

COMINCO LTD.

EXPLORATION

WESTERN DISTRICT

DIAMOND DRILLING REPORT

ON

VULCAN GROUP

OF MINERAL CLAIMS

N.T.S. 82F/16W

Fort Steele Mining Division

September 1979

D.D. Hole Vu-79-1

Latitude: 116° 20'

Longitude: 49° 48'

Report by:  
G.L. Webber  
Geologist

Kootenay Exploration  
2450 Cranbrook Street  
Cranbrook, B.C.  
VIC 3T4

Under the supervision of:  
D. Anderson, P. Eng.  
Geologist

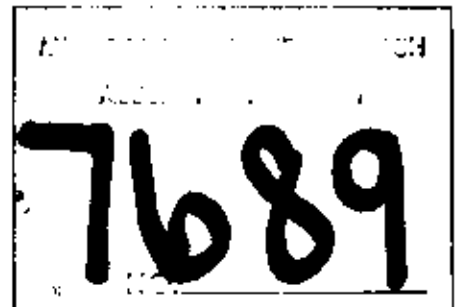


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DIAMOND DRILL LOGS	
ATTACHMENTS	
Claim Location Map ( in pocket ) 1:50,000	
Location map and DDH section Vu-79-1 (1:10,000)	in pocket
Detailed Geological Logs.	

COMINCO LTD.

EXPLORATION

WESTERN DISTRICT

VULCAN NO. 1 CLAIM

Fort Steele Mining Division

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GENERAL STATEMENT

This report describes the results and expenditures relating to diamond drilling on the Vulcan No. 1 claim of the Vulcan Group of 1, 2 and 3 claims which consists of 40 units.

Diamond drilling was performed during July 19th to August 9th, 1979.

Total expenditures relating to this program amounted to \$25,026.00.

It is requested that \$24,000 be applied as follows:

Vulcan No. 1 (15 units) 3 years @ \$200 per unit	\$ 9,000
Vulcan No. 2 (10 units) 3 years @ \$200 per unit	6,000
Vulcan No. 3 (15 units) 3 years @ \$200 per unit	<u>9,000</u>
	\$24,000

It is requested that \$1,026 be credited to Cominco PAC account.

INTRODUCTION

General

One H.Q. diamond drill hole, totalling 187.14 metres was drilled to test the potential of a sulphide-bearing conglomerate and its host stratigraphy, and for potential economic Pb-Zn mineralization.

Interpretation (Vulcan Hole)

The drill hole intersected pyrrhotite laminations and blotches over an interval of 10 metres. A concentration of pyrrhotite laminations occurs from 121 to 126 metres. No significant galena and sphalerite. The hole also indicates a sporadic, conglomeratic interval from 129 metres to the bottom of the hole. The widespread occurrence of biotite in the rocks is a reflection of the metamorphism due to the White Creek batholith.

Vulcan No. 1  
D.D.H. Vu-1-79

- 2 -

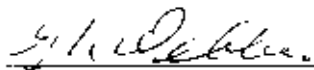
The drill program was under the direction of G.L. Webber and supervised by D. Anderson.

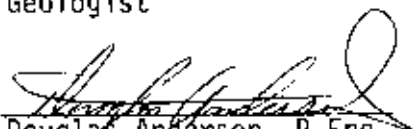
Location and Access

The Vulcan claim group is located 52 km via good gravel road from Marysville, B.C. and 8 km of 4 x 4 road to drill site. The claims are located near Mt. St. Patrick and range in elevation from 1900 m to 2721 m.

Sperry Sun Single Shot Test of D.D.H. Vu-79-1:

As of this date no core from Vu-79-1 has been removed for assay.

Submitted by:   
G.L. WEBBER  
Geologist

Endorsed by:   
Douglas Anderson, P.Eng.  
Geologist

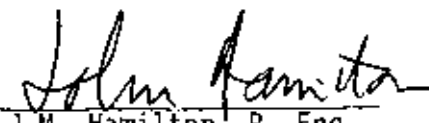
Approved for  
Release by:   
J.M. Hamilton, P. Eng.  
Chief Geologist  
Kimberley

EXHIBIT "A"

STATEMENT OF EXPENDITURES

VULCAN CLAIMS

D.D.H. Vu-79-1

Diamond Drilling - Indirect

Salaries (field)

G.L. Webber (Geologist) 8 days @ \$114/day \$ 912.00  
D. Anderson (Geologist) 5 days @ \$148/day 740.00

Salaries (office)

G.L. Webber (Geologist) report and map preparation  
3 days @ \$114/day 342.00

Diamond Drilling - Indirect - Drill Support

Core Boxes - E.G. Whalley & Sons Ltd., Burnaby, B.C. 203.00  
Transportation: 4 x 4 1/2T - 13 days @ \$25/day 325.00

Mobilization

Henderson Heavy Hauling 361.00  
W.M. Barker Contract Hauling 124.00  
Cominco K-301 (D-7 Tractor) 26 hrs. @ \$43/hr. 1,118.00  
(includes heavy equipment operator).

