ARIS SUMMARY SHEET

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District Geol	ogist, Nelson Off Confidential: 90.03.20
ASSESSMENT RE	PORT 18573 MINING DIVISION: Nelson
PROPERTY: LOCATION:	Whitewater LAT 49 23 00 LONG 117 26 00 UTM 11 5469941 468547 NTS 082F06W
CAMP:	004 Ymir - Nelson Area
CLAIM(S): OPERATOR(S): AUTHOR(S): REPORT YEAR: COMMODITIES SEARCHED FOR: KEYWORDS:	Snowwater 2 Snowwater Res. Murray, J.R.S. 1989, 59 Pages Gold Jurassic,Rossland Group,Metasediments,Metavolcanics Nelson intrusives,Quartz veins,Sulphides,Gold
WORK DONE: Dri DIA DIA SAM RELATED REOTS: MINFILE:	lling D 728.6 m 6 hole(s);NQ Map(s) - 1; Scale(s) - 1:2000 P 40 sample(s) ;AU,MO 05558 082FSW222

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	<u>Owner/Operator:</u> <u>Snowwater Re</u> <u>Box 850, Nel</u> <u>V1L 5A6.</u> A	esources. SSESSMENT P	ANCH PORT
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M.R. _____\$___ NELSON, B.C.

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<u>Author:</u>J. Murray, B.Sc. Nov. 20th, 1988.

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Table 1

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I. SUMMARY:

The property held by Snowwater Resources lies 16 km SW of Nelson, B.C. Well mineralized float and boulders were discovered in the vicinity in the late 1800's, and the property includes the old Whitewater Mine which has seen limited production in the past.

-1-

The property is underlain by Lower Jurassic Rossland group metasediments and metavolcanics, intruded by rocks of the Upper Jurassic Nelson Batholith. The intrusive contacts are altered, and silicified, and contain minor sulphides. Numerous lamprophyre, (and occasionally aplite), dikes, and guartz veins and stringers, (sometimes mineralized), transect the Intrusive rocks.

In the past large "float" boulders of quartz have yielded high gold values. Over the years considerable effort has been expended searching for the source of these boulders. Past work on known quartz veins has documented the presence of good gold values over significant widths. A small ore shipment was made to the Trail smelter in 1980.

Work conducted on the property over the years has included prospecting, trenching, diamond and percussion drilling, underground drifting, VLF-EM surveys, geochemical surveys, and geologic mapping.

Two targets exist on the property:

- a) the prime target is the source of the large, high grade, gold-bearing quartz boulders found along the creek; and
- b) the location of higher grade shoots within known gold-bearing veins which are open both along strike and down-dip, and the location of new veins.

The main thrust of exploration in recent years has been to locate the source of large mineralized float boulders that carrying good gold values, so far without success.

This report describes part of the 1988 exploration programme on the property. Further work on the property is warranted.



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II. INTRODUCTION: (Figure 1, Location)

The Whitewater gold prospect being explored by Snowwater Resources lies 16 km SW of Nelson at Lat 49° 23'N, Long 117° 26'W. in the Nelson Mining Division , in a cirque at the headwaters of Snowwater Creek, (sometimes known as Whitewater Creek). Snowwater Creek flows into Rover Creek, which drains northwestward into the Kootenay River near South Slocan. Access is via approx. 25 kms. of logging roads along the south bank of the Kootenay River, and then southward along Rover and Snowwater Creeks.

Topography is moderate to steep, ranging in elevation from 1460m to 2225 m. Vegetation is relatively dense hemlock, cedar, fir, and balsam, with recent clear-cut logging in the area. Outcrop is less than 25% with much of the surface covered by talus and deep glacial till, known to exceed 30 feet in depth in some locations.

The 1988 programme was planned and supervised by Mr. H. Zukowski, President of Snowwater Resources, and the author was asked to log and sample diamond drill core from this programme. Later in the year a request was made that the author prepare this report for assessment purposes. This report deals with the drill core logged by the author for Snowwater Resources Ltd. at their core shack in Nelson; the author has not visited the property.

-2-

III. CLAIM DATA:

Snowwater Resources owns a 100% interest in the property which is comprised of 2 Crown grants, fifteen Recorded Mineral claims, and six Mineral Leases:

Cf. Fig. 2, Fig. 3, Table 1, and Fig. 2A, (Index Map).

Table 1.

Claim Name	<u>Crown Grant No.</u>	Lot No.	District
Gold Coin	6712	15240	Kootenay
Floatstone	6713	15241	Kootenay

<u>Claim Name</u>	<u>No. of Units</u>	<u>Record No.</u>	Expiry
Siwash	1	(). ()	08.02.94
Roosevelt Fr.	1	936	08.02.94
Victory Fr.	-territoria	937	08.02.94
Virginia Fr.		938	08.02.94
Churchill Fr.	4	939	08.02.94
Ambassador Fr.	1	940	08.02.94
Veronica Fr.	4	941	08.02.94
Hyland Fr.	4	941	08.02.94
Silver #1 Fr.	1	2957	28.02.94
Silver #2 Fr.	- 1	2958	28.02.94
Snowwater 1	10	3670	21.03.89
Snowwater 2	16	3671	21.03.89
Snowwater 3	18	3672	21.03.89
Snowwater 4	4 200 5	4226	23.09.89
Snowwater 5	20	5017	08.04.89
Claim Name	Mineral Lease No.	lot No.	Fxnirv
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Whitewater Midas	M-121 M-121	529 3135	25.07.89 25.07.89

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M-121

M-122

M-131

M-153

Columbia Snowwater Stillwater Peter Fr.







IV. HISTORY:

In the late 1800's float boulders and quartz veins carrying high gold values were discovered in the area. By 1890 a 90 ft tunnel had been driven on a reported 6 ft wide mineralized quartz vein reported to average \$80/ton. Limited production from float and underground occurred in the interval between 1890-1930 with some 1200 tons milled, (recoveries unknown). A significant amount of trenching, drilling, and drifting was also done.

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The float boulders can be of impressive dimension; some as much as 17 tons in size have been noted. They carry gold in pyrite, galena, sphalerite, and chalcopyrite. B.C.D.M. Bull. 1, 1932, refers to one float specimen grading 7.06 oz/ton gold, and 37.6 oz/ton silver. Other samples from float boulders have graded 3.76, 1.76, and .37 ounces per ton of gold. Much effort has been expended over the years in attempts to locate the source of the high grade boulders, so far to little avail.

Samples of vein quartz from both underground, and surface, have returned gold values of .54 oz/ton, 4.08 oz/ton, .60 oz/ton, and 3.02 oz/ton. In 1943-44 a total of 2865 metres of diamond drilling was done in 19 holes.

In 1970 Scurry-Rainbow Oil Ltd. optioned the claims and conducted road construction, surface and underground mapping, trenching, and 1064 ft. of diamond drilling. (One hole is reported to have intersected 2.2 feet grading .26 oz/ton gold.)

In 1973 R.H. Seraphim collected 320 reconnaissance soil samples which outlined two elongated zinc anomalies, and several individual samples with gold values. In 1975 J.J. Barakso collected 19 reconnaissance chip and stream sediment samples.

In 1980 3 possible VLF-EM conductors were outlined, and a small shipment of 19.5 tons was made which returned .359 oz/ton gold and 0.6 oz/ton silver, with 87.2% silica.

Between 1980-83 Woodcrest Holdings, (Zukowski), built roads, trenched, did geochem surveys, and conducted limited percussion drilling, followed in late 83-84 by a new adit on a known quartz vein to test the vein at depth. (Note, this cross-cut was stopped short of the projected vein intersection). Percussion hole PD83-4 returned .108 Au over 5 ft., but to this author's knowledge it has not been followed up. In 1985 a VLF-EM survey was conducted, with a follow - up programme of percussion and diamond drilling. Percussion drilling of the VLF-EM anomalies returned one section reported to assay 1.488, and 1.296 oz /ton (check assay) in hole P85-17.

In 1985 Seraphim outlined 2 targets for further exploration:

a) locate source of float along Snowwater Creek;

b) explore known mineralized quartz veins.

To achieve this he recommended geologic, geophysical, and geochemical surveys, as well as more prospecting. Also he wanted more trenching, with results plotted. Contingent on results from this first phase he also suggested detailed trenching in the vicinity of clusters of float boulders, and on the trend of the known Whitewater vein system, with diamond drilling on veins and systems found in place.

In 1987 a total of 1070 metres of NQ size hole was diamond drilled in four holes to test the high-grade intersection obtained percussion drilling the VLF anomaly, and a 3050m programme of trenching, (and rehabilitation) was conducted, following Seraphim's recommendations, at a cost of \$116,180.

One of the 1987 holes was almost entirely in a propylitized granite according to Santos. He asserts that this type of alteration occurs in the wallrocks adjacent to the Whitewater vein. Trenching found float boulders in a more localized area, several with lamprophyre still attached. Santos obtained a chip sample from one of these float boulders which assayed 4.2 oz/ton gold, and 8.34 oz/ton silver.

Santos, (1987), recommended a 2 phase programme aimed at more drilling for the float source, and to define ore mineralization within the known Whitewater vein, at a total cost of \$770,000.

