

LOG NO. 1012	RD.
ACTION:	
FILE NO:	

Diamond Drilling Report

Heather Property

Victoria Mining Division

NTS 92 C/15, 16

48° 59' N Latitude 124° 30' W Longitude

FILMED

Owner: Minnova Inc.

Operator: Minnova Inc., International Cherokee Developments Ltd.

by: G. S. Wells

August, 1988

Claims

Carol Group

Carol S

Marino S

Carol S-2 GEOLOGICAL BRANCH  
Audace ASSESSMENT REPORT

17,835

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## Diamond Drill Report

### Heather Property

#### 1. Introduction

Minnova Inc. optioned the Heather property from Canamin Resources in May, 1986. The property is currently being evaluated for its gold potential. This report summarizes the results of diamond drill holes H-7 to H-10 inclusive which were drilled during the period September 24 to September 30, 1987.

#### 1.1 Location and Access

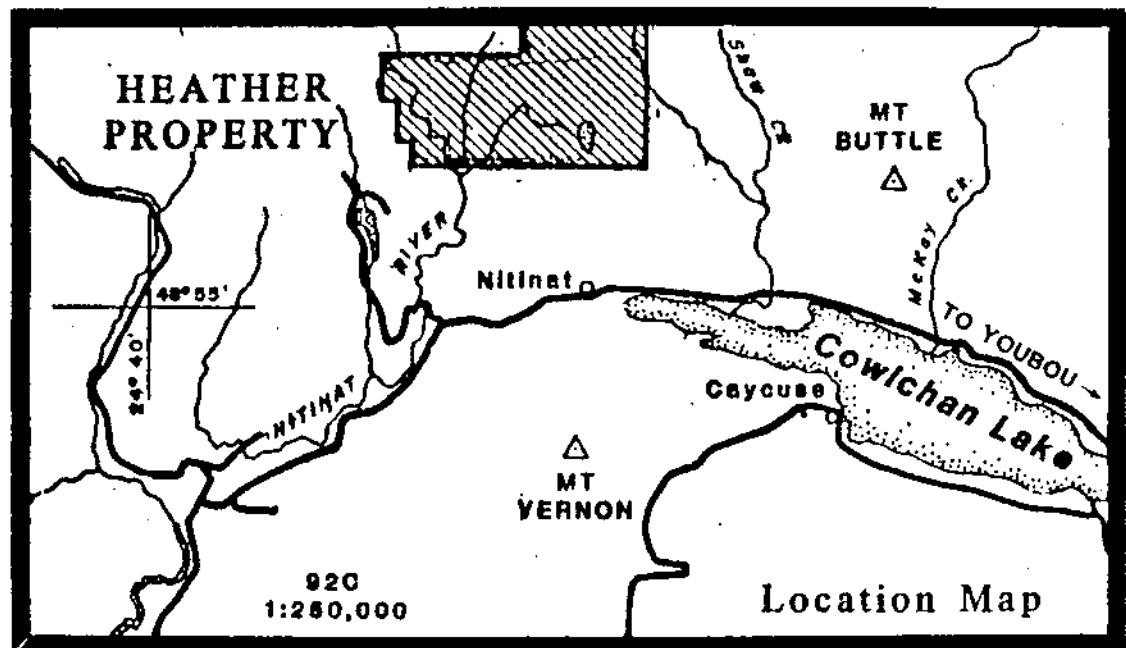
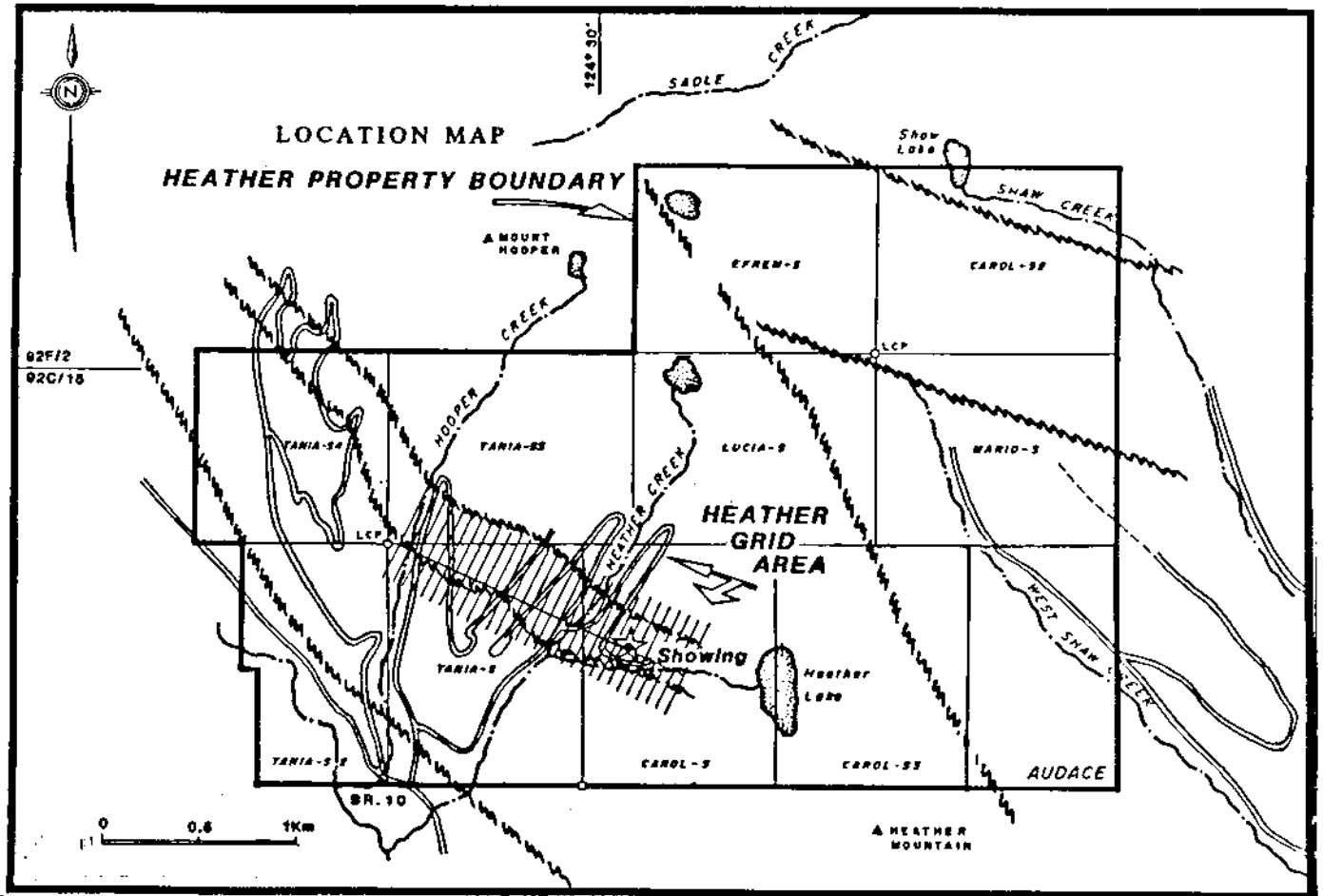
The Heather property is located on Vancouver Island approximately 40 km southwest of Nanaimo and 7 km north of the west end of Cowichan Lake (Figure 1). Access is currently via Crown Forest's Nanaimo Lakes and Mt. Hooper roads due to the closure of a bridge in the Nitinat valley which is 2 km east of the property.

