

CRAIGMONT MINES LIMITED

GEOLOGICAL REPORT

OF

DIAMOND DRILLING

ON THE

WILLY GROUP OF MINERAL CLAIMS

NICOLA MINING DIVISION

NTS SHEET 92 1/2

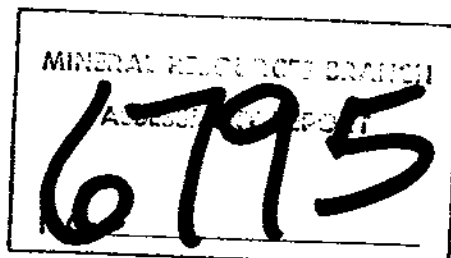
N 50°12' E 120°57'

OWNED AND OPERATED BY CRAIGMONT MINES LIMITED

REPORT PREPARED BY

GERALD R. SANFORD - CRAIGMONT MINE GEOLOGIST

16 JUNE 1978



GEOLOGICAL REPORT OF DIAMOND DRILLING  
ON THE WILLY GROUP OF MINERAL CLAIMS.

TABLE OF CONTENTS

INTRODUCTION

Index Map 1:50000	1
Location and Access	2
Property Description	2
Summary of Work Done	3
List of Claims	3

DETAILED TECHNICAL DATA AND INTERPRETATIONS

Geological Setting	4
Purpose of Diamond Drilling	5
Drill Hole Plan, S-111, 1:4800 GE-A-72	6
Drill Hole Plan, S-113, 1:4800 GE-A-72A	7
Results and Interpretations	8
Section 1177E, 1:4800, GE-A-72B	10
Section 2200W, 1:4800, GE-A-72C	11

