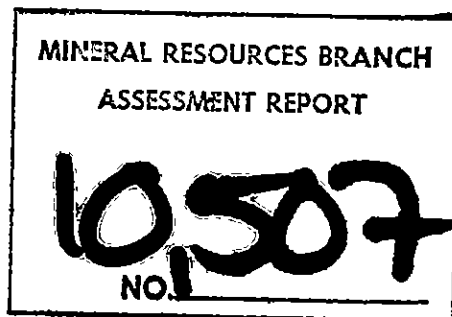


A Diamond Drill Report
on the
DAVE CLAIMS
Located in the
Likely Area, Cariboo Mining Division
Map M93A/12E
Latitude $52^{\circ} 37' N$ and Longitude $121^{\circ} 35' W$
for
Raymond A. Cook
(owner and operator)
by
Raymond A. Cook B.Sc., M.Sc., Geology
July 17, 1982



Raymond A. Cook

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1. INTRODUCTION

An exploration diamond drill program was performed to test the continuity and character of polymetallic lode mineralization from hydrothermal systems.

Property

The Dave claims are located in the Quesnel Lake area of the Cariboo Mining Division, British Columbia. The claims are held by Raymond A. Cook and the record number is 1773.

Location and Access

The claims are situated approximately 1 kilometre southwest of the town of Likely, British Columbia. Likely is some eighty-three kilometres from One Hundred and Fifty Mile House, by a good paved and gravel road. The claims are accessible by the Horsefly-Likely gravel road. Slum Gulch runs diagonally across the property from the southwest to the northeast (Figure 1).