#### 1.2 Mineral Rights

All four drill holes are located on the Carol S. claim which is part of the Carol Group (Figure 2). Details of the property claim status are given below:

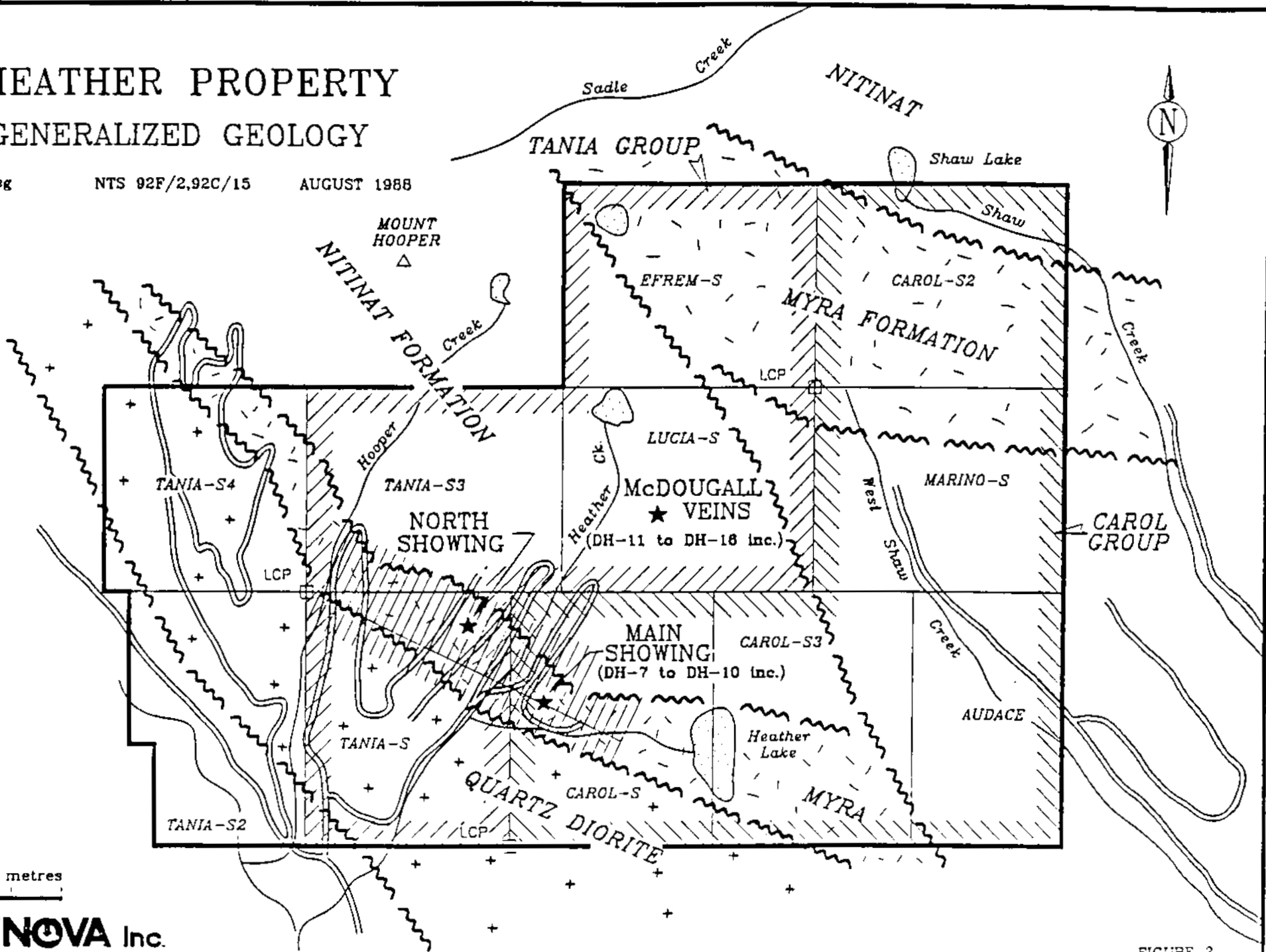
#### Carol Group

<u>Claim Name</u>	<u>No. of Units</u>	<u>Record No.</u>	<u>Month of Record</u>
Carol S.	20	644	August
Marino S.	20	647	August
Carol S-2	20	648	August
Carol S-3	20	686	October
Audace	15	1567	September



