

G E O L O G I C A L   R E P O R T

for

Mount Grant Mines Ltd.

Mount Grant Area, Y.T.

Marsh Lake Area, Y.T.

East of Atlin, B.C.

by

J. W. Antal, P. Geol.

## SUMMARY

This report describes certain properties in the Yukon Territories and in northern British Columbia which have been mapped and/or examined on behalf of Mount Grant Mines Limited, 6212 - 86 Avenue, Edmonton, Alberta.

1. Mount Grant area, Yukon Territories; this property consists of 32 contiguous claims on claims Map 105c 11, at the head waters of Evelyn Creek south fork.

There is a large outcrop of manganese on this property, and detailed mapping, trenching and drilling have been carried out, on the property. The results do not indicate a commercial body of manganese, and no further expenditure on the property is warranted.

2. A further eight claims have been examined at the headwaters of Evelyn Creek, north branch, about 1,000' north-west of the above-mentioned claims. On this property, a thin vein of high grade copper mineralization has been found in a large erratic boulder. It is recommended that a photogeological study be carried out, on these claims, to ascertain the most likely source of the erratic; thereafter, a limited geophysical program should be carried out to determine whether or not further mineralization can be found at depth.

## SUMMARY (continued)

3. Marsh Lake, Yukon Territories; this property is located on the south-east shore of Marsh Lake about four miles off the Alaska Highway.

No evidence of mineralization has been found on this property, and no further work is recommended.

4. Atlin, British Columbia; this property is located approximately thirty-five miles S.W. of Atlin, the undersigned has examined a vein of pyrrhotite, on this property, which contains small amounts of copper. The largest observed width of the vein is about 6 feet, and the lateral extension appears to be limited.

The economics of a small deposit, in this area, is open to question, and it not felt that further work on the property is warranted.

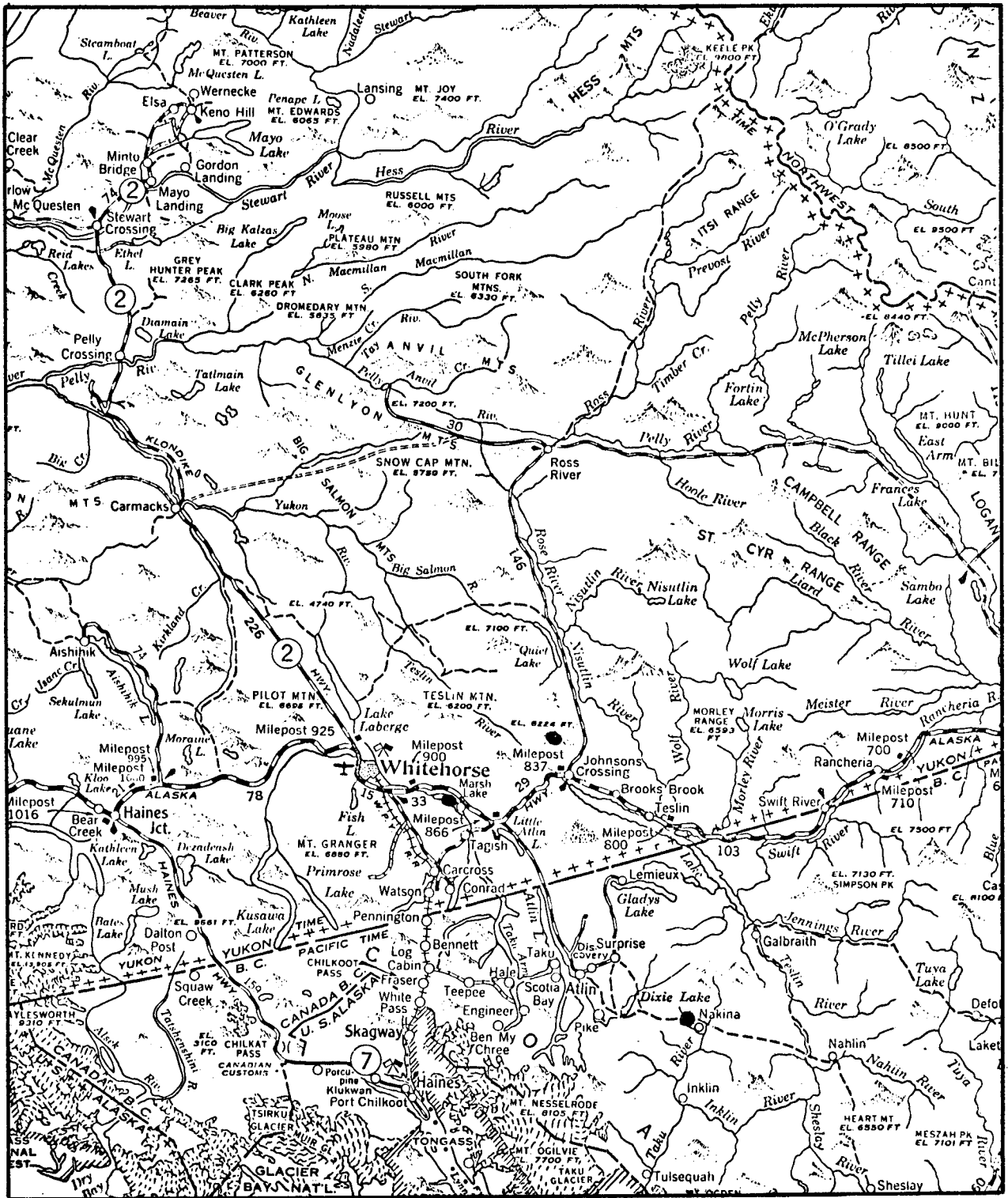


Fig. 1

Location Map

## Section I

## INTRODUCTION

## Location

Area 1 consists of 32 contiguous claims at the headwaters of Evelyn Creek, south fork, about 1-1/2 miles due south of Mount Grant, Yukon Territories.

These claims consist of the following:

The Lucky Claims are 1 to 8 inclusive, registration 92940 to 92947 inclusive.

The Marlin Claims Nos. 1 to 8 inclusive, Registration 92903 to 92910 inclusive.

- and -

The Sun Claims Nos. 1 to 16 inclusive  
Registration Y24587 to Y24602 inclusive.

Access And Travel  
Routes

Access to the properties is by a tote road, which branches off from Mile 26 on the Canol Road and runs approximately 14 miles towards the southwest onto the properties described.

Previous Geological  
Work

Robert Mulligan made a comprehensive geological map and report of the Teslin Map Area, which included the properties in question, in 1963.

In 1967, the undersigned made a property examination and a geological report on the area.

Field Work and  
Technical Data

Roads:

Due to unusually wet weather conditions, the

Field Work and  
Technical Data  
(continued)

building and maintenance of access roads presented considerable difficulty, and approximately six weeks were necessary to build fourteen miles of tote road, from the Canol Road to the base camp. An additional 3,500 feet of road was built from the base camp to the work site.

The access road to base camp was passable by pick-up, and under favorable conditions was passable by passenger vehicles.

The road from the base camp to the work site was passable, with difficulty, by pick-up.

Trenching:

A total of 3,770 feet (linear) of trenching has been carried out on the manganese property; the average width of the trenching was 15', but in some instances widths of up to 40 feet have been trenched.

The depth of the trenching varied from 2 feet to about 15 feet; total material removed was in the vicinity of 6,200 yards.

Two hundred lineal feet of trenching was carried out on the limestone outcrop, and a total of about 180 yards of material was moved.

All trenching was done by a D-7 cat.

Drilling Report:

Arrived at access road - August 7, 1968  
Arrived at site - August 9, 1968  
Commenced drilling - August 9, 1968

## INTRODUCTION 9(continued)

Field Work and  
Technical Data  
(continued)

Drilling Report - continued

Breakdown - August 9, 1968  
Drilling Recommended - August 15, 1968

<u>Drill Holes</u>	<u>Casing</u>	<u>T.D.</u>
H.A.	30'	60'
Casing stuck - drilling out casing 25'		
H.B.	20'	100'
H.C.	20'	60'
H.D.		180'
H.E.		13'
H.F.	25'	25'
DH-1		80'
DH-2		50'
DH-3		150'
DH-4		150'
DH-5		120'
DH-6		150'
DH-7		70'
DH-8	30'	30'
DH-9		60'
DH-6E	23'	23'
DH-7E		55'
DH-8E		140'
DH-9E		90'
DH-13		210'
DH-14		150'
DH-15		140'
DH-16		160'
DH-17		205'
DH-18		130'
DH-19		155'
10 Shot holes		120'
Totals	118'	2,901'

The total footage drilled was 2,781 feet. Casing tally was kept only when 20 feet or more casing was used. Total casing - 118 Feet. All casing was recovered except for 20 feet and a shoe which were left in H-A.