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4,125.00

Diamond Drilling - Direct

Longyear Canada Inc., Box 330, North Bay Ont., P1B 3H6  
Drill Mud 1,275.00  
D.D. Hole Vu-79-1: 187.14 m @ \$104.87 19,626.00

\$ 20,901.00

Total Expenditures - Indirect \$ 4,125.00  
Total Expenditures - Direct \$20,901.00  

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\$25,026.00

This is Exhibit "A" to the Statutory  
Declaration of G.L. Webber declared  
before me this 18 day of

September, 1979.

**M. G. REID**  
COMMISSIONER FOR TAKING  
AFFIDAVITS IN BRITISH COLUMBIA

A Commissioner for taking Affidavits  
for the Province of British Columbia.

IN THE MATTER OF THE

B.C. MINERAL ACT

AND

IN THE MATTER OF A DIAMOND DRILL PROGRAM

CARRIED OUT ON THE VULCAN 1 MINERAL CLAIM

DEWAR CREEK AREA

in the Fort Steele Mining Division  
of the Province of British Columbia


More Particularly N.T.S. 82F/16W

A F F I D A V I T


I, G.L. WEBBER, of the City of Kimberley, 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 a diamond drill programme, on the Vulcan 1 Mineral Claim.
3. That the said expenditures were incurred between the 19th day of June 1979 and the 9th day of August, 1979, for the purpose of mineral exploration on the above noted claim.

Sworn Before Me at Cranbrook  
in the Province of British Columbia,  
this 18 day of September, 1979

  
A Commissioner for taking Affidavits  
in the Province of British Columbia.

M. G. REID  
COMMISSIONER FOR TAKING  
AFFIDAVITS IN BRITISH COLUMBIA

  
G.L. WEBBER

COMINCO LTD.


EXPLORATION

WESTERN DISTRICT

STATEMENT OF QUALIFICATIONS

G.L. WEBBER has personally conducted many types of mineral exploration work for Cominco Ltd. over the last twenty-five years.

I consider him well qualified to prepare this report.

  
DOUGLAS ANDERSON, P. Eng.  
Geologist

# Drill Hole Record



**Property** V U L C A N      **District** Fort Steele      **Hole No.** V-79-1      **Page** 1  
**Commenced** July 22, 1978      **Location** Peavine Creek      **Feet at** 187 m      **Hor. Comp.** 130 m  
**Completed** July 29, 1978      **Core Size** HQ      **Corr. Dip** -45      **Vert. Comp.** 130 m  
**Co-ordinates**      **True Brg.** 100°      **Logged by** CL WEBBER  
**Objective** TO TEST THE POTENTIAL OF A SULPHIDE-BEARING CONGLOMERATE AND ITS HOST STRATIGRAPHY.      **% Recov.** 98%      **Date** Sept. 12, 1978

Footage From	To	Description	Sample No.	Length	Analysis					
0	71	GABBRO: Four feet of chilled contact at bottom.								
71	114	QUARTZ WACKE AND QUARTZITIC WACKE: Alternating beds of light grey to medium grey turbidites. No definite pattern to healed fractures, bedding 85°. Concretions from 1 x 2 cm to 3 x 8 cm are common; some concretions contain pyrrhotite throughout; some crossbedding. Alternating mottled beds throughout, probably due to the development and concentrations of phlogopite, with scattered specks of pyrrhotite. 71-114 is generally siliceous.								
114	118	WACKE AND SUB WACKE: Very thin-bedded to laminated, alternating medium light grey to medium dark grey beds that are siliceous in part. Contact of subwacke at 119m. 119 to 124 subwacke with alternating pyrrhotite laminated beds that may contain up to 8% Fe. Some rip-up clasts contain pyrrhotite.								
118	127	WACKE TO SUBWACKE: Siliceous in part, thin-bedded to very thin-bedded. Light grey to light greenish grey 1 cm beds; some mottled sections. Scattered 2x1cm wispy pyrrhotite patches.								



