Box 13

Drill Results, 1981, Windy - Craggy & Budget Proposal #1, 1982

PN 135

NTS 114P/12

January 21, 1982 J. J. McDougall

Vancouver, B. C.

FOLIO CONTENTS

CONTENTS

DRILL RESULTS, 1981

WINDY-CRAGGY

&

BUDGET PROPOSAL #1, 1982

PN 135

January 21, 1982

J.J. McDougall

TABLE OF CONTENTS

FIGURES AND TABLES

MAPS

APPENDICES PAGE

Appendix III	Drill & Assay Sections	Page

DRILL RESULTS, 1981 WINDY - CRAGGY

PN 135

FORWARD

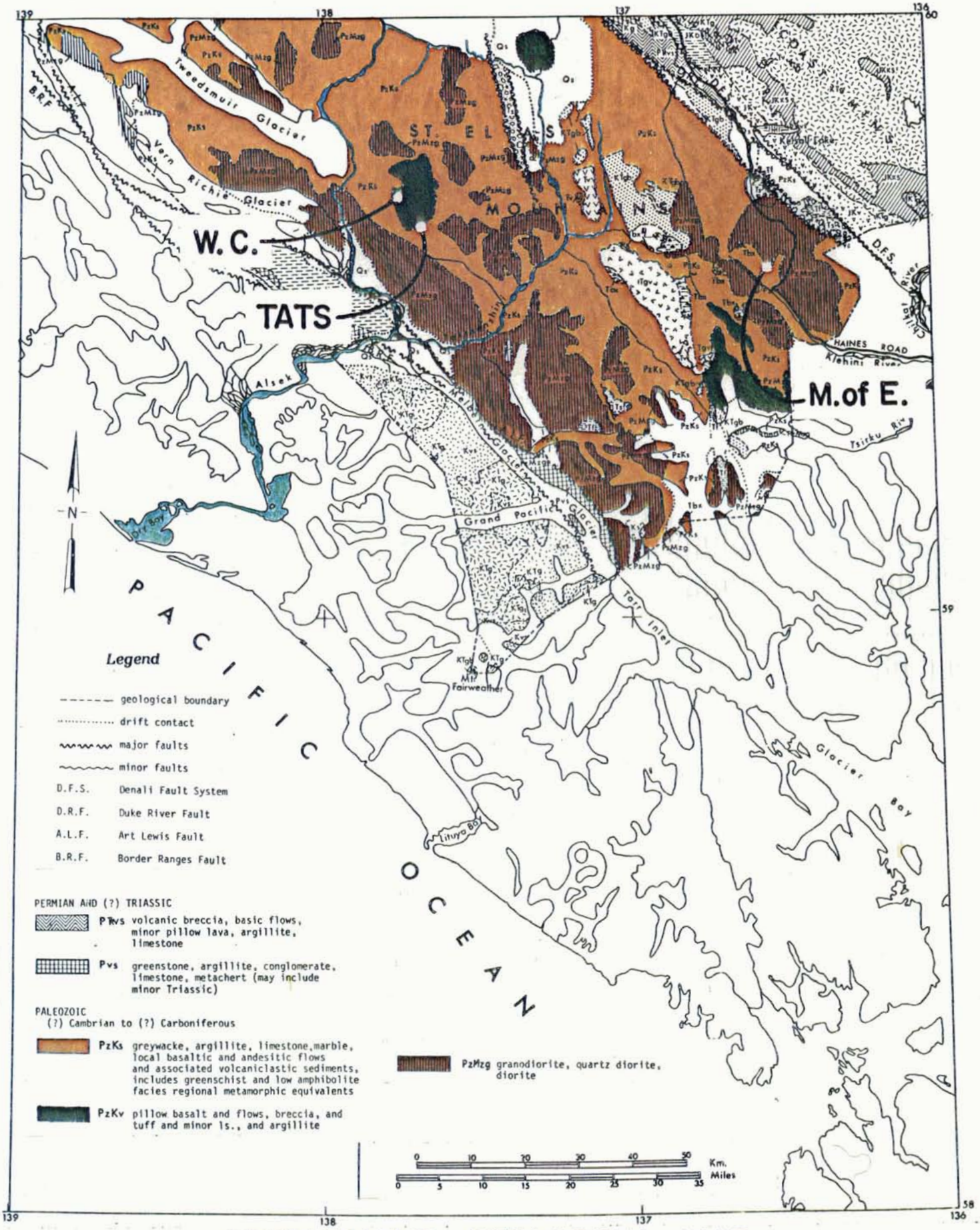
During the short 1981 field season the first stage of a proposed two stage drilling programme on the Windy - Craggy massive sulphide deposit in northwestern B. C. was completed.* Basic assay data is finally available and is presented in this report, accompanied by a map folio.

Data required for a complete assessment of the 1981 work has not been received as of this date (Jan. 21) although reportedly shipped from the Whitehorse assay labs in mid December. Many delays were expected considering the late date at which authority to proceed with the programme was received.

An inclusive summary report will be prepared within the next couple months. Included will be 1) Petrographic study of select specimens so that rock units can be correctly labelled. (2) Check assays including fire assay reruns of presently AA - determined gold and silver (i.e. the size of sample used may be critical). A shipment of rejects from the Whitehorse assayers is awaited. (3) A study of trends (zoning, alteration, etc) within the deposit, including more accurate locational plotting of geophysical data. (4) More detailed plans for property exploration, dependant on any escalation of scope.

The physical and historical aspects of Windy - Craggy were adequately described in the February, 1981 Report and will not be repeated here.

* Figure - W.C. 9/81 Preliminary Geological Map



PRELIMINARY GEOLOGICAL MAP

Tatshenshini Map Sheet
-(after GSC, 1979)

Figure-W.C. 9/81

ABSTRACT, DISCUSSION AND CONCLUSIONS

I ABSTRACT

First and second stage programmes were designed to test-drill the largely unexposed deposit for continuity, including depth, along a relatively accessible 3000 feet of minimal strike length. The first stage, 10 drill holes totalling 2540.96 metres (8336.48 feet), successfully outlined the southern portion of the deposit within broad parameters along a strike length of 400 metres (1312.3 feet), and indicated mineralization to extend to depths of at least 492 metres (1614 feet).

II DISCUSSION OF RESULTS

A Drilling

1) Historical and Chronological

Two new Longyear Drills (FLY 38's) were utilized by Longyear Canada on the job. Due to the lateness of the season, there was no chance to properly appraise the job before hand, and our 1965 experience (BBS1 - AQ drill holes) was used as the sole guide. A John Deere 450 tractor was flown to the property for drill moves, etc. Crews were based at Tats Lake and flown to the property daily using a Bell 206B chartered from Pacific Helicopters. Heavier helicopter hauls were made by Shirley Helicopters of Whitehorse.

2) Drill Holes

Drill holes were located as close to section as possible. Locations are shown on Map 034-81-A (in pocket). It is to be noted that this is an updated version of earlier map Figure 2, 034/80 which should now be discarded. Co-ordinates were assigned to a 500 m. grid oriented True North.

As drill equipment is still not in metric, core was logged in 'feet and inches'. All ground measurements not affecting the drill directly are in metric. In most cases any significant numbers are shown in both systems.

Holes were dip-tested using etch tubes. Such tests were not carried out on occasion due holes blocked at depth. Tropari tests for bearing proved unreliable due magnetics.

3) Core Logging and Sampling Procedures

Although the writer did most of the organizing of the Windy - Craggy project, geological help was required and geologist Don Hoy was obtained thru G. A. Noel, Consultants.

All core showing more than 5% sulphides was split and assayed. After being preliminarily logged on the property and flown to Tats Lake for detailed logging,drill core was split by a power splitter at the Maid of Erin camp where it is now stored.

Attempts were made to sample at 10 foot intervals except where obvious changes in character were noticed. As several tons of sample was involved, and we had experienced problems with CPA to Vancouver in the past, it was decided to utilize Bondar - Clegg in Whitehorse following confirmation of their ability by known Bondar - Clegg officials in Vancouver. However, as shown on the logs, we are still missing a few samples.

4) Assay Procedures

To date check assays have not been made but we have little reason to suspect number problems with Bondar - Clegg, Whitehorse. Normal waiting time for assays in Vancouver increased from 5 to 6 weeks in 1981 due to heavy geochemical demands. All assaying was done in Whitehorse except for sulphur which was done by Bondar - Clegg in Vancouver.

Gold, silver, lead and zinc were done geochemically (AA). Some gold-silvers will be checked by fire assay methods. Sulphur is shown in the logs as "sulphide (S_2)" - a close approximation being that pyrrhotite, the dominant sulphide, contains about 40% sulphur and the only other sulphides, pyrite and chalcopyrite, would not significantly change this generalization more than a percent or two, which is unimportant at this stage.

Assays are presented in the drill logs enclosed and are plotted on accompanying assay sections. Cobalt, copper, sulphur, and any anomalous value in pm's or zinc, are included in individual or composite form. Transparent overlays (folios only) contain the copper-cobalt sulphide values and the underlays contain the general geology. Summaries and averages are presented at the end of each drill log.

B Assays

1) Value Distribution

Copper distribution within the deposit is such that copper-rich segregations may occur, especially to the north where the closest drill hole encountered the best continuous copper section to date, 66 ft of 2.6% Cu within a 107 foot core length in which 40 feet of similarly logged material is still to be reported on by the assayer. This was part of a sulphide bearing zone whose core length of 967 ft. (238 m) represents a true width exceeding 700 feet which averages 0.78% copper. Copper vs sulphide plots diverge considerably from straight lines. Fig. 19-81 (a&b) represents an attempt to contour average copper and sulphide values projected to surface, the purpose being to suggest trends, etc.

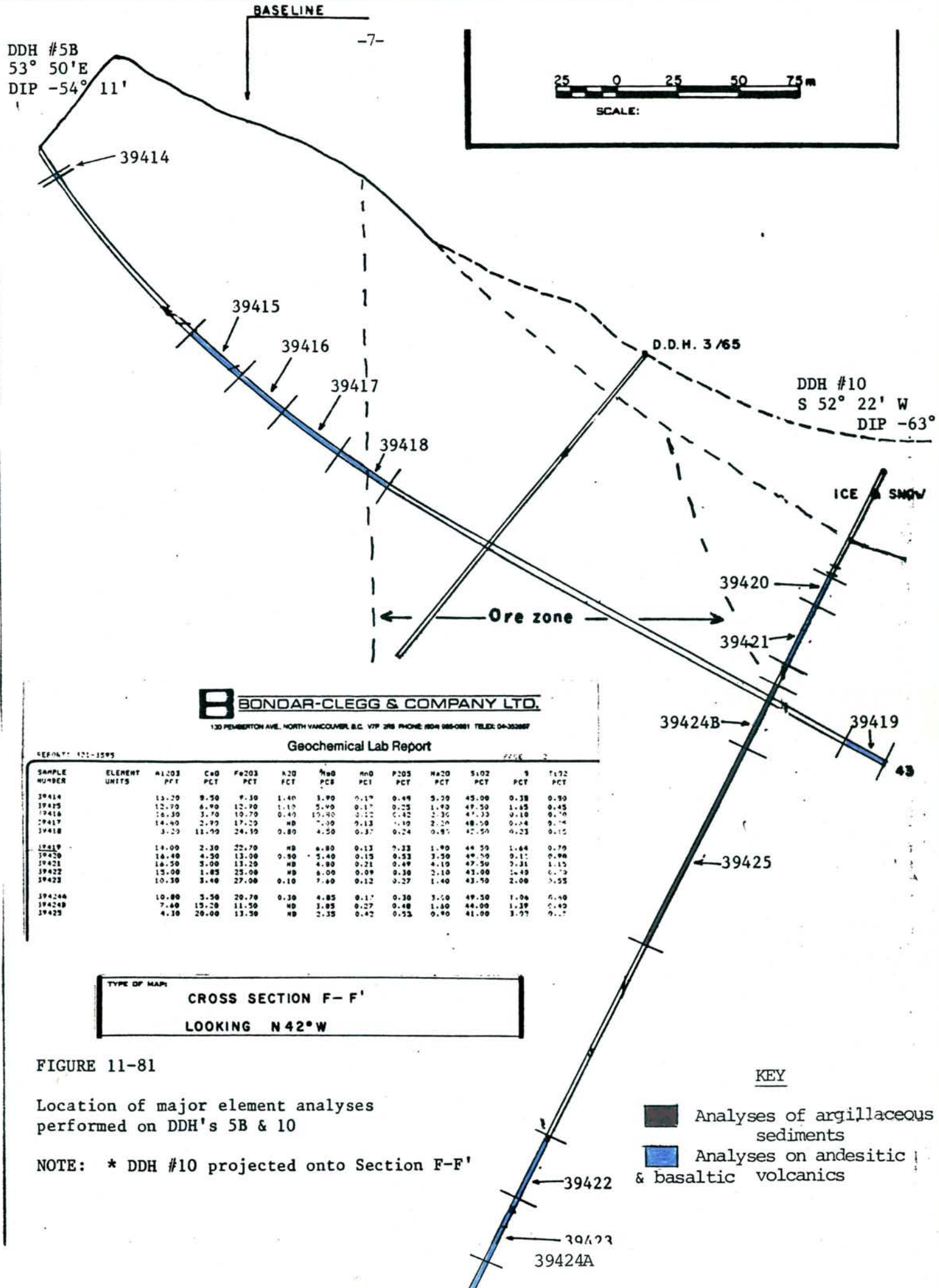
Assay summaries, including averages, are included with the drill logs.

All sulphides encountered, with the possible exception of pyrite in shale, and the probable exception of chalcopyrite, are cobaltiferous with approximate uniform or straight line Co/S ratios. The highest cobalt assays of 0.23% occurs in 83% sulphide material (0.5 % copper) suggesting a maximum of 0.28% Co in pure pyrrhotite. This number is slightly lower than that suggested by earlier microprobe work. The distribution of cobalt in pyrite vs that in pyrrhotite in the drill core is not known at this time. A cobalt vs sulphide plot will be available for study at a later date.

Gold-silver content is minimal but assayable. The best average of 355 ppb Au occurs in the better copper sections of hole #5b. Checks will be made as earlier sampled material, tested by fire assay, suggested an erratic but higher pm content, especially of silver. Pm values in this range would be more accurately determined in a chalcopyrite concentrate.

Zinc content in the main zone is so low (maximum 900 ppm over 35 feet in hole 5(b)), that copper-zinc ratios utilized in any zoning studies would be hardly valid. Zinc in adjoining shales (DDH #3)reached 1275 ppm across 100 feet. Sphalerite associated with a siliceous breccia is present in one section and perhaps a detailed but very local examination (planned) may suggest an orderly rather than haphazard arrangement not recognized during logging. Siliceous volcanic float containing sphalerite and galena is known elsewhere, including the Tats - Kowall area (Map WC9/81).

The value of rock geochemistry is in doubt as the area sampled (1000 feet across the deposit) is within the central aureole of the deposit itself, (Fig. 11/81). Sampling should be carried out across several thousand feet, but this is difficult due to topography. Erratic values (i.e. Na) appear across the deposit as sampled such as to suggest lack of recognizable orderly depletion or enrichment, but a detailed study may shed more light on this.



BONDAR-CLEGG & COMPANY LTD.

130 PEMBERTON AVE., NORTH VANCOUVER, B.C. V7P 2R8 PHONE: (604) 985-0581 TELEX: 04-352667

Geochemical Lab Report

REPORT: 121-1595 PAGE 2

SAMPLE NUMBER	ELEMENT UNITS	Al2O3 PCT	CaO PCT	Fe2O3 PCT	K2O PCT	MgO PCT	MnO PCT	P2O5 PCT	Na2O PCT	SiO2 PCT	S PCT	TiO2 PCT
39414		13.20	9.50	9.30	1.40	3.90	0.17	0.46	5.70	45.00	0.38	0.90
39415		12.70	6.90	12.70	1.10	5.90	0.17	0.25	1.90	47.50	1.65	0.45
39416		16.30	3.70	10.70	0.40	10.80	0.22	0.42	2.30	47.33	0.10	0.70
39417		14.40	2.90	17.20	ND	7.30	0.13	0.10	2.20	48.50	0.24	0.75
39418		3.20	11.90	24.10	0.80	4.50	0.37	0.24	0.80	42.50	0.23	0.15
39419		14.00	2.30	22.70	ND	6.80	0.13	0.33	1.90	44.50	1.64	0.70
39420		16.40	4.50	13.00	0.90	5.40	0.15	0.53	3.50	49.50	0.11	0.98
39421		16.50	5.00	13.20	ND	4.80	0.21	0.49	4.10	47.50	0.31	1.15
39422		15.00	1.85	25.00	ND	6.00	0.09	0.30	2.10	43.00	1.49	0.73
39423		10.30	3.40	27.00	0.10	7.60	0.12	0.27	1.40	43.50	2.00	0.55
39424A		10.80	5.50	20.70	0.30	4.85	0.17	0.30	3.40	49.50	1.06	0.60
39424B		7.60	15.20	11.50	ND	3.85	0.27	0.48	1.60	44.00	1.39	0.40
39425		4.30	20.00	13.30	ND	2.35	0.42	0.53	0.90	41.00	3.07	0.27

TYPE OF MAP:

CROSS SECTION F- F'

LOOKING N42°W

FIGURE 11-81

Location of major element analyses performed on DDH's 5B & 10

NOTE: * DDH #10 projected onto Section F-F'

TABLE 12-81

GEOCHEMICAL WATER ANALYSES - RED CREEK

SAMPLE NO.	Cu	Zn	Ag	Co	Fe	As	pH	SO_4
1	9.91	.12	.001	1.16	45.50	.01	4.0	175
2	9.25	.11	.001	1.05	42.00	.01	4.0	170
3	9.40	.11	.001	1.10	43.50	.01	4.0	172
4	9.35	.11	.001	1.10	43.10	.01	4.0	180
5	** 21.40	.34	.001	2.60	192.00	.01	4.0	420
6	9.50	.11	.001	1.10	44.00	.01	4.0	174

* All elements in ppm 6 Samples taken Sept 13/81 along 100 feet of Creek

** Some sediment included??

Water analyses (Red Creek) are interesting, (Table 12/81) confirming that it should not be drunk by humans. Metal content is highly anomalous save for silver which is below detectable levels.

2) Geological Interpretation

a) Orientation

The Geological Sections will be further defined at a later date; to this point no trouble has been experienced in locating the sulphide zone utilizing more than a simple interpretation of geology. The western contact of the sulphide zone was accurately predicted in all holes to within a few feet of it's intersected location. The totally unexposed eastern contact is more of an unknown. Attitudes suggest that, although the western contact (fault controlled in part) is near vertical, some of the massive sulphides (+70% S_2) occur as easterly dipping lenses (?) within the zone. Due to lack of holes and penetration, plus faulting, the attitude of the Eastern Contact is uncertain. Thus we do not know at this time what is "hangingwall" and what is "footwall". Regional observations on the Windy Claims suggest a steep easterly dip while those on the Craggy suggest a vertical to steep westerly dip. The writer is unprepared to be committed at this stage. It appears that plunging sulphide shoots are likely but evidence is again too skimpy for support.

b) Rock Types

Cross sections suggest, as earlier described, that rocks to the west of the sulphide zone consist of felsitic to slightly basic volcanics (andesites) interbedded with shales (some are prominently calcareous and may serve as marker horizons). The southern sulphide zone consists of at least three steeply dipping, paralleling bands. These may merge into a single unit to the north. Rocks to the east of the sulphides are dark chloritized volcanics (andeso-basalts) succeeded by a dense black shale and/or argillite unit at least several hundred feet thick. Alernating bands of volcanics and shales (argillite?) are evident at the first exposures beyond the ice cap 1000 feet to the east.

Utilizing the Anyox Model (see earlier diccussions) either contact would qualify as "footwall" at this stage. Alteration appears to be Lower Greenschist.

c) Sulphide Zone

The sulphide zone consists of the often described massive sulphides (+50% pyrrhotite, minor pyrite and chalcopyrite) flanked by "stringer-zone" mineralization (±30% S_2). 1981 drilling showed extensive "crackle"or weakly brecciated zones containing higher than usual chalcopyrite/pyrrhotite ratios. Sulphide persists through depths of at least 1500 feet (Photo 8/71).

d) Anomalous Geological Features

Based on west (footwall??) geology, and observation of the sections (i.e. model photographs enclosed, Sect. C-C' + 40N & Photo 6) it appears that DDH #10 did not penetrate the main zone as intended (it was hoped that hole would flatten) before being abandonned due to freeze-up. Faulting present may have caused complications. This hole collared in ice and can not be re-entered, one problem with ice cap drilling.

Some problems were encountered with cavities of large dimensions and no surface representation - i.e. DDH's 2/81 and #1(65). Pyrrhotite present prior to encountering the cavity oxidized rapidly, some visually within one hour of pulling, and the writer interprets the cause of the large cavity to be due to "burning", (rapid oxidization), of similar material. Deeper holes showed no sign of this phenomena (see sections).

A breccia-like rock encountered under the snow cap (DDH #8 & #10) is suggestive of some form of laharic breccia. Fragments are unlike those composing rocks exposed on surface, and the matrix seems more tuffaceous than would be expected on a normal mudslide or in a derived calcrete. The breccia is deeply weathered in part but is

unmineralized save for secondary oxides. In the two best exposures, the breccia overlies unmineralized volcanics but at a low dip angle. The origin is in doubt at this time.

e) Shape of Deposit

In general it would appear that the Windy - Craggy deposit has the shape of a crater with tangents or offshoots to the north and south. 1982 drilling should clarify this.

f) North Extensions

No sampling was done on the north extension, in fact it was not even visited during 1981. Float from the north cliffs, where a steep sulphide body is exposed, (see Model, Photo 5/81) was sampled along a two mile moraine. Copper assays (Table 13/81) are erratic as in previous sampling but the cobalt content, also erratic, must be compared to total sulphides, assays(the material is decidedly more pyritic) for which are awaited. When sulphur assays are completed on other mineralized material, ratios may suggest regional trends.

g) Geophysical Surveys

Airborne DIGHEM traverses have proven very difficult to plot due to the lack of ground control, the "ground" in the area of most interest being essentially impassable. Unfortunately the only airphotos available and used for plotting suffer from distortions and severe shadow effects in the area of interest, (Fig. 17/81). Also the snow was much further melted when the photos were taken than when DIGHEM photographed during their traverses. Detailed studies by the writer, after constructing a 35mm viewer, suggested that only minor changes in the DIGHEM plot are necessary. In order to utilize all the data, we should make a few airborne obliques about the same time of the year that DIGHEM flew. Ice fracture patterns identified at low level on the DIGHEM photos could be useful as these change little from year to year.

TABLE 13 - 81

FLOAT SPECIMENS FROM THE WEST FROBISHER GLACIER

SAMPLE NO	% Cu	% Co	% Sulphides
46027	2.40	0.074	
46028	0.14	0.012	
46029	0.30	0.048	
46030	0.15	0.046	
46031	2.14	0.046	
46032	1.14	0.071	
46033	0.45	0.042	
46034	0.07	0.042	
46035	0.87	0.067	

* Analyses for Sulphides not yet received.

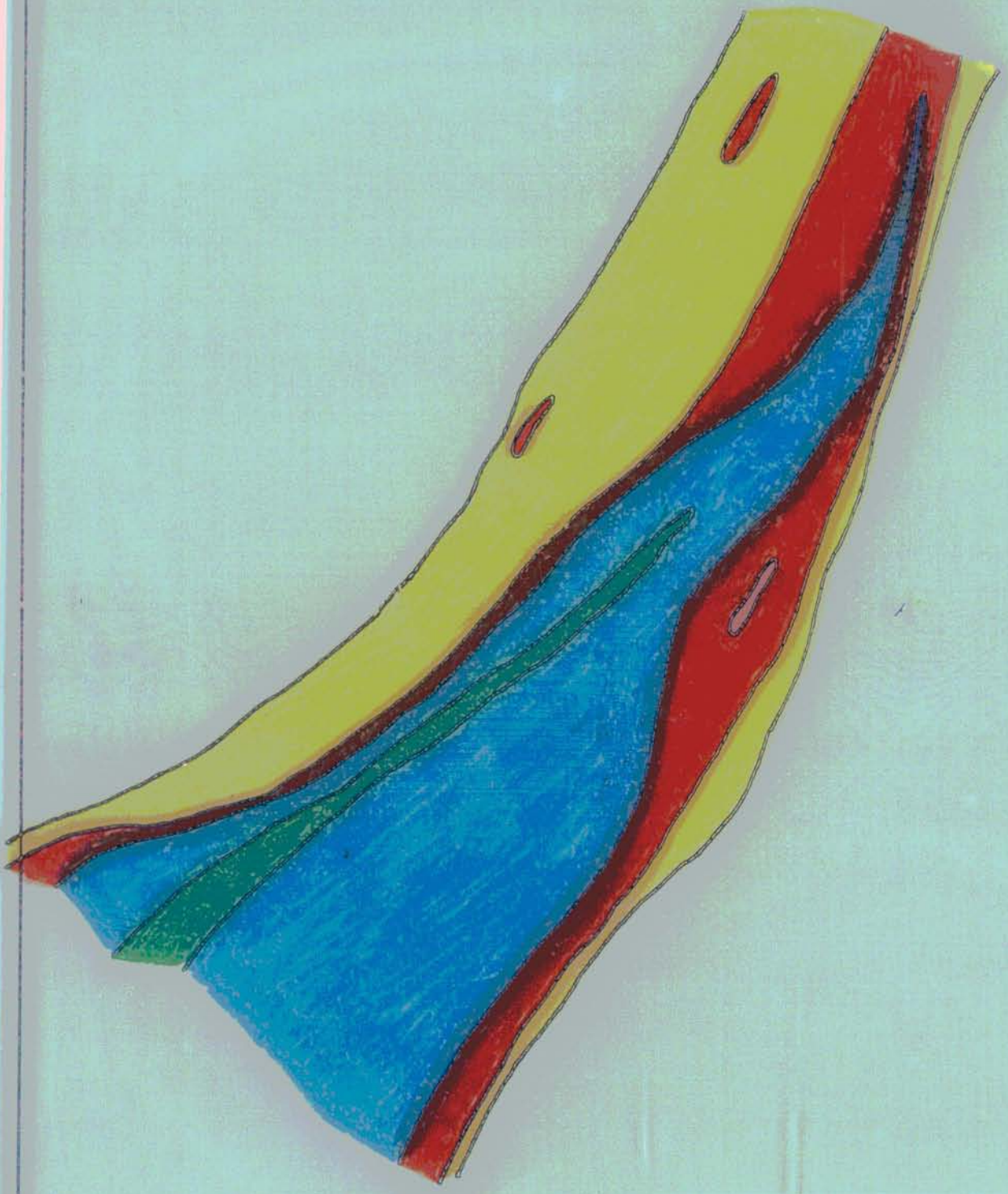
There is also a possible plotting problem due to the varying and non-lineal number of frames between fiducial marks, apparently an effect caused by the helicopter slowing down in precipitous situations, but cameras continuing at the same speed.

Several sets of prints of anomalous locations will be made off the DIGHEM film roll, and the results discussed in more detail. Dighem Reports and Maps (5) have been forwarded to Toronto.

Assuming DIGHEM plots correct, the centre of the Windy - Craggy EM anomaly on Line 105 is 1000 feet east of the only usable drill set-up, thus the footage allowance to guarantee complete penetration of the zone (DDH #9 or #9+100m N?) would be at least 1400 feet. A shallow hole (less than -45°) would run the likelihood of encountering huge cavities (such as DDH #2 and #1/65) and a steep one would never reach the zone within the capability of the drill without wedging.

III CONCLUSIONS

Despite many problems due to the pioneering aspect of the project, first stage drilling was successful in outlining the southern portion (1/3?) of the massive sulphide deposit. The main north center of the large body, it's presence now better confirmed by airborne geophysics, remains to be tested in 1982 as per earlier recommendations. Initial plans were to work outwards from this more northern location in 1981, but circumstances forced most early work southerly. Snow drilling was only moderately successful due to crevasses and appears doubtful for 1982. Thus the longer, more expensive alternative holes from the ridge top are required unless intermediate set-ups can be constructed (given low snowfall).



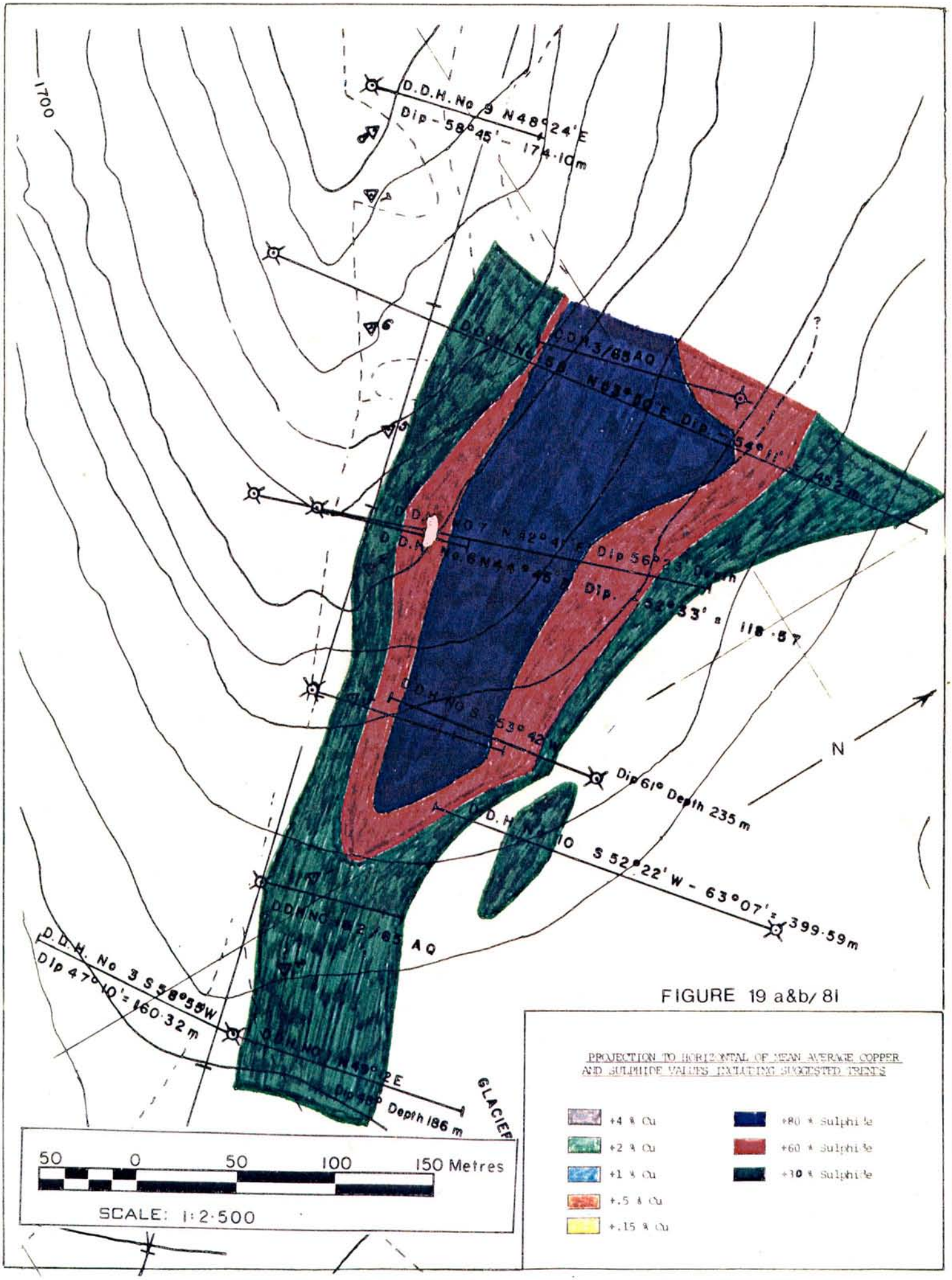


FIGURE 19 a&b/ 81

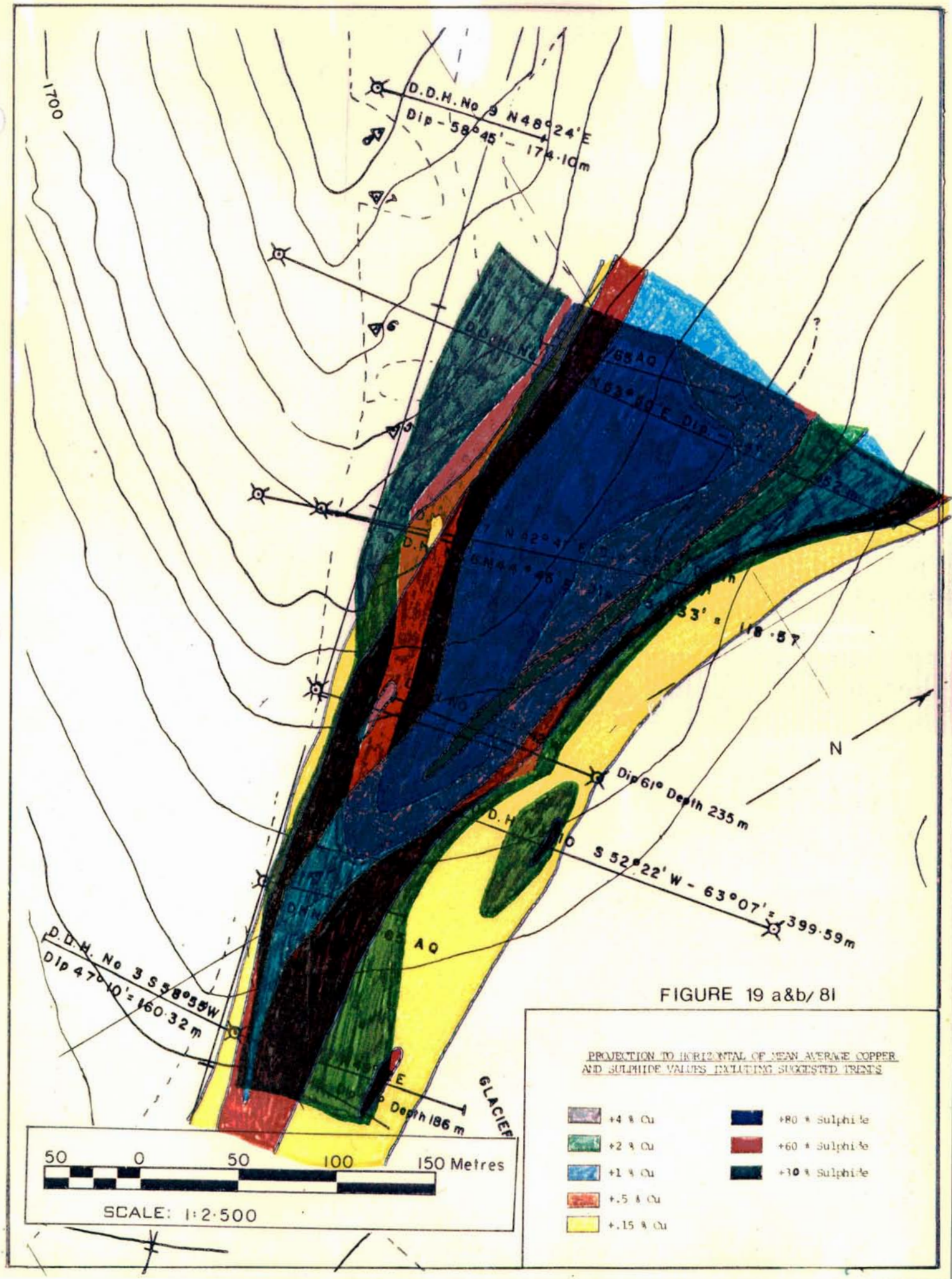


FIGURE 19 a&b/ 81

IV PROPERTY SITUATION

The Windy - Craggy claims have 5 years additional assessment applied to them (Figure 15/81).

