

5673

COMINGO LTD.

EXPLORATION

WESTERN DISTRICT

N.T.S.: 92I/10E

DIAMOND DRILLING REPORT

RAG-APOLLO 75-1 GROUP

GREENSTONE MTN. AREA

KAMLOOPS M.D.

OCTOBER 28, 1975

R.U. BRUASET B.Sc.

PERIOD OF WORK

1 SEPTEMBER - 2 OCTOBER 1975

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
No. 5673 MAP

IN THE MATTER OF THE
B.C. MINERAL ACT
IN THE MATTER OF A DIAMOND DRILL PROGRAMME
CARRIED OUT ON THE MINERAL CLAIM
RAG 73
OF THE RAG-APOLLO 75-1 GROUP
LOCATED IN THE GREENSTONE MTN. AREA
IN THE KAMLOOPS MINING DIVISION
PROVINCE OF BRITISH COLUMBIA
MORE PARTICULARLY NIS 92I/10E

A F F I D A V I T

I, RAGNAR U. BRUASET, of the City of Vancouver in the Province of British Columbia, make oath and say:

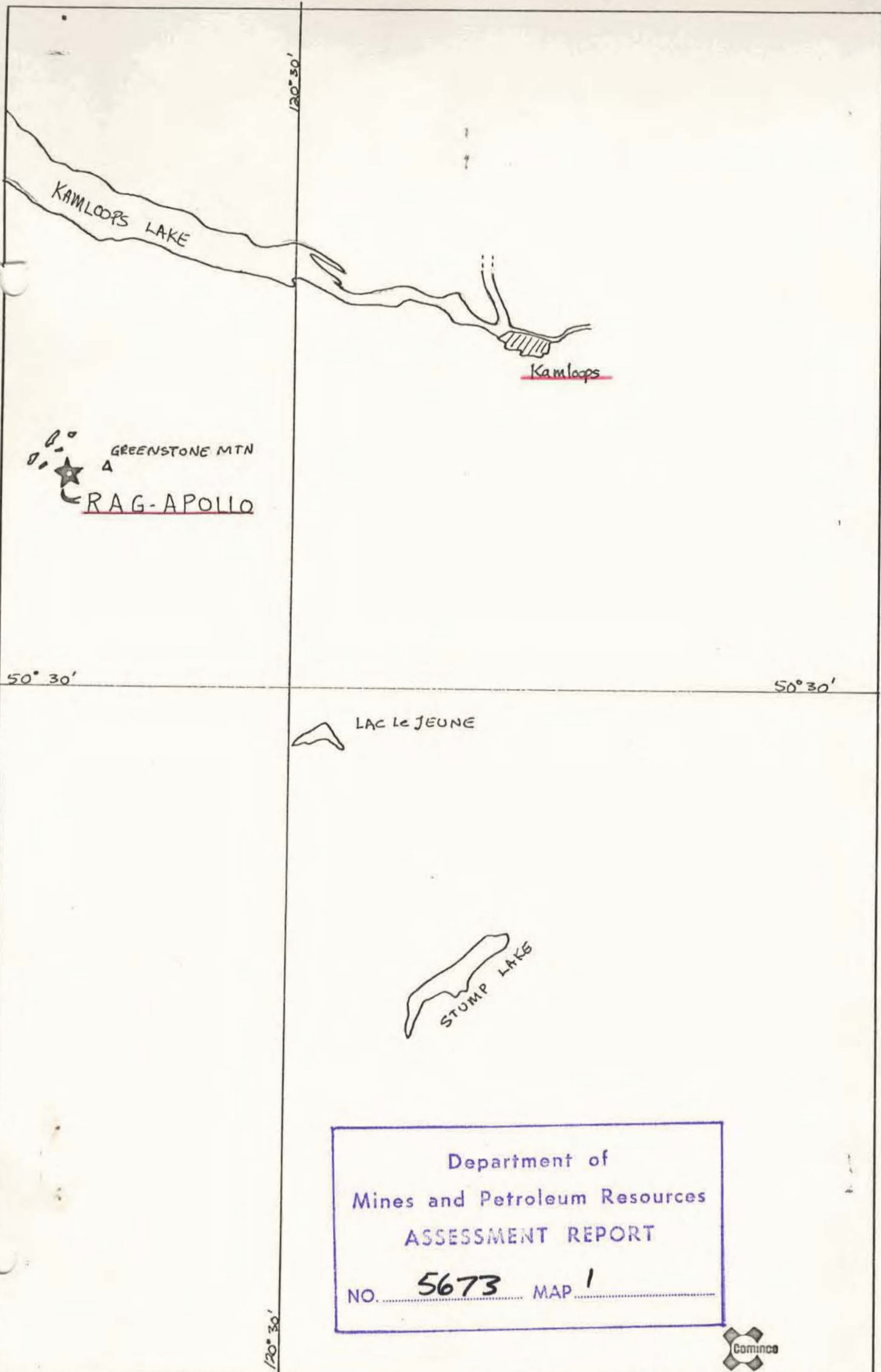
1. That I am employed as a geologist by Cominco Ltd. and, as such, have a personal knowledge of the facts to which I hereinafter depose;
2. That annexed hereto and marked as "Exhibit A" to this my affidavit is a true copy of expenditures incurred on diamond drilling on mineral claim Rag 73;
3. That the said expenditures were incurred between the 1st day of September, 1975 and the 20th day of October, 1975 for the purpose of mineral exploration on the above noted claims.