# Drill Hole Record



Property V U L C A N District Fort Steele Hole No. V-79-1 page 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		Description	Sample No.	Length	Analysis					
From	To									
127	132.5	<p>WACKE: Convoluted bedding, rip-up clasts and concretions, one of which is up to 9 x 5 cm; centre of this concretion contains some phlogopite and galena; others may only contain mica and pyrrhotite. Some ovoid clasts contain pyrrhotite. The convoluted bedding appears to be soft-sediment deformation, however, most textures cut the bedding at 30° and are healed. Ovoid clasts or small concretions are generally orientated in the shear direction.</p>								
132.5	138	<p>WACKE: Laminated and very thin-bedded. Some mottling persists, ovoid concretions from 4mm to 2 cm, appear generally orientated at 30° off the bedding which is 85°. Quartz vein ± 4 cm at 133 m some gouge. Minor shearing associated at 25°. Fragmental at 138 m. One quartz vein (1.5cm) with pyrrhotite at 137m.</p>								
138	141	<p>WACKE: Fragmental. Fragments orientated at 25 to 30° to bedding. Broken core with some gouge at 141 m.</p>								

# Drill Hole Record



Property	V U L C A N	District	Fort Steele	Hole No.	Y-79-1
Commenced		Location		Tests at	
Completed		Core Size		Corr. Dip	
Co-ordinates		True Brg.		Logged by	
Objective		% Recov.		Date	

Clear  
T Brg.  
Collar Dip  
Elev.  
Length  
Hole No.

Footage From To	Description	Sample No.	Length	Analysis
141 148	QUARTZ WACKE AND WACKE: Very thin-bedded, contains siliceous sections, medium light grey to dark beds. Barren quartz vein up to 3 cm at 145 m. Chlorite and pyrrhotite in healed fractures at 143 m.			
146 147.5	WACKE: Siliceous, convoluted(?) broken ground with gouge along tight fractures.			
147.5 161	WACKE and SUBWACKE: Silicification developed adjacent to quartz veining and fractures. Dark grey thinly laminated subwacke to 149m; laminated to 151.5 m. Light grey wacke with mauve to grey mottled textures. Nine cm barren quartz vein at 151.5m. Healed fractures and tension joints, possibly some crenulated bedding.			
161 172	WACKE AND QUARTZ WACKE: Well-healed shearing; chevron folding and crenulated bedding at all angles to the core. Less than 5% pyrrhotite in wispy patches and along fractures. Shearing 32°. Extreme deformation and solution textures.			

