

GEOLOGICAL - GEOCHEMICAL REPORT  
on the EAGLE Property

EAGLE, RAVEN, LOCK #1-4 MINERAL CLAIMS

SKEENA MINING DIVISION

MORESBY ISLAND, QUEEN CHARLOTTE ISLANDS, B.C.  
Latitude 52° 42' N Longitude 131° 48' W  
NTS 103B/12W

Dates of Work:	April 26 - May 12, 1983
Owner:	Diamond Resources Inc.
Operator:	JMT Services Corp.
Written by:	J.S. Christie, G.G. Richards
Submitted:	August 3, 1983

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**11,603**

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## INTRODUCTION

Previous work on the property has focussed on chalcopyrite in amygdules and hairline fractures within greenstones of the Karmutsen Formation. See Athol Sutherland-Brown's description of the SWEDE property on page 215 of B.C. Dept. of Mines Bulletin No. 54 - Geology of the Queen Charlotte Islands.

The present work was designed to provide broad scale geochemical-geological coverage of the EAGLE claim. The precious metal potential was of particular interest as well as copper because of numerous recent discoveries of gold-silver properties in the immediate area. Four geologists collected 157 samples, of which 28 were rock chips, 3 were silts and 126 were soil samples. All samples were analyzed geochemically for arsenic, gold, copper and silver.

Results are encouraging. Consistent anomalous geochem patterns for Ag, Cu and As and several highly anomalous Au values occur on the property some of which are related to geology. More detailed work is required in some of these anomalous areas.

## LOCATION AND ACCESS

The property is located on the Swede Peninsula and low lying slopes, west of Anna Inlet and Klunkwoi Bay in the Lockeport area of central Moresby Island, Queen Charlottes Islands, some 60 km south of the town of Sandspit.

The property is accessible by helicopter from Sandspit to the ridge top in the middle of the EAGLE claim or by helicopter, boat or



JMT SERVICES CORP.			
<i>EAGLE CLAIM</i>			
PROPERTY LOCATION MAP			
<i>Figure 1.</i>			
SCALE			
0		136 Miles	
Prepared by	Date	NTS MAP AREA	DRAWING No.
Drawn by	Revised:		



fixed-wing float-equipped aircraft to numerous places along the tide water shoreline. Local access on the property is by foot and because of rugged topographic relief in many areas, is slow and difficult.

#### TOPOGRAPHY AND VEGETATION

The Swede Peninsula east of Anna Inlet forms a hill some 485 m high with steep rocky slopes often forming cliffs of up to 200 m in height. Vegetation is mixed spruce-hemlock forest and stunted pine-cypress forest with abundant salal undergrowth. Soils are well developed but thin, generally less than one or two metres deep except where rocky talus slopes occur beneath cliffs. Recent and old slide scars are numerous.

The slopes west of Anna Inlet form rocky knolls with stunted pine-cypress forest and abundant salal undergrowth.

#### MINERAL CLAIMS

The EAGLE property consists of six mineral claims with a total of 15 units. Pertinent claim information is listed in the following table:

<u>CLAIM NAME</u>	<u>UNITS</u>	<u>RECORD NO.</u>
EAGLE	9	622(5)
RAVEN	2	623(5)
LOCK 1	1	2293(5)

<u>CLAIM NAME</u>	<u>UNITS</u>	<u>RECORD NO.</u>
LOCK 2	1	2294(5)
LOCK 3	1	2295(5)
LOCK 4	1	2296(5)

#### GEOLOGY

General - Only the geology on the Swede Peninsula was studied. The oldest rocks on the property are massive, porphyritic and amygdaloidal greenstones of the Karmutsen Formation. Overlying these rocks are massive gray limestone, black limestone and limy argillites of the Kunga Formation. Several dykes of dacitic, andesitic and possibly gabbroic compositions but commonly andesitic and often porphyritic, form a dyke swarm, intrusive into the Kunga Formation units, on the ridge in the south part of the survey. Their outcrop pattern has been generalized on Figure 3, and thus do not show intervening Kunga argillites and limestones.

Structure - Two prominent northwesterly trending faults mapped on the ridge at C129 and at C142 have brought limy argillite between the faults in contact with massive gray limestone on the other sides of the faults. A north south fault with a sinistery gouge less than one meter wide occurs at B147. A. Sutherland-Brown in B.C. Dept. of Mines Bulletin No. 54 describes two major faults that bound the Swede Peninsula-- the northern one a large one parallel with Anna Inlet with either the

south block dropped relative to the north or a large right hand component of movement.

