M.T. #12 Fr.	27221
M.T. #13	27222
M.T. #14 Fr.	27279
M.T. #15 Fr.	27280
M.T. #16 Fr.	27281
M.T. #17	27623
Fox #1	28908
Fox #2	28909
Fox #3	28910
Fox #4	28911
Fox #5	28912
Fox #6	28913

In addition, the report covers work completed on some of the Crown Grants and Mineral Leases immediately surrounding the Greyhound which were under option to Mascot while the program was in progress.

Ah There	L. 1960
Pluto	L. 2393
Syd M. Johnson	L. 1961
E.C.B.	L. 827
Hound #1	22640
Hound #2	22641

HISTORY

The complete property and district history is not included in this report as it has been thoroughly covered by others. A substantial amount of data has been collected from past operations which has been used in assessing the property. These sources will be briefly reviewed in this section.

Several of the claims within the Motherlode-Greyhound claim block have produced in the past. The principal production was from the Motherlode, which, from 1900 to 1918 yielded in excess of 3.6 million tons of copper ore with significant amounts of gold and silver. The Primrose (Sulphide Zone) and Sunset also produced ore during that era. Production figures are not complete but they produced in excess of 100,000 and 135,000 tons respectively.

Renewed production occured by open pit mining from the Motherlode for six months in 1957 and again from 1960 to 1962. During the last period, some ore was also mined from the Sunset. About 600,000 tons were milled during these operations and the operators were Woodgreen Copper Mines Ltd. and later, Consolidated Woodgreen Mines Ltd.

In 1970, the Greyhound deposit was brought into production for about five months by Greyhound Mines using open pit mining.

The first serious effort to revive interest on the property after 1918 was made by the Motherlode Sunset Mining Co. when it commissioned Francis H. Frederick to make a thorough examination of the Motherlode, Crown Silver, Sulphide and Sunset deposits in 1951. Much of the data on hand on the 1901 to 1918 operations comes from Frederick's report. Assay results from diamond drilling prior to 1918 on the Sulphide and Greyhound zones are included in reports obtained from Granby and Cominco respectively.

Since 1951, a number of companies have carried out exploration programs on the Motherlode-Greyhound property. This work consisted of geologic mapping, geophysical surveys and diamond and percussion drilling. A large amount of data is available from this work.

Extensive diamond drilling was performed in the Motherlode to Sunset area by Surety Oils and Minerals Limited, and by Consolidated Woodgreen from 1955 to 1956, and 1960 to 1962 respectively. On the Greyhound deposit a large amount of diamond drilling was completed from 1952 to 1956 by Attwood Copper and Salamet Mines. Salamet also completed a resistivity survey over the southeastern part of the property.

In 1966 to 1967, magnetometer and I.P. surveys were completed over the southern part of the property on behalf of San Jacinto Explorations.

By 1969, the present Motherlode-Greyhound property was consolidated into one holding and Pechiney Development Limited (N.P.L.) completed a geologic map of the area on a scale of approximately 1"=500'. Pechiney also completed some magnetometer surveying.

In 1970, Seigel Associates Limited completed I.P. and magnetometer surveys on behalf of Greyhound Mines Ltd., which covered all but the northeastern end of the property. In addition, some of the Lost Group to the northwest was covered. Greyhound Mines completed some percussion drilling on the Greyhound and Sunset deposits and around the north and east edge of the Motherlode pit.

Montgomery Mines performed a magnetometer survey in 1972 over the Lost Group which surrounds the property to the north and west.

MASCOT EXPLORATION PROGRAM

1973:

From August to Decemember 21, 1973, Mascot completed an exploration program aimed primarily at what was considered the highest priority targets. Some work of a general nature was performed in analysing geophysical and geologic data, doing reconnaissance, and completing some percussion drilling. The diamond drilling was performed on the known mineral zones. A reverse circulation drilling program was carried out in the Motherlode pit.

Approximately 12.5 line miles of the Seigel grid were cleared and remarked. Several transit surveys were completed for control in the Motherlode to Sunset area. The tailings line was surveyed which also gave a tie to the Greyhound. About 4.7 line miles of surveying were completed. Stadia surveys were done on the Greyhound, Sunset and Motherlode pits in order to prepare accurate base maps. Detailed magnetometer surveying and geologic mapping was completed in the area embracing the Motherlode and Sunset pits. New maps with cross sections were drafted for the Motherlode, Sunset and Greyhound areas on a scale of 1"=50'.

The Sulphide stope was made accessible via the air shaft and the stope was surveyed by transit.

A tabulation of the drilling completed in 1973 follows.

Diamond Drilling

Area	No. of Holes	Footage
Motherlode	8	2697 ft.
Sulphide	4	793 ft.
Sunset	6	1000 ft.
Greyhound	8	2459 ft.
	26	6949 ft.

Percussion Drilling

Area	No. of Holes	Footage
Marguerite	6	1240 ft.
C.O.D.	2	555 ft.
Greyhound	2	370 ft.
Crown Silver	1	300 ft.
Standard	1	300 ft.
Gotcha	4	600 ft.
	16	3365 ft.

Reverse Circulation Drilling in Motherlode Pit

Type	No. of Holes	Footage
Rotary	7	734 ft.
Percussion	2	252 ft.
	9	986 ft.

Reverse Circulation on Southwest Corner of Greyhound

Type	No. of Holes	Footage
Percussion	1	49 ft.

Total holes drilled: 52
Total footage drilled: 11,349

1974:

During the winter and early spring, maps and cross sections were revised and updated. Detailed ore calculations with accompanying plans and cross sections were completed on the Greyhound deposit for both a conventional and a selective mining plan. Calculations were made of the mineral reserves on the Sunset, Sulphide, Shaft and Motherlode zones.

The field work began May 1st, 1974 and ran to July 14th, 1974. A large portion of the work completed during this period was done on optioned properties adjacent or near to Mascot's holdings. Results of work completed on the Gotcha and San Jacinto options are detailed in separate reports. However, a summary of all work performed follows.

Old geophysical data was extensively analysed and color coded on new sheets, and composites of overlapping surveys were prepared. The Pechiney general geologic map was converted to 1"=400'.

Approximately 14.2 line miles of grid lines were remarked or run new with a topofil. A large portion of these lines were soil sampled and surveyed by magnetometer. The soil samples collected and analysed for copper numbered 454. Claims on which magnetometer and soil sampling were done include Hound #1, E.C.B., Peacock, Buckhorn (magnetometer only), and Gotcha #7 - #10. The Seigel and San Jacinto grids over the Hound #1 Fraction and north part of the Greyhound were remarked to locate anomalies and spot drill holes.

A percussion drill program was completed and a summary of the drilling follows.

Mascot Holdings:

Area	No. of Holes	Footage
Crown Silver	3	445 ft.
Sulphide zone	13	2018 ft.
Motherlode	12	2724 ft.
Sunset	2	270 ft.
Old Tailings Pond	1	75 ft.
Peacock - Hound #1 Fr.	6	1255 ft.
	37	6787 ft.

Options:

Area	No. of Holes	Footage
Pluto	2	640 ft.
Ah There	5	530 ft.
San Jacinto	10	1171 ft.
Gotcha Group	17	3515 ft.
	34	5856 ft.

Total holes 71
Total footage 12,643 ft.

The total footage drilled in the combined 1973 to 1974 program was 23,992 ft. in 123 holes.

Following the drill program, maps and cross sections were updated and reserve estimates made for the Sunset, Sulphide and Shaft zones.

GENERAL GEOLOGY

The Pechiney geologic map appears to be thorough and accurate. It covers all of the Motherlode-Greyhound property, a large portion of the Lost Group to the north and west, and the area east of the Anaconda and Plutonia claims to Boundary Creek. The map was completed on a metric scale roughly equivalent to 1"=500'. Mascot added more information to the map in the Peacock-Hound #1 Fr. and Greyhound-Pluto areas using drill hole information and converted it to a scale of 1"=400'.

Pechiney's geologic report covers the lithology of the rock types found on the property in detail. The regional geology is covered in various government publications. A brief description of the rock units follows to provide minimal background information for the succeeding sections of this report.