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V. Geology

A. Regional

Little, (GSC mem 308. map 1090A), shows the area to be underlain by (possibly Jurassic age Hall Formation ?) metasediments - argillites, argillaceous quartzites, conglomerates and minor pyroclastics - in contact with Lower Jurassic Rossland Formation volcanics and metavolcanics, all intruded by granites, granodiorites, and diorites of the Upper Jurassic/Lower Cretaceous Nelson Batholith.

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Along the contact of the intrusive schistose metasediments and metavolcanics have formed, locally with abundant chlorite, epidote, and calcite. Later lamprophyre dykes, aplites, pegmatites and guartz veins intrude both the intrusive rocks, and the altered metasediments, and metavolcanics.

B. Detail

Mulligan's 1952 mapping of the area shows the property to cover volcanics, (andesites), of the Elise member of the Jurassic Rossland Formation: and Jurassic age slates, argillites, and argillaceous quartzites of the Hall Formation, both units being intruded by Nelson Batholith granites, granodiorites, and diorites.

The Nelson Intrusive here takes the form of a medium grained, coarsely foliated, equigranular granite/granodiorite, along whose contacts propylitization, (and sericitization), has produced schistose metavolcanics, and metasediments. Similar alteration assemblages are found in the wall rocks adjacent to the veins.

Trenching along the intrusive/volcanic contact has shown that the contact is silicified, and contains minor disseminated sulphides. Younger pegmatite, aplite, rhyolite, and lamprophyre dikes are also known to occur, including one lamprophyre dike that transects the quartz vein.

Two sets of faulting were noted on the property by Seraphim. The predominent set trends 030°-040°, is subparallel to some of the mineralized vein segments, and transects all units. The second trends 150° -180° and seems to parallel the lamprophyre dikes which intrude the granitic rocks. Quartz veins in the area tend to strike E-W to NE-SW, with a southerly or southeasterly dip. The old Whitewater workings developed a quartz vein in granodiorite striking 040° and dipping 60° SE.

The 1987 trenching uncovered at least one previously unknown narrow quartz vein striking 040°, and dipping 60° SW.

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The search for the source of the mineralized float boulders has been tantalizing, but difficult. The 1987 trenching programme was hampered by the depths of overburden. Even at higher elevations trenching reached bedrock only 50% of the time. At higher elevations glacial debris was found to be 3.6-4.5m thick, whereas at lower elevations overburden is 6.4-6.7 m thick, (sometimes more).

Many of the boulders are angular, occurring in the creek channel, and along its sides, and usually lying on top of cemented gravel or hardpan. They are generally quartz, sometimes with intrusive wall rock, and they do not appear to have been subjected to much movement. The boulders uncovered in the 1987 trenching programme were buried deep in the glacial debris section, also suggesting limited movement. Their size and angularity suggest close proximity to their source, which J.W. Mulholland, (1948), suggested may be a N-S striking quartz vein on the west side of, and parallel to, a wide lamprophyre dike, (strike 010°).

Mineralized quartz veins occur in place down the cirque from the float.

A N-S striking quartz vein along trend of creek has been suggested by J.W. Mulholland as possibly the source of the float. A wide lamprophyre dike strikes sub-parallel to this vein.

For a more complete summary of results of 1987 trenching please refer to Santos' report. For more complete descriptions of previous work please refer to Seraphim's reports.

C. Mineralization.

The mineralized quartz veins are fissure fillings, occasionally containing "stoped" fragments of country rock. For the most part, they are found within the intrusive rocks, although some are reported to be hosted by Rossland Formation chloritic schists and argillites.

The mineralization consists of pyrite, with minor galena, sphalerite, and molybdenite in quartz veins, mainly within the intrusive. The pyrite occurs as vug fillings, and clusters, with minor galena and sphalerite at irregular intervals, and as fine disseminations. Gold association appears to be with the pyrite. (Seraphim). Native gold has been reported with the pyrite.

Molybdenite may be present with some quartz veins, and may also be associated with both lamprophyre and pegmatite dikes.

Past work on the known veins has documented the prescence of high gold values over significant widths, (up to 1.7m). For a more complete summary of previous sampling results please refer to Seraphim's 1985 and 1986 reports, and to Santos' 1987 report. Seraphim concluded that the high grade values were erratically distributed, within a widespread, low - grade mineralization within the quartz veining.

The float boulders, whose source is as yet unknown, contain spectacular gold mineralization, better than that seen in veins in place.

VI. 1988 PROGRAMME. (Cf. Fig. 4)

More than 900 m of NQ core was drilled in 1988, of which this author logged 729 m, all from the east side of the creek.

SN 88 - 01 was drilled to a depth of 150.87m at -45°, on an azimuth of 035°. It encountered bedrock at 17.67m, where it entered a typical granite/granodiorite with pervasive epidote and chlorite, and minor sulphides, (especially on slip surfaces). It also contains numerous lamprophyre dikes, and occasional guartz stringers and zones of alteration. Sulphides include sphalerite, pyrite, magnetite, and pyrrhotite. A major structure was intersected between 50.1 - 51.8m, and between 34.76 - 36.4m, and again between 115.8 - 116.9m a very fine-grained, dark, well mineralized volcanic rock, (lamprophyre?), was encountered.

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SN 88 – 02 was drilled 140.82m at – 45° on azimuth 035°. It entered bedrock at 8.23m, and passed through granodiorite/ quartz diorite for the first 90m, then granite to the Foot of Hole. A 5.2m segment of Intrusive breccia was intersected at 59.25 - 64.45m, (probably a lamprophyre dike), which may represent a major fracture zone. The quartz diorite is quite mafic, and somewhat altered and carbonatized, with abundant chloritic slips. Texture is porphyritic. A possible structure occurs at 42.5 - 43.5m, and again at 68 - 68.5m where broken and ground core, mud and gouge are logged. Mafic content increases with depth. Several volcanic, (lamprophyre?), dikes are present, as are some aplitic dikes near 80m.

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SN 88 - 03 was drilled -60° to a depth of 160m, on an azimuth of 035°. Only four boxes, (numbers 6,7,8, & 20), of this hole were logged. They contain a generally unremarkable granodiorite, with some fracturing, and occasional quartz seams, and disseminated sulphides. Some of the fractures display strong bleaching and brecciation. Some garnet may be present.

SN 88 - 07 was drilled 168.5m at -45°, on an azimuth of 310°. Overburden was 4.57m deep. The first 6.2m drilled was in a porphyritic andesite, with minor pyrite, some epidote, and chloritic slips. At 10.8m the hole entered a medium to coarse grained, altered, epidotized granodiorite. Occasional mineralized white quartz veins, lamprophyre dikes, and disseminated pyrite are present. An aplite dike at 34.45m crosscuts the core at 85°. Deeper in the hole, the mafic content of the granodiorite increases, and the the rock is still chloritized, and epidotized. Minor sericite appears to be present. At 38.1m a tight, strong, heavily pyritized fault is intersected at 85°. (In places this granodiorite is quite well mineralized.) At 83m molybdenite is found with a narrow quartz stringer.

Between 86.87 - 101.1m is a dark, fine-grained, sparsely pyritized, volcanic, (andesitic), porphyry. 101 - 137 is essentially granodiorite with altered and epidotized zones, with occasional garnet, well pyritized with numerous fracture zones. From 137-FOH altered granodiorite is intermixed with volcanic porphyry, (characterized by a deep reddish-scarlet mineral).

SN 88 - 08 was drilled 68.9m at -70° on azimuth 310°. Only 6.05m of this hole were logged. From 27.3 - 33.35m this hole passed through somewhat altered, epidotized, porphyritic granodiorite, and a felsic volcanic unit with 5 - 6% pyrite, pyrrhotite, and minor chalcopyrite. (This felsic unit is "good-looking".) SN 88 – 09 was drilled 238m on an azimuth of 035°, and a dip of -45° . Bedrock was encountered at 7.62m, followed by a generally unremarkable granodiorite. A probable fault, (with lamprophyre), was intersected about 14m. The granodiorite has occasional bleached, altered, and epidotized zones. A strong structure was intersected at 39m, followed by several strong fractures. Another major structure was intersected at 53m. Bleaching is common. Minor sulphides are present, including pyrite, magnetite, pyrrhotite, and possibly sphalerite. Between 96 – 98m another strong structure was encountered, and from 119 – 122m a highly altered zone of "rotten" lamprophyre and granodiorite, bleached, leached, and with mud seams, was intersected. This also appears to be a significant structure, with considerable broken and lost core. From 122m on the core is altered granodiorite with andesite dikes. The andesites contain 1 – 2% disseminated pyrite.

Total core logged was 728.62 metres, (2390 feet).

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VII. CONCLUSIONS:

The source of the auriferous boulders is a prime target on the property as a consequence of their high gold values, and the large size and frequency of the boulders. More trenching, and more drilling is warranted.

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The geologic setting is favourable, with metasediments and metavolcanics intruded by the Nelson Batholith, itself intruded by various dikes, and veins. Alteration within the Intrusive is common, (especially near dikes and fault structures), and low-grade mineralization is widespread. Mineralization seems to be more prevalent in the vicinity of volcanic units.

All of the drill core logged showed evidence of alteration of varying degree, especially hole SN 88 - 07, which appeared to be the most favourable of the holes logged in terms of alteration and structure.

Preparation of a geologic map is recommended in order to record and document current knowledge of the property, and to guide future activity. Lack of outcrop on the property is a real problem, but by now a very considerable amount of geologic data is available in drill core. Logging and plotting of all holes would permit a more complete understanding of alteration and structural patterns. All available geologic data should be recorded.