V RECOMMENDATIONS

It is recommended that drilling proceed as initially planned, with modifications as dictated by circumstances yet unforeseen. Details are discussed under the 1982 Budget Section which follows.

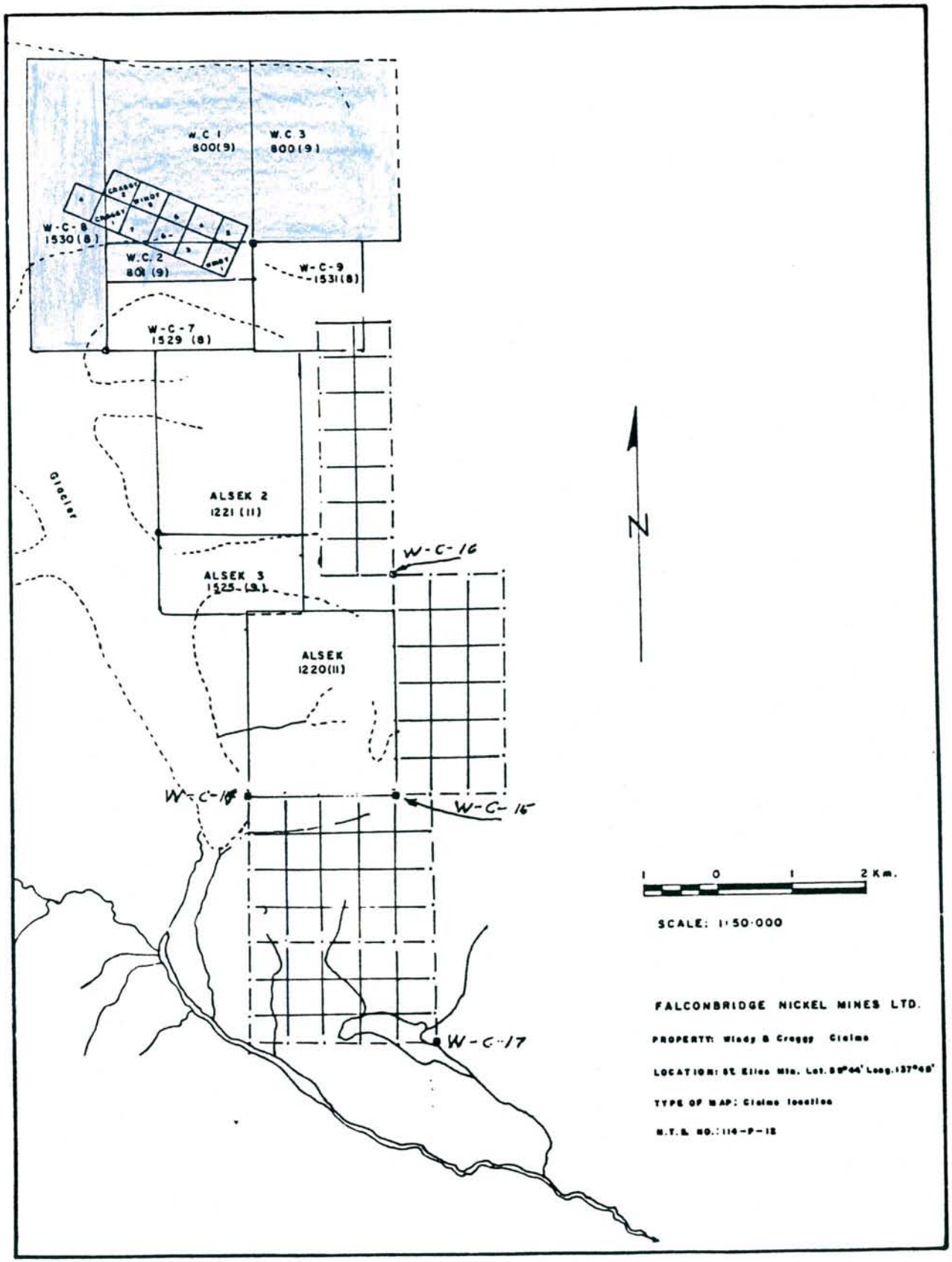


Figure 15-81: Windy & Craggy Claims
January (82)

1982 BUDGET

Budget proposals are presented under two headings, a) Current and b) Additional.

a) Current

Approximately $ 600,000.00 remains of the 1,500,000.00 budget originally planned. The best possible cost estimating can be done by simple reference to 1981 costs. Certain cost items will not occur again but others, such as mobilization on completion of the program must be considered. Costs of some items involved in any expanded program are also presented.

Overall project costs in 1981 worked out to about $100/foot. The only items which will be reduced significantly in 1982 will be infrastructure (camp, etc.) and excessive fuel hauls by helicopter. During the past season these items totalled about $150,000.00. Deducting them, 1982 costs should then be about $83/ft. With inflation increase, a $90/foot figure should be used. Implimentation of new drilling techniques - drilling mud, water heaters, NQ rod for initial drilling, and fewer set-ups but longer holes - should reduce costs to about $80/ft, but a larger helicopter will be required for moves in a more difficult terrain. The safest estimate then works out to about $85/ft overall, allowing about 7000 feet of drilling for the $600,000.00 available.

Items in addition to those required in 1981 should include:

1) Larger project helicopter - a Long Ranger will cost more but this will be offset by more efficient crew moves and better lifting capability at altitude - Cost Diff. - 0.

2) A better communication set-up between crews, helicopter and Northern Telephone. This is a safety requirement which should add considerable efficiency as well. A VHF system, totally recoverable, has been designed similar to others in use in the St. Elias - Cost $12,000.00.

3) Expanded mapping of the Windy - Craggy Deposit and legal but minimal claim surveying (i.e. W. C. #1, 2, 3 and 9) - Preliminary estimate (McElhanney - $10,000).

4) Expanded DIGHEM Survey including better definition of the Windy-Craggy Deposit $20,000 (should be done along with the Tats Deposit). The job and price depend on the availability of DIGHEM in the area - i.e. they may be working nearby in Alaska. The remainder left in the fund applicable against comparative drilling costs would then be 558,000, which would allow 6550 feet of drilling.

b) Drilling Plans - 1982

No changes are anticipated in the grid drilling program set up in 1981 which includes drilling on sections G to L, (Table 16/81). Snow drilling from the east would increase efficiency but we can not rely on such at this time, thus drilling will have to be done from the ridge top.

As outlined on Map 034/81 (a) (pocket), a short 500 ft. drill hole should be put in from a convenient set-up on Section A, which can be occupied earlier. This hole, #11, would test any plunge of the sulphide body to the south and may help explain the sudden termination evident on surface , or the weak DIGHEM response (Figure 17/81). Priority would be lower than that of the other holes, however.

The length of Hole #9 (Section G-C') must be doubled (600 feet remaining). Some consideration will be given to induced flattening by wedging on all subsequent steep holes.

Drill Hole #12 will be on Section H (1300 ft), #13 on Section I-I' (1400 ft), and #14 on Section J-J' (1500 ft). Footage remaining (1250 ft) to arrive at a total of 6550 ft (1996.4 m) should be allocated to Section K-K', L-L' or M-M' (if feasible). These lengths would be minimal and unless holes flatten may have to be extended.

The above program will minimally test what the writer has always believed to be the largest part of the W. C. deposit, a concept enhanced in 1981 by the extremely high E.M. and accompanying magnetics

TABLE 16 - 81

DRILLING PLANS - 1982

DDH#	SECTION	BASELINE	CO-ORDINATES N	CO-ORDINATES E	ELEVATION metres	BEARING	INCLINATION	MINIMUM DEPTH metres	COLLAR	PURPOSE
11	A-A'		10,020	10,070	1560	N 48 E	-50°	152.4	creek near camp	test plunge to south & EM anomaly
9	G-G'		10,435	9,610	1812	N 48 E	-58°	182.9	ridge	partly drilled
12	H-H'		10,515	9,580	1840	N 48 E	-50°	396.2	ridge	on section test
13	I-I'		10,565	9,985	1845	N 48 E	-50°	426.7	ridge	on section test
14	J-J'		10,612	9,385	1870	N 48 E	-50°	457.2	ridge	on section test
15	K-K'		10655	9,285	1880	N 48 E	-60°	381.0	bluff	on section test
or										
15	L-L'		10,985	9,450	1845	S 48 W	-45°	381.0	Ridge OC	test holes to sample diss. min. & to test at medium depth for massive S_2
or										
15	M-M'		11,056	9,375	1840	W	-60°	381.0	Ridge snow & talus	exploration hole to test cliff exposed mineralization.

TOTAL 1996.44 m. (6550 ft)

FIG 17/81 DIGHEM EM SURVEY, TATS AREA (SCALE DISTORTED)

encountered by airborne work. We can not affort gambles on such as deep surface (?) cavities encountered in DDH #4, thus the holes should be steep enough to miss these problems. Each set-up will be rationed to only one hole. Unless other financing arrangements can be made, it being more important to prove continuity along strike that at depth. Continuity of the sulphide body will be proven by intersections but little will be gained as to continuation or configuration at depth. The most northerly hole envisioned (on Section L-L' or M-M') will air in the direction of the massive sulphide evident on the inaccessible north (Craggy) cliffs. The outcrop will be geographically positioned by helicopter-controlled transit surveys. The intervening ground, although devoid of massive sulphides, is mineralized to some degree over impressive widths (1958 observations).

c) Budget Summary - Second Stage (minimal requirements to mount worthwhile program). This is presented on form #4.

d) Timing and Distribution

Jan.	Supervision, Communications System and Warehouse overhauls and preparation	$ 10,000.00
Feb.	As above, plus fuel haul	100,000.00
March, April & May (as Jan.)		30,000.00
June	As Jan., plus mobilization	30,000.00
July	Drilling - as 1981	100,000.00
August	Drilling - as 1981	150,000.00
Sept.	Drilling, Demobilization	100,000.00
Oct.-Dec.	Supervision, Assays, Report	80,000.00
	TOTAL	$600,000.00

e) Third Stage Program - 1982 (for reference only - not budgeted for at this time).

A) Moderate Expenditures

1)	Extra drilling - deepening of 1982 holes (1000 foot total) plus two extra holes from established set-ups (3000 ft) = 4000 feet @ $50/ft (estimate overall average $70/ft*)	$200,000
2)	Geological Survey - extra, 15,000	15,000
3)	Local Exploration and Sampling, W. C. type deposits	15,000
4)	Regional Exploration and Sampling, W. C. type deposits	20,000
	TOTAL	$250,000

e) B) Heavier Expenditures (1981 Range - for reference only)

1)	As (A) on previous page	250,000
2)	Additional drilling, north end. Would include oblique (off-section) holes for a flatter intersection, or crevass bridging (metal mesh) from ice cap: 2000 ft @ $90/ft (see map 034/81(a)) if larger helicopter available.	180,000
3)	Cat road access to establish winter road route to Tats Lake. 42 miles @ $15,000 mi. Haulage road costs (to Tats Lake only) estimated at $40,000/mi, plus $150,000 for bridges, culverts, etc.Bridge Costs including pile driving are about $1000/ft	630,000
	TOTAL	$1,060,000

f) Comment on Second Stage Program

This program is essentially set up and only modifications are required for it's implementation.

Some early committments are required, however. These include:

1) A committment to Longyear so they can 1) begin construction during the off-season of special design water heaters and 2) decide on drill deployment - i.e. if we're not proceeding, they want their drills back. The same holds for D. J. Drilling's J. D. Tractor.

2) A committment to construct the VHF mobile terminal - lead time 5 months due to uncertainty of part procurement.

3) Arrangement for 1982 field help.

EXPLORATION FORECAST FORM 4

1982

Project Name Windy - Craggy Project Number 135

		$ Estimate	
SURVEYS			
Salaries		5,000	
Transportation		7,000	
Contract Payments (Legal Land)	10,000		
(Other)	20,000		
Field Expenses		12,000	
Assays		3,000	57,000
DIAMOND DRILLING			
Salaries		15,000	
Transportation		7,000	
Contract Payments		233,000	
Field Expenses *		245,000	
Assays		5,000	505,000
CAMP OPERATION			
Salaries		8,000	
Camp Supplies		21,000	
Hotels & Meals		2,000	31,000
METALLURGY AND MINERALOGY			5,000
OPTION PAYMENTS AND PARTICIPATIONS			
PROPERTY MAINTENANCE			2,000
TOTAL FOR PROJECT			600,000

Notes - * (includes fuel & haulage - 65 Deisel, 20 Stove Oil, 200 bbls JP4 Totallying $62,000) JP4 based on 400 hr helicopter contract .

SUMMARY

EXPLORATION FORECAST 1982

o.	PROJECT Name	MEMO ONLY FIXED COSTS Salaries incl. in details →	Surveys	Diamond Drilling	Camp Operation	Metallurgy Mineralogy	Option Payments etc	Property Maint.	TOTAL
135	Windy-Craggy	28,000.00	57,000.00	505,000.00	31,000.00	5,000.00		2,000.00	600,000.00
	TOTALS								600,000.00
	Nickel								
	Non-Nickel								

Form 2

EXPLORATION SUMMARY

FORECAST OF EXPENDITURE FLOW 1982

oject No.	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	TOTAL
135	10,000	100,000	10,000	10,000	10,000	30,000	100,000	150,000	100,000	30,000	30,000	20,000	600,000.00
OTALS													600,000.00
ckel													
-Ni.													

4) Fuel haul arrangements while snow conditions are suitable (Feb.)

5) Helicopter Arrangements (there were no established company machines left available as of March, 1981). We will look hard at Pacific again, providing the correct pilot and machine are available. A 206 L_2 model (latest with larger engine) would be the most suitable.

g) Comment on Third Stage

This would involve more extensive work on the Windy Craggy deposit.

Examination in December, 1981, of routes to Tats Lake (J. J. McDougall, Grant Stewart, J. Hugi) suggested that the best winter access would be from the Carmine (Red Mtn) airstrip across the lower O'Connor and up the south side of Tat Creek (see Map 114P in Folio). Work involved can only be properly estimated in the summer when overburden, etc. can be examined. A cat could probably walk thru in about 2 weeks, preparing a later winter cat train route. This would anticipate an expanded project in 1983. Other routes - i.e. Henshi Creek (E. Arm) seem a distant second choice at this time due to the roughness of the glacier, although the base of the East Arm glacier could be reached easier than could Tats Lake.

Tats Glacier would present about a mile of tough going for a large cat before it smoothens out, but there is more room to manoeuvere than on the East Arm. Ultimate access to the deposit (i.e. possible adit) appears much better off Tats Glacier unless a roadway can be blasted in solid rock to the camp on a bench 200 feet above. An adit would be collared off the edge of the glacier below the Red Creek camp but snow accummulations would have to be allowed for at the portal - i.e. a 50 foot(?) shed elevated by fill on the glacier would be a minimal requirement. Waste rock would conceivably supplement the natural and extensive gravel moraines forming a solid and elevated roadbed which should

move so slowly as to be hardly troublesome. The one mile above the base of the Glacier would be most difficult, requiring heavy equipment and gravel to fill numerous ice depressions . However, once in, this route would be free of dangerous crevasses or avalanches. Contractors will not estimate beyond Tats Lake until the area is ground examined.

Further comment on possible additional stages is not practical at this time.

APPENDIX 1

Photos

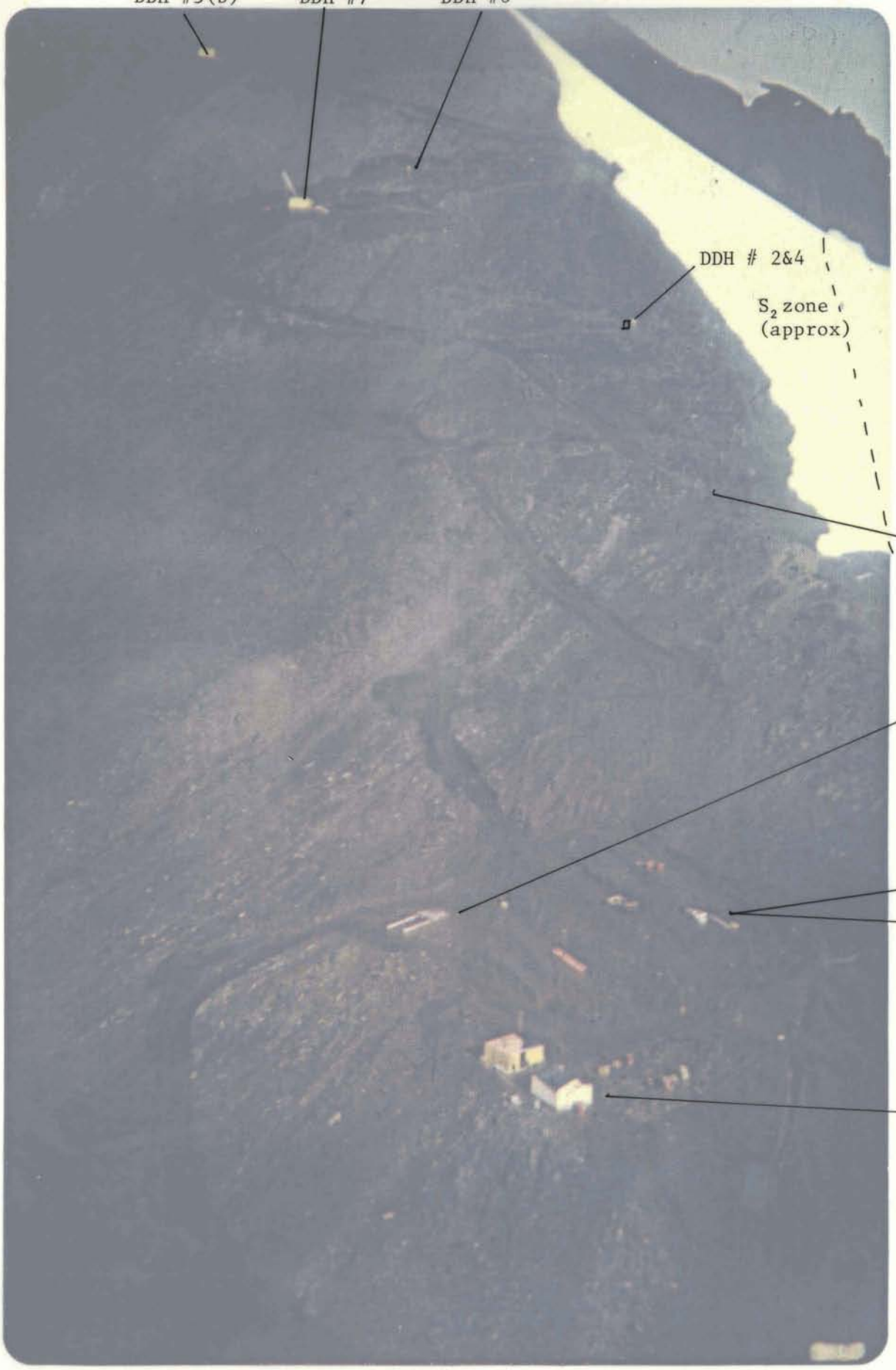
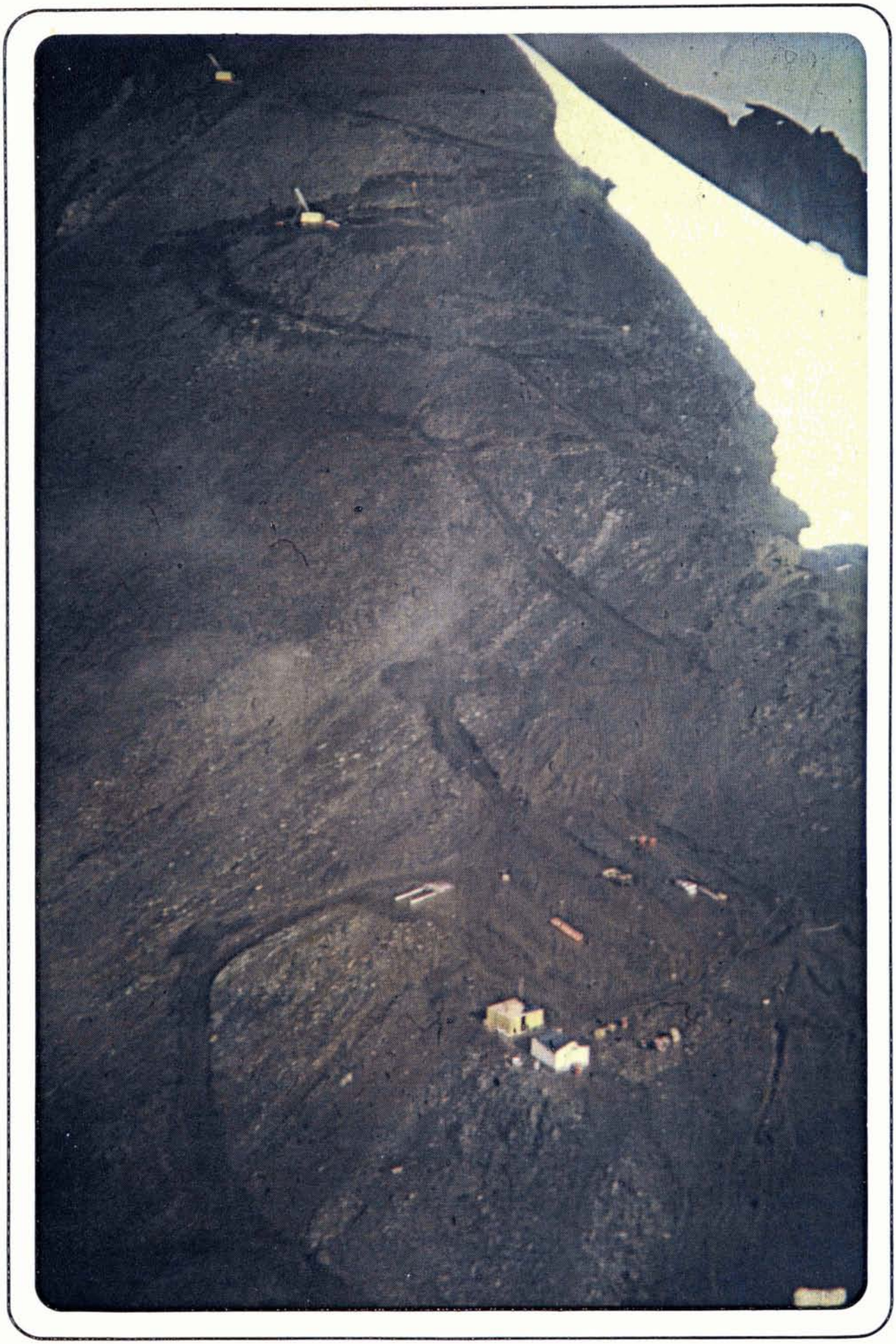