The drilling was completed on August 29 and equipment started moving out on August 30, 1968.

The drilling was carried out with a percussion drill, mounted on track and powered by one 600 C.F.M. Compressor.

## INTRODUCTION - continued

Field Work and  
Technical Data  
(continued)

Staking

The original properties consist of the eight Marlin claims and the adjoining eight Lucky claims. Sixteen additional claims have been staked to the west of, and adjoining this group; they are known as the Sun Claims.

Eight Bo claims have been staked approximately 1,000 feet north of the Lucky claims. These have been staked on a copper showing. See Section II.

The undersigned has recommended staking approximately four claims between the Bo claims and the Lucky claims to fill in the gap, and to cover other interesting rock formations in the area.

Geological Mapping

The undersigned has carried out detailed mapping at and near the manganese showing, covering all or nearly all of the Marlin claims, at a scale of 1" = 200 feet.

Further mapping has been carried out at a scale of 1" = 1/2 mile on the remainder of the claims held by Mount Grant Mines Ltd.

A drill hole location map has been prepared at the scale 1" = 50 feet.

TABLE OF CONTENTS

SUMMARY	1
Section I. - Manganese Deposit	
INTRODUCTION	3
Location	3
Fig. 1 - Location Map	
Access & Travel Routes	3
Previous Geological Work	3
Field Work and Technical Data:	3
1. Roads	3
2. Trenching	4
3. Drilling	4
4. Staking	6
5. Geological Mapping	6

TABLE OF CONTENTS

TOPOGRAPHY . . . . .	.1
GENERAL GEOLOGY . . . . .	.1
Table of Formations, after R. Mulligan. . . . .	.1
Description of Formations . . . . .	.3
Big Salmon Complex . . . . .	.3
Unit a. - mica schist . . . . .	.3
b. - quartzite . . . . .	.4
c. - quartz-schist . . . . .	.4
d. - limestone . . . . .	.5
e. - undivided quartz-schist and mica-schist.	5
Diorite Intrusive . . . . .	.5

TABLE OF CONTENTS  
(continued)

STRUCTURAL GEOLOGY . . . . .	.5
Folds . . . . .	.5
Faults . . . . .	.6
Fig. 2 - Geological Map 1/3 - 1" = 1/2 mile.	
ECONOMIC GEOLOGY . . . . .	.6
Manganese Deposit . . . . .	.6
Sample Descriptions . . . . .	.8
RESUME AND CONCLUSIONS . . . . .	13
RECOMMENDATIONS . . . . .	13
Section II. - Copper Showing	
GEOLOGY . . . . .	14
Stratigraphy . . . . .	14
Structure . . . . .	14
ECONOMIC GEOLOGY . . . . .	14
PROPOSED EXPLORATION PROGRAM . . . . .	16
COST ANALYSIS . . . . .	17
Section III. - Marsh Lake	
GENERAL GEOLOGY . . . . .	18
RECOMMENDATIONS . . . . .	18
Section IV. - Atlin, B.C.	
GENERAL GEOLOGY . . . . .	19
RECOMMENDATIONS . . . . .	19
CERTIFICATION . . . . .	20
APPENDIX	

Lithologic logs - Drill holes

T A B L E O F C O N T E N T S

(continued)

Geological Map 2/3 - 1" = 200 feet

Well Location Map 3/3 - 1" = 50 feet

Assays

## TOPOGRAPHY

The area has considerable relief, rising from about 2,500' at the banks of the Teslin River to over 7,000' at the peaks. Average elevation is about 4,500'.

The slopes are generally rounded and accessibility by foot, over most of the property, is no problem. However, there are some steep cliffs present.

## GENERAL GEOLOGY

Table of Formations

Era	Period	Formation or Unit	Lithology
Mesozoic and (?) Cenozoic	Cretaceous and (?) Tertiary	14	Volcanic andesite and dacite porphyry, in part older than 13; feldspar-quartz porphyry dykes may be contemporaneous or younger
Mesozoic	Cretaceous	13	Granite, granodiorite, diorite; gabbro, hornblendite, pyroxenite; syenite, monzonite
			Not in contact, probably intrusive
	Jurassic or Cretaceous	12	Diorite
			Intrusive contact
		11	Peridotite, pyroxenite, serpentine
			Intrusive contact
	Upper Triassic and/or Jurassic	10	Augite porphyry and augite-feldspar porphyry: lava, breccia, agglomerate; argillite, sandstone, grey-wacke, conglomerate; chert
			Probably partly contemporaneous
		9	Argillite, siltstone, sandstone, grey-wacke, conglomerate, limestone; minor lava
Upper Triassic			not in contact

Table of Formations  
(continued)

Era	Period	Formation or Unit	Lithology
	Upper Triassic	8 Lewes River Group	Limestone, argillite, sandstone
		Probable confirmity with 8, possibly disconfirmity with 9	
	Permian and/or Triassic	7	Volcanic rocks, chert, minor argillite, quartzite, limestone
Palaeozoic and/or Mesozoic		Not in contact with 7 - 10, intrusive contact with 11, 12	
	Permian, possibly later	6	Conglomerate, greywacke, limestone
		Probably unconformable on 1-3; relationship to other rocks unknown	
		Fault (?) contacts, possible disconformity with 7	
Palaeozoic	Permian and (?) Pennsylvanian	5 Cache Creek Group (in part)	Limestone
		Partly contemporaneous	
		4 Cache Creek Group (in part)	Argillaceous and quartzitic siltstone, greywacke, chert; minor limestone and conglomerate
		Not in contact, probably unconformity	
	Mississippian	3 Englishmans Group (in part)	Argillite, quartzite, phyllite, chert; arkose, greywacke, grit, conglomerate; limestone; minor greenstone
		Probably local disconformity, partly (?) contemporaneous	
		2 Englishmans Group (in part)	Limestone

Table of Formations  
(continued)

Era	Period	Formation or Unit	Lithology
Palaeozoic			Probably local disconformity; in part may be equivalent to 2, 3, and younger rocks
	Mississippian and Earlier	1 Big Salmon Complex	Quartz-mica schist and gneiss, quartzite, slate; greenstone, albite-epidote amphibole gneiss and amphibolite; limestone; quartz-plagioclase-amphibole-garnet gneiss
Palaeozoic ?		A	Quartz-hornblende and quartz-feldspar-hornblende gneiss and amphibolite; diorite (?) in part gradational with, in part intrusive? into 1

## Description of Formations

## Big Salmon Complex - The Big Salmon

Complex is the only rock type found on the map area; it is composed of various rocks of volcanic and sedimentary origin, all of which are at some stage of metamorphism.

In this area, five separate units of the Big Salmon complex have been recognized, they are, from oldest to youngest:

Unit a. predominantly mica schist, with some bands of quartz. On the weathered surface, it is dark grey in colour, is generally fairly soft,

## GENERAL GEOLOGY - continued

Description of Formations  
(continued)Unit a. - continued

forming hollows which are generally covered with foliage; the thickness is unknown. The best outcrop of this unit is found at the axis of the main anticlinal structure on the east bank of the stream near claim post - Marlin 7 and 8.

The contact between Unit a. and the succeeding unit is sharply defined.

Unit b. - buff to grey to white quartzite; it is a hard massive ridge forming unit which serves to outline the main fold in the area. On the west bank of the stream, it contains the main showing of manganese which pinches westward and fingers out eastward. Some two and three inch bands of manganese were observed, in this quartzite on the east bank of the stream.

The contact between unit b and the succeeding unit is sharply defined.