VIII. REFERENCES:

- 1. Report on the Whitewater Property, R.H. Seraphim, Ph.D., P.Eng., 1985.
- 2. H.Zukowski, Personal communication
- 3. GSC Mem. 308, Nelson Map Area, W. Half, H.W. Little Map 1090A.
- 4. Snowwater Gold Prospect, J.J. Barakso, 1975.
- 5. BCDM MMAR 1953, pp114
- 6. BCDMBull. No.1, 1932, pp. 101
- 7. GSC Paper 52-13, Map 52-13A; R. Mulligan, 1952.
- 8. Report on Whitewater Property; P.J. Santos, 1987.
- Report on the Whitewater Property, R.H. Seraphim, Ph.D., P. Eng., 1986.
- GSC O.F. 1195, Preliminary Geologic Map of the Nelson Map Area, H.W.Little, 1971.



SNOWWATER RESOURCES LTD.

STATEMENT OF EXPENSES.

Drill Pads, Access Roads, Set-ups, and Moves:

D-6 Cat, 361 hours @ \$76.50/hour \$27,616.50 (April 11/88 - Nov.30/88)

Drilling

2390 feet	@ \$17.50/fc	ot .	 41.	825.00
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Geologist

Core Logging	100.00
Report	550.00
Computer rental	132.00
Expenses	51.58
\$71,	275.08

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STATEMENT OF QUALIFICATIONS

J. MURRAY,

519 W. Innes, Nelson, B.C., V1L 3J2.

- I am a graduate Mining Technician of Haileybury School of Mines.
- 2. I am a graduate B.Sc. (Geology), University of Manitoba, 1974.
- 3. I practice as a geologist at the above address.
- 4. I have practiced as a geologist continuously since 1974, having worked in Manitoba, Saskatchewan, Ontario, and British Columbia for a number of large and small companies, including INCO Metals and LAC Minerals.
- 5. I have based this report on the references listed, and on personal observation of the drill core.
- I have no interests in any of the properties described, nor in any within 10 kilometres of the property.
- 7. My sole remuneration is the professional fee charged for this report.
- 8. I have not, (nor do I expect to have), any interest in the company.
- 10. I hereby consent to the use of this report, in its entirety, by Snowwater Resources in a prospectus, SMF, or Gualifying report. Written permission must be obtained before release of any quotation or summary.

J. Murray. date: March 03, 1989.



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212 BROOKSBANK AVE., NORTH VANCOUVER, BRITISH COLUMBIA, CANADA V7J-2C1 PHONE (604) 984-4221 OWWATER RESOURCES

P.O. BOX 850 NELSON, B.C. VIL 5A6 Project : WHITEWATER Comments: ATTN: N. ZUKOWSKI

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CERTIFICATE OF ANALYSIS A8816980

SAMPLE DESCRIPTION	PRE COD	P E	Au oz/T RUSH						ļ
121601 H 121602 H 121603 H 121603 H 121604 H 121605 H	236 236 236 236 236 236		< 0.002 < 0.002 < 0.002 0.004 0.004					 	-
21606 H 21607 H	236 236		< 0.002 0.002						
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	COMP	ANY: Snowwater Resou	irces				Hole No.:	SN 88-01
	Proj	ect: Whitewater	Elevation:	Remarks:			Dip Tests	
	Sect	ion:	Depth: 150.87	Drilled A	April 11-15	88		an an tha an an tha far an tair. Tha an tha tha an tair an tair
	Loca	tion:	Dip: -45 ⁰					
	Nort	hing: 0 + 50S	Core Size: NQ					
	East	ing: 0 + 35E	Purpose:	Logged				
	Azim	uth: 035 ⁰		June 7, 1	L988 J. Mu	rray		
From (m)	T0 (m)		DESCRIPTION		From To (m) (n	CO Tot:)	REal Sample No.	Ozs.
0.0	17.67	CASING						
	~ . ~ ~							
1/.6/	34.90	GRANODIORITE	ular medium to coarse grai	nod Pervacivo				
		epidote and chlorit	Minor sulphide mineraliza	tion. especialv				
		on slip surfaces -	ovrite, pyrrhotite. Numerous	fine, tight,				
		healed fractures, g	ceenish alteration. Numerous	lamprophyre				
		dikes, dikelets (ge	nerally fine-grained).					
		20.15 - bullis	n, 2 1/2 cm, white quartz st	ringer.				
		20.45 - 20.80	Lamp dike @ 30 ⁰ .					
		21.15 - Minera	lized chloritic slip @ 35 ⁰ ,	(pyrite, pyrrhoti	ite).			
		24.15 - Thin t	ight healed fractures with g	uartz and minor s	sulps.			
		26.25 - <u>Strong</u>	<u>chlorit</u> ic slip @ 35° with m	inor sulps and wh	nite			
		quartz						
		27.70 - 28.10	Lamp dike running down core.	· · · · · · · · · · · · · · · · · · ·				
		30.80 - 31.10	Snearing:/ Iaulting: @ 20°. H	roken and ground	core			
		Rusty	tracture, chloritic slip sur	Jace 020 . 0. NP tight heal	1 - 4			
		34.80 = BUILIS	i white quartz stringers 035	martz voin	rea,			
		epidor	= 1111eu 11actures transect	fractures and fra	acture			
	and and a second se		ing are younger than guartz	Harver And IIC				
			ing are younger than quarts.	X				
					<u> </u>			
				fracto	J S ⇔ S,			1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -

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<u>COMPANY:</u> Snowwater

Hole No.: SN 88 - 01

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From (m)	To (m)	DESCRIPTION	From (m)	то (m)	CORE- Total	Sample No.	0zs.	
34.90	36.40	<u>VOLCANIC</u> Dark, gray-black, very fine grained. Segment in centre has a a coarser grain. Resembles lamprophyre. Core surface displays a distinctive mottled appearance; broken surface shows very fine grained texture with perhaps 10% well disseminated pyrite. Rare thin carbonate stringer. Units can be scratched by knife.						
36.40	63.00	<pre>GRANODIORITE As at 17.67: medium to coarse grained, light gray,epidotized, chloritized, common tight healed fractures, occasional quartz stringer. As at 36.70(-@40⁰), & at 39.80(-@35⁰). - 38.65 a tight slip @ 35⁰ with chlorite & quartz. Minor disseminated sulphides, <1% (occasional anhydrite coated slip?). - 45.7 quartz stringer @ 50% Rare mafic sub-rounded/sub-angular xenoliths as @ 46.70.</pre>						
		50.10 - 51.80 Broken, ground and lost core, likely a major structure in here. White carbonate, strong chlorite slip @ 20 ⁰ .						
		51.80 - 52.40 Dark green black <u>lamprophyre</u> , trailing contact @ 60 ⁰ . Very mottled appearance. Disseminated pyrite. Dark mi with lighter coloured altered rims.	nerals	3				
		53.34 - Thin lamp dikelet, followed by "feathery" chlorite? in granodiorite.						
		59.00 - 59.60 Bullish white quartz stringer with black magnetite.						
		$60 - 4$ cm wide quartz vein @ 20^0 .						

					CORE-			
From (m)	T0 (m)	DESCRIPTION	From (m)	To (m)	Total	Sample No.	Ozs.	
63.00		<u>GRANODIORITE</u> (As @ 36.40 - 63.00) Light grey, medium-grained, equigranular, epidotized. Common tight healed microfractures, occasional quartz veinlet, stringer.						
		64.1 - a narrow <u>mineralized quartz</u> stringer @ 15 ⁰ pyrite, pyrrhotite, highly altered (chloritized) also a hard, light brown mineral.						
		65.2 - 66.05 Dark green and black lamprophyre (with an included .25m granodiorite in between).						
		67.0 - a thin quartz filled fracture @ 45 ⁰ with pyrite						
		68.25 - Tight healed fracture, greenish alteration $@30^{\circ}$.						
		Box 10 to 74.7: as above. Occasional dark mafic inclusions? Numerous chlorite slips, epidote rims around biotites. Numer tight, healed fractures, occasional pyrite.	rous					
		Box 11 to 80.5 as above.						
		75.2 - 78.4 pinkish granite.						
		75.5 - @ 4cm <u>healed fracture zone</u> @ 80 ⁰ light grey cement, altd, chlorite fractures @ 55 ⁰ .						
		Box 12 to 86.3 Light grey granite as above, occasional pink cast, occasional epidote? filled tight healed (greenish mineral) fractures @ 40 ⁰ .	ish					
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				CORE-		
From To (m) (m)	DESCRIPTION	From (m)	To (m)	Total	Sample No.	Ozs.
	80.5 a strong fracture @ 40 ⁰ , with quartz veinlet. Some green and brown alteration. Very narrow - 1 cm width unremarkable box.					
	Box 13 to 91.8: as above. Occasional stringer of bullish we quartz 0.50° .	nite				
	88.6 - 2 cm wide dekelet light - medium grey, fine-gram material.	ined				
	91.0 - 91.3 - a dark altered segment with pyrite, epide	ote.				
	Box 14 to 97.3 Granodiorite as above; box has several segments with strongly pink - orange orthoclase generally around healed fractures; occasional quartz veinlet, epidote	e.				
	97.0 - 0.10 m altered dark grey segment heavily epidotized. Bullish white quartz with pyrite & sphalerite.					
	Box 15 to 102.9 : pink "cast" segment ends approximately 97.8. Beyond it is medium to coarse-grained equigranular granodiorite with occasional thin (1cm wide) bullish white quartz veinlets. Also occasional 1/2 cm wide greenish overprints in a criss-cross pattern: X (epidote))				
	98.8 99.06: An altered quartz-rich zone. Magnetite, sphalerite. Minor pyrite Box 16 to 108.7: more "tomb-stone granite"! Unremarkable Box. Box 17 to 114.3: as above					
	110.9 - a tight, healed, well mineralized fracture $@40^0$					

