DRILLING REPORT

Hatsoff Property

Golden Mining Division

Located 40 Km WSW of Invermere, B.C.

NTS 82 K/7E

Lat. 50°27'N

Long. 116°34'W

Owned And Operated By

Utah Mines Ltd.

Work Performed Between August 6 - August 21, 1980

Tom Pollock, M.A.Sc.
Utah Mines Ltd.

Vancouver, B.C.
September 19, 1980

Part 1 of 2

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SUMMARY

The 1980 exploration program on the Hatsoff Property consisted of drilling one hole to a depth of 701.6 metres in order to test a zone of quartz-sericite-pyrite-molybdenite stockwork. The drill hole was at an elevation of 2930 metres and located 53 metres away from the Hatsoff 1-4 Legal Corner Post at a bearing of 008°.

INTRODUCTION

Diamond drilling of one hole was carried out on the Hatsoff Property from August 7th to 28th, 1980. The drilling was totally confined to claim Hatsoff #2.

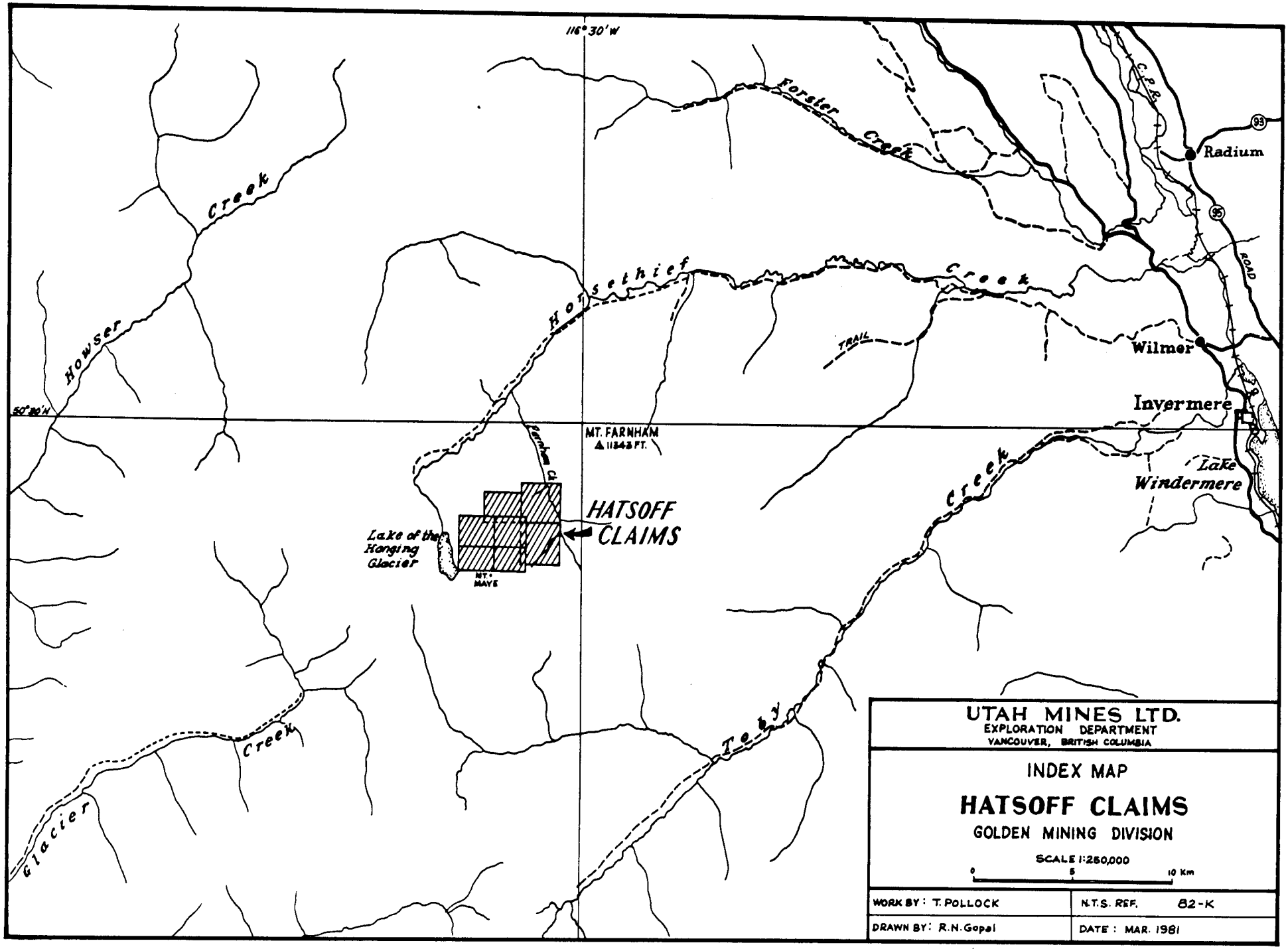
This report will claim the following as assessment work: (1) the direct diamond drilling cost, (2) necessary camp costs, (3) helicopter costs, and (4) fuel costs.

The following Utah Mines Ltd. personnel supervised and performed the geological work for the Hatsoff prospect: T. Pollock, geologist, and M. Stewart, field assistant.

LOCATION AND ACCESS

The Hatsoff Property is located approximately 40 kilometers west-southwest of Invermere, B.C., in the extremely rugged and glaciated terrain of the Purcell Mountains. The property consists of seven claims (85 units) covering an area of 1844 hectares. All claims are above treeline with elevations ranging from 2200 to 3200 meters.

Access to the property is by a dirt two-wheel drive road which leaves Highway 95 at Radium and proceeds westerly and southerly along Horsethief and Farnham Creeks. Helicopter access is required for the last four kilometers from Farnham Creek to the property - a vertical distance of 1200 meters.


116° 30' W
50° 30' N
Howser Creek
Forster Creek
Horsethief Creek
TRAIL
Radium
93
95
ROAD
C.P.R.
Wilmer
Invermere
Lake Windermere
Toby Creek
MT. FARNHAM
▲ 11243 FT.
Farnham Gl.
HATSOFF CLAIMS
Lake of the Hanging Glacier
MT. MAYE
Glacier Creek
UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER, BRITISH COLUMBIA
INDEX MAP
HATSOFF CLAIMS
GOLDEN MINING DIVISION
SCALE 1:250,000
0
5
10 Km
WORK BY : T. POLLOCK
N.T.S. REF. 82-K
DRAWN BY : R.N. Gopal
DATE : MAR. 1981

HISTORY

The area was first staked as a tungsten prospect (Sec claims) by Union Carbide Ltd. After a limited examination in 1972 the claims were allowed to lapse as no assessment was filed.

In July 1978, during the course of an examination of the above tungsten prospect by Utah geologists, a molybdenum occurrence was discovered. The claims Hatsoff 1-4 totalling 30 units were staked and following this the showings were mapped at a preliminary level (scale 1:7,500).

Detailed mapping (scale 1:5,000) of the Hatsoff 1-4 claims was completed in July and August 1979 with the conclusion that the Property had good potential as a porphyry molybdenum prospect. In August 1979 Hatsoff 5-7 claims (totally 52 units) were staked expanding the Property to the northeast towards the Farnham Creek Valley.

The reader is referred to the 1979 assessment report by B. Bowen for the geology and geochemistry of the Hatsoff Property. The Property is 100% owned and operated by Utah Mines Ltd.

DIAMOND DRILLING PROGRAMME

Drilling was performed by Longyear Canada Limited utilizing one Longyear "44" drill equipped to drill NQ core size. The camp and drill were flown up to the property from the access road by an Okanagan 214 helicopter on July 26, 1980. Drilling began 12 days later on August 7th after the camp and its facilities were erected. The hole was terminated August 28th, 1980.

Core was logged in detail by a Utah Mines Ltd. geologist, then split in half, with one-half of the core returning to the core box to be stored on the property. Of the other half, every other 3 meter section of core was sent for analysis while the other unanalyzed sections were sent to Utah's storage facility in Vancouver. The core that remained on the property was stored in wooden core boxes that were piled neatly up off the ground. All core boxes were clearly labelled with metal tags giving the hole and box number, and the meterage contained within.

The drilling was generally in good ground with an average core recovery of approximately 97%. The only major problem encountered in the drilling was from ice forming on the inside of the hole when the rods had to be pulled. Salt was used to control the amount of ice formation.

The depth of the first hole on the Hatsoff property extended to 701.3 meters. The following table gives the particulars of the hole drilled.

Hole No.	Co-ords (M) N.	E.	Elev. (M)	Date Start/Finish	Angle	Azimuth	Hole Depth (M)
HO-1	12790	12410	2930	Aug 7-Aug 28	-060°	012°	701.3

Data accompanying the drill report are found in the Appendices following this report. The data consists of the complete diamond drill log and associated assay log for the diamond drill hole HO-1 found in Appendices D and E respectively. A statement of qualifications, statement of cost and major contract invoices are given in Appendices A, B and C respectively.

DRILL HOLE GEOLOGY

Lithology:

Although only two basic rock types were encountered in hole HO-1, namely quartz monzonite and quartz porphyry, variations in these two rock types were numerous.

Quartz monzonite was the most predominant rock type occurring from 0 to 90 metres and from 480 metres to the bottom of the hole. This rock type was typified by its salt and pepper texture, equigranular appearance and low K-feldspar content. Above 540 metres where quartz monzonite was present, it typically was logged as the coarse grained phase of the Hanging Glacier Stock but below this depth the grain size decreased noticeably to a medium grain size. Associated with this finer grain size was the presence of large K-feldspar crystals averaging between one and two centimetres square, thus establishing this variety of quartz monzonite as the medium grained phase of the Hanging Glacier Stock as described by surface mapping.

The geology between 90 to 480 metres varied from a weakly porphyritic quartz monzonite with quartz phenocrysts to a quartz porphyry. Localized within this zone were sections up to 85 metres wide of non-porphyritic coarse grained quartz monzonite similar to that described above. Generally the contacts were gradational over several metres.

The presence and extent of well developed quartz porphyry rock increased with depth. The most continuous section was from 400 to 480 metres where the rock was characterized by a low mafic content (2-3%) and 10% rounded quartz phenocrysts set

in a fine grained granular groundmass of quartz and feldspar.

The number of dykes occurring in HO-1 was very small, totally less than ten. The dykes present were as follows: 1) feldspar-quartz-biotite porphyry, 2) alaskite, 3) aplite, 4) quartz porphyry and 5) quartz-feldspar porphyry.

Alteration:

The most prominent alteration present in the drill hole was the direct result of vein formation and was of the phyllic alteration type. Most of the veins logged had associated with them quartz-muscovite (sericite) - pyrite alteration envelopes; their width being directly proportional to the width of the vein.

Alteration in the envelopes consists of feldspar and mafic minerals (mainly biotite) altering to muscovite and the formation of pyrite, partially from biotite. In veins larger than 1cm, there is on occasion an envelope bordering the phyllic zone characterized by a pale green colour. This envelope would represent the final extent of the vein solutions that have penetrated the host rock and is characterized by plagioclase being altered by muscovite, carbonate and clinozoisite.

Where the rock was moderately fractured, fine veinlets ($\leq$ 1mm) of quartz, sericite and pyrite were common forming a stockwork pattern. Where this stockwork was present, for example in quartz monzonite, the rock lost its typical salt and pepper texture for a sparkly texture from a 10-20% contained sericite content.

Other forms of alteration observed that were only of local extent were propylitic alteration, and potassic alteration found in the envelopes of some quartz veins.

Mineralization:

Molybdenite mineralization throughout HO-1 was most commonly associated with quartz-pyrite veins and on occasion in their phyllic alteration envelopes. The molybdenite values were very irregular due to the fact that the Mo was mainly vein associated but generally the highest values were obtained in the first 180 metres of the hole. The values in this section averaged roughly 40 ppm Mo and then subsequently decreased downhole to an average of 8 ppm in the lower 200 metres of the hole.

Zinc and tungsten both increased downhole to values in the lower 150 metres roughly four times those found at the beginning of the hole. Sphalerite and to a lesser extent scheelite were commonly logged in quartz veins with or without pyrite below 500 metres.

Fluorine values showed slightly anomalous results over two sections of the hole. These were from 0 to 120 metres and 550-650 metres where values were on average 400 ppm higher than over the rest of the drill hole.

Other minerals logged were calcite, gypsum, beryl, tetrahedrite (?), garnet (along fault planes) and magnetite.

CONCLUSIONS

Results from D.D.H. HO-1 have indicated the following:

1) The medium grained quartz monzonite phase found below 525 metres is anomalous in zinc, tungsten and fluorine with respect to the other rock units logged in the hole. It should be noted that this medium grained phase partially surrounds the alaskite unit on the central ridge.

2) Molybdenum values decrease slightly downhole.

3) Due to the small number and width of the dykes intersected in the hole, it was impossible to tell whether any of the dykes carried anomalous metal values.

4) Nearly all the alteration observed in HO-1 is phyllic in nature and associated with fracturing and quartz veining.

Surface mapping and the drilling of HO-1 have indicated that the best potential for molybdenum mineralization lies in the quartz-sericite-pyrite molybdenite stockwork zone. The fact that zinc and tungsten values are increasing with depth might suggest that good molybdenite mineralization is possible at greater depths. Since it was felt from field mapping a genetic relationship exists between the alaskite and pyrite-molybdenite mineralization, our drill target would be a mineralized alaskite related phase below the anomalous medium grained quartz monzonite. This quartz monzonite represents the core of the Hanging Glacier Stock.

APPENDIX A

STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

The field work for this report was done by the following person whose qualifications are outlined below:

T. Pollock, Geologist for Utah Mines Ltd., Vancouver, British Columbia. Completed Hon. B.Sc. (geology) at Queen's University, Kingston, Ontario in 1977; completed M.Sc.A. at McGill University, Montreal, Quebec in 1980; employed by the Ontario Geological Survey as an assistant geologist during the 1974 and 1975 summer field seasons; employed by Inco Limited as a field geologist for the 1976, 1977 and 1978 summer field seasons; employed by the Geological Survey of Canada as a geologist, December 1977 to April 1978; employed by Kelvin Energy Ltd. during the 1979 field season as a field geologist; employed by Utah Mines Ltd. from May 1980 to date as a geologist under the supervision of J.B. Richards, P.Eng.

APPENDIX B

STATEMENT OF COSTS

STATEMENT OF COSTS

	Total Cost	Cumulative Total
Diamond Drilling	77,907.93	77,907.93
Okanagan Helicopter	17,365.95	95,273.88
Shirley Helicopter	16,546.99	111,820.87
Camp Cost (E.G. Walley & Sons Ltd.)	12,162.80	123,983.67
Fuel	5,684.52	129,668.19
Eddies Fairmont Grocery	2,848.35	132,516.54
Power Lease & Export	1,883.76	134,400.30
Sperry Sun Rental	1,070.00	135,470.30
Thiessen Equipment Ltd.	861.12	$136,331.42

Depth drilled up to and including August 21, 1980 = 567.84m
Total meterage drilled = 701.30m

Therefore, total value of assessment work spent up to and including August 21, 1980 equals:

$$\frac{567.84\text{m}}{701.30\text{m}} \times \$136,331.42 = \$110,387.03$$

APPENDIX C

MAJOR INVOICES

Longyear

Longyear Canada Inc.
CONTRACT DRILLING DIVISION
721 Alaford Avenue
Annacis Island, New Westminster, B.C. V3M 5P5
Telephone: 604-524-2511
Telex: 43-51280

8/11/80

Invoice No. 8555
Cust. No. 6051
Job No. 6277
Dest. 062

Utah Mines Limited,
Exploration Department,
Suite 1600-1050 W. Pender St.,
Vancouver, British Columbia
V6E 3S7

Utah Hatsoff
Invoice date: August 6, 1980
for July 1980

To: Invoice regarding diamond drilling programme on Hatsoff Project near Invermere, B.C., during period July 24-28, 1980 per agreement dated March 21, 1980.

Move In To First Site		
46 1/2 hours @ 74.00	3,441.00	
93 hours @ 23.00	2,139.00	
		$5,580.00

TERMS — NET 30 DAYS — INTEREST CHARGED AT 21% PER ANNUM ON OVERDUE ACCOUNTS

Longyear

Longyear Canada Inc.
CONTRACT DRILLING DIVISION
721 Aldford Avenue
Annacis Island, New Westminster, B.C. V3M 5P5
Telephone: 604-524-2511
Telex: 43-51280

RECEIVED
SEP 4 - 1980
UTAH MINES LTD.
EXPLORATION DEPT.