Unit c. - grey quartz-schist, massively bedded with slaty internal structure, containing some narrow bands of mica schist. Its thickness is approximately 250', but due to tectonic thickening, this thickness may be greatly exceeded at the crest of the anticlinal structure.

The contact between Unit c and the succeeding unit is well defined.

## GENERAL GEOLOGY

Description of Formations  
(continued)

Unit d. - milky grey to buff quartzitic limestone; cut by north-south trending stringers of quartz. In many instances this limestone is fluorescent. The limestone is approximately 130' in thickness, although on Limestone Hill, it is well over 400' thick. This latter thickness is thought to be due to folding.

The contact between Unit d and the succeeding unit is well defined.

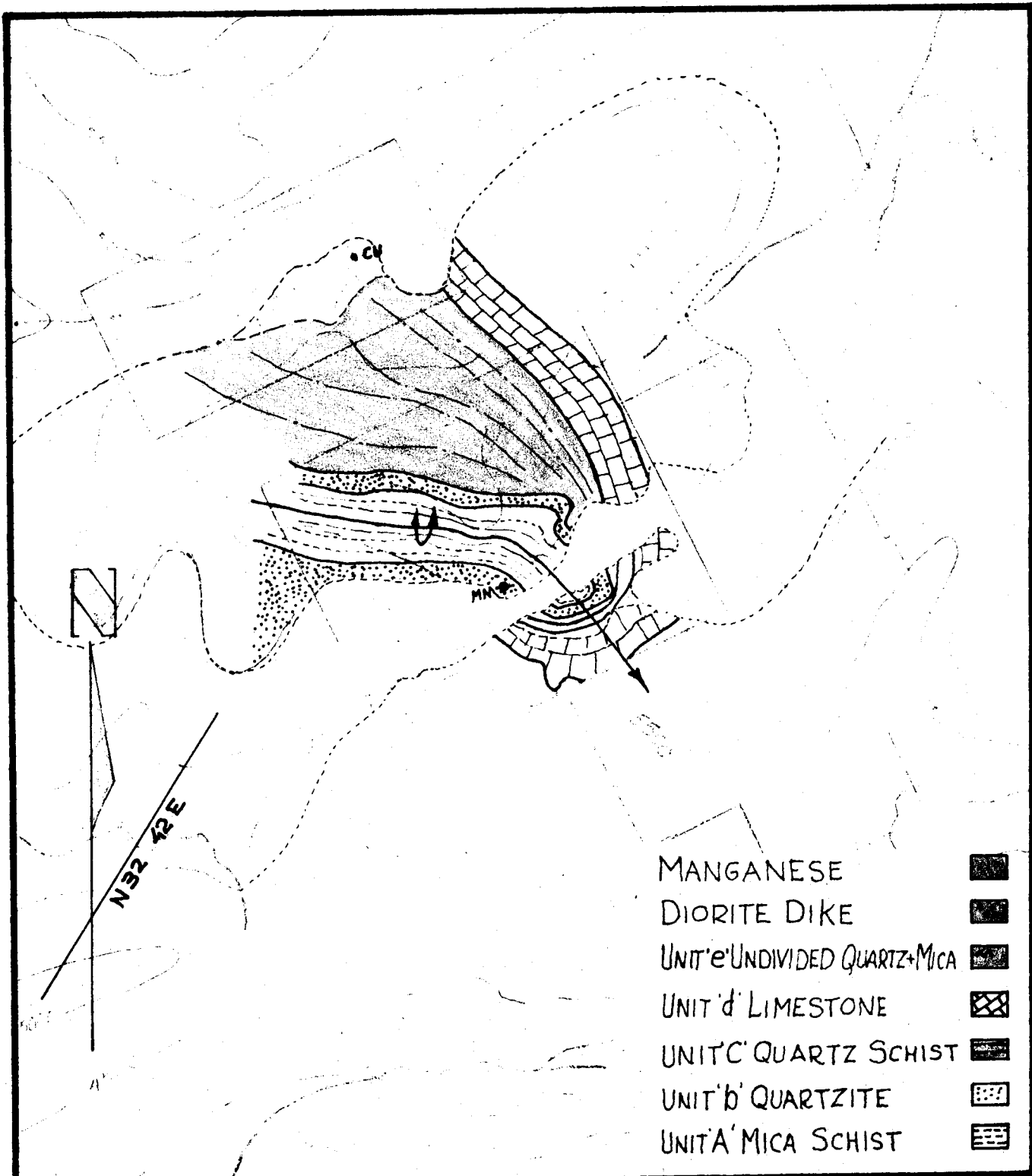
Unit e. - this unit consists of a thick succession of quartz schist and mica schist, highly folded; no thickness was measured. It is within a massively bedded quartz schist of this unit that the copper mineralization was found on the Bo Claims.

Diorite Intrusive - probably cretaceous or Jurassic in age. These intrusives measuring generally 10 - 15 across cut Unit c and d (see geological map). The dikes trend generally east-west.

## STRUCTURAL GEOLOGY

Folds - The major structure in the area is a large recumbant fold which trends WNW and which plunges to the S.E. - See fig. 2. The south flank of the structure is overturned.

The core of the anticline is formed by Unit a, and the form is outlined by Unit b. It is on the south flank of the structure that



GEOLOGICAL MAP  
MOUNT GRANT CLAIMS

1/3

CLAIM SHEET No 105011  
By J. WANTAL  
SCALE: 1/2 IN = 1 INCH

TR. BY R. PAULUK.

## STRUCTURAL GEOLOGY

(continued)

Folds - continued

Unit b contains the lense of manganese.

On Unit c on the south flank of the structure, there are numerous minor folds, having axial planes which dip towards the north, that is towards the core of the major fold. This is the normal position of minor folds which are located on the overturned flank of a recumbant anticline.

On the southernmost contact between Unit d and Unit c at Limestone Hill, there are similar minor folds, indicating considerable structural complication at this hill. This is probably the explanation for the great thickness of unit d at this point, and a fault can be envisioned between Units d and c.

Faults: Other than the fault interpreted above, no major faulting has been observed in the area; fracturing is prevelant.

## ECONOMIC GEOLOGY

Detailed surface mapping and drilling have been carried out on the west bank of creek and around the manganese deposit. The surface work validates the previous assessment of the property insofar as its extent towards the south is concerned. Drilling however, indicates that the vertical extent of the body is limited to the base of the

## ECONOMIC GEOLOGY

(continued)

visible outcrop; at this point the mineralization ceases, by fingering out downwards. The western extension continues for a distance of 110' more or less then thins out very rapidly.

This leads to the conclusion that no large mineral body is present on the west bank.

None of the drill holes penetrated manganese on the east bank; there is however, a blind zone which could possibly have a mineral body, which due to technical difficulties, the drill could not penetrate; however, studies at and around Unit b, which is the host rock, indicates that no great tonnage would be available on the east bank of the stream.

## SAMPLE DESCRIPTION

<u>Drill Hole</u>	<u>Interval</u>	<u>Description</u>
DH-1	10-12	fluveoglacial till; scattered chips, rhodonite, rhodocrosite, manganese oxide,
	12-20	as before, predominantly manganese oxide.
	20-30	Rhodonite and rhodocrosite
	30-35	predominantly rhodocroxite, also rhodonite.
	35-45	rhodocrosite, rhodonite, manganese oxide, considerable sand grains and rounded pebbles (fracture?)
	45-55	mostly rhodocrosite, some rhodonite, some silica.
	55-60	rhodonite, rhodocrosite, considerable silica and rounded sand grains (fracture?)
	6 -70	rhodocrosite, rhodonite, manganese oxide, grains sand.
	70-80	quartzite; angular fragments clear quartz, weathering slightly, s rusty.
DH-2	10-15	Rhodonite, some rhodoncrosite, scattered chips manganese oxide, considerable quartzite, clear angular chips.
	15-20	predominantly rhodonite, some rhodocrosite, scattered manganese oxide, some quartzite.
	20-25	rhodocrosite, rhodonite, some manganese oxide, quartz
	25-30	sandstone; fine grained, angular clear quartz, some medium grained and rounded. Particles, scattered rhodonite.
	30-45	sandstone; clear, angular grains, some schist mica, brownish weathering.
DH-3	15-25	sandstone; fine grained, clear angular quartz grains, quartzitic
	25-45	sandstone, schist, probably quartz-schist, mica flakes and pyrite weathers, rusty green. Scattered large rounded grains black chert.