# HEATHER PROPERTY GENERALIZED GEOLOGY

GW/sg NTS 92F/2,92C/15 AUGUST 1988



1000 metres

**MINNOVA** Inc.  
FILE.DA.8X11\LOCHEA

FIGURE 2

Tania Group

<u>Claim Name</u>	<u>No. of Units</u>	<u>Record No.</u>	<u>Month of Record</u>
Tania S	20	645	August
Lucia S	20	646	August
Efrem S	20	649	August
Tania S #3	20	684	October

Ungrouped Claims

<u>Claim Name</u>	<u>No. of Units</u>	<u>Record No.</u>	<u>Month of Record</u>
Tania S #2	15	683	October
Tania S #4	16	685	October

1.3 History

Canamin Resources Limited staked the property in 1982 after E. Specogna, a local prospector, discovered several polymetallic, sulphide-rich boulders in the Heather Creek area. The property was optioned to Falconbridge Limited in 1982 and they discovered the McDougall quartz vein which returned assays of up to 0.35 oz/T Au. In 1983, Falconbridge and Chevron Canada Resources Limited formed a joint venture partnership with Chevron as the operator. Over the next 2 years they carried out reconnaissance-style mapping and soil geochemical surveys over the property using the many logging roads as control. They also contracted helicopter-mounted INPUT E.M. and magnetic surveys over the property and ground follow-up of anomalies with an EM-37 system. The best mineralization encountered was a sulphide-rich section of what is now known as the Main showing. It yielded assays of 0.25 oz/ton Au and 0.18% Cu. Chevron tested this showing with 2 diamond drill holes totalling 338 meters. The best intersection from this program was 3.0 g/T Au over 1.5 meters and they subsequently dropped the option in early 1985. Minnova acquired the Heather property in May 1986 and has been actively exploring the ground for base and precious metals with International Cherokee Development Ltd. as a joint venture partner. Five diamond drill holes totalling 547 meters were

drilled on the property in 1986 to test geophysical and lithogeochemical anomalies associated with a quartz-pyrite shear zone (Wells, 1987). Five drill holes tested the extent of the Main zone mineralization in 1987. One of these holes has been previously filed for assessment credit (Wells, 1987).

#### 1.4 Work Done

Four NQ diamond drill holes totalling 431 meters were drilled on the Heather property during the period September 24 to September 30, 1987. All of the holes tested the extent of the Main Showing mineralization which is located on the Carol S. claim. (Figure 3) Mineralized sections were analyzed at Min-En Laboratories in Vancouver for Au using a wet, atomic absorption technique which has a detection limit of 5 ppb Au. The diamond drill core is stored at 6722 Lakes Road in Duncan, B.C.

#### 2.0 Heather Area Geology

The Heather property is underlain primarily by volcanic rocks of the Paleozoic Sicker Group (Figure 2,3). Muller (1980) has subdivided the Sicker group as follows:

1. Buttle Lake Formation
2. Sediment-Sill Unit
3. Myra Formation
4. Nitinat Formation

The oldest rocks exposed on the property are the pyroxene porphyritic agglomerates and flow breccias of the Nitinat formation. These are overlain conformably by cherts, lapilli tuffs and phyllitic tuffs of the Myra formation. Triassic Karmutsen basalts are exposed in the southwestern corner of the property and are separated from the Myra volcanics by a thick dioritic intrusion of possible Jurassic age.

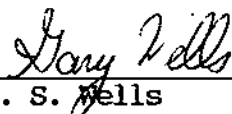
The Main Zone showing consists of a northwesterly trending quartz-pyrite shear zone which cuts cherts and ashes of the Myra formation (Figure 2,3). The gold bearing McDougall Vein is hosted in the Nitinat flow breccia.