Metamorphics (Grand Forks Series ?):

The oldest unit on the property consists of mica schist, hornfels, quartzite, and lenses of marble and amphibolite. These rocks outcrop on the eastern portion of the property from the Plutonia to Boundary Creek. Their age is unknown. They could be equivalent to the Grand Forks Series, a similar metamorphic formation of Proterozoic (?) age which occurs in the Grand Forks area.

Knob Hill Formation:

The Knob Hill formation, Permian in age, is composed primarily of white and black cherts and andesite tuffs. It outcrops over a widespread area from the Morrison to the Butte City and Great Hopes. It apparently underlies all units outcropping to the north with the exception of the Nelson intrusives. Pechiney geologists included minor diabase and amphibolite with this formation. Elsewhere in the district, the Knob Hill formation also contains minor limestone, shale and serpentine.

Andesite outcrops at the mouth of the Greyhound pit and has been traced to the south under Deadwood Flat by drilling. Hole S.J. #8 intersected some white Knob Hill type chert at depth. It is possible that these rocks belong to the Knob Hill formation.

Brooklyn Formation:

On the property, this formation consists of sharpstone and chert pebble conglomerate and various types of limestone and very limey sediments. All zones of interest on the property and the principal copper deposit in the district, occur within Brooklyn limestone. An exception to this may be the Greyhound deposit.

Widespread exposures of the sharpstone conglomerate were mapped by Pechiney from the Marguerite west into the Lost Group. The limestone outcrops are more restricted. They occur from the Motherlode to the Sunset, from the Birthday Fr. (Marguerite) to the Plutonia, from the Birthday Fr. to the N.M. #1, and around the Greyhound deposit. Numerous pods of limestone occur throughout the sharpstone conglomerate.

The limey rocks and skarn at the Greyhound are quite different in character to those found elsewhere on the property. It is possible that the Greyhound host rocks belong to the Knob Hill formation. A point supporting this possibility is that sharpstone conglomerate occurs with all limestone zones on the property except at the Greyhound.

The Knob Hill and Brooklyn formations are included in the Anarchist Group on the regional geologic map (East Kettle River Sheet by Little - 1957) and are dated as Permian. Pechiney geologists have dated the Brooklyn formation as Triassic quoting Little and Thorpe (1965).

Nelson Intrusives:

These intrusions consist primarily of diorite and quartz diorite and are stated to be of Cretaceous age. The Greenwood stock which surrounds Greenwood and borders the property on the southeast is the largest Nelson intrusive body in the property area. A band of the Greenwood stock extends from the main body across the Hound #1 Fr. and through the southern half of the Peacock. This band does not outcrop but has been indicated by drilling.

Several small bodies of diorite occur in the Motherlode and Marguerite areas.

Tertiary Formations:

There are two post mineral tertiary formations which overlie or intrude all preceding rock groups.

The older Kettle River formation is composed of sandstone, arkose and conglomerate. A band of Kettle River sediments has been traced by drilling across Deadwood Flat from the Buckhorn and into the overburden covered area on the north end of Deadwood Flat.

The Marron formation consists of extrusive and intrusive phases. The extrusives have been defined as trachytes and trachyandesites. They cap the ridges north and west of the Motherlode. No outcrop of the extrusive phase of the Marron formation has been observed on the Motherlode-Greyhound property.

The intrusive phase of the Marron formation consists of fine to medium grained syenitic dikes, commonly with pink feldspar phenocrysts. Locally these dikes are termed pulaskite and cause significant dilution in some of the ore bodies of the district.

GEOLOGY - MOTHERLODE, SULPHIDE, SHAFT & CROWN SILVER ZONES

Pechiney geologists completed a general geologic map of the Motherlode-Greyhound property. No detailed geologic mapping has been completed since Leroy's Memoir 19. Since that time the Motherlode, Sunset and Greyhound zones have been further exposed by open pitting. The writer completed geologic mapping of the Motherlode to Sunset area on a scale of 1"=50'.

Knob Hill Formation:

Rock types of this formation underlie large portions of the Motherlode main zone, the Shaft zone, and the Sulphide zone. The skarnified andesitic unit outcropping around the Shaft zone and along the western edge of the Motherlode pit is believed to belong to the Knob Hill formation. Drilling has indicated that this unit dips under the southwestern portion of the Motherlode - Shaft zones, the massive white limestone forming the northwest rim of the pit, and the northwestern 1/3 of the Sulphide stope. Interbedded Knob Hill white chert and andesite underlies the skarn on the northeast side of the Motherlode pit. According to Leroy, the Motherlode main zone is in fault contact with Knob Hill rocks on its south side from the 200 to 400 level.

White Knob Hill chert occurs along the southwest edge and dips under the remaining 2/3 of the Sulphide stope. A unit of black Knob Hill chert was intersected below the white chert in PH26. (PH - Percussion Hole.)

Brooklyn Formation:

Two small outcrops of sharpstone conglomerate occur above the Crown Silver road about 200 ft. south of the Crown Silver shaft. Some very altered skarny rocks mixed with diorite and outcropping above the water tanks could represent the continuation of this unit. These outcrops carry minor amounts of chalcopyrite. The sharpstone conglomerate here is characterized by angular to rounded fragments up to ½" in size in a highly silicious matrix.

Lying from the sharpstone conglomerate west and forming the northern portion of the east wall of the Motherlode pit, is a pervasively altered skarn. The writer has classed it as calcareous sandstone. It is fine to medium grained sandstone and has been altered to garnet, epidote, chorite, silica, calcite, and hematite. The bedding is easily observable in many places due to the selective mineral alteration along bedding planes. There is an exposure of unaltered calcarious sandstone at the mouth of the small adit on the south end of the Crown Silver. The bedding strikes N20°E. The dip varies from 60° east at the north end of the pit to about 75° east on the ridge top above the Motherlode shaft.

Massive white aeolian limestone forms the northern part of the west wall of the Motherlode pit. This unit outcrops continuously for 800 ft. north of the northwest corner of the pit. Essentially it is a coarse grained sandstone composed of calcite and is virtually devoid of alteration minerals.

The Motherlode main ore body lies along the zone where the white limestone and calcarious sandstone were originally in contact.

The relationship of the Sulphide zone limestone to the rest of the Brooklyn formation in the Motherlode area is unclear. It forms the host rock for the Sulphide zone, but the trend of the unit is near right angles to the calcarious sandstone. The unit does not outcrop and no bedding was observed in the core. Fine to medium sand sized grains were observed in places, but it is generally massive, and grey coloured but with light greenish zones. It is not significantly altered outside the mineral zone. This limestone unit occurs along the southeastern 2/3 of the Sulphide stope and extends under the old tailings pond.

Dark blackish green chert is interbedded with the limestone in the Sulphide zone. It is a dense, hard, fine-grained, and highly silicious rock which for the most part is barren. It has however been mineralized to ore grade in limited spots.

Quartz Diorite:

The Motherlode, Crown Silver and Sulphide zone area has been intruded by irregular bodies of quartz diorite which comprise a significant portion of the outcrops in the area mapped. These intrusives appear to be both pre-mineral and post-mineral. The pre-mineral quartz diorite has been skarnified by the development of epidote, garnet and calcite. In places it contains minute amounts of pyrite and chalcopyrite. The alteration gives it a slightly greenish cast. The unaltered quartz diorite is fresh and light grey to greyish white in color. Grain size of both types is fine to medium grained.

The post-mineral quartz diorite is exposed in several spots along the northeast wall of the Motherlode pit, and into the Crown Silver zone. It also occurs in the small adit on the south end of the Crown Silver claim.

The altered quartz diorite appears to be a continuous body from the high wall above the Shaft zone to the Sulphide stope where it trends along the hanging wall side of the Sulphide zone and into the tailings pond.

The quartz diorite may form one of the ore controls but it seldom comes into direct contact with ore.

A body of dioritic rock occurs around the northeast end of the Motherlode pit. This unit differs from the above in composition and alteration. It is green in color and alteration consists of light chloritization and pyritization. It may be that this unit is a coarser variety of Knob Hill andesite.

Feldspar Porphyry (Pulaskite):

This tertiary unit is exposed in several spots in the northern portion of the Motherlode pit and by the water tanks. It has been intersected in drill holes below the Sulphide zone. It is composed of a fine-grained ground mass of pink feldspar with minor biotite and chlorite, with pink feldspar phenocrysts.