Drill Hole Record

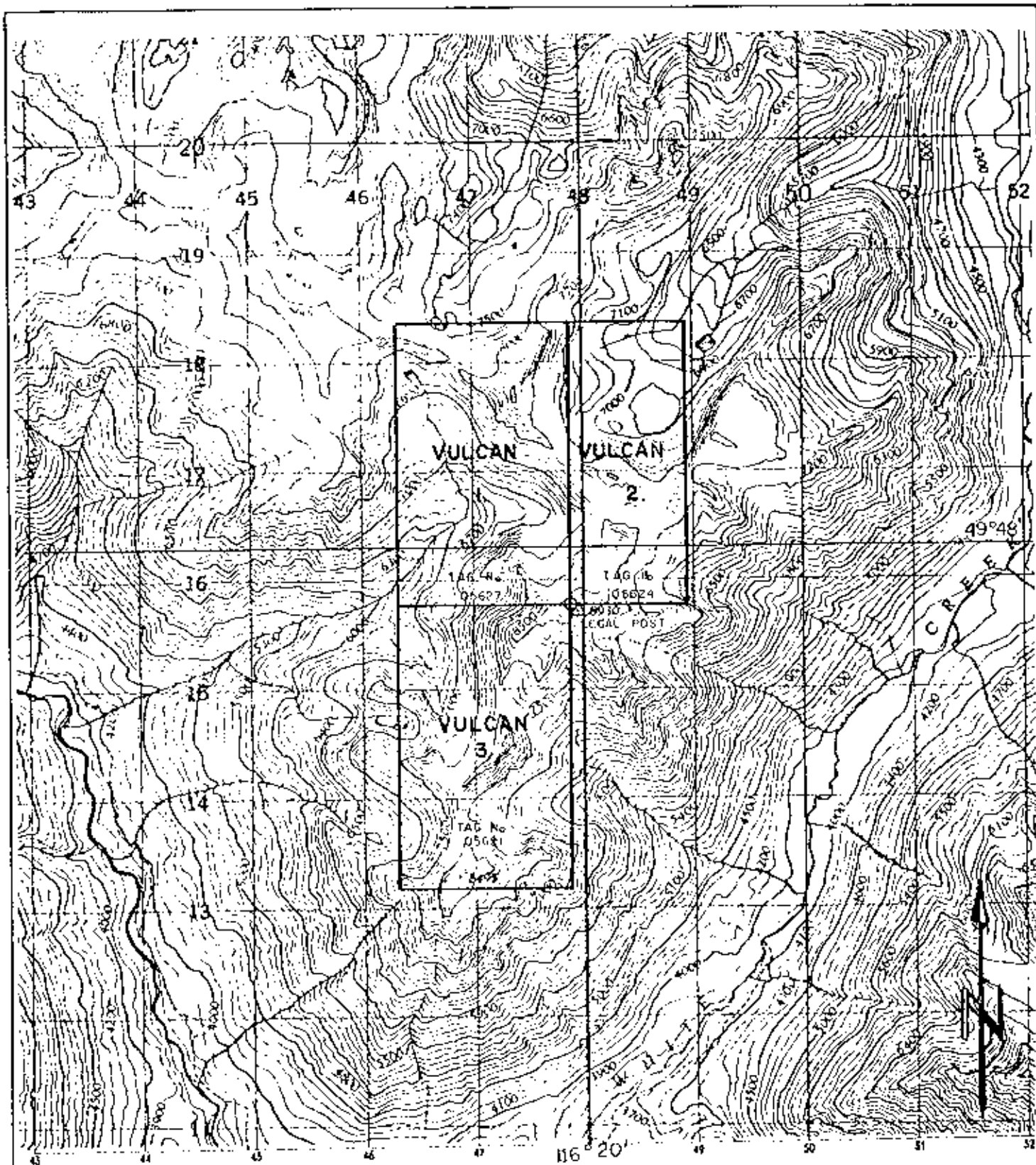


Property V U L C A N District Fort Steele Hole No. V-79-1 page 4  
 Commenced \_\_\_\_\_ Location \_\_\_\_\_ Tests at \_\_\_\_\_ Hor. Comp. \_\_\_\_\_  
 Completed \_\_\_\_\_ Core Size \_\_\_\_\_ Cor. Dip \_\_\_\_\_ Vert. Comp. \_\_\_\_\_  
 Co-ordinates \_\_\_\_\_ True Big \_\_\_\_\_ Logged by \_\_\_\_\_  
 Objective \_\_\_\_\_ % Recov. \_\_\_\_\_ Date \_\_\_\_\_

Claim \_\_\_\_\_  
 True Big \_\_\_\_\_  
 Collar Dip \_\_\_\_\_  
 Elev. \_\_\_\_\_  
 Length \_\_\_\_\_  
 Hole No. \_\_\_\_\_

Footage From To	Description	Sample No.	Length	Analysis
172 172.2	PEBBLES(?): Mottled, subangular fragments parallel to shear direction. This is shearing across a fragmental bed of grit conglomerate.			
172.2 181	WACKE: Quartzitic wacke - siliceous in part - ovoid and wispy pods oriented with shearing. This is a section of sediments that has been highly altered and all but wacke thick and medium beds of grit conglomerate. (5cm conglomerate at 175m) (5 cm at 175.5). (12 cm at 175.8) (5 cm at 180m). Minor amounts of pyrrhotite is common in wispy patches and healed fractures.			
181 184	QUARTZITIC WACKE(?): Probably wacke with introduced silica; medium dark grey, appears medium to thin-bedded where textures are not destroyed. Phlogopite is a commonly developed accessory mineral throughout the sediments of this hole.			
184 187	WACKE: Medium grey to buff grey. Grit conglomerate 12 cm @ 184m; 46 cm of grit from 184.6m. Scattered 2mm mottled patches			





Vulcan Claims	Tag Nos.	Date Located	Date Recorded	Record No.
Vulcan No. 1	05627	Sept. 14, 1976	Sept. 27, 1976	69
Vulcan No. 2	05624	Sept. 15, 1976	Sept. 27, 1976	70
Vulcan No. 3	05621	Sept. 16, 1976	Sept. 27, 1976	71

7689



Drawn by: GLW	Traced by:
Revised by: _____	Revised by: _____
Date: _____	Date: _____
_____	_____
_____	_____