<u>Drill Hole</u>	<u>Interval</u>	<u>Description</u>
	45-50	Schist; rounded grey quartz grain, rusty quartz grains (black grains?) (fracture?)
	50-55	quartz-schist; rusty grey
	55-65	mica schist; grey with quartz
	65-90	quartz-schist; some mica, rose grey color, clear medium, grains, and scattered rounded frosted grains, fragments quartzite.
	90-100	quartzite; clear angular grains quartz and large quartzitic fragments.
	100-105	quartz-schist, fine grained clear angular quartz and rounded frosted quartz
	105-145	quartz-schist; clear angular grains quartz, mica light grey in color.
DH-4	15-60	quartz-schist; very fine grained clear angular quartz, some medium grained frosted quartz, oxide straining.
	60-65	sand; dark grey rounded grains poorly sorted, some manganese oxide.
	70-90	schist; grey somewhat micaceous.
	90-100	quartz, schist; light grey, poorly sorted angular to rounded grains of quartz, some mica.
	100-150	schist; dark grey some mica, poorly sorted grains of quartz, some rounded grains with oxide staining,
DH-5	15-20	flaveoglacial till
	20-80	quartzite; large chips quartzitic sandstone poorly sorted grains of clear angular quartz, light grey in color.
	80-110	schist; contains grains of quartz, mica dark grey color, some sulphides.
DH-6	20-90	quartzite; chips of various sizes, some clear quartz and larger quartzitic fragments, light pinkish grey in color.
	90-100	quartz-schist; rounded, poorly sorted quartz grains, schist, scattered mica flakes.

DH-7	13-70	quartzite; chips of various sizes, some very fine grained clear quartz and larger quartzitic fragments, light pinkish grey scattered chips, smoky quartz.
DH-8	10-30	quartz-schist; poorly sorted rounded grains of quartz-and clear angular grains of quartz, some mica.
DH-9	10-50	quartzite; poorly sorted angular grains of quartz, light pinkish grey in color.
	50-70	sand; fine grained, rounded frosted quartz-dirty, brownish grey (fracture?)
	70-90	schist; dark grey contains rounded quartz grains.
DH-13	10-20	rhodonite; some sand and fluveoglacial till.
	20-30	rhodonite, some rhodocrosite and grey to brown grey quartzite.
	30-50	quartz-schist; fine grained rounded quartz, schist, some mica, scattered rhodonite and rhodocrosite (fracture zone?)
	50-110	rhodocrosite, some rhodonite, considerable silica
	110-120	schist; considerable poorly sorted clear and frosted quartz grains, scattered grains manganese oxide.
DH-13	120-210	quartz-schist; light grey, fine grained rounded frosted quartz becoming micaceous with depth.
DH-14	10-30	fluveoglacial till; scattered fragments rhodonite and rhodocrosite.
	30-50	rhodonite, rhodocrosite, some quartz, rhodocrosite becoming more pronounced with depth.
	50-60	schist; rounded grains of quartz, considerable sulphides, chips of rhodocrosite and rhodonite.
	60-150	quartz-schist; considerable rounded frosted grains of quartz, poorly sorted quartz grains becoming finer with depth, grading into clear angular grains.
DH-15	10-20	fluoglacial till
	20-70	quartz-schist; poorly sorted rounded grains of quartz, frosted, some with oxide stain on surface.

	20-70	some fine clear angular grains of quartz, light grey color.
	70-80	mica-schist; fine grained rounded quartz, mica, dark grey color.
DH-15	80-100	sand; medium sorting dark grey poorly sorted, rounded, frosted quartz grains.
DH-16	10-40	quartz-schist; medium grey, poorly sorted, rounded frosted grains of quartz, some fluveoglacial till, pyrite.
	40-70	mica-schist; dark grey some rounded frosted quartz and sulphides.
	70-100	quartzite; angular fragments, some fine grained clear quartz, light pinkish grey in color.
	100-140	quartz-schist; light grey, angular, clear, fine grained quartz some sulphides.
DH-17	10-30	quartz-schist; medium grey rounded frosted poorly sorted grains quartz, scattered rhodonite, rhodocrosite, scattered sulphides.
	30-60	quartz-schist; light pinkish grey, angular chips quartz (increased amount of quartz), trace sulphides.
	60-205	quartzite; pinkish white, very fine grained, clear, angular quartz.
DH-18	10-20	quartz-schist; rusty grey, rounded, frosted, poorly sorted grains of quartz and fluveoglacial till.
	20-40	quartzite rusty grey, scattered large fragments quartz and fine grained angular, clear grains.
	40-130	quartzite; light, pinkish grey predominate fine grained, clear quartz, some larger chips.
DH-19	10-70	quartzite; rusty brown, fine grained, angular, clear quartz, considerable larger angular milky fragments, some till.
	70-135	quartzite, light pinkish grey, predominantly fine grained clear quartz, scattered larger frosted rounded grains.
DH-8E	20-140	quartzite, light pinkish grey, fine grained, clear quartz, large angular grains of grey

	20-140	quartz becoming predominantly composed of fine grained clear quartz with depth.
DH-9E	10-70	quartzite; light pinkish grey, fine grained, clear, angular quartz grain , scattered grains rounded, frosted quartz.
	70-90	mica-schist; dark grey, very fine grained, rounded quartz, mica, scattered sulphides.
H-A	55-58	fluveoglacial till
H-B	30-35	fluveoglacial till
	35-60	sand grey, poorly sorted clear and frosted quartz grains some black schist and earthy material
	60-65	sandstone; fine grained, angular, clear quartz, large fragments quartzite.
	65-90	fluveoglacial till, scattered sulphides.
H-C	20-40	fluveoglacial till
	40-50	sandstone; fine grained, clear quartz and quartzitic fragment.
	50-60	sand; rounded grains poorly sorted some angular fragments
H-D	13-20	fluveoglacial till
	20-110	quartz-schist; angular fragment quartzite, schist, and mica flakes, color light grey.
	110-115	quartz-schist; considerable pyrite and rust staining,
	115-135	quartz-schist; becoming more schistose with depth
	135-180	mica-schist; dark grey, mica flakes, some quartz particles.

RESUME AND CONCLUSIONS

1. The claims are all on the Big Salmon Complex which is a series of metamorphic rocks, pre-Mississippian in age.
2. The manganese mineralization is in a massive quartzite.
3. The mineralization pinches out to the southwest, and cuts off abruptly towards depth.
4. Limited mineralization proven, approximately 25,000 tons does not constitute an ore body.

RECOMMENDATION:

Further work in the manganese deposit is not recommended.

## Section II

GEOLOGY:

## Stratigraphy:

In the area in question the outcropping formation is the Big Salmon Comple of Mississippian or earlier age.

The actual host rock consists of massively bedded, but internally laminated quartz schist, in which the quartz content varies from bed to bed.

## Structure:

The actual mineralization was found in a large boulder, approximately 1,000 cubic feet in size, which was found at the foot of northwest slope of a mountain. This mountain is located due south and approximately two miles from point 6552 on Mount Grant.

The mountain in question is composed of a similar rock, as that which encloses the mineral showing. This mountain is formed by the normal flank, of a large recumbant anticline, which continues to the Southeast, and onto the manganese claims which are held by Mount Grant Mines Ltd.

ECONOMIC GEOLOGY:

A large boulder of quartz schist approximately 1,000 cubic feet in size was found to have a quartz vein following the schistosity. Maximum thickness of the vein is about eight inches and its observed

## Economic Geology (continued)

length is approximately 10 feet; one extremity pinches out and the other is covered by soil and rock debris.

The quartz is a high temperature intrusive variety, and at the contact with the wall rock is a thin band of sericitic schist.

The mineralization within the quartz consists of massive chalcopyrite, bornite and some malachite. Assays done by Crest Laboratories Ltd., Argyle Road, Edmonton, Alberta, at the request of Mr. W. Crawford of Mount Grant Mines Ltd., indicated the presence of gold and silver.