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COMPANY: Snowwater

From (m)	T0 (m)	DESCRIPTION	From (m)	TO (m)	CORE- Total	Sample No.	Ozs.	
	1	Box 18 to 120.5: as above.						
		- 115.8 - 116.9 Lamprophyre? dark grey-black, fine grained, abundant black biotites on broken surface. NB: Leading contact @ 42 ⁰ (<u>resembles volcanic</u>). Minor sulphide (disseminated).						
	1	Box 19 to 126.2: "Tombstone Granite" as above. Occasional thin quartz vein, and greenish altered zone unremarkable.						
		122.2 - 122.3 - Lamprophyre dikelet: black fine-grained.						
	1	Box 20 to 132.0 as above, unremarkable.						
	1	Box 21 to 137.9 as above, occasional pyrite.						
		Box 22 to 142.7 as above Note 137.8 to 140.20 a bleached and altered zone (with a darker segment in the middle). Zone ends with a quartz veinl and fracture @ 45 ⁰ .	et					
		138.68 - some broken and ground core minor carbonate. A structure?						
] 	Box 23 to 149.4 "Tombstone Granite" as above. Some dark blotches generally unremarkable.						
	1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	Box 24 to 150.88 as above						
150.88	8	END OF HOLE						

	COMP	ANY: Snowwa	ter Resou	rces				E	lole No.:	SN 88 02
	Proj	ect: Whitew	ater	Elevation:	Remarks	:		ľ)ip Tests	ана В С ерци Серци -
	Sect	ion:		Depth: 140.82						
	Loca	tion:		Dip: - 45 ⁰						
	Nort	:hing:		Core Size: NQ						
	East	ing:		Purpose:	Logged	by : J.	Murray			
	Azim	uth: 035 ⁰			June 25	/88 Bega	n Loggi:	ng		
From (m)	To (m)			-DESCRIPTION		From (m)	T0 (m)	CORE- Total	Sample No.	Ozs.
00 8.	23	<u>COLLAR</u> broken & los altered fine	t core. s grained b	Short segment of highly rock.						
0.23 11	.30	light grey, altered zone	medium gra s, unremai	ained, epidotized, some rkable.						
11.30 1	7.30	<u>QUARTZ DIORI</u> dark grey, m is almost po	<u>TE</u> edium gra: rphyritic	ined, in places texture . Up to 40% mafics (esp. b	viotites).					
		14.40 - 15.0 - trailin	light gra strong cl g contact	anodiorite dikelet @ 20 ⁰ . hloritic slips @ 30 ⁰ - no : gradual.	distinct					
17.30 2	2.3	<u>GRANODIORITE</u> light grey, sulphides. <u>Strong chlor</u> (35. ⁰) & 20.	medium to To about : itic slip: 4. Lamproj	coarse grained: 1- 2% 20 several segments are qu <u>s</u> @ 19.45 (50 ⁰)& especiall phyre dikelets @ 18.7 & 19	ite pink y @ 20.1 .0 @70 ⁰ .					
		21.0 -	Calcite st	tringer along fracture @ 4	00					

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Hole No.:SN 88 02

COMPANY: Sno	owwater			E	Iole No.:	SN 88 02
From To (m) (m)	DESCRIPTION	From (m)	T0 (m)	CORE- Total	Sample No.	0zs.
22.3 59.25	<u>QUARTZ DIORITE</u> as @ 11.30 Dark grey, medium-fine-grained, somewhat "rotten": lots of chloritic slips. Segment is quite altered near leading contact, chloritized & carbonated. Texture occasionally somewhat porphyritic. Occasional epidote(?).					
	26.5 - 27.1 Strong Chloritic Slip running down core.					
	29.40 narrow (2 cm) felsic dikelet @ 40 ⁰ . White with occasional flecks of biotite: salt and pepper appearance.					
	33.5 - 33.6 dikelet of lighter phase of same material, with chloritic slips.					
	37.70 - 38.10 dike of lighter colored phase. Coarse grained. Well developed biotite books. Poss xenoliths of darker mater	rials.				
	Becoming more epidotized deeper in hole (near 41).					
	41.0 - 41.4 series of chloritic slips.					
	42.5 - 43.5 series of chloritic slips some very strong. <u>Possible</u> <u>structure</u> ?					
	44 - 45.14 lost and broken core. Heavily chloritized slips generally @ large angles to core).					
	45.20 Chlorite slips @ 20 ⁰					
	45.25 - 46.40 lighter coloured phase: dike. Leading contact is not too distinct; trailing contact @ 25 ⁰ . On broken surface granitic texture is apparent with large and small black minerals, mainly biotite, making up perhaps 25% of roo Minor sulphide.	t ck.				

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<u>COMPANY:</u> Snowwater

				CORE-		
From To (m) (m)	DESCRIPTION	From (m)	T0 (m)	Total	Sample No.	Ozs.
	47.24 - Aplite dike @ 45 ⁰ 5 cm wide.		n de la constante de la constan En constante de la constante de			
	51 - a narrow bleached zone with chloritic slips, minor qtz stringer.					
	52.7 - <u>talcose slip</u> @ 45 ⁰ .					
	54.4 - 54.54 volcanic dikelet; black very fine-grained; soft scratches with a knife - numerous chloritic slips. Core is becoming more biotite-rich as the hole deepens. Now probably 55 - 60% biotite & mafics, 35 - 40% quartz.					
	58.0 - chloritic fracture @ 25 ⁰ .					
	59.25 - chloritic fracture @ 45 ⁰ .					
59.25 64.45	<u>INTRUSIVE BRECCIA:</u> dark black, fine grained, biotite rich, (resembles a lamprophyre in places). Flecks and stringers of white carbonate. Common brecciation. Rare sulphide.					
	62.30 strong fracture @ 25 ⁰ ; chloritic, somewhat bleached. Bx fragments are biotite rich compared to matrix.					
64.45 89.50	<u>QUARTZ DIORITE</u> as @ 22.3: dark grey-black medium to coarse-grained, numerous chloritic slips. Somewhat "rotten". Flecks white carbonate. Broken core near segment beginning.					
	68-68.5 <u>broken and ground core, mud, gouge: Possible</u> structure.					

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COMPANY: Snowwater

				CORE-			
rom To (m) (m)	DESCRIPTION	From (m)	T0 (m)	Total	Sample No.	Ozs.	
	71.10 - 71.40 volcanic dike @ 60 ⁰ . Dark, very fine-grained, homogeneous (possible lamprophyre dike?).						
	71.80 - STRONG CHLORITIC SLIP @ 30 ⁰ . Core is becoming finer grained, less "rotten", less mafic.						
	74.7 74.90 dike @ 75 ⁰ . Black, very fine-grained; small biotites(?) in an aphanitic matrix. Minor sulps. Quartz veinlets with pyrite on contacts.						
	77.0 - thin mud seam @ 65 ⁰ .				с. С		
	77 - 77.5 thin dikelets of material as @ 74.7.						
	After 78 core becomes more mafic again, with numerous large biotites.						
	79.9 - 80.1 Aplite dike: white with acicular flecks of biotite; one larger xenolith of quartz diorite in centre	e.					
	80.4 - 80.6 Aplite dike. Minor sulphides. Around 82.0 core is quite "rotten". Also indistinct (relatively) seams of white quartz.						
	83 - 86: Occasional chloritic slips @ 35 ⁰ .						
	Box 14 (83 - 88) is quite unremarkable.						
	87.65: strong chloritic slip at 30 ⁰ . Strong chloritic slip running down core. Still dark, medium grained.						
	Trailing contact @ 30 ⁰						

Erom To		From	 То	Total	Sample	079
(m) (m)		(m)	(m)	IUCAI	No.	025.
89.50 92.25	<u>TRANSITION ZONE</u> GRANITE - medium to coarse-grained, pink feldspar, grey-pink "cast", equigranular - Segment has several lengths of previous unit.					
92.25 105.20	<u>GRANITE:</u> grey-white-(pink) medium to coarse-grained, equigranular, (occasional large pink feldspars) occasional large xenolith of above.					
	94.3 segment here is quite pink.					
	96.8 - 96.9 carbonate seams perpendicular to core.					
	100.0 - strong fracture $@ 30^0$.					
	102 - bleached zone 0.1m wide, 30^0 .					
105.2 108.1	<u>QUARTZ DIORITE</u> - dark grey to black, (with flecks of white), medium grained, biotite rich. As @ 64.45. Segment has xenoliths of white-grey granodioritic material.					
108.10 140.82	<u>GRANITE</u> light grey-pink, medium to coarse grained, equigranular, quite homogeneous. Occasional xenolith of mafic material. Unremarkable "tombstone" granite.	2				
	109.50 a narrow, 6 cm altered zone, @ 40 ⁰ with a tight heal slip in middle.	.ed				
	113.3 - 113.5 more pink, healed fracture running down core.					
	114.55 - slip $@45^0$ some carbonate.					