### 3.0 Diamond Drill Results

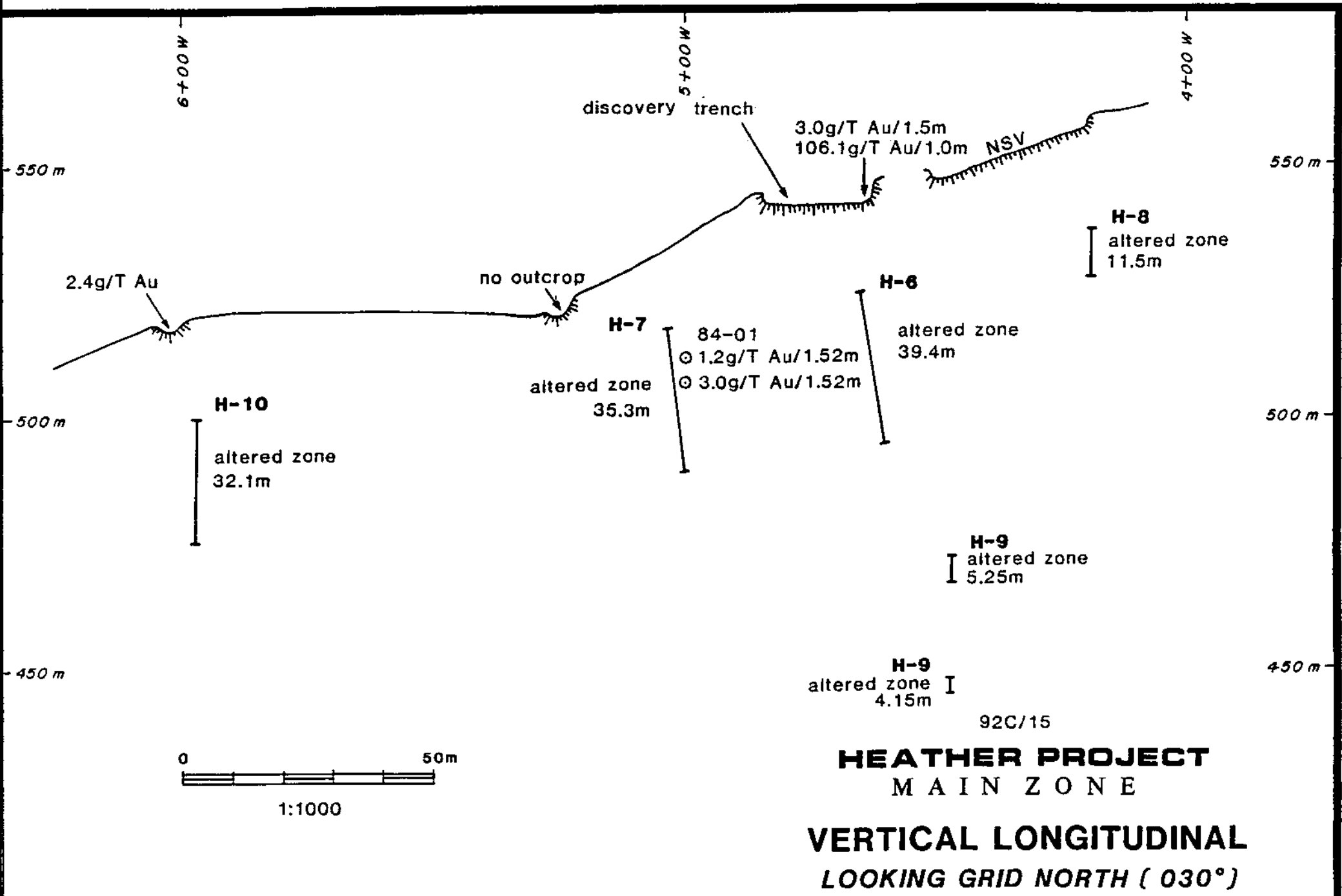
Diamond drill holes H-7 to H-10 were drilled to properly evaluate the Main Showing (Figures 2,3) where gold values of up to 0.25 oz/ton Au have been obtained. Minnova's 1986 drill program indicated that the Main zone mineralization has a northwesterly trend and southwesterly dip. Thus all of the holes were collared at the southwestern edge of the zone and drilled to the northeast. Each hole intersected an altered, grey andesitic tuff with variable (5-15%) quartz-carbonate veining and up to 5% very fine grained pyrite. These altered zones vary in thickness from 4.15 m in H-9 to 35.3 m in H-7. Intersections of these altered zones which are correlated with the Main zone mineralization are plotted on a vertical longitudinal (Figure 4). No significant gold values are associated with these altered zones. Detailed drill logs and assays for holes H-7 to H-10 inclusive are presented in Appendix I.

### 4. Conclusions

Holes H-7 to H-10 confirmed that the Main showing mineralization has a northwesterly trend and dips to the southwest at  $50^{\circ}$  to  $60^{\circ}$ . Wide zones of altered andesitic tuff with low gold values are present at shallow levels below the surface (<50 m) but at greater depths (approx 100 m), the altered zone horsetails and thins. Further work in the Main Showing area is not warranted at this time.

  
\_\_\_\_\_  
G. S. Wells





**HEATHER PROJECT  
 MAIN ZONE**

**VERTICAL LONGITUDINAL  
 LOOKING GRID NORTH ( 030° )**

5. Statement of Costs

Carol S claim holes H-7 to H-10 incl.	filed for	\$37,992.64
mob/demob		\$ 1,200.00

H-7 (315 ft - 96.0 m)

footage costs	5670.00	
casing (22 ft)	348.00	
casing shoe	176.32	
casing cap	40.60	
drilling additives	348.00	
tractor hrs (7 hrs at \$60/hr)	420.00	
man hrs (7 hrs at \$22/hr)	154.00	
G. S. Wells 2 days at \$400/day	800.00	
M. Shelbourne 2 days at \$100/day	<u>200.00</u>	
	8156.92	\$ 8,156.92

H-8 (315 ft - 96.0)

footage costs	5670.00	
casing (20 ft)	301.60	
casing shoe	176.32	
casing cap	40.60	
drilling additives	348.00	
drill bits	290.00	
tractor hrs (2 hrs at \$60/hr)	120.00	
drill hrs (5 hrs at \$20/hr)	100.00	
man hrs (10 hrs at \$22/hr)	220.00	
G. S. Wells 2 days at \$400/day	800.00	
M. Shelbourne 2 days at \$100/day	<u>200.00</u>	
	8266.52	\$ 8,266.52

H-9 (417 ft - 127.1 m)

footage costs	7504.00	
casing (42 ft)	649.60	
casing shoe	176.32	
drilling additives	366.56	
drill bits (2)	580.00	
tractor hrs (4 hrs at \$60/hr)	240.00	
drill hrs (5 hrs at \$20/hr)	100.00	
man hrs (14 hrs at \$22/hr)	308.00	
G. S. Wells 2 days at \$400/day	800.00	
M. Shelbourne 2 days at \$100/day	<u>200.00</u>	
	10924.48	\$10,924.48

H-10 (365 ft - 111.3 m)

footage costs	6570.00	
casing (30 ft)	452.40	
casing shoe	176.32	
drilling additives	348.00	
tractor hrs (8 hrs at \$60/hr)	480.00	
man hrs (19 hrs at \$22/hr)	418.00	
G. S. Wells 2 days at \$400/day	800.00	
M. Shelbourne 2 days at \$100/day	<u>200.00</u>	
	9444.72	\$ 9,444.72
	Total	<u>\$37,992.64</u>

6. ReferencesGibson, H.

1986: Geophysical Report IGS 2 VLF/magnetometer and Induced Polarization Surveys on the Heather Property of Canamin Resources. Assessment report.

Gray, M. J.

1987: Summary report of 1986 Fieldwork on the Heather Option of Canamin Resources Ltd. Minnova internal report.

Muller, J. E.

1980: The Paleozoic Sicker Group of Vancouver Island, B.C., GSC Paper 79-30.

Wells, G. S.

