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COLOSSUS

Geological Report

by

D. C. Malcolm, B.A.Sc., P.Eng.2568

Vancouver, B.C.,
August 1st, 1960.

COLOSSUS

Owners:

Blue Bell and Portage Mineral Claims -
Herbert William Gardner, 1807 Fir Street,
Vancouver, B.C.

Colossus and Champness Fraction Mineral Claims -
Andrew Dixon, Laidlaw, B.C.

(under option to Phelps Dodge Corporation of Canada,
Limited)

Fred Nos. 1 - 13 incl. Mineral Claims -
Phelps Dodge Corporation of Canada, Limited

Red Nos. 1 - 12 incl. Mineral Claims -
Phelps Dodge Corporation of Canada, Limited

Location:

Estero Basin, Latitude 50° Longitude 125° N.E.,
Range 1, Coast District,
Vancouver Mining Division.

Author:

D.C.Malcolm, B.A.Sc., P.Eng. 2568

Dates of Work:

March 21st to May 15th, 1960.

COLOSSUS

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COLOSSUS

Geological Report

SUMMARY:

Geologists of the Phelps Dodge Corporation of Canada, Limited mapped the Colossus claims early in 1960. Copper and molybdenum sulphides occur in quartz and detailed geological mapping was done to attempt to determine the continuity of the deposits and how they might best be explored. The work showed that faulting has so disrupted the deposits that there remains no continuity either horizontally or vertically.

LOCATION:

The Colossus claims are staked along the mountainside above Fredricks Arm and Estero Basin, an arm of the Pacific Ocean at Latitude 50° 24' North, Longitude 125° 10' West. They are approximately 150 miles northwest of Vancouver, British Columbia.

GEOLOGY:

(a) Topography:

The relief in the area is great and most slopes are precipitous. They consist of rock cliffs separated by talus slopes and heavily timbered areas. Some logging operations have left parts of the mountain slopes impassable and the underbrush is jungle-like.

(b) Rock Types:

The rocks in the area are part of the Coast

Range intrusive complex and consist of granitic intrusives of a composite nature complicated by extensive normal and reverse faulting and by acid and basic diking. The following rocks have been classified megascopically.

(1) Quartz:

This is a sugary textured rock which has in part been recrystallized. The quartz grains are commonly between 1/16 and 1/8 inch in size and form a mozaic texture. In places the rock has a banded appearance and it is minutely fractured in numerous directions. The rock is generally pure.

(2) Pegmatite:

The rock is coarse textured and composed of pink orthoclase feldspar and quartz with few if any femic minerals except in a few places where streaks of chlorite occur. It is generally highly fractured and grades into both the quartz and granodiorite. In several places the pegmatite merges into a fine grained rock of quartz and feldspar with small black hornblende crystals and very black biotite.

(3) Granodiorite:

A coarse grained granitic textured rock containing about 50% plageoclase feldspar, about 10% quartz and 40% dark colored hornblende. In places, near the pegmatites, there is up to 30% of pink orthoclase feldspar and a corresponding decrease in the amount of the plageoclase feldspar present.

(4) Gneissic Granodiorite:

There are a great many areas of gneissic rocks in the granodiorite. These show foliation and cataclastic

structures and appear to have been derived from older rocks intruded by the granodiorite and grade into that rock.

(5) Diorite:

Fine grained dioritic inclusions were mapped in the granodiorite. These are generally rounded and grade into the surrounding granodiorite.

(6) Hornblende Diorite:

A small plug of hornblende diorite intrudes the granodiorite north of the mine workings. It is a coarse textured hornblende bearing rock with relatively small amounts of plagioclase and biotite. It shows fracturing.

(7) Dike Rocks:

Small dikes of lamprophyre, hornblende diorite porphyry and serpentized andesite or diorite rocks occur in the workings. They are generally fine grained and in places are difficult to differentiate from basic bands in the gneiss.

(c) Alteration:

Many of these rocks have been highly altered by feldspathitization and by sericitization. In places silicification is intense. Some of these materials have been introduced after rock fracturing and may be closely associated with the injection of the pegmatitic material. The reddish orthoclase common in the simple pegmatite is extensively distributed through the granodiorite and quartz irregularly. Sericite is associated with the orthoclase and with sulphide mineralization. Chalcopyrite, often ringed by bornite, molybdenite, pyrite and

pyrrhotite are the common sulphides.