				CORE-			
From To (m) (m)	DESCRIPTION	From (m)	TO (m)	Total	Sample No.	Ozs.	
	115.7 - <u>Strong slip</u> @ 50 ⁰ .						
	118.5 - 118.8 a narrow dike $@ 20^{0}$ of more mafic material, with a mottled appearance.						
	118.9 - STRONG CHLORITIC SLIP $@ 60^{\circ}$. Thin quartz stringer. No sulps.						
	133.0 - thin wedge (almost a disk) of black, fine-grained material.						
	133.9 fractures @ 25 ⁰ .						
	135.3 - 135.5: <u>VOLCANIC</u> dike-black, very fine grained, homogeneous, soft-scratches with a knife. At 90° .						

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Page No.:Box 6 & 7

<u>COMPANY:</u> Snowwater

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From (m)	To (m)	From (m)	T0 (m)	CORE- Total	Sample No.	Ozs.
		G <u>RANODIORITE</u> banded appearance - generally medium to dark grey, medium grained with white bleached bands. Disseminated pyrite. Numerous chloritic slips (always in bleached segments).					
		46.4 - 46.9 A faulted segment	46.25	47.2	0.95	121637	.002
		46.6 - 46.7 <u>brecciated gouge</u> material @ 55 ⁰ .					
		Occasional quartz seams, veinlets, dark grey, especially 47.9 a 3 cm quartz vein @ 25 ⁰ between chloritic slips @ 60 ⁰ .	47.7	48.5	0.80	121638	.002
		47.8 - 48.5 fractured zone, pink feldspars.					
		52.65 STRONG CHLORITIC SLIP @ 35 ⁰ , highly bleached, brecciated.					
		53.80 - CHLORITIC SLIP $@ 60^0$ (narrow bleached zone).					
		56-57.2 highly bleached and brecciated zone, especially brecciation @ 56.24 @ 50° .	56.0	57.2	1.2	121639	.002
		58.0 - 58.8 bleached, altered "cloudy" texture, abundant red-brown mineral (garnet?) occasionally rusted, pyritized.					

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Hole No.:SN-88-3

					CORE-			
From	То	DESCRIPTION	From	То	Total	Sample	Ozs.	
(m)	(m)		(m)	(m)		No.		

Between 59-60.5 core is chasing a thin healed fracture. Some cloudy alteration with occasional brown mineral (garnet?) and sulps. Occasional mafic xenolith.

62.5: narrow altered segment and brown mineral and sulps.

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<u>COMPANY:</u> Snowwater

Hole No.:SN-88-03

_			CORE
(m)	TO (m)	DESCRIPTION	From To Total Sample Ozs. (m) (m) No.

<u>LAMPROPHYRE</u> black, medium to coarse-grained. Very soft, "rotten". Ubiquitous rounded grains of carbonate (and plagioclase), narrow stringers @ 30⁰, leached. Very biotite rich.

<u>Com</u> :	PANY: Snowwater Reson	urces				Hole No ·SN-88-07		
Pro	ject: Whitewater	Elevation:	Remarks:		Alam (1997) Alam (1997) - Alam (1997)	Dip Tests.		
Sect	tion:	Depth:						
Loci	ation:	Dip: -45 ⁰						
Nort	thing: 100 S	Core Size: NQ	에는 것이 있는 것이 있는 것이다. 같은 것이 같은 것은 것이 있는 것이 같은 것이 같이 있는 것이 있는 것이 없는 것이 있는 것이 있는 것이 있는 것이 같은 것이 같은 것이 같은 것이 같은 것이 같이 있는 것이 같이 있는 것이 없는 것					
East	ting: 300 E	Purpose:	Logged: J. N	lurray				
Azir	muth: 310 ⁰		11 June/88; 12 June, 22 June					
from To (m) (m)		DESCRIPTION	Fr (11	om To .) (m)	CORE- Total	Sample Ozs. No.		
0.0 4.57	CASING		in the second second Second second					
4.57 10.8	<u>PORPHYRITIC ANDESIT</u> dark grey - black w fine grained, dark collar. Good recov	<u>TE</u> with white flecks (plagiocla matrix. Minor pyrite. Some very, Occasional chlorite sl	se) in a very epidote near ips 25 - 30 ⁰ .					
L0.8 23.30	<u>GRANODIORITE</u> medium to coarse gr seams epidote @ 55 ⁰ porphyry 11.10 - 11 in this segment.	ained, equigranular, epidot . Leading edge @ 25 ⁰ Anothe .60 with broken and lost co	ized, occasional r tongue of re, and mud seams					
	14.45 - 14.55	white quartz veinlet @ righ	t angles to core.					
	14.00 rusting	chloritic slip @ 10 ⁰ .						
	17.30 - a narr boundaries mor	ow zone of alteration finer e indistinct.	grained, grain					

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COMPANY: Snowwater

From To (m) (m)	DESCRIPTION	From (m)	T0 (m)	CORE- Total	Sample No.	Ozs.
	18.25 - 18.5 LAMPROPHYRE dark black, biotite rich, rusty brown fragments, broken core.					
	19.30 - 19.8 broken core, rusty brown LAMPROPHYRE.					
	20.8 - strongly epidotized seams @ 55 ⁰ .					
	From 21 on there is increasing light green epidoization.					
	22.25 - 22.86 mostly missing core.					
23.30 24.15	<u>ALTERED GRANODIORITE</u> light grey, fine grained, more indistinct grain boundaries 10-15% disseminated pyrite.	22.30	24	4.15 1.85	12160	L .002
	23.43 - 23.46, 23.90 - 23.96; mineralized white quartz veins @ 45 ⁰ , vuggy with rusty brown fractures and clots of pyrite.					
24.15 34.45	<u>GRANODIORITE</u> medium to coarse grained light grey as @ 10.80. Epidotized.					
	27.04 - 27.2 brownish- <u>white</u> massive quartz. Occasional rusty-brown fractures @ low angles to core. Rare black inclusions, xenoliths, occasional blebs; seams of pyrite in granite groundmass. Epidote common, especial in narrow zones almost @ right angles to core.	ly				
	29.60 - Barren milky white quartz stringer @ 90 ⁰ .					
	29.85 -tight healed fracture, epidotized and mineralized					

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COMPANY: Snowwater

				CORE				
From (m)	T0 (m)	DESCRIPTION	From (m)	То (m)	Total	Sample No.	Ozs.	
34.45	35.05	<u>APLITE</u> Light pink and white, massive, minor acicular mafics. Rare pyrite. Leading edge @ 85 ⁰ . Ditto trailing edge, some feldspar: resembles pegmatite. (fine grained for a pegmatite!)	34.30	35.05	0.75	121602	.002	
35.05	41.90	<u>GRANODIORITE</u> as at 24.15: proportion of mafics is increasing, coarse grained. Some chloritization, epidotization. (Minor sericite)						
		35.27 - 35.37, also 36.05 - 36.15 pink - white quartz stringers @ 80 ⁰ to core, as at 34.45.						
		37.70 - 38.4: section has rusty fracture down core, some alteration. At 38.10 strong, tight <u>fault</u> heavily pyritized at 85 ⁰ . Up to 8% pyrite. At 38.35 narrow barren white quartz vein.	37.70	38.50	0.80	121603	.002	
41.90	43.75	<u>GRANODIORITE</u> rotten, rusty brown, fractured.						
43.75	44.80	<u>GRANODIORITE</u> granitic, medium grained equigranular texture. Medium to dark grey, altered. More indistinct grain boundaries, siliceous. well mineralized (up to 6-8% pyrite), with white quartz stringers.	43.75	44.80	1.05	121604	.004	
44.80	86.87	<u>GRANODIORITE</u> medium-grey, medium to coarse grained, often heavily epidotized. Several phases with subtle alteration, finer grain and (more) indistinct grain boundaries - these zones have up to 6 - 8% pyrite. As at: 46.8 - 47.7 (this						
		segment also has some vein gtz) & at 48.0-48.2, 50.65-51.0	46.8	47.7		121605	.002	

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<u>COMPANY:</u> Snowwater

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From To (m) (m)	DESCRIPTION	From (m)	To (m)	Total	Sample No.	Ozs.
	50.29 - 51.0 epidote, pyrite and numerous thin microfracture in ordinary looking granodorite.	es				
	51.20 - 52.0 minor alteration, increased pyrite and an inclusion of dark grey material with porphyritic textures.					
	52.6 - 53.34 a more altered, fine grained zone with a stress appearance and vein quartz at 53.0 up to 10% pyrite, also blebby quartz.	sed 52.	6 5	3.34	121606	.002
	Box 10: 55 onward: unremarkable occasional thin whole quart stringer $(80 - 90^{\circ})$. Perhaps 1 - 2% widely disseminated pyr	z ite.				
	Box 11 61.9 - 62% A thin <u>VOLCANIC?</u> dikelet @ 5% and disseminated pyrite and quartz stringers and blebs.	61.	9 6	2.7	121607	.002
	63.0 - 63.3 minor quartz stringers and alteration with increased pyrite. (Possible later assay?)					
	64.0 thin quartz stringer, epidote, pyrite. Also fine graine and altered.	ed				
	64.85 - 64.95 Bullish white quartz stringer.					
	65.80 - 66.30 Altered, finer grained, pyritized.					
	66.8: thin mineralized quartz stringer at 15 ⁰ . Some alterat Well epidotized.	ion				
	67.9: highly altered segment 0.10 m long with pinkish aplit dikelet @ 80 ⁰ . Some moly present. Heavily epidotized.	ic				