9/8/80

Utah Mines Limited
Exploration Department
Suite 1600 -
1050 West Pender Street,
Vancouver, B.C. V6E 3S7

Invoice No. 8713
Cust. No. 6051
Job. No. 6277
Dest. 062

Utah Hatsoff
Invoice date: August 29, 1980
for August, 1980

To: Invoice for diamond drilling performed on Hatsoff project near Invermere, B.C., during period August 05-15, 1980 as per agreement dated March 21, 1980

Hole No.	Size	From	To	Total	Rate	Amount
H01	NQ Wireline	Ø	1000	1000	21.20	21,200.00
		1000	1085	85	23.30	1,980.50
				1085		23,180.50

Drilling Mud & Additives (attached)

Thiessen Equipment Ltd.		949.52	
Valley Bus Ltd.		8.00	
		957.52	
	Plus 18%	172.35	
			1,129.87

Client Charge - attached

Travel Headquarters		302.40	
E.W. Hagen		1,278.50	
		1,580.90	
	Plus 18%	284.56	
			1,865.46

Move in to Hole H01

25 hours	@ $74.00	1,850.00	
34 hours	@ $23.00	782.00	
			2,632.00

Longyear Canada Inc.
CONTRACT DRILLING DIVISION
721 Aldford Avenue
Annacis Island, New Westminster, B.C. V3M 5P5
Telephone 604-524-2511
Telex. 43-51280

Reaming Casing & Cave

Hole H01

15 hours	@ $74.00		1,110.00
1 NQ Bit GR.32827		431.60	
1 NQ Bit SI.35835		322.40	
1 NQ Bit SI.35833		322.40	
1 NQ Shell E.2253		161.20	
1 NQ Shell E.2252		161.20	
Prorated recovery - see later invoice		-	
		1,398.80	
Plus 18%		251.78	
			1,650.58
			2,760.58
			$31,588.41

Longyear Canada Inc.
CONTRACT DRILLING DIVISION
721 Aldford Avenue
Annacis Island, New Westminster, B.C V3M 5P5
Telephone: 604-524-2511
Telex: 43-51280

Longyear

SEP 15 1980

9/17/80

UTAH EXPLORATION

Invoice No. 8714
Cust. No. 6051
Job No. 6277
Dest. 062

Utah Mines Limited,
Exploration Department,
Suite 1600-1050 West Pender St.,
Vancouver, British Columbia
V6E 3S7

Utah Hatsoff
Invoice date: September 10, 1980
for August 1980

To: Invoice for diamond drilling performed on Hatsoff project near Invermere, B.C. during period August 16-30, 1980 per agreement dated March 21, 1980.

Hole No.	Size	From	To	Total	Rate	Amount
HO-1	NQ Wireline	1085	1500	415	23.30	9,669.50
	NQ Wireline	1500	2000	500	26.10	13,050.00
	NQ Wireline	2000	2301	301	29.75	8,954.75
				1216		31,674.25

Reaming Casing and Cave - Hole HO-1

10 hours @ 74.00		740.00	
1 NQ Bit SI35836	N/C		
1 NQ Bit SI35840	N/C		
1 NQ Bit SI35841	322.40		
1 NQ Shell E2252 (charged previously)	-		
1 NQ Shell E2253 " "	-		
1 NQ Shell E5041	N/C		
Prorated recovery for SI35841	(228.90) CR.		
Prorated recovery for Invoice 8713	(1,038.28) CR.		
	(944.78) CR.		
Plus 18%	(170.06) CR.		
		(1,114.84) CR.	
			(374.84)CR.

Drilling Mud and Additives - attached

Thiessen Equipment Ltd.		474.66	
	Plus 18%	85.44	
			560.10

Left in Hole
Hole HO-1

1 NW Casing Cap	58.76	
1 NW Shoe E751	131.04	
1 NW 5' casing	64.84	
NW 10' casing	116.64	
	371.28	
Plus 18%	66.83	
		438.11

Longyear Canada Inc.
CONTRACT DRILLING DIVISION
721 Aldford Avenue
Annacis Island, New Westminster, B C V3M 5P5
Telephone 604-524-2511
Telex 43-51280

Utah Mines Limited
Invoice No. 8714
2...

Water Supply		
Hole HO-1		
15 1/2 hours @ 69.00		1,069.50
Client Testing		
Hole HO-1		
7 1/2 hours @ 74.00		555.00
Lost Circulation		
Hole HO-1		
4 1/2 hours @ 74.00		333.00
Client Delays		
Hole HO-1		
24 hours @ 69.00		1,656.00
Move Out From Hole HO-1		
18 hours @ 74.00	1,332.00	
.6 hours @ 23.00	368.00	
		1,700.00
Demobilization		
Lump Sum		2,670.00
Core Splitter		
1 Longyear Core Splitter #9326		478.40
	$	40,759.52

OKANAGAN HELICOPTERS LTD.
4391 AGAR DRIVE, RICHMOND, B.C. V7B 1A5
TELEPHONE (604) 278-5502 TELEX 04-355594

8/12/80

TO

Utah Mines Ltd.
1600 - 1050 W. Pender St.,
Vancouver, B.C.
V6E 3S7

INVOICE NUMBER
1-6069

INVOICE DATE
30/ 07/ 80
DAY MONTH YEAR

OUR REFERENCE NO.	CUSTOMER P.O. NO.	PAGE
85027		1

For charter of our 214 helicopter, GJNU

FIying July 25-27, 1980 as per attached flight report
#'s 377389 - 377391

10.4 hours @ 1650.00 per hour	$ 17160.00
Plus oil supplied by Okanagan Helicopters Ltd.	
10.4 hours @ 2.50 per hour	26.00
Plus Expenses	
A. MacDougald # 60301	179.95
	$ 17365.95

Payment Terms: 30 days from date of invoice.

Interest at 1½% per month will
be charged on overdue invoices.

INVOICE COPY

Shirley
Helicopters Ltd.

INVOICE

Hangar No. 6A, Municipal Airport
Edmonton, Alberta T5G 2Z3
Phone 453-5121

9/2/80

August 22, 1980

TO

Utah Mines Ltd.,
Suite 1600 - 1050 W. Pender Street,
Vancouver, B.C.
V6E 3S7

ACCOUNTS DUE WHEN RENDERED — PAYABLE AT PAR EDMONTON

CUSTOMER'S ORDER NUMBER	HELICOPTERS	PILOT
	C-GLMW	Levesque

		DESCRIPTION	CHARGES
August 13, 1980	76033	1.3 hrs. @ $375. per hr.	$ 487.50
		Plus Fuel @ $1.30 per gal for 32.5g.	42.25
		Plus Oil @ $1.20 per hr.	1.56
August 15, 1980	76041	1.9 hrs. @ $375. per hr.	712.50
		Plus Fuel @ $1.30 per gal for 47.5g.	61.75
		Plus Oil @ $1.20 per hr.	2.28
			$1,307.84

A 12904

TERMS NET 30 DAYS — 2% PER MONTH CHARGED ON OVERDUE ACCOUNTS

Shirley
Helicopters Ltd.

INVOICE

Hangar No. 6A, Municipal Airport
Edmonton, Alberta T5G 2Z3
Phone 453-5121

August 28, 1980

TO

Utah Mines Ltd.,
1600 - 1050 W. Pender,
Vancouver, B.C.

9/15/80

ACCOUNTS DUE WHEN RENDERED — PAYABLE AT PAR EDMONTON

CUSTOMER'S ORDER NUMBER	HELICOPTERS	PILOT
	C-GLMW	Levesque

DESCRIPTION			CHARGES
August 20, 1980	76051	4.4 hrs. @ $375. per hr.	$1,650.00
		Plus Fuel @ $1.30 per gal for 30g.	39.00
		Plus Oil @ $1.20 perhr.	5.28
			$1,694.28

A 12980

TERMS NET 30 DAYS — 2% PER MONTH CHARGED ON OVERDUE ACCOUNTS

OFFICE COPY

Shirley
Helicopters Ltd.

INVOICE

Hangar No. 6A, Municipal Airport
Edmonton, Alberta T5G 2Z3
Phone 453-5121

August 29, 1980

TO

Utah Mines Ltd.,
1500 - 1050 W. Pender Street,
Vancouver, B.C.
V6E 3S7

9/10/80

ACCOUNTS DUE WHEN RENDERED — PAYABLE AT PAR EDMONTON

CUSTOMER'S ORDER NUMBER	HELICOPTERS	PILOT
	C-GLMW	Levesque

DESCRIPTION		CHARGES
August 28, 1980 76073	3.0 hrs. @ $380. per hr.	$1,140.00
	Plus Fuel @ $1.30 per gal for 75g.	97.50
	Plus Oil @ $1.20 per hr.	3.60
		$1,241.10

A 13275

TERMS NET 30 DAYS — 2% PER MONTH CHARGED ON OVERDUE ACCOUNTS

Shirley Helicopters Ltd.

INVOICE

Edmonton, Alberta T5G 2Z3
Phone 453-5121

September 9, 1980

TO

9/17/80

Utah MineslLtd.,
1600 - 1050 West Pender Street,
Vancouver, B.C.
V6E 3S7

RECEIVED
SEP 12 1980
UTAH MINES
EXPLORATION DEPT

ACCOUNTS DUE WHEN RENDERED

PAYABLE AT PAR EDMONTON

CUSTOMER'S ORDER NUMBER	HELICOPTERS	PILOT
	C-GLMW	Levesque

DESCRIPTION			CHARGES
September 3, 1980	70785	5.2 hrs. @ $380. per hr.	$1,976.00
		Plus Fuel @ $1.30 per gal for 40g.	52.00
		Plus Oil @ $1.20 per hr.	6.24
			$2,034.24

A 13340

TERMS NET 30 DAYS — 2% PER MONTH CHARGED ON OVERDUE ACCOUNTS

OFFICE COPY

INVOICE No. 9672

E.G. WHALLEY & SON LTD. — SERVING THE DRILLING INDUSTRY

5791 BERESFORD STREET
BURNABY, B.C. V5J 1J9

DIAMOND DRILL
REPAIRS & SERVICE
CORE BOXES
WIRE-LINE HOISTS

PHONE: 433-5141

June 23/80

TERMS NET 15th OF MONTH FOLLOWING

SALES TAX LIC. No. EXEMPT

S.S.M.A. TAX No. EXTRA

SOLD TO Utah Mines Ltd.,
#1600 - 1050 West Pender St.,
VANCOUVER, B.C.
V6E 3S7

7/4/80

SHIP TO Above, Invermere, B.C.

CUSTOMER'S ORDER No. 8549

ORDER DATE Apr. 7/80

SHIPPING DATE June 23/80

VIA Direct Transportation System

OUR ORDER No. 4225

P.P.D. | COLL. X

QTY. ORDERED	BACK O.	DESCRIPTION	UNIT PRICE	QTY. SHIPPED	AMOUNT
		To supplying Material and Assembling Components for four only Prefabricated Camp Shacks.			$ 11,695.00
		4% PST			467.80
					$ 12,162.80
		TERMS: As per our letter of March 31/80:			
		$ 1,695.00 on receipt of Order			
		$ 5,000.00 on completion,			
		$ 5,000.00 on delivery			
		Balance owing: $ 10,000.00			
		Plus 4% PST 467.80		JUN 25 .80	
		Due on receipt of Invoice $ 10,467.80		UTAH EXPLOR...	

TERMS: ACCOUNTS DUE & PAYABLE ON OR BEFORE 30 DAYS FROM DATE OF INVOICE. 2% PER MONTH CHARGED ON OVERDUE AMOUNTS.

9672

TOTAL $ 12,162.80

STATEMENT

GULF CANADA LIMITED

P.O. BOX 4084, POSTAL STATION "A"
TORONTO, ONTARIO M5W 1L6

ACCOUNT NO 613772-01

UTAH MINES LTD
1600 - 1050 WEST PENDER ST
VANCOUVER BC

DATE: AUG 31, 1980

PAGE NO. 1

Original sent to H.O. with info 9/18/80

ITEMS LISTED AS OUTSTANDING ON PREVIOUS STATEMENT AND ALL CURRENT MONTH'S TRANSACTIONS

DAY	MO.	YR	DESCRIPTION	REFERENCE NUMBER	CHARGES	PAYMENT NUMBER	CREDITS
20	08	80	MERCHANDISE CR NOTE	178815			672.00
25	07	80	MERCHANDISE INVOICE	182683	1,735.08		
19	08	80	MERCHANDISE INVOICE	183799	1,473.96		
25	07	80	MERCHANDISE INVOICE	183806	3,147.48		
			SUMMARY OF TOTAL DUE BY MONTH				
			AUG 80 5,684.52				

PLEASE MAKE CHEQUES PAYABLE TO "GULF CANADA"

OVERDUE ACCOUNTS ARE SUBJECT TO SERVICE CHARGE

TOTAL DUE 5,684.52

DIRECT ACCOUNT ENQUIRIES TO:
P.O. BOX 2000
CALGARY, ALTA T2P ...
JENNIFER WINTERS
...

GULF CANADA LIMITED

UTAH MINES LTD

61694 ACCOUNT NO 613772-01

DATE: AUG 31, 1980 PAGE NO 1

PLEASE DETACH AND RETURN THIS STUB WITH YOUR REMITTANCE

PLEASE CHECK (✓) ITEMS COVERED BY YOUR REMITTANCE

MO.	YR.	REFERENCE NUMBER	OUTSTANDING ITEMS
		178815	672.00-
		182683	1,735.08
		183799	1,473.96
		183806	3,147.48
SUMMARY		TOTAL	DUE BY MONTH
AUG		80	5,684.52

RECEIVED
SEP 12 1980
UTAH MINES LTD.
EXPLORATION DEPT.

PLEASE PAY

TOTAL DUE 5,684.52

9/10/80

EDDIE'S FAIRMONT GROCERY
BOX 40
FAIRMONT HOT SPRINGS, B.C.

DATE Sept 4 1980

M Utah Mines

		ACCT FWD
1	Grocery Bill	
2	for July & Aug..	
3		
4	2848.35	
5		
6	Chge.	
7		
8	With Thanks	
9		
10	E. Semenyna	
11	Eddie's Grocery	
12		
13		
14		
15		

RECEIVED
SEP 8 - 1980
UTAH MINES LTD.
EXPLORATION DEPT.

27

O SPEEDIBOOK

POWER LEASE & EXPORT

BOX 1201, BLAINE, WASHINGTON 98230
BOX 6215, VANCOUVER, B.C. V6E 4C3

☐ REPLY
☒ TO

SOLD TO
Utah Mines Limited
Suite 1600-1050 West Pender Street
Vancouver, B.C.
V6E 3S7

8/12/80

SHIPPED TO
Utah Mines Ltd c/o
Shirley Helicopters,
Fairmont Hot Springs B.C.
Air Frt to Vancouver
Greyhound to Fairmont.

INVOICE DATE	FEDERAL SALES TAX NO	ACCOUNT NO.	YOUR ORDER NO.	OUR ORDER NO	SALESMAN
Aug. 8/80	Included		8715	1227-V-865	EEP
DATE SHIPPED	**PROVINCIAL SALES TAX NO**		**F.O.B.**		**SHIPPED VIA**
June 20/80	Charge		Montreal, Quebec	PPD COL	Air Frt & Greyhound

FOLD

QUANTITY ORDERED	QUANTITY SHIPPED	BACK ORDERED	DESCRIPTION	UNIT PRICE	PER	AMOUNT
Lot	Lot	0	Lot of lightning protection materials as described in detail in our quotation V-865, for the sum of.....			$1,695.23
6	6	0	No 67B Bases (formerly No. 60).....	9.53		57.18
5	5	0	No. 89 Points (formerly No. 331A).....	11.77		58.85
						1,811.31
			Plus 4% S.S. Tax.....			) 72.45
			Note: 4 #67B & 4 #89 added for chimneys and shipped with original lot. 2 #67B and 1 # 89 added by tel. from B.Richards and sent to J. Howe at Mtn Bungalows, Fairmont.			$1,883.76

FOLD

# 4603	TERMS: Net 30 days	TOTAL		$1,883.76

E & O E

STOCKFORMS #1016-S SMALL INVOICE UNRULED

TRIPLICATE

YOUR CHEQUE IS YOUR RECEIPT
PLEASE PAY LAST AMOUNT . . .

sperry-sun OF CANADA LTD.

P.O. BOX 4026 EDMONTON, ALBERTA T6E 4S8

INVOICE DATE	DELIVERY TICKET No.	JOB No.	RENTAL ORDER No.		INVOICE No.
19800731			SSB-753		C 10651
CUST. ORDER No.	DATE SHIPPED	VIA	FROM	TO	
	19800624	PWA	EDMONTON	UTAH MINES LTD.	