1987: Diamond Drilling Report: Holes H-1 to H-5 Heather Property. Assessment Report.

Wells, G. S.


1987: Diamond Drilling Report: Hole H-6 Heather Property. Assessment Report.

7. Statement of Qualifications

I, Gary S. Wells, hereby certify that:

1. I hold an Honours Bachelor of Science degree in combined geology and chemistry (1975) from Carleton University, Ottawa, Ontario and a Ph.D degree in geology (1980) from Queen's University, Kingston, Ontario.
2. I am an associate member of the Geological Association of Canada and a member of the Canadian Institute of Mining and Metallurgy.
3. I have practised my profession in exploration continuously since graduation in 1980.
4. I have based conclusions contained in this report on knowledge of the area, my previous experience and results of field work conducted on the property.

Date: August 19, 1988

  
Gary S. Wells

Vancouver, British Columbia

*Burwash Enterprises Ltd.* CONTRACT DIAMOND DRILLING

1236 WILDER ROAD - R.R. 2 - COBBLE HILL, B.C. V0R 1L0 - VANCOUVER ISLAND - TEL. 743-3092

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October 2nd, 1987

Minnova Inc.,  
4th Floor, 311 Water Street,  
Vancouver, B. C.  
V6B 1B8

Dear Sirs:

Re: Heather property near Youbou, B. C.

Please find enclosed invoice for diamond drilling on your Heather property near Youbou, B. C.

The invoice includes total charges to job completion.

We would also like to thank you for awarding us the contract and look forward to working for you in the near future.

Yours sincerely,

**BURWASH ENTERPRISES LTD.**

Per:



DAVID BURWASH,  
President.

DB/cr

Encl.

From base to truck unlad point and return  
 from truck load point to base  
 Lump sum of \$1,200.00

Moving truck unload point to first hole

Man hours = 20 @ \$22.00 per hour 440.00 } H-6  
 Cat hours = 5 @ \$60.00 per hour 300.00 }

Overburden

Hole 87 - 6 = 12 feet  
 87 - 7 = 20 feet  
 87 - 8 = 20 feet  
 87 - 9 = 42 feet  
 87 -10 = 30 feet  
 Total Overburden 124 feet x \$18.00 2,230.00

Coring

Hole 87 - 6 = 505 feet  
 87 - 7 = 295 feet  
 87 - 8 = 295 feet  
 87 - 9 = 375 feet  
 87 -10 = 335 feet  
 Total Coring 1,805 feet x \$18.00 32,490.00

Moving between holes (over 4 man hours per move)

16 man hours @ \$22.00 per hour 352.00  
 16 Cat hours (moving and building sites) @ \$60.00 per hour 960.00 } H-8, H-9

Hole Stabilization

20 man hours @ \$22.00 per hour 440.00  
 10 Drill hours @ \$20.00 per hour 200.00

Materials consumed and ruined due to fault zones

12 x 10' NW Casing @ \$130.00 each 1,560.00  
 3 x 2' NW Casing @ \$40.00 each 120.00  
 5 NW Casing Shoes @ \$152.00 each 760.00  
 2 NQ Bits @ \$500.00 each x 50% 500.00 H-9  
 1 NQ Bits @ \$500.00 x 50% 250.00 H-7  
 15 pails alcomer 120 L @ \$100.00 each 1,500.00  
 2 Bags gel @ \$8.00 each 16.00 H-9  
 3 NW Casing Caps @ \$35.00 each 105.00  
6% P.S.T. 288.66  
Cost plus 10% 481.10

Moving from last hole to truck load point

14 man hours @ \$22.00 per hour 308.00  
 5 cat hours @ \$60.00 per hour 300.00 } H-10

\$44,800.76

TOTAL INVOICE TO END OF JOB:  
 CORPORATION FALCONBRIDGE COPPER

VENDOR NAME	ORDER DATE
<i>BURWASH ENTERPRISES LTD.</i>	
ACCOUNT CODE	

OK. J.R.

Appendix I

Drill Logs

H-7 to H-10





FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALISATION	REMARKS
0.00 TO 6.10	OVERBURDEN					CASING
6.10 TO 25.10	GREENISH-GREY TUFF TO CRYSTAL TUFF	Greenish grey Fine grained Massive to weakly foliated tr. fsp crystals in patches.  veins 16.0m veins 21.0m	45 40	1-2% qtz-carb veins	none	6.1 - 25.1 - blocky core
25.10 TO 60.40	GREY PYRITIC TUFF	Grey Fine grained to very fine grained Massive. Trace qtz 'eyes' - vesicles? - fine grained ash with the odd angular lithic fragment noted (ie., 50.8m)  30.0m (veins) 35.8m (veins)  37.5m (veins)  44.4m (veins) 46.5m (veins)  fine grained light green intermediate dikes at: 48.2 - 48.45 49.2 - 49.25  49.2m (contact)  54.2m (veins) 59.5m (veins)	70 65    70 65   60  40 60	25.1 - 28.4 pervasively moderately silicified  28.4 - 36.0 1-2% qtz veins all oriented at approx. the same angle to the core axis  36.0 - 40.4 pervasive intense qtz-ser-Chl(?) plus trace carb. Sericite is light brown and wispy - looks similar to leucosene  40.4 - 43.45 3-5% wispy leucosene or sericite(?)  43.45 - 51.1 pervasive intensely to moderately silicified with minor carbonate sericite  51.1 - 60.4 moderately silicified (10-12% qtz's)	25.1 - 28.4 3-5% py as specks in host rock; trace cp in qtz veins 28.4 - 36.0 trace-1% py  36.0 - 40.4 3-5% very fine grained pyrite  40.4 - 43.45 trace-1% diss. py.  43.45-51.1 5-7% diss. py. locally have patches with 10% Generally py in host rock and v.fgr  47.25 - 47.5 trace-1% diss. cp.  51.1 - 60.4 2-3% diss. py	