CONCLUSIONS 13

ITEMIZED COST STATEMENT 14

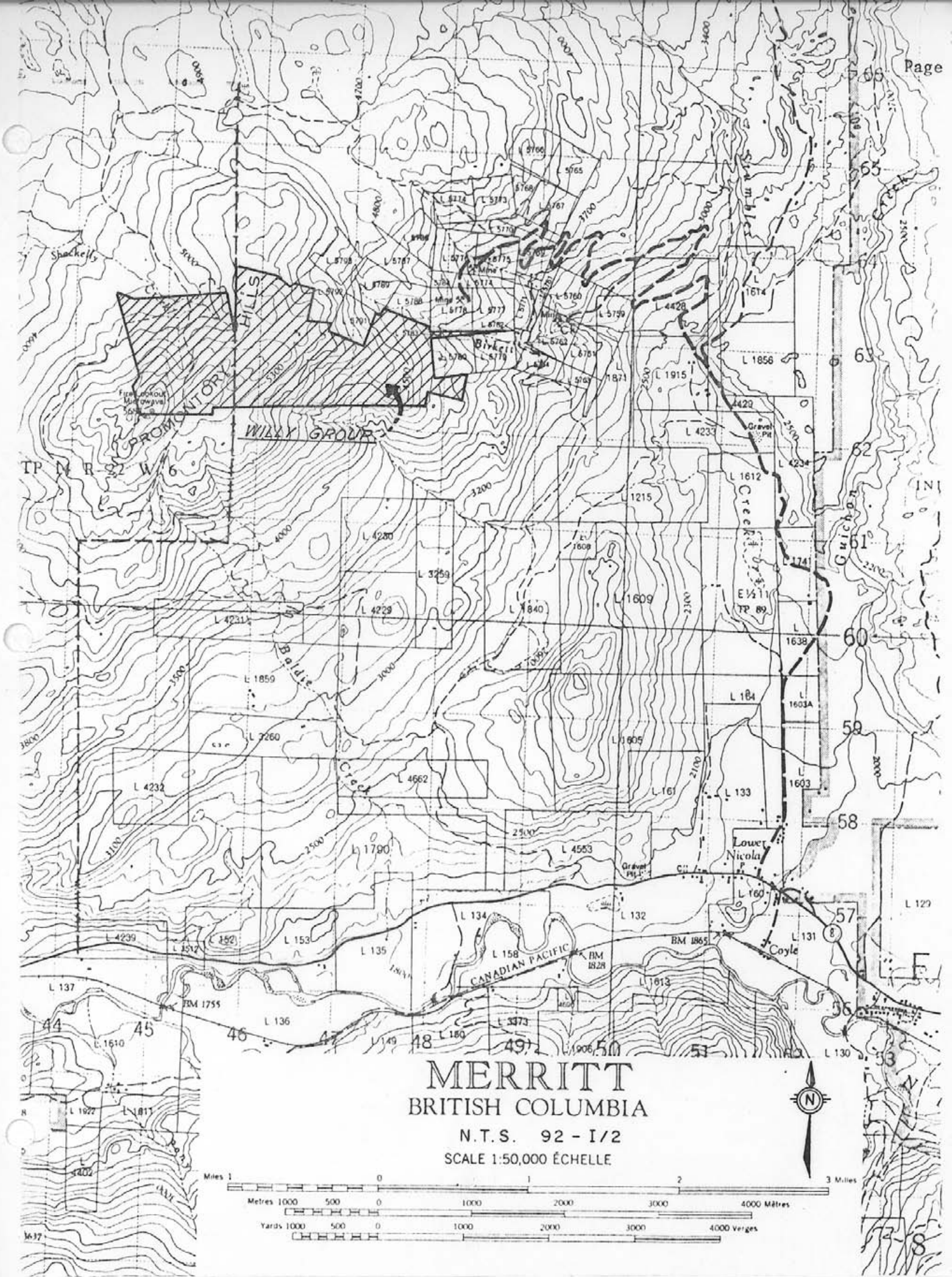
STATEMENT OF QUALIFICATIONS 15

APPENDIX I - Core Logging Standards

APPENDIX II - Diamond Drill Log S-111

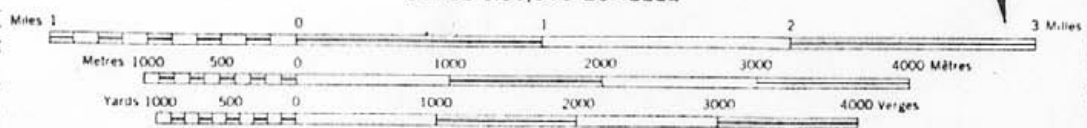
APPENDIX III - Diamond Drill Log S-113

IN POCKET: Claim Boundaries - Craigmont Area  
Willy Claim Group 1:12000 GD-142D



MERRITT  
BRITISH COLUMBIA

N.T.S. 92 - I/2  
SCALE 1:50,000 ÉCHELLE



W-17

8

GEOLOGICAL REPORT OF DIAMOND DRILLING ON THE  
WILLY GROUP OF MINERAL CLAIMS

INTRODUCTION

Location and Access

The Willy group of mineral claims lies on the north and eastern flanks of Promontory Hill, some 16 kilometers northwest of Merritt, B.C. The Promontory forestry look-out is in the extreme south western corner of the group.

The relief is locally rugged, varying from 1734 meters at the summit of Promontory Hill to 1400 meters at the northwest end of the group near Shackelly Creek. Access is by poor gravel-dirt four-wheel drive road from either the forestry look-out road or from the Craigmont Mine site, 3 kilometers to the east.

Most of the area was burned some thirty years ago, and is densely forested with second growth jackpine and criss-crossed windfalls.

Property Description

The Willy Claims, owned and operated by Craigmont Mines Limited, were staked in 1960 to cover ground of potential interest 2 to 3 kilometers west along strike from the known Craigmont orebodies. The claim area has been under constant review since that time. Prior to 1970, ground magnetometer surveys, induced polarization surveys and several drill holes were used to probe the area. No mineralization of any significance was uncovered, but it was quickly realized that the

area was geologically complex. Surface exposure is generally sparse except in the immediate area of Promontory Hill and in several locations mapping must be done using diamond drilling.