(d) Faulting:

A study of air photographs of the area show a series of north 45 to 50 degree east striking linears, a second set of north 70 to 80 degree east striking linears, a number of parallel north 70 degree west striking breaks and a host of smaller faults in many directions. A more detailed study of the faulting on the ground has shown two main sets of fractures as follows:

(1) A series of reverse faults striking north east with a dip of 45 to 60 degrees north west create an imbricate structure and they are a late series younger than all the rocks in the area.

(2) A set of normal faults striking slightly north of west and dipping almost vertically or at steep angles both north east and south west. This set has had several periods of movement and abruptly terminates the quartz and pegmatite in several places. The crushing associated with these latter faults is from 20 to 150 feet in width.

Distribution of Rocks:

The whole claim area originally was underlain by granodiorite which contained gneissic bands and dioritic segregations and quartz in irregular northwest trending bands, veins or segregations. These rocks were faulted and intruded by a hornblende diorite plug, by irregular pegmatitic intrusives and by basic dikes. The normal faults have broken the rocks into a series of displaced blocks along their strike and the

reverse faults have moved the blocks and further broken them across their dip. This has resulted in a number of irregular blocks of quartz in the mountain as shown on the attached surface plan. There is little or no continuity between blocks either vertically or horizontally.

Report by:

D C Malcolm

D. C. Malcolm, B.A.Sc., P.Eng.2568.

Vancouver, B.C.,

August 1, 1960.

Expenditure - Colossus

Geological Mapping

Wages:

Geologist	M.G.Mooney, BA.	March 21st to April 25th, 1960
Geologist	John DeLeen, MAsc., P.Eng.3675	April 18th to May 9th, 1960
Geologist	H.W.Agnew, MA.	April 25th to May 15th, 1960
Assistant	L. Kiss	March 21st to May 15th, 1960
Assistant	Z. Plaskowski	April 18th to May 15th, 1960

Supervision and study of air photographs - D. C. Malcolm, BAsc.,
P. Eng. 2568.

Wages:

Geology -----	\$ 2,283.89
Compensation and Unemployment Insurance -----	89.60
Supervision-----	<u>800.00</u>
Total Wages -----	\$ 3,173.49
Camps and Cookery -----	537.79
Transportation and Travelling -----	569.47
Boat Hire -----	206.80
General Field Expense -----	<u>35.72</u>
Total -----	<u>\$ 4,523.27</u>

Certified as to accounting:

V. M. Scott
V. M. Scott, Accountant.

Claims - Colossus

Estero Basin, Latitude 50° Longitude 125° N.E.,
Range 1, Coast District,
Vancouver Mining Division.

Owner

Colossus Group 1

Champhess Fr. C.G. Lot No. 260 Andrew Dixon, under
option to Phelps Dodge Corporation of Canada, Limited
Fred 3 M.C., Record 8026)
Fred 2 M.C., Record 8025)
Fred 4 M.C., Record 8027)
Fred 5 M.C., Record 8028)
Fred 6 M.C., Record 8029) Phelps Dodge Corporation
Fred 7 M.C., Record 8030) of Canada, Limited