Many other quartz veins, in both erratic boulders and in places on the mountain, have been examined. The majority of these were barren, but two thin veins approximately 2" thick, were found to contain considerable pyrite.

Because of the size of the erratic boulder, found to contain the mineralization, and because of the fact that no evidence of movement was found on the boulder, it would appear that this erratic had originated at close proximity to its present location.

The following alternatives can be visualized:

Economic Geology: (continued)

1. That the mineralized vein is an erratic occurrence and that no other mineralization is present in the area.
2. That the area from which the boulder came contains a stockwork of mineral veins of the same type.
3. That the vein is an off-shoot from a larger ore body.

Although it is difficult to choose between the possible alternatives, the possibility of either of the latter alternatives warrants a limited exploration program.

Proposed Exploration Program

## Phase A.

Objective -- to localize the area from which the erratic boulder containing the mineralization came.

Method -- geomorphological study from aerial photographs, in order to ascertain whether the movement was due to glaciation or to rock slide, and to determine the direction and extent of the movement. At the completion of the photogeological mapping, it may be advisable to spend one day on the location.

## Phase B.

Objective -- to determine whether or not, further mineralization exists at the locality

Proposed Exploration Program (continued)

from which the boulder has been moved.

Method -- geophysical program, the exact type to decide upon at the completion of Phase A.

COST ANALYSISPHASE A:

Professional Fees	\$1,200.	
Transportation	170.	
Expenses	60.	
Draughting and Photography	150.	
Typing	50.	
		\$1,530.

PHASE B:

Geophysical crew 21 days @ \$200.00 per day	\$4,200.	
Transportation	340.	
Camp	840.	
Geophysical inter- pretation	1,500.	
Typing	50.	
Draughting	150.	
Contingencies	700.	
		\$7,780.
Total . . . . .		\$9,310.

## Section IV

ATHLIN, BRITISH COLUMBIA.

## GENERAL GEOLOGY:

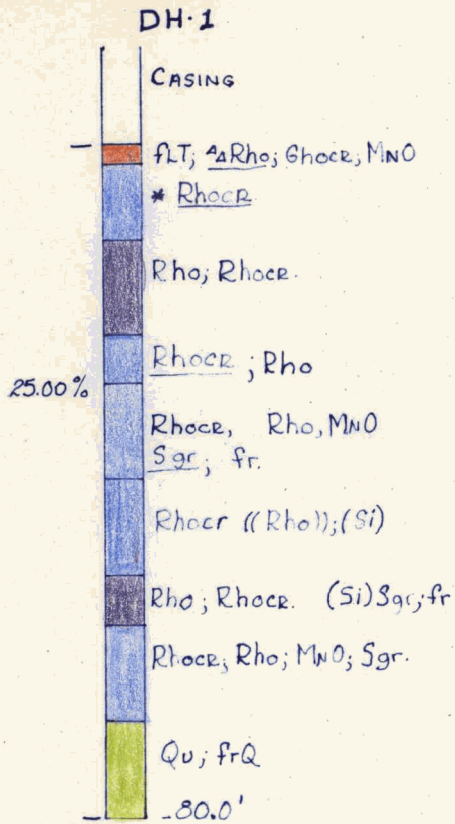
The mineral showing on this property consists of a vein of pyrrhotite intruded along a fracture in a quartzitic limestone. The pyrrhotite contains small amounts of chalcopyrite, but the maximum thickness of the vein is about 6 feet. The vein thins out along strike, and about 2000 feet to the east, only a small band can be found. Westwards the thinning is very rapid, and at about 50 feet in this direction, only a 2 foot band is observable.

In the vicinity of the main exposure, the wall rock contains disseminated pyrrhotite, but no visible copper minerals.

## CONCLUSIONS AND RECOMMENDATIONS

The mineral vein is small, and the copper content is not high, were there any disseminated copper associated with the disseminated pyrrhotite in the wall rock, some staining would be evident, therefore it is unlikely that wallrock contains any copper.

The economics of a small low grade copper deposit in this area, are not favorable and further work on the property, is not recommended.

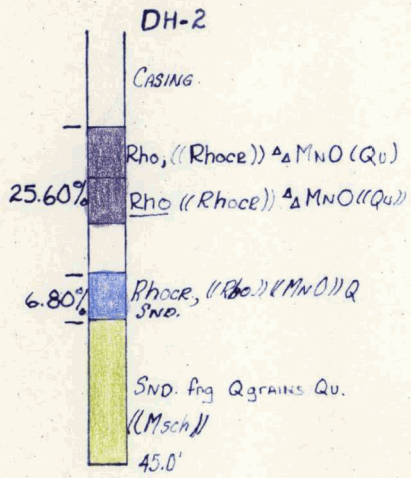


DH-1

1" - 20'

20 SCALE

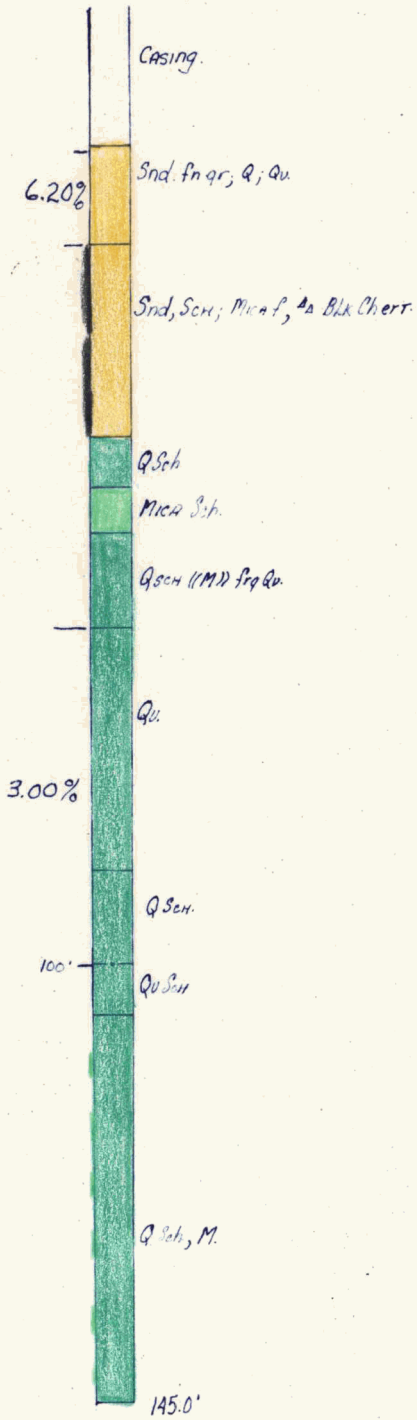
R. PAWLAK



DH-2

20 SCALE  
R. Pawlik

DH-3

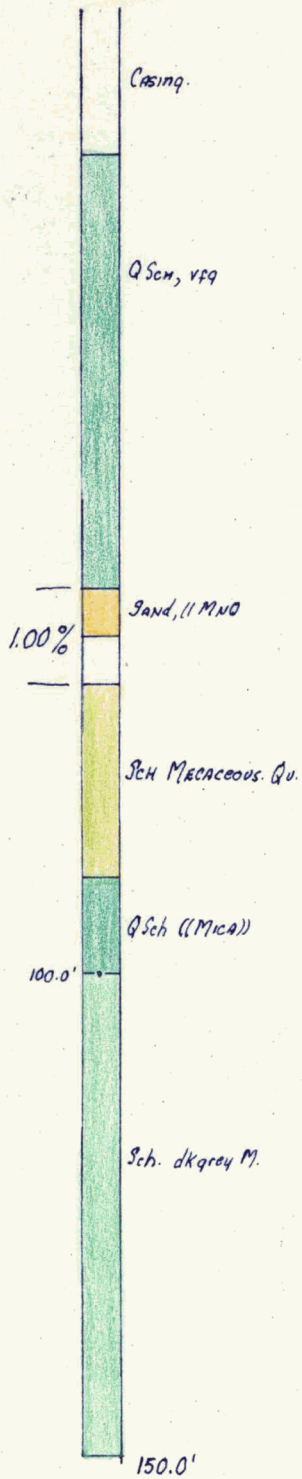


DH-3

20 SCALE

R. PAWLIK

DH-4

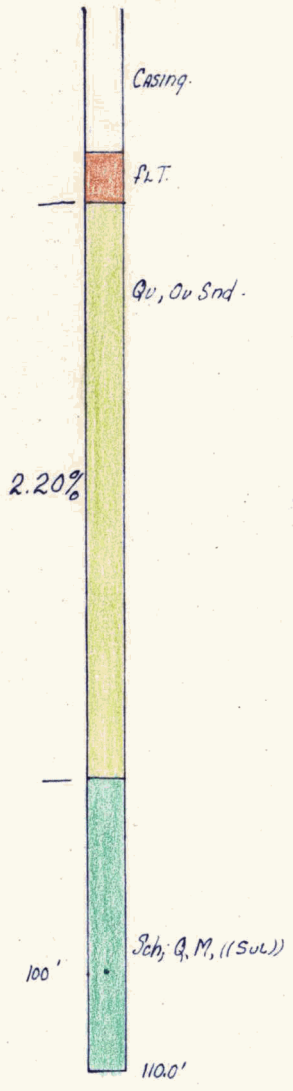


DH-4

20 SCALE

R Prowlik

DH-5



DH-6

Casing.