STRUCTURE AND ORE CONTROL

Motherlode Main Zone:

The consensus of past geological opinions on the origin of the Motherlode deposit is that the mineralization was formed by replacement within a synclinal fold of limestone upon being invaded by the quartz diorite. A synclinal structure might have been assumed due to the belief that the white acolian limestone and the calcareous sandstone were the same unit. The literature does not distinguish between the two units other than to describe the alteration occuring on the east side of the deposit.

The writer believes that no evidence of an ore control due to folding exists. The sharpstone conglomerate, the calcarious sandstone and the white limestone are thought to be slightly overturned beds dipping steeply to the east and striking N20^{o}E. Their attitude is indicated by the bedding observable in the calcarious sandstone skarn.

The ore appears to have been deposited along a large and intense breccia zone occuring along the contact between the white limestone and the calcarious sandstone. Leroy in Memoir 19 describes the mineralization as replacing both rock types. He also mentions that W.H. Weed compared the Motherlode deposit to those at Cananea which are breccia pipes.

The white limestone does not appear to have been mineralized outside the breccia zone. Mineralization outside the breccia zone into the calcarious sandstone is erratic and weak. Two factors probably account for this. If the enclosing rocks were relatively impermeable, mineralization into them would be restricted. Second, it is possible that mineralization of the breccia zone was a rapid event which did not allow time for mineral bearing solutions to penetrate the unbrecciated enclosing rocks.

Leroy describes the boundaries of the Motherlode orebody. The northwest side is bounded by white limestone where there is a near vertical but irregular footwall. The east side is bounded in part by fault contacts, by skarn and skarny quartz diorite. The south side from the 200 to the 400 levels is in fault contact with the Knob Hill formation. The main floor of the deposit lies on Knob Hill chert and quartz diorite. Leroy

does not mention the rock types on the north end but does describe a fault boundary there. Level plans in Frederick's report indicate that the rocks in the lower levels on the north are mixed white limestone and green diorite. Two percussion holes by Mascot spotted at the north rim of the pit and drilled 360 ft. and 400 ft. intersected mixed unaltered white limestone and greenish diorite.

Old reports indicate that an assay boundary occurs to the east into the skarn zone. Leroy has described fault boundaries between the ore and skarn in the lower levels. This misconception of an assay boundary to the east resulted because there is a low grade cap on the skarn along the rim and ridge on the east side of the pit. Old drill data and drilling and chip samples by Mascot indicate that the top forty feet of the ridge going south from the break through area for about 300 ft. will run about 0.35% copper. The area adjacent to the break through area may average slightly better. The material below the cap drops sharply in value to less than 0.1% copper.

It would appear that during the period of mineralization and intrusion by the quartz diorite, little or no mineral bearing solutions penetrated the calcarious sandstone and white limestone. The calcarious sandstone probably contained enough minerals along with calcite to be pervasively altered to skarn. The white limestone being composed essentially of calcite was partially altered to marble.

The original Motherlode deposit was a large breccia zone of unknown dimensions. The present limits of the Motherlode zone appear to be fault contacts. The dimensions of the zone remaining in the pit diminish from the pit bottom (60 to 115 Level) to the 400 Level. At surface, in the pit bottom, mineralization occurs for a length of about 500 feet. The width varies due to dilution in places. On Section MM3 and MM4 the mineralization is at least 140 feet wide. On the 400 Level information from Frederick's report indicates that the zone is somewhat rounded and irregular with maximum length and width of 250 feet and 150 feet.

Leroy has described the deposit as having been block faulted down into the Knob Hill formation. Drill data from the Mascot program supports this conclusion.

Frederick has theorized that the Motherlode zone is dipping steeply and is open to the southeast. The writer does not agree.

Motherlode Shaft Zone:

Little is known of the subsurface geology of the Shaft zone. Leroy does not mention the Shaft zone in Memoir 19. The zone was extensively drilled by Surety Oils in 1956. No geologic logs are available from this work.

Surface mapping indicates that the mineralization occurs in a remnant or fault block of the white limestone. This block is approximately 100 ft. long in a north-south direction and varies irregularly up to 150 ft. wide. It appears to be open below the 200 ft. level and pinch out above the 300 ft. level. It is surrounded on the north, west and south by Knob Hill (?) andesite. Skarny quartz diorite lies in close proximity on the northeast, east and southeast sides and probably comes in contact with the zone in part.

A flat lying band of ore grade material about 45 ft. thick branches off the main block approximately 50 ft. north of the shaft and just below the 200 ft. level. This band strikes north northwest and dips shallowly toward the main Motherlode zone. Percussion drill cuttings recovered from this zone were skarn composed of epidote, garnet, magnetite, pyrits and chalcopyrite. The host rock was probably limestone.

Crown Silver Zone:

A small mineral zone occurs on the western edge of the Crown Silver which has been partially delineated by drill holes and the Crown Silver shaft workings (Refer to cross sections MM5, MM6 and MM7). The trend is N20^{o}E, parallel to the Motherlode main zone. The upper part of the zone appears to dip 30^{o} easterly. It lies somewhat parallel to and shallowly below, the sidehill and is partially exposed along the road to the break through into the Motherlodepit. It appears to steepen to 80^{o} toward the bottom of the Crown Silver workings.

The zone appears to be about 20 ft. thick and has been traced for about 250 ft. It's continuity has been broken to an unknown extent by the intrusion of a branch of the quartz diorite outcropping in the east centre of the Motherlode pit. The zone terminates on the north against a strong northwest trending fault which dips 50^{o}-60^{o} southwest. The Crown Silver adit was driven along this fault. The zone is open to the south.

The mineralization occurs in a rock type which is similar to and probably belongs with the skarny calcarious sandstone. It differs in being coarser grained and may be a coarser grained base zone to the unit.

Mineral control in the Crown Silver zone may be related to a more favourable horizon in the calcarious sandstone and proximity to the quartz diorite. This quartz-diorite appears to be post-mineral but may have induced remobilization of mineralization along its margins.

Sulphide Zone:

The Sulphide zone is separated from the Shaft zone by an apparently barren section, probably due to the lack of any limestone occuring there. The Knob Hill (?) andesite appear to be in direct contact with the quartz diorite.

The northwestern third of the Sulphide stope, 130 ft. in length, lies outside of the magnetometer anomaly associated with the Sulphide zone. In this seotion the values appear to have occured in massive pyrite with no magnetite. The host may have been a thin remnant of limestone but there is no evidence to support this. This portion of the stope is narrower, 10 to 15 ft., and more regular than the southeastern end. Values remaining in the walls are narrow and of marginal grade. The strike is northwest and the dip varies from 35^{o} to 40^{o} to the northeast. The northwestern portion of the stope has been displaced upward 20 ft. from the southeast part by a northeast trending fault that dips steeply to the west.

The southeastern two-thirds of the Sulphide stope, 240 ft. in length, strikes northwest and the overall dip is 25^{o} to 35^{o} northeast. The top of the zone appears to be horizontal in places. The mineralization lies within a limestone unit near its lower margin.

The mineral zone varies up to 75 ft. thick in the upper portion and appears to pinch out down dip. The center of the zone, which was a higher grade core, has been mined irregularly by open stoping over widths varying up to 40 ft.

The footwall of the limestone, and in places the mineral zone, is a band of intrusive rocks varying from two ft. to thirty ft. thick. The intrusives, composed of andesite with minor pulaskite, have invaded a strong fault zone lying between the limestone and underlying Knob Hill chert.

The hanging wall limestone has been weakly and irregularly altered. Alteration minerals are chlorite, epidote, scattered blebs of magnetite and minor amounts of disseminated pyrite. Apart from the main mineralization minor amounts of chalcopyrite occur in limited areas. The top of the limestone is in contact with quartz diorite.

In cross section the limestone is wedge shaped, varying up to 150 ft. wide near surface and narrowing sharply down dip. Evidence suggests that the limestone-quartz diorite contact is a fault zone dipping steeply to the northeast which has cut off the limestone and mineral zone along its northeast and down dip edge. This fault explains the apparent narrowing of the mineral zone down dip.