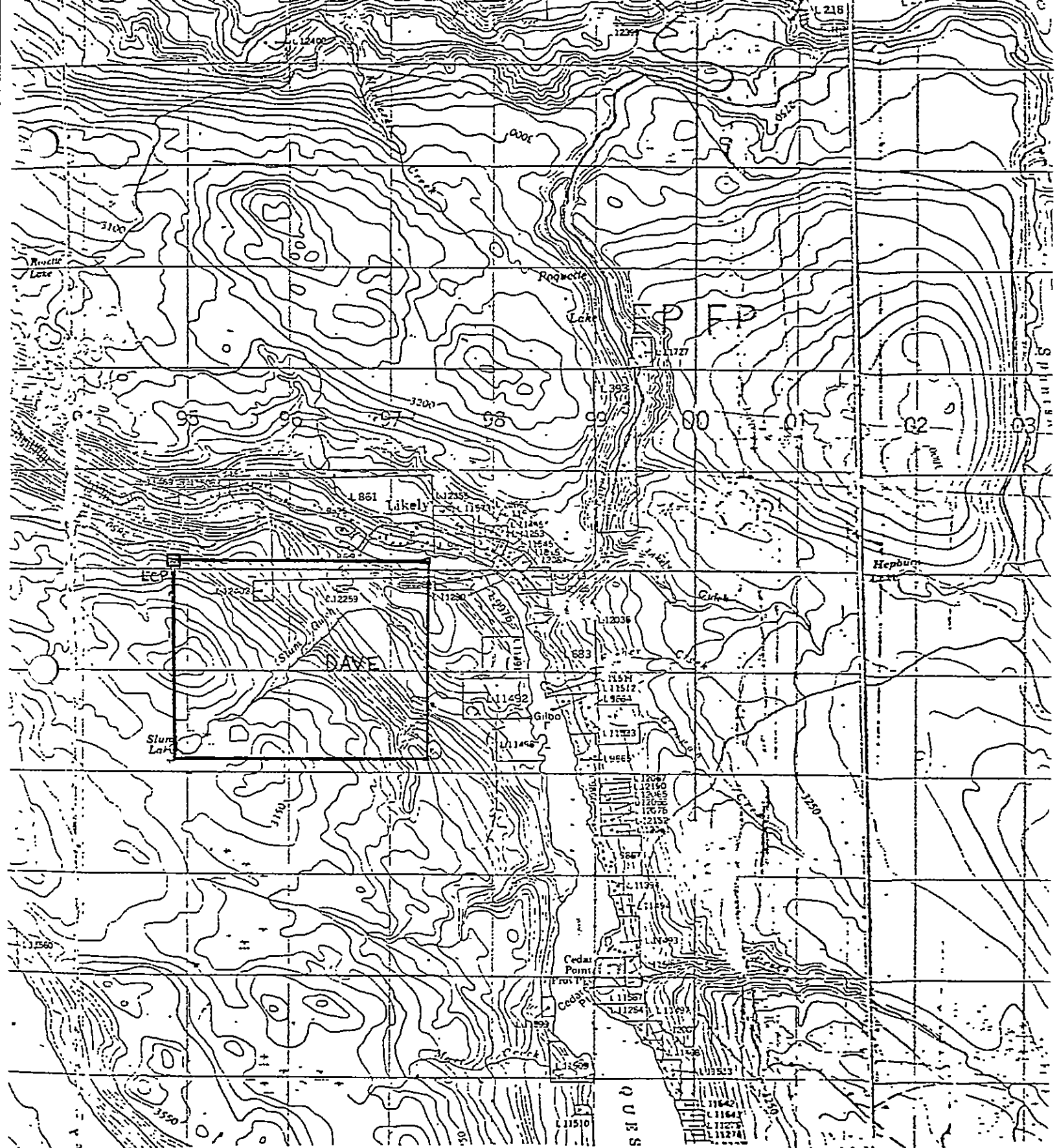
History

The area of the Dave claims was initially subjected to exploration in 1862, at the time of the Cedar Creek gold rush. Because of the proximity to the Cedar Creek, subsequent attention has been focused on this area up to the present. The absence of a major water course, however, has limited the possibility of placer gold. Not until the 1960's, when discoveries of vein gold (Cariboo Gold Quartz mine, Island Mountain mine, Cariboo Hudson mine) deposits motivated explorationists to consider lode gold, did a real resurgence of exploration take place in the general area of the Dave claims. The results of the resurgence were the discoveries of the Cariboo Bell and Big Timothy Mountain deposits. These massive sulphide, porphyry copper and molybdenum deposits were related to the volcanics and intrusive stock complexes.

Initial assessment work on the property now known as the Dave was executed by Ardo Mines N.P.L. in the early seventies. They established geochemical and geophysical anomalies located in the northern half of the present claim block. One anomaly north of the Dave property boundary was drilled by Ardo and good copper-gold values were intersected thereby indicating potential for lode ore body emplacement.

Initial geological examination of the Dave property included mapping

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CARIBOO LAND DISTRICT
BRITISH COLUMBIA

Scale 1:50,000 Échelle

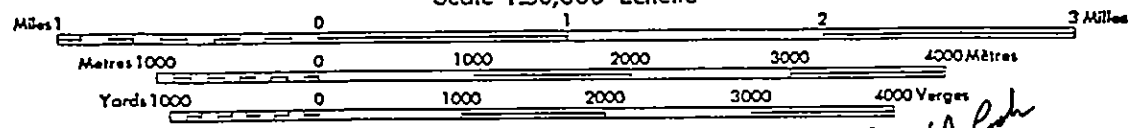


Figure 1.

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This Provisional Map is equivalent to a standard map in accuracy of content.

Some names on this map are not yet official. Corrections or additions are invited by the Surveys and Mapping Branch.

CONTOUR INTERVAL 100 FEET
Elevations in Feet above Mean Sea Level
North American Datum 1927
Transverse Mercator Projection

of outcrops mainly along road cuts and in particular the Slum Gulch outcrop about which geochemistry was executed. Particular attention was directed toward highly altered zones where hornblende diorite intrudes andesitic volcanics (1981 Dave Claims Report)(Figure 2).. This fine to medium grained hornblende diorite structure which cross-cut the volcanics has, in part, been mapped by Campbell and Tipper (1959-70). Association may also be drawn to the Cariboo-Bell copper-gold deposit which is located on Polly Mountain, the host mountain to the Dave claims.