Sworn Before Me at the City)
of Vancouver in the Province)
of British Columbia this)

22nd day of)
October 1975)

M. Brown)
A NOTARY PUBLIC IN AND FOR THE)
PROVINCE OF BRITISH COLUMBIA)

Ragnar U. Bruaset
RAGNAR U. BRUASET



Drawn by:	R.U.B.	Traced by:	
Revised by	Date	Revised by	Date

NTS. 92 I

RAG - A POLLO
LOCATION MAP

Scale: 1" = 4 miles Date: October 1975 Plate:

COMINCO LTD.

EXPLORATION
N.T.S. 92I

WESTERN DISTRICT
20 October 1975

COST STATEMENT

RAG PROPERTY


GREENSTONE MOUNTAIN AREA

KAMLOOPS M.D., B.C.

Contract Charges	892 feet @ 14.28/foot	\$ 12,739
Shepherd Enterprises Ltd.		
Supervision - R.U. Bruaset		2,970
Period: Sept. 15-October 20/75		
27 days @ 110.00/day		
Domicile		852
Miscellaneous charges: building material, equipment repairs, car rental, telephone, reproduction and material consumed		451
Surface Transportation		
Truck rental (Redhawk Lease)		
36 days @ \$39.25/day		
		<u>1,413</u>
TOTAL COST:		\$ 18,425

OVERALL COST PER FOOT: $\frac{\$18,425}{892'} = \underline{\underline{\$ 20.66/\text{foot}}}$

THIS IS EXHIBIT "A" TO THE STATUTORY DECLARATION OF EXPENDITURE
RELATING TO THE DIAMOND DRILLING PROGRAM DECLARED BEFORE ME ON
THE 22nd DAY OF OCTOBER, 1975 A.D.


A NOTARY PUBLIC IN AND FOR THE
PROVINCE OF BRITISH COLUMBIA.

COMINCO LTD.

EXPLORATION

WESTERN DISTRICT

20 OCTOBER 1975

STATEMENT OF QUALIFICATIONS

I, R. U. Bruaset, with business address at 2200-200 Granville Square, Vancouver, British Columbia, V6C 2R2, do hereby certify that I have supervised the diamond drilling programme and the logging of the drill core, and have assessed and interpreted the data resulting from said programme on the Rag Property.

I also certify that:

1. I am a graduate of the University of British Columbia with a degree of B.Sc. in Geology 1967.
2. That I have been involved in exploration work for Cominco Ltd. since 1967 and that I have been involved in most phases of porphyry copper exploration and development since 1968 to the present.
3. That I have been closely involved with the exploration work on the Rag property during 1969, 1970 and 1975.

Respectfully submitted:

Ragnar U. Bruaset

R.U. Bruaset
Project Geologist

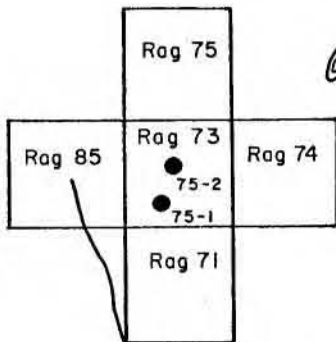


DAIRY LAKE

DURAND LAKE

Greenstone Mtn. ▲

KWILALKWILA LAKE



DOMINIC L.