Two drill holes along the northeast side of the southeastern two-thirds of the stope require special comment. PH31 intersected a 40 ft. section of 0.51% copper which was in line with the projected dip of the zone. Unusual was the fact that the hole was entirely in quartz diorite. This was the only hole on the Sulphide zone where the quartz diorite formed the host and occurred as well below the mineralization. This suggests that some mineralizing took place after the fault occured which separates the limestone and quartz diorite. One of the old holes, 121, intersected a good section of mineralization which is well above the projected dip of the zone. This apparently small block suggests an upward movement on the northeast side after mineralization took place. Should this be true it would imply that no limestone can be expected below the quartz-diorite north of the slope.

A fault trending north northeast has displaced the Sulphide zone at the southeast end of the stope. The lower workings appear to have stopped at the fault. The upper part, as indicated by DDH MM#1 (DDH = Diamond drill hole), continues for a short distance under the old railroad grade and was probably left because of the railroad. The fault seems to dip steeply to the east.

Certain changes occur in the Sulphide zone east of the fault at the end of the stope. The strike veers to east-west and the dip steepens to approximately 45^{o} north. A barren section of limestone lies below the mineral zone where it was intersected by DDH MM8, PH33 and DDH Surety #2. DDH Surety #1 intersected the zone in the middle of the limestone unit and collared in limestone, not in quartz-diorite as would be expected from other drill data.

It would seem that the mineralization is not related to the quartz diorite contact, but probably to a breccia zone which cut through the formations more or less indiscriminately. The zone was then displaced slightly by the north-northeast trending faults. Subsequently, or concurrently, it was down-faulted into the surrounding Knob Hill chert.

GEOLOGY, STRUCTURE, ORE CONTROL -
SUNSET, MARGUERITE & GREYHOUND ZONES

Sunset Zone:

This deposit occurs in a remnant of limey rocks mixed with dark green chert which has been down-faulted into Knob Hill chert. Almost all of the rocks in the remnant contain magnetite and a band of copper mineralization occupies the major portion of the remnant.

The flat-lying Sunset zone averages approximately 40 feet in thickness by 150 feet in width. It has a known length of 400 feet and strikes northwesterly. The bottom of the zone in the area of the pits slopes at approximately 15^{o} to the surface on the northeast side along a fault contact with Knob Hill chert. The southwest edge of the zone is down-faulted into Knob Hill chert and the attitude of the fault zone has not yet been determined. The mineralized zone lies at a relatively constant elevation through the pits area then plunges at approximately 21^{o} to the northwest under the old tailings pond.

Pulaskite dikes have intruded the zone in several places and form both the hanging and the footwalls, in part, on the northwest end. Dark green chert overlies the mineralization through the pits area but has been extensively eroded leaving the zone of mineralization exposed in spots or lying shallowly below the surface. Some barren dark green chert has also been intersected between the mineral zone and underlying Knob Hill chert.

The limits of the zone are not precisely known along the southwest margin and it is open to the northwest.

Marguerite Zone:

The Marguerite zone is a small replacement body located on the contact between a small diorite intrusion on the west and massive white limestone on the east. On the surface the zone can be traced for about 50 ft. along strike and is about 5 ft. at the widest spot. PH5, drilled directly under the showing due west at 45°, intersected the zone from 20 ft. to 40 ft. where it averaged 0.48 copper. A vertical hole PH10, from the same location did not encounter mineralization although it passed through the limestone-diorite contact.

The magnetometer anomaly over the showing was limited to 100 ft. along one north-south line with one anomalous reading on the adjacent line 100 ft. to the east. The anomalous reading to the east reflects the plunge of the limited zone where it was intersected by PH5. Lower order magnetometer anomalies in the vicinity of the Marguerite showing can be directly related to outcrops of barren magnetite-bearing rocks. The I.P. Survey run by Seigel over the area did not produce any anomalous results.

In looking at the general geologic map, the geology of the Marguerite area resembles in certain respects the geology around the Motherlode, particularly the diorite intrusions in contact with or close to limestone. Lacking is the intense, widespread alteration which occurs at the Motherlode. Large portions of the limestone in the Marguerite and Marguerite North areas have been altered. This alteration appears to be due to regional metamorphism rather than contact metamorphism and replacement.

The I.P. survey indicates that no large sulphide body occurs near surface in this area. The writer feels that the Marguerite and Marguerite North showings are isolated pods. No well defined target can be visualized at this point and the chances for finding ore bodies there seem remote.

Greyhound Zone:

The geology of the Greyhound deposit is not clearly understood. The rocks exposed in the pit are so altered that their origin cannot be determined, and individual units cannot be distinguished or traced. For this reason a geologic map of the Greyhound pit was not made.

Pechiney had a number of thin sections prepared from the Salamet drill cores. Rock types identified were slightly altered limestone, altered andesitic tuff, chert and argillite. The majority of the specimens were listed as skarn of unknown

origin. These rocks were composed principally of calcite with quartz in a ratio of about 2:1. Pechiney lists chlorite, amphibole (actinolite) and pyrite as accessory minerals which are present in quantities of over 1%. However, abundant epidote and hematite occur in places throughout the pit. Zones of abundant pyrite also occur. The alteration zone is unique among the limestone replacement deposits in the district in that no magnetite is present. Minor amounts of crystalline garnet were observed.

The rocks exposed in the Greyhound pit have been intensely brecciated. Individual fault zones are generally not traceable and gougy zones occur extensively throughout the pit and the drill core from Mascot's program.

The nature of the rock due to alteration and brecciation at the present surface of the pit is such that it can be easily ripped by bulldozer. To what depth it can be ripped is not predictable but diamond drilling indicates that the same shattered and gougy conditions exist to the bottom of the deposit.

The mineralization occurs in parallel and coalescing bands trending east-west. The upper portion and northern part of the deposit dips steeply south. The zone flattens to near horizontal to the south. The bands coalesce on the western end to form a solid zone approximately 100 ft. wide. Going west, the mineralization splits into three bands, 20 ft. to 35 ft. wide separated by waste zones of similar widths. On the western end the mineralization has been broken into blocks isolated by waste.

The mineral control at the Greyhound is not known. The high lime content of the host rocks and the widespread and intense brecciation should have provided an environment for more extensive mineralization. Perhaps the control was an original breccia zone through the limey host rocks. A band of more competent rock, which after brecciation was less gougy and more permeable, could also explain the control.

The most logical explanation for the steepening of the deposit along the north side is that is was thrust faulted against the Greenwood Stock. This could also explain the thicker section of mineralization on the east end. The mineral zone is closest to the contact there and the thrusting could have tended to pile the mineralization in a more solid mass.

The Greyhound skarn is bounded on the east by quartz diorite of the Greenwood Stock. The contact dips irregularly southwesterly at approximately 50° under the skarn zone. The contact between the skarn and quartz diorite is intensely mashed. The quartz diorite is intensely gougy for over 100 ft. from the contact. Undoubtedly a great deal of movement has taken place along this plane.

It is felt that there is no relationship between the Greenwood Stock and the origin of mineralization. The zone appears to have been faulted into its present position after the mineralizing occurred.

Greenish andesitic tuff (?) lies on the west side of the skarn zone at the entrance to bench 5.

GEOPHYSICAL TARGETS AND GEOLOGY

A considerable amount of time was spent in analyzing geophysical data from old surveys. Some areas were tested by percussion drilling directly. Other areas were covered by magnetometer and soil sampled for copper before choosing percussion drill sites. No copper mineralization of economic interest was encountered in any of these percussion holes. The holes essentially eliminated the areas drilled as zones for further exploration except on the Pluto Mineral Claim and south of the Greyhound pit.

Standard:

One 300 ft. percussion hole, PH1, was drilled on the Standard claim to test a strong Seigel I.P. anomaly. The rock type encountered was black Knob Hill chert and there was no copper mineralization of interest in it. The cause of the anomaly was not established. Assays for carbon and soluble iron ruled out graphite or pyrite as the cause. The anomaly is related to a specific Knob Hill chert unit as mapped by Pechiney. The Pechiney geologists referred to manganiferous coatings on the fractures of this unit which may explain the cause of the I.P. anomaly.

Crown Silver (Motherlode I.P. Anomaly):

One percussion hole, PH2, was drilled about 400 ft. east of the northeast end of the Motherlode pit to test the anomalous area delineated by Seigel's survey.

Greenish diorite with minor pyrite and minor bands of calcite occured to the bottom of the 300 ft. hole. The diorite is the same as that occuring around the north end of the Motherlode pit and may be a coarse grained variety of the Knob Hill andesite.