LOCATION MAP

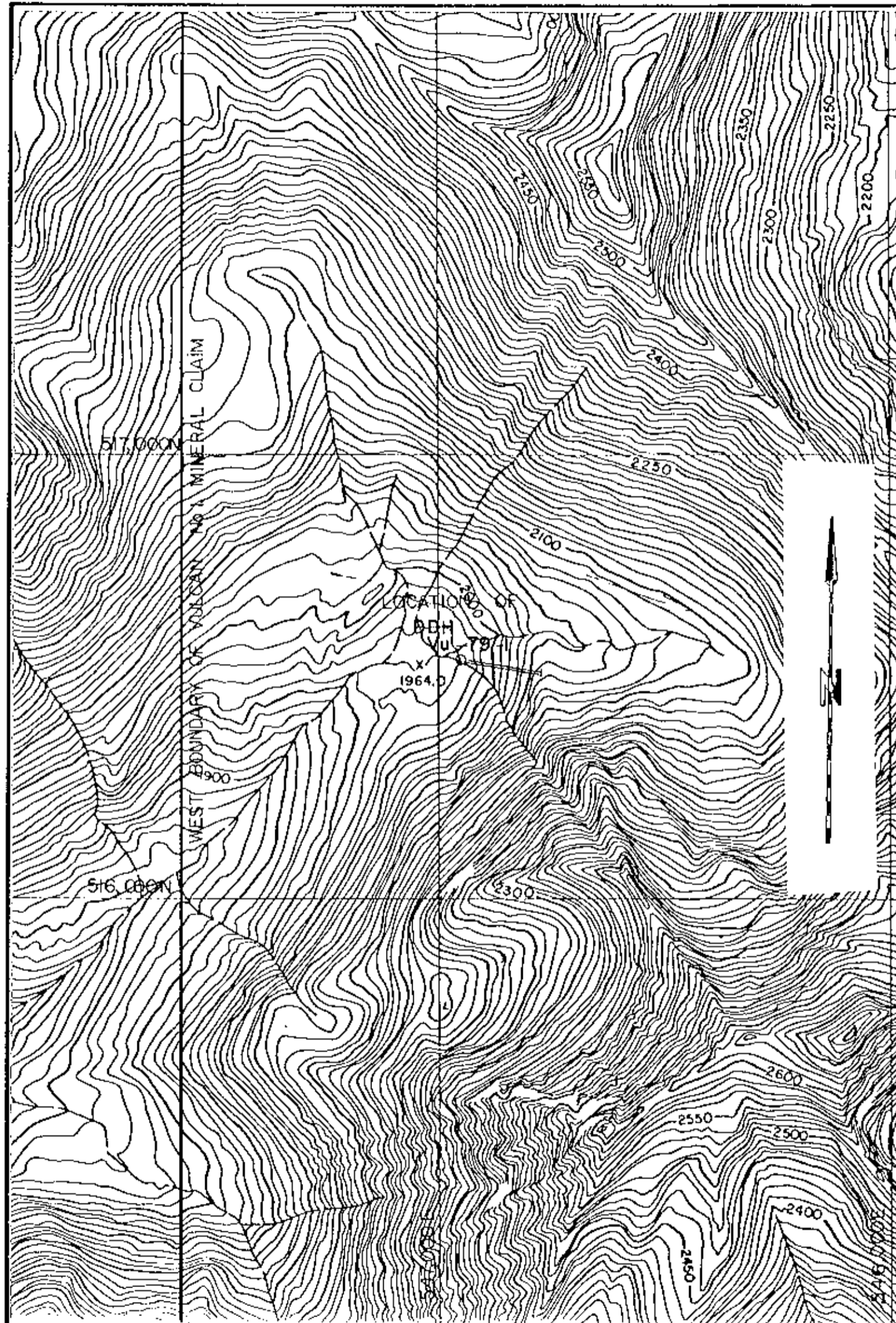
VULCAN CLAIMS 1, 2 and 3  
(40 units)