Geochemical survey work of limited size defined anomalous copper values ($>2000\text{ppm}$) proximal to the road cut outcrops central to the Dave claims. This data supported the Slum Gulch exploration model of an association of polymetallic auriferous sulphides with the occurrence of hornblende diorite and monzonite.

Further substantiation of the geological model of the Dave claims was attained in Aug., 1981, by way of a limited diamond drill program. The program was to test the degree of alteration about the hornblende dyke noted in Slum Gulch, and to test the auriferous polymetallic geochemical values associated with the altered rock.

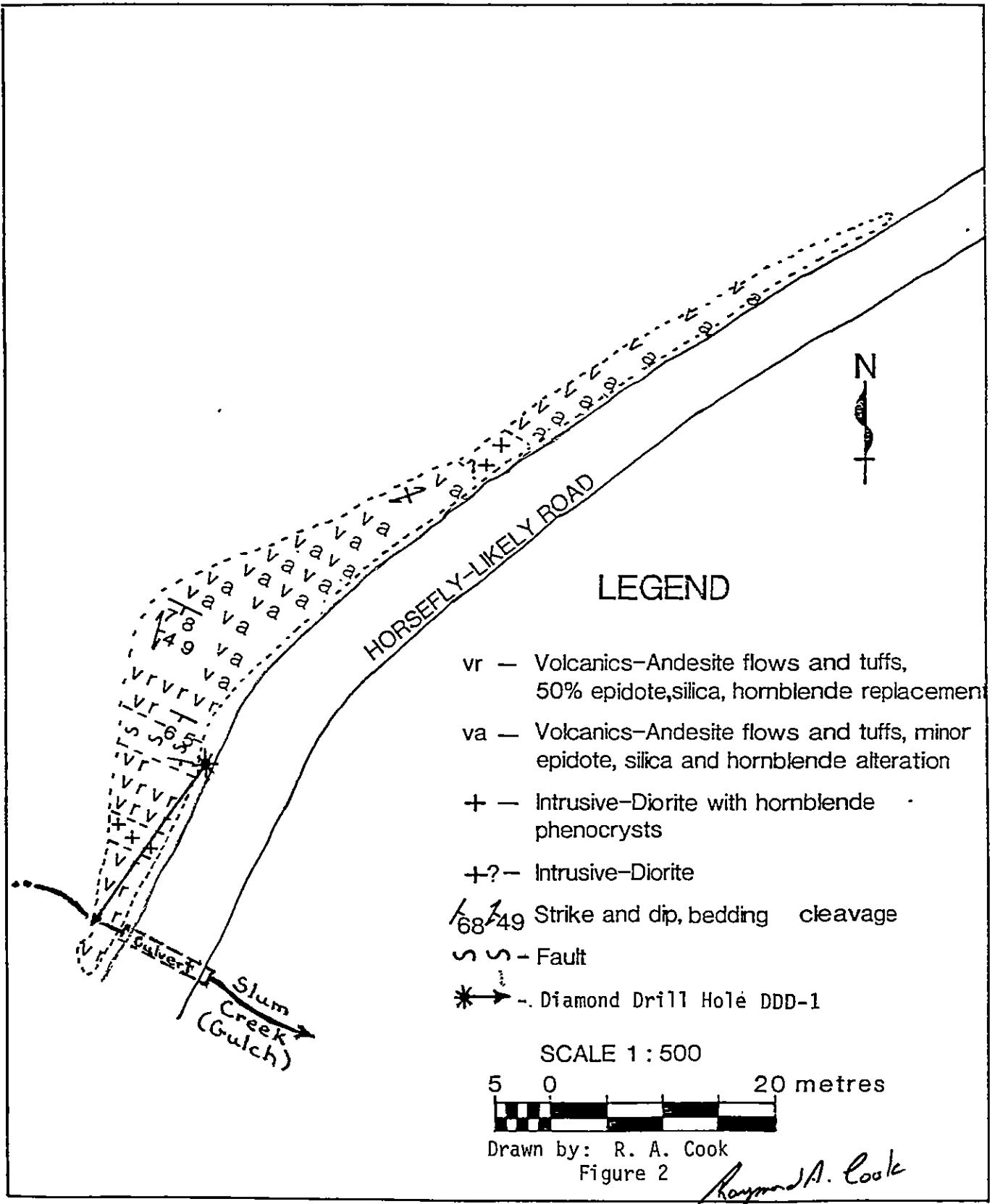
Summary of Work Performed

Diamond drilling was performed from the 15 to the 27 of August, 1981, using a JKS Winkie diamond drill with a 2.5 centimeter (1 inch) diameter core capacity.