ROPER LAKE

● DDH 1975-1,2

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 5673 MAP 2



92 1/10

RUB

Drawn by: RUB		Traced by:	
Revised by	Date	Revised by	Date

RAG GROUP

Greenstone Mountain Area
Kamloops M.D.

Scale: 1" = 1/2 mile

Date: Oct., 1975

Plate:

DRILL DATA FOR DIAMOND DRILL HOLES

75-1, 75-2

ON THE RAG-APOLLO GROUP

HOLE	LOCATION	CLAIM GROUP	DIP	BEARING	DEPTH	CORE SIZE	UNIT COST	TOTAL COST	CREDITS
75-1	RAG 73	Rag-Apollo 75-1	-90°	---	370	BQ	\$20.66	7644.20	38.22 years
75-2	RAG 73	Rag-Apollo 75-1	-90°	---	522	BQ	\$20.66	10784.52	53.92 years
					Total:			\$18428.72	92.14

All drill cores are stored in core shack on RAG 73 M.C.

The locations of the holes have been determined by chain and compass and the elevation of the holes have been determined by altimeter.

Report by:

R. U. Bruaset

R. U. Bruaset, B.Sc.

Endorsed by:

S. J. Pedley

S. J. Pedley, P.Eng.

Approved for
Release by:

W. T. Irvine per *S. J. Pedley*

W. T. Irvine, P.Eng.

RUB/pm

28 October 1975

Drill Hole Record



Sub

Colour Plot & Dip

Property _____ RAG GROUP _____ District _____ Hole No. 75-1

Commenced _____ Location _____ Tests at _____ Hor. Comp. _____

Completed _____ Core Size _____ Corr. Dip _____ Vert. Comp. _____

Co-ordinates _____ True Brg. _____ Logged by _____

FOOTAGE	RECOVERY	TEXTURE		bn/MoS2 ABSENT OR PRESENT	CORE ANGLE OF MINERALI- ZATION	ALTERATION	MAGNETISM	HABIT OF MINERALI- ZATION	NOTE	Sample No.	Length	Analysis
		A = APHANITIC B = FINE C = GRAINED MEDIUM	GRAIN SIZE				A = NON B = WEAK C = MODERATE D = STRONG					
116.5 - 121	4.5	B	1:3	No/No	5°, 15°	Plagioclase soft to knife. Mafic altered to chlorite.	Generally C, Occasionally D, (seams and clotts of magnetite @ 20°, 70°)	Fracture fills + dissemination.		4775I	4.5	
121 - 132.5	11.5	B	2:1	No/No	50°	Soft Plagioclase relative to knife, mafics chloritized Calcite gangue with cpy, py 132.0 secondary brown biotite in heavily mineralized interval 121-122.	B			4776I	11.5	
132.5 - 140	7.5	B	1:4	No/No	-	-	C - D	Disseminated Local cpy shows brecciation with angular fragments of adjacent rock Cpy in matrix cpy >> py		4777I	7.5	

Claim _____ T Brg. _____ Collar Dip _____ Elev. _____ Length _____

Drill Hole Record



Property RAG GROUP District Hole No. 75-1

Commenced Location Tests at Hor. Comp.

Completed Core Size Corr. Dip Vert. Comp.