Photo 1/81 - W.C. Zone looking North, July/81



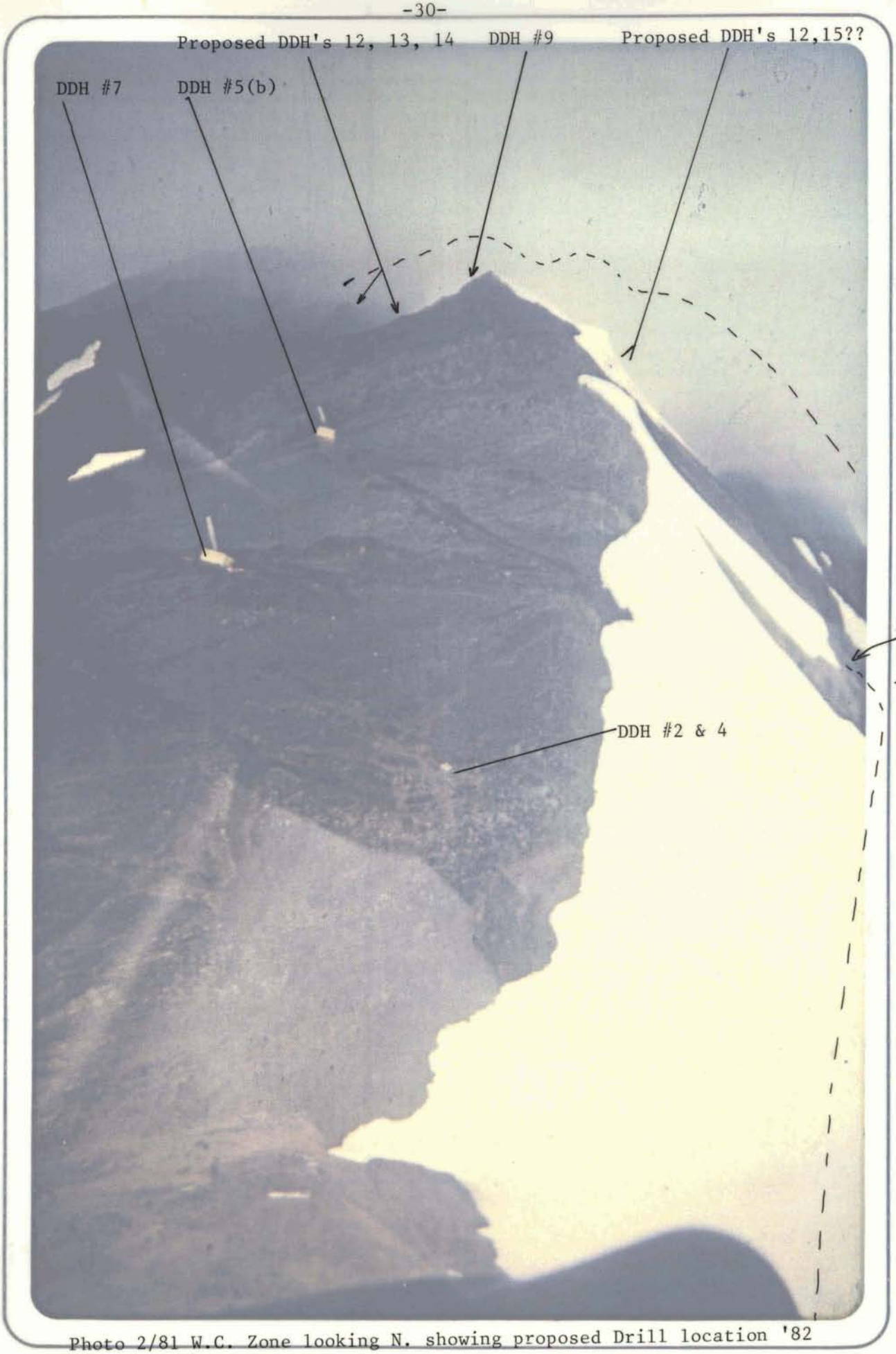


Photo 2/81 W.C. Zone looking N. showing proposed Drill location '82

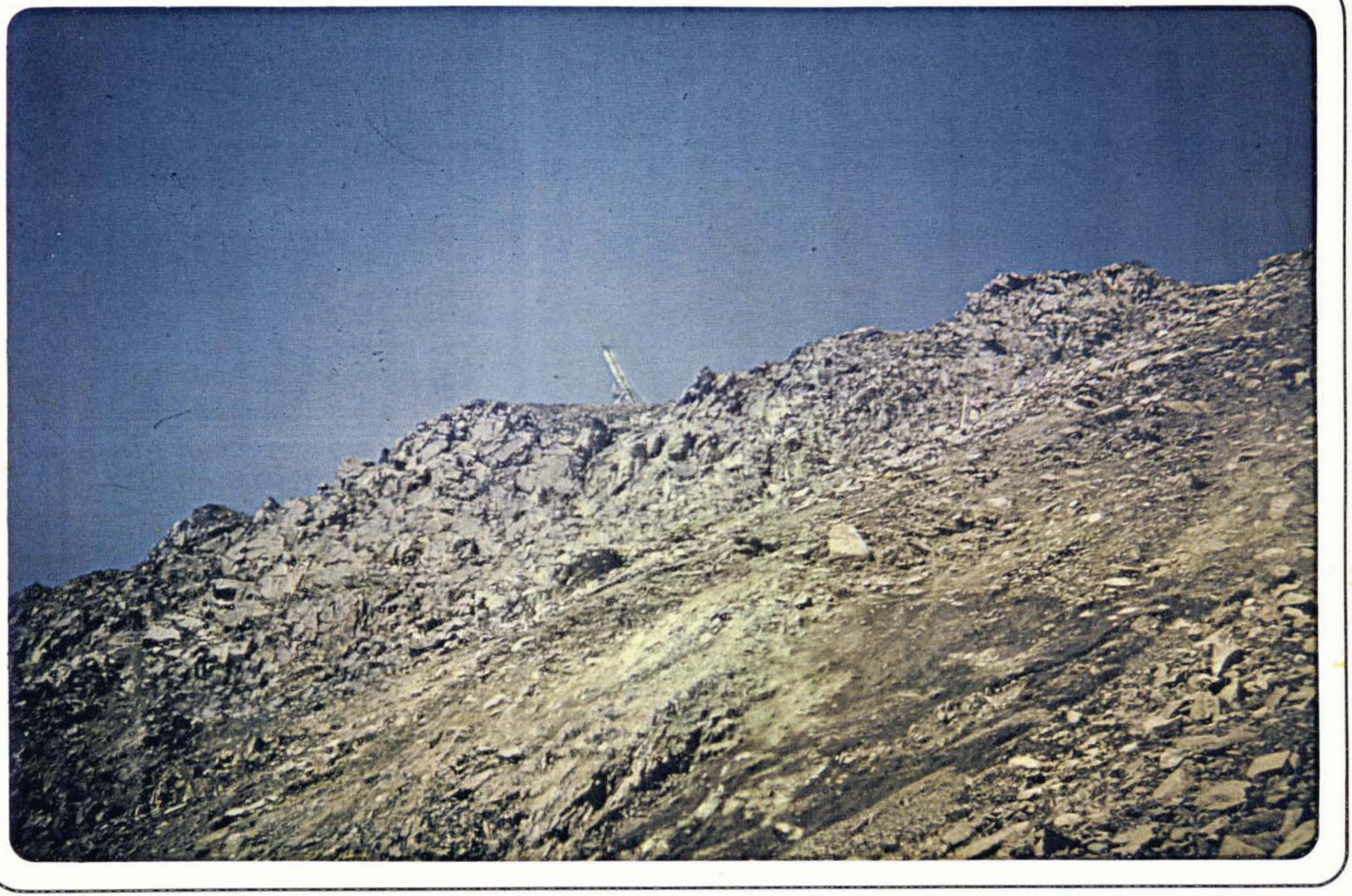
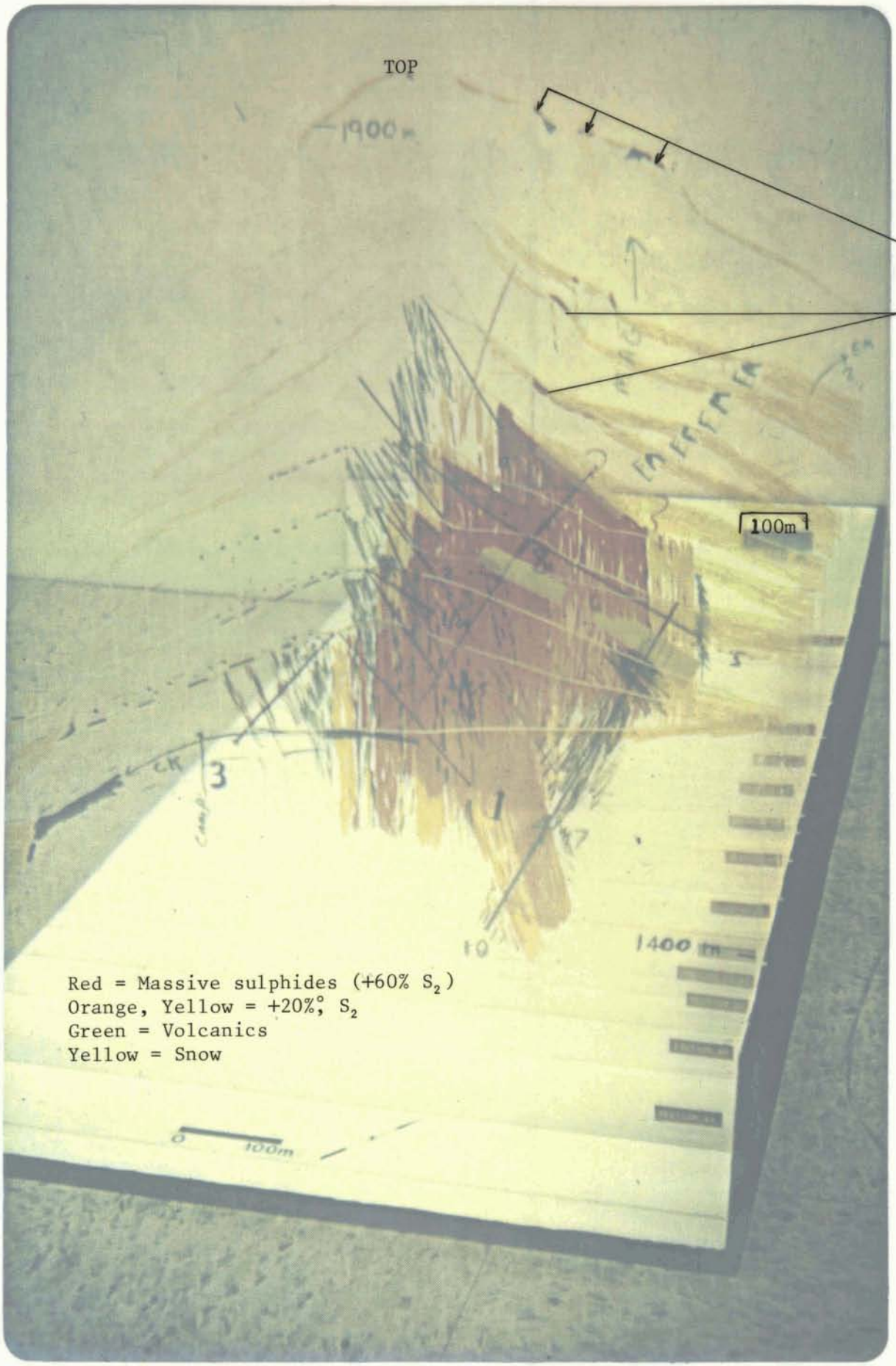
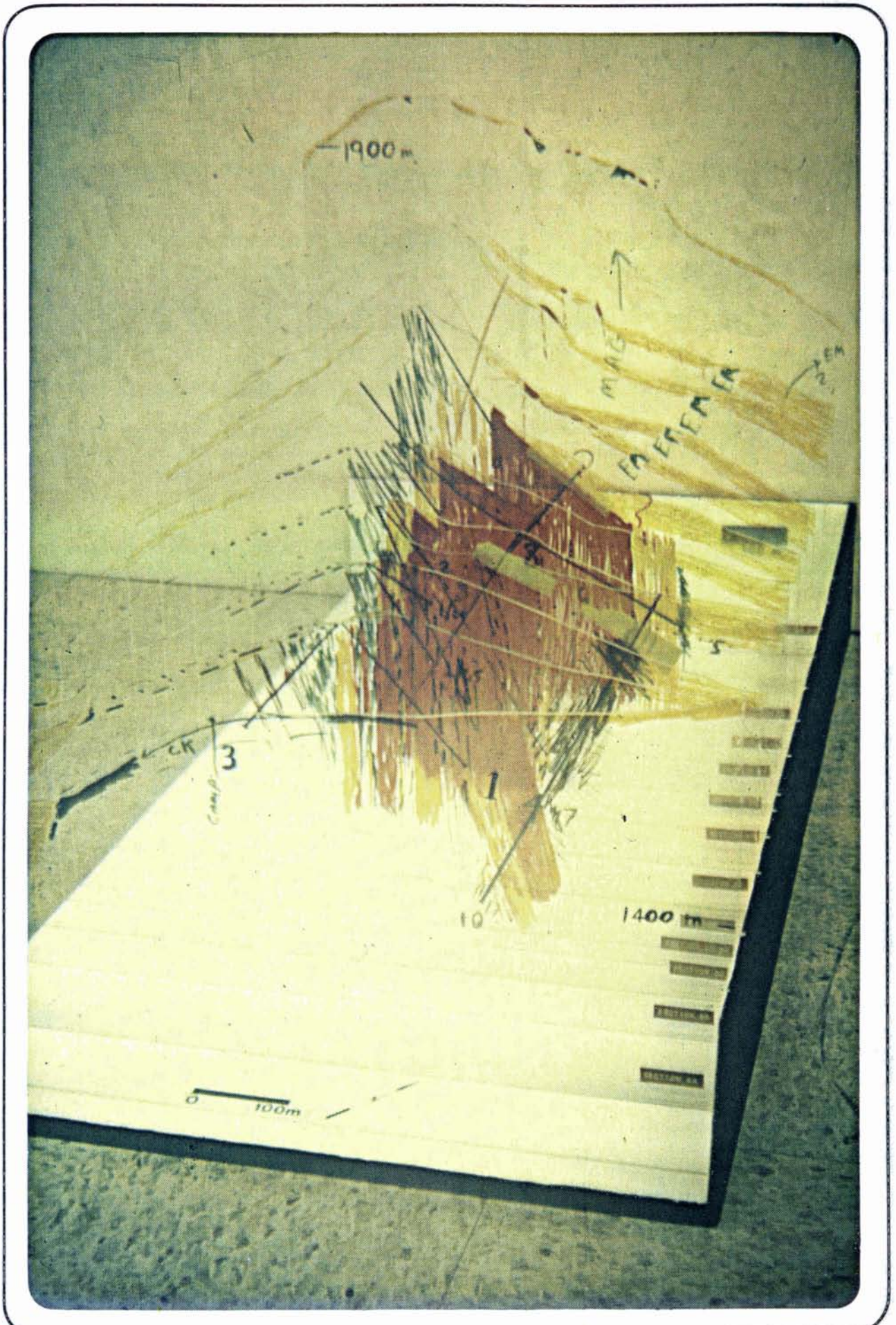


Photo 3/81 DDH #9 looking N. from approx. location DDH #5, Aug 81



4/81 - preliminary sketch model and inferred projections W.C. zone looking NW


1900 m
CR
3
1
10
1400 m
0
100m

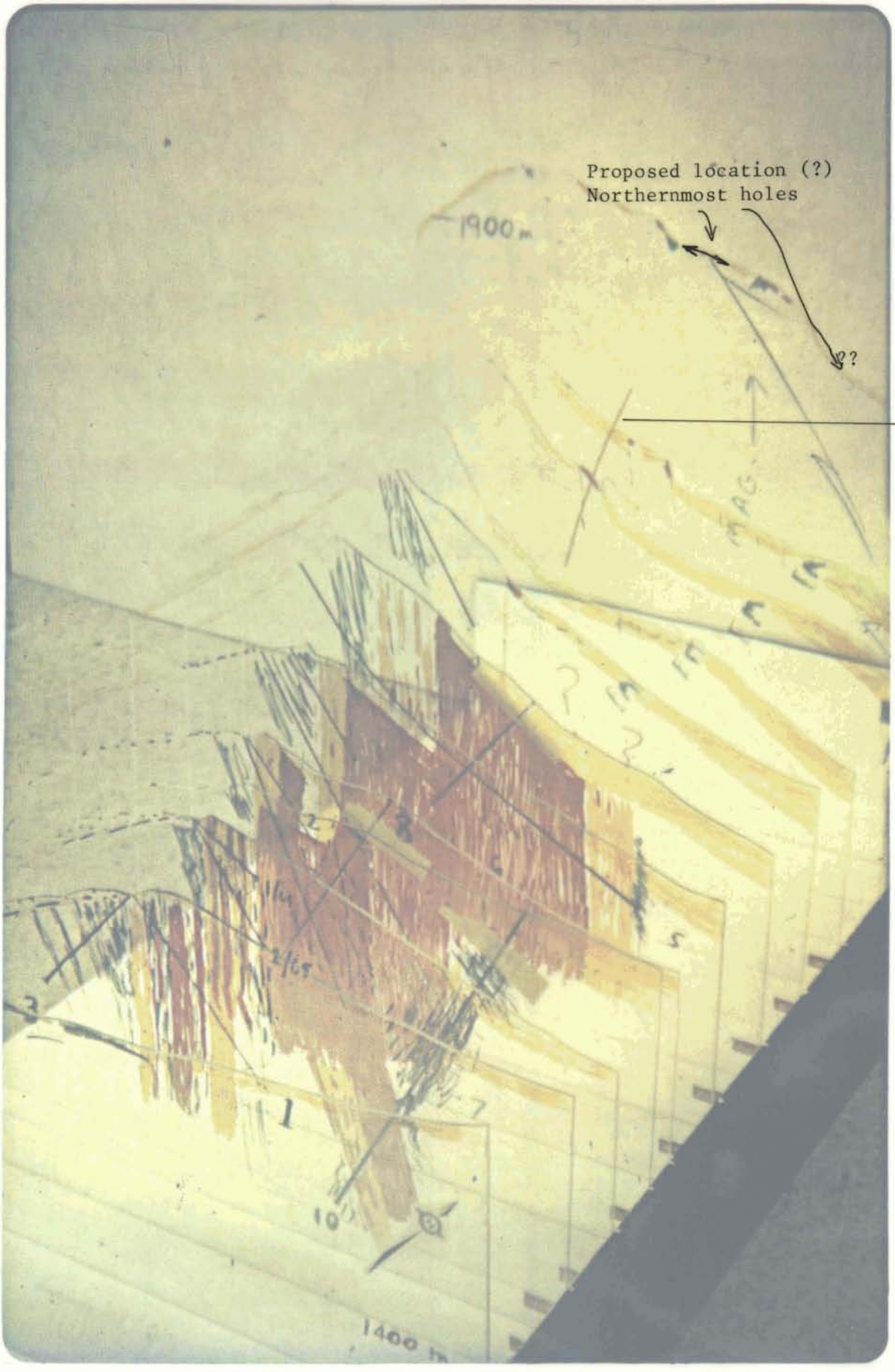
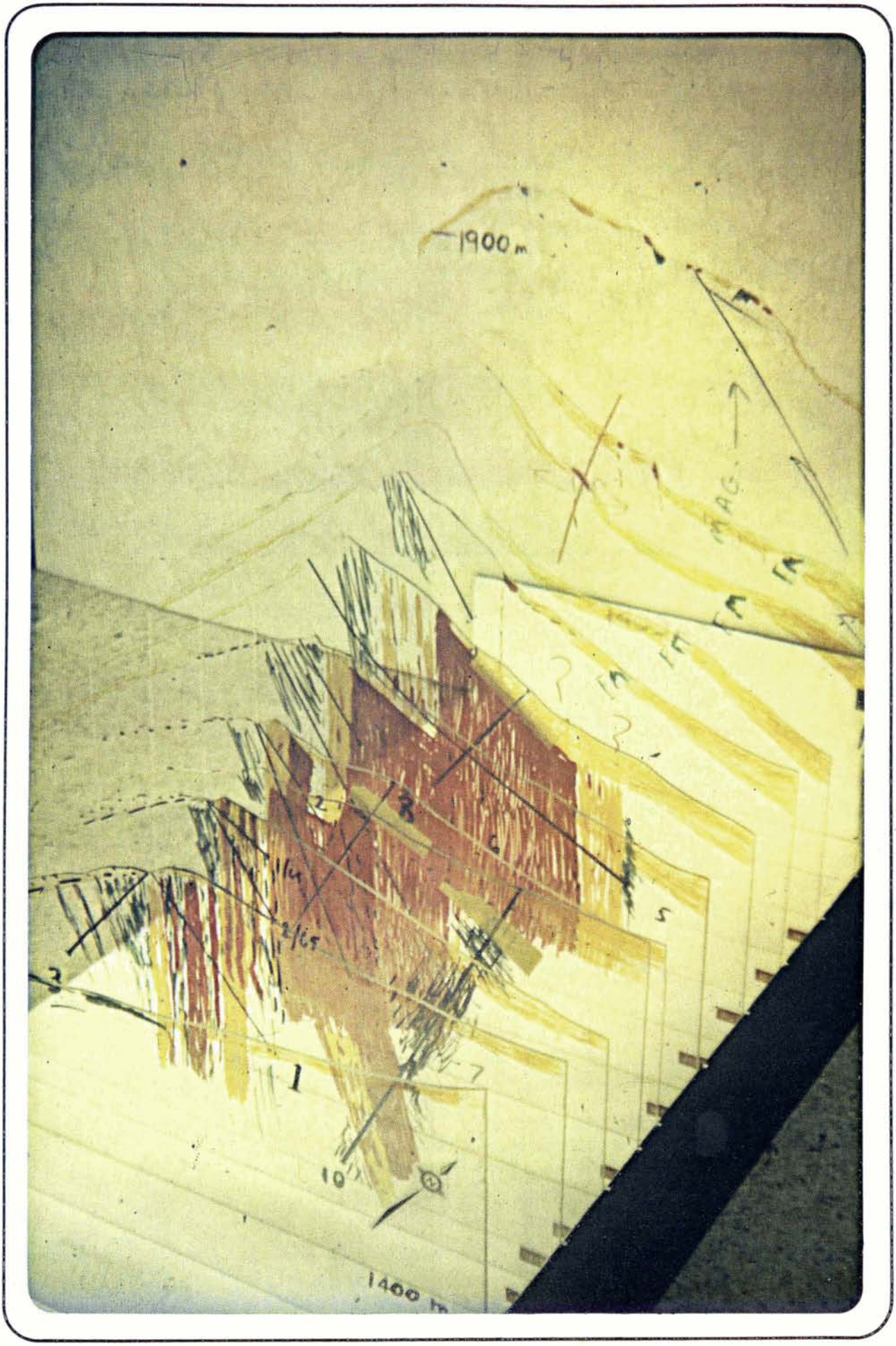


Photo 5/81 - as 4/81 showing proposed location 1982 drilling


1900 m
1400 m

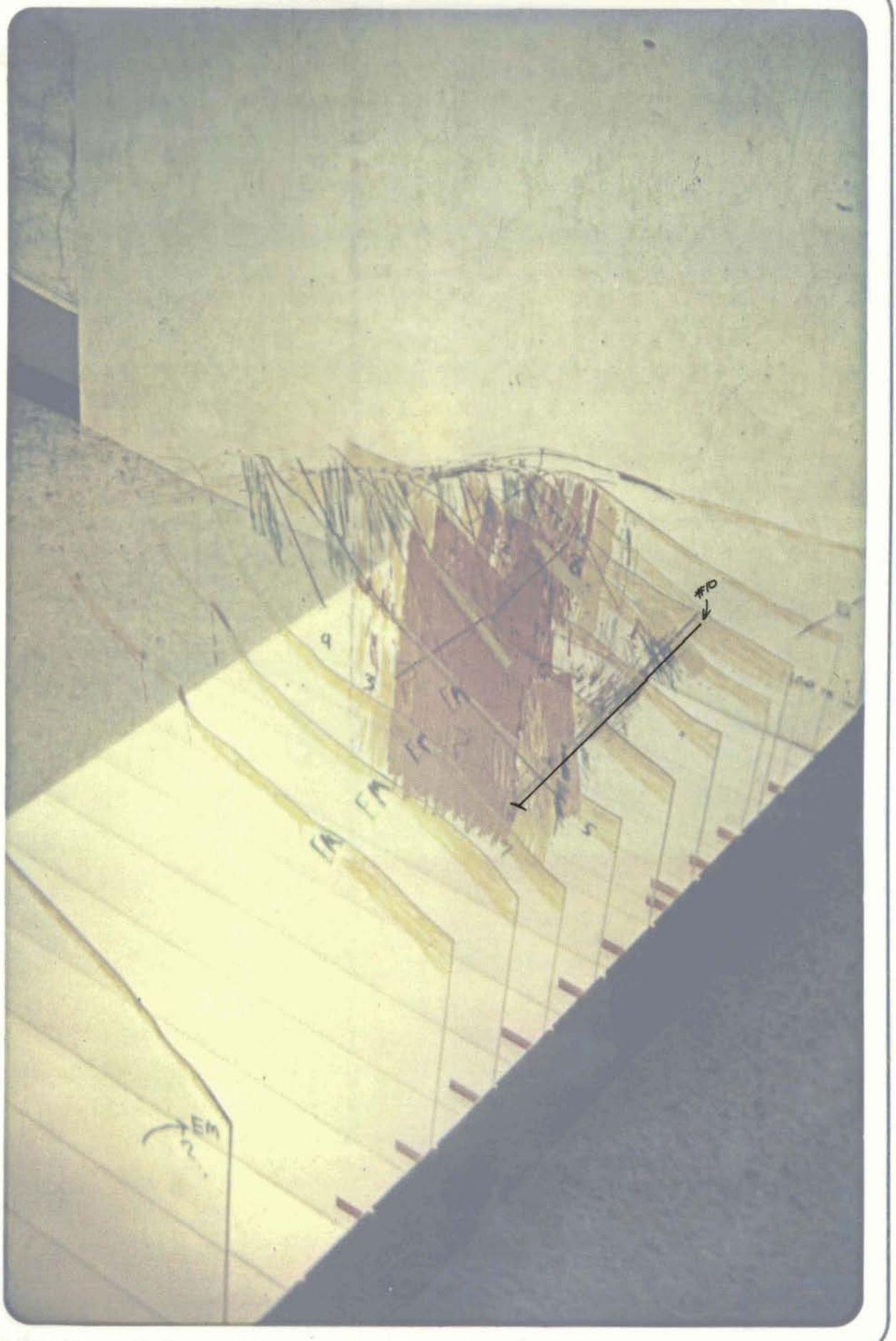
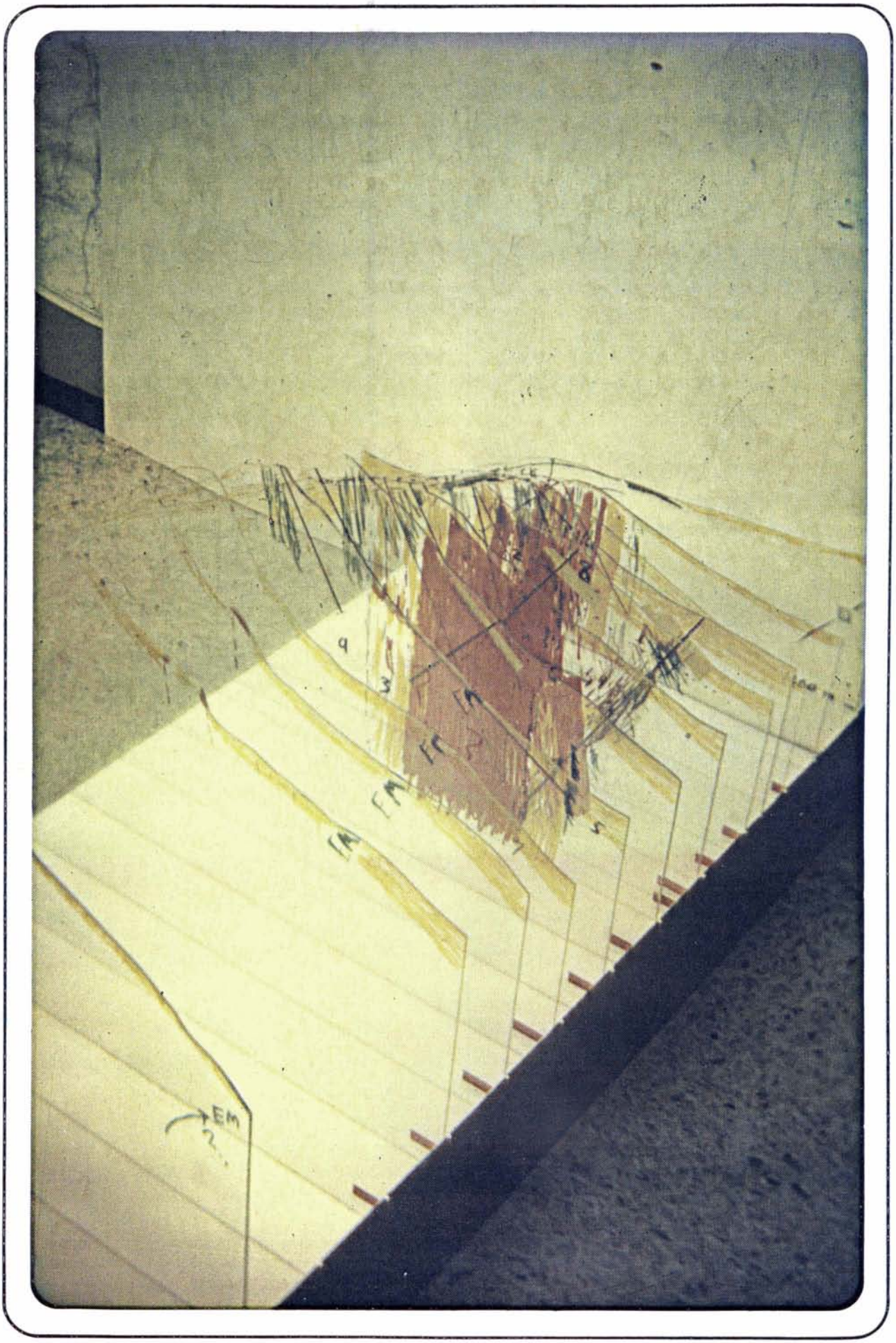


Photo #6-as #4 but looking south. Photo is reversed but shows best the location of DDH #10 whish may not have penetrated the main zone unless fault displacement has occured.


EM
2

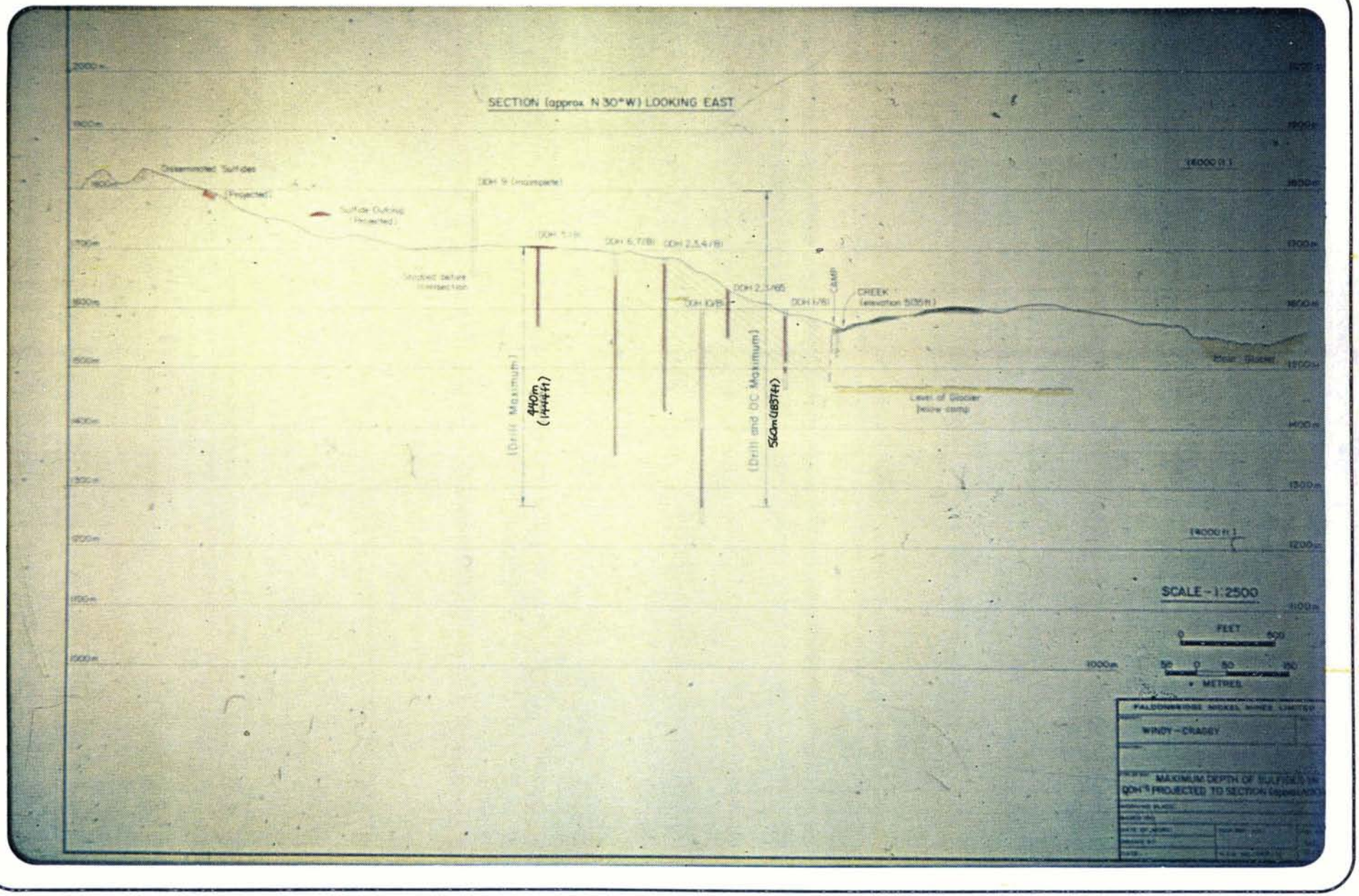


Photo 7/81 - Longitudival view looking east of drill holes projected showing depths at which sulphide was encountered. NOTE: LEVEL OF GLACIER

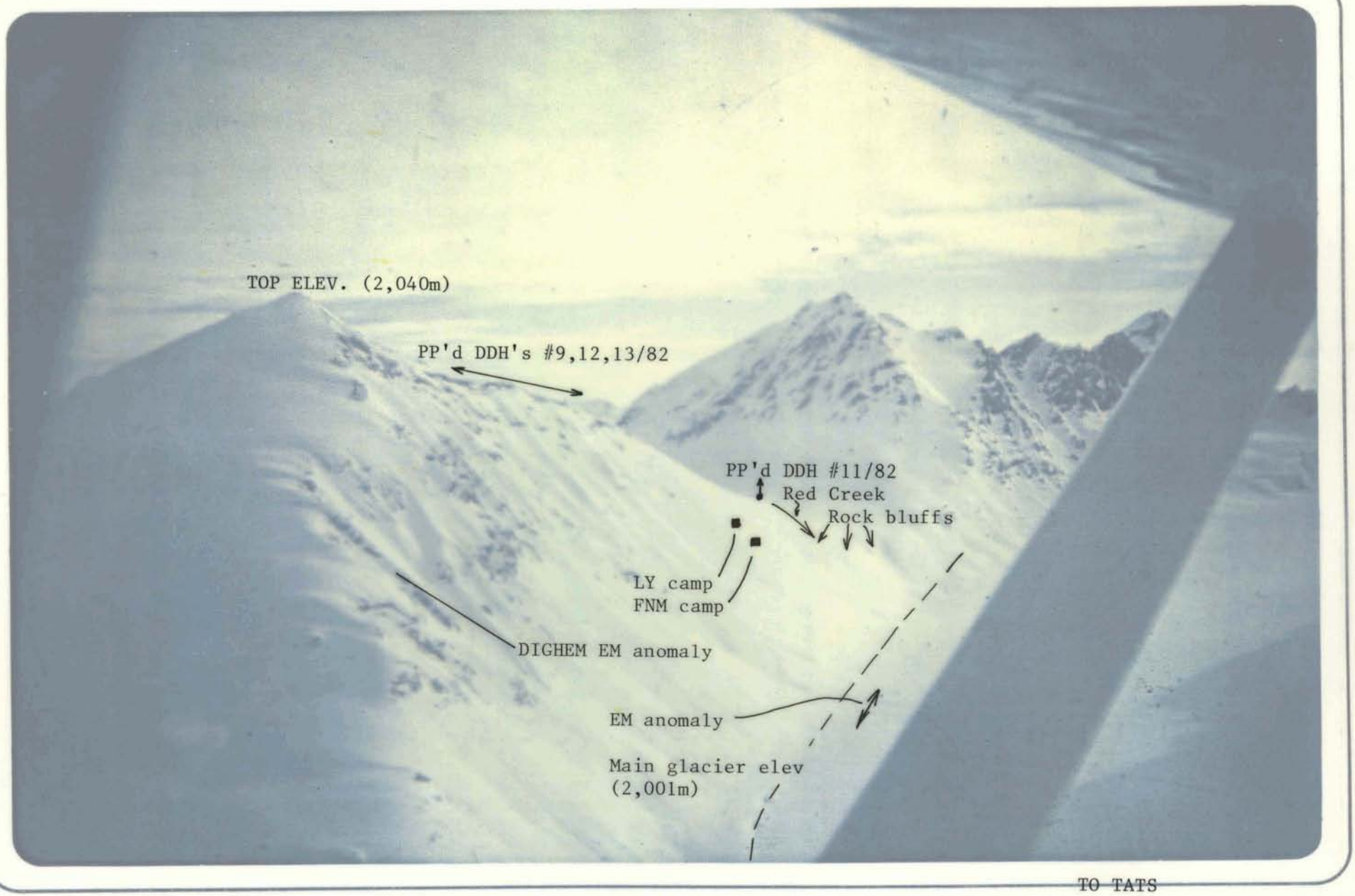
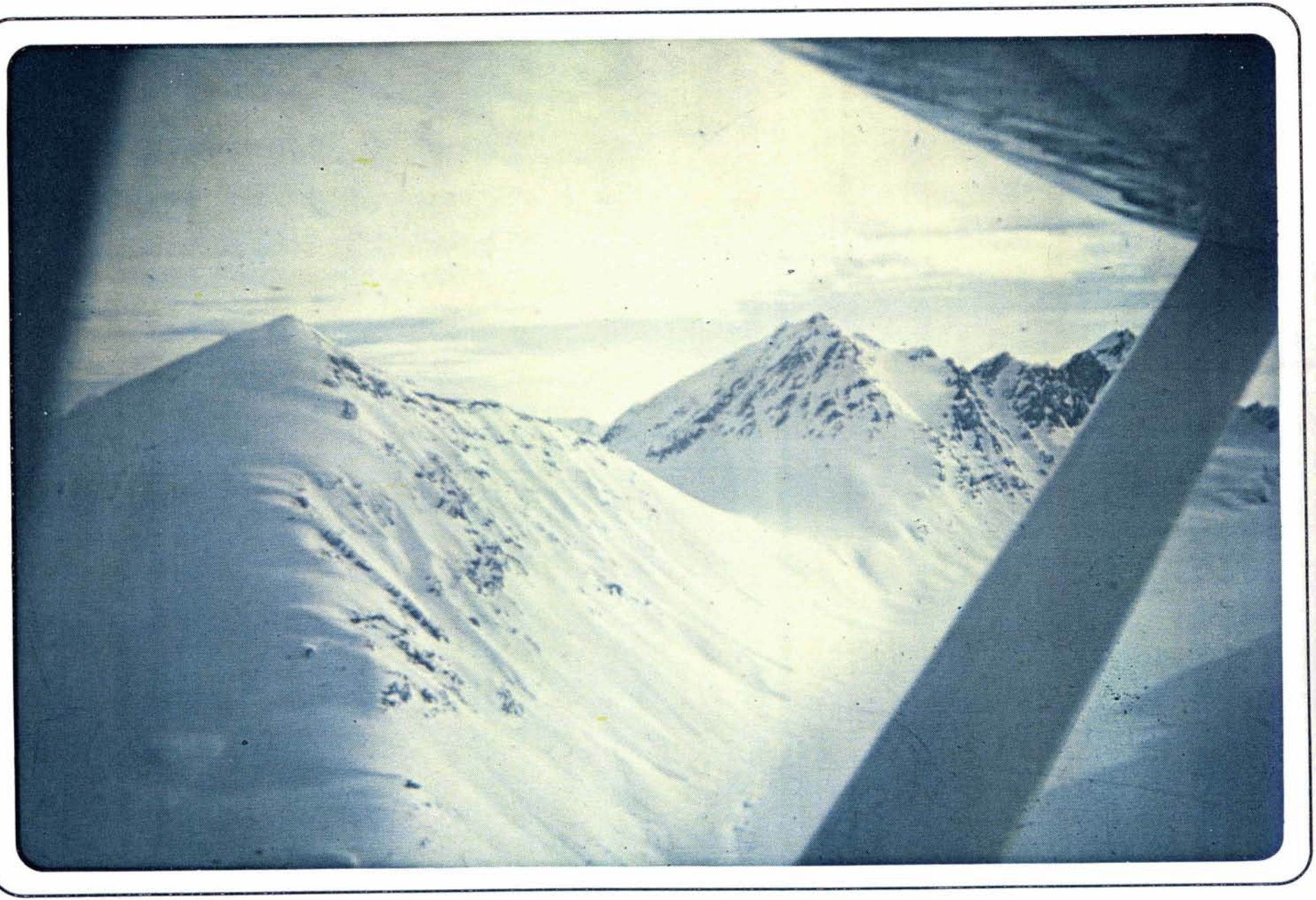


Photo #8/81 - W.C. in winter, looking from S.W.