Peacock - Hound #1 Fraction:

The geophysical data from Seigel, Salamet, and San Jacinto were transferred to composites. Magnetometer and soil sample surveys were run over the Peacock. This information was utilized in spotting drill holes. Five percussion holes were drilled to check the overburden covered area between the Greyhound and the outcropping Knob Hill chert to the north.

It was found that the area is underlain by an offshoot of the Greenwood Stock. Ph24 encountered Knob Hill chert at bedrock and passed into barren diorite at 160 ft. This may indicate that the diorite underlies the Knob Hill chert outcropping on the Great Hopes - Butte City area. Ph20 was drilled to test a mag anomaly on the Peacock. The cause was found to be magnetite bearing quartz diorite.

No further exploration is warranted on the Peacock to Hound #1 Fraction area.

Hound #1 - E.C.B.:

The area east of the Greyhound is known to be underlain by quartz diorite of the Greenwood Stock. This environment has no potential for the occurrence of large copper deposits. Since there are overburden covered areas to the east and an airborn magnetometer anomaly occurs northeast of the Greyhound, magnetometer and soil sample surveys were completed over parts of the Hound #1 and E.C.B. The results were totally negative.

Greyhound:

A small I.P. anomaly located along the southern boundary of the Greyhound was tested by PH#11. The hole was lost at 170 ft. because of broken rods. The rock encountered was highly pyritic Greyhound skarn and this potential zone remains untested at depth.

Two holes were drilled near the southwest corner of the Greyhound to check a hole by Greyhound Mines which was said to have encountered ore. PH12 was drilled to 200 ft. beside the Ah There shaft. It encountered highly pyritic Greyhound skarn for the entire 200 ft. One experimental reverse circulation hole was drilled 150 ft. north of the Greyhound southwest corner. The hole was drilled to 49 ft. in the same rock as Ph12 at which point the hole was abandoned due to equipment failure.

Pluto - Ah There:

The area south and west of the Greyhound is overburden covered. This area, known as Deadwood Flats, is level and is under cultivation as hay meadows. The geology is partially known from drill hole logs.

The Greyhound limey skarn continues south to just beyond the southern boundary of the Greyhound claim. Quartz diorite was cut in two percussion holes a few hundred feet south of this. The skarn appears to be down faulted into the quartz diorite on its southern edge.

Andesitic rocks were encountered by percussion holes drilled by the Mapletree Syndicate near the middle of the Montrose Fraction. This unit has been projected from these through the Ah There to the entrance of bench 5 at the Greyhound pit. Some confusion exists as to the geology around hole DDH S.J.8 on the Ah There. Four shallow percussion holes drilled by Mascot around DDH S.J. 8 encountered a mixture of rock types which include skarn, andesite, and arkose. Some white chert, resembling Knob Hill, was intersected at depth in DDH S.J. 8. It is possible that the andesite belongs to the Knob Hill formation. Some geologists have suggested that the Greyhound limey rocks belong in the Knob Hill formation.

To the west of the andesite a unit of Kettle River arkose and shale has been encountered in drill holes. The Kettle River unit outcrops on the Buckhorn and has been traced by drilling through the Pluto to the old railroad grade north of Deadwood Flat. This unit overlies a down faulted block of considerable vertical displacement. One percussion hole by Mascot, G21, located on the Pluto, drilled through the arkose and at 340 ft. encountered intensely pyritized Greyhound type skarn. G21 was drilled to the limit of rods available, 410 ft., in this pyritic skarn. Although no copper was present, this area has ore bearing potential. Because of the depth of overlying arkose, minerals zones would have to be high

grade or very large. Based on the known mineralization in the Greyhound deposit this zone on the Pluto is considered a low priority target.

The Kettle River arkose is in contact on the north with the quartz diorite lying through the Hound #1 Fraction - Peacock area. G 28, drilled in the west corner of the Pluto, encountered quartz diorite which therefore lies in contact with the arkose on the northern part of its west boundary.

SUMMATION OF RESULTS AND RESERVES

Motherlode - Main Zone:

A reverse circulation drill program was completed in an attempt to sample the main part of the Motherlode pit. This area was mined originally by open stope methods with pillar blasting. This has left the remaining mineralization as a collapsed zone mixed with waste. The material varies in size from dirt to large blocks which are erratically mixed together. Old timbers and iron are also present. This program was only marginally successful because of the broken ground in that no hole could be completed to the required depth, drill rate was slow resulting in high costs, and in places samples could not be recovered.

Preliminary calculations and plans were completed to estimate the possible tons of mineralization and waste lying in the main zone of the Motherlode pit. Golder-Brawner's pit wall specifications were used and tonnage factors assumed for mineralization and waste were 18 $ft.^3$/ton for broken mineralization and 12 $ft.^3$/ton for solid waste. Calculating all of the mineral zone to the 400 ft. level gives 1,220,000 tons of mineralization and 8,610,000 tons of waste. The reverse circulation drilling has indicated that the upper part of the zone is highly diluted with collapsed waste on the east side. The average of the assays from the drill program run 0.45% copper. Since the mineralization to waste ratio is 1:7 the situation is not attractive.

Drilling also indicated areas in the zone of excellent grade. Higher grade material may be tending to hang along the footwall of the caved area. A section through holes R4, R6, R7 and RP 1 (R = Reverse Circulation Rotary; RP = Reverse Circulation Percussion), indicates 700 tons per linear foot down to the 200 ft. level grading 0.80% copper. Consequently, some

rough calculations were made to estimate the tonnage of mineralization and waste occurring if the western 100 feet of the zone were mined to the 200 foot level. The same specifications as above were used and a 350 foot length was taken. A pit slope of 35° was assumed for the broken waste in the east wall. Results were 283,000 tons with mineralization to waste ratio of about 1:4, plus mineralization to broken waste ratio of 1:0.66. This mineralization to waste ratio would be improved should this zone be mined in conjunction with the Shaft zone. The writer has therefore included 200,000 tons grading 0.7% copper in the possible reserves category, from the main part of the Motherlode pit.

Shaft Zone:

Mascot's drilling did nothing to add to the reserves of the Shaft zone. Mineralization and waste estimations were made assuming mining to the 200 foot level and using Golder-Brawner's pit wall specifications for the diorite, 45°.

Three Surety sections, S1 - S3, were used to calculate reserves. Proven tons was taken to a few feet below the Surety holes and possible tons from there to the 200 level. The holes drilled by Surety coupled with old assays plotted on the 200 foot level plan were used to project the limits of the zone down to the 200 foot level.

Mineralization estimates are 60,000 proven tons grading 1.0% copper and 48,000 possible tons grading 0.8% copper. The mineralization to waste ratio is estimated at 1:3 and mineralization to overburden ratio at 1:0.31.

It is anticipated that a pit wall in the quartz diorite on the east side of the Shaft zone would safely stand at steeper than 45°. Golder-Brawner have probably determined the safe slope from observation of the more shattered quartz diorite occuring in the east center of the Motherlode pit and the dangerous condition of the quartz diorite above the Shaft zone. The material above the Shaft zone is unstable due to the poor mining procedure used by Consolidated Woodgreen.

As was mentioned before, mining the Shaft zone in conjunction with the main Motherlode zone would also improve the mineralization to waste ratio.

The Surety drilling did not delimit the eastern edge of mineralization at the Shaft zone. There is the possibility that reserves can be increased by drilling there. This will require diamond drilling due to the longer holes required to reach the target from the top of the ridge east of the Shaft zone.

A small increase in reserves can be expected by drilling to confirm and delineate the ore cut by Surety DDH #0-1.

Crown Silver Zone:

A small zone grading about 0.5% copper has been indicated by the drilling completed on the Crown Silver zone. Since the upper part of the zone appears to shallowly parallel the surface, possibilities are good for proving a small tonnage mineable by open pitting. Section MM 6 and MM7 indicates about 200 tons per linear foot of 0.5% copper. The zone has been intersected 170 ft. south in PH17. This hole also disclosed that the continuity of the mineralization may be broken by a quartz diorite intrusion. ML34 (percussion hole by Greyhound Mines) intersected 50 ft. of 0.55% copper an additional 40 ft. to the south. Some detailed drilling is required between these holes and to the south to delimit the zone.