Co-ordinates True Brg. Logged by

		TEXTURE				MAGNETISM		Date		Claim	T Brg.	Collar Dip	Elev.	Length	Hole No. 75-1	Sheet 3
		GRAIN SIZE				A = NON										
116.5 - 252 Cont'd)		A = APHANITIC B = FINE		bn/MoS2 CORE ANGLE OF		B = WEAK MAGNETIC		HABIT OF		Sample No.	Length	Analysis				
FOOTAGE		GRAINED C = MEDIUM		ABSENT OR PRESENT		C = MODERATE D = STRONG		MINERALI- ZATION				NOTE				
RECOVERY		cpy:py				ALTERATION										
140 - 150	10	C to 144, then B	py only.	No/No	-	Chloriti- zation of mafics. Plagioclase soft to knife. Bleaching along fractures. Epidote fractures begin to appear at 144. No cpy or py with epidote.	B	Dissemin- ated euhedral pyrite. No fracture control	140 brecciation over 6" (unmineral- zed).	4778I	10					
150 - 158	8	B. Generally brecciated with fragments of adjacent rock. A few fragments are pink. (possibly due to fine grained hematite in plagioclase) Between fragments occurs finer grained fragments and magnetite.	10:1	No/No	-	Epidote develop- ment in breccia. K-spar occurs in veinlets. More K-spar where the local copper content is highest.	Fe ₃ O ₄ in breccia.	Dissemin- ated cpy + py in breccia ground mass	cpy shows affinity to breccia where magnetite occurs with or without calcite gangue.	4779I	8					

Sub

Drill Hole Record



Sub

Property	RAG GROUP	District	Hole No.	75-1
Commenced		Location	Tests at	Hor. Comp.
Completed		Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by	

		TEXTURE				MAGNETISM		Date		Claim	T Brg.	Collar Dip	Elev.	Length	Hole No. 75-1 Sheet 4
		GRAIN SIZE				A = NON									
116.5 - 252 Cont'd.		A = APHANITIC		bn/MoS2	CORE ANGLE OF		MAGNETIC		Sample No.	Length	Analysis				
FOOTAGE		B = FINE		ABSENT OR PRESENT	MINERALIZATION	ALTERATION	B = WEAK	HABIT OF MINERALIZATION							
		C = MEDIUM	cpy:py				C = MODERATE		NOTE						
							D = STRONG								
158 - 169	11	B	cpy>>py	No/No	60° core angle of breccia, contact cpy in fracture @ 30°.	Softening of plagioclase chloritization.	C to D magnetite seams with associated cpy.	Disseminated cpy and small clotts.		4780I	11				
169 - 177	8	B	cpy>>>py	No/No	As above.	Epidote fractures. 170 - 177	As above.	As above.		4781I	8				
177 - 185	8	Breccia as 150 - 158.	cpy>>>py	No/No	Core angle of breccia contact 50° magnetite with cpy @ 60°.	Softening of plagioclase and chloritization of mafics epidote is common. K-spar development noted increasingly.	D	As above.	Calcite vugs.	4782I	8				
185 - 199	14	Generally B. Minor brecciation	cpy>>>py	No/No	Fracture @ 70°.	Secondary K-spar apparently on the increase.	D	Cpy dissemination in areas of K-spar, magnetite and calcite in narrow sections of brecciation.		4783I	14				



Drill Hole Record

Scale
Colour Plot & Dips

Scale
Colour Plot & Dips

Scale
Colour Plot & Dips

0
0
0

Pr
Cc
Cc
Cc

1
2
2
2

Scale
Colour Plot & Dips

0

Pr
Cc
Cc
Cc

1
2
2
2

Property	RAG GROUP	District		Hole No. 75-1		Commenced		Location		Tests at		Hor. Comp.	
Completed	Core Size		Corr. Dip		Vert. Comp.		Co-ordinates		True Brg.		Logged by		
TEXTURE		GRAIN SIZE		MAGNETISM		Date							
A = APHANITIC		B = FINE		A = NON		B = WEAK		HABIT OF				Sample No.	
C = MEDIUM		GRAINED		C = MODERATE		D = STRONG		MINERALI-		NOTE			
FOOTAGE	RECOVERY	bn/MoS2	ABSENTOR PRESENT	CORE ANGLE OF MINERALI-ZATION	ALTERATION								
116.5 - 252 Cont'd.													
199 - 210	11	No/No	No/No	30°	Strong epidote development in breccia. Some secondary brown biotite development. Softening of plagioclase and chloritization of mafics.	D	Disseminated	202' : a two inch breccia fragment cut by K-spar fractures prior to brecciation. Unmineralized.				4784I	
210 - 220	10	No/No	No/No	-	Similar to 199-210 well as local bleaching.	D	Disseminated.					4785I	
220 - 230	10	No/No	No/No	Fracture @ 40°.	As above. Bleaching, K-spar development, epidote.	D	Mainly as disseminated cpy with magnetite in brecciated sections as well as in fractures.					4786I	