APPENDIX 2

Diamond Drill Logs

LEGEND

A Massive sulphides (50-100%), pyrrhotite, pyrite, chalcopyrite.

B Sulphides (10-50%), pyrrhotite, pyrite, chalcopyrite largely as stringers, bands & patchy mineralization.

C Sulphides (0-10%), pyrrhotite, pyrite, chalcopyrite as disseminations, vein & fracture fillings.

D Rusty gossan-highly oxidized.

1 Relatively unaltered basic-intermediate flows, sills & dykes (andesitic)

2 Schistose fine grained basic volcanics, pillow lavas, chlorite & epidote alteration (spilitic basalts?) commonly interbedded with chert & argillite.

3 Relatively unaltered medium to coarse grained basic-ultrabasic intrusives (dioritic - gabbroic?).

4 Felsic dykes, light grey, medium grained.

5 Black shale, laminated, aften argillaceous & calcareous.

6 Argillite, black, thinly bedded & massive, commonly calcareous & pyritic.

7 Undivided minor metasediments & metavolcanics, thinly bedded.

8 Light grey to black limestone, argillaceous.

9 Dark green to grey chert, commonly chloritic, resembles fine grained rhyolitic volcanics in places.

10 Volcanic breccia-conglomerate, subangular foreign clastics, tuffaceous matrix (laharic breccia).

ABBREVIATIONS

po	pyrrhotite	volc	volcanics	fg	fine grained
py	pyrite	arg	argillite	mg	medium grained
cpy	chalcopyrite	calc	calcareous	cg	coarse grained
n cu	native copper	qtz vng	quartz veining	diss	disseminated
mal	malachite	cte vng	calcite veining	amyg	amygdaloidal
az	azurite	oxid	oxidized	bx	brecciated
chal	chalcanthite	sulph	sulphides	frac	fractured
cup	cuprite	vnlts	veinlets	str	stringers
chl	chlorite				
epte	epidote				
sph	sphalerite				
cte	calcite				
qtz	quartz				

Ore Zone Margin

Massive Sulphide Zone

Geological Contacts

Possible Fault

DRILL HOLE RECORD

FALCONBRIDGE NICKEL MINES LIMITED

FNM68

	Inclination	Bearing
Collar 600 ft	-48°	N 49°12 E
	-45°	

PROPERTY W.C. (WINDY-CRAGGY)
Location South end W, Section B-B'
Elevation 1608.42m
Coordinates 10,147·29 N
10,036·28 E

Length 185.93m (610 ft)
Hor. Comp: /Vert. Comp:
Bearing N 49°12 E
Begun July 19/Completed 7/22/81
Core size BQ /Recovery ±95 %

HOLE No. 1-81 PAGE # 1
Sheet of
Logged by Don Hoy
Sampled by " "
DRILLERS Longyear (FLY # 38) RIG# 2

FOOTAGE From	To	RECOV'Y Run	Core	DESCRIPTION
0	6		50%	Drill Casing
6	10		60%	Intensely fractured metasediment - metavolcanic, Fe staining, chloritic
10	21		40%	Fractured zone, rubbly to pebbly core recovered
21	27		95%	Massive sulphide zone, crudely banded Sulphides as Po(80%0,Py (15%), cpy (5%)
27	36		100	Sulphide zone, (5 - 20%), hosted in fine grained basic volcanic and interbedded argillite, mineralization largely as disseminations and stringers of po, py, and cpy, 29'-4" band of massive cupriferous pyrite. 30-31.5' banded massive po, associated py & cpy
36	41		100	Massive sulphide zone, (-70 - 80% sulphides), large blebs and patchy pyrrhotite, cupreous pyrite and chalcopyrite.
41	59		90%	Light to moderately fractured fine grained basic volcanic, contains 5% sulphides, stringers & bands of dominantly po with assoc. py & cpy. Chloritic fracture surfaces, quartz veinlets 51-51.6', oxidized zone, gossan.
59	93		90%	Moderate to heavy sulphide mineralization (~30-50% sulphide) massive po and assoc. py & cpy minor qtz and carbonate veinlets, mineral textures, massive, blebs, stringers & fracture fillings
93	96		100	Small interval of massive sulphide, pyrrhotite most abundant, accessory pyrite & minor cpy
96	105		100	Moderate to heavy sulphide zone,(30-50% sulphides) patchy po, minor cupreous pyrite & chalcopyrite, lightly brecciated,qtz & carbonate gobs
105	116		"	Zone of light sulphide mineralization, 5-10% sulphides, pyrrhotite most abundant, minor cpy, fine grained basic volcanic host
116	126		"	Massive sulphide, 70-80% sulphides, moderately brecciated, sulphide textures as massive & irregular shape gobs
126	140		100	Zone of moderate sulphide mineralization, (~30% sulphide hosted in fine grained basic volcanic, moderately brecciated,po most abundant, exsolved py & cpy
140	153		100	Brecciated fine grained basic volcanic (pillow lavas?),sparse to light sulphide mineralization, quartz-carbonate gangue, po bands & gobs
153	158		60%	Shear zone, fault gouging, brecciated friable crumbly core, slight oxidation, prominent chlorite
158	202		90%	Moderate to heavily brecciated basic volcanic, flow breccias in appearance, appreciable sulphides (~30%) crudely banded po with some assoc. pyrite, chloritic fracture surfaces 183-186' - intense fracturing, heavily brecciated, 189-191' - as above.
202	210		100	Extremely fine grained volcanic, finely disseminated sulphides, minor quartz veining
210	246		100	Light to moderately brecciated, fine grained basic volcanic, moderately mineralized (~10-30%) containing small massive sulphide bands, quartz-carbonate gangue, sulphide textures are patches stringers, blocks and heavy disseminations of dominantly po, some py & cpy
246	266		95%	Dark green,fine grained basic volcanic, light to moderately brecciated, banded po comprising 10-15% rock volume,249', po & cpy massive sulphide band (~8")
266	281		95%	Sparsely mineralized (~5%) fine grained basic volcanic,268'fracture zone (@45°) pronounced chlorite on fractures,280-281', brecciated, conglomeratic massive sulphide band po,py,cpy, quartz - calcite accessory.
281	312		90%	Lightly mineralized, fine grained basic volcanic as above, disseminated po & cpy, light fracturing, (@45°),305-312' sheared, fractured zone, abundant chlorite

GRAPHIC

SAMPLES No.	From	To	Ft	ASSAYS Cu%	Co%	COMPOSITES Au PPb	Ag ppm	S%	Zn ppm	Co%
15301	21	27	6	.71	.044					
302	27	36	9	2.11	.140					
303	36	41	5	2.23	.110	40	.3	40	40	.074
304	41	51	10	.52	.038					
305	51	59	8	.36	.028					
306	59	69	10	.81	.065					
307	69	79	10	.62	.069	25	.3	52	20	.097
308	79	93	14	.13	.056					
309	93	96	3	.83	.140					
310	96	105	9	.52	.140					
311	105	116	11	.24	.086					
312	116	126	10	.25	.230					
313	126	140	14	.20	.110	5	.2	40	200	.100
314	140	150	10	.14	.094					
315	150	158	8	.11	.100					
316	158	168	10	.24	.064					
317	168	178	10	.08	.032					
318	178	188	10	.24	.042	15	.6	21	440	.037
319	188	202	14	.23	.056					
320	202	210	8	.09	.029					
321	210	220	10	.26	.056					
322	220	230	10	.31	.052					
323	230	246	16	.83	.057	210	.3	31	305	.050
324	246	256	10	.96	.064					
325	256	266	10	.22	.065					
326	266	281	15	.20	.037					
327	281	291	10	.24	.022					
328	291	301	10	.02	.008	60	.3	15	100	.022
329	301	312	11	.04	.014					
330	312	322	10	.25	.046					
331	302	328	6	1.36	.085					
332	328	340	12	.03	.010					
333	340	350	10	.14	.021	105	.2	22	130	.029
334	350	360	10	.19	.042					
335	360	370	10	.09	.025					
336	370	380	10	.02	.014					
337	380	390	10	.08	.008					
338	390	405	15	.32	.029	50	.4	11	470	.017
339	464	474	10	.48	.028					

** 405 TO 464 FT LOST IN TRANSIT AFTER LOGGING

Assayed Section 21-405', 464-474= 394 ft. lost 59 ft. ZnNE
total 453 ft (138m) a) Sulphide range 11-52%, average 29%
including 245ft@37% b) Copper range 0.02 to 2.23%.
c) Average 0.38% (369 ft) including 14 ft @ 2.15%

DRILL HOLE RECORD

FALCONBRIDGE NICKEL MINES LIMITED

FNM68

	Inclination	Bearing
Collar		

PROPERTY
Location
Elevation
Coordinates N
E

Length
Hor. Comp. / Vert. Comp.
Bearing
Begun / Completed
Core size / Recovery %

HOLE No. PAGE #
Sheet of
Logged by
Sampled by
DRILLERS RIG#

FOOTAGE From	FOOTAGE To	RECOV'Y Run	RECOV'Y Core	DESCRIPTION
312	328		100	Appreciable sulphides (~30-40%) hosted in lightly-moderately brecciated basic volcanic, abundant po assoc. with minor py & cpy, prominent chlorite film on fracture surfaces.
328	486		98%	Basic fine grained volcanic containing disseminated sulphide with small local massive bands, prominent quartz and calcite veining, suggestion of epigenetic stockwork mode of mineralization.
				350-351' - small massive po band, minor py
				352' - small massive po band assoc. with qtz veining
				363-365' - po and py assoc. with quartz and calcite
				368' - patchy po assoc.with quartz - carbonate veining
				387' - quartz-calcite vein (3") containing patchy po
				390-392 - large quartz vein with massive po, interstitial quartz
				394-399' - intensely fractured zone, chloritic
				404' - massive po unit (6")
				447' - massive po band (3")
				464-466' - massive sulfide, po & py
				468-469' - po band, massive, accessory py & cpy
				480-481' - shear zone, quartz veining containing po and minor py, chloritic
486	598		100	Fine to medium grained basic hypabyssal rock, (gabbroic - diorite?) coarser grained than preceeding volcanic units, lightly fractured, minor disseminated sulfides.
598	610		95%	Black laminated shaly-argillite, heavily fractured, chlorite on fracture surfaces.

GRAPHIC

SAMPLES No.	From	To	Ft	ASSAYS Cu%	Co%	COMPOSITES Au PPb	Ag ppm	S%	Zn ppm	Co%

DRILL HOLE RECORD

FALCONBRIDGE NICKEL MINES LIMITED

	Inclination	Bearing
Collar	-50°	N 48°29'E
367ft	-47°	

PROPERTY WINDY - CRAGGY
Location Location D-D' (south end)
Elevation 1666.69m
Coordinates 10,276.75 N
9,905.79 E

Length 111.86m (367 ft)
Hor. Comp. / Vert. Comp.
Bearing N 48° 29'E
Begun 7/22/81 / Completed 7/25/81
Core size BQ / Rec ±90% to 317'

HOLE No. 2-81 PAGE # 1
Sheet of
Logged by Don Hoy
Sampled by " "
DRILLERS Longyear FLY #38 RIG# 1

FOOTAGE From	To	RECOV'Y Run	Core	DESCRIPTION
0	10		50%	Drill Casing
10	36		70%	Highly oxidized fine to medium grained volcanic, intense high angle fracturing (80-90°)
				minor quartz veinlets, limonitic staining
36	44		90%	Banded fine grained basic volcanic, highly sheared & fractured (45°) some light oxidation
44	67		100	Grey, medium grained, intermediate to basic volcanic (dyke rock?) moderate to heavy fracturing
67	145		95%	Relatively unaltered fine-medium grained basic-intermediate volcanic (andesite?) light
				to moderate fracturing, light sulfide mineralization (10%), quartz, calcite
				86' - small band po, assoc. py & cpy
				87-104' - heavily fractured, oxidized locally
				109' - banded po and py
				117' - 8" band of massive po, associated py
145	158		95%	Sheared fine grained basic volcanic interbedded with black argillite, minor sulphide banding (@45°), pyrrhotite, quartz veining
158	183		90%	Highly oxidized zone, gossan, limonitic, highly porous, intensely fractured.
				178-179' - fault gouge, alteration to clay minerals
				179' - copper sulphate, chalcanthite
183	219		98%	Massive sulphide zone, (70-90% sulphides), appears to be syngenetic with black argillaceous shale & intercallated black fine grained volcanic, lightly oxidized, dominantly po with associated gobs & disseminated py & cpy
				204 - 206' - fractured zone, shaly unit
				207 - 209' - fractured zone, increasing oxidation of massive sulphides
				219' - fractured zone, chalcanthite
219	317		70%	Highly oxidized gossan zone, crumbly core, extremely porous, residual Fe hydroxides,
				limonitic some minor azurite and malachite
				242' - chalcanthite
317	367		0%	no core recovery, surface breakthrough?
				HOLE LOST IN LARGE CAVITY (POSSIBLE OXIDIZED (BURN) ZONE) BEFORE PENETRATING S_2 ZONE.
				PYRRHOTITE IN THIS HOLE BEGAN VISIBLE OXIDATION WITHIN ONE HOUR OF EXPOSURE.

GRAPHIC

SAMPLES No.	From	To	Ft	ASSAYS Cu%	Co%	COMPOSITES Au PPb	Ag ppm	S_2%	Zn ppm	Co%
15340	67	77	10	.06	.008					
41	77	87	10	.07	.007					
42	87	97	10	.06	.008	25	L 1	2	60	.008
43	97	107	10	.03	.008					
44	107	117	10	.07	.010					
45	117	127	10	.11	.015					
46	127	137	10	.17	.019					
47	137	145	8	.22	.024	25	L 1	10	145	.016
48	145	158	13	.09	.026					
49	158	168	10	.09	.011					
50	168	178	10	.04	.009					
51	178	183	5	.07	.008					
52	183	193	10	.93	.130	55	0.6	58	110	.073
53	193	203	10	1.19	.110					
54	203	213	10	1.27	.160					
55	213	219	6	4.26	.110					
56	219	229	10	.39	.019					
57	229	239	10	.14	.015	240	7.5	30	40	.032
58	300	310	10	.10	.010					

Assayed Section 67 - 310', = 243 ft (74m)

a) Sulphide Range 10 - 58%
1) Average in S_2 Zone 45% (81 ft)

b) Copper
1) Average in S_2 Zone (81 ft) = 0.82% including
2) 36 ft @ 1.65% Cu

HOLE ABANDONED!! NOT REPRESENTATIVE

DRILL HOLE RECORD

FALCONBRIDGE NICKEL MINES LIMITED

FNM68

	Inclination	Bearing
Collar	-47° 30'	S 58° 55' W
226 ft	-47°	

PROPERTY WINDY-CRAGGY
Location Section B-B'
Elevation 1606.06m
Coordinates 10,145.11 N
10,035.46 E

Length 140.32m (526 ft)
Hor. Comp. /Vert. Comp.
Bearing S 58°55' W
Begun 7/23/81 /Completed 7/26/81
Core size BQ /Recovery + 70 %

HOLE No. 3-81 PAGE # 1
Sheet of
Logged by Don Hoy
Sampled by " "
DRILLERS Ly 38, RIG# 2

FOOTAGE From	To	RECOV'Y Run	Core	DESCRIPTION	GRAPHIC
0	20		50%	Drill Casing	
20	32		80%	Basic metavolcanic, locally brecciated, chloritic, moderate to heavy fracturing	
32	47		70%	Oxidized zone, highly altered, heavily fractured, prominent Fe staining, brecciated	
47	56		90%	Intermediate-basic metavolcanic, slightly altered & oxidized, pitted surface, some chlorite moderate to heavy fracturing.	
~~56~~	96		50%	Oxidized zone, pervasive alteration, heavily fractured, crumbly to rubbly core, volcanic predecessor? 81-81': fresh intermediate-basic subunit, andesitic, limonite, locally brecciated	
96	105		90%	Moderately to heavily fractured intermediate - basic volcanic, locally oxidized. Amygdaloidal in places, calcareous.	
105	124		95%	Relatively unaltered intermediate - basic volcanic (andesite?) moderate fracturing@(80°) Fe staining, secondary copper minerals, chalcanthite, malachite	
				105' - chalcanthite, gypsum	
				111' - malachite staining, chalcanthite	
124	127		40%	Heavily fractured shear zone, Fe staining, malachite staining & chalcanthite	
127	171		95%	Fine grained intermediate volcanic (andesitic), locally porphyritic, heavily fractured, Fe staining, locally oxidized.	
171	175		90%	Black laminated shale, prominent Fe staining, fractured	
175	242		90%	Fine grained intermediate-basic volcanic, amygdaloidal in places, primary copper, chlorite filming fracture & shear surfaces, trace pyrite, locally calcareous	
				176' - native copper fleks	
				187' - cuprite coating fracture surfaces	
				192-193'- dendritic native copper in brecciated & oxidized andesite	
				195-196'- traces native copper	
				214' - cuprite	
				232-242' - dendritic native copper & minor cuprite coating slicken slided fracture surfaces	
242	270		80%	Foliated shaly metasediment, pitted surfaces, locally brecciated & oxidized, native copper in thin seams @242' - thin seam of native copper; 246 - 249'- appreciable native copper, lightly oxidized, alteration zone, brecciated	
270	281		80%	Brecciated intermediate-basic volcanic (andesitic?), 275-281' - light to moderate brecciation, heavy fracturing (@ 45°).	
281	303		90%	Black shaly metasediment, phyllitic, locally porous, calcite veinlets,	
				286' - minor native copper in seams filling fractures, 293' - small fault gouge	
				293-303' - heavily fractured	
303	328		100	Largely fine grained andesitic volcanics with intercallated phyllites & shales	
				320-321' - minor native copper & cuprite in fractured metasediment.	
				321-328' - minor native copper assoc. with volcanic-metasediment contacts, heavily fractured	
328	393		95%	Black laminated shale, locally argillite, & Phylite, calcite veinlets, minor po & py, lightly fractured, 346-347' - minor cuprite & native copper, 368-369'-quartz veining	
393	418		40%	Fine-medium grained andesitic volcanics, minor interbedded shales, chlorite & slickensleded fracture surfaces (fault zone?), locally oxidized, minor disseminated & stringer po & py	

SAMPLES No.	From	To	Ft	ASSAYS Cu%	Co%	COMPOSITES Au PPb	Ag ppm	S_2%	Zn ppm	Co%
15358	20	32	12	.14						
59	32	47	15	.09	.006	40	L.1	4	65	.008
60	47	56	9	.04	.005					
61	56	66	10	.17	.005					
62	66	76	10	.15	.012					
63	76	86	10	.17	.011	5	.1	.5	385	.014
64	86	96	10	.23	.009					
65	96	105	9	.01	.016					
66	105	111	6	61	.014					
67	111	123	12	.51	.010					
68	123	137	14	.01	.005					
69	137	147	10	.06	.008	5	0.5	1	860	.010
70	147	162	15	.10	.015					
71	162	176	14	.10	.009					
72	176	186	10	.10	.012					
73	186	196	10	.45	.011					
74	196	211	15	.09	.018	5	0.2	2	1300	.014
75	211	232	21	.12	.010					
76	232	242	10	.19	.010					
77	242	247	5	.76	.031					
78	247	252	5	1.83	.035					
79	252	262	10	.19	.025	5	L.1	2	1250	.026
80	262	272	10	.37	.014					
81	272	282	10	.12	.020					
82	282	292	10	.03	.025					
83	292	302	10	.05	.009					
84	302	312	10	.19	.014	5	L.1	2	220	.016
85	312	322	10	.35	.023					
86	322	332	10	.07	.015					
87	347	352	5	.08	.020					

** 352 to 450 ft lost from helicopter after logging. 450-526' mineralization as logged but not assayed.

Assayed Section 20 - 352 = 332 ft (101.2m)

a) Sulphide Range 0.5 to 4%
b) Copper 1) Range 0.01 - 1.83% Including
2) 1.29% West (Shale) Zone only

DRILL HOLE RECORD

FALCONBRIDGE NICKEL MINES LIMITED

	Inclination	Bearing
Collar		

PROPERTY
Location
Elevation
Coordinates N E

Length
Hor. Comp. / Vert. Comp.
Bearing
Begun / Completed
Core size / Recovery %

HOLE No. 3 PAGE # 2
Sheet of
Logged by
Sampled by
DRILLERS RIG#

FOOTAGE From	FOOTAGE To	RECOV'Y Run	RECOV'Y Core	DESCRIPTION
418	476		100	Unaltered fine grained andesite, moderate to heavy fracturing (@ 70°), disseminated po.
				426' - minor native copper on fracture surfaces
				431 - 433' - light brecciation
				461 - 462' - small fault gouge
476	526		95%	Intensely fractured andesite, fault zone? Minor cuprite & disseminated po, py.
				490 - 496' - fracture zone, minor cuprite & native copper
				502' - fault zone
				502' - minor cuprite
				HOLE WAS DRILLED WESTERLY TO TEST OXIDIZED CUPRIFEROUS SHALE BANDS INDICATED BY SURFACE RUBBLE.
				DUE TO GEOMETRY, THE HOLE DID NOT PENETRATE FAR ENOUGH BELOW THE OXIDIZED ZONE TO INDICATE PRIMARY MINERALIZATION WITH ANY CERTAINTY. SOME CORE DROPPED AND/OR MISPLACED DURING HELICOPTER TRANSIT.

GRAPHIC

SAMPLES No.	From	To	Ft.	ASSAYS Cu%	Co%	COMPOSITES Au PPb	Ag ppm	S%	Zn ppm	Co%

DRILL HOLE RECORD

FALCONBRIDGE NICKEL MINES LIMITED

FNM88

	Inclination	Bearing
Collar	-70°	N 48° 29° E
500FE	-71°	

PROPERTY WINDY CRAGGY
Location Section D-D'
Elevation 1666.69m
Coordinates 10,276.75 N
9,905.79 E

Length 267.3m (877ft)
Hor. Comp. / Vert. Comp.
Bearing N 48° 29' E
Begun 7/27/81 / Completed 7/30/81
Core size BQ / Recovery +90 %

HOLE No. 4-81 PAGE # 1
Sheet of
Logged by Don Hoy
Sampled by " "
DRILLERS LY FLY #38 RIG# 1

FOOTAGE From	FOOTAGE To	RECOV'Y Run	RECOV'Y Core	DESCRIPTION	GRAPHIC	SAMPLES No.	From	To	Ft	ASSAYS Cu%	ASSAYS Co%	COMPOSITES Au PPb	Ag ppm	S%	Zn ppm	Co%
0	54		80%	Rusty oxidized andesitic volcanics		28351	244	254	10	6.70		20	0.2	3.42	290	M
54	58		85%	As above, rusty oxidized volcanics		352	254	265	11							
58	79		90%	Pyrrhotite stringers hosted in black shale, some quartz-carbonate rich sections with assoc po&py		353	265	275	10		L					
79	80		80%	Shear zone, quartz vein rich		354	275	285	10							
80	82		70%	Oxidized zone, gossan		355	285	295	10	1.34		60	1.2	30.3	80	M
82	93		100	Porphyritic andesitic volcanics		356	295	305	10	1.15						
93	99		90%	Partially altered andesite, about 50% alteration to gossan		357	305	315	10	1.37						
99	150		100	Grey, fine to medium grained andesitic volcanics, amygdaloidal, calcareous		358	315	325	10	1.85						
						359	325	335	10	2.23						
150	215		100	Porphyritic, basic-intermediate volcanic as above, slight oxidation		360	335	345	10	1.22		45	0.7	80	160	.14
215	217		80%	Fault gouge zone, brecciated shale, quartz-carbonate veinlets prominent		361	345	355	10	.74						
217	228		90%	Volcanic breccia, highly fractured, quartz & calcite veinlets, moderately oxidized, highly porous		362	355	365	10	1.11						
228	244		100	Relatively unaltered fine grained basic volcanic, basaltic, locally oxidized, disseminated & stringer po, py and minor cpy, 236-237' - quartz veining		363	365	375	10	1.00						
						364	375	385	10	.87						
244	265		70%	Fault zone, sheared, brecciated interbedded black shale and basaltic volcanics, quartz-calcite fragments, secondary coppers evident as malachite & azurite, 244-245'-strongly oxidized zone		365	385	395	10	1.02		35	0.1	41	165	.13
						366	395	405	10	.57	.150					
						367	405	415	10	.45	.150					
265	598		98%	Massive sulphide zone, (80% sulphides) largely fine grained po, with accessory py & minor cpy pyrrhotite 85%, pyrite 10-13%, chalcopyrite 2-5%. Light to moderate fracturing, lightly brecciated locally, minor quartz & calcite veining, chalcopyrite occurs as stringers - sulphides appear to be syngenetic with fine grained basic volcanics (pillow basalts?)		368	415	425	10	.86	.140					
						369	425	435	10	.58	.140					
						370	435	445	10	.57	.140	10	L.1	82	80	.13
						371	445	455	10	.38	.130					
						372	455	465	10	.48	.120					
598	657		100	Massive sulfide zone as above, (70-80% sulphides) light to moderate fracturing, dominantly fine grained pyrrhotite, minor pyrite and chalcopyrite contained therein, quartz, carbonate gangue - relict rock type appears to be fine grained chloritized basalt 637' - small fracture zone		373	465	475	10	.69	.120					
						374	475	485	10	.51	.110					
						375	485	495	10	.44	.120	L5	L.1	79	50	.12
						376	495	505	10	.60	.130					
						377	505	515	10	.62	.150					
657	700		100	Massive sulphide zone, not quite as massive as above (50-70% sulphides), patchy & massive fine grained po with cupriferous pyrite & chalcopyrite stringers, locally brecciated. Sulphides hosted in a dark green chloritized fine grained volcanic.		378	515	525	10	.95	.130					
						379	525	535	10	1.02	.130					
						380	535	545	10	.63	.130	40	L.1	27.6	120	M
						381	545	555	10	.73	.130					
						382	555	565	10	.56	.190					
700	853		100	Massive sulphide zone (approx. 80-90% sulphides), mostly fine grained pyrrhotite, pyrite cubes, stringers and exsolved chalcopyrite, hosted in chloritized fine grained volcanics and intercallated black shaley argillite, minor talc seams. 766-769' - fracture zone 820-824' - non mineralized, fractured chloritized volcanic 823-824' - as above, chloritic films on fracture surfaces 825' - 3" wide quartz-carbonate vein.		383	565	575	10	.88	.120					
						384	575	585	10	.88	.110					
						385	585	598	13	1.38	.110	35	L.1	74	100	.12
						386	598	608	10	.49	.120					
						387	608	618	10	.51	.150					
						388	618	628	10	.41	.180					
						389	628	638	10	1.28	.160					
853	877		100	Massive sulphide zone (50-60% sulphides), textures somewhat different than above, coarser grained host, framboidal and brecciated nature to mineralization in places, dominantly patchy massive, framboidal & brecciated po, with copper rich sections. 858-859' -chalcopyrite rich 861-864' - finely disseminated po in chloritic epidote volcanic 851-856' - sulfide deficient zone, 5% disseminated po		390	638	648	10	2.55	.130	40	L.1	82	50	.15
						391	648	657	9	.70	.160					
						392	657	667	10	.36	.180					
						393	667	677	10	.92	.160					
						394	677	687	10	.74	.160					

DRILL HOLE RECORD

FALCONBRIDGE NICKEL MINES LIMITED

	Inclination	Bearing
Collar		

PROPERTY
Location
Elevation
Coordinates N
E

Length
Hor. Comp. /Vert. Comp.
Bearing
Begun /Completed
Core size /Recovery %

HOLE No. 4 PAGE # 2
Sheet of
Logged by
Sampled by
DRILLERS RIG#

FOOTAGE From	To	RECOV'Y Run	Core	DESCRIPTION	GRAPHIC
				HOLE LOST IN S_2 ZONE	

SAMPLES No.	From	To	Ft	ASSAYS Cu%	Co%	COMPOSITES Au PPb	Ag ppm	S_2%	Zn ppm	Co%
28395	687	700	13	1.03	.14					
396	700	710	10	1.09	.140	45	L.1	77	35	.14
397	710	720	10	1.62	.150					
398	720	730	10	1.23	.160					
399	730	740	10	.56	.180					
400	740	750	10	.56	.170	30	L.1	86	20	.15
401	750	760	10	1.34	.150					
402	760	770	10	.77	.160					
403	770	780	10	.52	.180					
404	780	790	10	.79	.170					
405	790	800	10	.52	.170	10	L.1	87	10	.17
406	800	810	10	.47	.190					
407	810	820	10	.48	.200					
408	820	830	10	.34	.190					
409	830	840	10	.43	.180					
410	840	853	13			15	L.1	29.3	15	M
411	853	863	10	M						
412	863	877	14							

* 840 - 877
MISSING (TEMPORARILY ?) AT ASSAYERS.