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<u>COMPANY:</u> Snowwater

Hole No.:SN-88-07

			CORF		
From To (m) (m)	DESCRIPTION	From (m)	To Total (m)	Sample No.	Ozs.
	<u>GRANODIORITE</u> is quite coarse grained: epidote is everywhere. 69.4 - a stressed zone, some alteration, numerous tight microfactures. Pyritized.	69.3 sampl	69.8 e is mineralized	121551	.002
	69.6 - 69.7 thin quartz stringers with pronounced chill and altered margins in the intrusive.	MCTT	minel di izeu		
	70.36 - 70.45 Aplite dike @ 65 ⁰ acicular crystals, (biotites?) perpendicular to contacts.				
	70.65 - 70.85 strongly epidotized, altered segment, roughly 40 ⁰ to core, fine grained.				
	73.69 - 73.96 some lost core, greenish-grey-white barren-looking quartz vein. Some chilling of granodiorite on contact.				
	75.1 - 75.4 strong chloritic slip @ 10 ⁰ .				
	75.9 - 76.0 aplite dike @ right angles to core. Acicular biotites.				
	76.80 a possible stressed zone 2-3 cm wide. Core here is generally unremarkable.				
	78.26 - 78.27 strong chloritic slip @ 70 ⁰ , altered fine g	rained a	zone.		
	80.30 - a thin quartz stringer.				
	83.3 a 2 cm wide mineralized quartz stringer @ 85 ⁰ with Heavily epidotized margin, also a honey-brown mineral (no	moly t ZnS).			
	83.77 strong chloritic slip @ 80 ⁰ .				

Host rock is still an unremarkable granodiorite, generally with epidote rims around mafics.

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COMPANY: Snowwater

			CORE-		
DESCRIPTION	From (m)	То (m)	Total	Sample No.	Ozs.
84.3 thin quartz seam @ 80 ⁰ ; Altered zone.					
85.8 very thin mineralized epidotized quartz seam.					
86.7 - 86.87 a strongly altered zone, with epidote, quartz veinlet.					
<u>VOLCANIC PORPHYRY:</u> (Andesitic?) fine grained, dark grey to black, becoming lighter green-grey toward 94.2. Seams of carbonate near leading edge. Fracture surfaces show epidotes @ centre of light coloured feldspar? "eyes". Occasional pyrite well scattered and disseminated. Deeper in segment texture is reminiscent of granitic textures seen previously, but much finer grained. More mafics and distinctive rounded "eyes" often centred by epidote. Fracture surfaces can show strong mineralization. Quartz grains are present.	93.5	94.2	0.7	121552	.002
<u>VOLCANIC</u> dark grey black, very fine grained. Soft, can be scratched by a knife. Texture is porphyritic with both light and dark phenocrysts: dark predominate. These resemble clots of biotite, but can take on scarlet red hues.	94.2	94.8	0.6	121553	.003
<u>ALTERED VOLCANIC PORPHYPY</u> (andesitic?) as @ 86.87 - 94.2. medium to fine grained matrix with light phenocrysts.					
97.6 occasional rusty brown slip and fracture surfaces. Sparsely pyritized trailing contact, very sharp. Biotite books and pyrite. White phenocryst, very soft but					
		DESCRIPTIONFrom (m)84.3 thin quartz seam @ 80 ⁰ ; Altered zone.85.8 very thin mineralized epidotized quartz seam.86.7 - 86.87 a strongly altered zone, with epidote, quartz veinlet.VOICANIC PORPHYRY: (Andesitic?) fine grained, dark grey to black, becoming lighter green-grey toward 94.2. Seams of carbonate near leading edge. Fracture surfaces show epidotes @ centre of light coloured feldspar? "eyes". Occasional pyrite well scattered and disseminated. Deeper in segment texture is reminiscent of granitic textures seen previously, but much finer grained. More mafics and distinctive rounded "eyes" often centred by epidote. Fracture surfaces can show strong mineralization. Quartz grains are present.93.5VOICANIC Soft, can be scratched by a knife. Texture is prophyritic with both light and dark phenocrysts: dark predominate. These resemble clots of biotite, but can take on scarlet red hues.94.2ALTERED VOICANIC PORPHYPY (andesitic?) as @ 86.87 - 94.2. medium to fine grained matrix with light phenocrysts.97.6 occasional rusty brown slip and fracture surfaces. sparsely pyritized trailing contact, very sharp. Biotite books and pyritized trailing contact, very soft but	PromTo (m)84.3 thin quartz seam @ 80°; Altered zone.85.8 very thin mineralized epidotized quartz seam.86.7 - 86.87 a strongly altered zone, with epidote, quartz veinlet.VOICANIC PORPHYRY: (Andesitic?) fine grained, dark grey to black, becoming lighter green-grey toward 94.2. Seams of carbonate near leading edge. Fracture surfaces show epidotes @ centre of light coloured feldspar? "eyes". Occasional pyrite well scattered and disseminated. Deeper in segment texture is reminiscent of granitic textures seen previously, but much finer grained. More mafics and distinctive rounded "eyes" often centred by epidote. Fracture surfaces can show strong mineralization. Quartz grains are present.93.594.2VOLCANIC dark grey black, very fine grained. Soft, can be scratched by a knife. Texture is porphyritic with both light and dark phenocrysts: dark predominate. These resemble clots of biotite, but can take on scarlet red hues.94.294.8MITERED VOLCANIC PORPHYPY (andesitic?) as @ 86.87 - 94.2. medium to fine grained matrix with light phenocrysts.97.6 occasional rusty brown slip and fracture surfaces. Sparsely pyritized trailing contact, very short but94.12		

DIAMO	MD	DRILL	LOG

Winem Me	DECOTORION		 Me	CORE-		
(m) (m)	Description	(m)	10 (m)	TOTAL	No.	UZS.
101.1 110.5	<u>GRANODIORITE:</u> medium grey, coarse grained epidotized, occasional aplitic and quartz dikelets/seams. Unremarkable. Leading edge contact with porphyry is very sharp and gdte is somewhat bleached for 10 - 12 cm.					
	102.11 thin white quartz stringer @ 90 ⁰ .					nder det i Die Angeleicher
	102.6 a 5 cm white quartz stringer e^{700} .					
	103 - strong chloritic mineralized slip @ 25 ⁰ .					
	103.4 - 103.5 white quartz vein with pyrite and epidote.					
	105.4 - 105.5 aplite dikelet with quartz, epidote, biotite.					
	107.4 - 107.5 an altered, finer grained zone with pyrite (r	minor).				
	108.0 - pyrite seam @ 15 ⁰ .					
	110.5 - strong, rusty, chloritic slip @ 20 ⁰ .					
110.5 113.0	VOLCANIC ANDESTIC? PORPHYRY: dark grey black, fine grained. Speckled with white flecks of soft material. Minor pyrite.					
113.0 137.6	GRANODIORITE	112 0	114 0		121600	002
	well pyritized occasional mudseam. Occasional quartz/aplite	113.0	114.2	1.2 1.7	121608	.002

113.95 - well pyritized fracture @ 70⁰.

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COMPANY: Snowwater

					CORE-		
From (m)	To (m)	DESCRIPTION	From (m)	T0 (m)	Total	Sample No.	Ozs.
		115.3, 115.5 well pyritized fractures @ 10 ⁰ , 15 ⁰ with min quartz stringers. Altered zones have a greenish cast, finer grain and indis grain boundary.	or tinct				
		118.45 - 118.6 - brownish white barren quartz vein @ 65 ⁰ .					
		118.60 - 118.9 - rusty fracture @ 10 ⁰					
		119.40 - 119.7 - pyritized fracture @ 10 ⁰ .					
		120.3 - Aplite? dike @ 80 ⁰ .					
		120.8 Altered zone, with a fracture filled with epidote and a light brown mineral, probably garnet.					
		123.9 - 124.1 - epidotized fracture @ 10 ⁰ .					
		124.5 - narrow altered zone.					
		124.8 - 125.1 - altered zone with thin quartz at 70 ⁰ with light brown alteration mineral.	124.4	125.10	0.70	121610	.002
		126.1 - 126.3 - thin quartz stringer and moly - coated pyritized fracture $@ 10^{\circ}$. Some carbonate.					
		126.7 - 126.76 - Aplite dike, heavily epidotized.					
		128.4: suddenly much more mafic to 132.60.					
		128.86 - 129 - Aplite dike @ 85 ⁰ .					
		129.95 - 130.10 A narrow segment containing an aplite (quartz?), dike has been split.					