UTAH MINES LTD.
1600, 1050 WEST PENDER STREET
VANCOUVER, B.C.
V6E 3S7

8/12/80

TERMS: Net 30 Days. PROBE No.

MONTHLY RENTAL (NR) OF STANDARD SPERRY-SUN MAGNETIC SINGLE-SHOT INSTRUMENT COMPLETE, TYPE "B" FROM JUNE 24/80 THRU JULY 23/80 ONE (1) MONTH @ $1,000.00 PER MONTH	$1,000.00
MONTHLY RENTAL (NR) OF STANDARD SPERRY-SUN 90-DEGREE COMPASS ANGLE UNIT ONE (1) MONTH @ $70.00 PER MONTH	70.00
TRANSPORTATION CHARGE: PWA, AWB # 227-41992661	31.90
TOTAL INVOICE AMOUNT	$1,101.90

NO INSURANCE

RENTAL CONTINUED

LWT:ln

THIESSEN EQUIPMENT LTD.

CLOVERDALE INDUSTRIAL ESTATE
17910 ROAN PLACE, SURREY, B.C. V3S 5K1 • TEL. 576-9491
TELEX 04-365650

DATE: August 14, 1980

INVOICE TO: Utah Mines
#1600 - 1050 W. Pender St.
Vancouver, BC V6E 3S7

CONSIGNED TO: Above @ c/o Whitrley Helicopters
Fairmont, BC

8.19.80

[illegible] LTD.
[illegible] EXPLORATION DEPT.

INVOICE No. 8219

SHIPPED VIA	PREPAID	COLLECT	SHIPPING ORDER No.
Public		X	D 21920

SHIPPING DATE	FEDERAL SALES TAX	PROVINCIAL SALES TAX	CUSTOMER'S ORDER No.
August 14, 1980	Exempt	4% Extra	8827

Quantity	Unit	Description	Unit Price	Amount
36	88 lb	Calcium Chloride	$23.00/ea	$828.00
			4% SS Tax	33.12
				$861.12

After 30 days interest of 1½% will be charged on Declining Account Balance.

TERMS: NET 30 DAYS. 1½% PER MONTH ON OVERDUE ACCOUNTS

REMIT FROM THIS INVOICE — NO STATEMENTS ISSUED

APPENDIX D

DIAMOND DRILL LOG

HOLE NO.: D-1-80 | PROJECT: Ha[illegible]ff | PAGE NO.: 1 OF 47

COLLAR ELEV.: 2930.4m | GROUND ELEV.: | DATE STARTED: August 7/80 | REF. TO CLAIM CORNER: 53m @ 008°

COORDINATES: 11 793 N. 12431 E. | DATE FINISHED: August 28/80 | SCALE: 1:100

INCLINATION: -60° | BEARING: 012° | TOTAL DEPTH: 701.3m | LOGGED BY: Jon Pollock

SECTION	ALTERATION: Silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	% SULPHIDES py	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.	ESTIMATED
0								AVE CORE REC'Y / HOLE							
1								Casing 3 meters (10')							
2															
3															
4		weak			moderate	py	/	Fractures @ 15° + 55°, gossan + minor py + sericite.			93.8	NQ			
5							/	Coarse Grained Quartz Monzonite - equigranular, homogeneous, moderately hard, salt and pepper texture, 15% qtz, 10% matics (mainly biotite, minor hbl) some of matics slightly chloritized, 74% white feldspar (mainly plag) 1% py + sericite which is mainly concentrated about or within qtz veins or siliceous patches. py + sericite also occurs along fractures. upper 9 meters of core has a slightly rusty colour throughout the rock.	.3%	-4.6					
6							/	Qtz vein @ 35°, 5mm, vuggy with py + sericite			93.3		6		
7		weak	very weak	very weak	weak	py	/	Qtz vein @ 35°, 4cm wide, vuggy with sericite + qtz, XL's in vugs, also 2% diss. py.		-6.1					
8							/		.2%	-7.6	100				
9							/	Fractures @ 15° + 45°, mainly coated with gossan, minor sericite + py.					9		
10							/				93.5				
11		weak to mod.			weak	py, mo	/	Vein @ 65°, 1cm of mainly py, minor mo.	1%	-10.7					
12							/	Qtz veinlet @ 25°, .9cm wide with py + minor mo.			100		12		
13		weak	locally weak		weak	py, mo	X	Fractures @ 5, 25 + 35°, all gossan coated.							
14				very weak			//	Two qtz veins @ 30°, 2-3.5cm wide with py + trace mo in centers. Fracture @ 5° from 13.7-14.6 m, mainly coated with gossan minor py + sericite.	.5%	-13.7	93.5		15		
15								similar to above with fractures coated with gossan, qtz + py veinlets common, occasional large plag crystal - 1.5 x .5cm							

HOLE NO.: -1-80
COLLAR ELEV.: 2930.4 GROUND ELEV.: 2930m
COORDINATES: 11793 N. 12431 E.
INCLINATION: -68° BEARING: 012°

PROJECT: Hartsoff
DATE STARTED: August 7/80
DATE FINISHED: August 28/80
TOTAL DEPTH: 701.3 m

PAGE NO.: 2 OF 47
REF. TO CLAIM CORNER: 53m @ 008°
SCALE: 1:100
LOGGED BY: Tom Pollock

SECTION	ALTERATION: Silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.	ESTIMATED
15										py				15		
16		weak		weak	weak	py		Fracture @ 5°, along a qtz + py on 2mm thick coated with gossan. Violet @ 7°, 2mm of qtz + py				93.5				
17								Coarse grained Quartz Monzonite quite fresh + homogeneous, occasional large feldspar crystals (some to 2 x 1.5cm) qtz veins with py comm, all fractures are coated with gossan . slight chloritization of biotite + hbl, most of the sericite along fractures or associated with qtz veins.		.5%	16.8		NQ			
18								Fracture @ 25°, coated with gossan Qtz vein @ 30°, .5cm of qtz.				100		18		
19																
20		weak		weak	weak	py		Vein @ 18°, 1cm of qtz with py at edges 1cm zone @ 20° of qtz/py + sericite		.5%	19.8					
21								15-20% qtz, 10% mafics, rest mainly k-feldspar						21		
22		weak/locally mod		weak	weak	py, mo		similar to above, homogeneous with a few large feldspar crystals, few veins, just rusty fractures. Fracture @ 30°, coated with py, qtz + sericite. Fracture @ 50°, minor gossan + sericite				96.8				
23										.2%	22.9					
24			weak to mod.			py, mo		Qtz vein @ 20°, 1.3 cm of qtz with py, for 9cm on either side the rock has ±15% sericite + 1.5% py				96.6		24		
25				weak	high			crumbly			24.8	76.9				
26						py, mo		Fracture @ 20°, minor clay.		.2%	26.1					
27								24.0-26.2m: moderate clay alteration of feldspars feldspars have a pale green colour + are easily scratched, crumbly + locally has zones or veins high in sericite + py, minor mo on fractures.						27		
28	weak	locally weak		weak	moderate	py, mo		Fractures @ 5°, moderate clay minor gossan + @ 55°, the same with py				100				
29								Qtz vein @ 45°, white with disseminated py + mo, sericite conc^ at vein edges 5cm thick		1%	29.0					
30								Qtz vein @ 15°, .6cm with py, ser + mo				100		30		

28.05-28.5m: highly fractured + locally crumbly. fractures coated with gossan + clay. silicification associated with zone + with it sericite + minor mo.

HOLE NO.: -1-80 | PROJECT: Hartsoff | PAGE NO.: 3 OF 47

COLLAR ELEV.: 2930.4 | GROUND ELEV.: 2930m | DATE STARTED: August 7/80 | REF. TO CLAIM CORNER: 53m @ 008°

COORDINATES: 11793 N. 12431 E. | DATE FINISHED: August 28/80 | SCALE: 1:100

INCLINATION: -60° | BEARING: 012° | TOTAL DEPTH: 701.3m | LOGGED BY: Tom Pollak

SECTION	ALTERATION: Silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.	ESTIMATED
30										py				30		
31				very weak	weak	py		Veinlet @45°, 3mm of qtz+py/1cm zone of py+ser on either side. Fracture @45°, minor py+gossan. Veinlet of ser. alteration (10°) cuts a veinlet of potassic alteration (40°)	Coarse grained Quartz Monzonite quite fresh, + hard, homogeneous 20% qtz 10% mafics + mainly biotite, which are partially altered to chlorite; py+ sericite mainly concentrated along veins.	.5%		100				
32		weak									32.0		NQ			
33				locally weak	weak	py, mo, trace fl		Qtz vn @32.5°, 3.5 cm wide with py, mo, trace fl.	32.05-33.07m: vein like zone of medium grained monzonite, zone some what bleached compared to surrounding rock, sharp contacts @ 30°.		33.5	93.3		33		
34								Qtz vn @50°, 5mm of qtz, py minor mo, ser. along contacts								
35								Zone @30° of potassic alteration? 3cm wide, most feldspar pink. Fracture @40°, minor gossan.	where not cut by veins the rock is fresh with a salt + pepper texture.	.4%	34.7	100				
36									There appears to be 3 sets of veins 1) qtz vns., 2) qtz veins with or without py that have sericite zones for ≈1cm then a 1cm zone of green alteration, +3) vns of potassic alteration all the py + sericite is associated with veinlets.					36		
37		locally weak						Qtz vn @25°, 7mm wide, zoned from qtz vn to qtz w ser to a green coloration of the monzonite. Two veinlets (3mm) of weak potassic alteration, one @30° offsets the other @15° by .5cm.				87.1				
38				locally weak	weak	py				.2%	37.8					
39								Fractures @35+55°, minor gossan + py.	occasional feldspar KC's to 2x 1.5cm.					39		
40	weak	weak						Qtz vn @25° 2cm wide with py trace mo, pink feldspar on either side	39.5m - 49.8m: Zone of weak to moderate potassic alteration. ≈50% of the feldspars are pink + the zone has numerous qtz veins. From 42.05 the rock is quite siliceous + from 42.05-42.5 the rock has moderate sericite with mo. rock typically has few mafics ≈2% with a pale pinkish + green colour.			100				
41					weak	py		Vein @22°, .5cm of qtz + py.		1%						
42								Vein @28°, 1.5cm of qtz, py, trace mo, fracture along vn.			40.8			41		
43				very weak	moderate	py, mo		Zone @30°, 3.5cm of qtz, py, mo + sericite.			41.8	100				
44								Fractures @30°+60°, +@35° in the opposite direction, minor gossan.		1%	43.3	100				
45								Qtz vn @20°, 5mm wide with py sericite along edges.			44.2	100		45		

HOLE NO.: A 1-80 | PROJECT: Hartson | PAGE NO.: 4 OF 47

COLLAR ELEV.: 2930.4 | GROUND ELEV.: 2930m | DATE STARTED: August 7/80 | REF. TO CLAIM CORNER: 53m @ 008°

COORDINATES: 11793 N. 12431 E. | DATE FINISHED: August 28/80 | SCALE: 1:100

INCLINATION: -60° | BEARING: 012° | TOTAL DEPTH: 701.3m | LOGGED BY: Tom Pollock

SECTION	ALTERATION: Silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	GEOLOGY	COMMENTS: DESCRIPTIVE GEOLOGY		AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.	ESTIMATED
45																	
46				very weak	weak/locally high	py, mo		Qtz vn @ 22°, 2.5cm wide w py + mo, most mo in qtz + sericite patch on edge of vn. Fracture @ 15° coated w coarse sericite + py + gossan	Zone of weak to moderate potassic alteration continues. 45.25-45.6m: pegmatitic, very coarse grained feldspar + qtz, 12% py. feldspars look to be intermediate between K-feldspar + plag.		1%	46.9	100	NQ			
47																	
48		weak	locally weak	locally weak	weak	py, mo		47.5-48.1: highly fractured with gossan on the fractures.				48.5	100		48		
49																	
50					weak	py, mo		Zone of py, qtz + ser. @ 29°, 2cm wide	Contact sharp @ 30°		.7%	50.3	100				
51		locally weak						Vnlt @ 25°, 2mm of qtz + py, minor mo	Coarse grained qtz monzonite quite fresh, salt + pepper texture, similar to above. most of the py + sericite is associated with veins. These veins either give a greenish colour to the rock or a pink potassic alteration colour. 52.8m: thin (≤1mm) vnlts of qtz + py with associated sericite + green alteration zones. minor mo.						51		
52								Fracture @ 20°, minor coating by py					96.7				
53						py, mo		Vein @ 50°, 2cm wide of qtz w py at edges, then sericite + chl alt.			.7%	53.3					
54	potassic @ along qtz vns							Qtz + py vnlt @ 30°, 2mm wide							54		
55								3.5 cm wide potassic alteration on either side.					96.8				
56								Qtz vn @ 25°, 4cm with some K-feldspar, ser + py on edges, minor mo			.5%	56.4					
57								Fractures @ 35°, minor gossan + py							57		
58								Fractures @ 20° + ⊥ll to core axis mod. coating by py, gossan + ser.					100				
59								Qtz + py vn @ 25°, 1mm wide w some K-feldspar along vn. similar to above fractures ⊥ll to this vn.			.4%	59.4					
60								Fractures @ 22°, minor gossan, py + sericite. Fractures @ 65° + 25°, moderate gossan, py + sericite.					100		60		

HOLE NO.: -1-80 | PROJECT: Hatso, ? | PAGE NO.: 5 OF 47

COLLAR ELEV.: 2930.4m | GROUND ELEV.: 2930m | DATE STARTED: August 7/80 | REF. TO CLAIM CORNER: 53m @ 008°

COORDINATES: 11793 N. 12431 E. | DATE FINISHED: August 28/80 | SCALE: 1:100

INCLINATION: -60° | BEARING: 012° | TOTAL DEPTH: 701.3m | LOGGED BY: T. Pollock

SECTION	ALTERATION: Silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	GEOLOGY	DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.	ESTIMATED
60	1 pot. along some vns				weak	py		Fractures @ 30°					60		
61			along qtz vnlts					1/2 m of qtz+py @ 7°, 5mm wide w/ 1cm of ser either side plus pale green alt. (1cm).	.4%		100	N/C			
62								Fractures @ 20° + 65°, minor gossan		62.3					
63			along qtz vnlts					Granular qtz+py+ser zone @ 45° 2cm wide w/ some K-feldspar + green alt. Fractures @ 50°, mod gossan.					63		
64											100				
65			along py vnlts	v. weak		py			.4%	65.4					
66								1.5cm zone of qtz, py+ser, pale green alt. on edges. Fracture up center of zone					66		
67	5mm pot in vns				weak			qtz-py vn @ 20°, 5mm w/ ser + green alt.			89				
68			along py vnlts			py		1/2 m @ 25° of potassic alt. 7mm wide w/ green selvages	.1%	68.6					
69													69		
70				very weak	weak	py no		Zone @ 50°, 4cm with mod at the center w/ py, then ser + green alt. Fractures 15-30°, weak gossan, py+ser							
71									.3%	71.6	100				
72	weak to mod part			pale green	weak	py no		Two sets of qtz+py vnlts w/ associated potassic alt @ 10° + 35° in opposite directions in this sample zone. 5 vnlts/m					72		
73		along qtz vns	along qtz vnlts					Fracture @ 20° coated w/ gossan							
74						py no		Qtz vn @ 25°, 5mm wide w/ py + pot alt @ edges	.5%		100				
75								Qtz vn @ 30°, 5mm w/ no.		74.7			75		

COMMENTS:

AVE CORE REC'Y / HOLE

Coarse grained qtz monzonite

61.5m: Vein of coarse qtz + K-feldspar (minor sericite) @ 30° is cut by a hairline vnlt of py + sericite

61.35-62.7 m: qtz monzonite but w/ ≈10% pink feldspar. rock is f.g. as well + more granular, contacts are sharp @ 20°

72.3m ⇒: due to the high number of qtz+py vns + vnlts w/ associated potassic alt. having a more bleached colour. the rock has a pale green pink colour + locally only 2% noticed. vns have no set orientation + as their density increases the salt + pepper texture fades.