82F/16W

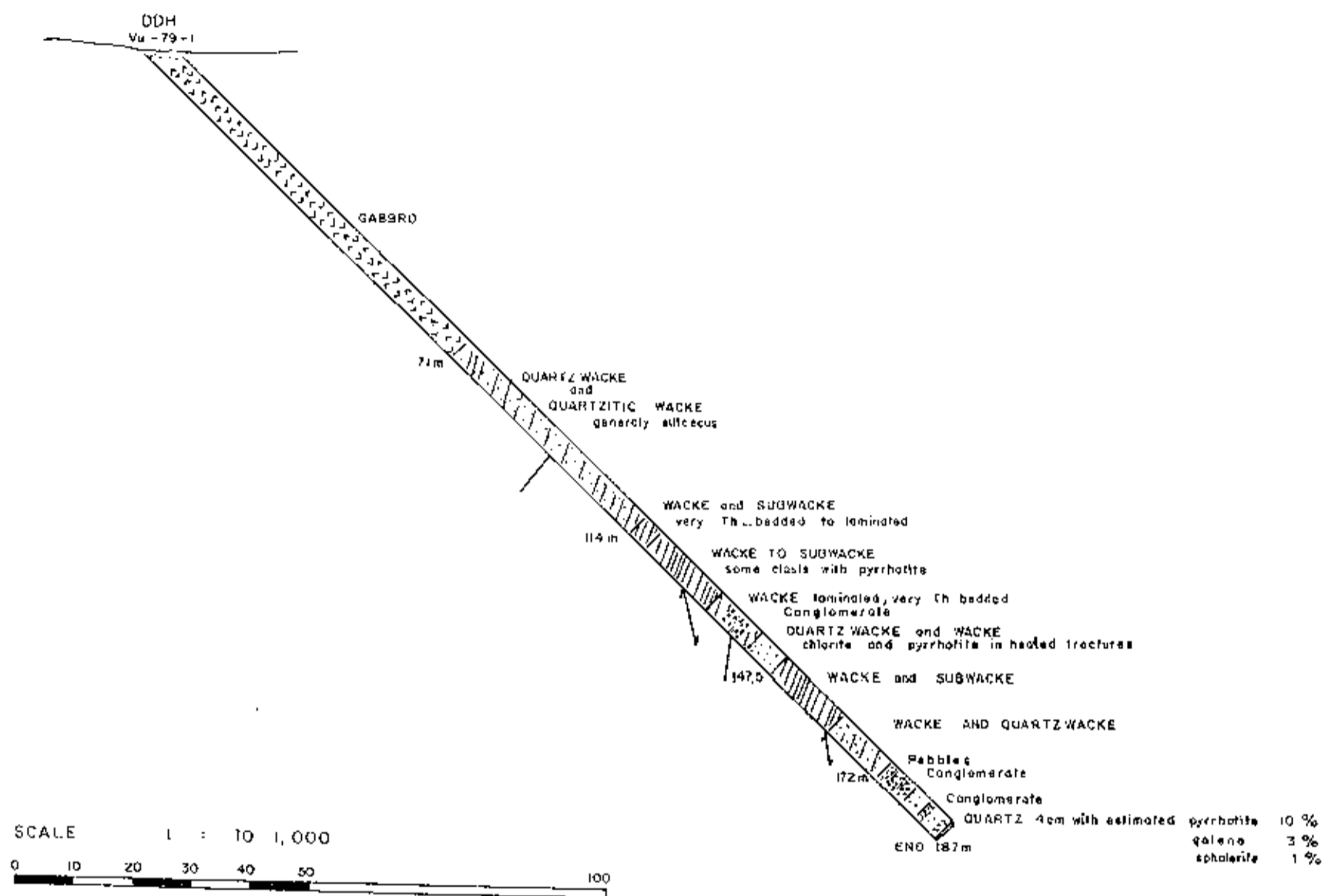
Scale: 1:50,000

Date: Sept. 23, 1976

Plate:



SCALE: 1 : TO 10,000  
 0 100 200 300 400 500 meters 1000



D.D.H. Vu-79-1

Length 187.14 m  
 Az 100°  
 Dip 45°  
 Hc 130 m  
 Vc 130 m

- LEGEND**
- QUARTZARENITE
  - QUARTZWACKE
  - QUARTZITIC WACKE
  - WACKE
  - SUBWACKE
  - CONGLOMERATE
  - GABBRO
  - TH THIN BEDDED
  - M MEDIUM BEDDED
  - TK THICK BEDDED
  - D.D.H. DIAMOND DRILL HOLE

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GRAPHIC LOG AND LOCATION MAP OF DIAMOND DRILL HOLE					
Drawn by:		Traced by: ZK		<b>VULCAN GROUP</b> D.D.H. - VU - 79 - 1.	
Revised by:	Date:	Revised by:	Date:		
				Scale: 1 : 10,000	Date: SEPT. 1979
				Plate: V-0-19-1	