QU<sup>Δ</sup>

Q<sub>5CH</sub>. ((M Pks.))

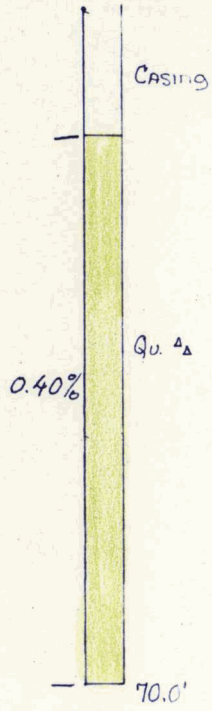
100.0'



DH-6

20 SCALE

DH7.

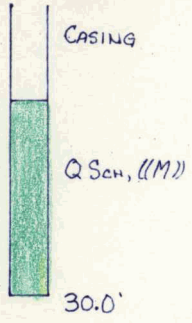


DH-7

20 SCALE

R. PAWLUK.

DH8

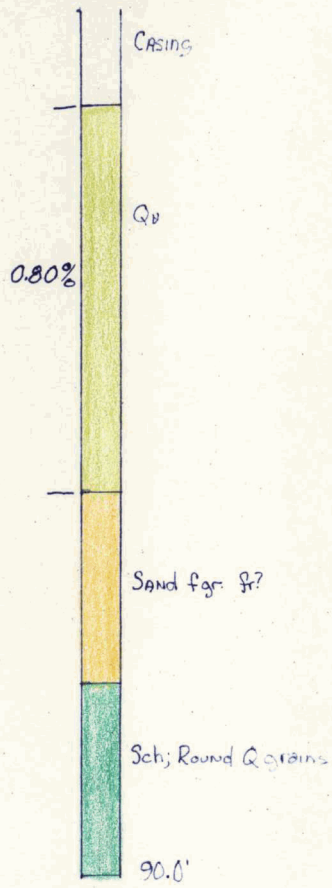


DH-8

20 SCALE

R. Pawluk

DH9

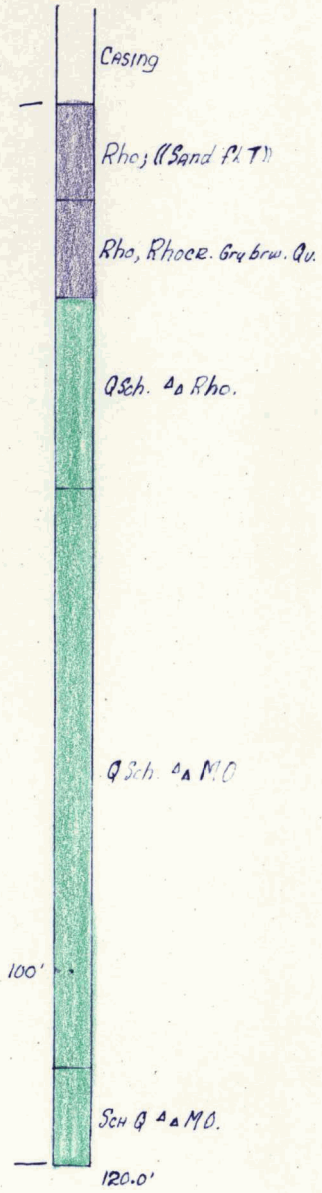


DH-9

20 SCALE

R. PAULIX

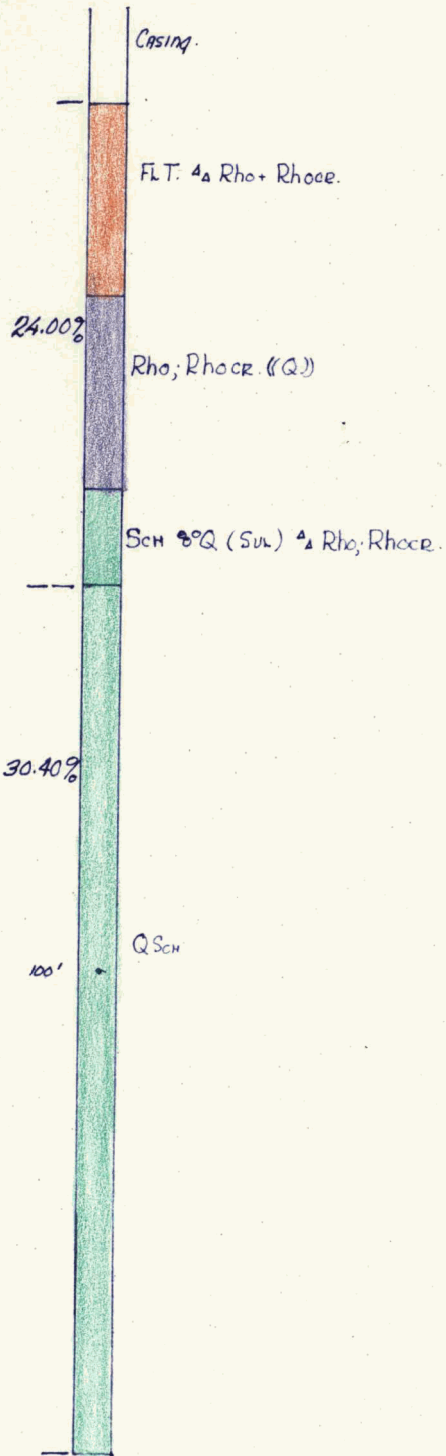
DH-13



DH-13

20 SCALE