Diamond drill hole DDD-1 was drilled at -45° , collared at 894 metres elevation, and the azimuth was 216° (Figure 3). The diamond drill casing was run from 0 to 4 metres, while total depth was 25.2 metres. The core recovery was 83%.

The DDD-1 hole was terminated because the alteration zone of the Slum Gulch fault was felt to have been traversed. The core examination later on revealed that the hole TD'ed in a medium greenish gray groundmass with augite, hornblende and plagioclase phenocrysts (see diamond drill log). The percentage of magnetite in the core was increasing to depth, as was chalcopyrite, and later acquired assays revealed gold and zinc to be anomalous at total depth. This tends to indicate that drilling terminated prematurely.

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LEGEND

- vr — Volcanics—Andesite flows and tuffs, 50% epidote, silica, hornblende replacement
- va — Volcanics—Andesite flows and tuffs, minor epidote, silica and hornblende alteration
- + — Intrusive—Diorite with hornblende phenocrysts
- +? — Intrusive—Diorite
- 68/49 — Strike and dip, bedding cleavage
- — Fault
- * — Diamond Drill Hole DDD-1

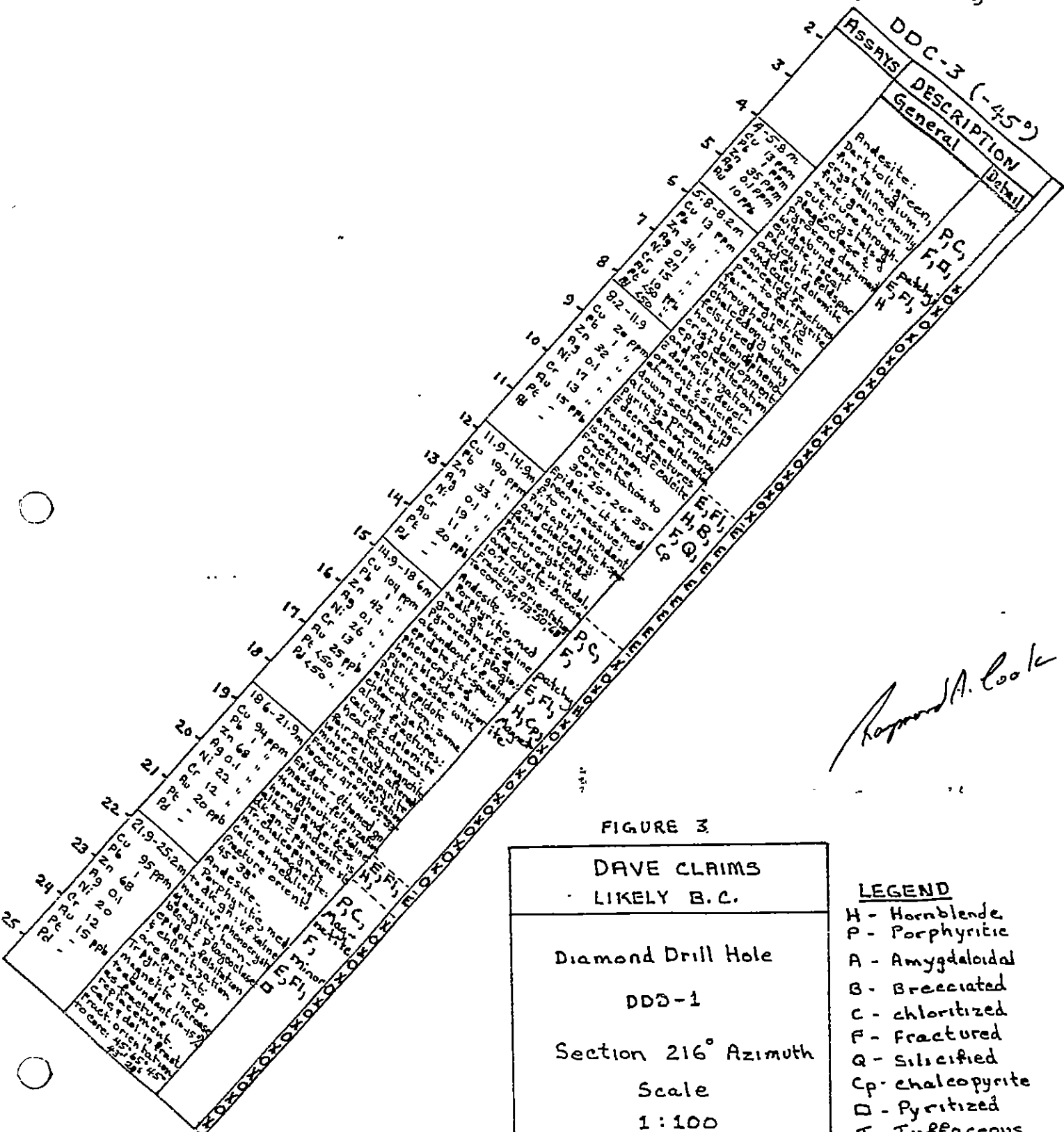
SCALE 1 : 500



Drawn by: R. A. Cook
Figure 2

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Talus
Bedrock
Core Depth (metres)
Road
Bedrock



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FIGURE 3

DAVE CLAIMS LIKELY B.C.	
Diamond Drill Hole DD-1 Section 216° Azimuth Scale 1:100	
Drawn by: R. Cook	Date: July 17, 1982

- LEGEND**
- H - Hornblende
 - P - Porphyritic
 - A - Amygdaloidal
 - B - Brecciated
 - C - chloritized
 - F - Fractured
 - Q - Silicified
 - Cp - chalcopyrite
 - D - Pyritized
 - T - Tuffaceous
 - Fl - Felsitized
 - E - Epidotization
- Core Symbols**
- x, o - Porphyritic + Amygdaloi
 - - Tuffaceous
 - E - Epidotization

Core Storage

Split core is stored at the residence of R. A. Cook in Calgary, Alberta.

2. RESULTS

Diamond drill reports and a certificate of assay are appended.