HOLE NUMBER: H-7

MINNOVA INC.  
DRILL HOLE RECORD

DATE: 1-December-1987

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALISATION	REMARKS
60.40 TO 96.00	PURPLE AND GREEN TUFF	maroon to light green Fine grained Alternating beds of maroon and green tuff. Very fine grained beds; locally have pseudo-breccia look due to veining. Purple colour due to hematite		60.4 - 72.3 pervasive carbonate alteration with 10-15% carb-qtz veins	Unit void of sulphides except as noted below	
		61.0m (veins) 64.0m (veins)	45 30			
		63.1 - 63.3 fault gouge			63.3 - 66.0 2-3% very fine grained py hosted in veined green tuff unit	
		67.0m (veins & bedding) 71.0m (bedding)	40 70			
		77.0m (bedding)	60	72.3 - 96.0 5% carb veins; commonly have hematite associated with these veins		
		END OF HOLE			86.45 - 86.55 10% py associated with qtz vein.  88.35 - 88.65 1-2% py associated with qtz vein.	

HOLE NUMBER: H-7

DRILL HOLE RECORD

LOGGED BY: G.S. WELLS

PAGE: 3

Sample	From	To	Length	ASSAYS				Comments
				Cu	Zn	Au	Ag	
	(#)	(#)	(#)	ppm	ppm	ppb	ppb	
BCD6778	25.10	26.75	1.65					
BCD6779	26.75	28.40	1.65					
BCD6780	28.40	29.90	1.50					
BCD6781	29.90	31.40	1.50					
BCD6782	31.40	33.00	1.60					
BCD6783	33.00	34.50	1.50					
BCD6784	34.50	36.00	1.50					
BCD6785	36.00	37.50	1.50					
BCD6786	37.50	39.00	1.50					
BCD6787	39.00	40.50	1.50					
BCD6788	40.50	41.90	1.50					
BCD6789	41.90	43.45	1.55					
BCD6790	43.45	45.00	1.55					
BCD6791	45.00	46.50	1.50					
BCD6792	46.50	48.00	1.50					
BCD6793	48.00	49.50	1.50					
BCD6794	49.50	51.10	1.60					
BCD6795	51.10	52.60	1.50					
BCD6796	52.60	54.10	1.50					
BCD6797	54.10	55.60	1.50					
BCD6798	55.60	57.10	1.50					
BCD6799	57.10	58.60	1.70					
BCD8000	58.60	60.40	1.60					
BCD8001	60.40	64.70	1.40					
BCD8002	64.70	66.00	1.30					
BCD8003	66.00	66.55	0.10					
BCD8004	66.55	88.55	0.50					
BCD6788				350	1400	100		
BCD6789				490	264	10		
BCD6790				274	280	25		
BCD6791				580	460	3	2.6	
BCD6792				125	13	025		
BCD6793						3		
BCD6794						10		
BCD6795						3		
BCD6796						3		
BCD6797						15		
BCD6798						3		
BCD6799						3		
BCD8000						10		
BCD8001						3		
BCD8002						10		
BCD8003						3		
BCD8004						160		



FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALISATION	REMARKS
0.00 TO 6.20	OVERBURDEN					CASING
6.10 TO 56.90	GREY TUFF	<p>Grey. Fine grained Massive</p> <p>17.0m (veins) 21.5m (veins)</p> <p>45</p> <p>60</p> <p>22.3 - 30.35 2-3% qtz veins at irregular angles</p> <p>30.35 - 31.4 pervasively silicified</p> <p>31.4 - 39.55 1% qtz veins</p> <p>39.55 - 39.8 pervasively silicified</p> <p>fault gouge and blocky core at: 36.6 - 36.8 39.55 - 39.8 40.9 - 47.5</p> <p>47.0m (veins)</p> <p>45</p> <p>50.0 - 50.9 pervasively silicified</p> <p>53.0 (veins)</p> <p>45</p>	<p>6.1 - 10.8 2-3% quartz carb veins</p> <p>10.8 - 22.3 pervasive moderately to intensely silicified approx. 15% qtz veins</p> <p>22.3 - 30.35 2-3% qtz veins at irregular angles</p> <p>30.35 - 31.4 pervasively silicified</p> <p>31.4 - 39.55 1% qtz veins</p> <p>39.55 - 39.8 pervasively silicified</p> <p>39.8 - 50.0 1-2% qtz veins</p> <p>50.0 - 50.9 pervasively silicified</p> <p>50.9 - 56.9 3-5% qtz veins</p>	<p>6.1 - 10.8 trace diss. py</p> <p>10.8 - 13.75 1-2% py trace cp in qtz veins</p> <p>13.75 - 15.35 10-15% very fine grained py - primarily in host rock</p> <p>15.35 - 22.3 3-5% very fine grained py. trace sph? in qtz vein at 20.1</p> <p>22.3 - 30.35 trace % diss. py.</p> <p>30.35 - 31.4 1-2% py, trace diss. cp.</p> <p>31.4 - 39.55 1% py - associated with qtz veins</p> <p>39.55 - 39.8 10% fine grained py</p> <p>39.8 - 50.0 trace diss py</p> <p>50.9 - 56.9 trace diss py.</p>	<p>6.1 - 9.4 blocky core</p> <p>silicified zones occur as patches in this hole</p>	
56.30 TO 96.60	PURPLE AND GREEN TUFF	<p>Purple/earoon and green Fine grained Interbedded earoon and green tuff. - locally have mm-sized fsp crystals - very fine ash layers in unit</p>				

HOLE NUMBER: H-8

MINNOVA INC.  
DRILL HOLE RECORD

DATE: 1-December-1987

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALISATION	REMARKS
		57.0m (veins & bedding)	70	56.9 - 78.5	none	
		62.0m (veins/bedding)	70	10-15% carb-qtz veins in green tuff have yellowy green sericite assoc. with qtz veins		
		72.5m (veins/bedding)	45			
		69.2 - 69.9: fault gouge				
				78.5 - 96.6 2-3% qtz carb veins		
				80.6 - 84.6 pervasive epidote associated with green tuff layer		
		89.0m (bedding)	55			
		96.0m (bedding)	60			
		END OF HOLE				