Drill Hole Record



Sub

Property	RAG GROUP	District	Hole No. 75-1
Commenced	Location		Tests at
Completed	Core Size		Hor. Comp.
Co-ordinates		True Brg.	Vert. Comp.
			Logged by

FOOTAGE	RECOVERY	TEXTURE		bn/MoS2	CORE ANGLE OF MINERALIZATION	ALTERATION	MAGNETISM	HABIT OF MINERALIZATION	NOTE	Sample No.	Length
		GRAIN SIZE	GRAINED								
300 - 309	5	C	cpy:py	No/No	10°, 30°	Pink K-spar development. Very heavy pyrite at contact.	C	Fracture filling & dissemination	304-309: shearing @ 20°. Calcite and hematite and heavy fine grained pyrite at contact. Little or no shearing in the rock below suggesting that the dyke rock 309-370 is controlled by this fault.	4793I	9
309 - END						Medium grained porphyritic quartz diorite dyke rock characterized by round quartz eyes (1/8-1/4") and a few large (1/2") square plagioclase crystals usually green in colour due to clay alteration. Very weakly fractured, non-magnetic. Traces of sulphide as disseminated pyrite + chalcopryrite. Molybdenite as traces are now noted for the first time in this hole.					

Claim	T Brg.	Collar Dip	Elev.	Length
Analysis				

Drill Hole Record



Property RAG GROUP District Hole No. 75-1
 Commenced Location Tests at Hor. Comp.
 Completed Core Size Corr. Dip Vert. Comp.
 Co-ordinates True Brg. Logged by

Sub

FOOTAGE		RECOVERY	TEXTURE GRAIN SIZE	bn/MoS2 ABSENTOR PRESENT	CORE ANGLE OF MINERALI- ZATION	ALTERATION	MAGNETISM A = NON B = WEAK C = MODERATE D = STRONG	HABIT OF MINERALI- ZATION	NOTE	Sample No.	Length	Claim	T Brg.	Collar Dip	Elev.	Length	Analysis
309 - 320	10		Porphyritic Quartz diorite	cpy<cpy	No/No	30° Molybd- enite slip	Lath shaped Mafic altered to sericite or chlorite. Pinkish ground man is probably due to fine grained hematite inclusions. Staining reveals essentially no K-spar. Pink colorations of rock fades to light grey further away from the fault another suggestion that this is a hematite effect rather than K-spar alteration Euhedral (1/2" by 1/2") plagioclase crystals altered to soft green material.	Dissemin- ated sulphides generally	A few calcite veinlets cut dyke.	4794I	11						

Scale

Colour Plot
& Dips

Drill Hole Record



Property RAG GROUP District Hole No. 75-1

Commenced Location Tests at Hor. Comp.

Completed Core Size Corr. Dip Vert. Comp.

Co-ordinates True Brg. Logged by

		TEXTURE				MAGNETISM	Date			Claim	T Brg.	Collar Dip	Elev.	Length
		GRAIN SIZE				A = NON								
		A = APHANITIC B = FINE C = GRAINED C = MEDIUM	bn/MoS2 ABSENT OR PRESENT	CORE ANGLE OF MINERALI- ZATION	ALTERATION	MAGNETIC B = WEAK C = MODERATE D = STRONG	HABIT OF MINERALI- ZATION	NOTE	Sample No.	Length	Analysis			
FOOTAGE	RECOVERY		cpy:py											
320 - 330	9.5	As above	py only	No/No	-	As above except that a pink ground mass has given way to a light one	A	Dissemin- ated pyrite.	4795I	10				
330 - 340	10	As above	py only	No/Yes	30° Molyb- denite slip at 336'	As above except that a pink ground mass has given way to a light one	A	Trace dissemin- ated Molybdenite	4796I	10				
340 - 355	15	As above	py only	No/Yes	-	As above except that a pink ground mass has given way to a light one	A	Trace dissemin- ated MoS ₂ 343-344 ²	4797I	15				
355 - 370	15	As above	py only	No/Yes	20° Molybd- enite slip	As above except that pink color- ation of ground mass returns but fades to light grey again.	A	Trace disseminated MoS ₂	4798I	15				
370 END														