The area of drilling, Slum Gulch, is fault disturbed and the host rock is highly altered due to hydrothermal action. The host lithology is principally porphyritic andesitic volcanics. The core reveals considerable alteration, divisible into sections predominately andesite and areas predominately epidote. The andesite is light to dark green, with a fine to medium groundmass of pyroxene and plagioclase containing abundant epidote and K-feldspar. Hornblende phenocrysts are abundant throughout. In comparison, the epidote bands are light to medium green, massive, fine to cryptocrystalline, containing abundant pink aphanitic feldspar and chalcedony. Minor hornblende phenocrysts are identifiable, while pyroxene and plagioclase are patchy and finely crystalline. The varying degree of epidotization may be associated with the relative degree of fault breccia development, the controlling influence to hydrothermal fluid migration.

Fractures are commonly annealed with calcite and/or dolomite. These fractures trend at various angles to the core, the low being 24° and the high being 73° , with the mean orientation being 44° .

The mineralization of the core, although on the whole sparse, reveals important trends. Chalcopyrite is predominately found in the calcite or dolomite healing the fractures, magnetite concentration increases with depth attaining values up to 10 - 15% about non-calcified fractures and pyritization increases in concentration in areas of decreased alteration.

Assays were executed by Chemex Labs Ltd. The samples were collected continuously in conjunction with the drill coring, and the results are provided in the appendix. Seven samples were assayed each of which covers approximately 3 metres. The values although low reveal specific anomalous behaviour: 1. gold assays increase $2\frac{1}{2}$ times background with

Raymond A. Cook

depth; 2. zinc also increases with depth from 35 to 68 ppm; 3. copper follows a comparable pattern increasing from 13 - 20 ppm to about 100ppm, while one assay attains 190 ppm. Lead, nickel and chromium, however, do not reveal any variation above background.