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<u>COMPANY:</u> Snowwater

				CORE-		
From To (m) (m)	DESCRIPTION	From (m)	TO (m)	Total	Sample No.	Ozs.
	131.1 - 131.2 an altered zone with a quartz filled fracture with epidote & a light brown mineral (ZnS?). 132.30 - 132.50 <u>Strong mineralized chlorite slip</u> . 134.25 - thin pyritized quartz stringer @ 35 ⁰ .					
137.6 144.6	<u>VOLCANIC</u> as @ 94.2. 137.6 - 137.9 is contact area @ say 10 ⁰ to core. Contact is very sharp, distinct. Occasional biotite overlaps contact:					
	Unit is very dark, fine-grained near the contact(where there are some rusty chloritic fractures! But by 139.6 has taken on a much more <u>prophyritic</u> texture with white phenocrysts in a fine-grained matrix. Unit is sparsely mineralized with widely disseminated pyrite and is characterized by a deep <u>reddish</u> <u>scarlet</u> mineral or phenocryst					
	again, becomes finer grained & light phenocrysts become progressively more scarce towards trailing contact. Chloritic fractures and white carbonate seams. NOTE: segment between 139.6 - 141.2 could be a separate distinct porphyritic unit - a relatively distinct contact exists @ 141.2. But both units share distinctive reddish mineral, and are treated as one here.					
144.6 145.6	<u>GRANODIORITE XENOLITH?</u> leading and trailing contacts are roughly 20 ⁰ to core. Some pink feldspar especially near contact zones otherwise medium - coarse - grained, grey, unremarkable.					
145.6 156.5	<u>VOLCANIC PORPHYRY:</u> overall dark, fine-grained appearance with reddish phenocrysts. Phenocrysts become larger and more abundant in centre of units. Rare disseminated pyrite, occasional white carbonate stringer, flecks.					

COMPANII SHOW				en strenge I	OTE NO.:	2N-88-0
From To (m) (m)	DESCRIPTION	From (m)	T0 (m)	CORE- Total	Sample No.	Ozs.
	NOTE: red mineral is more common in fine grained material. Near 152 unit is more coarse-grained, an olive-green cast. (close to a really rotten lamp!) 154.2 - 155.1 granitic contact zone @ low angle to core 155.2 - small granitic xenolith in dark fine-grained volcanic with pev phenocrysts 155.6 - 155.8 granitic delcelete 156.6 - sharp trailing contact @ 10 ⁰ (unit an andesitic tuff?)					
156.5 160.0	GRANODIORITE: medium grained, light to medium-grey, epidotixed, occasional brown mineral, healed fracture zones with surrounding alteration - (blurred grain boundaries, finer grain-size) widely disseminated pyrite, occasional quartz veinlets					
	157.0 - Altered fracture with vein quartz, epidite and brow mineral. Approaching 160 an occasional stringer,/dikelet of black volcanic material.	'n				
160.1 161.6	VOLCANIC PORPHYRY (88-031) as @ 145.6 dark black, fine grained matrix, while amgydules/phenocrysts - speckled, mottled appearance. Occasional large reddish/scarlet mineral as phenocryst. Chloritic fractures.					
161.6 168.5	GRANODIORITE as @ 156.5: medium to coarse grained, medium grey, unremarkable occasional quartz stringer. Epidote					
	163.0 - narrow laltered zone @ 30 ⁰ occasional moly -coated fracture					
168.5						

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COMPANY: Snc	owwater			. .	ole No.:	SN-88-
From To (m) (m)	DESCRIPTION	From (m)	T0 (m)	CORE- Total	Sample No.	Ozs.
	REMAINDER OF HOLE TO BE LOGGED			-		
27.3 31.74	PORPHYRITIC GRANODIORITE medium grey coarse-grained with large quartz "eyes" also occasional large mafic phenocryst and mafic xenoliths Epidotized with minor sulphides, occasional fractures, slips @ 55 ⁰ with some brownish alteration associated: as at 29.15, 29.55, 31.50, 830.5, 27.55: a 3 cm wide quartz veinlet with moly					
	28.10: mineralized microfractures @ 40 ⁰					
	30.45 - 30.70: a brown altered, porphyritic segment. Well mineralized, pyrite, magnetite. (up to 2% sulphides)					
	31.60 - microfractures	31.00	31.74	0.74	121611	.002
31.74 32.60	FELSIC VOLCANIC(?): purplish - brown, fine grained, homogenous, quartz seams and veinlets, 5-6% pyrite, pyrrhotite, minor chalcopyrite <u>Good looking segment</u> . Trailing contacts @ 40 ⁰ . Some brecciation	31.74	32.60	0.86	121012	.002
32.60 33.35	GRANODIORITE somewhat porphyritic, altered, brownish cast, mineralized fractures	32.60	33.35	0.75	121613	.002

COND	NV. Chourster Resoll	°CAS			He	ole No.:	5N-88-09
<u>COMP</u> Proje	ant: Showwater Resources	Elevation: Remarks	•		D:	ip Tests	
Secti	ion:	Depth:					
Tocal	tion:	Dip:					
Norti	hing:	Core Size:					
Roit		Purpose:	J. Murr	ay			
Azim	uth:	- Begun J	uly, 2nd	1988			
From To (m) (m)		DESCRIPTION	From (m)	T0 (m)	CORE- Total	Sample No.	 Ozs.
0.0 7.62	CASING						
7.62 13.41	GRANODIORITE medium grey, medium almost porphyritic Unremarkable 11.1 - 11.2 - a lan	to coarse-grained; texture occasionally with large phenocrysts, some epidote. prophyre xenolith					
13.41 - 14.70	LAMPROPHYRE black, fine-grained contact @ 50 ⁰	l, quite soft, numerous biotites, trailing					
	14.3 - 9 cm broken	friable material - probably fault @ 40 ⁰					
14.70 26.76	GRANODIORITE as @ 7.62 occasion	al quartz stringers					
	16.4 - 16.9 - blead minor pyrite. Unit of varying sizes	ched and altered zone; healed fractures and has occasional dark inclusion (Lamp?)	16.4	16.9	0.5	121614	.002
	21.9 - tight, rust	y fracture @ 3 ⁵⁰					

COMPANY: Show			. 193 - 194 	CODE	· · · · · · · · · · · · · · · · · · ·	
From To (m) (m)	DESCRIPTION	 From (m)	T0 (m)	Total	Sample No.	Ozs.
	22.4 - tight fracture, alteration @ 70 ⁰	and and a second se Second second second Second second				
	23.6 - short segment with more pink feldspar					
	25.91 - tight healed fracture @ 30 ⁰ with pink feldspar and bleaching					
26.70 33.50	GRANODIORITE medium to coarse-grained, generally medium grey, but occasional bleached segments, and short segments with pink feldspars. Unit has numerous carbonate seams, occasional quartz veinlet					
	27.60 - 28.80 - broken core; recovery 65%					
	29.70 - heavily carbonated and fracture @ 50 ⁰					
	30.2 - 30.50 - grey, <u>altered zone</u> , crystals indistinct					
	31 - 32 - somewhat bleached, carbonated zone;	31.0	32.0	1.0	121615	.002
	31.7 - <u>strong fracture</u> @n 30 ⁰ , vuggy, minor pyrite					
	32.7 - 33.2 bleached, epidotized strong fracture @ 35 ⁰	32.7	33.2	0.5	121615	.002
33.50 99.0	GRANODIORITE medium (to dark grey), medium to coarse-grained, unremarkable occasional dark inclusions/xenoliths occasional milky-white quartz veinlets @ 25 ⁰ . Epidotized. Occasional minor pyrite (rare?) occasional segments bleaching.					
	36.1 - tight slip @ 35 ⁰ with carbonate, minor bleaching alteration.					

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				CORE-		
om To) (m)	DESCRIPTION	From (m)	TO (m)	Total	Sample No.	Ozs.
	37.8 - very tight slip @ 60 ⁰ with minor bleaching					
	38.7 - 39.10 - <u>MAJOR STRUCTURE</u> broken core rusty fracture (brecciation?) pyrite & carbonate.	38.7	39.1	0.4	121617	.002
	40.54 - 41.2 - grey altered, indistinct minerals, up to 2% pyrite disseminated, well epidotized. Minor quartz veins @ 40 ⁰	40.45	41.2	0.75	121618	.002
	41.8 - 41.95 - bleached zone, minor pyrite					
	42.2 - 42.5 - Altered, indistinct crystals, minor pyrite	42.2	42.5	0.30	121619	.002
	43.1 - 43.4 - altered pyritized, <u>strong fracture</u> @ 30 ⁰	43.1	43.4	0.30	121620	.002
	47 - 48.9 - pinkish feldspar			ana Januaria Januaria		
	49 - 50 - segment is somewhat altered, dark grey, minor pyrite					
	50 - rusty strong fracture running down core					
	50 - 51.35 - altered zone; thin 1 - 2 cm white quartz stringer running down core, with a <u>magnetite seam</u> as a rim. Possible sphalerite(?)	50.0	51.6	1.6	121621	.002
	Structure:					
	51.35 - <u>strong slip</u> @ 60 ⁰					
	51.35 - 51.60 - strongly bleached, fractured zone					
	53.10 - 53.64 - <u>MAJOR STRUCTURE</u> broken and ground core, carbonate seams, dark grey, no distinct crystals, stressed	53.10	0 - 54.64	1.54	121622	.002

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COMPANY: Snowwater

		and the second second		 	 	 			CORE-		- <u>-</u>
			a paratra patan				From	ΨO	Total	Sample	Ozs.
From	To the second			 DESCRIPTION	 	 -	r r Om	10		NO	
FIOM	10						(m)	(m)	1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	NO.	
(m)	(m)							an a beach a bha			