HOLE NO.: -80 | PROJECT: Har...ff | PAGE NO.: 6 OF 47

COLLAR ELEV.: 2930.4m | GROUND ELEV.: 2930m | DATE STARTED: August 7/80 | REF. TO CLAIM CORNER: 53m @ 008°

COORDINATES: 11793 N. 12431 E. | DATE FINISHED: August 28/80 | SCALE: 1:100

INCLINATION: -60° | BEARING: 012° | TOTAL DEPTH: 170.63m | LOGGED BY: Tom Pollock

SECTION	ALTERATION: Silica	ALTERATION: Sericite	ALTERATION: Clay	ALTERATION: Chlorite	FRACTURING	MINERAL	GEOLOGY	COMMENTS	DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
75									Coarse grained qtz monzonite	py				75		
76–78	weak pot	weak along vns		weak pale green	weak	py		Fractures @ 15° + 30°, both coated w gosson, py + ser. Qtz vn (1mm) w minor ser + weak potassic alt.		.32	77.7	96.7	NQ			
78–81	weak pot.	weak along vns				py/minor Mo		Qtz vn @ 76°, 2mm w py + trace Mo. This vn X-cut by another @ 60°, no Mo. 1cm zone @ 30°, of K-feldspar + plag	locally porphyritic from white to pale pink phenocrysts.	.22	80.8	100		78		
81–84	weak pot.	along vns			weak	py/Mo		Qtz + py vnlt @ 45°, 2mm wide, 5mm qtz + ser selvages. Fracture @ 20°, coated w gosson. Vnlt @ 25°, 2mm w qtz, py + mo. Qtz + py vn @ 20°, 5mm thick,	main vn type is qtz + py w sericite selvages + sometimes w pot. alt. for a few mm's	.42	83.8	100		81		
84–87	weak pot.	conc^n along vns			weak	py		Qtz-py vn @ 15°, 4mm thick, pot alt.	through this section the rock becomes finer grained + the salt + pepper texture fades	.82	86.7	96.5		84		
87–90		along vns		weak	weak	py		Qtz + py vn from 86.8-87.6 ≅ // to core axis, 3mm w typical alt. Qtz-py vn w minor Mo @ 20° 5mm wide w ser + K-feldspar. Fractures from 35-45° minor gosson + py. 3.5 cm zone of chl, py + ser	K-feldspar content increasing slightly.	.52	89.8	96.8		87		
90														90		

HOLE NO.: 7-1-80	PROJECT: Hatsurf	PAGE NO.: 7 OF 47	
COLLAR ELEV.: 2930.4m	GROUND ELEV.:	DATE STARTED: August 7/80	REF. TO CLAIM CORNER: 53m @ 008°
COORDINATES: 11793 N. 12431 E.		DATE FINISHED: " 28/80	SCALE: 1:100
INCLINATION: -60°	BEARING: 012°	TOTAL DEPTH: 701.3m	LOGGED BY: Tom Pollock

SECTION	ALTERATION: Silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	GEOLOGY	COMMENTS	DESCRIPTIVE GEOLOGY	PY %	SULPHIDES %	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
90–93		along vns.			weak - mod	py, mt		Fracture @ 40°, coated w gossan + py. Qtz-py vnlts @ 40°, avg 2mm thick.	Qtz monzonite to Qtz Porphyry. 10-15% qtz of which 5% is qtz phenocrysts	.5%	.5%	90.7	100		90		
												92.5	100	NQ			
93–96		along vns		pale green alt. along vns.	weak	py, mt, MO3		Qtz + py vn @ 20°, has some K-feldspar XL's, 5mm wide. Gossan coated fractures @ 40°	locally the rock is aphanitic + creamy coloured (all plag?) also locally the rock is very high in biotite (≥25%) to mt.	1%	1%	95.6	100		93		
96–99		along vns		pale green alt. along vns.	weak	py, MO		Qtz-py vn @ 35°, 1mm thick. Qtz vn w minor MO @ 30°, 2mm wide. Qtz vn @ 7°, w minor py + trace MO, 1.5cm wide w a 2cm zone on either side of qtz + ser.		.7%	.5%	98.6	100		96		
99–102		along qtz vns			weak	py		Qtz-py vn @ 35°, 5mm thick. Fracture @ 25°, minor py.	the rock through this section takes on many variations. Typically n.g.r. mafics vary from 1-10%, most of which is biotite, minor mt. locally there are rounded clots or zones of high mafic content (25-30%).	.7%	.3%	101.7	100		99		
102–105		along vns			weak	py		Fracture @ 30°, minor gossan. Qtz-ser zone @ 20° w MO		1%	2%	104.7	100		102		
															105		

HOLE NO.: 1-80
COLLAR ELEV.: 2930.4 m
GROUND ELEV.:
COORDINATES: 11793 N. 12431 E.
INCLINATION: -60°
BEARING: 012°

PROJECT: Hats. f
DATE STARTED: August 7/80
DATE FINISHED: August 28/80
TOTAL DEPTH: 701.3

REF. TO CLAIM CORNER: 53 m @ 008°
SCALE: 1:100
LOGGED BY: Tom Pollock

COMMENTS: Qtz-py vn cut by qtz-py vn with cal, Mo + sph.

AVE CORE REC'Y / HOLE

SECTION	ALTERATION: Silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	GEOLOGY	DESCRIPTIVE GEOLOGY (comments)	DESCRIPTIVE GEOLOGY	% SULPHIDES Py	Mo	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
105–107.9	potassic along vns	Moderate but along vns			moderate	py, mt		2cm zone of qtz, py + ser @ 30° fracture up center of zone	Transition between qtz monzonite & qtz porphyry. generally homogeneous, equigranular, m.g. with 70% feldspar (1/3 K-feldspar) mafics 5-7%, of this minor mt., locally there are high conc^ns of mafics.	1%	.3%	107.9	93.8	NQ	105–108		
107.9–110.9	pot. in + along vns	mod. but along fractures			weak	py, mo, mt		Qtz-py-ser vn, fracture up center. Qtz-py vn @ 5° from 109.3-109.8m 3.5cm with minor mo conc^n along the contacts, 1cm qtz-ser selvages		1%	trace	110.9	100		108–111		
110.9–114.0	weak to mod.				weak to mod.	py, mo		Fracture @ 25°, minor py.	110.5 m: Vein @ 65°, 1.5 cm wide of qtz, calcite, py + ser. Good potassic alteration on either side.	1%	trace	114.0	100		111–114		
114.0–117.0	Mode to strong				weak to mod.	py, mo, mt.		Qtz vn @ 15°, 4cm wide with py along the edges, this vn is cut by another qtz vn @ 22° w py calcite, mo & a resinous brown mineral (sph).		2-3%	trace	117.0	100		114–117		
117.0–118.9					moderate	py		Fractures @ 40°, minor py + gossan	Similar to above	1%	trace	118.9	89.5		117–120		
118.9–120													100				

HOLE NO.: 1-1-80 | PROJECT: Har--ff | PAGE NO.: 9 OF 47

COLLAR ELEV.: 2930.4m | GROUND ELEV.: | DATE STARTED: August 7/80 | REF. TO CLAIM CORNER: 53m C 008°

COORDINATES: 11793 N. 12431 E. | DATE FINISHED: " 28/80 | SCALE: 1:100

INCLINATION: -60° | BEARING: 012° | TOTAL DEPTH: 701.3m | LOGGED BY: Tom Pollock

SECTION	ALTERATION: Silica	ALTERATION: Sericite	ALTERATION: Clay	ALTERATION: Chlorite	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.	ESTIMATED
120														120		
121	weak pervasive				weak	py, mo, mt		Mo smeared on fracture with gossan @ 45°			120.7					
122	weak pervasive along vns	weak along vns						Qtz - monzonite homogeneous, equigranular + mg.; the # of veins has dropped drastically which in turn gives a more consistant colour to the rock		.3		100	NQ			
123	weak pervasive along vns							Fractures @ 45°, moderate py + @ 50° w minor py		trace	123.4			123		
124	weak pervasive along vns	weak along vns		localized clots												
125					weak	py, mt		Qtz-ser zone @ 25° with trace Mo, 3mm wide		.5		100				
126										trace				126		
127	weak pervasive along vns	weak along vns						Qtz-py vn @ 35°, 5mm wide			126.5					
128					weak	py, mo, mt		Vein @ 20°, 1.3cm of mainly py plus qtz + mo.		.8		100				
129										trace				129		
130											129.5					
131						py, mo				.8		100				
132										trace				132		
133				in alt clots	weak			black alteration clots common			132.6					
134		along vns				py		Qtz-py vn @ 10°, 8mm wide 1cm qtz-ser selvage on either side.		.3						
135														135		

HOLE NO.: 0-1-80
COLLAR ELEV.: 2930.4m GROUND ELEV.: 2930m
COORDINATES: 11793 N. 12431 E.
INCLINATION: -60° BEARING: 012°

PROJECT: Halzutt
DATE STARTED: August 7/80
DATE FINISHED: " 28/80
TOTAL DEPTH: 701.3m

REF. TO CLAIM CORNER: 53m @ 008°
SCALE: 1:100
LOGGED BY: Tom Pollock

COMMENTS: Qtz-py vein w trace Mo (ser-py-qtz envelopes) cuts a qtz-py-ser vn (no envelopes).

AVE CORE REC'Y / HOLE

SECTION	Silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	DESCRIPTIVE GEOLOGY		% SULPHIDES py	% SULPHIDES Mo	CORE SIZE	SAMPLE INTERVAL
135–138		weak along vns		weak	weak	py/mt	Fracture @ 35°, minor py Qtz vn @ 65°, little ser @ edges	Qtz monzonite homogeneous & equigranular, pale pink-white w black biotite, occasional larger xl of qtz & plag. biotite 5%, which has been slightly chloritized, mt conc^n in mafic patches		.2	↑ NQ ↓	135–138
138–141		mod along fractures		weak in fspars & alt of biotite	weak	py/mt	Qtz-py vn @ 20°, 5mm wide w 5mm qtz-py-ser envelopes.	py conc^n mainly in qtz vns but does occur as fine disseminations replacing biotite.		.2		138–141
141–144		mod along frac.		weak in fspars & alt of bio	weak	py/mo/mt	Qtz-py vn @ 40° w 2 fine ribbons of Mo, 3cm thick, 1cm ser envelopes.	Vein types from 139-143m: most common is qtz-py-ser vns -21 next qtz-py vns -9 finally qtz vns sometimes w k-feldspar -1	1.5	.2		141–144
144–147		mod. along vns		weak	moderate	py/mo/mt	Qtz-py vn w minor Mo @ 15° (1cm wide w 5mm qtz-ser-py envelopes cuts a qtz-py-ser vn @ 30° (1cm wide w no envelopes)			trace		144–147
147–150		mod. along fractures		trace	weak	py/minor mt	Barren qtz vn @ 45°, 2mm wide		1.0	trace		147–150

HOLE NO.: 0-1-80		PROJECT: Hatsu, ff		PAGE NO.: 11 OF 47	
COLLAR ELEV.: 2930.4 m	GROUND ELEV.:	DATE STARTED: August 7/80		REF. TO CLAIM CORNER: 53m @ 008°	
COORDINATES: 11793 N.	12431 E.	DATE FINISHED: August 28/80		SCALE: 1:100	
INCLINATION: -60°	BEARING: 012°	TOTAL DEPTH: 701.3m		LOGGED BY: Tom Pollock	

COMMENTS: Mo in qtz-py veins. One vn w beryl.

AVE CORE REC'Y / HOLE

SECTION	ALTERATION: Silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	GEOLOGY	DESCRIPTIVE GEOLOGY		% SULPHIDES Py	Mo	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.	ESTIMATED
150–153		moderate		weak on bio	weak	py, mo, mt		Qtz-py vn w Mo @ 75°, 3mm wide. Qtz-py vn w mo, 7mm wide @ 12°. Fracture @ 45°, moderate coating by py.	Qtz Monzonite	2%	trace	150.9	100	NQ	150–153		
153–156		weak conc. along vns		weak on bio	weak, locally crumbly	py, mo, mt				1.5%	trace	153.9, 155.3	100		153–156		
156–159		moderate		weak	weak	py, mo, mt, beryl		Qtz vn @ 25°, 7mm wide w py, mo, beryl = 6cm wide w qtz-ser-py envelopes. Qtz-py vn w mo @ 25°, 2mm wide w 7mm qtz-py-ser envelopes. Barren qtz vn @ 65°, 5mm wide.	← Beryl in the qtz is long slender hexagonal Xl's – aquamarine in colour. Qtz-py (mo) + qtz-py-ser vns still the major type. Rarely there is a barren qtz vn.	1%	.2%	158.0	100		156–159		
159–162		weak along vns		very weak	weak	py, mo, mt				.5%	.2%	160.8	92.6		159–162		
162–165		mod - strong		mod	weak	py, mo, mt		Qtz-py vn w mo in fractures in the vn. @ 20°, 9cm wide, most of the mo is in the upper half + py in the lower ≥ 1cm qtz-ser-py envelopes. Fractures @ 30° along a qtz-py vn w minor mo.	Rock throughout this section has a high sericite content due to the # of qtz vns some of which are quite large.	1.5%	Nil	162.8	100, 100		162–165		

HOLE NO.: N-1-80
COLLAR ELEV.: 2930.4m
GROUND ELEV.: 2930m
COORDINATES: 11793 N. 12431 E.
INCLINATION: -60°
BEARING: 012°

PROJECT: Hatsoff
DATE STARTED: August 7/80
DATE FINISHED: August 28/80
TOTAL DEPTH: 701.3m

REF. TO CLAIM CORNER: 53m @ 008°
SCALE: 1:100
LOGGED BY: Tom Pollock

SECTION	ALTERATION: Silica	ALTERATION: Sericite	ALTERATION: Clay	ALTERATION: Chlorite	FRACTURING	MINERAL	GEOLOGY	COMMENTS	DESCRIPTIVE GEOLOGY	% SULPHIDES: py	% SULPHIDES: mo	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
165–168		weak along vns.			weak - mod.	py, mo, mt, [illegible]		Fractures @ 50-65°, clean. Qtz-py vn w mo @ 15°, 3cm wide	Qtz Monzonite	.5	.1	165.8	100 / 96.7	NQ	165–168		
168–171		weak along vns	locally weak		moderate	py, mo, mt		Fracture @ 35° along a 2mm qtz-py vn. Qtz-py vn @ 45°, 7mm wide w 5mm qtz-py-ser envelopes.		1.0	trace	168.9 / 170.4	100		168–171		
171–174		weak along fractures			locally mod.	py, mt		Qtz-py vn @ 25°, 5mm wide, 5mm qtz-py-ser envelopes, trace mo. Fractures @ 45° + 15°, ⊥ to each other, minor py		.3	trace	172.2	100 / 100		171–174		
174–177		weak			moderate	py, mo, mt		Contact quite sharp @ 65°. 1-2 cm qtz-py vn w trace mo @ 20°, weak envelopes. Contact @ 50°	175.4-177.05: Zone consists of milky white plag (possibly qtz) 80%, ≈ 1-2 white qtz + minor py + ser. w trace mo, homogeneous fine to m.g., pale green in colour, no mafics.	1	.1	174.7	100		174–177		
177–180	moderate				moderate	py, mo, mt		Qtz vn @ 35°, w py + mo. 10cm wide, 10+ cm qtz-py-ser. envelopes. Fracture @ 35°, clean.	Rock appears to be in a transition zone between qtz monzonite + quartz porphyry.	1.5	. (?)	177.7 / 179.2	100 / 100		177–180		

HOLE NO.: 0-1-80
COLLAR ELEV.: 2930.4m GROUND ELEV.: 2930m
COORDINATES: 11793 N. 12431 E.
INCLINATION: -60 BEARING: 012°

PROJECT: Hatsorf
DATE STARTED: August 7/80
DATE FINISHED: August 28/80
TOTAL DEPTH: 701.3m

REF. TO CLAIM CORNER: 53m @ 008°
SCALE: 1:100
LOGGED BY: Tom Pollock

COMMENTS: Qtz-py vns w no dropping off.