In addition, the top portion of the sharp ridge from the break through area south is carrying values. Chip samples taken along the south face of the break through averaged 0.48% copper over a true width of 60 ft. Further testing of this zone could add to any tonnage developed in the Crown Silver zone. A potential exists for proving in excess of 75,000 tons in these two zones.

Scattered small magnetometer anomalies occur on the Crown Silver from above the water tanks toward the Crown Silver zone. A drill hole is needed to check this area.

Sulphide Zone:

The Sulphide zone tonnage estimates were detailed because of the open stope, dumps and pillars and the sharp change in strike at the southeast end of the stope. The pit wall slope was assumed to be 45° in rock and 30° in overburden, dam fill and tailings. Tonnage factors used were 10, 12 and 15 $ft.^3$/ton for mineralization, waste rock and overburden, respectively.

Overburden lying above the Sulphide zone is relatively shallow. The major portion of overburden in the calculations lies along the southwest and south margin of the zone where the bedrock plunges steeply under a thick section of drift.

No allowance has been made for dilution. Dilution could be excessive around the stope due to collapsing of waste with mineralization into the stope while mining. Since this is an unknown factor, no attempt was made to delete tonnage from proven reserves because of dilution. The limiting factor was the mineralization to waste ratio. No possible mineralization was included below the proven tonnage in the stope area because of the sharp increase in the waste to mineralization ratio for the deeper mineralization. All proven tonnage in the estimates lies west of Sections MM1 and MM2.

The tonnage lying east of Sections MM1 and MM2 has been placed in the possible category. Drilling is required to delineate the upper portion of the zone and fill in between the Surety holes. Also, the exact locations of the Surety holes are not known and consequently the dip could vary from that shown on the cross-sections.

The waste figures cover both proven and possible tonnage. The Sulphide zone reserves calculated are:

	Tons	% Cu	Au Oz/Ton	Mineral to Waste Ratio
Proven	124,000	0.65	0.035	
Possible	71,000	0.65	0.021	
Waste Rock	697,000			1:3.57
Overburden, Dam Fill and Tailings	345,000			1:1.77

Sunset Zone:

The Sunset zone has been defined in cross section and in plan to the point that reasonable confidence can be placed in its continuity over set widths along its strike. An open pit was designed to include a portion of the Sunset zone. This portion averages 40 ft. thick and 150 ft. wide over a length of 350 ft. Part of the reserves in the pit layout are placed in the possible category because information as to grade is inadequate. Drill information through part of the zone is spotty. Several of the holes available for reserves estimation were percussion holes, drilled dry without casing, and which returned marginal values. There is a reasonable chance that additional drilling will upgrade the possible areas to proven tonnage.

In addition, there are 180,000 possible tons of estimated ore surrounding the pit layout on the southeast end, along the southwestern margin, and projecting the zone northwest under the tailings dam. Geology, structure and the magnetometer anomalies were used to infer this tonnage. 120,000 tons of the above figure are inferred on the northwest end of the Sunset zone under the tailings. The mineralization to waste ratio, should this zone continue, will be about 1:6, but the waste consists almost wholly of dam fill and tailings.

In calculating reserves and waste for the pit layout a semi-selective mining procedure was assumed for the flatly dipping deposit down to an even bench level. Rock faces in the pit were assumed to be 70° inasmuch as nowhere would they be higher than 60 ft. The pit wall slope in overburden, dam fill and tailings was assumed at 30°. No allowance has been made for dilution. The waste calculated is for both proven and possible tons within the pit layout. The major portion of overburden, dam fill and tailings is tailings and dam fill lying over the northwest end of the deposit. There are only limited patches of overburden overlying the deposit.

	Tons	% Cu	Au Oz/ton	Mineral to Waste Ratio
Proven	88,000	0.66	0.02	
Possible	85,000			
Waste Rock	38,000			1:0.22
Overburden, Dam Fill and Tailings	161,000			1:0.93

Possible ore outside pit layout - 180,000

Waste Dumps:

There is a possibility that the old tailings dam contains ore grade material. The dam has been estimated to contain 150,000 tons. This includes the 17,000 tons in the Sunset trestle dump which Frederick estimated to run from 0.35% to 0.7% copper. The balance of the dam was made from low grade and waste from the Motherlode pit. There is reason to believe that some ore from the Motherlode pit was incorporated into the dam when Consolidated Woodgreen was short of dam fill material. Hole DDH MS4 recovered a few feet of dam fill before it reached bedrock which assayed 0.45% copper.

If the Sulphide and Sunset deposits are mined the ends of the tailings dam will have to be removed. It would then be possible to made a more reliable appraisal of the ore potential of the dam.

The main Motherlode waste dump, according to Frederick, originally contained 140,000 tons grading from 0.55% to 0.80% copper. An unknown amount of this dump was milled by Consolidated Woodgreen, but a portion remains.

A low grade dump from Consolidated Woodgreen's operations lies just east of the north end of the Motherlode pit. There is approximately 20,000 tons in this dump and the grade is not known.

There is a stockpile from the Greyhound pit lying adjacent to the crusher building. This dump is estimated to contain ±30,000 tons.

If the Sulphide and Sunset deposits are mined it is reasonable to expect that some tonnage can be salvaged from the dam. Therefore, 100,000 tons grading 0.5% copper have been placed in the possible category from the dam, the main dump, and other dumps.

Greyhound Zone:

Two alternative calculations were made on reserves for the Greyhound. These calculations were made in detail with accompanying plans and cross sections (Refer to report "Greyhound Ore Reserve Calculations" dated April, 1974).

The alternatives were:

A. For a conventional open pit mining method with drilling and blasting:

Proven and probable tons - 218,048
at 0.65% copper diluted mill grade
Possible tons - nil.

B. For a selective open pit mining method based on the presumption that the mineralization and waste could be selectively ripped with a bulldozer and loaded without blasting:

Proven and probable undiluted tons - 224,442
at 0.84% copper
Possible undiluted tons - 132,093
at 0.60% copper

otal Reserves:

Area	Proven & Probable Tons	Undiluted Block Grade % Cu	Possible Tons	Undiluted Block Grade % Cu
Motherlode Main Pit			200,000	0.70
Shaft Zone	60,000	1.00	48,000	0.80
Sulphide Zone	124,000	0.65	71,000	0.65
Sunset (Pit layout)	88,000	0.66	85,000	0.60
Sunset			180,000	0.60
Waste Dumps			100,000	0.50
Greyhound (Selective)	224,442	0.84	132,000	0.60
Total	496,400	0.78	816,000	0.63
Greyhound (Conventional)	218,000	0.65 (diluted mill grade)		

EXPLORATION RECOMMENDATIONS

Much deliberation has been given in trying to ascertain what method might be employed to complete the testing of the main Motherlode zone. It is suggested that the zone be diamond drilled, using size N diamond drill equipment, and casing down into the collapsed zone. Fines will be lost, but enough material might be recovered from larger chunks to provide the encouragement needed to mine a portion of the zone. Since there is some question as to whether it is safe to work in the pit, no footage is included for the Motherlode zone in these recommendations.

Two percussion holes (250 ft.) are required on the Shaft zone to delineate the mineralization intersected in Surety DDH 0-1.

Two diamond drill holes (1,200 ft.) are recommended for the MM12 site. One should be drilled west toward the Shaft zone to test for ore extending to the east and to test between the crosscuts on the 200 ft. and 300 ft. Levels. The other should be drilled southeast to test spotty magnetometer anomalies lying from above the water tanks toward the Crown Silver zone.

Recommended holes for the Sulphide, Crown Silver, Sunset and Greyhound zones are plotted on the working plans and cross-sections for each area.

Detail drilling is required on the Crown Silver zone and the ridge above it, south from the breakthrough. Some percussion drilling can be done along the zone from the road. Because of the steep terrain and poor access, most of the drilling will have to be completed with a light diamond drill. Required depths of holes will be, for the most part, 100 ft. or less. Nine diamond drill holes (900 ft.) and four percussion holes (420 ft.) are recommended initially.

On the Sulphide zone, eleven percussion holes (1,760 ft.) are recommended to convert the possible tonnage east of the stope to the proven category. Two diamond drill holes (500 ft.) are recommended to complete holes PH 32 and PH 34 which were abandoned due to caving. A completed hole at PH 32 might disclose whether the Sulphide zone continues under the diorite to the north.