Assayed Section 244 - 840 ft = 596 ft (181.6m)
True width = 596 $\cos 47°$ = 406 ft (123m)

a) Sulphide Range 3% to 87%
1) Average 60% including
2) 505 ft @ 71% containing 385 feet in 3 sections averaging 80% Sulphides

Copper
1) Range 0.34 to 6.70%
2) Average 0.918% (596 ft) when 31 ft of core is assigned 0 value. Log indicated grade is in excess of 1.6% in which case
3) Average grade for hole (596 ft) is 1.0% including
4) 10 ft @ 6.7% and
5) 20 ft @ 2.04%

DRILL HOLE RECORD

FALCONBRIDGE NICKEL MINES LIMITED

	Inclination	Bearing
Collar	-54°	N 54° E

PROPERTY WINDY - CRAGGY
Location Section F-F'
Elevation 1741.06m
Coordinates 10,376.60 N
9,702.45 E

Length 39.9m (131 ft)
Hor. Comp. / Vert. Comp.
Bearing N 54° E
Begun 7/31/81 / Completed 8/2/81
Core size BQ / Recovery +90 %

HOLE No. 5(A) - 81 PAGE # 1
Sheet of
Logged by Don Hoy
Sampled by " "
DRILLERS Ly (FLY # 38) RIG# 2

FOOTAGE From	FOOTAGE To	RECOV'Y Run	RECOV'Y Core	DESCRIPTION
0	15		80%	Drill casing
15	95		95%	Medium grained grey andesite?, moderate to heavy fracturing, locally porphyritic, oxidized
				39-43' - brecciated andesite, oxidized, calcareous
				43-95' - heavily fractured, moderate to strong oxidation
				86-94' - moderate brecciation, calcite gobs, oxidized, sheared, slickenslides
95	131		90%	Black argillite, interbedded grey limestone, locally brecciated, crosscutting carbonate veinlets
				120-131' - pyrite cubes abundant
				HOLE ABANDONED SHORT OF S_2 SECTION DUE TO LOSS OF SET UP. REDRILLED AS 5(B)

GRAPHIC

SAMPLES No.	From	To	Ft	ASSAYS Cu%	Co%	COMPOSITES Au PPb	Ag ppm	S_2%	Zn ppm	Co%

DRILL HOLE RECORD

FALCONBRIDGE NICKEL MINES LIMITED

	Inclination	Bearing
Collar	-54°11'	N 53°50'E
310ft	-43°	
504	-39°	
750	-36°	
916	-33°	

PROPERTY	WINDY-CRAGGY	Length	452m (1483 ft)
Location	Section F-F'	Hor. Comp. / Vert. Comp.	
Elevation	1741.06m	Bearing	N 53° 50' E
Coordinates	10,376.60 N	Begun	8/3/81 / Completed 8/20/81
	9,702.45 E	Core size	BQ / Recovery + 90 %

HOLE No. 5(B) - 81 PAGE # 1

Sheet of

Logged by Don Hoy

Sampled by " "

DRILLERS LY (FLY #38) RIG# 2

FOOTAGE From	FOOTAGE To	RECOV'Y Run	RECOV'Y Core	DESCRIPTION
0	40		80%	Drill casing
40	78		70%	Highly fractured andesitic volcanics, oxidized, Fe staining prominently on fracture surfaces
78	93		90%	Sheared andesitic volcanics, fine grained, Fe staining
93	246		98%	Black, massive calcareous argillite - argillaceous limestone, locally oxidized, crosscut by quartz & calcite veinlets, pyrrhotite stringers, pyrite cubes, locally sheared
				136 - 138' - small intermediate felsic dyke, carbonate veining
				169 - 173' - as above
				174 - 180' - fine grained intermediate dyke, pyrrhotite occurences as fracture fillings
				185 - 191' - as above
				208' - 6" wide quartz-carbonate vein
				212 - 225' - argillite, prominent pyrite cubes, calcite veinlets
				225 - 246' - interbedded argillite & intermediate andesite, brecciated in places, disseminated po & py cubes, prominent carbonate veining
246	339		95%	Dark grey to black limestone - argillaceous limestone, numerous crosscutting quartz & carbonate veinlets, disseminated po and py, pyrite cubes
339	433		95%	Interbedded argillaceous limestone and andesitic sills?, quartz-carbonate veining, sheared & brecciated locally, po & py stringers intimately associated with quartz-carbonate veining
				351 - 376' - sheared brecciated andesite , po, py & minor cpy assoc. with quartz veining
				376 - 398' - argillaceous zone, stringer po
				404 - 406' - massive pyrrhotite, assoc. quartz & carbonate
				407 - 433' - sheared, quartz, calcite rich zone, po & cpy related to shearing and fractures in argillaceous host.
433	504		100	Highly fractured, fine to medium grained andesite, quartz & carbonate(ankerite?) veining, trace to minor sulphides.
504	515		100	As above,
				510 - 513' - massive carbonate vein
515	576.5		98%	Fine grained basic volcanic, interbedded with metavolcanics & some metasediments, appreciable sulphides (up to 50%), stringers, gobs & disseminated po, chalcopyrite rich zones, local brecciation, chloritic
576.5	645		98%	Fine to medium grained basic volcanic, (basaltic?) chloritic, local heavy fracturing, minor disseminated & stringer sulfides
				609 - 612' - pyrrhotite gobs, assoc. chalcopyrite, prominent calcite veining, sulphides associated with quartz & carbonate veining
645	688		98%	Sheared fine grained basic volcanic, light brecciation, prominent quartz & carbonate (ankerite) veining (30-45°), banded & interstitial pyrrhotite (~30% sulphide) with minor assoc. cpy&py
				664 - 668' - sulphides more dominant approaching massive zone below, stringer&patchy po&cpy
688	1070		95%	Massive sulphide zone, moderate to heavy fracturing (80% sulphides), dominantly fine to medium grained pyrrohotite with minor assoc. exsolved py & cpy.
				Modal percentages: pyrrhotite- 90%, pyrite- 5%, chalcopyrite- 2-5%
				734 - 796' - heavily fractured
				796 - 811' - no core pulled " "
				814 - 1065' - ore textures differ, medium to coarse grained po, pyrite is framboidal, conglomeratic nature to ore in places, sulphide blocks with sandy friable sulfide matrix, probable product of electrolyte leaching, hosted in altered

GRAPHIC

SAMPLES No.	From	To	Ft	ASSAYS Cu%	Co%	COMPOSITES Au PPb	Ag ppm	S %	Zn ppm	Co%
28433	515	530	15	.19	.010					
34	530	540	10	.13	.015	250	0.9	24	230	.010
35	540	550	10	.37	.020					
36	550	560	10	.11	.010					
37	560	5765	165	.13	.008					
38	5765	590	135	.01	.008	30	L.1	8	20	.008
39	590	600	10	.01	.007					
40	600	610	10	.05	.027					
41	610	620	10	.01	.010					
42	620	630	10	.05	.006					
43	630	645	15	.01	.006	20	L.1	1	20	.007
44	645	650	5	.04	.006					
45	650	660	10	.01	.008					
46	660	670	10	.08	.038	25	L.1	12	50	.028
47	670	680	10	.04	.017					
48	680	688	8	.09	.030					
49	688	700	12	.43	.150					
50	700	710	10	.56	.170					
51	710	720	10	.59	.180	35	L.1	84	75	.17
52	720	730	10	.37	.170					
53	730	740	10	.47	.200					
54	740	750	10	.51	.200					
55	750	760	10	.61	.160	15	L.1	88	285	.19
56	760	770	10	.38	.200					
57	770	780	10	.45	.180					
58	780	790	10	.46	.170					
59	790	800	10	.80	.130					
60	800	810	10	2.15	.093	50	1.7	86	105	.11
61	810	820	10	1.80	.078					
62	820	830	10	1.93	.066					
63	830	840	10	1.75	.077					
64	840	850	10	1.37	.090					
65	850	860	10	.93	.094	65	1.0	78	285	.089
66	860	870	10	.85	.077					
67	870	880	10	1.09	.100					
68	880	890	10	1.40	.110	15	0.1	84	40	.13
69	890	900	10	1.08	.120					
70	900	910	10	.77	.130					
71	910	920	10	1.23	.130					
72	920	930	10	.88	.120					
73	930	940	10	.87	.150					
74	940	950	10	1.15	.140					
75	950	960	10	1.28	.130	20	L.1	81	20	.13
76	960	970	10	.78	.120					

DRILL HOLE RECORD

FALCONBRIDGE NICKEL MINES LIMITED

	Inclination	Bearing
Collar		

PROPERTY
Location
Elevation
Coordinates N
E

Length
Hor. Comp. /Vert. Comp.
Bearing
Begun /Completed
Core size /Recovery %

HOLE No. 5(B) PAGE # 2
Sheet of
Logged by
Sampled by
DRILLERS RIG#

FOOTAGE From	To	RECOV'Y Run	Core	DESCRIPTION	GRAPHIC
				chloritic basalts & black shale	
				- colloform banding seen in places	
				- chloritic fracture surfaces	
				1065 - 1069' - fault gouge in black shales	
				1069 - 1074' - brecciated, sheared shale, conglomeratic nature to pyrrhotite	
1070	1105		70%	Brecciated massive sulphide, hosted in argillaceous rock, dominantly coarse grained & blocky po with minor py & cpy within a sandy friable sulfide matrix	
				1077 - intense fracturing	
				1100 - 1105' - prominent chalcopyrite banding	
1105	1113		60%	Faulted zone, sheared zone in interbedded green altered sericitic - chloritic volcanics and black argillite, friable, crumbly core, fault gouging, hydrothermal alteration probable	
1113	1122		95%	Slightly brecciated massive sulfide, coarse grained pyrrhotite, heavy fracturing	
1122	1136		50%	Alteration zone, prominent fault gouging, sericitic volcanics, disseminated po	
1136	1144		90%	Sheared, altered basic metavolcanic, chloritic, sericite, contains 50% sulphide, as coarse po, slight brecciation, friable sulphide matrix.	
1144	1148		70%	Alteration zone, friable, soft green volcanic, chlorite & sericite, appears to be result of hydrothermal alteration	
1148	1158		100	Brecciated massive sulfide, angular sulfide blocks within a gritty sulfide matrix (po & py) pyrrhotite most abundant sulphide, although zone is quite pyritic	
1158	1174		0%	No core pulled	
1174	1255		100	Sulfide zone, (~70% sulfides) textures variable from massive, patchy, framboidal and stringer like, mineralization - predominantly po, cpy rich zones	
				sulphides deposited syngenetically with green chloritic chert host, prominent carbonate gobs	
				1246 - 1247' - large disseminations & patchy cpy	
				1220 - 1236' - pyritic zone, some cpy	
1255	1285		100	Mineralized (~30% sulphides), intercallated fine grained chloritic volcanic, black calcareous argillite and grey chert, quartz veining - dominantly stringers, wispy bands, and disseminated po - heavily fractured, chloritic coating on surfaces	
				1262 - 1274' - black calcareous argillite, patches & gobs of quartz & buff coloured carbonate	
1285	1300		100	Mineralized (20-25% sulphides) black argillaceous limestone, banded & stringer po, transitional to underlying unit	
1300	1307		100	Green to grey chert, (50% sulphides) banded stringer and gobby pyrrhotite with appreciable chalcopyrite	
1307	1325		100	Banded sulfides (30%) hosted in chorite-epidote rich altered volcanic, stringer and gobby pyrrhotite with appreciable chalcopyrite-cupreous pyrite, quartz gobs & veinlets	
				1324 - 1325' - massive po band, assoc cpy & py	
1325	1333		100	Light grey to green(chloritic) cherty sediment, stringer & gobby po with appreciable cpy	
				1326 - 1328' - chalcopyrite rich	
1333	1361		100	Mineralized fine to medium grained chloritic volcanic (gabbroic) disseminated and stringer po & cpy 1347 - 1349' - small chalcopyrite bands	
1361	1410		100	Mineralized light grey to green chert and silicified fine grained volcanic(20% sulphide) - prominent stringer po and cpy - quartz & carbonate (ankerite?) veining	
				- some sulfide intimately assoc. eith quartz veining (epignetic?)	

SAMPLES No.	From	To	Ft.	ASSAYS Cu%	Co%	COMPOSITES Au PPb	Ag ppm	S%	Zn ppm	Co%
28477	970	980	10	.52	.120					
78	980	990	10	.83	.110					
79	990	1000	10	1.92	.083					
80	1000	1010	10	2.63	.093	265	L.1	79	25	.10
81	1010	1020	10	1.45	.120					
82	1020	1030	10	1.18	.100					
83	1030	1040	10	1.21	.090					
84	1040	1050	10	.74	.110					
85	1050	1060	10	.93	.087	60	0.5	77	50	.078
86	1060	1070	10	.92	.090					
87	1070	1080	10	.99	.057					
88	1080	1090	10	1.25	.057					
89	1090	1100	10	2.03	.060	40	0.9	81	900	.063
90	1100	1105	5	1.18	.066					
91	1105	1113	8	1.12	0.071					
92	1113	1122	9	1.43	.077					
93	1122	1136	14	.27	.043	60	L.1	64	140	.064
94	1136	1144	8	.82	.083					
95	1144	1148	4	.67	.052					
96	1148	1158	10	2.68	.058					
	1158	1174	LOST	LOST						
97	1174	1180	6	1.78	.073					
98	1180	1190	10	2.95	.083	355	1.4	75	40	.069
99	1190	1200	10	3.38	.063					
500	1200	1210	10	2.63	.060					
501	1210	1220	10	2.78	.076					
502	1220	1230	10	1.78	.087					
503	1230	1240	10			165	1.3	29.3	55	
504	1240	1250	10							
505	1250	1255	5							
506	1255	1265	10							
507	1265	1275	10	.34	.028					
508	1275	1285	10	.21	.030	100	L.1	10.2	30	
509	1285	1300	15	.14	.007					
510	1300	1307	7	.44	.028					
511	1307	1320	13	.05	.008	15	L.1	21	15	.019
512	1320	1325	5	.45	.013					
513	1325	1333	8	.98	.023					
514	1333	1340	7	.31	.018					
515	1340	1350	10	.19	.046	275	L.1	29	15	.049
516	1359	1361	11	.69	.076					
517	1361	1370	9	.28	.027					
518	1370	1380	10	.23	.013					
519	1380	1390	10	.16	.010	10	0.2	22	15	.017

DRILL HOLE RECORD

FALCONBRIDGE NICKEL MINES LIMITED

	Inclination	Bearing
Collar		

PROPERTY
Location
Elevation
Coordinates N
E

Length
Hor. Comp. /Vert. Comp.
Bearing
Begun /Completed
Core size /Recovery %

HOLE No. 5 (B) PAGE # 3
Sheet of
Logged by
Sampled by
DRILLERS RIG#

FOOTAGE From	FOOTAGE To	RECOV'Y Run	RECOV'Y Core	DESCRIPTION
				- locally sheared
				@ 1400' - sulphide concretions, po
1410	1442		100	Fine-medium grained chlorite -epidote rich volcanic, disseminated&minor stringer po(10%sulphide
1442	1460		98%	Medium grained, moderately fractured, basic volcanic, diabasic-dioritic? plagioclase laths visible, disseminated po & py
1460	1482		85%	Medium grained basic-ultrabasic volcanic as above containing patchy & banded (50% sulphide) pyrrhotite & minor pyrite
				- quartz & buff coloured carbonate gobs prominent
				- talc coating fracture surfaces
				1467 - 1482' - sheared & lightly brecciated volcanic as above interbedded with limey argillaceous units,
				- stringer & patchy po still persists
				- quartz veining

GRAPHIC

SAMPLES No.	From	To	Ft	ASSAYS Cu%	Co%	COMPOSITES Au PPb	Ag ppm	S_2%	Znppm	Co%
28520	1390	1400	10	.17	.008					
521	1400	1410	10	.27	.048					
522	1410	1420	10	.12	.019					
523	1420	1430	10	.03	.006					
524	1430	1442	12	.02	.005	L 5	L.1	8	30	.019
525	1442	1450	8	.04	.012					
526	1450	1460	10	.08	.031					
527	1460	1470	10	.31	.085	10	L.1	40	15	.052
528	1470	1482	12	.12	.036					

DRILL SUMMARY FOR DIAMOND DRILL HOLE 5 B

40-93' - highly fractured & sheared andesitic volcanics
29-339' - dominantly black calcareous shaly argillite, interbedded with minor limestone beds, intruded by andesitic sills, pyrite cubes, stringer pyrrhotite
339-433 - interbedded black calcareous argillite & andesitic sills
433-504 - andesitic volcanics, relatively unaltered
504-688 - fine grained dark green choritic-epidote altered volcanics (pillow lavas?) interbedded units of chert, appreciable stringer, diss. & patchy sulfides, dominantly po but some cpy rich zones, mineralization up to 30%.
688-1105 - Massive sulfides, replacement of dominantly volcanics but some shaly units replaced
688-814 - fine to medium grained po exsolved py and cpy
814-1065 - brecciated-conglomeratic, coarser grained po, framboidal textures, colloform banding, 90% po, 5% py & 5% cpy, sandy friable sulfide matrix interstitial to sulfide blocks
1105-1285 - Zone of pillow lavas, sheared and altered volcanics containing massive sulfide units brecciation and fault gouging, banded and stringer sulfides prominent up to 50%
1285-1410 - Dominantly grey to green chert, a few interbedded chloritic volcanics & limey sediments, prominent banded & stringer sulfides, chalcopyrite rich zones
1410 - 1482 - Altered f.g. basic volcanic chloritic, still persistant patchy & stringer sulfides

* HOLE LOST AT A DEPTH OF 1482', CUTTINGS IN THE HOLE JAMMED DRILL RODS, ALSO CIRCULATION LOST IN HOLE AT MUD SEAMS AND FRACTURE ZONES. S_2 ZONE ENCOUNTERED @ 504' CONT. TO END OF HOLE NO DIP TESTS AT BOTTOM DUE TO LOSS OF HOLE.

HOLE FLATTENED CONSIDERABLY ALLOWING A BETTER CROSS SECTION THAN OTHERS.

Intersection Summary

Assayed Section
515 ft to 1482 feet (core length) = 967 ft (294.7m)
true width = 783 ft (238m)

a) 1) Sulphide Range 1% to 88%
2) Average 50% sulphide (967 ft)

b) including 522 ft @ 80% S_2
Copper
1) Range 0.01 to 3.38%
2) Average (967 ft) = 0.78% Cu contiguous Sections include:
3) 622 ft @ 1.07% Cu
4) including 348 ft @ 1.18%
5) plus 66 ft @ 2.61% *NOTE recovery and missing assays 1158 ft - 1265 ft. Visual estimates from core logging plus averaging of adjacent samples suggest 82 feet of 2.53% copper instead of 5) above. Similarly the same section would contain an additional 25 ft (1230 - 1255) of similar grade material for a total core length of 107 feet in this higher grade section.

c) Gold Average 800 ft - 1300 ft (500 feet) = 109 PPb
Best section = 1174 - 1210 (36 ft) = 355 PPb =
= 0.35g/T

DRILL HOLE RECORD

FALCONBRIDGE NICKEL MINES LIMITED

	Inclination	Bearing
Collar	-52° 33'	N 44° 45' E
207 ft	-49°	

PROPERTY	WINDY - CRAGGY
Location	Section E-E'
Elevation	1706/20m
Coordinates	10,324.40 N
	9,828.80 E

Length	118.57m (389ft)
Hor. Comp.	/ Vert. Comp.
Bearing	N 44° 45' E
Begun	8/1/81 / Completed 8/5/81
Core size	B.Q. / Recovery +90 %

HOLE No. 6-81 PAGE # 1
Sheet of
Logged by Don Hoy
Sampled by " "
DRILLERS Ly (FLY #38) RIG# 1

FOOTAGE From	To	RECOV'Y Run	Core	DESCRIPTION
0	17		50%	Drill Casing
17	25		70%	Heavily fractured andesite, fault gouging, oxidized, Fe staining, limonite
25	32		80%	Fractured black shale, argillaceous & calcareous, fault gouging
32	38		90%	Laminated black shale, calcareous quartz & carbonate veinlets
38	104		100%	Relatively unaltered andesite, moderately fractured amygdaloidal (calcareous amygdules, locally oxidized.
104	158		95%	Basic fine grained chloritic volcanic, dark green moderate-heavy fracturing, minor disseminated sulphides, minor quartz & carbonate veining.
				112 - 129' - heavily fractured (10°-80°), light oxidation
				140 - 158' - as above
158	238		100	Beginning of ore zone, 10% pyrrhotite as large disseminations, fracture fillings and stringers hosted in fine grained basic volcanic, chlorite
				171 - 173' - quartz-carbonate breccia zone, po & py fragments, disseminated cpy within
				193 - 194' - band of massive po (@ 70°) minor py
				202 - 204' - banded massive po, assoc. with quartz & carbonate
				221 - 223' - gobs of po, assoc with quartz and buff carbonate
238	252		95%	Argillaceous shale, lightly brecciated, sheared, quartz & carbonate veining, locally oxidized fine grained po, py, & cpy
252	267		100	Medium grained andesite (dyke rock?) amygdaloidal, quartz-calcite veining, void of sulphides
267	272		95%	Chloritic fine grained volcanic intercallated with black argillite.
				267 - 269' - oxidized volcanic breccia, volcanic and argillaceous clastics, porous
				270 - 272' - intensely fractured, quartz veining
272	288		100	Black argillite, containing stringer & fracture filling po (20% sulphide). stringers@ 45-50°
288	315		95%	Fine grained, dark green volcanic, po stringers, (20-50% sulphide)
315	329		80%	Gossan, highly oxidized, fractured.
329	358		100	Basic fine grained volcanics, containing appreciable to heavy sulfides (30-50%), large stringers of po, some chalcopyrite, prominant calcite veining, moderate fracturing, chloritic
				344-346' - carbonate breccia, po clasts
				350-353' - massive po zone, minor py
358	366		98%	Black argillite, prominant po stringers and dissemination, minor pyrite
				365-366' - fractured zone
366	389		95%	Oxidized fine grained basic volcanic, chloritic, sheared, porous
				HOLE LOST DUE TO STUCK RODS BEFORE ENTERING S_2 ZONE.

GRAPHIC

SAMPLES No.	From	To	Ft.	ASSAYS Cu%	Co%	COMPOSITES Au PPb	Ag ppm	S_2%	Zn ppm	Co%
28413	158	168	10	.05	.014					
14	168	178	10	.05	.017					
15	178	188	10	.09	.016	5	L.1	11	110	.015
16	188	198	10	.20	.016					
17	198	208	10	.13	.034					
18	208	218	10	.01	.007					
19	218	228	10	.07	.014	5	L.1	7	60	.019
20	228	238	10	.07	.016					
21	238	248	10	.07	.019					
22	248	252	4	.06	.013	10	L.1	11	45	.013
23	272	288	16	.03	.005					
24	288	298	10	.14	.016					
25	298	308	10	.79	.023	20	1.3	17	305	.025
26	308	315	7	.38	.051					
27	315	329	14	.23	.048					
28	329	339	10	.24	.087					
29	339	349	10	.24	.029	40	.6	35	560	.066
30	349	358	9	.21	.100					
31	358	366	8	.18	.018					
32	366	371	5	1.70	.021	20	2.0	11	70	.019

INTERSECTION SUMMARY

a) Assayed Section: 158 - 371' = 213 ft (65m)
HOLE LOST PRIOR TO MEANINGFUL INTERSECTIONS

DRILL HOLE RECORD

FALCONBRIDGE NICKEL MINES LIMITED

	Inclination	Bearing
Collar	-56° 27'	N 42°41' E
525 ft	-52° 30'	
746 ft	-52° 30'	
1025 ft	-53°	

PROPERTY WINDY - CRAGGY
Location Section E-E'
Elevation 1695.23m
Coordinates 10,301.78 N
9,805.38 E

Length 596.5m (1300ft)
Hor. Comp. /Vert. Comp.
Bearing N 42° 41' E
Begun 8/8/81 /Completed 8/20/81
Core size BQ /Recovery + 95 %

HOLE No. 7-81 PAGE # 1
Sheet of
Logged by Don Hoy
Sampled by " "
DRILLERS LY (FLY #38) RIG# 1

FOOTAGE From	FOOTAGE To	RECOV'Y Run	RECOV'Y Core	DESCRIPTION
0	29		50%	Drill Casing
29	51		95%	Fine to medium grained, grey andesitic volcanics, oxidized in places, disseminated po
				43 - 48' - Fracture zone, Fe staining
51	62		80%	Highly fractured andesitic volcanics, oxidized in places, amygdaloidal (calcareous amygdules)
62	64		50%	Fault gouge, sheared black shale, poor core recovery
64	85		70%	Fractured, sheared andesitic volcanics, calcareous amygdules, numerous small fault gouges
85	129		20%	Fractured grey to black limestone, argillaceous, extremely poor core recovery
				85' - fault gouge
129	161		90%	Highly fractured black calcareous argillite-argillaceous limestone, locally laminated, calcite veins
161	235		95%	Predominantly medium grained andesitic volcanics, amygdaloidal, carbonate veins & veinlets, light to moderate fracturing, minor disseminated sulphide.
235	244		100	Fine grained basic volcanic, relatively unaltered, light to moderate brecciation, sheared po rich zones
				236.5' - band of coarse grained py
				239 - 244' - brecciated sulphide, with Fe carbonate matrix, po&py, slight oxidation
244	282		90%	Fine to medium grained andesite, amygdaloidal in places, minor disseminated sulphides
				253' - small po band
				269' - po band, containing py and cpy
				271 - 272' - large quartz carbonate vein, with associated py, po & cpy
				- sulphides have close spatial & genetic? relationship to veining
282	287		95%	Sheared metavolcanic, schistose, chloritic, minor disseminated sulphides
287	360		100	Fine to medium grained andesite, locally amygdaloidal, calcareous, minor po stringers closely associated with quartz-carbonate veining, also minor disseminated sulfide
				297' - po, py band assoc. with quartz-Fe carbonate
				299' - as above, py with interstitial quartz & Fe carbonate
				302' - sulfides associated with quartz-carbonate veining
				306' - as above
				315 - 316' - as above
				330 - 360' - heavily fractured, quartz & calcite vein rich, with associated patchy po & py
360	375		95%	Sheared black argillaceous shale, slaty cleavage, appreciable stringer sulphides (10-20% sulfide) mainly po & py, minor cpy, crosscut by numerous quartz & calcite veinlets, heavy fracturing (-45°)
375	415		85%	Large quartz body (large vein ?) relatively impure, Fe carbonate inclusions, stringer & patchy sulphides.
				375 - 397' - impure quartz, country rock inclusions, carbonate (buff) patches, blebs & stringers of po & cpy
				397 - 415' - pure quartz, little mineralization
				412 - 415' - brecciated, country rock inclusions, patchy po, sheared
415	439		95%	Highly fractured, black argillaceous shale, slaty cleavage, banded & stringer po, Fe carbonates
				433' = carbonate breccia, argillite fragments, po patches
439	445		95%	Fine grained chloritic=epidote volcanic & green chert, sheared, stringer po
445	453		95%	Black argillite, disseminated & stringer po, minor py & cpy

GRAPHIC

SAMPLES No.	From	To	Ft	ASSAYS Cu%	Co%	COMPOSITES Au PPb	Ag ppm	S %	Zn ppm	Co%
28529	360	370	10	.08	.014	5	L.1	10	130	.011
530	370	375	5	.04	.006					
531	375	385	10	.04	.005					
532	385	395	10	.04	.005					
533	395	405	10	.12	.005	5	L.1	3	35	.005
534	405	415	10	.01	.005					
535	415	420	5	.09	.014					
536	420	430	10	1.21	.035					
537	430	439	9	.05	.006	20	0.4	15	1450	.011
538	439	445	6	.20	.010					
539	445	453	8	.07	.007					
540	453	460	7	.38	.009					
541	460	470	10	.35	.030					
542	470	480	10	.41	.036	15	0.3	40	150	.022
543	480	490	10	.38	.031					
544	490	500	10	.26	.014					
545	500	510	10	.22	.020					
546	510	520	10	.24	.018					
547	520	530	10	.19	.029	5	L.1	39	60	.025
548	530	540	10	.32	.043					
549	540	550	10	.57	.065					
550	550	560	10	1.96	.092	60	0.3	84	300	.076
551	560	570	10	.55	.042					
552	570	580	10	.27	.030	10	0.2	33	200	.036
553	580	590	10	.51	.042					
554	590	600	10	.87	.120					
555	600	610	10	1.27	.110					
556	610	620	10	1.04	.140	25	0.1	79	520	.110
557	620	630	10	1.61	.120					
558	630	640	10	1.07	.100					
559	640	650	10	1.57	.100					
560	650	660	10	1.91	.095					
561	660	670	10	1.03	.120	50	L.1	81	130	.120
562	670	680	10	.98	.130					
563	680	690	10	.58	.150					
564	690	700	10	.56	.160					
565	700	710	10	.50	.150					
566	710	720	10	.29	.160	5	L.1	77	140	.160
567	720	730	10	.35	.170					
568	730	740	10	.46	.180					
569	740	750	10	.33	.210					
570	750	760	10	.45	.230					
571	760	770	10	.39	.190	10	L.1	83	210	.190
572	770	780	10	.72	.190					

CONT ON NEXT SHEET

DRILL HOLE RECORD

FALCONBRIDGE NICKEL MINES LIMITED

	Inclination	Bearing
Collar		

PROPERTY
Location
Elevation
Coordinates N E

Length
Hor. Comp. /Vert. Comp.
Bearing
Begun /Completed
Core size /Recovery %

HOLE No. 7 PAGE # 2
Sheet of
Logged by
Sampled by
DRILLERS RIG#

FOOTAGE From	FOOTAGE To	RECOV'Y Run	RECOV'Y Core	DESCRIPTION	GRAPHIC
453	540		95%	Largely fine grained grey to green chert, intercallated metasediments (phyllites) & minor chlorite-epidote altered volcanics - Prominent sulphide mineralization (50%), po, patches, stringers gobs, & fracture fillings, chalcopyrite rich zones	
				465 - 467' - large quartz-carbonate vein, patchy coarse grained po & py	
				468 - 470' - fine grained massive po	
				474 - 477' - massive po with appreciable cpy	
				484' - chalcopyrite rich zone	
				489' - as above	
				516 - 518' - fine grained felsic-intermediate dyke, dacitic?	
				529 - 534' - fine grained massive po, assoc cpy	
540	560		100	Massive sulphide, fine grained po, disseminated & exsolved py & cpy, cherty host.	
				546 - 547' - appreciable chalcopyrite	
560	590		100	Largely green chloritic chert, interbedded argillite, moderate to strong sulphide mineralization as colloform, oobicular and stringer po, and cpy (30% sulphides)	
590	947			Beginning of main massive sulphide zone, (~70-90% sulphide) hosted in dominantly green chloritic altered volcanics, largely fine grained massive po, also colloform & stringer textures	
				- lightly brecciated locally	
				pyrrhotite 90%, pyrite 7 - 8%, chalcopyrite 1 - 2%	
				615 - 656' - largely fine grained massive po, appreciable cpy (5%) some magnetite with sulphides @ 656'	
				667' - appreciable cupreous pyrite-chalcopyrite	
				710' - quartz-Fe carbonate veining	
				785 - 787' - unmineralized chlorite-epidote altered basalt	
				880 - 947' - sulphide content drops off slightly, light brecciation, host rock is chloritic basalt, minor interbedded argillaceous units, po most abundant sulphide massive & patchy mineralization	
947	971		100	Massive sulphides (50-70% sulphides), green siliceous host rock, dominantly po, chalcopyrite stringers, lightly brecciated	
971	990		100	Massive sulphide as above, fine to medium grained po (80%) cpy blebs & stringers (1-2%), magnetite prominant locally, green siliceous host rock	
990	1014		95%	Fine grained chlorite-epidote basalt?, schistose, disseminated stringer sulphides (30%), po&cpy segregated by banding - minor intercallated argillite.	
1014	1086		100	Massive sulphide zone, (50-70% sulphide), massive & large patches of po, & minor chalcopyrite and magnetite, siliceous, cherty groundmass	
				1062 - 1075'- prominant calcite veinlets	
				1080' - appreciable chalcopyrite	
1086	1124		100	Massive sulfide as above, relatively rich in chalcopyrite (5-6%) occurs as stringers and gobs dominantly medium to coarse grained po, siliceous-cherty matrix - sheared, slickenslided fracture surfaces, chloritic	
				1088' - zone of enriched cpy	
				1106 - 1109'- as above	
				1114 - 1115'- chalcopyrite stringers, gobs	
				1123' - chalcopyrite	
1124	1148		100	Heavily mineralized (30-40%) chlorite-epidote basalt, coarse grained po, minor cpy (1%) heavily fractured locally	

SAMPLES No.	From	To	Ft	ASSAYS Cu%	Co%	COMPOSITES Au PPb	Ag ppm	S%	Zn ppm	Co%
573	780	790	10	.52	.180					
574	790	800	10	.09	.160					
575	800	810	10	1.00	.150					
576	810	820	10	.71	.140	10	0.3	81	150	.150
577	820	830	10	.60	.140					
578	830	840	10	.56	.150					
579	840	850	10	.52	.160					
580	850	860	10	.56	.150					
581	860	870	10	.66	.130	30	0.1	83	70	.150
582	870	880	10	.69	.140					
583	880	890	10	.47	.150					
584	890	900	10	.72	.160					
585	900	910	10	.52	.150					
586	910	920	10	.42	.170	80	L.1	80	90	.170
587	920	930	10	.50	.190					
588	930	940	10	.50	.200					
589	940	947	7	.56	.190					
590	947	960	13	.47	.140					
591	960	971	11	.48	.180	5	L.1	75	25	.180
592	971	980	9	.37	.190					
593	980	990	10	.75	.170					
594	990	1000	10	.37	.017	5	L.1	30	20	.053
595	1000	1014	14	.36	.055					
596	1014	1020	6	.31	.160					
597	1020	1030	10	.17	.110					
598	1030	1040	10	.27	.130	140	L.1	52	15	.110
599	1040	1050	10	.22	.093					
600	1050	1060	10	.18	.098					
601	1060	1070	10	.18	.057					
602	1070	1080	10	.33	.094	30	L.1	51	10	.092
603	1080	1086	6	1.22	.091					
604	1086	1100	14	2.11	.087					
605	1100	1110	10	2.43	.120	60	L.1	74	70	.120
606	1110	1124	14	.69	.120					
607	1124	1130	6	.20	.050					
608	1130	1140	10	.28	.063					
609	1140	1148	8	.32	.059	15	L.1	46	20	.061
610	1148	1153	5	.79	.075					
611	1153	1160	7	.54	.046					
612	1160	1170	10	.27	.024	35	L.1	21	30	.029
613	1170	1180	10	.06	.010					
614	1180	1190	10	.47	.017					
615	1190	1202	12	.20	.035					
616	1202	1210	8	.39	.140					

CONT ON NEXT SHEET

JNBRIDGE NICKEL MINES LIMITED

Elevation | Bearing | HOLE NO. 7 | PAGE # 3

Coordinates N E | Begun /Completed | Sampled by

Core size | /Recovery % | DRILLERS | RIG#

FOOTAGE From	To	RECOV'Y Run	Core	DESCRIPTION
				1132 - 1145'- fractured zone
				1142' - chalcopyrite enriched
1148	1153		100	Heavily mineralized (30-40%) chlorite epidote basalt, coarse grained po, minor cpy (1%) heavily fractured locally
				1132 - 1145'- fractured zone
				1142' - chalcopyrite enriched
1148	1153		100	Massive sulphide breccia, angular po & minor py clasts in gritty sulphide matrix, talc & Fe carbonate present
1153	1202		98%	Sheared, mineralized fine grained chloritic volcanic, po bands, stringers & dissemination, cpy rich zones, quartz-carbonate veinlets
				1163' - chalcopyrite stringers
				1185' - chalcopyrite, pyrite gobs assoc. with buff carbonate
				1192' - chalcopyrite gobs
				1202' - carbonate veining (ankerite)
1202	1230		98%	Sulphide zone (50-60%), hosted in limey argillite,dominantly medium-coarse grained po, minor py and cpy,calcareous matrix, ankerite and quartz patches
1230	1300		98%	Patchy & massive py & po hosted in light to dark grey limey argillite, mottled look to sulphides carbonate crosscutting veins & veinlets.
				HOLE LOST STILL WITHIN SULPHIDE ZONE AT 1300 FEET BUT APPEARS TO HAVE PENETRATED THROUGH TO ARGILLITE HANGING WALL???