AVE CORE REC'Y / HOLE

SECTION	ALTERATION: Silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	GEOLOGY	DESCRIPTIVE GEOLOGY (comments)	DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
180–183		weak along vns		very weak	weak	py mt		Fracture @ 50°, clean. Qtz-py vn @ 30°, 4mm wide w no envelopes	Transition between qtz monzonite + qtz porphyry. M.g., homogeneous, equigranular, 10-15% qtz + 8-10% biotite, 20% k-feldspar 65% plag, plag XL's not easily distinguished but k-feldspar occurs as little (1mm) cubic + rect. XL's	.3 .1	180.1–182.0	94.7	NQ	180–183		
183–186		weak		very weak	weak-mod	py mt		Qtz-py vn @ 35°, 1mm with ser envelopes		.3 .1				183–186		
186–189		weak		very weak	weak	py mt		Qtz-py vn w mo @ 50°, 5mm wide w a 1cm qtz-ser-py envelope then a 5mm potassic envelope		.3 .1	186.4–187.5	100		186–189		
189–192		weak		very weak	weak	py mt			Qtz-py-ser vns still the major vn type.	.4 .1	190.5	100		189–192		
192–195	weak	weak			mod to high		mu	Qtz-py-ser vn @ 40°, 5mm wide w 3mm qtz-py-ser envelopes. highly fractured, fractures @ 25°-30° possible fault, downside move'd up.	193.4-198.6 : rock appears to be silicified rock is pale green to white w dark green specks which are the remains of biotite, it is now qtz + py there is some magnetite, but it may be primary or secondary.	1 .05	193.4	93.1 / 100		192–195		

HOLE NO.: H-1-80
COLLAR ELEV.: 2930.4m GROUND ELEV.: 2930m
COORDINATES: 11793 N. 12431 E.
INCLINATION: -60 BEARING: 012°

PROJECT: Hatsoff
DATE STARTED: August 7/80
DATE FINISHED: " 28/80
TOTAL DEPTH: 701.3m

REF. TO CLAIM CORNER: 53m @ 008°
SCALE: 1:100
LOGGED BY: Tom Pollock

COMMENTS:

AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

SECTION	ALTERATION: Silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	COMMENTS
195–198	moderate	weak along	high along frac.		high	py, mo, po, mt	Qtz vn @ 15°, 1.5 mm wide w qtz + mo. diffuse py-ser envelopes 1.5cm. Qtz-py vn @ 50° to minor mo 6mm wide w faint qtz-py-ser envelopes
198–201					weak-mod	py, mt	
201–204					weak	py, mo, mt	Fracture @ 20°, minor py. Qtz-py vn @ 50°, w minor mo, 9mm wide w potassic alteration envelopes.
204–207				weak	weak	py, mo, mt	Qtz-py vn @ 45°, 8mm wide w 1cm qtz-py-ser envelopes.
207–210				weak	weak/mod, weak	py, mo, mt	Fracture @ 40°, minor py. Barren qtz vn @ 30°, 6mm thick 1mm envelopes. Qtz-py-mo vn @ 45°, 1.3cm wide w mo, 5mm selvage.

Above zone continues – highly fractured w clay + green slippery surfaces. Fractures commonly @ 40° + ± 10°.

Qtz monzonite w ≈ 15-20% K-feldspar m.g., homogeneous, fresh, equigranular, mafics 8-10% (mostly biotite) qtz 10-15%, rest mainly plag.

Rock contains 15-20% euhedral K-feldspar crystals avg 1x2mm.
Rounded patches of high mafic minerals are still occurring.

% SULPHIDES py	mo	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
.5	.2	196.3–197.2	77.8	NQ	195–198		
		197.2–198.7	100				
.5	.2	198.7–199.8	100		198–201		
		199.8–201.2	92.9				
.5	.2	201.2–202.8	100		201–204		
		202.8–205.3	100		204–207		
.5	.2	205.3–208.3	100		207–210		
.5	.2	208.3–	100		210		

HOLE NO.: 1-1-80
COLLAR ELEV.: 2930.4m GROUND ELEV.: 2930m
COORDINATES: 11793 N. 12431 E.
INCLINATION: -60° BEARING: 012°

PROJECT: Har. Ag
DATE STARTED: August 7/80
DATE FINISHED: " 28/80
TOTAL DEPTH: 701.3m

PAGE NO.: 15 OF 47 53m @ 008°
REF. TO CLAIM CORNER:
SCALE: 1:100
LOGGED BY: Tom Pollock

COMMENTS:

AVE CORE REC'Y / HOLE

SECTION	ALTERATION: Silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	GEOLOGY	DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.	ESTIMATED
210								Qtz. porphyry rare K-feldspar phenocrysts biotite is very weakly chloritized	py				210		
211										210.6	100				
212		weak		locally weak		py, mo, mt	2	Qtz-py vn @ 25°, 3mm wide w/ no selvages.	.8% .3	211.8	100	NQ			
213							1	Qtz-py vn w/ good mo. 2cm wide w/ min. 3cm qtz-py-ser envelopes					213		
214		weak		locally weak	weak-locally mod.	py, mt					96.7				
215								215.29-215.55m: Aplite 3mm, contacts @ 50°, <1% matics, ≃10% qtz, plag ½-⅓ total K-feldspar Qtz-py vn @ 30°, 1mm wide, weak envelopes.	.5 .3	214.9					
216										216.1	100		216		
217		weak		locally weak	moderate	py, mo, mt		Qtz-py vn @ 35° w/ mo (mostly conc'n on fractures on either side w/ 5mm qtz-py-ser envelopes	.5 .3	217.5	100				
218															
219										219.3	100		219		
220		weak		weak	weak-mod	py, mt		Fractures @ 60° ± 20°, minor py	.5 Trace		100				
221										220.7					
222		weak		weak-mod.	weak-mod	py, mt, mo		10-15% K-feldspar, partial replacement of biotite by py.	.5%		14.3		222		
223										223.8					
224								Qtz vn @ 20°, 5cm wide w/ py.	.5%	224.2	100				
225											100		225		

HOLE NO.: -1-80 | PROJECT: Luckysoft | PAGE NO.: 16 of 47

COLLAR ELEV.: 2930.4m | GROUND ELEV.: 2930m | DATE STARTED: August 7/80 | REF. TO CLAIM CORNER: 53m @ 005°

COORDINATES: 11793 N. 1243 E. | DATE FINISHED: " 28/80 | SCALE: 1:100

INCLINATION: -60° | BEARING: 012° | TOTAL DEPTH: 701.3m | LOGGED BY: Tom Pollock

SECTION	ALTERATION: Silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP INT.	ESTIMATED
225								Qtz-py-ser vn @ 40°, 3mm wide		225.2			225		
226		← weak			weak	py, mt		Quartz Monzonite			84.6				
227				← weak				m.g., homogeneous, equigranular, ≈10-15% K-feldspar, 8% mafics - mainly biotite (partially chloritized) trace mt mainly concⁿ in mafic clots. ≈10% qtz, rest mainly plag.	1% trace	226.5 226.9	44.7	NO			
228					weak - mod			Fracture @ 25° along a qtz-ser hairline w/r.		227.4	100		228		
229						py, mo, mt					100				
230					weak - mod.			Qtz-py vn @ 15°, w trace mg 2cm wide	1% trace	230.4					
231						py, mt							231		
232											98.7				
233									1% trace	233.0					
234						py, mt, gr		Fault @ 22°; lower side moved up?					234		
235											96.8				
236					weak	py, mo, mt		Possible weak fault zone @ 55°, clay + chl on fractures	1% trace	236.1					
237								Qtz-py vn @ 35°, 4mm wide w fine dissem mo					237		
238											100				
239		weak		weak	weak	py, mo, mt		Fractures @ 20° + 30°; minor pyr ser	1% trace	239.1					
240								very little K-feldspar - salt + pepper textured qtz monzonite			100		240		

HOLE NO.: 1, -1-80 | PROJECT: Hatsurf | PAGE NO.: 17 OF 47

COLLAR ELEV.: 2930.4m | GROUND ELEV.: 2930m | DATE STARTED: August 7/80 | REF. TO CLAIM CORNER: 53m @ 008°

COORDINATES: 11793 N. 12431 E. | DATE FINISHED: August 28/80 | SCALE: 1:100

INCLINATION: -60° | BEARING: 012° | TOTAL DEPTH: 701.3 | LOGGED BY: Tom Pollock

COMMENTS: Qtz vn w sph + garnet? cuts a qtz-py vn w silvery mineral.

AVE CORE REC'Y / HOLE

SECTION	ALTERATION: silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	GEOLOGY	DESCRIPTIVE GEOLOGY	% SULPHIDES: py	mt	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.	ESTIMATED
240														240		
241		← weak		weak	weak	py, mt		Fracture w slickenslides, lower side moved up.				100				
242								Quartz Monzonite salt+pepper textured, 5% or less K-feldspar, 5-8% bio, trace mt, 15% qtz. rest plag., .5-1% py, .5-1% ser., m.g., homogeneous, rare large feldspar xl (2 x 1.5 cm).	.8	.2	2420		NQ			
243														243		
244			weak - mod.		weak	py, mo, mt		Qtz-py vn @ 25°, 3.4cm wide w no @ contacts				100				
245								Qtz-py vn w strong mg 6mm wide	.8	.2	2457					
246											2460	100		246		
247			weak		mod.	py, mo, mt		Qtz-py vn @ 10° (no mo) cuts a qtz-py vn @ 26° w mo, both vns 1mm.	.5	trace						
248												100				
249								Fracture @ 25°, minor py + ser						249		
250			very weak		weak - mod.	py, mo, mt										
251								Qtz-py vn @ 35°, 3mm wide w strong mo along contacts.	.5	.2		100				
252											2525			252		
253			weak - mod		weak - mod	py, mg, sph, gt, mt		Qtz vn 3mm w sph + garnet cut a qtz-py vn w silvery mineral	.8	.2		96.7				
254								Fault zone on fracture								
255											2545	96.8		255		

HOLE NO.: 1-80
COLLAR ELEV.: 2930.4m GROUND ELEV.: 2930m
COORDINATES: 11793 N. 12431 E.
INCLINATION: -60° BEARING: 012°

PROJECT: Hatson
DATE STARTED: August 7/80
DATE FINISHED: August 28/80
TOTAL DEPTH: 701.3m

REF. TO CLAIM CORNER: 53m @ 008°
SCALE: 1/100
LOGGED BY: Tom Pollock

COMMENTS: Qtz-py vn cuts a qtz-ser-py vn

AVE CORE REC'Y / HOLE

SECTION	Silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	COMMENTS	DESCRIPTIVE GEOLOGY	Py %	Mo %	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP INT.	ESTIMATED
255–256		weak ↓		weak ↓	weak	py, mo	Qtz-py vn @ 25°, 6mm w trace silvery mineral.	Qtz Monzonite	.3	trace		96.8	NQ	255		
256–257					weak	py, mt	30-35°; 30° sharp	Quartz Porphyry			257.6					
257–259					weak	mt	Qtz-py vn, 4mm w one 5mm silver coloured XL	Qtz Monzonite						258		
259–260.6					mod	py, mt	25° sharp; 40° sharp	Qtz Porphyry	.3	trace	260.6	100				
260.6–265		weak locally mod			weak - mod.	py, mo, mt, beryl	Qtz-py vn 5mm cuts a qtz-ser-py vn 2mm. Fractures @ 15+45°, mod py+ser. Qtz-py vn @ 55°, 6mm wide, trace mo	Qtz Monzonite ← qtz vn @ 20°, 6cm wide w py, mo, beryl, sericite + k-feldspar, 3cm qtz-ser-py envelopes + 1cm potassic alt. envelopes	1	.1	263.7	100		261; 264		
265–268					weak	py, mo	Qtz-py vn 2mm wide no envelopes. Contact gradational	Qtz Porphyry <5% K-feldspar, 1-2% bio, 20-25% qtz (10% phenos), rest mainly plag.	.4	.1	266.7	100		267		
268–270					weak	py	Qtz-py vn w minor mo 4mm. Fracture @ 40°, minor chl/py	Qtz Monzonite, salt + pepper textured, m.g., high mafic clots still present.	.3	trace	269.7	100		270		

HOLE NO.: -1-80
COLLAR ELEV.: 2930.4 m GROUND ELEV.: 2930m
COORDINATES: 11793 N. 12431 E
INCLINATION: -60° BEARING: 012°

PROJECT: Harsoff
DATE STARTED: August 7/80
DATE FINISHED: August 28/80
TOTAL DEPTH: 701.3m

PAGE NO.: 19 OF 47
REF. TO CLAIM CORNER: 53m @ 008°
SCALE: 1:100
LOGGED BY: Tom Bblock

COMMENTS:

AVE CORE REC'Y / HOLE

SECTION	ALTERATION: Silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	GEOLOGY	DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP INT.	ESTIMATED
270													270		
271				very weak	weak	py, mt	Qtz-py-ser mlts, 3mm or less	Quartz monzonite, salt + pepper textured, 7-10% mafics, trace mt, homogeneous, K-feldspar < 5%, qtz 20%, plag. 60-70% minor py + ser	.4 trace	232.8	100	NQ	273		
272															
273															
274					weak	py, mt	Fracture @ 25°, minor py + ser		.4 trace	275.2	96		276		
275								Occasional qtz phenocryst.							
276							Contact sharp @ 5°	276.87-276.91m: Aplite dike							
277					weak	py, mo	Qtz-ser py vn, 3mm w mo	Aplite dyke, f.g., pink-grey, 10-15% qtz < 10% mafics, 3/5 of feldspar plag. dissem, mo mainly conc° @ top + bottom of dyke	.2 nil	278.3	100				
278							Contact 5°								
279								Qtz monzonite					279		
280					mod.		Qtz vn, 1cm w K-feldspar down center plus py.	Qtz-Feld-Bio Porphyry Dyke.	.32 trace		100				
281					weak	py mt				287.3					
282								Qtz Monzonite that commonly has qtz phenocrysts.					282		
283					weak	PY	Qtz-py-ser vns common, 3mm or less (16/m) occasional stockwork, some have pot. alt.		.62 trace						
284															
285													285		
286															

ALTERATION: Intermittent vns

HOLE NO.: 80-1-80 | PROJECT: Harsoff | PAGE NO.: 20 OF 47

COLLAR ELEV.: 2930.4m | GROUND ELEV.: 2930m | DATE STARTED: August 7/80 | REF. TO CLAIM CORNER: 53m @ 008°

COORDINATES: 11793 N 12431 E | DATE FINISHED: August 28/80 | SCALE: 1:100

INCLINATION: -60° | BEARING: 012° | TOTAL DEPTH: 701.3 | LOGGED BY: Tom Pollock

SECTION	ALTERATION: Silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES: py	%	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP INT.	ESTIMATED
285								Qtz Monzonite							285		
286					weak	py mt	Qtz-py ms (largest 5mm) avg 40° qtz-ser-py envelopes.			.5	.1		98.9				
287							Fracture @ 45°, minor pyr ser										
288					weak	py mt						287.6		NQ	288		
289							Qtz-ser-py vn @ 50°, 6mm wide w minor potassic alt. Contact @ 80°			.5	trace		100				
290								Qtz-feldspar porphyry dyke dark green, siliceous, qtz phenos 10%, feldspar XL's to 6 x 1.5 cm										
291												290.8			291		
292								Locally over ≈10cm there are spots w qtz phenocrysts									
293				very weak on bio.	weak	py mt	Weak stockwork of qtz-ser-py units.			.6	trace		100				
294								rare feldspar phenos 1.5cm²				292.8			294		
295					weak	py mt	Qtz-py vn @ 10°, 2mm wide w qtz-py ser ± potassic envelopes	Qtz-feldspar porphyry		.6	trace		100				
296																	
297												296.9			297		
298					weak-mod	py mt, sph.	Qtz-py vn w no, 3mm wide			1%	trace		96.6				
299																	
300							Qtz-py vn @ 15°, 3.2cm wide w fine no in bands					299.7			300		

HOLE NO.: D-1-80
COLLAR ELEV.: 2930.4m GROUND ELEV.: 2930m
COORDINATES: 11793 N. 12431 E.
INCLINATION: -60° BEARING: 012°

PROJECT: Hatsoff
DATE STARTED: August 7/80
DATE FINISHED: August 28/80
TOTAL DEPTH: 701.3m

REF. TO CLAIM CORNER: 53m @ 008°
SCALE: 1:100
LOGGED BY: Tom Pollock

SECTION	Silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	GEOLOGY	COMMENTS	DESCRIPTIVE GEOLOGY	py %	mo % SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
300–303		in/along vns			weak	py, mt		Fracture @50°, minor py. Qtz-py vn @10°, 3mm w̄ trace silvery mineral, 6mm qtz-ser-py envelopes.	Qtz Monzonite salt + pepper texture, max 8% K-feldspar	.6	.1	300–302.7	100	NQ	300–303		
303–306	weak				weak	py, mo, mt		Fracture @50°, minor py. Contact @20°		1	.2	302.7–305.7	96.6		303–306		
306–309					weak	py		Contact @20°. Qtz-py vn @35°, 2mm wide w̄ 1cm envelopes.	Dyke-like structure that looks diorite like in composition. Qtz Monzonite	.6	.1	305.7–308.8	100		306–309		
309–312					weak	py, mt		Irregular qtz-ser-py vns, 3mm wide, on vn cut by barren qtz vn	Qtz-monzite – very weakly porphyritic from qtz phenos.	.6	.1	308.8–309.2; 309.2–312.3	100; 96.7		309–312		
312–315	strong				weak-mod	py, fl, mo		Qtz-py vn @20°, 2cm wide w̄ fl, minor mo.	Qtz - Feldspar Porphyry dyke	2-3%	nil	312.3–	100		312–315		