Regrouping in 1978 has made the eastern claims in the Willy Group contiguous with Craigmonts mineral leases. All claims within the group have been surveyed by either a B.C. Land Surveyor or by Craigmonts survey crews using transit and chain to tie into the Land Surveyors grid.

#### Summary of Work Done

Drilling - Two wire line diamond drill holes, HQ, NQ and BQ sizes.

Total of 1,333.8 meters.

Hole S-111, 683.4m long, was collared on the Hec 10 Mineral Claim, passed through the Blue Fractional M.C., and bottomed on Hec 8 M.C. This hole was drilled from 1 April 1978 to 31 May 1978. The hole was collared HQ and subsequently reduced to NQ and BQ sizes.

Hole S-113, 650.4m long was collared on the Willy 6 M.C., undercut the Willy 1 Fr, and bottomed on Willy 8 M.C. This hole was drilled from 24 April 1978 to 30 May 1978 and was collared and completed NQ size.

#### List of Claims

<u>Claim Name</u>	<u>Record Number</u>	<u>Due Date</u>
Last Time 1-4	12618-12621	13 January 1987
Paquet 1	4554	7 February 1991
Small FR	11971	19 April 1987
Willy 1-8	11980-11987	12 May 1987
Little FR	12035	25 May 1987
Willy 1FR, 2FR	12117-12118	30 May 1987

List of Claims (cont'd)

<u>Claim Number</u>	<u>Record Number</u>	<u>Due Date</u>
Ned 1-5	8622-8626	4 June 1987
TB1FR, TB4FR	8703, 8706	6 June 1987
Blue FR	20875	7 June 1987
Willy 3FR	12214	17 June 1987
Willy 5FR, 6FR	12216, 12217	17 June 1987
Hec 8, 10	4811, 4813	17 June 1987
Hec 7, 9	4810, 4812	17 June 1987
A1 2FR	5294	16 December 1987

DETAILED TECHNICAL DATA AND INTERPRETATIONGeological Setting

The Promontory Hill area is a complex north westerly trending, steeply dipping volcanogenic pile of Triassic Nicola Group rocks, bounded to the west and south by the Nicola River, east by the Guichon Creek Valley and north by the Jurassic Guichon Batholith. This area of some 7,000 hectares containing sequences of andesites, dacites and volcanogenic grey-wackes, all with interbedded limy/limestone horizons is intruded by the multistage Guichon Batholith and several small, complex intrusions. One of the limestone bands, in proximity to a small intrusion and well within the contact aureole of the Guichon Batholith becomes the host rock for the Craigmont skarn deposit.

Nearly 20% of the Promontory Hill area is covered by a veneer of Cretaceous Kingsvale Group agglomerate and flow rocks up to 200 meters thick. These volcanic rocks cover the eastern portions of the area, and masked portions of the Craigmont orebody.