GRAPHIC

SAMPLES No.	From	To	Ft.	ASSAYS Cu%	Co%	COMPOSITES Au PPb	Ag ppm	S_2%	Zn ppm	Co%
617	1210	1220	10	.29	.120					
618	1220	1230	10	.26	.110					
619	1230	1240	10	.17	.021	L5	L.1	38	50	.080
620	1240	1250	10	.02	.012					
621	1250	1260	10	.15	.070					
622	1260	1270	10	.14	.064					
623	1270	1280	10	.17	.013	L5	L.1	28	185	.054
624	1280	1290	10	.36	.063					
625	1290	1300	10	.31	.050					

INTERSECTION SUMMARY

Assayed Section:

360 ft - 1300' = 940 ft (286m)

True Width = 940 cos 52° = 578ft (176m)

a) 1) Sulphide Range 3 - 84%

2) Average 55.5% (940 ft) including 400 ft @ 80% S.

b) Copper

1) Range .01 - 2.43%

2) Average 0.52% (940ft) including 160ft @ 1.02% and 30ft @ 2.03%

DRILL HOLE RECORD

FALCONBRIDGE NICKEL MINES LIMITED

FNM88

	Inclination	Bearing
Collar	-61°	S53°42'W
251 ft	-61°	
500 ft	- 61°	

PROPERTY Windy-Craggy
Location Section D-D'
Elevation 1653.89m
Coordinates 10,376.33 N
10,020.01 E

Length 234.7m (770ft)
Hor Comp: /Vert Comp:
Bearing S 53° 42' W
Begun 8/23/81 /Completed 8/28/81
Core size BQ-410, /Recovery +95 %

HOLE No. 8-81 PAGE # 1
Sheet of
Logged by Don Hoy
Sampled by " "
DRILLERS LY (FLY #38) RIG# 1

FOOTAGE From	To	RECOV'Y Run	Core	DESCRIPTION
				NOTE**: NQ RODS DRILLED DOWN TO A DEPTH OF 440', AFTER WHICH BQ RODS WERE UTILIZED WITH THE NQ
				RODS ACTING AS CASING
0	127			Glacier hole, interbedded hard packed snow and ice
127	160		95%	Strongly oxidized volcanic? breccia, clasts dominantly subangular to angular, fine grained glassy
				matrix, clasts become larger towards bottom of interval, extremely porous in places.
				137 - 157' - gossan, extreme oxidation, clay minerals evident
160	169		95%	Fine to medium grained, chlorite-epidote altered volcanic, moderate fracturing, minor disseminated
				py, trace cpy.
169	203		100	As above, chloritized fine grained volcanic, stringer and banded cpy&po at regular intervals
				(perhaps interstitial sulphides between pillow lavas) disseminated po
				177' - banded po & cpy (3" wide) @ 45° associated with quartz veining
				182 - 183' - enriched zone in cpy
				198' - po banding
				199 - 200' - fine grained massive po band
203	217		85%	Zone of appreciable sulphides, (50% sulphides) hosted in interbedded green chloritic chert,
				chlorite altered basalts & minor argillites, minor slumping of sulphides in metasediments
				(sygnetic sulphides) - sulphides dominantly fine grained po, associated cpy as massive zones,
				colloform po seen locally, locally sheared, chloritic
				209' - colloform banding of po and gangue
				217' - highly chloritic zone, fractured
217	287		98%	Grey to dark green chert, contains significant massive, patchy&stringer po, appreciable cpy(2-4%)
				224' - band of chalcopyrite (1") 45° to core
				233' chalcopyrite banding @ 35-40°
				242 - 244' - considerable cpy in massive po & py
				250 - 255' - massive f.g. po, ,minor cpy
				259' - appreciable gobby cpy
				261 - 262' - Cu rich, cupreous py, colloform banding
				277' - fracture zone
				283' - banded chalcopyrite
287	320		100	Extremely fine grained grey to black volcanic, moderate to heavy (30-50% sulphides) banded,
				stringer & patchy po, cpy, rich zones, carbonate stringers
				289 - 295' - chalcopyrite rich zone
				307 - 357' - sheared, chloritic, carbonate veins, po stringers
320	357		100	Banded sulfides, almost massive (60-70%) sulphides, dominantly po, minor cpy, banding at 30°
				carbonate veining, basic volcanic host, minor cherty horizons
357	442		100	Patchy banded pyrrhotite hosted in green chert & chloritic basalts carbonate veining, copper
				rich sections
				368 - 370' - fracture filling mineralization associated with carbonate & quartz veining
				394 - 395' - chalcopyrite stringers
				413 - 422' - massive sulphide, fine grained po with occasional gobs of cpy
				422 - 434' - chert & chloritic volcanics, sheared, stringer po
442	447		0%	Lost core - no return
447	598		98%	Massive sulphide zone (approx 70% sulphide) grained pyrrhottite, streaks & blebs of cupreous
				pyrite-chalcopyrite, pyrrhotite 80-90%, pyrite & chalcopyrite 10-20%

NQ to bottom
GRAPHIC

½" core ground

SAMPLES No.	From	To	Ft	ASSAYS Cu%	Co%	COMPOSITES Au PPb	Ag ppm	S %	Zn ppm	Co%	Zn%	
28626	SELECTIVE ASSAY 137	159		.21	.065						L.01	L.01
627	160	169	9	.16	.014						L.01	L.01
628	169	180	11	.17	.019						L.01	L.01
629	180	190	10	.31	.034	10	L.1	12	30	.024	L.01	L.01
630	190	203	13	.46	.025						L.01	L.01
631	203	210	7	.47	.092						L.01	L.01
632	210	217	7	.73	.120	20	L.1	56	18	.100	L.01	L.01
633	217	220	3	.47	.048						L.01	L.01
634	220	230	10	.84	.043						L.01	L.01
635	230	240	10	1.00	.040	15	.6	47	20	.051	L.01	L.01
636	240	250	10	2.63	.057						L.01	L.01
637	250	260	10	1.66	.056						L.01	L.01
638	260	270	10	1.25	.040						L.01	L.01
639	270	280	10	.97	.029		.2	M	65		L.01	L.01
640	280	287	7	.70	.048						L.01	L.01
641	287	290	3	1.69	.061						L.01	L.01
642	290	300	10	2.97	.062						L.01	L.01
643	300	310	10	.63	.055	15	.8	42	30	.076	L.01	L.01
644	310	320	10	.43	.150						L.01	L.01
645	320	330	10	.37	.070						L.01	L.01
646	330	340	10	.40	.160	65	L.1	54	25	.13	L.01	L.01
647	340	350	10	.48	.180						L.01	L.01
648	350	357	7	.60	.160						L.01	L.01
649	357	360	3	2.33	.130						.04	L.01
650	360	370	10	1.15	.120						L.01	L.01
651	370	380	10	.87	.038	25	.4	66	125	.064	L.01	L.01
652	380	390	10	.58	.018						L.01	L.01
653	390	400	10	.92	.024						L.01	L.01
654	400	410	10	.16	.013						L.01	L.01
655	410	420	10	1.85	.047						L.01	L.01
656	420	430	10	.38	.031	10	.5	46	45	.027	L.01	L.01
657	430	441	11	.38	.025						L.01	L.01
658	447	450	3	2.26	.092						L.01	L.01
659	450	460	10	3.64	.098						.03	L.01
660	460	470	10	1.61	.100	30	.5	37	110	.10	L.01	L.01
661	470	480	10	1.38	.120						L.01	L.01
662	480	490	10	1.50	.130						L.01	L.01
663	490	500	10	.74	.150						END	END
664	500	510	10	.75	.140							
665	510	520	10	.59	.130	175	.3	83	160	.13		
666	520	530	10	.70	.130							
667	530	540	10	1.69	.130							
668	540	550	10	1.65	.130							
669	550	560	10	2.13	.150							

CONT ON NEXT PAGE

RILL HOLE RECORD

ALCONBRIDGE NICKEL MINES LIMITED

	Inclination	Bearing
Collar		

PROPERTY
Location
Elevation
Coordinates N
E

Length
Hor. Comp. / Vert. Comp.
Bearing
Begun / Completed
Core size / Recovery %

HOLE No. 8-81 PAGE # 2
Sheet of
Logged by
Sampled by
DRILLERS RIG#

FOOTAGE From	FOOTAGE To	RECOV'Y Run	RECOV'Y Core	DESCRIPTION
447	598	cont		- light to moderate fracturing, chloritic altered basaltic host
				447 - 457' - chalcopyrite streaks, coarse grained po
				464 - 465' - unmineralized chloritic basalt, quartz, Fe carbonate
				531' - chalcopyrite rich
				537 - 539' - chalcopyrite rich, minor magnetite
598	609		98%	Banded, wispy sulphide zone (50-70% sulphide) dominantly pyrrhotite, associated minor chalcopyrite
				dark green chloritic basalt host, carbonate, quartz gangue
609	612		100	Carbonate-quartz vein rich zone, trending 0° to core, cutting chloritic basalt as above
				611' - chalcopyrite gobs
612	641		100	Banded wispy po & cpy (@ 135°) in chloritic-epidote rich basalts, flow-like texture to sulphides
				and host
				624 - 627' - copper rich, chalcopyrite-cupreous pyrite
641	677		100	Dark green chloritic chert, containing moderate to heavy po & cpy (50-70% combined sulphides)
				variable textures, banding, patches, and disseminatives
677	695			Chlorite-epidote rich basalt, containing stringer sulphides, chalcopyrite rich sections, po
				stringers @ 120-140°
				682 - 683' - fine grained massive po, appreciable cpy
				687' - cpy rich zone
				692' - as above
695	713		85%	Pyrrhotite minor pyrite and chalcopyrite (30% combined sulphides) hosted in silicified volcanic
				quartz, weak sphalerite and/or ankerite?
				705 - 707' - heavily fractured black fine grained volcanic stringer sulfides @ 45°
713	747		95%	Dark green, fine grained volcanic, chloritic, interbedded grey chert horizons, disseminated &
				stringer po with minor associated cpy & py, locally very heavily fractured.
				746' - chert horizon, heavy po mineralization, some cpy
747	770		98%	Fine to medium grained basic volcanics, disseminated sulfides 1-5%po light fracturing
				769' - small quartz vein, minor cpy
				ICE HOLE, APPEARS TO HAVE PENETRATED MOST BUT NOT ALL OF THE S_2 ZONE. HOLE WAS MEANT TO BE
				200m NORTH BUT CREVASSES WORRIED DRILLERS.

GRAPHIC

SAMPLES No.	From	To	Ft	ASSAYS Cu%	Co%	COMPOSITES Au PPb	Ag ppm	S_2%	Zn ppm	Co%
670	560	570	10	.65	.160					
671	570	580	10	.49	.180	20	.3	87	122	.14
672	580	590	10	.40	.140					
673	590	598	8	.38	.130					
674	598	609	11	.26	.110					
675	609	612	3	.36	.040					
676	612	620	8	.23	.130	50	.2	84	45	.077
677	620	630	10	.35	.081					
678	630	641	11	.22	.040					
679	641	651	10	.37	.071					
680	651	661	10	.52	.083					
681	661	671	10	.51	.059	10	.2	48	70	.060
682	671	677	6	.25	.035					
683	677	687	10	.78	.017					
684	687	695	8	.48	.019	30	1.2	47	1770	.038
685	695	705	10	.52	.075					
686	705	713	8	.39	.050					
687	713	720	7	.10	.019					
688	720	730	10	.22	.012	L5	.1	30	60	.013
689	730	740	10	.05	.006					
690	740	747	7	2.10	.015					
691	747	750	3	.02	.006					
692	750	760	10	.16	.010	L5	.01	16	60	.008
693	760	770	10	.18	.009					

Assayed Section 137 - 770 = 633 ft (192.9m)
True width = 633 cos 61 = 306 ft (93.2 m)

a) Sulphide Range 12 - 87%
   1) Average - 50% (633 ft)
   2) includes 150 ft @ 84%

b) Copper
   1) Range 0.02 - 3.64%
   2) Average 0.80% (633 ft) includes a) 350ft continuous @1.14% or 401 ft. @ 1.05% and b) 43 ft @ 2.04%

DRILL HOLE RECORD

FALCONBRIDGE NICKEL MINES LIMITED

	Inclination	Bearing
Collar	-58° 45'	N 48° 24' E
492 ft	-58°	
542 ft	-58°	

PROPERTY WINDY-CRAGGY
Location Section G-G'
Elevation 1812.00m
Coordinates 10,466.70 N
9,656.01 E

Length (-1981) 174.9 in (574 ft)
Hor. Comp. / Vert. Comp.
Bearing N 48° 24' E
Begun 8/26/81 / Completed *****
Core size BQ, NQ / Recovery ±80 %

HOLE No. 9-81 PAGE # 1
Sheet of
Logged by Don Hoy
Sampled by "
DRILLERS LY 38 RIG# 2

FOOTAGE From	FOOTAGE To	RECOV'Y Run	RECOV'Y Core	DESCRIPTION
				NOTE: NQ rods drilled to a depth of 546', BQ to 577' with NQ rods acting as casing. Hole to be completed in 1982.
0	27		20%	Poor core recovery, mud, small pebbles
27	95		60%	Highly fractured grey to black limestone & interbedded calcareous argillite, carbonate veinlets, somewhat oxidized, bedding at 150-160°, fault gouging & local shearing
95	120.5		80%	Medium grained grey andesite, locally sheared and fractured, calcareous, lightly oxidized, minor Fe carbonate veinlets, and disseminated sulphide.
120.5	174		50%	Black massive & laminated calcareous shale & limestone, bedding at 150°, spheroidal pyrite, carbonate veinlets @ 25-30°
174	217		60%	Grey, sheared cherty volcanic, carbonate veinlets, interbedded argillaceous units, pyrite stringers.
217	237		50%	Oxidized, sheared volcanic, interbedded argillaceous horizons, fault zone
237	258		95%	Interbedded green chert and fine grained chlorite rich volcanics, 10% sulphides (po) related to fracture fillings.
258	276		90%	Medium grained grey andesite, amygdaloidal, calcareous
276	373		100	Relatively unaltered fine grained basic volcanics, cherty in places, minor po stringers & py related to fractures, carbonate veining generally parallel to core, locally amygdaloidal
373	574		98%	Relatively unaltered fine - medium grained basic volcanic, chlorite rich horizons locally present, quartz-carbonate veins & veinlets, isolated stringer & disseminated sulphides associated with carbonates.
				466 - 469' - sheared, fractured alteration zone, chlorite rich volcanic, shearing @ 70° cataclastic pyrite
				493 - 528' - Quartz-carbonate veining, 2-3" width
				528 - 546' - zone of prominent quartz & carbonate veining, primary direction @ 90°, secondary veinlets @ 40', minor associated po & cpy
				BQ EQUIPMENT LOST DOWN HOLE. THEN RE-DRILLED WITH NQ TO RECOVER HOLE AND EQUIPMENT.
				SUBSEQUENT BQ DRILLING CEASED FINALLY DUE LACK OF WATER. SULPHIDE ZONE NOT REACHED. DRILL STILL SET UP ON HOLE FOR 1982 COMPLETION.
				RECOVERY***** Not completed. Drilling suspended September 20, 1981

GRAPHIC

SAMPLES No.	From	To	Ft.	ASSAYS Cu%	Co%	COMPOSITES Au PPb	Ag ppm	S_2%	Zn ppm	Co%

DRILL HOLE RECORD

FALCONBRIDGE NICKEL MINES LIMITED

	Inclination	Bearing
Collar	-63° 07'	S 52° 22' W
516 ft	-63°	
780 ft	-62°	
1228 ft	-61°	

PROPERTY WINDY - CRAGGY
Location Section C-C' 40m North
Elevation 1612.00m
Coordinates 10,415.71 N
10,133.50 E

Length 399.57m (1311 ft)
Hor. Comp. / Vert. Comp.
Bearing S 52° 22 W
Begun 11/9/81 / Completed 9/20/81
Core size NQ + BQ / Recovery 90 %

HOLE No. 10-81 PAGE # 1
Sheet of
Logged by Don Hoy
Sampled by Don Hoy
DRILLERS LY (FLY # 38) RIG# 1

FOOTAGE From	To	RECOV'Y Run	Core	DESCRIPTION
0	116		0%	Snow & ice
116	150		30%	Highly oxidized conglomerate-breccia, small subrounded-subangular clasts. (volcanic?) porous & vuggy in nature, reddish-brown to chocolate brown in colour, poor core recovery
150	164		80%	Oxidized conglomerate-breccia, subangular clasts include prominent ivory coloured material volcanics, shale & chert.
				153 - 156' - clasts much smaller than in remainder of interval, subangular clasts embedded in oxidized fine grained matrix
				151 - 152' - ivory coloured vein material, highly altered
164	166			Volcanic breccia, slightly oxidized, grey fine grained matrix traces of cuprite
166	216		30%	Highly fractured basic volcanic fine to medium grained, (andesitic?), locally fault gouged, disseminated sulphides, poor core recovery.
				191 - 193' - Fe stained pitted volcanic, native copper & cuprite in fracture surfaces
216	302		95%	Grey fine to medium grained andesitic? volcanics, locally amygdaloidal calcareous, minor disseminated sulphide, stringer po & py trending generally @ 020°-050°
				232.5' - stringer po & cpy @ 020° assoc. with carbonate veining
				255 - 295' - stringer & banded po & minor cpy trending @ 020° to 035°
302	795		100	Black thanly bedded, calcareous argillite, extremely fine grained, bedding @ 0-20°, disseminated & patchy po up to 10%
				302 - 315' - stringer po & py @ 30-45°, calcite veinlets
				346 - 358' - pyrite cubes lineated with bedding
				367 - 369' - pyrite cubes
				387 - 389' - framboidal py & py cubes aligned with bedding
				411 - 416' - abundant pyrite cubes, sediment bedding @ 010°
				443 - 445' - small slivers of po
				724 - 726' - large relatively pure quartz vein, sediment bedding @ 155°
				756 - 782' - small intervals of banded & stringer po trending @ 135°-150°, also finely disseminated po
				781 - 782' - Chloritic chert horizon, CO^3 veining & stringer po @ 135°
795	875		80%	Dark green to black metavolcanic, interbedded argillaceous horizons, locally sheared, 5-10% sulfides
				800 - 804' - patchy po, minor cpy, extremely chloritic
				826 - 870' - heavily sheared & fractured, chloritic, po banding @ 135°
				853 - 855' - po rich zone, appreciable cpy, patchy mineralization
				869 - 870' - small massive po zone, appreciable cpy
875	922		95%	Interbedded chlorite-epidote fine grained volcanic and black fine grained volcanic-metavolcanic
				10% sulphide as stringer, gobby & disseminated po
				897' - beginning of ore zone, 30-50% sulphide banded & stringer po, with appreciable cpy banding @ 30-50°
				918 - 919' - cpy banding @ 45°
				920 - 922' - banded & stringer po & cpy @ 135°
922	1026		100	Heavy sulphide mineralization hosted in dark green chlorite-epidote basalts and interbedded green cherty volcanics dominantly patchy & gobby po, minor to appreciable cpy & py prominant quartz-carbonate veining
				994' - chalcopyrite banding in massive po
				998' - appreciable cpy assoc. with quartz & po
				1015-1025' - cpy stringers assoc. with po @ 30°

GRAPHIC

SAMPLES No.	From	To	Ft	ASSAYS Cu%	Co%	COMPOSITES Au PPb	Ag ppm	S%	Zn ppm	Co%
28694	116	126	10	.17	.005					
95	126	136	10	.16	L005					
96	136	150	14	.09	L005					
97	150	160	10	.06	L005	L 5	1.0	7	10	.005
98	160	166	6	.12	L005					
99	166	176	10	.45	.007					
700	176	186	10	.11	.008					
01	186	196	10	.65	.008	155	0.1	2	48	.007
02	196	206	10	.01	.008					
03	294	305	11	.22	.005					
04	305	315	10	.16	.010	L 5	0.5	1	55	.007
05	403	413	10	.01	.005					
06	413	424	11	.01	.005	20	0.3	10	28	.005
07	724	734	10	.03	.005					
08	734	744	10	.04	.003	744	754	102	.005	
09	744	754	10	.02	.005					
10	754	764	10	.03	.005	L 5	0.2	4	20	.005
11	764	774	10	.08	.005					
12	774	784	10	.08	.005					
13	784	795	11	.07	.05	5	0.3	7	20	.005
14	795	805	10	.19	.011					
15	805	815	10	.07	.005					
16	815	825	10	.06	.005	5	0.1	8	24	.007
17	825	835	10	.05	.005					
18	835	845	10	.17	.009					
19	845	855	10	.49	.015	5	0.2	17	32	.016
20	855	865	10	.48	.018					
21	865	875	10	.07						
22	875	885	10	.13	.026					
23	885	895	10	.14	.014					
24	895	905	10	.28	.021					
25	905	915	10	.28	.025	5	0.3	25	15	.032
26	915	922	7	.61	.060					
27	922	930	8	.29	.090					
28	930	940	10	.22	.110					
29	940	950	10	.42	.140	10	0.4	46	20	.11
30	950	960	10	.26	.100	960	970	.21	.110	
31	960	970	10	.21	.110					
32	970	980	10	.12	.081					
33	980	990	10	.25	.120					
34	990	1000	10	.39	.150	5	0.4	41	15	.095
35	1000	1010	10	.21	.091					
36	1010	1020	10	.38	.055					
37	1020	1026	6	.16	.028					
38	1026	1036	10	.68	.026					
39	1036	1046	10	.09	.013	5	0.3	13	25	.020

DRILL HOLE RECORD

FALCONBRIDGE NICKEL MINES LIMITED

	Collar	Inclination	Bearing

PROPERTY
Location
Elevation
Coordinates N E

Length
Hor. Comp. /Vert. Comp.
Bearing
Begun /Completed
Core size /Recovery %

HOLE No. 10-31 PAGE # 2
Sheet of
Logged by
Sampled by
DRILLERS RIG#

FOOTAGE From	FOOTAGE To	RECOV'Y Run	RECOV'Y Core	DESCRIPTION	GRAPHIC
1026	1311		100	Fine to medium grained, dark green chlorite volcanic, stringer and banded po & cpy up to 10% sulphide.	
				1043' - banded po @ 90°	
				1053 - 1054' - cpy gobs & stringers assoc. with quartz & po	
				1072 - cpy assoc with patchy quartz & po	
				1082 - 1084' - host rock coarser grained, more siliceous	
				1101 - 1120' - banded and stringer po & assoc. cpy trending @ 125°	
				1139 - 1142' - fault gouge, highly sheared, chlorite	
				1144 - 1183' - host rock coarser grained equivalent, diorite-gabbroi ?	
				1183 - 1197' - cherty subunit, appreciable po & minor cpy @ 90°	
				1197 - 1269' - fine grained, chlorite-epidote rich volcanic, interbedded chert horizons appreciable patchy & gobby po 10-20%	
				1248 - 1252' - appreciable patchy po in sheared, altered chloritic volcanic	
				1269 - 1311' - coarser grained equivalent, chloritic, contains disseminated po	
				1309 - 1311' - stringer po	
				HOLE MAY NOT HAVE PENETRATED MAIN SULPHIDE ZONE AS ROCKS STILL MORE CHLORITIC THAN FOUND TO THE WEST. POSSIBLE FAULT OFFSET? HOLE FAILED TO FLATTEN AS ANTICIPATED AND WAS ABANDONED DUE LACK OF WATER.	