HOLE NO.: ,, 0-1-80
COLLAR ELEV.: 2930.4m GROUND ELEV.: 2930m
COORDINATES: 11793 N. 12431 E.
INCLINATION: -60° BEARING: 012°

PROJECT: Hatsoft
DATE STARTED: August 7/80
DATE FINISHED: August 28/80
TOTAL DEPTH: 701.3m

REF. TO CLAIM CORNER: 53m @ 008°
SCALE: 1:100
LOGGED BY: Tom Pollock

SECTION	ALTERATION: Silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	GEOLOGY	COMMENTS	DESCRIPTIVE GEOLOGY	% SULPHIDES: Py	Mo	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
315–318		strong		weak	weak, locally mod	py, fl, mo		Qtz-py vn @ 25°, 3mm wide slightly higher ser around vn than in matrix. Qtz-py vn @ 35° 1mm wide minor mo in sericite @ edges of vn.	Quartz - Feldspar porphyry dyke cont. Contact sharp @ 50°	2%	Nil	315.3	100	NQ	315–318		
318–321		ser along vns		←	weak	mt, py, sph, cal, fl		Fractures @ 7+50°, minor py on both low angle + high angle fractures.	Quartz Monzonite. Vein @ 320.1m: @ 50°, 5cm wide to qtz, fluorite, calcite, py, sph, silvery mineral, 8cm qtz-ser-py envelopes.	.8	Trace	318.4	100		318–321		
321–324					weak	py, mo, mt		Fracture w small movement @ 20°, calcite + ch on plane	323.15-324.1m: Qtz porphyry - matrix looks like an altered qtz monzonite. Qtz monzonite very weakly porphyritic	.6	Trace	321.6	100		321–324		
324–327					weak	py, mt		Fracture @ 45°, minor py		.3	Trace	324.6	100		324–327		
327–330					weak	py, mo, mt		Qtz-py vn @ 20°, 9mm wide with minor mo, 5mm qtz-ser-py envelopes.	vein types 327-330m Qtz-py - 6 Qtz-ser-py - 18.	.5	Trace	327.7	100		327–330		

HOLE NO.: 1-80 | PROJECT: Hatsoff | PAGE NO.: 23 OF 47

COLLAR ELEV.: 2430.4m | GROUND ELEV.: 2430m | DATE STARTED: August 7/80 | REF. TO CLAIM CORNER: 53m @ 008°

COORDINATES: 11793 N 12431 E | DATE FINISHED: August 28/80 | SCALE: 1:100

INCLINATION: -60° | BEARING: 012° | TOTAL DEPTH: 761.3m | LOGGED BY: Tom Pollock

SECTION	ALTERATION: Silica	ALTERATION: Sericite	ALTERATION: Clay	ALTERATION: Chlorite	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	SULPHIDES**	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP INT.	ESTIMATED
														330		
								Qtz-py vn @ 35°, 5cm wide w minor calcite, 3mm qtz-ser-py envelopes. Quartz Monzonite: weakly porphyritic, m.g. - f.g.,			330.9	100				
					weak	Py, mt		Fracture along a 1mm qtz-py vn, minor movement on plane.		.5 Trace			NQ				
												100		333		
											338.8					
					weak	Py, mt		Minor stockwork of qtz-py vns w minor mv, minor bleaching of rock		.5 Trace							
												100		336		
											336.8					
					weak	Py, mt		Small (≤1mm) qtz-ser-py vnlts		.5 .1		100		339		
								weakly porphyritic, Max 10% qtz phenos, rounded avg 3-4 mm across, fine qtz-ser-py vnlts most common vn type.			339.8					
					weak	Py, mt		Qtz-ser-py vn @ 45°, 1mm w 3mm potassic alteration envelopes.		.5 .1		100		342		
											342.9					
					weak	Py, mt, mo		Calcite vn @ 50°, 1.7mm wide w py + trace mo, 1cm ser-qtz envelope		.4 Trace		100				
														345		

HOLE NO.: 10-1-80
COLLAR ELEV.: 2930.4m GROUND ELEV.: 2930m
COORDINATES: 11793 N. 12431 E.
INCLINATION: -60° BEARING: 012°

PROJECT: Hw. 20 #5
DATE STARTED: August 7/80
DATE FINISHED: August 28/80
TOTAL DEPTH: 701.3m

PAGE NO.: 24 OF 47
REF. TO CLAIM CORNER: 53m @ 008°
SCALE: 1:100
LOGGED BY: Tom Pollock

SECTION	ALTERATION: Silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP INT.	ESTIMATED
345														345		
346			← trace		weak	py		Fracture @ 45°; minor py. Quartz Monzonite m.g., salt + pepper textured, fresh, weakly porphyritic, 2-3% qtz phenos, very weak replacement of biotite by chlorite + pyrite.		.2	345.4	100				
347																
348				← weak		py, mt		Qtz-py vn @ 20°, 1mm wide w/ 1cm qtz-ser-py envelopes				93.5	NQ	348		
349								Contact @ 40°			349.0					
350					weak	py		Aplite (possibly alaskite) dyke.		.8						
351								Contact @ 30°				100		351		
352					weak	py, mt, mo				.5	352.0					
353																
354								Qtz monzonite, locally weakly porphyritic.				100		354		
355					weak	py, mt					355.1					
356								Qtz-py vn, 1mm @ 35°.		.5						
357												100		357		
358					weak	py, mt		Fracture @ 30°, along qtz-ser py vn.			358.1					
359								Weak qtz porphyry.		.4						
360														360		

HOLE NO.: 1-1-80
COLLAR ELEV.: 2930.4m GROUND ELEV.: 2930m
COORDINATES: 11793 N. 12431 E.
INCLINATION: -60° BEARING: 012°

PROJECT: Harsoff
DATE STARTED: August 7/80
DATE FINISHED: August 28/80
TOTAL DEPTH: 701.3m

REF. TO CLAIM CORNER: 53m @008°
SCALE: 1:100
LOGGED BY: Tom Pollock

Section	Alteration: Silica	Alteration: Sericite	Alteration: Clay	Alteration: Chlorite	Fracturing	Mineral	Geology	Comments	Descriptive Geology	% Sulphides	Drilling Interval	% Core Recovered	Core Size	Sample Interval	% Rec'y Samp. Int.	Estimated
360–363		int along vns (to 364)		weak	weak	Py, at silic-ry min.	✱	Crosscutting qtz-py + qtz-ser py vnlts ≤3mm. Fracture @60°, minor py+ser. Contact @ 60°	Qtz monzonite, mafic content highly variable	.7	361.2, 363	100, 100, 91.7	NQ	360, 363		
363–366					weak	py, mo		Qtz-py vn @ 20°, 2mm wide trace mo.	Quartz porphyry dyke. creamy/light grey, fresh, 10-15% rounded qtz phenos, Comp: qtz 15%, mafics 3-5%, K-feldspar 5-35%, py 1% max, rest mainly plag., often feldspars have a welded together silicious look	.7 Nil	364.2	100		366		
366–369					mod.	Py, Mo		Qtz-py vn w good mo @ contacts 1.5cm w 4mm qtz-ser-py envelopes		.7 Nil	367.3	100		369		
369–372					weak	Py, Mo		Qtz-py vn @ 23°, 6mm wide w mo, 5mm envelopes.		.4 Nil	370.3	93.5		372		
372–375					weak	Py, sph, mo		Qtz vn @ 10°, 2.5cm wide w minor sph, py + mo, weak envelopes.	rock through this section is more granular looking, feldspars are easier to pick out.	.4 Trace hem.	373.4	100		375		

HOLE NO.: 9-1-80	PROJECT: Hutsoff	PAGE NO.: 26 OF 47	
COLLAR ELEV.: 2930.4m	GROUND ELEV.: 2930m	DATE STARTED: August 7/80	REF. TO CLAIM CORNER: 53m @ 008°
COORDINATES: 11793 N. 12431 E.		DATE FINISHED: August 28/80	SCALE: 1:100
INCLINATION: -60°	BEARING: 012°	TOTAL DEPTH: 701.3m	LOGGED BY: Tom Pollock

SECTION	ALTERATION: Silica	ALTERATION: Sericite	ALTERATION: Clay	ALTERATION: Chlorite	FRACTURING	MINERAL	COMMENTS	DESCRIPTIVE GEOLOGY	SULPHIDES: py %	SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
375–378		in + along vns ↓			weak	py, sph	Fracture @ 60°, minor py + ser Small qtz-ser-py vn w minor sph. Fractures @ 35°; minor movement.	Quartz Porphyry continues	.4	trace hem	376.4	100 / 96.7	NQ	375		
378–381			weak	weak ←	weak	py, mo	Fracture possible fault zone @ 15°		.4	Nil	379.5			378		
381–384					weak	py, mo	Qtz-py vn @ 10°, 4mm wide w 1cm qtz-py-ser envelopes.	380.1 - 380.8 - rock has a high sericite content, no mafics, trace k-feldspar, white in colour w .1% dissem. mo.	.4	Nil	382.5	100		381		
384–387					weak	py, mo, sph	Contact @ 45°, sharp	bottom part of dyke is dark green silliceous looking, with ≈20% sericite, 2% py + .3% mo.	.4	Nil	385.6	96.7		384		
387–390					weak	py, mo	Fracture @ 50°; minor py. Qtz-py vn @ 15°, 3mm wide w trace mo.	Quartz Monzonite: m.g., euhedral feldspars, <10% k-feldspar, salt + pepper textured.			388.6	100 / 100		387 / 390		

HOLE NO.: 10-1-80
COLLAR ELEV.: 2930.4m GROUND ELEV.: 2930m
COORDINATES: 11793 N. 12431 E.
INCLINATION: -60° BEARING: 012°

PROJECT: Au, soff
DATE STARTED: August 7/80
DATE FINISHED: August 28/80
TOTAL DEPTH: 701.3m

REF. TO CLAIM CORNER: 53m @ 008°
SCALE: 1:100
LOGGED BY: Tom Pollock

SECTION	ALTERATION (silica / sericite / clay / chlorite)	FRACTURING	MINERAL	COMMENTS	DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
390–393	sericite: in + along vns	weak	py, mo	Qtz-py vn @ 25°, 1.7 cm wide trace mo, 1.5 cm qtz-ser-py envelopes; Qtz-py vn w ser + trace mo, 2mm wide.	Qtz Monzonite	.5% trace	391.7	100	NQ	390		
393–396			py	Fracture @ 35°, minor py. Fine qtz-ser-py vnlts, 3mm or less	Quartz Monzonite: good salt + pepper texture, 10% biotite, trace MT, qtz 15%	.5 trace	394.7	100		393		
396–399			py, mo		still getting rounded to irregular high mafic clots.	.5 trace	397.8	96.7		396		
399–402			py, mo	Qtz-ser-py vn w minor mo, 2mm wide w 1.5 cm qtz-ser-py env.	Qtz Monzonite: moderately porphyritic from qtz phenos, in these spots biotite is slightly more chloritized than usual.	.1%	400.8	100		399		
402–405			py	Qtz-py vn, 4mm wide, 1cm envelopes; Fractures @ 25 + 70° ⊥ minor movement on 70° one		.1%	400.9	90.3		402		
405										405		

HOLE NO.: 40-1-80
COLLAR ELEV.: 2930.4m GROUND ELEV.: 2930m
COORDINATES: 11793 N. 12431 E.
INCLINATION: -60° BEARING: 012°

PROJECT: Marsoff
DATE STARTED: August 7/80
DATE FINISHED: August 28/80
TOTAL DEPTH: 701.3

PAGE NO.: 28 OF
REF. TO CLAIM CORNER: 53m @ 008°
SCALE: 1:100
LOGGED BY: Tom Pollock

COMMENTS: Barren qtz vn cuts a qtz-py vn.
Qtz-py vn cuts a qtz-ser-py vn.

AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

SECTION	ALTERATION: Silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	GEOLOGY	DESCRIPTIVE GEOLOGY	% SULPHIDES: py	pt	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.	ESTIMATED
405														405		
406		in + along vns			weak	py, mt		Qtz-py vn 2mm wide to 5mm qtz-ser-py envelopes.				93.3	NQ			
407									.4	.1	406.9					
408				weak	weak to mod	py, fl, mo, mt						100		408		
409																
410								Qtz-py vn, 1.4m wide @ 20°, minor mo + WO_3	.9	Trace	410.0					
411														411		
412												100				
413					weak	py, mo		Fracture @ 35°, moderate py + ser.	.5	Trace	413.0					
414								Qtz-py vn to trace mo, 6mm wide						414		
415					moderate	py, mo, sph						100				
416								Vein like structure of potassic alteration 7mm wide.	.5	Trace	416.1					
417														417		
418				moderate	weak	py						100				
419								Irregular qtz-ser-py vn/ts, rock loses its salt + pepper texture	.6	N.I	419.2					
420												100		420		

Quartz Monzonite (to Qtz Porphyry).
salt + pepper texture, quartz phenos common.

colour variations + textures numerous due to the large number of vns.

Quartz Monzonite to Quartz Porphyry

HOLE NO.: 2-1-80
COLLAR ELEV.: 2930.4 m
GROUND ELEV.: 2930m
COORDINATES: 11793 N. 12431 E.
INCLINATION: -60°
BEARING: 012°

PROJECT: Hatsoff
DATE STARTED: August 7/80
DATE FINISHED: " 28/80
TOTAL DEPTH: 701.3m

REF. TO CLAIM CORNER: 53m @008°
SCALE: 1:100
LOGGED BY: Tom Pollock

SECTION	ALTERATION: Silica	ALTERATION: Sericite	ALTERATION: Clay	ALTERATION: Chlorite	FRACTURING	MINERAL	GEOLOGY	COMMENTS	DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
420–423		weak intalong vns (420–426)		Minor chl of bio (423–426)	weak-mod.	py, mo, fl		Qtz-py vn @20° ω irregular offshoots mo in vns plus the qtz-ser-py envelopes.	Quartz Porphyry: 2-3% biotite, 20% qtz, 5-7% qtz phenos 20-25% K-feldspar, 45% plag?, mottled pink - pale green in colour, fresh.	.%, trace	422.3	100	NQ	420		
423–426					weak-mod	py, sph		Qtz vn @35°, ω py + sph, 2mm wide		.%, nil	425.2	100		423		
426–429					weak/locally mod	py, sph, mo		Qtz vn ω sph + minor py, mo + silvery mineral - cuts a qtz vn with minor ser.	rock has a granular look to it from the 1mm pink + white k-feldspar 5% subrounded qtz phenos (avg 3-4 mm) biotite is 2% + is partially replaced by py. + chl, rock also has ≃1% dissm sericite	.6, nil	428.2	100		426		
429–432					moderate	py, sph, mo		Fracture ω slickenslides (2mm wide)		.%, nil	431.3	96.7		429		
432–435					weak	py, mo, sph		Qtz-py vn @10°, 3mm wide ω v.f. dissem. mo, 3mm qtz-ser-py env. Qtz-py vn @30°, 4mm wide ω sph.	Feldspar content varies from ≃10% - 40% K-feldspar.	.%, nil	434.3	100 / 100		432, 435		

HOLE NO.: 40-1-80 | PROJECT: Harsoff | PAGE NO.: 30 OF 47

COLLAR ELEV.: 2930.4m | GROUND ELEV.: 2930m | DATE STARTED: August 7/80 | REF. TO CLAIM CORNER:

COORDINATES: 11793 N. 12431 E. | DATE FINISHED: August 28/80 | SCALE: 1:100

INCLINATION: -60° | BEARING: 012° | TOTAL DEPTH: 701.3m | LOGGED BY: Tom Pollock

ALTERATION: Silica | Sericite | Clay | Chlorite

FRACTURING | MINERAL | GEOLOGY

COMMENTS:

AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

SECTION	DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.	ESTIMATED
435	Quartz Porphyry K-feldspar has increased greatly. Qtz-20%, =5% in qtz phenos, biotite 3%, 70-75% feldspar (K-feldspar varies from ¼-½) n.g.) fresh, locally some clay alteration of plag.	.2 ni	432.4	100	NQ	435		
436	Qtz-py vn @ 20°; 1.1cm wide w 5mm qtz-ser-py envelopes, trace mo.							
437	Fractures @ 35°; high clay + @ 45° w minor ser-py.							
438				100		438		
439		.2 ni						
440	Crosscutting qtz-py vns one @ 45° has little py but minor mo.		439.9	100				
441						441		
442	Rock has a gravelly look to it. max 15% K-feldspar., qtz =25%, 10% in qtz phenos. rock is a mottled colour from pink + white feldspars.	.5 ni		100				
443	Fracture @ 10°, 3mm wide along a qtz-ser-py vn.		443.5					
444						444		
445	Barren qtz vn @ 50°; 3mm wide no envelopes	.3 ni		100				
446			446.6					
447						447		
448	Qtz-ser-py vn @ 25°; 3mm wide.	.3 ni		100				
449	Barren qtz vn @ 35° 2.1cm wide w .5 cm qtz-ser-py envelopes		449.6					
450						450		