Log

Drill Hole Record



Ref

Property	RAG GROUP	District	Hole No.	DDH75-2
Commenced		Location	Tests at	Hor. Comp.
Completed		Core Size	Corr. Dip	Vert. Comp.
Co-ordinates			True Brg.	Logged by
Objective			% Recov.	Date

FOOTAGE	GRAIN SIZE AND TEXTURE	cpy:py	PRESENCE OF bn/MoS ₂	MAGNETISM A = NCN B = WEAK C = MOD D = STRONG	CORE ANGLE OF MINERALIZED STRUCTURE	HABIT	ALTERATION	NOTE	Sample No.	Analysis		Core Recover
										ZCu		
104 - 120	Fine grained massive greenish grey	py traces cpy	No/No	C Disseminated magnetite	20°	Disseminated euhedral pyrite + fractures.	Weak Chloritic along fractures	Occasionally tuff breccia with rounded fragments 3/4" dia eg. 105. Fragments similar to adjacent rock but probably in part assimilated.				10
120 - 140	Fine grained massive greenish grey	py traces cpy	No/No	C Disseminated magnetite	-	Disseminated euhedral pyrite + fractures.	Weak Chloritic along fractures		48001			19.5
140 - 160	As above to 150 then medium grain massive with plagioclase laths.	py traces cpy	No/No	C Disseminated magnetite	40°, 35°	Disseminated euhedral pyrite + fractures.	Weak Chloritic along fractures		48511			19.5

Claim
T Brg.
Collar Dip
Elev.
Length
Hole No. 75-2
Sheet 7

Drill Hole Record



Sub

Property RAG GROUP

District

Hole No. DDH75-2

Commenced

Location

Tests at

Hor. Comp.

Completed

Core Size

Corr. Dip

Vert. Comp.

Co-ordinates

True Brg.

Logged by

Objective

% Recov.

Date

Claim

T Brg.

Collar Dip

Elev.

Length

Hole No.

Sheet

FOOTAGE	GRAIN SIZE AND TEXTURE	cpy:py	PRESENCE OF bn/MoS ₂	MAGNETISM	CORE ANGLE OF MINERALIZED STRUCTURE	HABIT	ALTERATION	NOTE	Sample No.	Analysis		Core Recover
				A = NON B = WEAK C = MOD D = STRONG						%Cu		
160 - 180	As above.	py traces cpy	No/No	C	As above	As above.			4852I			19
183 - 431	Generally lapilli tuff micola. Local brecciation ie. angular fragments as opposed to generally round fragments in the lapilli tuff. Heavy concentrations of magnetite locally similar to brecciated sections in 75-1. Augite phenocrysts common. Chloritic development pervasive. Sulphides almost entirely in the form of pyrite - chalcopyrite being very rarely observed in the core. Greenish grey in colour.											
180 - 200	Lapilli tuft	pyrite traces cpy	No/No	C	30° for magnetite seam	As above		183 apparent bedding with core angle of 70°. Apparent crystal settling on lapilli tuft.	4853I			20
200 - 220	Same as above	pyrite traces cpy	No/No	C	35° for magnetite seam	As above	Chloritic rock.	209-211 faulting @ 25° gauge.	4854I			17.5
220 - 240	Same as above		No/No	C	-	As above.	Chloritic. Epidote fractures begin to appear.	238 traces of dissemination cpy.	4855I			19

Drill Hole Record



Pub

Property RAG GROUP District Hole No. DDH75-2

Commenced Location Tests at Hor. Comp.

Completed Core Size Corr. Dip Vert. Comp.