3. INTERPRETATION

The lithological composition of the core finds similarity to that mapped on surface, however, the magnitude of alteration in the core is greater. This increased alteration appears to be a function of the degree of fault breccia development. It may be deduced that the epidotization is a result of fluid migration within the fault system. Within this context the probable significance of the surface mapped hornblende diorite dike, which is quite close to the drill location, cannot be overlooked as a heat source to hydrothermal fluids. Metal transport would be by way of these fluids as well. The specific paragenetic sequence has not been deduced, however, it is evident that copper mineralization is associated with carbonates while magnetite is not so associated, rather magnetite is concentrated about fractures and is disseminated in the secondary epidote. Pyrite appears to be primary in that it is predominately found in the host andesite. Since the observed chalcopyrite and magnetite attain greater concentration in the lower sections of the core, the most prospective area for higher concentrations of the metals may be at greater depth than attained by this drill program.

The assays run on gold, zinc and copper reveal distinctive increase in concentration with depth. Again, this supports the idea of hydrothermal transport of the metal bearing brines within the Slum Gulch fault system. The cored section of highest concentrations lies between 11.9 metres and 25.2 metres or total depth. This implies that drilling to greater depths will result in higher mineral values which may be economic.

4. CONCLUSIONS

1. Gold, zinc and copper are anomalous in the lower half of the drill core, as is magnetite.
2. The drilling stopped within the anomalous zone.
3. The area of anomalous mineral values is within the Slum Gulch fault zone, which is considered to have been the avenue for hydrothermal fluid

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migration. The heat source is considered to have been the hornblende diorite dike which is proximal to the fault zone.

5. The fault zone merits additional exploration in order to prove the extent and concentration of the anomalous metal values encountered in DDD-1 diamond drill hole.

Raymond A. Lusk

APPENDIX I

COST STATEMENT - DAVE CLAIMS

Exploration Expenditures from August 15 to 26, 1981

<u>Name</u>	<u>Work</u>	<u>Dates Worked</u>	<u>No. of Days</u>	<u>Salary/Day</u>	<u>Value</u>
R. Cook	Geologist part-time driller	Aug. 15 - 25	11	\$200	\$2200
H. C. Cook	Drillers helper	Aug. 15 - 26	12	\$125	\$1500
H. Cook	Cook	Aug. 15 - 25	11	\$100	\$1100
R. Stonard	Part-time driller	Aug. 16 - 26	11	\$125	\$1375
Subtotal:					\$6175

GENERAL EXPENSES

Accomodation (12 days @ \$16.00/day)	\$ 192
Food (\$12.00/man/day)	\$ 552
Transportation (truck rental)	\$ 187
Drill costs (gas, oil, 2 bits - IEX, 1 shoe - EW, 13 feet casing)	\$ 758
Assays	\$ 129
Report compilation (5 days @ 150/day)	\$ 750
	<u>\$2568</u>
TOTAL:	<u>\$8743</u>

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APPENDIX II
Qualifications

I, Raymond A. Cook have been practising my profession as a geologist since 1973.

I am an honours B.Sc., in Geology from the University of Alberta, Edmonton, 1973, and an M.Sc., Geology from the University of British Columbia, Vancouver.

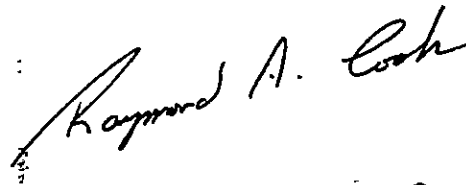
In applying my profession I have worked with Eldorado Nuclear, Cominco, Terra Mines, Union Carbide and Crowdis Oil Consultants. The work has covered mineral exploration and mining as well as oil and gas exploration.

I have worked on research projects in geology for the University of Alberta, Edmonton, Alberta and for the University of British Columbia, Vancouver, British Columbia.

I have worked privately on interests of my own in British Columbia and the Northwest Territories since 1975.

I hold interest in the property described in this report and I supervised and directed all exploration activity.