Qtz porphyry (Qtz monzonite composition)

HOLE NO.: 1-80 | PROJECT: Hayoff | PAGE NO.: 31 OF 47

COLLAR ELEV.: 2930.4m | GROUND ELEV.: 2930m | DATE STARTED: August 7/80 | REF. TO CLAIM CORNER: 53m @ 008°

COORDINATES: 11793 N. 12431 E. | DATE FINISHED: " 28/80 | SCALE: 1:100

INCLINATION: -60° | BEARING: 012° | TOTAL DEPTH: 701.3m | LOGGED BY: Tom Pollock

SECTION	ALTERATION: Silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	GEOLOGY	DESCRIPTIVE GEOLOGY	% SULPHIDES py	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.	ESTIMATED
450												NQ	450		
451		weak in & along fracs			weak	py mo		Fracture along a qtz-py vn, 2mm wide w fine mo along the break. Quartz Porphyry (fresh, m.g.) mottled pink & white matrix 2-3% py, qtz 20% (5-8% qtz phenos).							
452									.3		100				
453								Qtz-py vn @ 50°, 3mm wide.		452.6			453		
454						py, sph					100				
455									.3						
456								Qtz-py vn @ 80, 2mm wide w sph cuts a qtz-ser-py vn @ 30°		455.7			456		
457						py, sph		occasional salmon pink feldspar xl's in the porphyry.							
458									.3		100				
459								Vein types 459-462m: 1 - barren qtz, 10 - qtz-ser-py, 2 - qtz vns w py & sph, 3 - qtz-py vns. Barren qtz vn @ 50°, 2mm wide		458.7			459		
460						py, sph, calcite		Qtz vn w py & sph, 6mm wide							
461									.4		96.7				
462						py, sph		Fracture @ 20°, minor py		461.8			462		
463					weak			Qtz-py vn @ 30°, 2mm w minor ser. Large # of qtz-py vns through this section.							
464						py		Fracture along a qtz-py vn @ 55°, vn is 2mm wide.	.8		100				
465										464.9			465		

HOLE NO.: 10-1-80 | PROJECT: Hanoff | PAGE NO.: 32 OF 47

COLLAR ELEV.: 2930.4m | GROUND ELEV.: 2930m | DATE STARTED: August 7/80 | REF. TO CLAIM CORNER: 53m @ 008°

COORDINATES: 11793 N. 12431 E. | DATE FINISHED: August 28/80 | SCALE: 1:100

INCLINATION: -60° | BEARING: 012° | TOTAL DEPTH: 701.3m | LOGGED BY: Tom Pollock

SECTION	ALTERATION: Silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	GEOLOGY	COMMENTS:	DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.	ESTIMATED
465															465		
466		← in along ms		weak	weak	py/mo, fl		Fracture @ 35°, minor py.	Quartz Porphyry to Quartz Monzonite. rock is returning to its salt & pepper texture & qtz phenos are decreasing. K-feldspar < 5%. trace fl in hairlin mlt, biotite up to 5% mt starting to reappear		1		100	NQ			
467								Qtz-py vn from 466.4-467.4m, 1cm to 1cm qtz-ser-py envelopes, good mo in green envelopes									
468												467.9			468		
469																	
470						py					.3		100				
471								} hairline qtz-py vns w 3-4 qtz-ser-py envelopes.	Quartz Monzonite occasional qtz pheno or large feldspar ↓			471.9			471		
472																	
473						py/spk					.6		100				
474												474.6			474		
475		locally strong		moderate													
476						py/sph, mo, cal		Qtz-py vn @ 15°, 1.3cm wide w minor mo. 5cm qtz-ser-py envelopes.	good mo disem in qtz-ser-py from 475.85 - 476.07m.		.9		100				
477												477.0			477		
478					moderate	py/mo		Qtz-py vn @ 30°, 2mm wide.			.4		100				
479									biotite weakly altered to py + chl.								
480								Fault @ 35°, 1.2cm of ground up rock + clay.							480		

HOLE NO.: 0-1-80 | PROJECT: Hanoff | PAGE NO.: 33 OF 47.

COLLAR ELEV.: 2930.4m | GROUND ELEV.: 2930m | DATE STARTED: August 7/80 | REF. TO CLAIM CORNER: 53m @ 008°

COORDINATES: 11793 N. 12431 E. | DATE FINISHED: August 28/80 | SCALE: 1:100

INCLINATION: -60° | BEARING: 012° | TOTAL DEPTH: 701.3m | LOGGED BY: Tom Talbot

SECTION	ALTERATION: Silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
480											480.1			480		
481		← in varying uns			weak	py		Qtz-py m @ 20°, 5mm wide + cuts a qtz-ser-py m, 5mm pot. alt'n envelope.		.2		100	NQ			
482				← weak												
483											482.1			483		
484					weak	py, mt										
485								Qtz-py m @ 55°, good mo, 2.5mm		.2	Trace	100				
486											486.2			486		
487					weak	py, mt		3 Fine qtz-ser-py m/ts, 3mm or less								
488								Barren qtz m @ 50°, 4mm wide, weak envelopes		.2	Trace	100				
489											489.2			489		
490					weak	py, mt		3 Fine qtz-py + qtz-ser-py m/ts								
491								Fractures @ 30°+35°		.5	Trace	100				
492											492.2			492		
493					weak	py, mt		Two qtz ms @ 45° w sericite, 7mm wide, much qtz-ser-py around ms.		.2	Trace	100				
494																
495														495		

Quart Monzonite generally salt + pepper textured however local variations such as

1) porphyritic (qtz phenos)
2) zones higher in mafics (15-20%) some of which are chloritized
3) zones low in mafics + w 10% K-feldspar giving the rock a pinkish tinge.

Good salt + pepper textured qtz monzonite

Vein types 489-492 m:
25 - qtz-ser-py (many hairline m/ts
2 - qtz-py

HOLE NO.: 40-1-80
COLLAR ELEV.: 2930.4m
GROUND ELEV.: 2930m
COORDINATES: 11793 N. 12431 E.
INCLINATION: -60°
BEARING: 012°

PROJECT: Har-off
DATE STARTED: August 7/80
DATE FINISHED: August 28/80
TOTAL DEPTH: 701.3m

REF. TO CLAIM CORNER: 53m @ 008°
SCALE: 1:100
LOGGED BY: Tom Pollock

SECTION	ALTERATION: Silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	COMMENTS	DESCRIPTIVE GEOLOGY	py %	SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
495–498		in vnlts along ms		moderate	weak	py, mo	Qtz-py vn @30°; 3mm w mo, 9mm envelopes. Fracture w good slickenslides, bottom moved up.	Quartz Monzonite, weak chloritization of biotite	1-1.5	Trace	495.3	100	NQ	495–498		
498–501				weak		py, mt	Qtz vn w py + silvery mineral cuts a qtz vn w potassic alt.		.2	Trace	498.3	100		498–501		
501–504						py, mt	Fault zone @20°, 1cm wide w qtz ser + py + mo, slickenslides, much qtz-ser-py along fault zone	Quartz Monzonite, rare feldspar XL (pink) 1.5cm; qtz-ser-py vnlts dominant vn type.	.5	Trace	501.4	100		501–504		
504–507						py, mt	Weak stockwork of qtz-ser-py vnlts, avg 1mm wide, weak pot. alt envelopes.		.6	Trace	504.4	96.7		504–507		
507–510						py, sph, mt	Fine qtz-ser-py vnlts max 1mm, trace sph	Similar to above.	.5	Trace	507.5	100		507–510		

HOLE NO.: D-1-80 | PROJECT: Haisoff | PAGE NO.: 35 OF 47

COLLAR ELEV.: 2930.4m | GROUND ELEV.: 2930 | DATE STARTED: August 7/80 | REF. TO CLAIM CORNER: 53m @ 008°

COORDINATES: 11793 N. 12431 E. | DATE FINISHED: " 28/80 | SCALE: 1:100

INCLINATION: -60° | BEARING: 012° | TOTAL DEPTH: 701.3m | LOGGED BY: Tom Pollock

SECTION	ALTERATION: Silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	GEOLOGY	COMMENTS: DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.	ESTIMATED
510						py, mt		Qtz-py vn @ 40°, 4mm wide ± 3mm qtz-ser-py envelopes						510		
								Quartz Monzonite			508.5					
511		in valleys ms		← weak				Contact @ 60°								
					← weak			Aplite (Alaskite) dyke.		.4	Nil - Trace	100				
512						py		Contact 60°								
513								Weak stockwork of qtz-ser-py vnlts						513		
514						py, mt, sph		Quartz Monzonite occasional qtz phens, rare pink feldspar xl.		.4	Nil to Trace	100				
515								Barren qtz vn @ 40°, 5mm wide								
								Contacts @ 30°			513.6					
516								white, v.f.g., qtz ≈ plag dyke.						516		
											516.6					
517								Qtz-ser-py vnlts, max 2mm.		.6	Trace	96.7				
518						py, sph, mt		Quartz Monzonite								
519								Vein types 516 - 519: qtz-ser-py ms 29 (mainly vnlts) qtz-py ms : 2						519		
520								Qtz-ser-py vnlt stockwork.								
521						py, mt		local stockworks common from qtz-ser-py vnlts. generally ≤ 3mm.		.7	Trace	100				
522					← weak-mod									522		
											522.7					
523								Fracture @ 50°, minor qtz + py.		.5	Trace	90.3				
524						py		Weak stockwork of qtz-ser-py vnts.								
525														525		

HOLE NO.: 10-1-80	PROJECT: Halsott	PAGE NO.: 36 OF 47	
COLLAR ELEV.: 2930.4m	GROUND ELEV.: 2930	DATE STARTED: August 7/80	REF. TO CLAIM CORNER: 53m @ 008°
COORDINATES: 11793 N. 12431 E.	DATE FINISHED: August 28/80	SCALE: 1:100	
INCLINATION: -60°	BEARING: 012°	TOTAL DEPTH: 701.3m	LOGGED BY: T. Pollock

COMMENTS: Fault offsets vns.

AVE CORE REC'Y / HOLE

ALTERATION (Silica, Sericite, Clay, Chlorite) — FRACTURING — MINERAL — GEOLOGY — DESCRIPTIVE GEOLOGY — % SULPHIDES (py, mt) — DRILLING INTERVAL — % CORE RECOVERED — CORE SIZE — SAMPLE INTERVAL — % REC'Y SAMP. INT. — ESTIMATED

Section	Alteration	Fracturing	Mineral	Comments	Descriptive Geology	py %	mt %	Drilling Interval	% Core Recovered	Core Size	Sample Interval
525–528	Sericite: in/along vns; Chlorite: weak	weak	py, mt	Qtz-py vn @ 25°, 1mm w 4mm qtz-ser-py envelopes.	Quartz Monzonite: salt & pepper textured, fresh, hard, numerous qtz-ser-py vnlts., biotite weakly chloritized.	.5	Trace	525.5	90.3	NQ	525
528–531			py, mt	Weak stockwork of qtz-ser-py vnlts 4mm or less.		.6	.15	528.5	100		528
531–534			py, sph, mt	Contacts @ 45°; Fracture @ 10°, minor gypsum + py	V.f.g., light grey dike, <1% mafics, looks to made solely of qtz + plag. w minor dissem ser.	.5	Trace	531.9	100		531
534–537			py, mt	Qtz-py vn @ 20°, 4mm qtz-ser-py envelopes	Quartz Monzite has many qtz-ser-py vnlts, sometimes // or crosscutting.	.7	Trace	534.9	100		534
537–540			py, mo, mt	Fracture @ 50°, moderate qtz + py. Cemented fault zone @ 25° by calacite, offsets two pot. alt vns.		.5	Trace	538.0	96.7 / 100		537 / 540

HOLE NO.: 0-1-80	PROJECT: Hatsuff	PAGE NO.: 37 of 47	
COLLAR ELEV.: 2930.4 m	GROUND ELEV.: 2930	DATE STARTED: August 7/80	REF. TO CLAIM CORNER: 53m @ 008°
COORDINATES: 11793 N. 12431 E.	DATE FINISHED: August 28/80	SCALE: 1:100	
INCLINATION: -60°	BEARING: 012°	TOTAL DEPTH: 701.3m	LOGGED BY: Tom Pollock

SECTION	Silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	GEOLOGY	COMMENTS	DESCRIPTIVE GEOLOGY	Py	Cu SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
540									Quartz Monzonite basic texture but the rock has many colour variations due to a large # of vns that locally cause chloritization of biotite + makes plag xl's green + soft giving the rock a green tinge.				100		540		
541–543		← int along vns		← weak - mod	← weak	py, mo		Possible fault zone @ 5°. Qtz-ser-py vns, max 1cm wide		.7	Trace	541	96.7	NQ	543		
543–546						py, mt, gypsum		Qtz-ser-py vns, 1cm wide		.8	Trace	544.1	100		546		
546–550						py, sph, fl, mt		Contact @ 30°. Weak stockwork of qtz-py vnlts. Stockwork of qtz-ser-py vnlts + associated green alteration. Contact @ 55°	Dike-like structure w a basic qtz monzonite comp. but w ≥ 20% mafics.	.8	Trace	547.1	100		549		
550–552						py, sph		Qtz-py vn @ 15°, 2cm wide w fl. Barren qtz vn @ 65°, 7mm wide w 1cm qtz-ser-py envelopes w sph.	Quartz Monzonite	.7	Nil - Trace	550.2	100		552		
552–555					weak - mod.	py, mo		Possible fault zone @ 25°, 1cm zone of crushed rock + clay.	K-feldspar has become present again giving the rock a pink tinge. K-feldspar 5-10%, m.g., fresh,	.5	Nil Trace	553.2	96.6		555		

HOLE NO.: 0-1-80
COLLAR ELEV.: 2930.4m GROUND ELEV.: 2930m
COORDINATES: 11793 N. 12431 E.
INCLINATION: -60° BEARING: 012°

PROJECT: Hatsoff
DATE STARTED: August 7/80
DATE FINISHED: August 28/80
TOTAL DEPTH: 701.3m

PAGE NO.: 38 of 47
REF. TO CLAIM CORNER: 53m @ 008°
SCALE: 1:100
LOGGED BY: Jim Pollock

SECTION	ALTERATION: Silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	GEOLOGY	COMMENTS	DESCRIPTIVE GEOLOGY	% SULPHIDES py	mo	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
555		weak (intr. along vns)		weak	weak	py, mo, sph, cal, fl			Quartz Monzite	.8	Trace			NQ	555		
556								Qtz-py vn @ 30°; 8mm w cal, mo, + sph in qtz-ser-py envelopes	generally salt + pepper texture, 5-10% K-feldspar giving the rock a pale pink tinge.			556.1					
557								Qtz-py vn @ 10°; 1mm w mo, gypsum calcite,									
558						py, mo, fl				.5	Trace		96.7		558		
559												559.2					
560								Qtz-py vn @ 60°; avg 2mm w fl, mo									
561						py, sph				.4	Nil		93.8		561		
562								Fracture @ 50°; mod qtz + py.				562.4					
563																	
564						py				.4	Nil		100		564		
565								Fracture @ 10°; clean.	the # of vns has dropped through this section giving the rock a more homogeneous appearance.			565.4					
566																	
567					moderate	py				.7	Nil		100		567		
568								Qtz vn @ 20°; 5mm w sph.	Qtz Monz. to Quartz Monzonite Porphyry large feldspar XL's commonly vary from pale pink to white avg 1.2cm.			568.3					
569													85.7				
570								Fracture @ 55°, mod py.							570		

HOLE NO.: 10-1-80
COLLAR ELEV.: 2930.4m GROUND ELEV.: 2930m
COORDINATES: 11793 N. 12431 E.
INCLINATION: -60° BEARING: 012°

PROJECT: Aarsoff
DATE STARTED: August 7/80
DATE FINISHED: August 28/80
TOTAL DEPTH: 701.3m