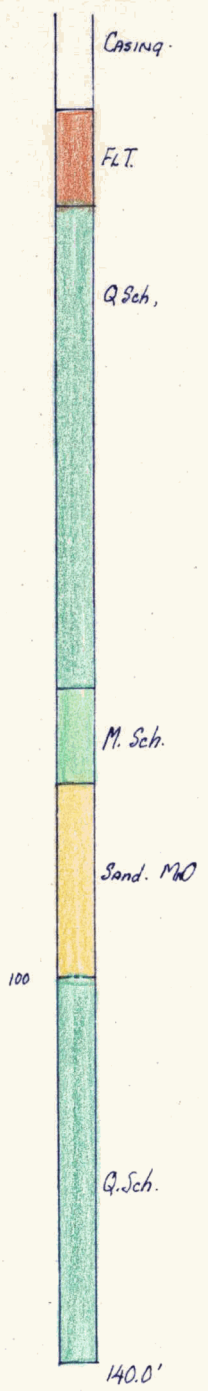
DH-14



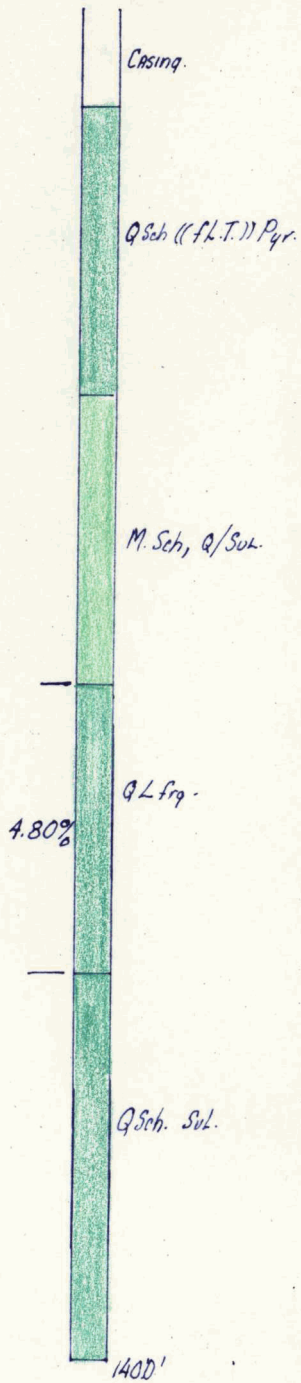
DH-14

20 SCALE

DH-15



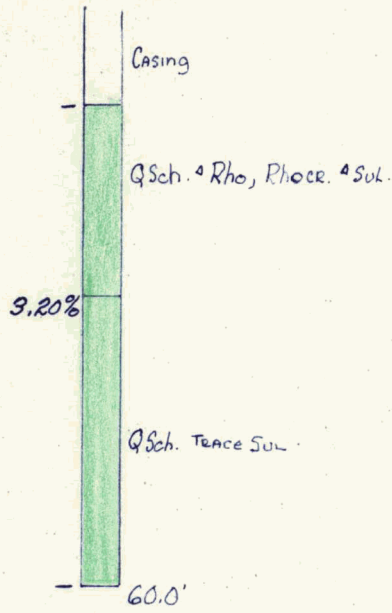
DH-16



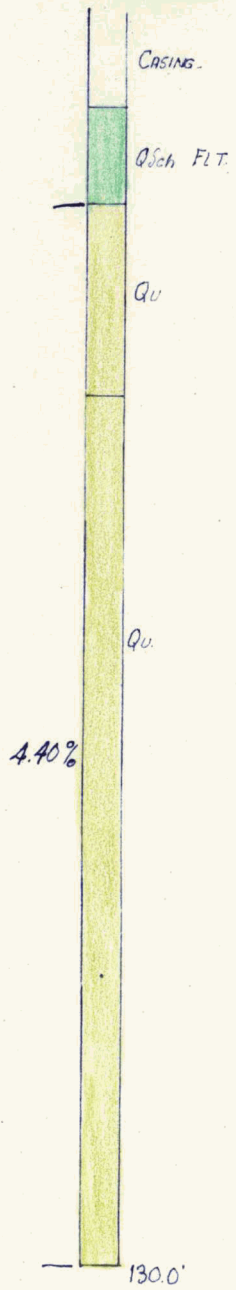
DH 16

20 SCALE

DH-17



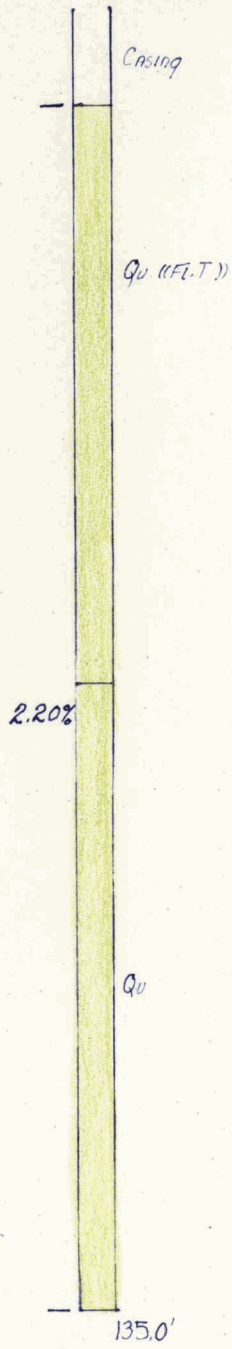
DH-18



DH-18

20 SCALE

DH-19



DH-19

20 SCALE

DH-8E



Casing

Q0 light Pink Grey fng

0.80'

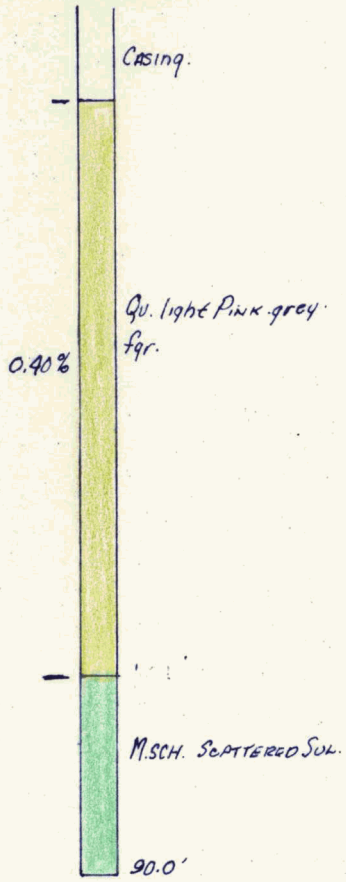
140.0'