Co-ordinates True Brg. Logged by

Objective % Recov. Date

Claim
T Brg.
Collar Dip
Elev.
Length
Hole No. 75-2
Sheet 3

FOOTAGE	GRAIN SIZE AND TEXTURE	cpy:py	PRESENCE OF bn/MoS ₂	MAGNETISM	CORE ANGLE OF MINERALIZED STRUCTURE	HABIT	ALTERATION	NOTE	Sample No.	Analysis			Core Recovery
				A = NON B = WEAK C = MOD D = STRONG									
240 - 260	As 220 - 240	pyrite traces cpy	No/No	C	-	As above	Epidote infrastructures also chlorite.		4856				19
260 - 280	As 220-240.	pyrite traces cpy	No/No	C	-	As above	-		4757				14
280 - 300	As above but medium grained Augite phenocrysts common.	pyrite traces cpy	No/No	C	0°	As above	Chloritic alteration.	288' minor fault @ 45°.	4858				20
300 - 320	As 220 - 240.	pyrite	No/No	B-C	-	As above	Chloritic alteration.	306' minor cpy with pyrite in fracture @ 25°.	4859				19.5
320 - 340	As 220 - 240.	pyrite traces cpy	No/No	B-C	Heavy pyrite in fractures @ 60°.	As above	Chloritic alteration		4860				19
340 - 360	As 220 - 240.	pyrite traces cpy	No/No	B-C	Heavy pyrite in fractures @ 20° + associated epidote alteration	As above	Chloritic alteration	348-358 Massive dark grey non-lapilli tuft. Nicola with heavy dissemination pyrite.	4861				19.5

Drill Hole Record



Sub

Property	RAG GROUP	District	Hole No.	DDH75-2
Commenced	Location		Tests at	Hor. Comp.
Completed	Core Size		Corr. Dip	Vert. Comp.
Co-ordinates	True Brg.		Logged by	
Objective	% Recov.		Date	

FOOTAGE	GRAIN SIZE AND TEXTURE	cpy:py	PRESENCE OF bn/MoS ₂	MAGNETISM	CORE ANGLE OF MINERALIZED STRUCTURE	HABIT	ALTERATION	NOTE	Sample No.	Analysis	Core Recover
				A = NON B = WEAK C = MOD D = STRONG							
420 - 431	As 220 - 240	pyrite minor cpy	No/No	B-C			Bleaching	429-431, the rock becomes a light grey or whitish grey colour from a dark greenish grey above. Contact is gradational. Appears to be a bleached equivalent of the rock above.	4865		10
431 - 522	Generally massive, fine-grained and aphanitic generally light grey volcanic rock. Chalcopyrite becomes relatively more abundant in this section than in the rest of the hole. Occasionally a little bornite is noted also as well as chalcocite possibly. Lapilli tuff as 183 - 431 occasionally noted. Alteration and sulphide mineralization appears to improve with depth.										
431 - 458	Generally fine grained & aphanitic occasionally medium grained	pyrite + cpy	Yes/No	A	20°, 30°, 50°	Disseminated pyrite + fractures	Bleaching. Some quartz introduction. Local chlorite development. Core as quartz stringers	448-455 Fault @ 20° 457 traces of bornite and Chalcopyrite 463-465 fine grained bornite + chalcocite.	4866		26.5

Claim
T Brg.
Collar Dip
Elev.
Length
Hole No. 75-2

Drill Hole Record



Sub

Property	Rag Group	District	Hole No.	DDH75-2
Commenced	Location		Tests at	Hor. Comp.
Completed	Core Size		Corr. Dip	Vert. Comp.
Co-ordinates			True Brg.	Logged by
Objective			% Recov.	Date

FOOTAGE	GRAIN SIZE AND TEXTURE	cpy:py	PRESENCE OF bn/MoS ₂	MAGNETISM	CORE ANGLE OF MINERALIZED STRUCTURE	HABIT	ALTERATION	NOTE	Claim	T Brg.	Collar Dip	Elev.	Length	Hole No.	Sheet
				A = NON B = WEAK C = MOD D = STRONG											
458 - 470	As 183 - 431	py + cpy	Yes/No	A-B	-	Disseminated pyrite + cpy	Chlorite alteration pervasive	463-465 Bornite as disseminations in bleached section.	4867				12		
470 - 480	As general description	pyrite + cpy	No/No	B	-	pervasive chlorite alterations + epidote			4868				10		
480 - 490	As general	pyrite + cpy	No/No	B	-	Disseminated pyrite + cpy	pervasive chlorite alterations + epidote		4869				10		
490 - 500	As general description	pyrite cpy	No/No	B	-	Disseminated pyrite + cpy	pervasive chlorite alterations + epidote		4870				10		
500 - 515	As general description	pyrite cpy	Yes/No	B	-	Disseminated pyrite + cpy	508 Fault @ 45° 500° minor fine grained chalcocite + bornite		4871				15		