REF. TO CLAIM CORNER: 53m @ 008°
SCALE: 1:100
LOGGED BY: Tom Pollock

SECTION	ALTERATION: Silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	GEOLOGY	COMMENTS	DESCRIPTIVE GEOLOGY	% SULPHIDES py	mo	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
570–573		in ser along vns		weak		py, sph, mt		Qtz vn @ 45°; 1.3mm wide w/ py+sph	Quart Monzonite weakly porphyritic from large feldspar XL's, m.g.-c.g., salt+pepper textured.	.6	Nil to trace	571.5	100	NQ	570		
573								Qtz vn @ 25°, 7mm wide w/ py+sph					100		573		
573–576						py, mt				.5	.1	574.5					
576–579						py, mo, mt		Qtz-py vn @ 40°, 1mm w/ mo.		.5	Trace	577.6	100		576		
579–582						py, sph, mt		Qtz-py vn @ 50°, 2mm w/ 5mm qtz-ser-py envelopes. Fracture @ 40°; minor qtz+py.	Quart Monzonite m.g. to c.g., relatively homogeneous, qtz 20-25%, plag 70%, biotite 10%, sericite 1%	.5	Nil	580.6	100		579		
582–585						py, tl		Qtz-py + qtz-ser-py vnlts ≤1mm w/ minor sph. Weak stockwork of qtz-ser-py vnlts	# of vns have dropped off slightly. Vein types 579-582: qtz-ser-py vnlts -13, qtz-py -6.	.5	Nil	583.7	96.3 / 100		582 / 585		

HOLE NO.: 10-1-80 | PROJECT: Harriff | PAGE NO.: 40 OF 47

COLLAR ELEV.: 2930.4m | GROUND ELEV.: 2930m | DATE STARTED: August 7/80 | REF. TO CLAIM CORNER: 53m @ 008°

COORDINATES: 11793 N. 12431 E. | DATE FINISHED: " 28/80 | SCALE: 1:100

INCLINATION: -60° | BEARING: 012° | TOTAL DEPTH: 701.3m | LOGGED BY: Tom Billard

ALTERATION: Silica | Sericite | Clay | Chlorite | FRACTURING | MINERAL | GEOLOGY

COMMENTS:

AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

SECTION	DESCRIPTIVE GEOLOGY	% SULPHIDES (py / py)	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.	ESTIMATED
585	Quartz Monzonite m.g. - e.g., salt & pepper textured, large feldspar XL's common. # of vns has dropped considerably.				NQ	585		
586	Qtz-ser-py vn @ 30°, 4mm wide	5% / tr	586.3	100				
587	Qtz-py vn @ 55°, 3mm w goodno 4mm qtz-ser-py envelopes.							
588						588		
589				100				
590	Fractures @ 50°, minor py + slickenslides.	5% / tr	590.1					
591	Barren qtz vn @ 50°, 6mm wide.					591		
592	Fracture @ 40°; clean.			100				
593		1% / tr	592.5					
594	Qtz-py vn, 2mm wide w sph.					594		
595				96.7				
596		1% / tr	595.5					
597	Qtz-ser-py vn @ 65°, 1mm w bleached + potassic alt. envelopes					597		
598	Qtz-ser-py vns, minor stockwork, mod. silic.	2% / tr	598.1	100				
599			599.5					
600				96.7		600		

598.1 - 592.25m: Dike like structure of mg qtz + plag, 1% mafics.

HOLE NO.: J-1-80
COLLAR ELEV.: 2930.4m GROUND ELEV.: 2930m
COORDINATES: 11793 N. 12431 E.
INCLINATION: -60° BEARING: 012°

PROJECT: Marcoff
DATE STARTED: August 7/80
DATE FINISHED: " 28/80
TOTAL DEPTH: 701.3m

PAGE NO.: 41 OF 47
REF. TO CLAIM CORNER: 53m @ 008°
SCALE: 1:100
LOGGED BY: Tom Pollock

SECTION	ALTERATION (Silica / Sericite / Clay / Chlorite)	FRACTURING	MINERAL	GEOLOGY	COMMENTS	DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
600–603		weak	py	XL	Qtz-ser-py vns, max 3mm, minor stockwork.	Quartz Monzonite – weakly porphyritic from white + pink feldspar XL's.	.2 Trace	602.	96.7	NQ	600		
603–604.5			py/sph		Many hairline qtz-py vnlts.	Aplite dike, pale pink, granular, <1% mafics, many qtz-py vns.			100		603		
604.5–606	Sericite: dissem + along vns; Chlorite: weak-strong		py/sph		Fracture @ 55°, along a qtz-py vnlt.	Qtz. Mon. – weakly porphyritic from feldspar XL also the occasional rounded qtz pheno.	.8 Trace	605.	100		606		
606–609	Sericite: dissem + along vns; Chlorite: weak-strong		py		Qtz-py vn @ 40°, 5mm wide w/ trace hem, much ser. + green altered plag.	rock appears to be more + more effected by phyllic alt. + by propylitic alt → biotite altering to chlorite + plag. turning pale green + soft.	.2 Nil	608.1	100		609		
609–612			py		Fracture @ 50°, mod. gypsum + py.		.6 Nil	611.1	100		612		
612–615		locally mod.	py, fl, gypsum		Possible fault @ 30, much chl py + gypsum. Possible fault zone @ 5°		.6 Nil	614.2	96.7 / 100		615		

HOLE NO.: 2-1-80 | PROJECT: Harsoff | PAGE NO.: 42 OF 47

COLLAR ELEV.: 2930.4m | GROUND ELEV.: 2930m | DATE STARTED: August 7/80 | REF. TO CLAIM CORNER: 53m @ 000°

COORDINATES: 11793 N. 12431 E. | DATE FINISHED: " 28/80 | SCALE: 1:100

INCLINATION: -60° | BEARING: 012° | TOTAL DEPTH: 701.3m | LOGGED BY: Tom Pollock

COMMENTS:

AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

SECTION	ALTERATION: Silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	GEOLOGY	DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.	ESTIMATED
615													615		
616		weak		weak	weak	py, mo, gypsum		Qtz-py vn @ 25°, 7mm wide w/ mo, 1cm qtz-ser-py envelopes.			100				
617								Fracture @ 50°; minor slickensides. Quartz Monzonite weakly porphyritic from euhedral feldspar xl's, pale pink phenocrysts. most plag. saussuritized.	.6	617.2		NQ			
618									Nil				618		
619						py, sph					100				
620									.7	620.5					
621								Small qtz-ser-py vnlts, max 5mm					621		
622						py, sph		Quartz Monzonite Porphyry increasing feldspar xl's, generally pink & avg 1-1.5cm².			100				
623									1						
624								High sericite content in the rock locally minor sph.		623.5			624		
625						py, mo, fl, sph					100				
626								626.25-626.35 m: v.fg., siliceous looking dike-like structure.	.9						
627								Fracture w/ good slickensides, minor fl, bottom moved up.		626.5			627		
628						py, fl		Qtz vn @ 20°; w/ fl, py & feldspar	.4		100				
629									Nil	629					
630								Aplite dyke @ 35°; 3cm wide.			100		630		

HOLE NO.: 10-1-80
COLLAR ELEV.: 2930.4m   GROUND ELEV.: 2930 m
COORDINATES: 11793 N.   12431 E.
INCLINATION: -60°   BEARING: 012°

PROJECT: Anisoff
DATE STARTED: August 7/80
DATE FINISHED: " 28/80
TOTAL DEPTH: 701.3m

REF. TO CLAIM CORNER: 53m @ 008°
SCALE: 1:100
LOGGED BY: Tom Pollock

SECTION	ALTERATION: Silica	ALTERATION: Sericite	ALTERATION: Clay	ALTERATION: Chlorite	FRACTURING	MINERAL	GEOLOGY	COMMENTS	DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES py	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.	ESTIMATED
630															630		
631–633		weak ↓		weak ↓	weak ↓	py, mo		Qtz-py vn @10°, 5mm wide w/ no 5mm qtz-ser-py envelopes Qtz-py vn w/ minor mo. } Qtz-ser-py vnlts, max 3mm wide	Quartz Monzonite m.g., weakly porphyritic, 5-10% k-feldspar, 20% qtz, biotite ≈ 10%, weakly replaced by chlorite & some py. remainder mainly plag, ser + py ≈ 1.5%		.9	632.5	100	NQ	633		
633–636						py, fl, sph		Aplite dike @ 30°, 5cm wide			.9	635.5 / 636.1	100		636		
636–639						py		Qtz-py vn @ 50°, 1cm wide	rock here has a cloudy siliceous appearance, is still slightly porphyritic + plag is still generally pale green in colour.		.5	638.6	100 / 96.0		639		
639–642						py					.5	641.6	100		642		
642–645						py, fl		Fractures @ 30° (w/ slickenslides + gypsum + @ 60° w/ py.	Qtz Monzonite: m.g., ≈10% k-feldspar, weakly porphyritic from pink k-feldspar XL's.		.6	644.7	96.7		645		

HOLE NO.: H0-1-80
COLLAR ELEV.: 2930.4m GROUND ELEV.: 2930. m
COORDINATES: 11793 N. 12431 E.
INCLINATION: -60° BEARING: 012°

PROJECT: Motsoff
DATE STARTED: August 7/80
DATE FINISHED: " 28/80
TOTAL DEPTH: 701.3m

REF. TO CLAIM CORNER: 53m @ 008°
SCALE: 1:100
LOGGED BY: Tom Pollock

SECTION	ALTERATION (Silica / Sericite / Clay / Chlorite)	FRACTURING	MINERAL	GEOLOGY	COMMENTS	DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y SAMP. INT.	ESTIMATED
645–648		weak	py, fl, mo		Qtz-py vn @ 50°, 4mm wide w minor fl + mo; Qtz-py vn w mo, 4mm qtz-ser-py envelopes.	Quartz Monzonite m.g., salt + pepper texture, 1/3-1/2 plag is pale green, biotite weakly chloritized. 10% mafics, ≃5% k-feldspar.	.6	646. / 647.7	100 / 94.1	NQ	645–648		
648–651	weak in + along (Sericite)		py, mo		Qtz-py vn @ 30°, w mo	←Zone of weak potassic alteration	.6	650.7	100		648–651		
651–654			py, sph, fl		Fractures @ 65° + 25°; Qtz-ser-py vn @ 45° w sph, 1.5 cm wide.		.4	653.5	96.7		651–654		
654–657	weak chl of bio (Chlorite)		py, fl			Qtz Monzonite	.5	656.8	100		654–657		
657–660			py, mo		Fracture along a qtz-ser-py vn/t w mo.; Qtz-py vn @ 20°, 1cm wide w mo.		.5		96.9		657–660		

HOLE NO.: H0-1-80 | PROJECT: Harsoff | PAGE NO.: 45 OF 47

COLLAR ELEV.: 2930.4m | GROUND ELEV.: 2930 m | DATE STARTED: August 7/80 | REF. TO CLAIM CORNER: 53m @ 008°

COORDINATES: 11793 N. 12431 E. | DATE FINISHED: " 28/80 | SCALE: 1:100

INCLINATION: -60° | BEARING: 012° | TOTAL DEPTH: 701.3m | LOGGED BY: Tom Pollock

ALTERATION: Silica | Sericite | Clay | Chlorite | FRACTURING | MINERAL | GEOLOGY

COMMENTS:

AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

SECTION	DESCRIPTIVE GEOLOGY	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.	ESTIMATED
660	Quartz Monzonite f.g., peppery textured, occasional qtz pheno, 10% mafics, trace mt, qtz 20-25%; plag 65%, fresh, hard		660.		NQ	660		
661								
662	Qtz-py vn @ 15°, 8mm wide w minor mo.	.4 Trace		100				
663			662.9			663		
664	Vein types 660-665': qtz-py: 6; qtz-sph-mo: 1; qtz-ser-py: 14							
665	Qtz-py vn @ 60°, 2mm wide.	.5 Trace		96%				
666			666.			666		
667	Qtz-py vn @ 40° w sph + ser.	.6 Trace		100				
668								
669			669			669		
670	Fracture @ 20°; along < qtz-ser py vn w mo.	.4 Trace		100				
671								
672			672.1			672		
673	Qtz Monzonite; f.g., good salt + pepper texture, homogeneous. Fractures @ 10+45°, minor py + ser.	.4 Nil		100				
674			674.2					
675				100		675		

HOLE NO: H0-1-80 | PROJECT: Ha..ff | PAGE NO.: 46 OF

COLLAR ELEV.: 2930.4m | GROUND ELEV.: 2930m | DATE STARTED: August 7/80 | REF. TO CLAIM CORNER: 53m @ 008°

COORDINATES: 11743 N 12431 E | DATE FINISHED: " 28/80 | SCALE: 1:100

INCLINATION: −60° | BEARING: 012° | TOTAL DEPTH: 701.3m | LOGGED BY: T. Pollock

ALTERATION: Silica | Sericite | Clay | Chlorite

FRACTURING | MINERAL | GEOLOGY

COMMENTS:

AVE CORE REC'Y / HOLE

DESCRIPTIVE GEOLOGY

SECTION	DESCRIPTIVE GEOLOGY		% SULPHIDES (py / Tr)	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP INT.	ESTIMATED
675	Qtz-ser-py vn @ 15°, 9mm wide	Quartz Monzonite: generally f.g., good salt + pepper texture, homogeneous.		675.1			675		
676									
677			.4 / .2		100	NQ			
678				678.2			678		
679									
680	Fracture @ 20°; minor		.4 / Trace		100				
681	Fine g. qtz + plag dyke, matics < 1%, 2-3% ser, minor py.	Vein types 678-681m: qtz-ser-py : 5 qtz-py : 1		681.2			681		
682									
683			.7 / Trace		100				
684				684.3			684		
685									
686	Qtz vn @ 35°; w ser + sph wits a qtz-ser-py vn @ 40°	similar to above 5-10% max K-feldspar.	5 / .1		100				
687				687.3			687		
688	Qtz-py vn @ 45°; w ser + sph.		.4 / Trace		96%				
689	Qtz-py vn @ 50°; 1.5mm wide								
690							690		

HOLE NO.: H0-1-80 | PROJECT: Hatsoff | PAGE NO.: 47 OF 47

COLLAR ELEV.: 2930.4m | GROUND ELEV.: 2930. m | DATE STARTED: August 7/80 | REF. TO CLAIM CORNER: 53m @ 008°

COORDINATES: 11793 N 12431 E | DATE FINISHED: August 24/80 | SCALE: 1:100

INCLINATION: -60° | BEARING: 012° | TOTAL DEPTH: 701.3m | LOGGED BY: Tom Pollock

SECTION	ALTERATION: Silica	Sericite	Clay	Chlorite	FRACTURING	MINERAL	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVE CORE REC'Y / HOLE	% SULPHIDES	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y. SAMP. INT.	ESTIMATED
690											690.4	96.7		690		
691		weak intermittent		locally weak	weak	py, sph		Fracture @ 15°; minor calcite + slickenslides. Quartz Monzonite locally weakly porphyritic from qtz phenos + the occasional large feldspar xl.		.5 nil						
692												100	NQ			
693								Fracture @ 50°; mod qtz + ser.			693.4			693		
694																
695						py				.5 locally tr ma		96.7				
696								Qtz-py vn @ 8°; w sph, mo, gypsum calcite, 1cm qtz-ser-py envelopes.			696.6			696		
697						py, sph, cal, fl,										
698								Qtz-py vn @ 40°; 2cm wide w Ab, mo, 1cm envelopes		1.5 tra		100				
699											699.5			699		
700								Fracture @ 40°; minor ser+py.				94.4				
701						py		Qtz-ser-py vn @ 45°; 3mm wide		.5 .1	701.3					
702								End of hole 701.3 meters.						702		

Morraine Lake

West Farnham Cr.

HATSOFF 6

HATSOFF 7

BO GLACIER

HATSOFF 1

HATSOFF 2

LCP FOR HATSOFF 5 & 6
12 UNITS EAST OF
BELOW LOCATION POST

HATSOFF 7 LCP

FARNHAM GLACIER

WEN GLACIER

EAST GLACIER

WEST GLACIER

HATSOFF 5

LAKE OF THE HANGING GLACIER

HO-1

LCP

HATSOFF 3

HATSOFF 4

MAYE ICE FIELD

COMMANDER GLACIER

Water level 2154 ±

LEGEND;

- 2100 — Topographic contour in meters
- 2885 — Elevation control point in meters
- Limit of glacier
- Creek
- HO-1 — Diamond drill hole drilled during the period of August 6 — August 21, 1980
- LCP — Legal corner post
- Corner post or identification post
- Corner post or identification post not placed

Part 1 of 2

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 8637

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
A. J. SCHMIDT
Nov 1980

Plate

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

HATSOFF Mo PROSPECT

DIAMOND DRILL HOLE COLLAR LOCATION PLAN

Work by T.R.P.	Date Oct. 1980	NTS Ref 82 K - 7 E
Drawn by K.N.Gopal	Revised	

SCALE: 1:5000