On the Sunset zone, twenty-one percussion holes (2180 ft.) are recommended to convert the possible tonnage to the proven category.

On the Greyhound zone, fourteen diamond drill holes (1800 ft.) are recommended for the pit area. Because of the poor recovery on the Salamet diamond drill holes, it is felt that this drilling could improve the ore reserves and grade. Percussion drilling is not recommended because of the broken nature of the rock and because more detailed information would be desirable.

One percussion hole (300 ft.) is recommended to test the skarn zone to the diorite contact just northeast of PH11 near the southern border of the Greyhound. It is felt that the flat lying zone south of the pit may have been thrust faulted and piled up along the contact. The hole should be drilled northeast at 60°.

The dumps should be sampled in order to estimate their grade and size.

A tabulation of the recommended drilling follows:

Area	D.D.H.	FT.	P.D.H.	FT.
Crown Silver Zone	9	900	4	420
Shaft Zone	1	600	2	250
Sulphide Zone	3	1100	11	1760
Sunset Zone			21	2180
Greyhound	14	1800	1	300
	27	4400	39	4910

H.H. Shear, P.Eng.

APPENDIX

SUMMARY LOGS OF THE PERCUSSION HOLES ON THE MOTHERLODE-GREYHOUND GROUP

PH 17 Drilled at the breakthrough on the east rim of the Motherlode pit. S70E-50° 0-10 ft. no recovery. 10-30 ft. skarn with minor Cp and Py.30-40 ft. changes from skarn to diorite. 40-60 ft. white diorite no sulfides. 60-100 ft.greenish altered diorite with minorpyrite. 100-125 ft.skarn with Py and Cp. 120-125 ft. best looking sulfides.Hole abandoned at 125 ft. due to lost circulation.

PH 18 Drilled S70°E 200 ft. north of PH 17 along the pit rim. 0-120 ft. skarn with abundant Py and minor Cp. 120-130 changes to diorite. 130-170 diorite.

PH 19 Collared 50 ft. south of the Crown Silver Shaft and drilled S55°W at 60° to a depth of 150 ft. 0-20 casing, 20-50 diorite, 50-150 skarn Motherlode east wall type.

PH 20 Collared near the S.W. corner of the Peacock Crown Grant L1243, the hole is located on a power line road and was drilled to test a magnetometer high. The hole is vertical to a depth of 300 ft.0-80 ft. overburden with boulders at 60-70 ft. that contained approximately 15% pyrite. 80-140 ft. chloritized qtz. diorite with minor pyrite. 140-160 ft.dark green serpentine with very little pyrite. 160-250 ft. mafic qtz. diorite nearly black in colour.Minor pyrite but with abundant magnetite. this section is probably responsible for the magnetometer high. 250-300 ft.chloritized diorite with about 1% pyrite. 275-280 ft.3-5% pyrite and the odd pyrrhotite x/s.

PH 21 This hole is located on the old C.P.R. road bed on the Hardscrabble claim. This hole is vertical for 390 ft. and it was drilled to test the stratigraphy and the mineralization intersected in G21. 1-80 ft. overburden 80-155 ft. Kettle River Formation - chert with 3-5%pyrite. 155-270 ft. Leucocratic arkose derived from a qtz. diorite approximately 3% pyrite except from 200-250 ft. where the sulfide content is only 1%. 270-390 ft. mainly siliceous fragment, slightly chloritized with 2-3% pyrite.Arkose present but probably due to upper part of hole.Abundant calcite. The rock appears to be silicified arkose or possibly Knob Hill chert.

PH 22 A 200 foot deep vertical hole drilled on the Hound #1 Fraction. 0-30 ft. overburden. 30-200 ft. qtz. diorite minor chlorite almost no pyrite.

PH 23 Located off the switchback on the main haul road above the cattleguard on the Hound #1 Fraction. 0-30 ft. overburden. 30-100 ft. qtz. diorite moderately siliceous with chlorite and minor epidote, abundant calcite and 1-2% pyrite.

PH 24 Collared 600 ft. up the main haul road from PH 23. Vertical to 162 ft. 0-30 ft. overburden. 30-160 ft. Knob Hill Chert with 1-2% pyrite. This unit is composed mainly of silica with moderate chlorite and minor epidote. Some of the pyrite looks black probably due to crushing in a breccia zone similar to the Sunset ore. Numerous diorite dykes between 100-130 ft. 160-162 ft. qtz. diorite with abundant calcite. Rods stuck at the contact, and 130 ft. of rods were lost in the hole.

PH 25 Located just off the public road to the mill; this hole was collared near the southwestern corner of the Hound #1 Fraction. The hole is vertical to a depth of 100 ft. Bedrock was not reached.

PH 26 This hole is located next to the mine sub-station on the Primrose Crown Grant L927. Drilled to test mineralization in the Sulphide Stope. 0-65 ft. overburden. 65-95 ft. Knob Hill Chert. 95-120 ft. pulaskite. 120-200 ft. black chert or qtz.-chlorite schist; similar to hole PH 1. 1-2% pyrite.

PH 27 Drilled across the main haul road from PH 26 this vertical hole is to test the extension of mineralization in the Sulphide Stope. 0-10 ft. casing. 10-20 ft. mixed diorite (overburden). 20-40 ft. strongly oxidized mineralized zone, magnetite, iron oxide, pyrite, and chalcopyrite. 40-60 ft. well mineralized skarn, magnetite and chalcopyrite. 60-74 ft. greenish-black chert with minor mag. and Cp. 74-76 skarny diorite with abundant epidote. 76-83 ft. Knob Hill Chert. 83-86 ft. pulaskite. 86-100 ft. Knob Hill Chert with 1-3% pyrite.

PH 28 Drilled June 21, vertical, Sulphide zone

0-40	casing, overburden
40-78	mineralized skarn zone
78-90	skarny diorite, abundant epi., py., and mag.
90-105	yellowish-green to black skarn with mag., py., and epi.
105-107	skarny diorite
107-111	pulaskite
111-120	Knob Hill chert

PH 29 Drilled June 21, vertical, Sulphide zone

0-80	casing, overburden
80-100	Knob Hill chert

PH 30 Drilled June 29, vertical, Sulphide zone

0-20	casing, overburden
20-112	skarny diorite
112-135	skarny diorite with mag. and minor py. and cp.
135-148	pyritic skarny diorite; broke into old stope.

PH 31 Drilled June 30, vertical Sulphide zone

0-159	skarny diorite, abundant epi.
159-170	as above, abundant py.
170-200	mineral zone, abundant py., mag., cp. in diorite
200-230	diorite with abundant py., minor cp
230-266	skarny diorite, 1-3% py.
266	broke into 300 ft. level?

PH 32 Drilled July 1, vertical, Sulphide zone

0-15	casing, overburden
15-224	skarny diorite, abundant epi.
224-229	altered diorite, mixed return - black, white, dark blackish red.
229-235	black return, altered diorite with abundant py.
235	hole lost due to caving

PH 33 Drilled July 2-3, vertical, Sulphide zone
0-15 casing, overburden
15-115 skarny diorite
115-128 altered diorite, minor mag., py., and cp.
128-151 sedimentary skarn, mixed white and black return, minor spotty mag. with py. and cp.
151-159 black chert
159-190 well mineralized mag., py., cp.
190-220 mixed return spotty mineralization as above.
220-280 mixed skarn (sedimentary) with 2-4% py., no visible cp.
280-300 pulaskite, end of hole.

PH 34 Drilled July 3, vertioal, Sulphide zone
0-30 casing
30-47 skarny diorite
47-49 hemitite
49-52 mineral zone, mag., he., minor cp. and py.
52-94 unmineralized skarn (sed. ?) with spotty mag.
94-98 epidote skarn with minor cp.
98 lost circulation, abandoned hole.

PH 35 Drilled July 3, vertical, Sulphide zone
0-55 casing, overburden
55-60 black return, mag., py., no visible cp.
60-142 mainly greenish black pyritic chert, intermittent bands of heavy py.
142-150 slightly altered (chl. epi.) arkose?, well pyritized.