Raymond A. Cook, B.Sc., M.Sc., Geology

A handwritten signature in cursive script that reads "Raymond A. Cook". The signature is written in dark ink and is positioned below the typed name.

DIAMOND DRILL LOG

LAT/LONG: 52°37'N / 121°35'W	PROPERTY: DAVE CLAIMS	RECOVERY: 83%
DIP: -45°	HOLE NO: DDD-1	LOGGED BY: R. A. Cook
ELEVATION: 894m	COMMENCED: August 15, 1981	Page 1 of 3
AZIMUTH: 216°	FINISHED: August 26, 1981	

DEPTH (meters)	DESCRIPTION	SAMPLE No	FROM	TO	DIFF (meters)	ASSAYS
0-4	Casing set					ASSAYS IN PPM EXCEPT GOLD IN PPB AND Pt AND Pd in PPB Cu - Pb - Zn - Ag - Ni - Cr
4-10	Andesite - Dark to light green, fine to medium crystalline, mainly fine crystalline; granular texture throughout; crystals of plagioclase and pyroxene dominant with abundant epidote, local patchy K-feldspar and fair dolomite and calcite annealed fractures; poor to fair pyrite; fair magnetite throughout, fair chalcedony where felsitized, patchy hornblende phenocryst development; epidote alteration and felsitization with hornblende development and silicification decreasing down section but always present, pyritization increasing with decreasing alteration, tension fractures annealed with calcite is common (post date alterations; epidote, felsitization and silicification): Fracture orientation to core axis: 30°, 25°, 24°, 35°	DDD-1	4m	5.8m	1.8m	13 - 1 - 35 - .1 -----
		DDD-2	5.8m	8.2m	2.4m	13 - 1 - 34 - .1 - 27 - 15
		DDD-3	8.2m	11.9m	3.7m	20 - 1 - 32 - .1 - 17 - 13
						Au, Pt, Pd in ppb
						Au - Pt - Pd
		DDD-1	4m	5.8 m	1.8m	10 - -- - --
		DDD-2	5.8m	8.2m	2.4m	10 - <50 - <50
		DDD-3	8.2m	11.9m	3.7m	15 - -- - --
10-13.4	Epidote - Light to medium green; massive; fine to cryptocrystalline; abundant pink aphanitic feldspar and chalcedony; minor					

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DIAMOND DRILL LOG

LAT/LONG: 52°37'N/ 121°35'W	PROPERTY: DAVE CLAIMS	RECOVERY: 83%
DIP: -45°	HOLE NO: DDD-1	LOGGED BY: R. A. Cook
ELEVATION: 894m	COMMENCED: August 15, 1981	Page 2 of 3
AZIMUTH: 216°	FINISHED: August 26, 1981	

DEPTH (meters)	DESCRIPTION	SAMPLE No.	FROM	TO	DIFF (width)	ASSAYS
	to fair hornblende phenocrysts; minor patchy finely crystalline pyroxene and plagioclase; abundant dolomite, calcite hairline fractures increasing to breccia at 10.7-11.3m, hornblende phenocryst growth and abundance is optimal at lithologic variations ie. epidote-felsitized and silicified contacts:					ASSAYS IN PPM EXCEPT FOR Au, Pt, Pd which are in PPB.
	Fracture orientation to core axis: 37°, 73°, 50°, 68°, 45°.					Cu - Pb - Zn - Ag - Ni - Cr
		DDD-4	11.9m	14.9m	3.0m	190- 1 - 33 - .1 - 19 - 11
		DDD-5	14.9m	18.6m	3.7m	104- 1 - 42 - .1 - 26 - 13
		DDD-6	18.6 m	21.9m	3.3m	94 - 1 - 68 - .1 - 22 - 12
		DDD-7	21.9m	25.2m	3.3m	95 - 1 - 68 - .1 - 20 - 12
13.4-19.5	Andesite - Porphyritic; medium to dark grayish green; very finely crystalline groundmass of pyroxene and plagioclase; abundant very finely crystalline epidote and pink K-feldspar; phenocrysts of hornblende common to abundant throughout; minor pyrite associated with patchy epidote alteration; minor to fair chloritization along fractures; fractures annealed with calcite and dolomite; fair patchy magnetite where least altered; rare to minor chalcopyrite throughout increasing slightly at 17.8-18.6m:					Au, Pt, Pd in ppb
	Fracture orientation to core: 47°(with					Au - Pt - Pd
		DDD-4	11.9m	14.9m	3.0m	20 - - - - -
		DDD-5	14.9m	18.6m	3.7m	25 - <50 - <50
		DDD-6	18.6m	21.9m	3.3m	20 - - - - -
		DDD-7	21.9m	25.2m	3.3m	15 - - - - -
						<i>Raymond A. Cook</i>