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55.4 - 55,7 - light bleaching, barren looking 4 cm quartz
vein @ 50<sup>0</sup>
56.85 - fracture/slips @ 25<sup>0</sup> (carbonate seams)
60.5 - carbonate slip @ 75<sup>0</sup>
68.35 - some bleaching, tight slip @ 60<sup>0</sup>
68.80 - ditto
71.70 - minor chloritic slip @ 70<sup>0</sup>
75.10 - 75.90 - lighter, (bleached?) somewhat altered,
strongly epidotized, narrow white quartz veinlets @
70 - 80<sup>0</sup>
From 82 on lighter coloured zones become common, with some
bleaching and carbonate seams with minor pyrite
82.9 - fracture @ 25<sup>0</sup> in a bleached segment
 84.35 - minor mineralized seam 0.50^{\circ}
 85.6 - 86.30 - light colored "rotten" segment minor pyrite
 quartz seam
 91.90 - tight bleached fracture @ 50<sup>0</sup>
 93 - 95: darker, somewhat altered with some segments of
 indistinct or "clouded" crystal structure, with numerous
 micro fractures. One tight healed fracture runs the
 length of the unit and has associated pyrite. Unit is
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From I (m) (ľ0 (m)	DESCRIPTION	From (m)	T0 (m)	CORE- Total	Sample No.	Ozs.
		silicified and has disseminated pyrite too (less than 1%)					
		95.15 - 95.30 - a bleached (?) zone: milk white quartz crystals, chloritic slips					
		95.9 - somewhat altered, with micro fractures and pyrrhotite					
		96.2 - 98.1: <u>STRUCTURE (MAJOR)</u> zone begins and ends with dark altered "clouded" rock; centre is bleached to greenish white and strongly epidotized: some carbonate. <u>Numerous chloritic slips</u> @ 40 ⁰ . Some brecciation, especially @ 97.3. Minor sulphides.	96.2	98.1	1.9	121623	.002
99.0 1	.19.9	GRANODIORITE medium grey, (occasional narrow white zones) medium to coarse grained. Carbonate seams/slips are common (especially in white zones) Epidotized. Occasional dark inclusions/xenoliths (lamprophyre?) Occasional narrow (.5 - 3 cm) milky white quartz veinlets. Minor (rare?) disseminated pyrite. Quite siliceous. Generally unremarkable. Carbonate seams are @ $65 - 70^{\circ}$; Quartz veinlets are at $30 - 40^{\circ}$					
		108.1 - Chloritic slip @ 15 ⁰					
		108.6 - slip surface @ 40 ⁰ very red/orange hematite? limonite					
		112.4 - 112.7 - dark "cloudy" alteration.					an an Shakara an Shakara An Angala Shakara an Angala Angala Shakara Angala Shakara
		114.0 - narrow altered zone (bleached) with slips $@40^0$.					

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COMPANY: Snowwater

	•				CORE-		
From To (m) (1	0 m)	DESCRIPTION	From (m)	TO (m)	Total	Sample No.	025.
		119.5 - 119.62 - coarse-grained black lamprophyre with well developed black biotite, also blood-red mineral.					
		119.62 - 119.9 - Some bleaching, strongly epidotized.					
119.9 12	0.2	"ROTTEN" LAMPROPHYRE(?) dark-green-brown (khaki) colour, very soft! Occasional flecks black biotite. Mud seam on trailing contact					
120.2 12	21.0	"ROTTEN" GRANODIORITE light to dark grey, medium to coarse grain, bleached and leached, broken core. Lost core.					
121.0 12	21.9	"ROTTEN" LAMPROPHYRE as @ 119.9. Core recovery approximately 35%: ground and broken and lost core. Some fragments show chloritic slips running down core					
121.9 12	23.5	GRANODIORITE light grey-pink, medium-coarse grained, somewhat rotten; seams of epidote, leaching and mud seams					
123.5 17	73.0	GRANODIORITE generally dark grey, with narrow light coloured zones and greeni epidotized bands occasionally giving banded appearance. Medium grained occasional xenolith, dark material (lamprophyre) occasional disseminated pyrite (rare?)	lsh				
		125.27 -126.14 - bleached and leached pink granodiorite @ either end with <u>0.3 m brown mud</u> in box <u>Structure?</u>					
		128.5 - 128.63 - rotten material, broken core; slips @ 45 ⁰ bleaching					
		Unit has occasional thin milky-white quartz veinlets at 30^0-40^0	•				

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COMPANY: Snowwater

				COPE-		
From To (m) (m)	DESCRIPTION	From (m)	To (m)	Total	Sample No.	Ozs.
	Unit has occasional thin milky-white quartz veinlets @ 30 - 40 ⁰					
	135 - core takes on a somewhat porphyritic (quartz eye) texture in this vicinity. Quite unremarkable					
	141.07 - 141.12 - PROBABLE FAULT @ 60 ⁰ Light bleached segment, brecciated appearance: rusty					
	158.2 - 158.2 - bleached and altered zone segment is note worthy in that it clearly shows milky/white/grey quartz veins being offset by later very thin seams/fractures associated with bleaching/epidotization etc.					
	165.0 - thin quartz seam @ 30 ⁰ with pyrite 167.2 167.4 - coarse-grained segment; large black hornblendes					
173.0 174.6	ANDESITE (TUFF?) (88-023) dark black dike rack, very fine-grained 2-3% finely disseminated pyrite Approximately 173.2 - @ 3 - 4 cm tongue of unaltered granodiorite Dike rock shows a chill margin - darker black and more fine-grained	173.0	173.8	0.5	121616	.002
174.6 197.0	GRANODIORITE as at 123.5 medium grey, medium to coarse-grained, epidote occasional xxxxxxx pyrite occasional zones bleaching alteration					
	177.3 - 177.8 <u>dark dike rock</u> very fine-grained as @					

COMPANI.							<u> </u>
From To (m) (m)	DESCRIPTION	From (m)	T0 (m)	Total	Sample No.	Ozs.	
	179.5 - 180.0 - dark dike rock, very fine-grained leading contact @ 10 ⁰ Some assimilation of granodiorite on margin; sulphides in granodiorite near contact	179.5	180.0	0.5	121627	.002	
	185.2 - 186.0 - bleached, altered indistinct "cloudy" appearance, tight healed (chloritic?) micro fractures running down core; carbonate silps, narrow quartz seams wit pyrite	185.2 ch	186.0	0.8	121628	.002	
	187 - short altered segment						
	187.65 - 188.3 brownish altered zone						
	188.3 strong fault @ 40 ⁰						
	189.86 - 190.3 - dark dike rock andesite? minor epidote, 3 - 4% disseminated pyrite	189.86	5 190.3	0.44	121629	.002	
	190 on: granodiorite has large black porphyoblasts, also occasional dark black inclusion (fine-grained diorite?)						
	Some strongly epidotized segments between 193.5 and 196.5						
	195.4 - 196.0 somewhat altered "cloudy" appearance, strongly epidotized micro fractures, siliceous, well pyritized: 5%+?	195.4	196.0	1.6	121630	.002	
197.0-198.2	GRANODIORITE light to medium grey, medium-grained in places strongly epidotized. Becoming more altered near dike rock.						

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and the second second				CORE-		
From To (m) (m)	DESCRIPTION	From (m)	TO (m)	Total	Sample No.	Ozs.
198.2 199.1	ANDESITE (?) dark-grey to black, fine-grained honogeneous up to 1% disseminated pyrite (appears to be a fine-grained granodiorite rock, with more mafics than regular granodiorite) Tongues of granodiorite	198.2	199.1	1.1	121631	.002
199.1 200.4	GRANODIORITE light grey to pink, medium to fine grained, very strongly epidotized in places. Often altered, "cloudy" appearance minor disseminated pyrite	199.1	200.4	1.3	121632	.002
200.4 202.2	 as above; strongly altered, cloudy and leached appearance, extremely epidotized. Minor disseminated pyrite 	200.4	202.2	1.8	127633	.002
202.2 202.55	- dark very fine-grained dike rock; as @ 198.2					
202.55 203.9	GRANODIRITE (good looking segment) medium fine grained, greenish cast, occasional pink orthoclase sections "cloudy" appearance siliceous, strongly epidotized, disseminated pyrite, (up to 3%) some quartz veining and stockwork. Tiny healed micro fractures (chloritic?) @ 45 ⁰	202.55	203.9	1.35	121634	.002
203.9 207.5	ANDESITE(?) as at 198.2. Black, very fine-grained dike rock, disseminated pyrite. Occasional thin quartz seams. Trailing contact @ 20 ⁰ on a rusty chloritic slip. Occasional pyrite coatings on fracture surfaces Rx Geoch character sample.	204.00) 205.0	1.0	121635	.002
207.5 210.0	GRANODIORITE medium grey, medium grained, bands and blotches epidote altered, "cloudy" near 207.5 contact	207.5	208.3	0.8	121636	.002

From To (m) (m)	DESCRIPTION	From (m)	T0 (m)	CORE- Total	Sample No.	Ozs.
210.0 214.1	MIXED ANDESITE (?) AND GRANODIORITE segments of grey granodiorite and black dike rock, Granodiorite has bands and patches strongly epidotized, has well disseminated pyrite					
	209.8 - narrow quartz stringer 25 ⁰ pyritized with magnetite					
	Granodiorite occasional siliceous					
	ANDESITE black, yery fine-grained disseminated pyrite, occasional epidotized thin seams quartz occasional rusty slip @ 50 ⁰					

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