SAMPLES No.	From	To	Ft	ASSAYS Cu%	Co%	COMPOSITES Au PPb	Ag ppm	S_2%	Zn ppm	Co%
28740	1046	1056	10	.66	.017					
41	1056	1066	10	.07	.013	5	0.3	13	25	.020
42	1066	1076	10	.13	.016					
43	1076	1086	10	.14	.015					
44	1086	1096	10	.28	.015	5	0.4	11	20	.018
45	1096	1106	10	.09	.012					
46	1106	1116	10	.21	.034					
47	1116	1126	10	.10	.020					
48	1126	1136	10	.05	.017					
49	1136	1146	10	.12	.016	5	0.4	7	20	.016
50	1146	1156	10	.16	.018					
51	1156	1166	10	.02	.013					
52	1166	1176	10	.04	.024					
53	1176	1186	10	.25	.072					
54	1186	1196	10	.15	.043	5	0.2	15	20	.032
55	1196	1206	10	.05	.023					
56	1206	1216	10	.04	.016					
57	1216	1226	10	.06	.045					
58	1226	1236	10	.17	.050					
59	1236	1246	10	.12	.022	5	.03	14	115	.029
60	1246	1256	10	.23	.027					
61	1256	1266	10	.03	.008					
62	1266	1276	10	.04	.009					
63	1276	1286	10	.05	.014					
64	1286	1296	10	.02	.015	5	0.1	6	20	.014
65	1296	1306	10	.03	.014					
66	1306	1311	5	.08	.025					

Assayed Section
116 - 724 (122 ft sampled), 724 - 1311 (587 ft)

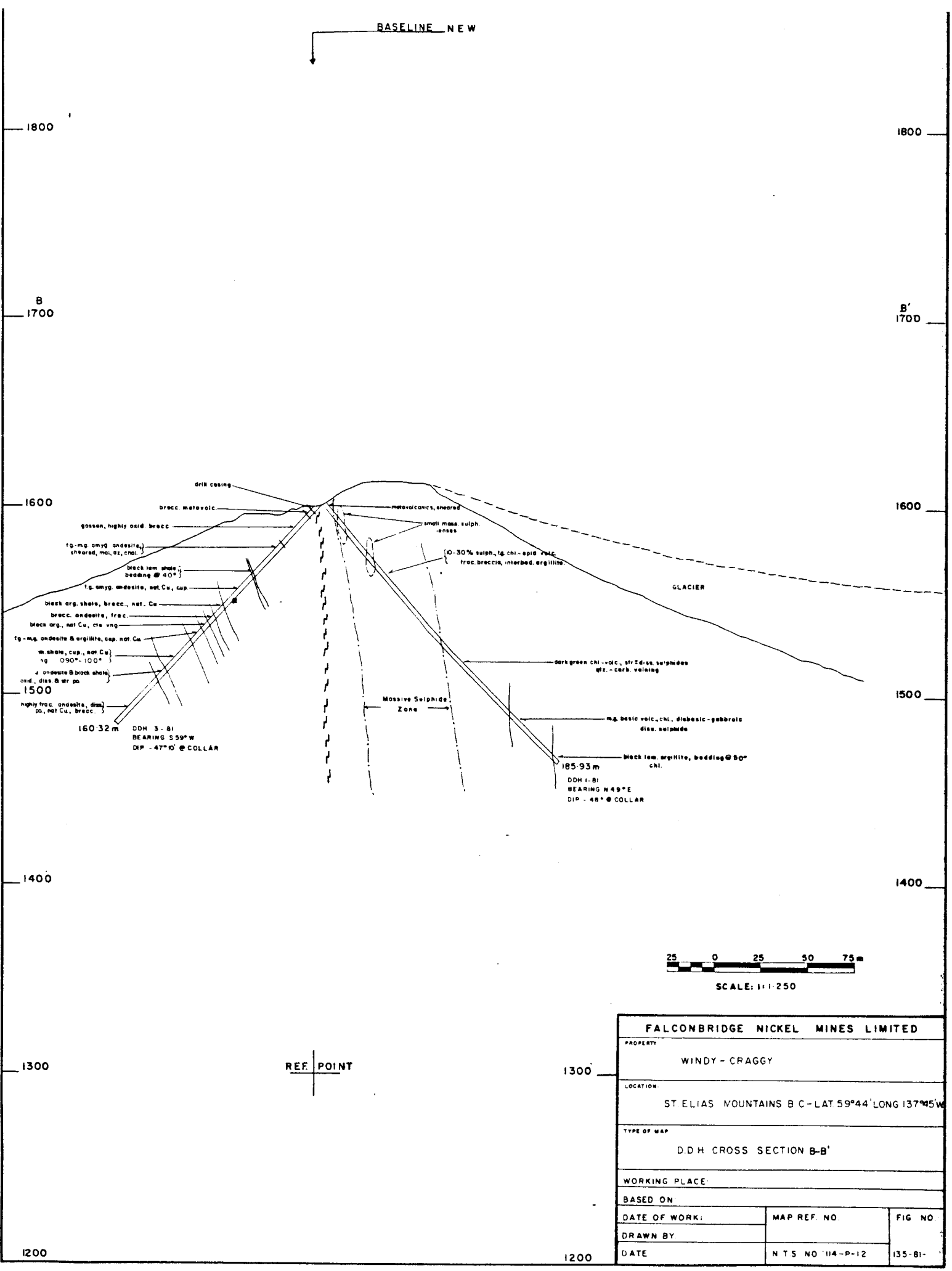
Total 709 ft (216m)

a) Sulphide Range 1% to 46%
   1) Average (in main volcanic section (+845 ft) = 32.2% (165 ft)

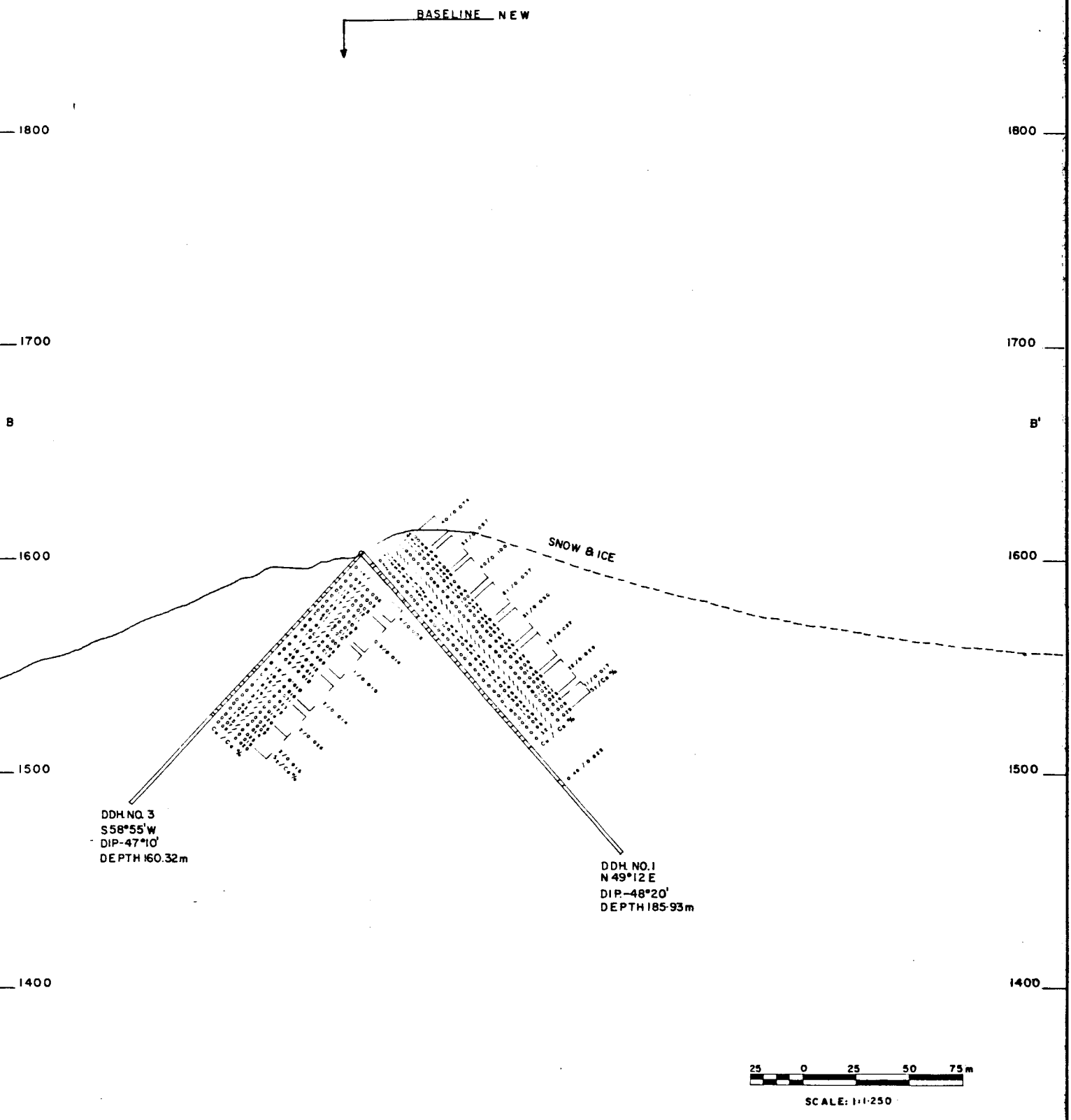
b) Copper
   1) Range - .01 to 1.13%
   2) Average (845 - 1311) = 0.23% (466 ft) including
   3) 10 ft @ 1.13%

APPENDIX 3

Drill and Assay Sections



FALCONBRIDGE NICKEL MINES LIMITED		
PROPERTY: WINDY - CRAGGY		
LOCATION: ST. ELIAS MOUNTAINS B.C. - LAT. 59°44' LONG. 137°45'W		
TYPE OF MAP: D.D.H. CROSS SECTION B-B'		
WORKING PLACE:		
BASED ON:		
DATE OF WORK:	MAP REF. NO.	FIG. NO.
DRAWN BY:		
DATE	N.T.S. NO. 114-P-12	135-81-

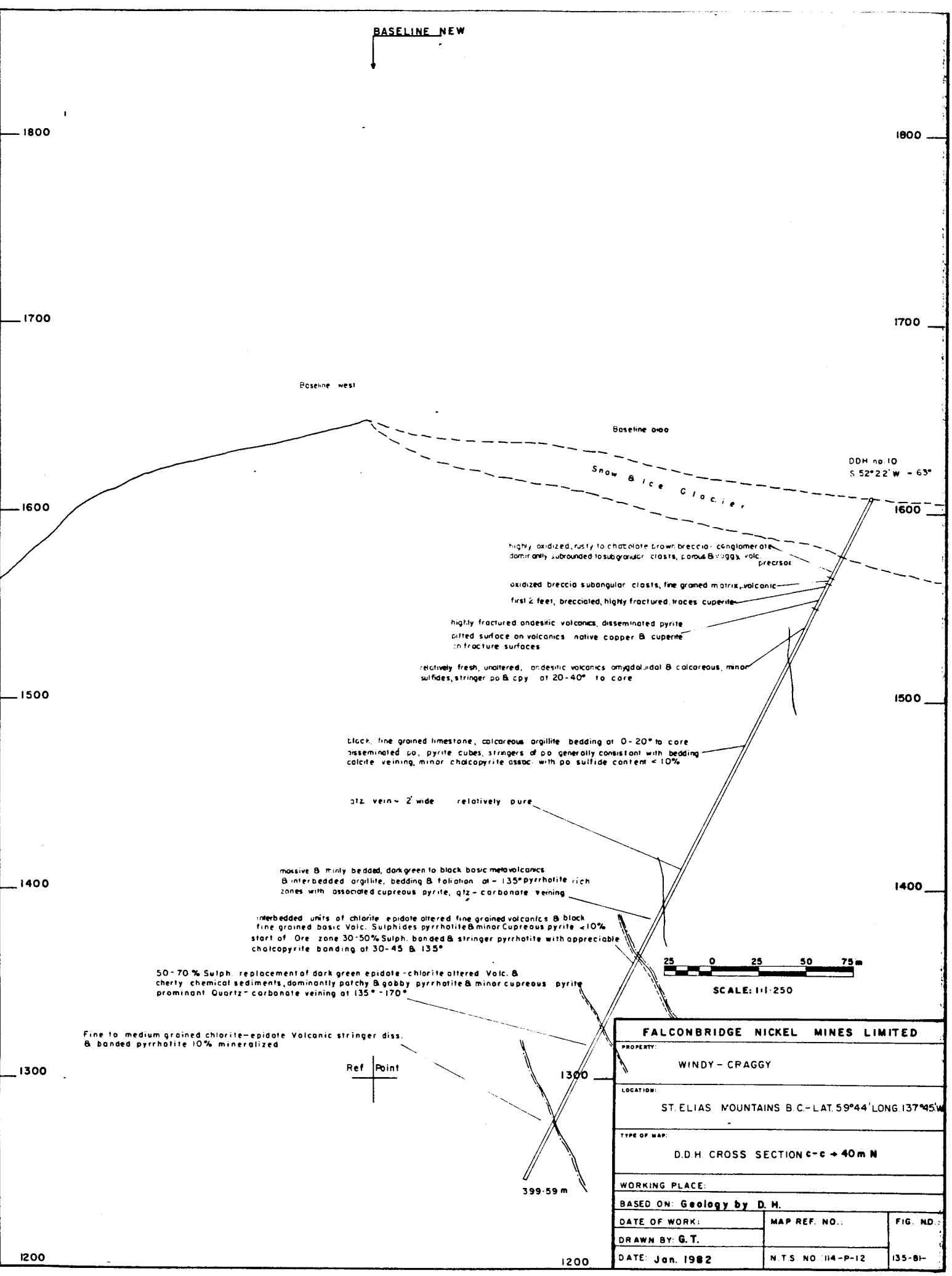


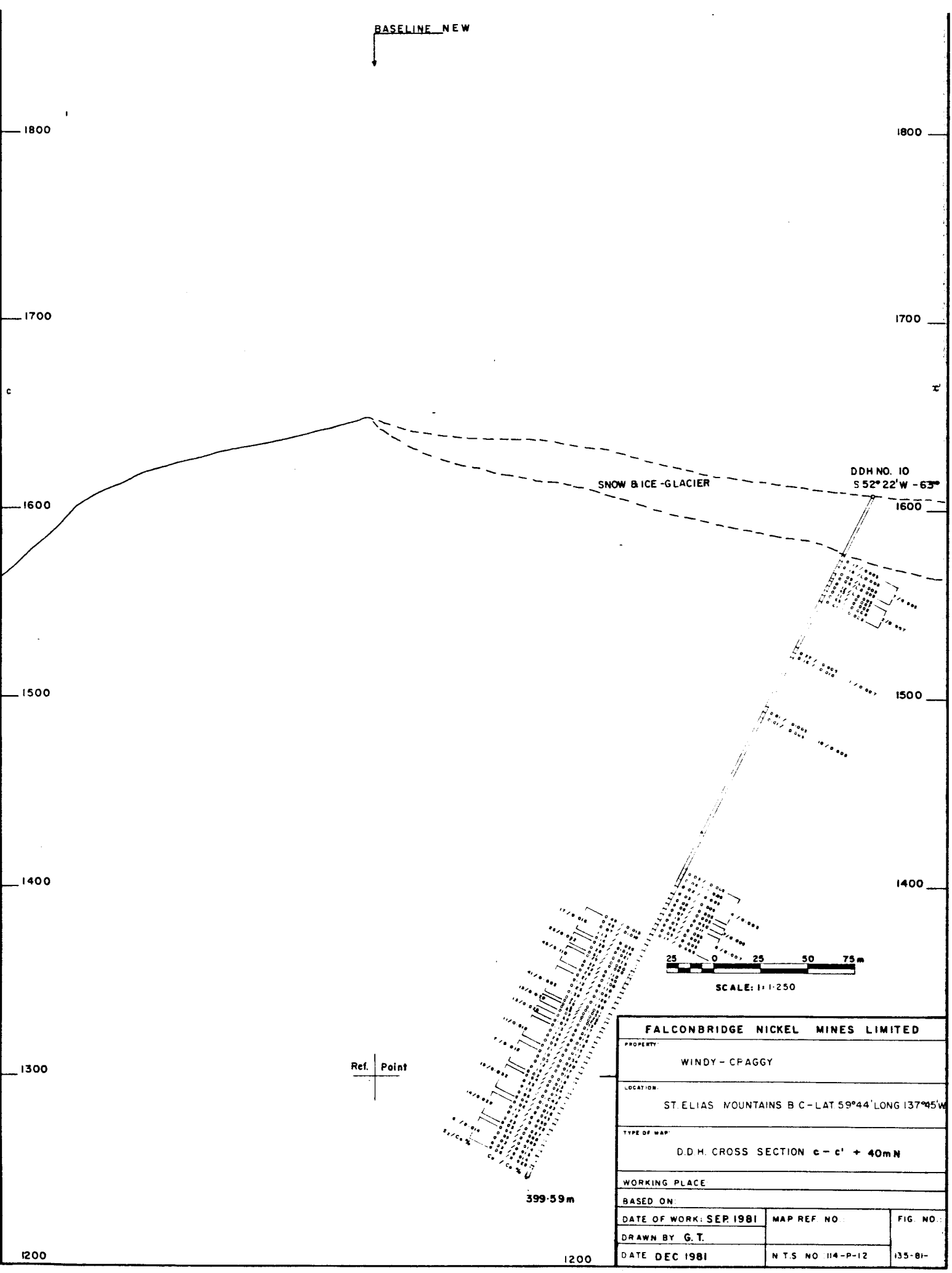
25 0 25 50 75 m

SCALE: 1:1·250

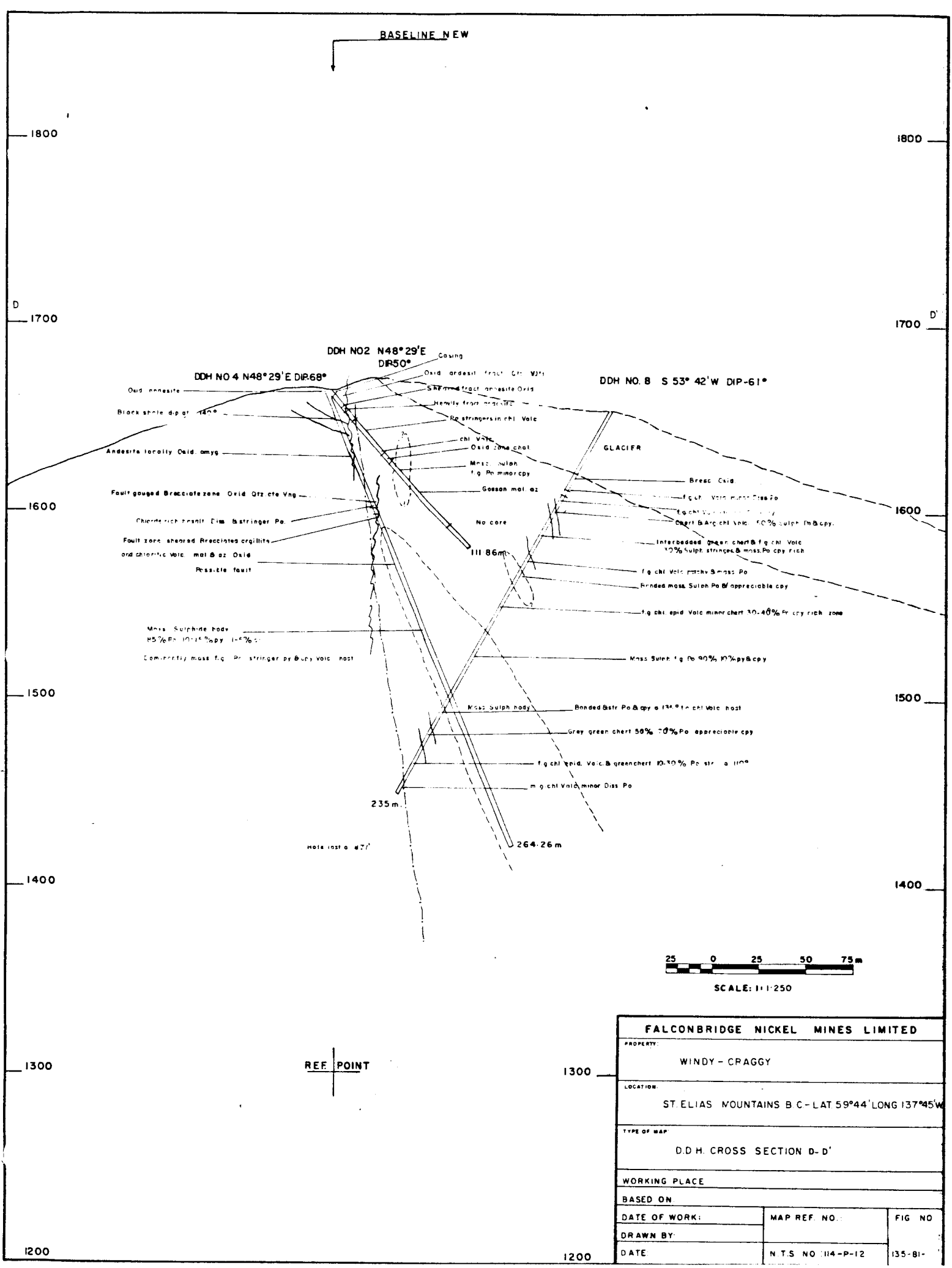
REF. POINT

FALCONBRIDGE NICKEL MINES LIMITED		
PROPERTY: WINDY – CRAGGY		
LOCATION: ST. ELIAS MOUNTAINS B.C. – LAT. 59°44' LONG. 137°45'W		
TYPE OF MAP: D.D.H CROSS SECTION B - B'		
WORKING PLACE:		
BASED ON:		
DATE OF WORK: JULY 1981	MAP REF. NO.:	FIG. NO.:
DRAWN BY: G.T.		
DATE DEC. 1981	N.T.S. NO. 114-P-12	135-81-

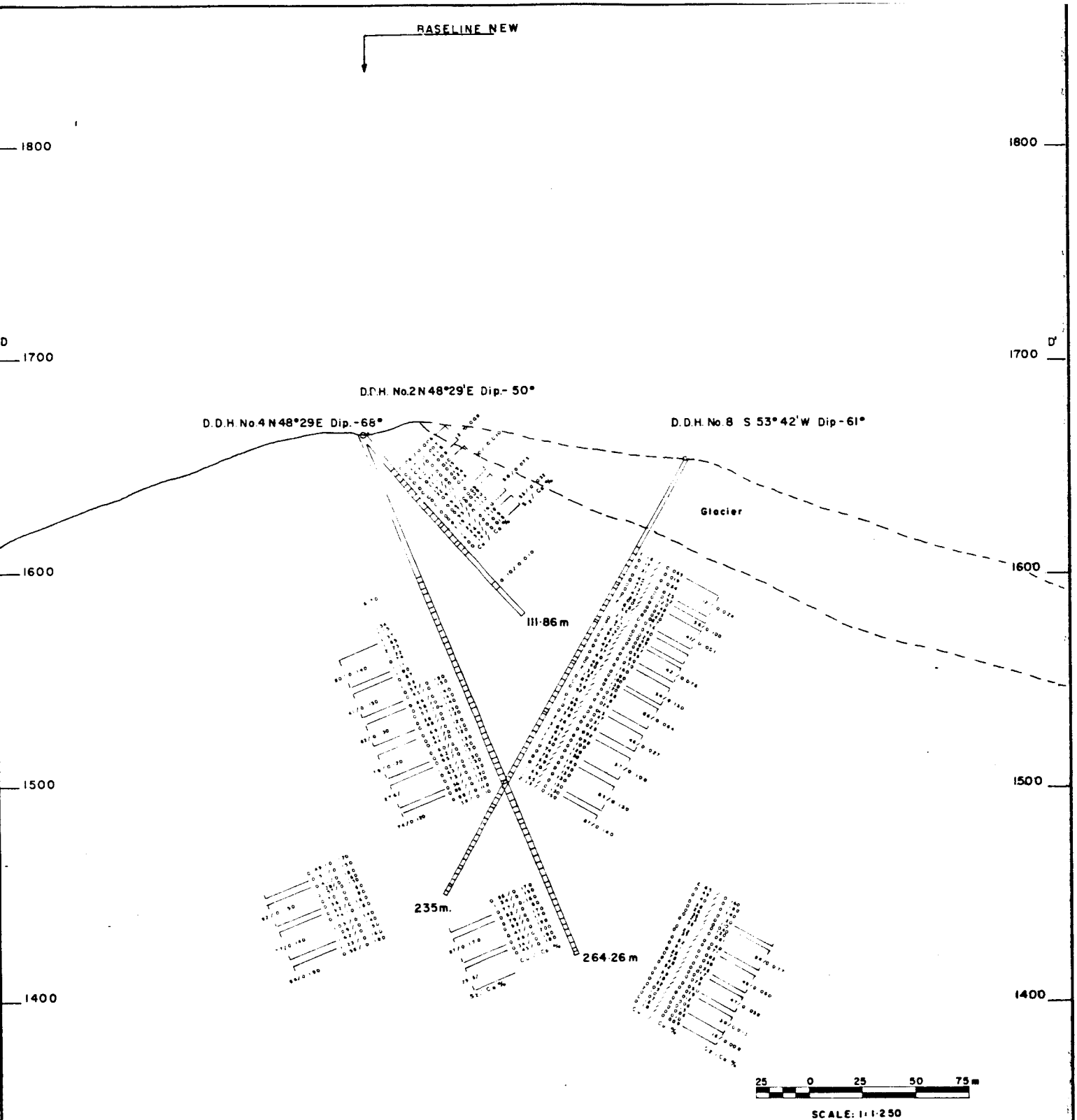

BASELINE NEW
1800
1700
1600
1500
1400
1300
1200
Baseline west
Baseline 0+00
Snow & Ice Glacier
DDH no. 10
S 52°22'W - 63°
highly oxidized, rusty to chocolate brown breccia - conglomerate dominantly subrounded to subgranular clasts, porous & vuggy volc. precrsor
oxidized breccia subangular clasts, fine grained matrix, volcanic
first 2 feet, brecciated, highly fractured, traces cuperite
highly fractured andesitic volcanics, disseminated pyrite
pitted surface on volcanics native copper & cuperite on fracture surfaces
relatively fresh, unaltered, andesitic volcanics amygdaloidal & calcareous, minor sulfides, stringer po & cpy at 20-40° to core
Black, fine grained limestone, calcareous argillite bedding at 0-20° to core disseminated po, pyrite cubes, stringers of po generally consistant with bedding calcite veining, minor chalcopyrite assoc. with po sulfide content < 10%
qtz. vein ~ 2' wide relatively pure
massive & thinly bedded, dark green to black basic metavolcanics & interbedded argillite, bedding & foliation at ~ 135° pyrrhotite rich zones with associated cupreous pyrite, qtz - carbonate veining
interbedded units of chlorite epidote altered fine grained volcanics & black fine grained basic Volc. Sulphides pyrrhotite & minor Cupreous pyrite <10%
start of Ore zone 30-50% Sulph. banded & stringer pyrrhotite with appreciable chalcopyrite banding at 30-45 & 135°
50-70 % Sulph. replacement of dark green epidote - chlorite altered Volc. & cherty chemical sediments, dominantly patchy & gobby pyrrhotite & minor cupreous pyrite prominant Quartz - carbonate veining at 135° - 170°
Fine to medium grained chlorite-epidote Volcanic stringer diss. & banded pyrrhotite 10% mineralized
Ref Point
399.59 m
25 0 25 50 75 m
SCALE: 1:1:250
FALCONBRIDGE NICKEL MINES LIMITED
PROPERTY: WINDY - CRAGGY
LOCATION: ST. ELIAS MOUNTAINS B.C. - LAT. 59°44' LONG. 137°45'W
TYPE OF MAP: D.D.H. CROSS SECTION c-c → 40m N
WORKING PLACE:
BASED ON: Geology by D. H.
DATE OF WORK:
DRAWN BY: G. T.
DATE: Jan. 1982
MAP REF. NO.:
N.T.S. NO: 114-P-12
FIG. NO.: 135-81-



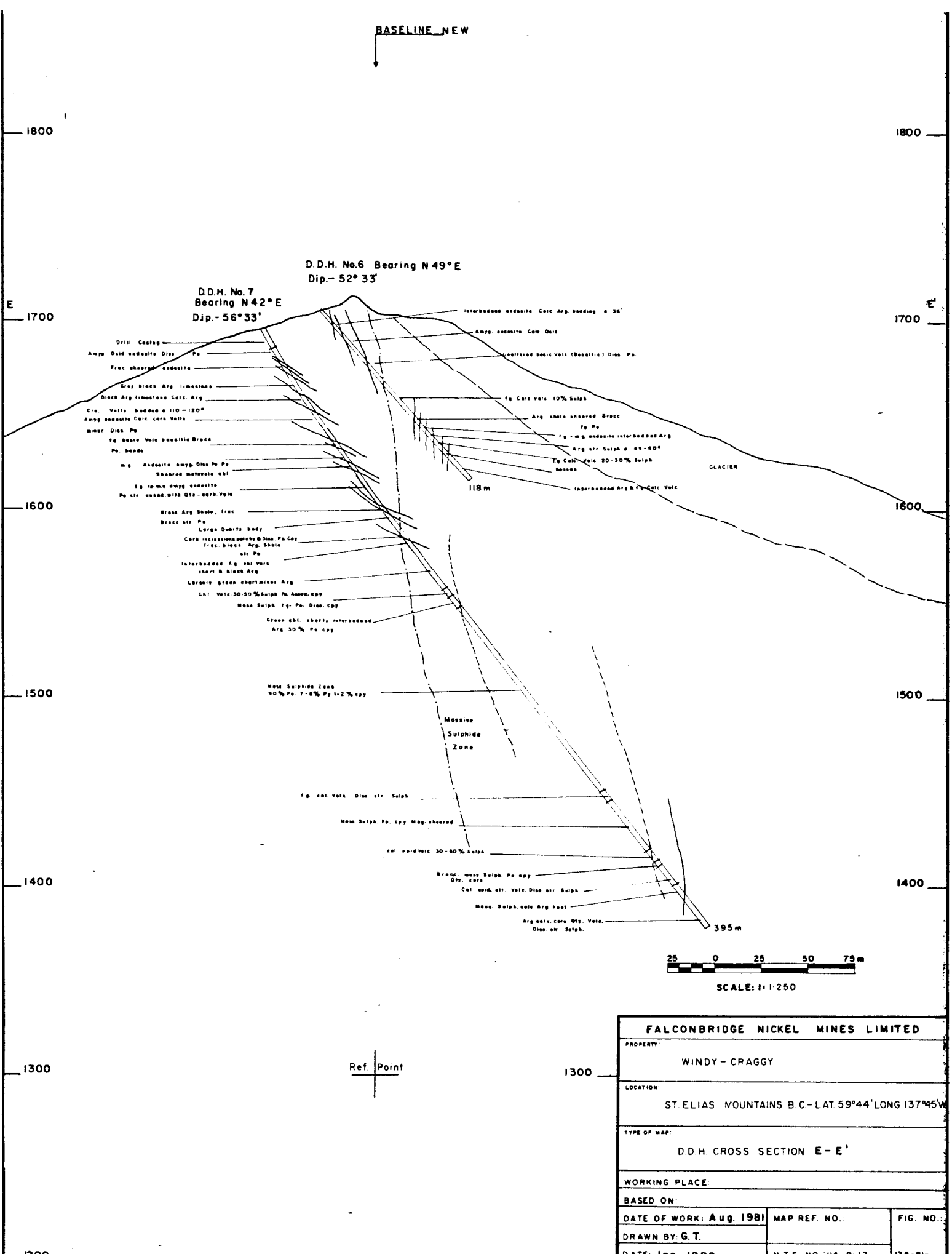
FALCONBRIDGE NICKEL MINES LIMITED		
PROPERTY: WINDY - CRAGGY		
LOCATION: ST. ELIAS MOUNTAINS B.C. - LAT. 59°44' LONG 137°45'W		
TYPE OF MAP: D.D.H. CROSS SECTION c - c' + 40m N		
WORKING PLACE:		
BASED ON:		
DATE OF WORK: SEP. 1981	MAP REF. NO.	FIG. NO.
DRAWN BY G. T.		
DATE DEC 1981	N.T.S. NO. 114-P-12	135-81-



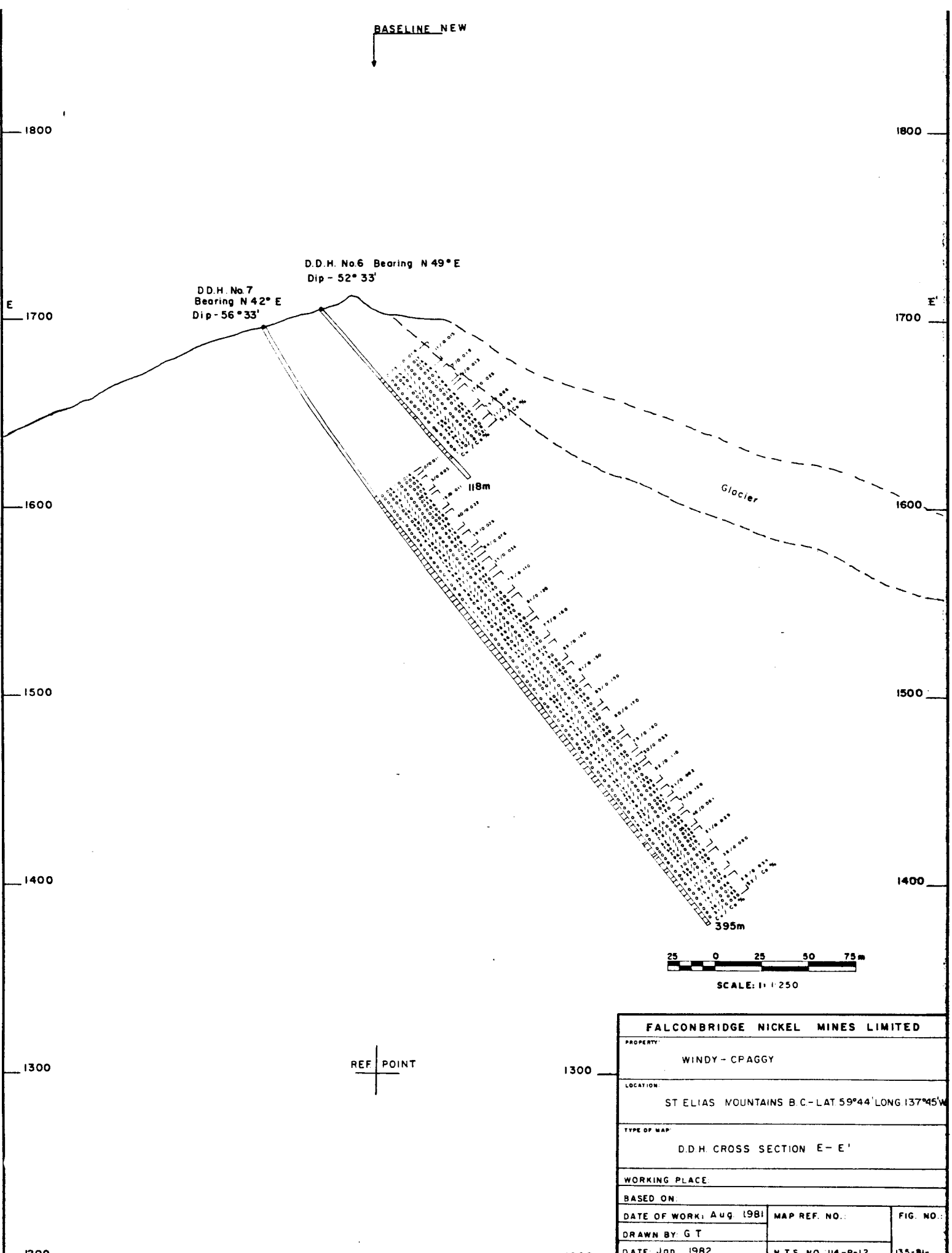
FALCONBRIDGE NICKEL MINES LIMITED		
PROPERTY: WINDY – CRAGGY		
LOCATION: ST. ELIAS MOUNTAINS B.C. – LAT. 59°44' LONG 137°45'W		
TYPE OF MAP: D.D.H. CROSS SECTION D–D'		
WORKING PLACE		
BASED ON		
DATE OF WORK:	MAP REF. NO.:	FIG. NO.
DRAWN BY:		
DATE	N.T.S. NO. 114-P-12	135-81-