DIAMOND DRILL LOG

LAT/LONG: 52°37'N / 121°35'W	PROPERTY: DAVE CLAIMS	RECOVERY: 83%
DIP: -45°	HOLE NO: DDD-1	LOGGED BY: R. A. Cook
ELEVATION: 894m	COMMENCED: August 15, 1981	Page 3 of 3
AZIMUTH: 216°	FINISHED: August 26, 1981	

DEPTH (meters)	DESCRIPTION	SAMPLE No.	FROM	TO	DIFF (width)	ASSAYS
	chalcopryite in calcite gangue), 44°, 65°, 33°					
19.5-20.8	Epidote - Light to medium green; mainly light green; massive; fair to abundant felsitization throughout; very fine to finely crystalline, hornblende throughout; patchy lessor altered andesite occurs as dark green in colour with pyroxene crystals fairly indicated; trace chalcopryite and pyrite mainly in the andesite; minor magnetite throughout; fractures abundant with calcite and dolomite annealing:					
	Fracture orientation to core axis: 45°, 38°:					
20.8-25.2	Andesite- Porphyritic, medium to dark green-gray; very fine to finely crystalline; massive; phenocrysts of augite, hornblende and plagioclase are most common; epidote and felsitization alteration are not as common as chloritization although all are common; trace to minor patchy pyrite; rare chalcopryite; magnetite increasing down core from minor to abundant (>10-15%) as fracture replacement; fair calcite and dolomite along fractures:					

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Fracture orientation to core: 45° 65° 45° 43° 28°



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TELEPHONE (604)984-0221
TELEX. 043-52597

ANALYTICAL CHEMISTS GEOCHEMISTS REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO : COOK, RAY
#7-3843 W. 4TH AVE.
VANCOUVER, B.C.
V6R 1P8

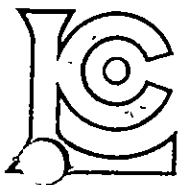
CERT. # : A8113319-001-A
INVOICE # : 18113319
DATE : 09-SEP-61
P.O. # : NONE

Sample description	Prep code	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Cr ppm
DDD-1	205	13	1	35	0.1	--	--
DDD-2	205	13	1	34	0.1	27	15
DDD-3	205	20	1	32	0.1	17	13
DDD-4	205	190	1	33	0.1	19	11
DDD-5	205	104	1	42	0.1	26	13
DDD-6	205	94	1	68	0.1	22	12
DDD-7	205	95	1	68	0.1	20	12

Raymond A. Cook

Certified by *Hart Bichler*





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ANALYTICAL CHEMISTS GEOCHEMISTS REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO : COOK, RAY
#7-3943 W. 4TH AVE.
VANCOUVER, B.C.
V6R 1P8

CERT. # : A8113319-001-3
INVOICE # : I8113319
DATE : 09-SEP-31
P.O. # : NONE

Sample description	Prep code	AU-FA+AA ppb	Pt ppb	Pd ppb			
DDO-1	205	10	--	--	--	--	--
DDO-2	205	10	<50	<50	--	--	--
DDO-3	205	15	--	--	--	--	--
DDO-4	205	20	--	--	--	--	--
DDO-5	205	25	<50	<50	--	--	--
DDO-6	205	20	--	--	--	--	--
DDO-7	205	15	--	--	--	--	--

Raymond A. Cook



Certified by *H. B. Bichler*