HOLE NUMBER: H-8

DRILL HOLE RECORD

LOGGED BY: G.S. WELLS

PAGE: 3

Sample	From (m)	To (m)	Length (m)	ASSAYS				COMMENTS
				Cu ppm	Zn ppm	Au ppb	Ag ppm	
BCD6805	10.80	12.30	1.50			5		
BCD6806	12.30	13.75	1.45			5		
BCD6807	13.75	15.35	1.60	138	155	5		
BCD6808	15.35	16.90	1.55			25		
BCD6809	16.90	18.40	1.50			10		
BCD6810	18.40	19.90	1.50			5		
BCD6811	19.90	21.10	1.20			30		
BCD6812	21.10	22.30	1.20			5		
BCD6813	30.35	31.90	1.55			5		
BCD6814	31.90	33.40	1.50			5		
BCD6815	33.40	34.90	1.50			10		
BCD6816	34.90	36.40	1.50			5		
BCD6817	36.40	37.90	1.50			10		
BCD6818	37.90	39.55	1.65			5		
BCD6819	39.55	39.80	0.25	225	780	5		
BCD6820	39.80	40.90	1.10			5		
BCD6821	50.00	50.90	0.90			25		





FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALISATION	REMARKS
0.00 TO 12.90	OVERBURDEN					CASING
12.90 TO 36.10	GREY SILICIFIED ANDESITIC TUFF	Grey Fine grained Generally massive - weak foliation due to veining  Areas of blocky core have less veins - possibly a different unit 23.0m (veins) Blocky core at: 14.3 - 19.9 27.4 - 29.1 31.8 - 32.5 24.3m (veins)	20 50	Pervasively intensely silicified zones with minor carbonate at: 12.8 - 14.3 19.9 - 27.4 30.15 - 31.8 32.5 - 36.1	2-3% diss. py in intensely silicified zones. Trace cp at 26.7	12.8 - 14.3 - missing 0.5m 19.9 - 23.2 - missing 0.4m 24.2 - 26.2 - missing 1.0m 32.5 - 34.4 - missing 0.5m
36.10 TO 61.45	GREENISH GREY ANDESITIC TUFF	Greenish grey Fine grained Massive - locally foliated due to veining 44.5m (veins) 36.1 - 39.7 blocky core and fault gouge 55.5 - 56.2 fault gouge	30	5% qtz carb veins throughout. - weakly chloritic	trace diss py	
61.45 TO 66.70	GREY PYRITIC TUFF	Grey fine grained Massive - foliation due to alignment of quartz veins 63.4m	40	15% qtz veins throughout, trace chl and light brown, wispy sericite in veins	3-5% very fine grained py - gen. occurs in host rock adjacent to veins. Locally 5 mm sections are massive very fine grained py	
66.70 TO 81.40	ANDESITE CRYSTAL TUFF AND ASH	Drabdy grey Fine-crst. Well-bedded/foliated. Have interbedded crystal rich layers and a finer-grained ash (which looks more felsic) 73.0m 76.0m	60 50	1-2% qtz veins Orange coloured carbonate (ankerite) zones at: 68.6 - 69.1 76.4 - 76.7	trace diss py	

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALISATION	REMARKS
81.40 TO 84.00	SILICIFIED FAULT ZONE	Light grey Mgr fragments set in fine grained silicified matrix. - silicified zone well foliated - fault gouge throughout zone  81.7 - 82.6 chloritic dike  83.0m (fol'n)	70	pervasively silicified	none	
84.00 TO 87.50	ANDESITIC ASH	Greenish grey Fine grained Weakly foliated; qtz veins generally aligned parallel to foliation  87.0m	70	10-15% quartz +/- carb veins	1-2% very fine grained py	
87.50 TO 90.65	SILICIFIED FAULT ZONE	Light grey Mgr Weakly foliated  89.8 - 90.4 chloritic fault gouge		pervasively silicified	none	
90.65 TO 94.80	PYRITIC GREY TUFF/ASH	Light grey Fine grained Massive, ashy look. - contact with underlying andesitic crystal tuff gradational  93.6m (veins)	55	10-15% qtz veins	5% very fine grained pyrite within zone	
94.80 TO 111.20	ANDESITIC CRYSTAL TUFF	Light green Fine agr. Well-foliated locally, otherwise massive zones with 5-7% fsp crystals aligned parallel to foliation  96.0m (fol'n) - locally have rounded qtz "eyes" (1-2 mm diam.) = possible vesicles?  101.0m (veins)  100.2 - 100.4 fine grained, light green intermediate dike; chilled, irregular contacts	55  30	94.8 - 111.2 10-15% qtz veins; in place impart a pseudo-breccia look to rock - generally aligned at shallow core angles	94.8 - 100.2 1-2% py in veinlets and as disseminations  100.2 - 111.2 trace py - generally intimately assoc. with quartz veins	

HOLE NUMBER: H-9

MINNOVA INC.  
DRILL HOLE RECORD

DATE: 1-December-1987

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALISATION	REMARKS
111.30 TO 127.10	PURPLE AND GREEN TUFF	Purple and dark green Fine grained Purple and green layers interfinger - fine ashy look - locally have contorted bedding - weakly foliated				
		118.0m (fol'n)	45			
		113.0 (veins)	30			
		126.0 (veins)	20			
		END OF HOLE		15-20% carbonate veins with minor qtz - purple colour due to fine grained hematite	none	