Mineralization and Alteration - The most noticeable mineralization is amygdaloidal and fracture filling chalcopyrite that occurs with epidote and chlorite near the two adits above Anna Inlet in float at R86 and R102 and probably numerous other locations, judging from the geochem pattern and descriptions of previous work. A third adit is supposed to exist at 450 feet elevation above the two adits shown on Figure 3.

The diorite dykes near C134 to C139, C147 and C152 contain 1-3% pyrite-pyrrhotite with local areas containing up to 10% sulfide. The dykes are also locally bleached and silicified.

Local silicification occurs at C121 on the unconformity with Karmutsen greenstones and several pieces of quartz and quartz-breccia float occur sporadically along the survey lines where indicated on Figure 3. Siliceous breccia float at B134 contains a small amount of a very fine-grained gray sulfide, possibly arsenopyrite.

#### GEOCHEMISTRY

General - The soil geochemical lines described in this report were designed to provide broad geochemical coverage of the EAGLE claim in the hope of finding geochemical targets for more detailed work. One hundred and fifty-seven soil, rock chip and stream sediment samples were collected along four contour traverses except where cliffs prevented contouring.

Rock chip samples were made from three to ten rock chips small enough to fit into gusseted kraft sample bags. Soil samples were collected from the B horizon where possible, from a depth of 1 cm to 1/2 m. Stream sediment samples were collected with a spoon from active silt in creeks.

Gold, arsenic, copper and silver geochemical analyses were done on the minus 80 mesh fraction by Chemex Labs Ltd., 202 Brooksbank Ave., North Vancouver, B.C., using the following standard procedures:

GOLD - Fire assay preconcentration with Neutron Activation Analysis  
ARSENIC, COPPER and SILVER - Perchloric - nitric acid extraction  
with Atomic Absorption determination.

Arsenic - A large arsenic anomalous pattern of greater than 29 ppm As measures some 700 m by 800 m in the centre of the survey area. A second arsenic anomalous pattern exists at the southernmost part of the survey area. The area of intervening low arsenic values occurs over the area underlain by the porphyry dyke swarm. The northeast side of the anomaly is roughly coincident with the contact between massive gray limestone of the Kunga Formation to the southwest and greenstone of the Karmutsen Formation to the northeast.

Arsenic is particularly useful in prospecting for gold because of its common association with gold mineralization.

Gold - Three highly anomalous gold values occur within the arsenic anomaly described above. They occur in soils at B128 (590 ppb Au), B133 (314 ppb Au), and in silicified breccia float at B134 (230 ppb

Au). Overall gold results are much lower probably ruling out chances for bulk tonnage low grade mineralization to occur on the hillside. However potential for narrower zones of gold mineralization should be pursued particularly within the arsenic anomaly. The three high gold values mentioned above should all be prospected further.

Copper - A broad copper anomaly of greater than 79 ppm Cu occurs in soils in an area underlain by Karmutsen greenstones. Fracture and amygdaloidal chalcopyrite are known to occur within the greenstones from the present survey and previous work by others. The overall geochem pattern is crudely stratigraphic in that it roughly parallels the contact with overlying Kunga Formation massive gray limestone. No copper values high enough to consider economic were obtained from the present survey.

Silver - A broad silver anomaly of greater than 0.4 ppm Ag up to 450 metres wide is defined by seven soil samples on the ridge at the south end of the survey in an area roughly coincident with the feldspar porphyry dyke swarm. The anomalous pattern is open to the east and west.

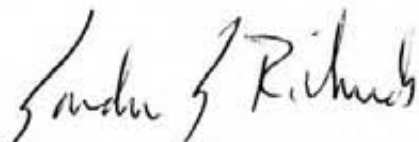
#### CONCLUSIONS AND RECOMMENDATIONS

Karmutsen greenstones overlain by Kunga massive gray limestones to limy argillites have been intruded locally by a feldspar porphyry dyke swarm and cut by at least two northwest trending faults. Soil samples outline: a large anomalous arsenic zone of greater than 29 ppm

AS with three contained highly anomalous gold values on ground underlain by limestones and limy argillites; a 450 metre wide silver anomalous zone roughly coincident with the dyke swarm; and a broad anomalous copper zone crudely parallel to stratigraphy and related to known showings of chalcopyrite mineralization.

Several of these geochemical patterns are open and require further work to limit the extent of the anomalous patterns as well as more detailed work to relate them to a source. In particular detailed prospecting should be done uphill from the three highly anomalous gold values and over the silver anomalous zone. More widespaced sampling should be done east of the silver anomaly on the southernmost part of the EAGLE claim.

Respectfully yours,



Gordon G. Richards, P. Eng.



James S. Christie, Ph. D.