Colossus Group 2

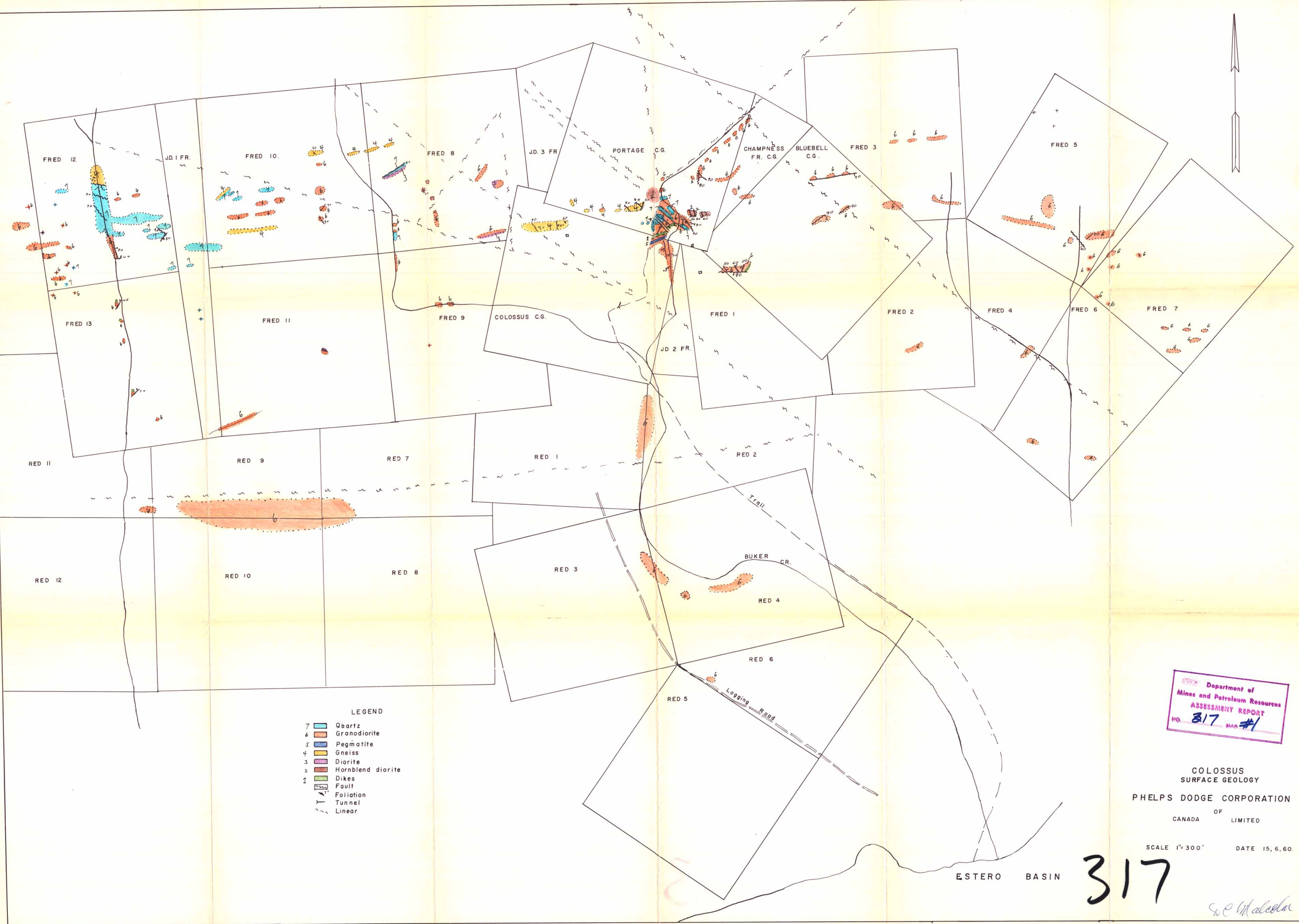
Blue Bell C.G. Lot 258, Herbert William Gardner, under
option to Phelps Dodge Corporation of Canada, Limited
Fred 1 M.C., Record 8024)
J.D. 2 Fr., Tag 294848)
Red 2 M.C., Record 8038)
Red 4 M.C., Record 8040)
Red 5 M.C., Record 8041)
Red 6 M.C., Record 8042) Phelps Dodge Corporation
Red 3 M.C., Record 8039) of Canada, Limited

Colossus Group 3

Colossus C.G. Lot 256 Andrew Dixon, under
option to Phelps Dodge Corporation of Canada, Limited
Red 1 M.C., Record 8037)
Red 7 M.C., Record 8043)
Red 8 M.C., Record 8044)
Red 9 M.C., Record 8045)
Red 10 M.C., Record 8046)
Red 11 M.C., Record 8047) Phelps Dodge Corporation
Red 12 M.C., Record 8048) of Canada, Limited

Colossus Group 4

Portage C.G. Lot No. 259, Herbert William Gardner, under
option to Phelps Dodge Corporation of Canada, Limited
J.D. 1 M.C. Record)
(Tag 294849)
J.D. 3 M.C. Record)
(Tag 401100)
Fred 8 M.C. Record 8031)
Fred 9 M.C. Record 8032)
Fred 10 M.C. Record 8033)
Fred 11 M.C. Record 8034)
Fred 12 M.C. Record 8035) Phelps Dodge Corporation
Fred 13 M.C. Record 8036) of Canada, Limited



- LEGEND
- 7 Quartz
 - 6 Granodiorite
 - 5 Pegmatite
 - 4 Gneiss
 - 3 Diorite
 - 2 Hornblend diorite
 - 1 Dikes
 - Fault
 - Foliation
 - Tunnel
 - Linear

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 317 MAP #1

COLOSSUS
SURFACE GEOLOGY
PHELPS DODGE CORPORATION
OF
CANADA LIMITED

SCALE 1" = 300' DATE 15, 6, 60.

ESTERO BASIN

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W. P. Malcolma