HOLE NUMBER: H-9

DRILL HOLE RECORD

LOGGED BY: G.S. WELLS

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Sample	From (m)	To (m)	Length (m)	ASSAYS				COMMENTS
				Cu ppm	Zn ppm	Au ppb	Ag ppm	
BCD6822	12.80	14.30	1.50			25		
BCD6823	19.90	21.70	1.80			40		
BCD6824	21.70	23.20	1.50			20		
BCD6825	23.20	24.20	1.00			15		
BCD6826	24.20	26.20	2.00			10		
BCD6827	26.20	27.40	1.20	3000	430	20		
BCD6828	30.15	31.80	1.65			5		
BCD6829	32.50	34.40	1.90			25		
BCD6830	34.40	36.10	1.70			10		
BCD6831	61.45	63.00	1.55	175	158	20	1.2	
BCD6832	63.00	64.50	1.50	240	250	15	1.4	
BCD6833	64.50	65.60	1.10	218	300	30	1.6	
BCD6834	65.60	66.70	1.10	330	190	15	1.0	
BCD6835	84.00	85.50	1.50			5		
BCD6836	85.50	86.50	1.00			25		
BCD6837	86.50	87.50	1.00			5		
BCD6838	90.65	92.20	1.55	278	280	25	1.3	
BCD6839	92.20	93.50	1.30	170	280	10	1.0	
BCD6840	93.50	94.80	1.30	98	260	30	1.0	
BCD6841	94.90	96.20	1.50			15		
BCD6842	96.20	97.60	1.30			75		
BCD6843	97.60	98.90	1.30			25		
BCD6844	98.90	100.20	1.30			90		



FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA	ALTERATION	MINERALISATION	REMARKS
0.00 TO 9.10	OVERBURDEN					CASING
9.10 TO 13.25	GREEN ANDESITE TUFF	Green Fine grained Weakly foliated - blocky core and fault gouge throughout		1I qtz-carb veins	trace py	
13.25 TO 52.30	GREY TUFF	Grey to greenish grey Fine grained Generally massive; foliation due to parallel alignment of quartz veins 15.0m (veins) 15.5 - 20.2 more green andesite tuff, blocky core and fault gouge 30.0m (veins) 31.0m (veins) 40.6 - 40.7 fault gouge 38.8m (veins) 45.9 - 52.3 patches with 5% fsp crystals - unit has a greener colour 48.2m (veins)	60 55 65 70 60	13.25 - 15.5 3I qtz veins 15.5 - 20.2 1-2I qtz carb veins 20.2 - 30.2 moderately silicified (5-7I qtz-veins) 30.2 - 52.3 intensely silicified with minor carbonate in veins (15-20I veins)	13.25 - 15.5 3-5I very fine grained py 15.5 - 20.2 trace py 20.2 - 47.5 3-5I very fine grained throughout - locally occurs as patches with 10-12I py 46.4 - trace sph. in qtz vein 47.5 - 52.3 trace diss py.	15.5 - 17.4 - missing 0.3m 17.4 - 20.4 - missing 0.7m 21.7 - 23.5 - missing 0.7m 23.5 - 25.1 - missing 0.6m
52.30 TO 111.50	PURPLE AND GREEN TUFF	Maroon and green Fine grained to very fine grained Well foliated/bedded. Maroon layers are dominant in this hole. 55.0m (vein/fol'n) 61.0m (vein) 64.0m (fol'n) 69.5 - 70.0 fault gouge 71.5m (fol'n) 77.0m (fol'n) 84.0m (bedding) 95.0m (veins/fol'n) 106.5m (veins)	60 60 65 70 70 70 65 55	52.3 - 69.5 pervasive carbonate veining (15I) gives unit a well-defined foliation. - purple/maroon colour due to very fine grained hematite. Hematite also occurs as veinlets. - also have trace-1I leucosene in unit occurs as light brown viscos. 69.5 - 102.1 3-5I carb veins locally have thin (2-3mm) hematite veinlets in green tuff/crystal tuff units which give rock a pseudo-oreocia look 102.1 - 107.6	none except as noted below 59.7 - 60.1 3-5I py associated with Qtz-hematite, sericite vein 60.75 - 61.0 3-5I py associated with Qtz-chl vein	

HOLE NUMBER: H-10

JVA INC.  
DRILL HOLE RECORD

DATE: 1-December-1987

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CH	ALTERATION	MINERALISATION	REMARKS
		111.0m (veins)  END OF HOLE	50	10-15% carb veins  107.6 - 111.3 3-5% carb veins in green tuff unit		

HOLE NUMBER: H-10

DRILL HOLE RECORD

LOGGED BY: G.S. VALLS

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Sample	From (m)	To (m)	Length (m)	ASSAYS				COMMENTS
				Cu ppm	Zn ppm	As ppb	Ag ppm	
BCD6845	13.25	15.50	2.25			10		
BCD6846	15.50	17.40	1.90			5		
BCD6847	17.40	18.40	1.00			5		
BCD6848	18.40	20.20	1.80			5		
BCD6849	20.20	21.70	1.50			5		
BCD6850	21.70	23.40	1.70			5		
BCD6851	23.40	25.30	1.90			10		
BCD6852	25.30	26.80	1.50			30		
BCD6853	26.80	28.00	1.20			25		
BCD6854	28.00	29.50	1.50			10		
BCD6855	29.50	31.00	1.50			15		
BCD6856	31.00	32.50	1.50			10		
BCD6857	32.50	34.00	1.50			15		
BCD6858	34.00	35.50	1.50			5		
BCD6859	35.50	37.00	1.50			5		
BCD6860	37.00	38.50	1.50			10		
BCD6861	38.50	40.00	1.50			5		
BCD6862	40.00	41.50	1.50			435		
BCD6863	41.50	43.00	1.50			15		
BCD6864	43.00	44.50	1.50			20		
BCD6865	44.50	45.90	1.40			5		
BCD6866	45.90	47.50	1.60	220	360	10	1.5	
BCD6867	47.50	49.00	1.50			5		
BCD6868	49.00	50.50	1.50			10		
BCD6869	50.50	52.30	1.80			5		
BCD6870	59.70	60.10	0.40			45		
BCD6871	60.75	61.00	0.25			85		