DH- 8E

20 SCALE

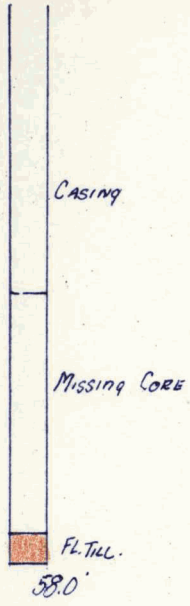
DH-9E



DH-9E

20 SCALE

H-A



H-A

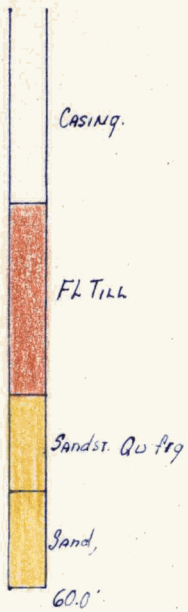
20 SCALE

H-B



H-B 20 SCALE

H-C



H-C

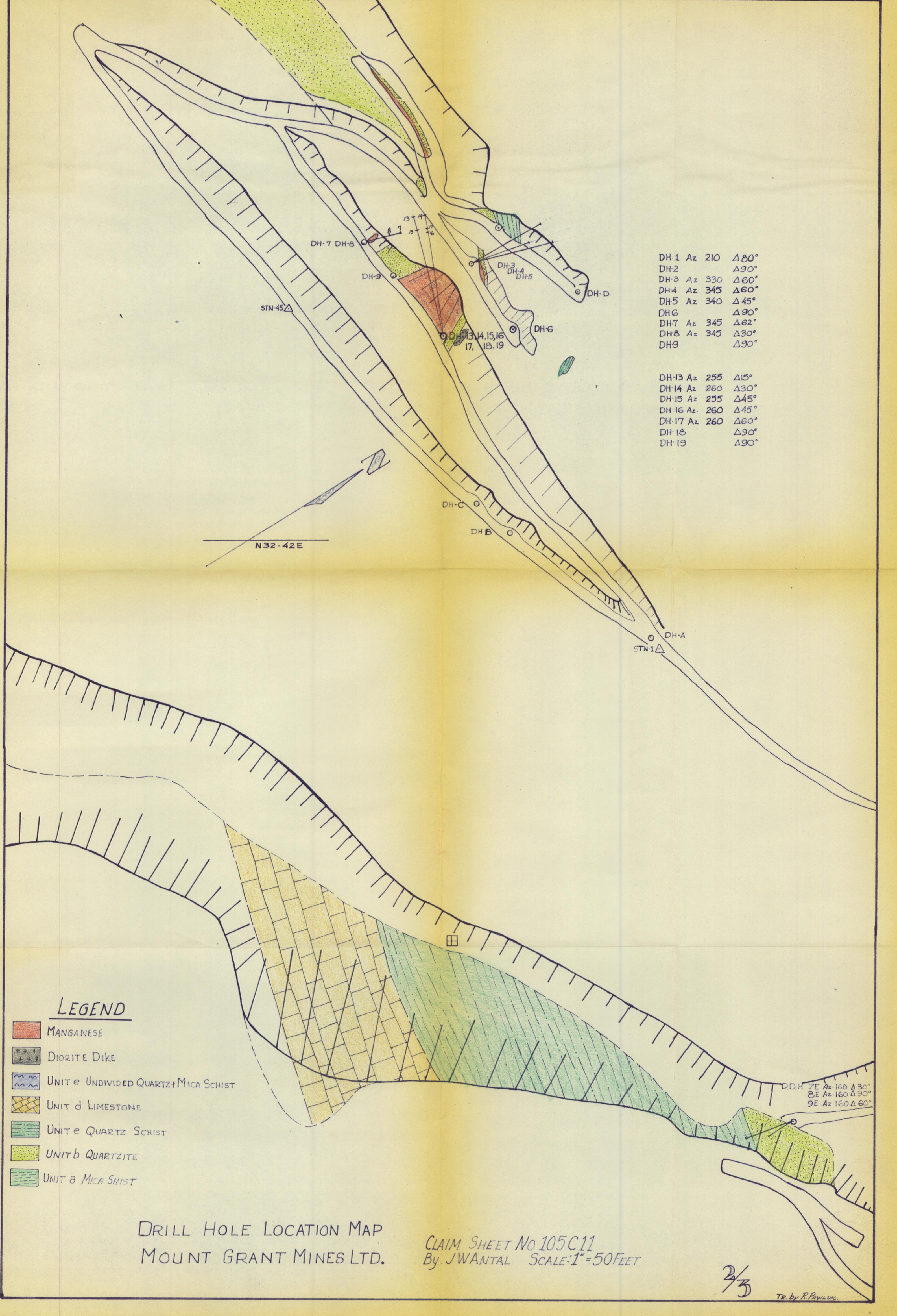
20 SCALE

H-D.

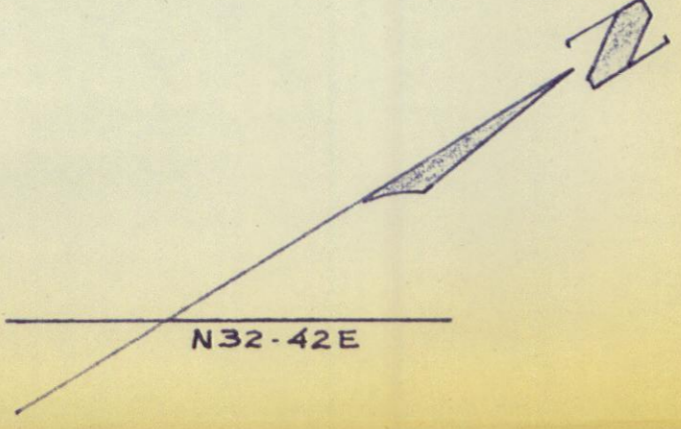


H-D

20SCALE



DH-1	Az 210	Δ 80°
DH-2		Δ 90°
DH-3	Az 330	Δ 60°
DH-4	Az 345	Δ 60°
DH-5	Az 340	Δ 45°
DH-6		Δ 90°
DH-7	Az 345	Δ 62°
DH-8	Az 345	Δ 30°
DH-9		Δ 90°
DH-13	Az 255	Δ 15°
DH-14	Az 260	Δ 30°
DH-15	Az 255	Δ 45°
DH-16	Az 260	Δ 45°
DH-17	Az 260	Δ 60°
DH-18		Δ 90°
DH-19		Δ 90°



**LEGEND**

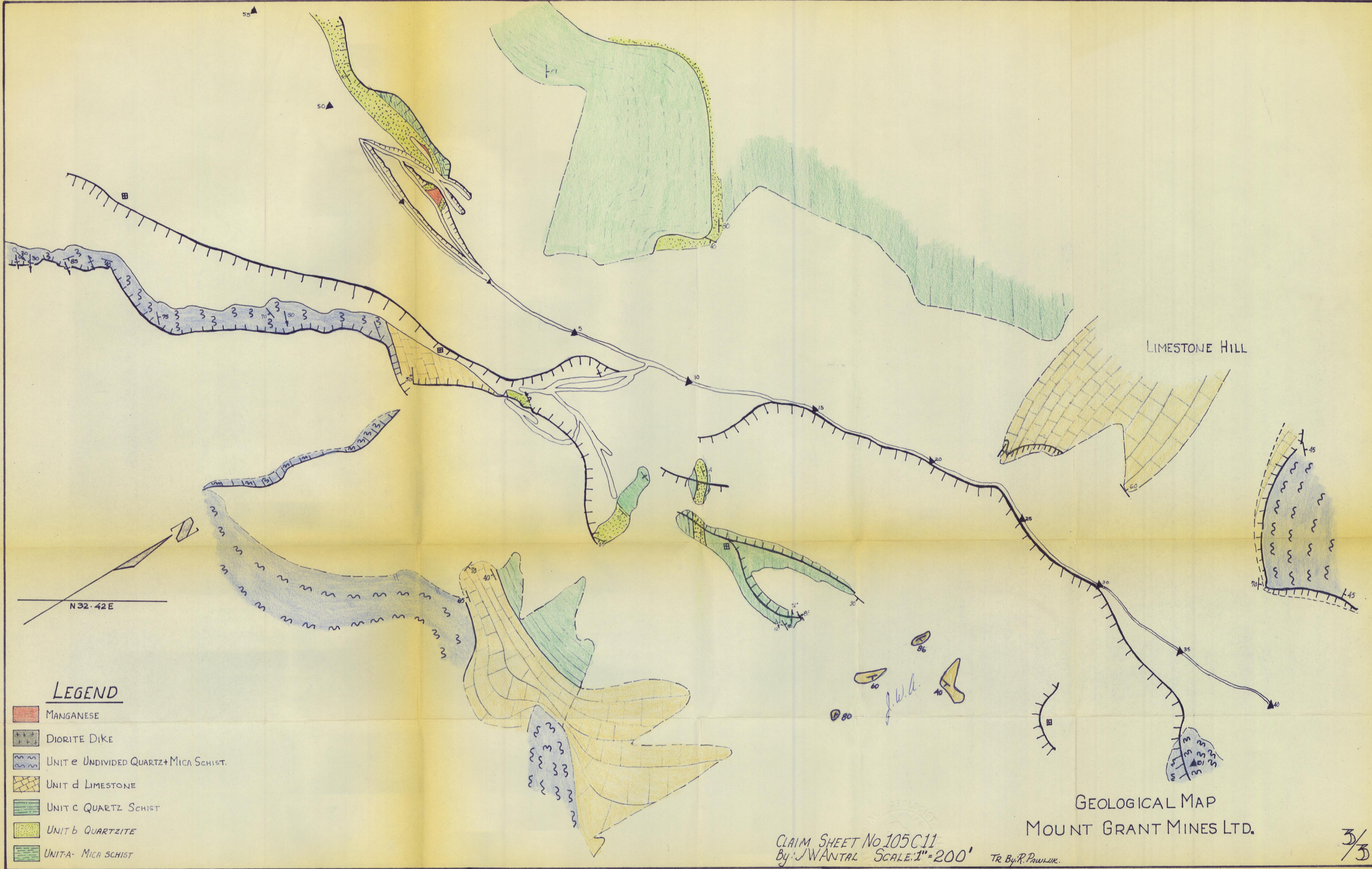
- MANGANESE
- DIORITE DIKE
- UNIT e UNDIVIDED QUARTZ+MICA SCHIST
- UNIT d LIMESTONE
- UNIT e QUARTZ SCHIST
- UNIT b QUARTZITE
- UNIT a MICA SCHIST

DRILL HOLE LOCATION MAP  
MOUNT GRANT MINES LTD.

CLAIM SHEET No 105C11  
By JWANTAL SCALE: 1" = 50 FEET

2/3

Tr. by R. Pawluk.



**LEGEND**

- MANGANESE
- DIORITE DIKE
- UNIT e UNDIVIDED QUARTZ+MICA SCHIST.
- UNIT d LIMESTONE
- UNIT c QUARTZ SCHIST
- UNIT b QUARTZITE
- UNIT a- MICA SCHIST

GEOLOGICAL MAP  
MOUNT GRANT MINES LTD.

CLAIM SHEET No 105C11  
By J.W. ANTAL SCALE 1" = 200' TR By R. PAWLAK.