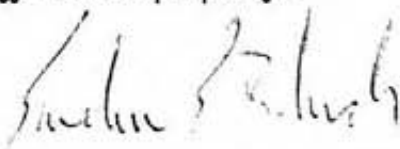
## STATEMENT OF COSTS

TIME			
J.S. Christie	April 30, May 10(1/2)		\$ 375.00
W.A. Howell	April 30, May 26(1/2)		375.00
G.G. Richards	April 27(1/2), 30, May 6(1/2), 11(1/2)		625.00
M. Carr	April 30, May 10(1/2)		375.00
Truck Rental	JMT vehicle	1 day @ \$50.	50.00
DISBURSEMENTS			
Sandspit Inn	#41524		190.79
	#41523		270.18
Pacific Western	#19006175 F portion		50.00
Chemex Labs	#18311263		1,707.50
	#18311264		414.40
Q.C. Helicopters	#5247		1,119.30
Supplies: flagging, string, sample bags			140.00
Airfare 1/2 x 4 men Vancouver-Sandspit			289.45
G. Richards, expenses			10.02
Drafting and reproductions			300.00
Report, writing, typing			750.00
			<u>\$ 7,041.64</u>

## STATEMENT OF QUALIFICATIONS

I, Gordon G. Richards, of Vancouver, British Columbia, do hereby certify that,

1. I am a Professional Engineer of the Province of British Columbia, residing at 6195 Lynas Lane, Richmond, B.C., V7C 3K8.
2. I am a graduate of the University of British Columbia, B.A.Sc., 1968, M.A.Sc. 1974.
3. I have practised my profession as a mining exploration geologist, continuously since 1968.
4. This report is based on my personal knowledge of the district, and mapping of the geology at the property.

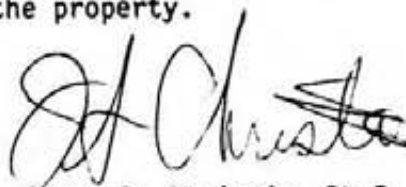


Gordon G. Richards, P.Eng.

## STATEMENT OF QUALIFICATIONS

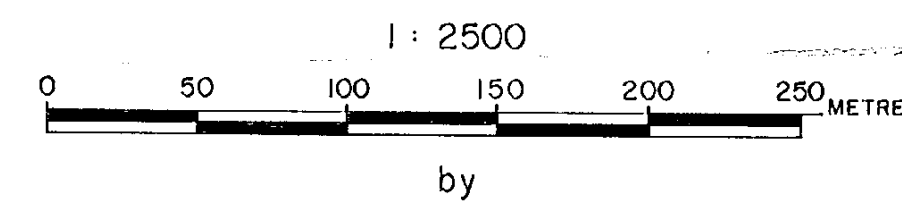
I, James S. Christie of Vancouver, British Columbia do hereby certify that,

1. I am a Professional Geologist residing at 3921 West 31st Avenue, Vancouver, B.C., V6S 1Y4;
2. I am a graduate of the University of British Columbia, B.Sc., Honours Geology, 1965; Ph.D. Geology, 1973;
3. I have practised my profession as a mining exploration geologist, continuously since 1965;
4. I am a Fellow of the Geological Association of Canada.
5. I am a Member of the Geological Society of America.
6. This report is based on my personal knowledge of the district, and mapping of the geology at the property.



James S. Christie, Ph.D.

EAGLE PROPERTY  
MORESBY ISLAND, QUEEN CHARLOTTE ISLANDS, B.C.  
N.T.S. 103B/12W  
As, Au, Cu, Ag GEOCHEMISTRY  
&  
GEOLOGY



J.M.T. SERVICES CORP. 8927 HURON ST. VANCOUVER, B.C.  
Base map compiled by McELHANEY SURVEYING & ENGINEERING LTD. from  
B.C. Government of 1970.  
Survey control by hip chains, compass, barometer using base map reference.  
Contour interval 20m.  
Drawn by FIRELINE DRAFTING LTD.

LEGEND

- 1 ANDESITIC TO DACITIC FELDSPAR PORPHYRIES
- 2 KUNGA BLACK LST TO LIMY ARGILLITE
- 3 KUNGA MASSIVE GREY TO WHITE LST.
- 4 KARMUTSEN GREENSTONES
- 5 80 ppm Cu Soils
- 6 05 ppm Ag Soils
- 7 30 ppm As Soils
- 8 > 9ppb Au
- 9 SOIL SAMPLE
- 10 ROCK SAMPLE
- 11 SILT SAMPLE
- 12 SAMPLE NO. 26/15/26/1 As/Au/Cu/Ag 200/200/200/200
- 13 HELICOPTER LANDING AREA