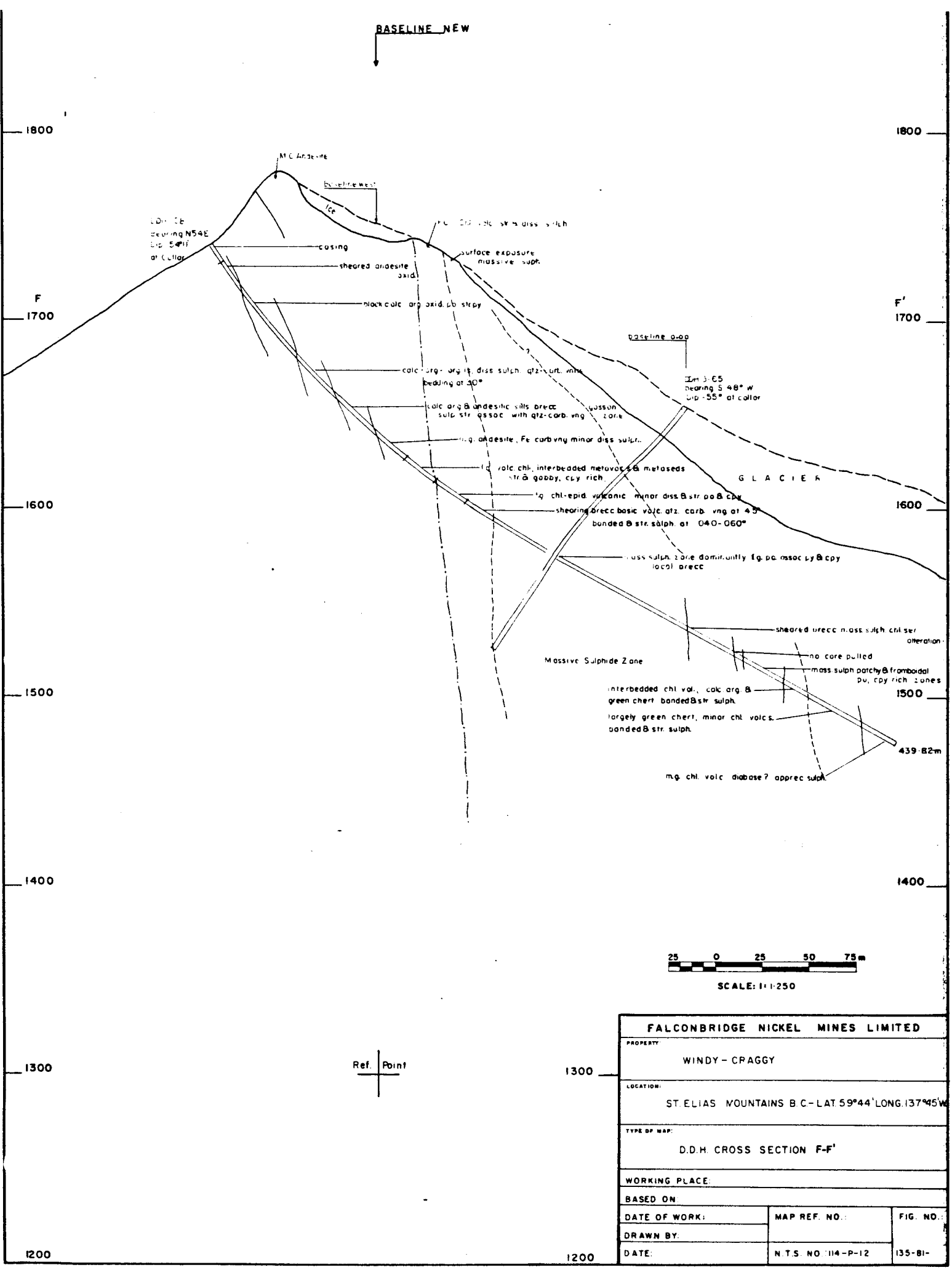
FALCONBRIDGE NICKEL MINES LIMITED	
PROPERTY: WINDY - CRAGGY	
LOCATION: ST ELIAS MOUNTAINS B.C - LAT 59°44' LONG 137°45'W	
TYPE OF MAP: D.D.H CROSS SECTION D-D'	
WORKING PLACE	
BASED ON	
DATE OF WORK:	MAP REF. NO.
DRAWN BY: G.T.	
DATE: Jan. 1982	N.T.S. NO. 114-P-12
FIG. NO. 135-81-	



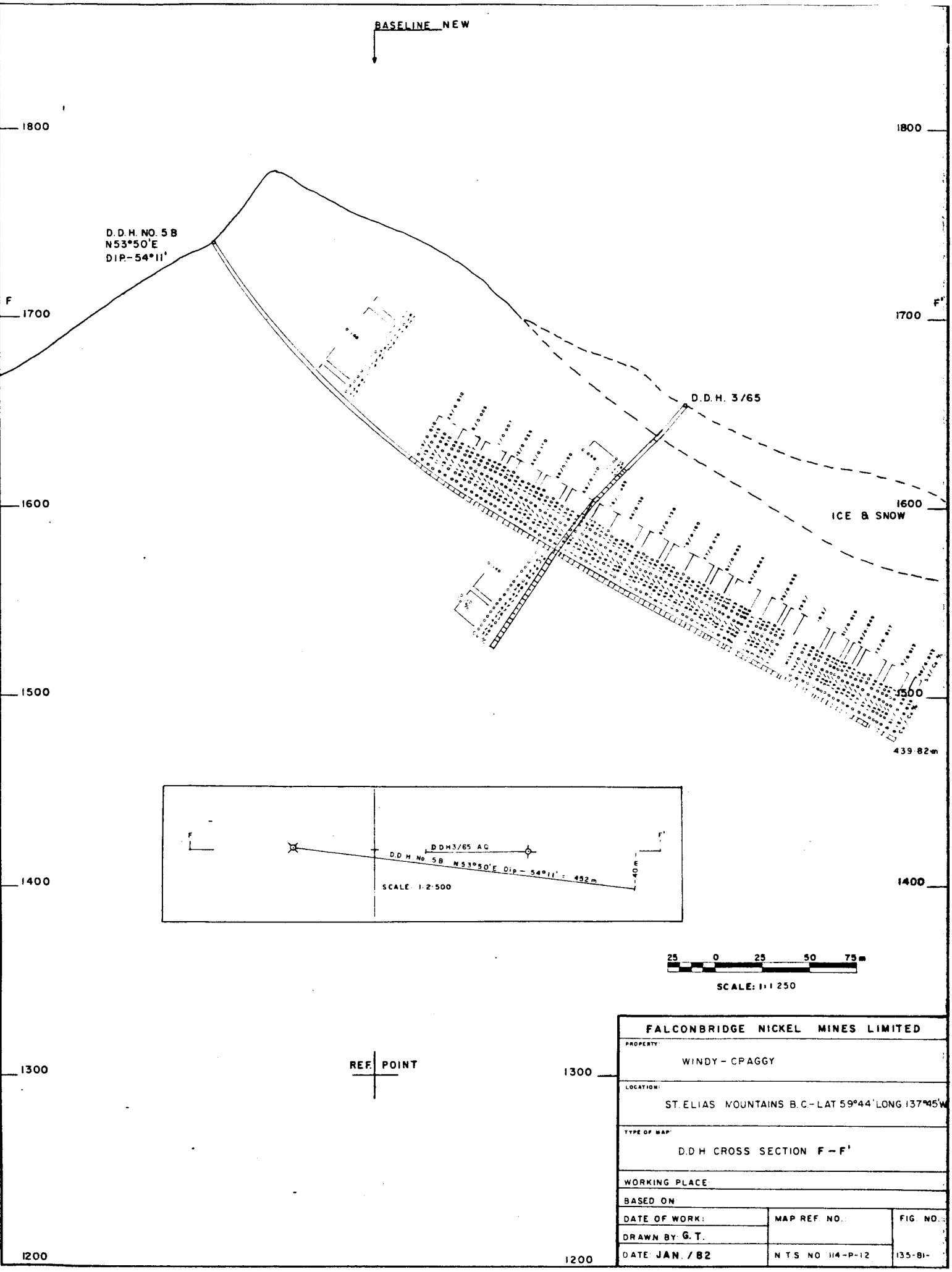
FALCONBRIDGE NICKEL MINES LIMITED		
PROPERTY: WINDY - CRAGGY		
LOCATION: ST. ELIAS MOUNTAINS B.C. - LAT. 59°44' LONG 137°45'W		
TYPE OF MAP: D.D.H. CROSS SECTION E - E'		
WORKING PLACE:		
BASED ON:		
DATE OF WORK: Aug. 1981	MAP REF. NO.:	FIG. NO.:
DRAWN BY: G. T.		
DATE: Jan. 1982	N.T.S. NO: 114-P-12	135-81-



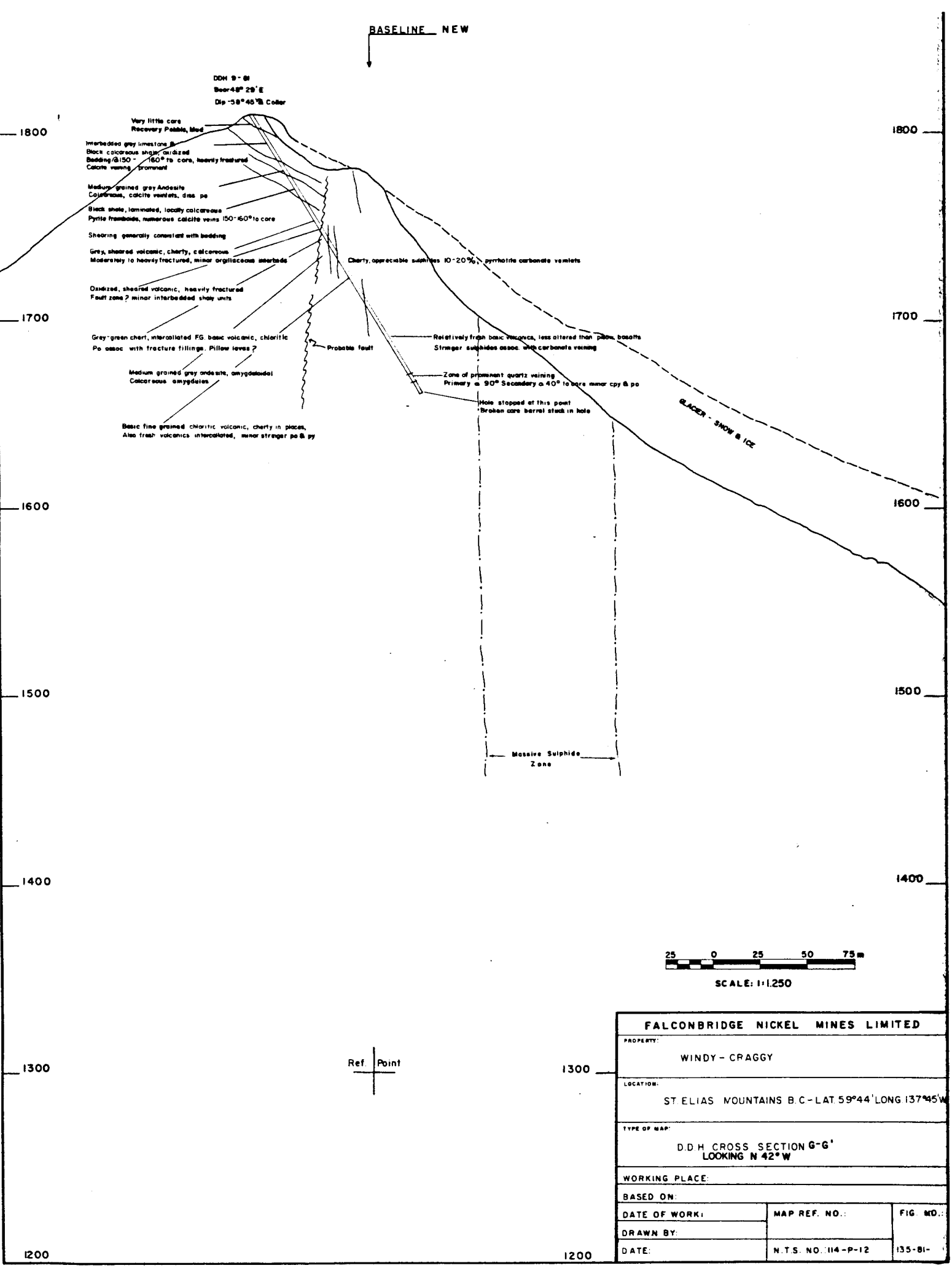
FALCONBRIDGE NICKEL MINES LIMITED		
PROPERTY: WINDY - CRAGGY		
LOCATION: ST ELIAS MOUNTAINS B.C. - LAT 59°44' LONG 137°45'W		
TYPE OF MAP: D.D.H. CROSS SECTION E - E'		
WORKING PLACE:		
BASED ON:		
DATE OF WORK: Aug. 1981	MAP REF. NO.:	FIG. NO.:
DRAWN BY: G.T.		
DATE: Jan. 1982	N.T.S. NO. 114-P-12	135-81-



FALCONBRIDGE NICKEL MINES LIMITED		
PROPERTY: WINDY – CRAGGY		
LOCATION: ST. ELIAS MOUNTAINS B.C. – LAT. 59°44' LONG. 137°45'W		
TYPE OF MAP: D.D.H. CROSS SECTION F-F'		
WORKING PLACE:		
BASED ON:		
DATE OF WORK:	MAP REF. NO.:	FIG. NO.:
DRAWN BY:		
DATE:	N.T.S. NO. 114-P-12	135-81-

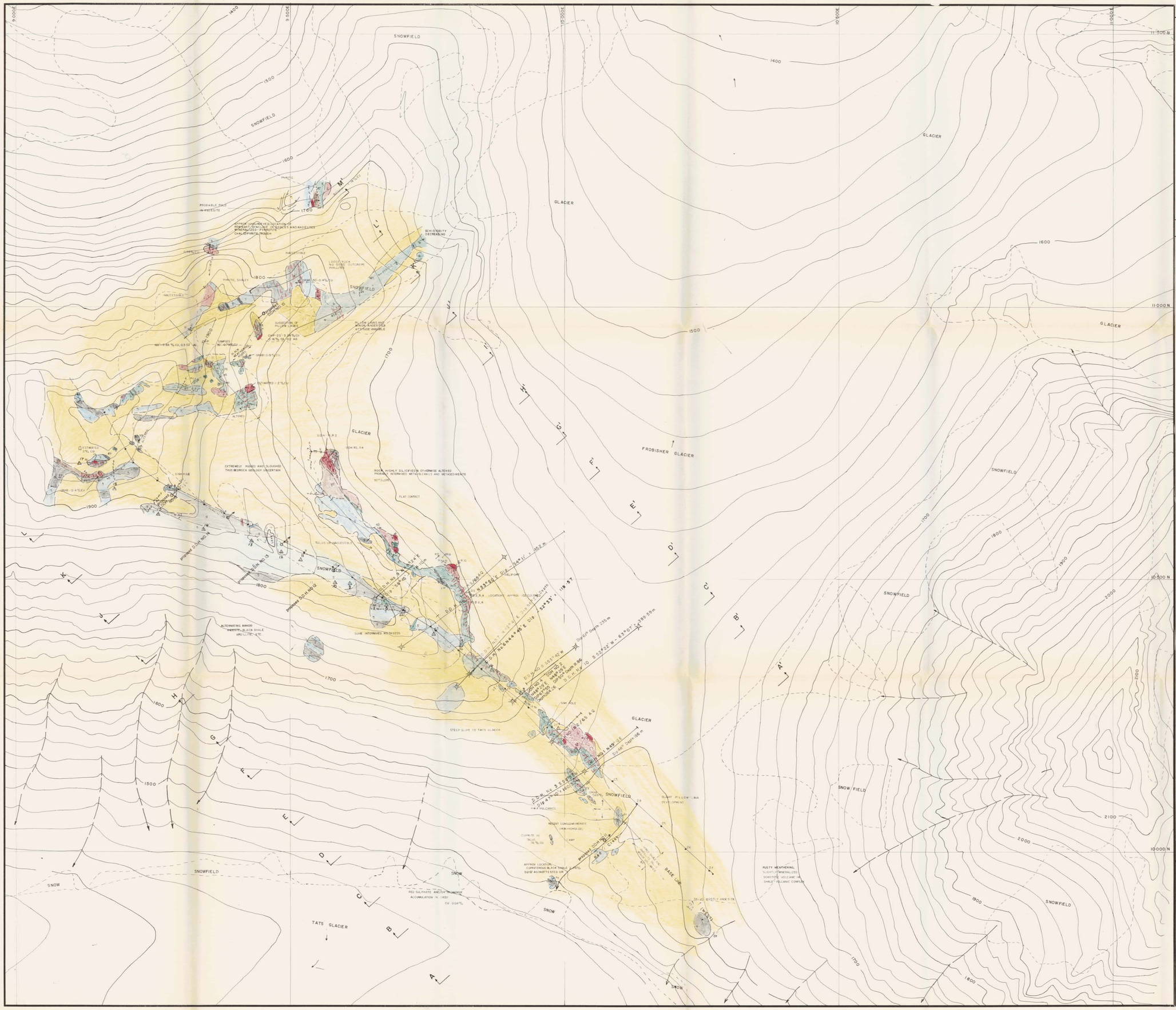


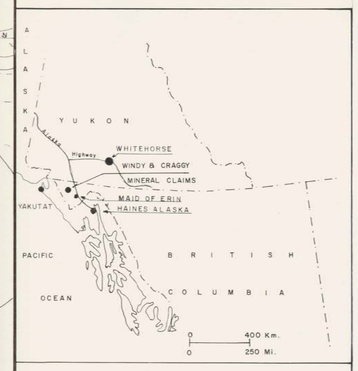
FALCONBRIDGE NICKEL MINES LIMITED	
PROPERTY: WINDY - CRAGGY	
LOCATION: ST. ELIAS MOUNTAINS B.C. - LAT 59°44' LONG 137°45'W	
TYPE OF MAP: D.D.H CROSS SECTION F - F'	
WORKING PLACE:	
BASED ON:	
DATE OF WORK:	MAP REF. NO.: FIG. NO.:
DRAWN BY: G. T.	
DATE: JAN. / 82	N.T.S. NO 114-P-12 135-81-



FALCONBRIDGE NICKEL MINES LIMITED	
PROPERTY: WINDY - CRAGGY	
LOCATION: ST. ELIAS MOUNTAINS B.C. - LAT. 59°44' LONG. 137°45'W	
TYPE OF MAP: D.D.H. CROSS SECTION G-G' LOOKING N 42° W	
WORKING PLACE:	
BASED ON:	
DATE OF WORK:	MAP REF. NO.:
DRAWN BY:	
DATE:	N.T.S. NO.: 114-P-12

FIG. NO.: 135-81-





INDEX MAP (1-A/50) SCALE: 1:160·000

LEGEND

- MASSIVE (50-100%) SULPHIDES — PYRRHOTITE, PYRITE-MINOR CHALCOPYRITE
- 2 SULPHIDES (10-50%) PYRRHOTITE, PYRITE.
- 3 SULPHIDES (0-10%) INCLUDES RUSTY WEATHERING PYRITIC ALTERATION HALO
- 4 RUSTY GOSSAN ZONE
- 5 RELATIVELY UNALTERED TATS GROUP - BASIC TO ANDESITIC FLOWS SILLS & DYKES; PILLOW LAVAS (RARELY DEVELOPED)
- 6 SCHISTOSE GREENSTONE (ALTERED TATS VOLCANICS IN PART); PILLOW LAVAS, 4 INDICATES BRECCIATION. OFTEN INTERMIXED WITH SHALE, ARGILLITE, ETC.
- 7 FELSITIC, GRANITIC DYKES
- 8 BLACK SHALE, POSSIBLY CALCAREOUS IN PART.
- 9 GREY SHALE, ARGILLITE. OFTEN INTERMIXED WITH V2 (ABOVE)
- 10 UNDIVIDED META-SEDIMENTS & MINOR META-VOLCANICS - THINLY BEDDED, PROBABLY METAMORPHOSED EQUIVALENT OF S2; QUARTZ VEIN.
- SNOW & ICE; TALUS
- DIAMOND DRILL HOLE (1965 & EARLIER) + 1981 ⊕ PROPOSED 1982 D.D.H.
- FAULT OR SHEAR ZONE (OBSERVED, PROBABLE); JOINTING
- BEDDING, CONTACT, AND SCHISTOSITY OR BANDING ATTITUDES
- CONTACTS — OBSERVED, APPROXIMATE, ASSUMED
- SNOW BOUNDARY (FLUCTUATES)
- SECTION LINE

DIAMOND DRILL HOLE DATA (METRIC)

HOLE	SIZE	DATE	COORDINATES	BRG.	DIP	DEPTH	ELEV
D-1	PAR.S	AUG.59		—	-90°	12.8m	1608.43
D-2	"	AUG.59		W	-45°	27.43m	1711.76
D-3	"	AUG.59		W	-55°	15.24m	1712.98
D-4	"	SEP.59		W	-70°	27.43m	1711.76
D-5	"	SEP.59		W	-68°	9.14m	1743.46
R-1	"	AUG.60		—	-90°	15.90	1768.15
R-2	"	AUG.60		N.80°W	-37°	25.91	1768.15
R-3	"	AUG.60		S.42°W	-35°	31.39	1746.51
R-4	"	AUG.60		N.68°E	-70°	9.75	1746.51
R-5	"	AUG.60		S.75°W	-80°	14.63	1730.05
R-6	"	AUG.60		S.50°W	-45°	7.31	1729.13
R-7	"	AUG.60		S.50°W	-35°	9.75	1729.74
R-8	"	AUG.60		S.50°W	-65°	19.51	1721.82
R-9	"	AUG.60		S.55°W	-45°	18.29	1721.82
R-10	"	AUG.60		S.63°W	-47°	8.23	1710.85
R-11	"	AUG.60		N.24°E	-42°	12.19	1633.12
1-65	AQ	AUG.65		N.48°E	-30°	75.29	1638.30
2-65	AQ	AUG.65		N.48°E	-55°	24.66	1638.30
3-65	AQ	SEP.65		S.48°W	-55°	163.98	1674.88

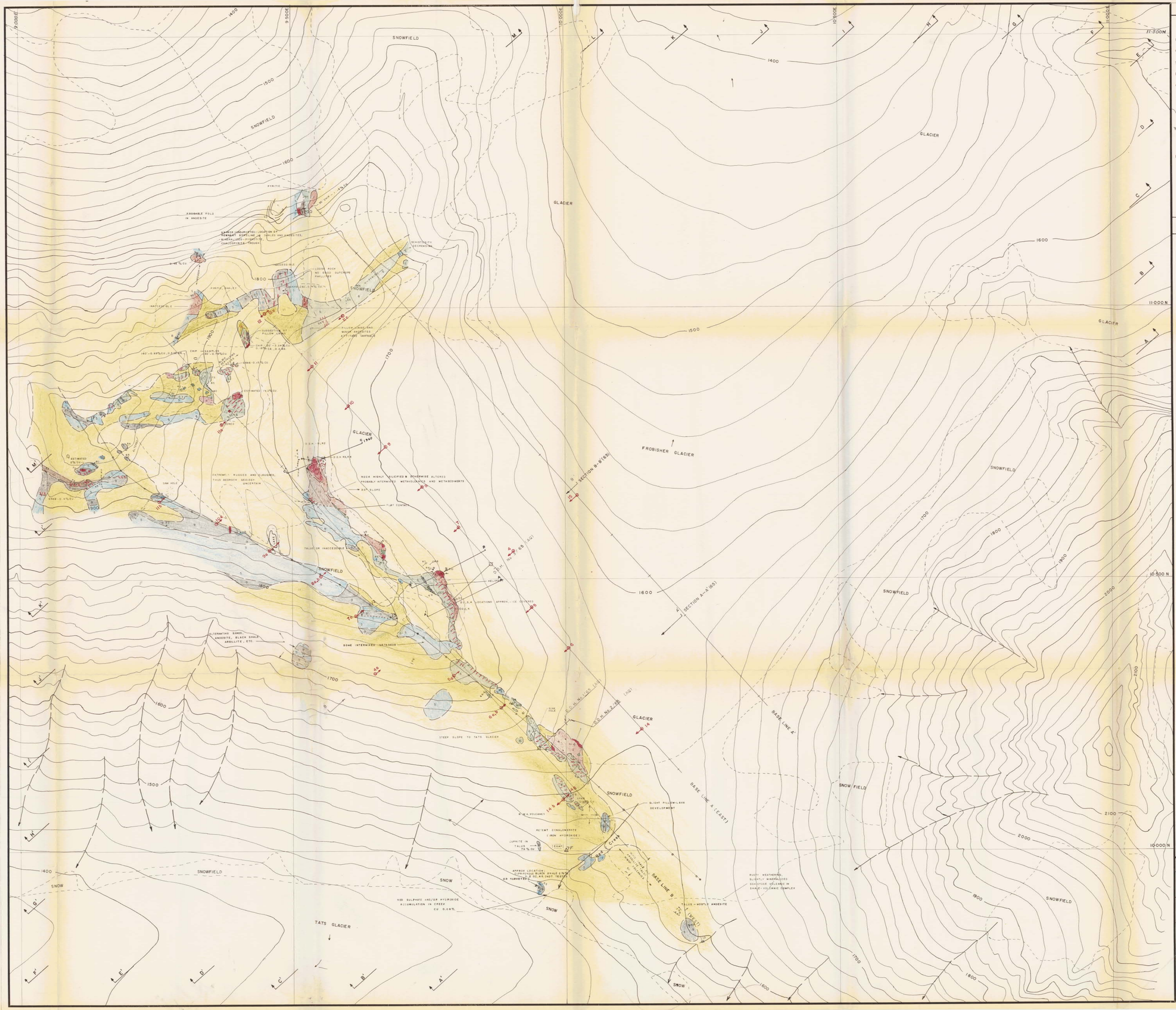
200 0 200 400 Feet

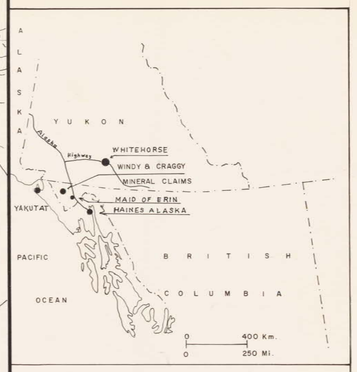
50 0 50 100 150 Metres

SCALE: 1:2·500

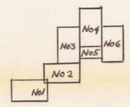
FALCONBRIDGE NICKEL MINES LIMITED

PROPERTY: WINDY & CRAGGY COPPER-COBALT	PROJECT NO.: 034
LOCATION: ST. ELIAS MOUNTAINS B.C. Lat. 59°44' Long. W.137°45'	
TYPE OF MAP: COMPOSITE - GEOLOGY & DEVELOPMENT TO 1980	
WORKING PLACE: MAIN RIDGE	
BASED ON: 1965 GEOL. & TOPO., PLUS 1980 AIRPHOTO TOPO ADDITIONS	
DATE OF WORK: 1965-1980	MAP REF. NO.: 034-M0
DRAWN BY: MM & P.S.	FIG. NO.: 3
DATE: Jan 1982	N.T.S. NO.: 114-P-12 034-81-A





INDEX MAP (1-A/50) SCALE: 1:160 000



1960 Map Sheet Index
0 1 Km.

LEGEND

- MASSIVE (50-100%) SULPHIDES — PYRRHOTITE, PYRITE - MINOR CHALCOPYRITE
- SULPHIDES (10-50%) PYRRHOTITE, PYRITE.
- SULPHIDES (0-10%) INCLUDES RUSTY WEATHERING PYRITIC ALTERATION HALO
- RUSTY GOSSAN ZONE
- RELATIVELY UNALTERED TATS GROUP - BASIC TO ANDESITIC FLOWS SILLS & DYKES; PILLOW LAVAS (RARELY DEVELOPED)
- SCHISTOSE GREENSTONE (ALTERED TATS VOLCANICS IN PART); PILLOW LAVAS, ± INDICATES BRECCIATION OFTEN INTERMIXED WITH SHALE, ARGILLITE, ETC.
- FELSITIC, GRANITIC DYKES
- BLACK SHALE, POSSIBLY CALCAREOUS IN PART.
- GREY SHALE, ARGILLITE, OFTEN INTERMIXED WITH V2 (ABOVE)
- UNDIVIDED META-SEDIMENTS & MINOR META-VOLCANICS - THINLY BEDDED, PROBABLY METAMORPHOSED EQUIVALENT OF S2 ; QUARTZ VEIN.
- SNOW & ICE ; TALUS
- DIAMOND DRILL HOLE (1965 & EARLIER) Proposed 1981
- FAULT OR SHEAR ZONE (OBSERVED, PROBABLE); JOINTING
- BEDDING, CONTACT, AND SCHISTOSITY OR BANDING ATTITUDES
- CONTACTS — OBSERVED, APPROXIMATE, ASSUMED
- SNOW BOUNDARY (FLUCTUATES)
- SECTION LINE

DIAMOND DRILL HOLE DATA (METRIC)

HOLE	SIZE	DATE	COORDINATES	BRG.	DIP	DEPTH	ELEV
D-1	RAK.S	AUG. 59	N 10,054.0 E 10,075.0	—	-90°	7.19 m	1608.43
D-2	"	AUG. 59	N 10,445.0 E 9,807.0	W.	-45°	27.43m	1711.76
D-3	"	AUG. 59	N 10,464.0 E 9,800.0	W.	-55°	15.24m	1712.98
D-4	"	SEP. 59	N 10,445.0 E 9,807.0	W.	-70°	27.43m	1711.76
D-5	"	SEP. 59	N 10,476.0 E 9,770.0	W.	-68°	9.14m	1743.46
R-1	"	AUG. 60	N 10,769.0 E 9,540.0	—	-90°	15.85	1768.15
R-2	"	AUG. 60	N 10,769.0 E 9,540.0	N.80°W	-37°	25.91	1768.15
R-3	"	AUG. 60	N 10,724.0 E 9,556.0	S.42°W	-35°	31.39	1746.51
R-4	"	AUG. 60	N 10,724.0 E 9,556.0	N.68°E	-70°	9.75	1746.51
R-5	"	AUG. 60	N 10,509.0 E 9,763.0	S.75°W	-80°	14.63	1730.05
R-6	"	AUG. 60	N 10,520.0 E 9,753.0	S.50°W	-45°	7.31	1729.13
R-7	"	AUG. 60	N 10,530.0 E 9,745.0	S.50°W	-35°	9.75	1729.74
R-8	"	AUG. 60	N 10,533.0 E 9,758.0	S.50°W	-65°	19.51	1721.82
R-9	"	AUG. 60	N 10,509.0 E 9,771.0	S.50°W	-45°	18.29	1721.82
R-10	"	AUG. 60	N 10,520.0 E 9,783.0	S.63°W	-47°	8.23	1710.85
R-11	"	AUG. 60	N 10,793.0 E 10,015.0	N.24°E	-42°	12.19	1633.12
1-65	AQ	AUG. 65	N 10,188.0 E 9,949.0	N.48°E	-30°	75.29	1638.30
2-65	AQ	AUG. 65	N 10,188.0 E 9,949.0	N.48°E	-55°	64.66	1638.30
3-65	AQ	SEP. 65	N 10,527.0 E 9,864.0	S.48°W	-55°	163.98	1674.88

200 0 200 400 Feet

50 0 50 100 150 Metres

SCALE: 1:2 500

FALCONBRIDGE NICKEL MINES LIMITED

PROPERTY: WINDY & CRAGGY COPPER-COBALT	PROJECT NO.: 034
LOCATION: ST. ELIAS MOUNTAINS B.C. Lat. 59° 44' Long. W 137° 45'	
TYPE OF MAP: COMPOSITE - GEOLOGY & DEVELOPMENT TO 1980	
WORKING PLACE: MAIN RIDGE	
BASED ON: 1965 GEOL. & TOPO, PLUS 1980 AIRPHOTO TOPO ADDITIONS	
DATE OF WORK: 1965-1980	MAP REF. NO.: 034-80 / FIG. NO.: 2
DRAWN BY: MM	N.T.S. NO.: 114-P-12
DATE:	