PH 36 Drilled July 4, vertical, Shaft zone
0-10 casing
10-66 altered diorite?, chl. and epi., minor py., epi. increases to 66.
66-159 altered diorite?, epi.-garnet skarn minor py. and cp.
159 lost, hit 200 level.

PH 37 Drilled July 4, vertical, Shaft zone
0-50 casing, overburden
50-60 heavy magnetite, good ore (cp.)
60-70 mineral zone, minor cp.
70-100 skarny volcanic. (KH?)
100-120 dark blackish-green chert

120-140 skarny volcanic, abundant py.
140-144 light colored highly silicious chert (KH?)
144-146 black dike
146-150 same as 140-144

PH 38 Drilled July 5, vertical, entrance to bench 6 and 7, Motherlode Pit.

0-10 casing, no sample
10-30 pyritic green chert
30-50 pulaskite
50-70 pyritic green chert
70-100 pyritic skarny volcanic (KH?), epi., and chl.
100-250 return dark, epi, and chl. die out, well pyritized, rock type dark grey to black andesite (?)

PH 39 Drilled July 6-8, vertical, west edge Motherlode Pit.

0-10 casing, no sample
10-20 green chert with py., mag., and cp.
20-43 mainly green chert, minor mag.
43-45 good looking mineralization, mag., py., and cp.
45-70 mixed limey sed. and chert with 5-10% py., minor cp. and garnet, bands of epi.

70-242 black cherty andesite (?)
242-250 pulaskite

PH 40 Drilled July 8, east at -60°, west edge Motherlode Pit.

0-10 casing, no sample
10-30 green to black epidotized andesite (?) abundant calcite and py., minor cp.
30-70 epi.-chl. skarn with up to 5% py.
70-110 epi.-calcite skarned limestone, 3-5% py.
110-155 skarny diorite (epi.), minor py.
155-205 black return; epi.-mag.-gar skarn with abundant py. and cp.
205-230 skarny diorite with epi., chl., cal. and minor mag.,
230-238 pulaskite
238-300 multicolored skarny diorite with epi., chl., gar. and mag. little or no sulphides. skarn becomes weaker with depth.

PH 41 Drilled July 8-9, N30E at -60°, Drilled on ramp down to Bench 9 of Motherlode Pit.

0-10	casing, no sample
10-25	gar., epit., mag. skarn, 5-10% py. with minor cp.
25-50	skarny diorite
50-110	epidotized limestone, 1% py.
110-197	skarny diorite
197-215	mag., epi., gar. skarn 2-5% py. with cp.
215-225	skarny diorite, minor py.
225-245	epidotized pulaskite
245-250	epidotized diorite, barren.

PH 42 Drilled July 9, N50E at -60°, Sunset zone

0-20	casing, dam fill, no sample
20-40	dark green chert with minor py. and cp.
40-80	mag.-py. zone with cp.
80-120	greenish Knob Hill chert.

PH 43 Drilled July 10, east at 45°, on old tailings pond.

0-75	tailings, failed to reach bedrock.

PH 44 Drilled July 10, vertical, northwest end of Sunset zone.

0-65	casing
65-70	no sample saved
65-81	multicolored iron oxide stained chert minor cp.
81-100	magnetite with cp.
100-136	pulaskite
136-145	greenish-grey f.g. volcanic (Pulaskite?)
145-150	Knob Hill chert

PH 45 Drilled July 10-11, vertical north rim Motherlode pit.

0-30	casing
30-100	white limestone
100-140	skarny diorite (epi. and chl.) minor py.
140-160	chert
160-218	skarny diorite (epi. and chl.) minor py.
218-234	pulaskite
234-245	cherty arkose (?)
245-256	light green chloritized diorite, minor py.
256-268	pulaskite
268-400	light green chloritized diorite

PH 46 Drilled July 12, vertical, north rim Motherlode Pit
0-10 casing
10-105 white limestone, lost circulation @ 105 ft.

PH 46A Drilled July 12, vertical, 200 ft. N of north rim Motherlode Pit.
0-20 casing
20-70 grey limestone
70-230 white limestone
230-340 chloritic diorite
340-350 pulaskite
350-360 diorite, hole lost due to caving.

Ph 47 Drilled July 13, vertical, Sulphide zone
0-20 casing
20-121 epidotized diorite, caving started at 110, hole abandoned due to caving.

PH 48 Drilled July 13, vertical, south edge of Shaft zone
0-149 epidotized diorite, minor py.
149-160 pulaskite
160-280 dark grey-green ehloritized diorite minor py.
280-300 silicious light green chert (KH?)

PH 49 Drilled July 14, vertical, west of Motherlode Pit
0-20 casing
20-100 greenish black andesite (?) (KH?) minor py.

PH 50 Drilled July 14, vertical, west of Motherlode pit
0-30 casing
30-40 white limestone
40-60 skarny diorite
60-80 greenish black andesite (?)
80-100 Knob Hill chert

PH 51 Drilled July 41, vertical west edge old tailings pond
0-10 casing
10-120 skarny diorite, minor py.

PH 52 Drilled July 14, vertical, west edge of old tailings pond
0-30 casing
30-50 light brownish (weathered) diorite
50-60 light green limey sediments hole abandoned due to caving.

ASSAY VALUES

Percentage Copper

FOOTAGE	HOLE NUMBERS														
	PH17	PH18	PH19	PH27	PH28	PH30	PH31	PH33	PH34	PH36	PH37	PH40	PH41	PH42	PH44
10-20	0.86	0.20	0.22	0.02								0.13	0.31		
20-30	0.76	0.12	0.01	0.04								0.03	0.22	0.11	
30-40	0.28	0.50	0.01	0.24	0.06							0.05	0.08	0.19	
40-50		0.61	NIL	0.83	1.00				0.07			0.13	0.03	0.33	
50-60		0.41	0.04	0.68	0.94				0.04		0.98	0.04	0.03	0.47	
60-70		0.38	0.14	0.45	0.20				0.03	0.28	0.09	0.03	0.03	1.12	
70-80		0.47	0.08	0.14	0.38				0.03	0.26	0.04	0.02	0.03	0.32	0.73
80-90		0.25	0.14	0.04	0.10				0.06	0.19		0.02	0.02	0.06	0.92
90-100		0.19	0.10	0.02	0.17				0.41	0.17		0.01	0.02	0.05	1.40
100-110	0.46	0.13	0.17		0.09			0.06		0.31		0.02	0.02		
110-120	0.47		0.13		0.08	0.07		0.14	0.04			0.02	0.01		
120-130	0.50	0.13	0.12			0.42		0.19		0.03		0.02	0.03		
130-140		0.08	0.12			0.28		0.12		0.06		0.02	0.02		
140-150		0.06	0.22			0.06		0.47		0.14		0.02	0.04		
150-160		0.05						0.13		0.17		0.29	0.12		
160-170		0.04					0.08	1.83				0.64	0.14		
170-180							0.84	1.24				0.68	0.08		
180-190							0.52	1.08				0.66	0.05		
190-200							0.36	0.34				1.14	0.42		
200-210							0.31	0.35				0.35	0.56		
210-220							0.14	0.32				0.26	0.25		
220-230							0.14	0.06				0.15	0.05		
230-240												0.05	0.03		
240-250												0.09	0.07		
250-260												0.08			
260-270												0.10			
270-280												0.08			
280-290												0.04			
290-300												0.03			

ASSAYS ON COMPOSITES FOR SILVER AND GOLD

Hole No.	Footage	Ounces Gold	Ounces Silver
PH27	40-70	0.040	Tr
PH28	40-80	0.100	0.13
PH30	110-130	0.010	Tr
PH30	130-150	0.013	0.04
PH31	170-180	0.025	0.13
PH31	160-170	0.012	Tr
	180-200	0.012	Tr
PH31	200-220	0.048	0.02
PH31	210-230	0.036	0.08
PH32	220-230	0.005	0.04
PH32	230-235	0.010	Tr
PH33	110-140	0.005	Tr
PH33	140-160	0.005	0.02
PH33	160-190	0.064	0.22
PH33	190-220	0.005	0.05
PH34	90-100	0.005	0.08
PH40	150-160)	0.050	Tr
	200-220)		
PH40	160-200	0.050	0.06
PH41	190-220	0.020	Tr
PH42	40-80	0.018	0.56
PH44	70-100	0.032	Tr