### Geological Setting (cont'd)

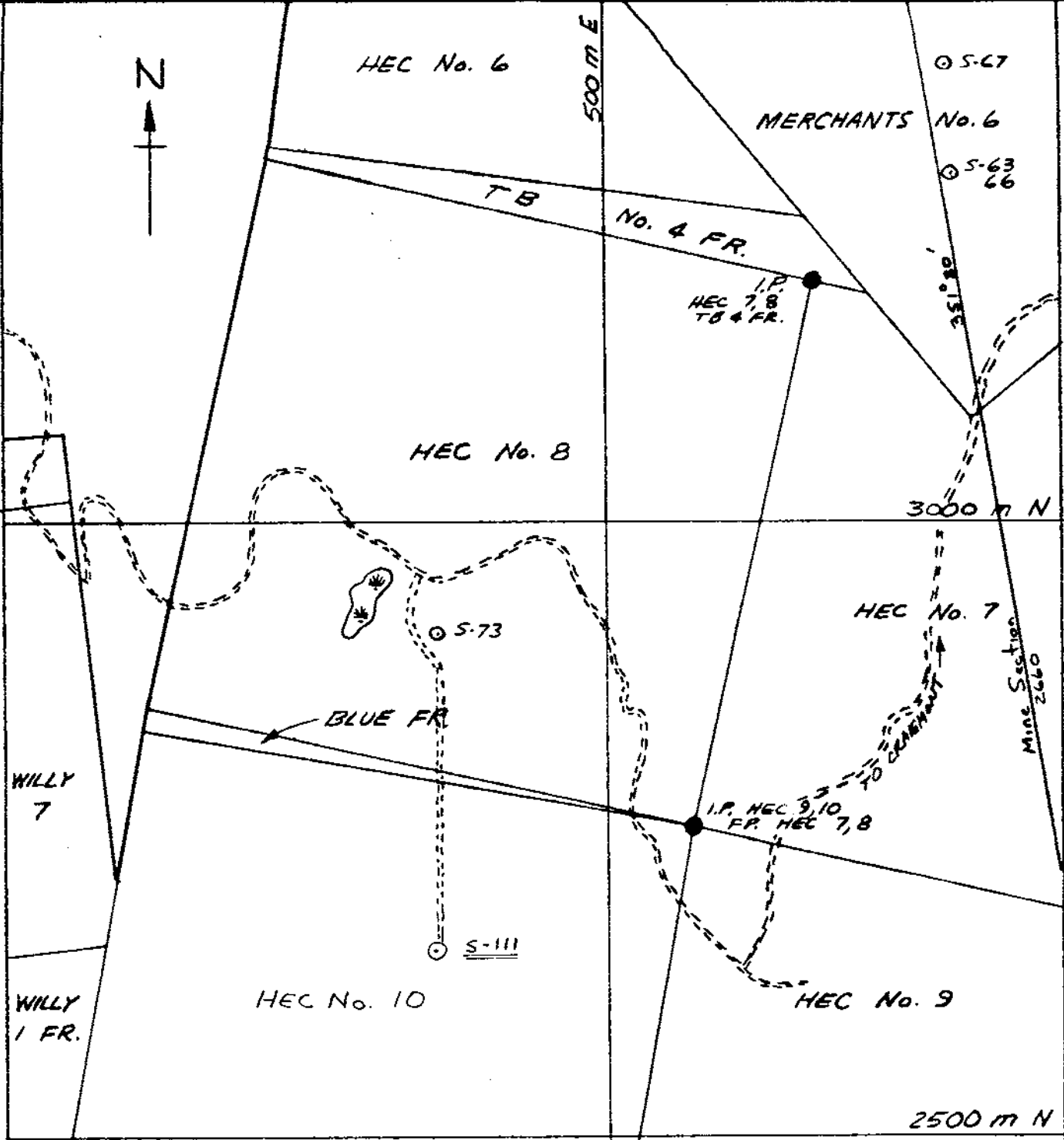
The geology and origin of the Craigmont deposit is very complex, is still incompletely understood, and is open to considerable discussion. However, the orebodies appear to lie within a limestone/limy horizon between a southern dacite - northern volcano-clastic sediment (greywacke) contact.

The main exploration technique has been to investigate the mine limestone and other limestones in areas which appear favorable, especially those within the contact aureole of the Batholith ( $\pm 200$  meters south), and near the small intrusive plugs. These plugs may be fingers from the batholith or synvolcanic feeders to the Nicola Group.

### Purpose of Diamond Drilling

The aureole strip from the mine westerly for 2,000 meters is completely masked by the Kingsvale Group. The Willy claims cover some 1,200 meters of the first exposures of Nicola rocks to the west of this Kingsvale capping. The edge of the batholith lies some 1,500 meters north of Promontory Hill at this point.

Hole S-111 was collared on Craigmont True N-S Section 1177E. This hole was designed to undercut a known limy horizon some 400m below surface. This hole was intentionally drilled to the north through a major fault, (the West Embayment or Winney Creek Fault), to get beneath the Kingsvale capping. See Drawing GE-A-72B. This fault is the western counterpart of the East Embayment Fault which offsets the Craigmont skarn horizon some 450m north. The limestone undercut here is within the southern dacite unit, and does not occupy the same position as the mine skarn which has



**LEGEND**

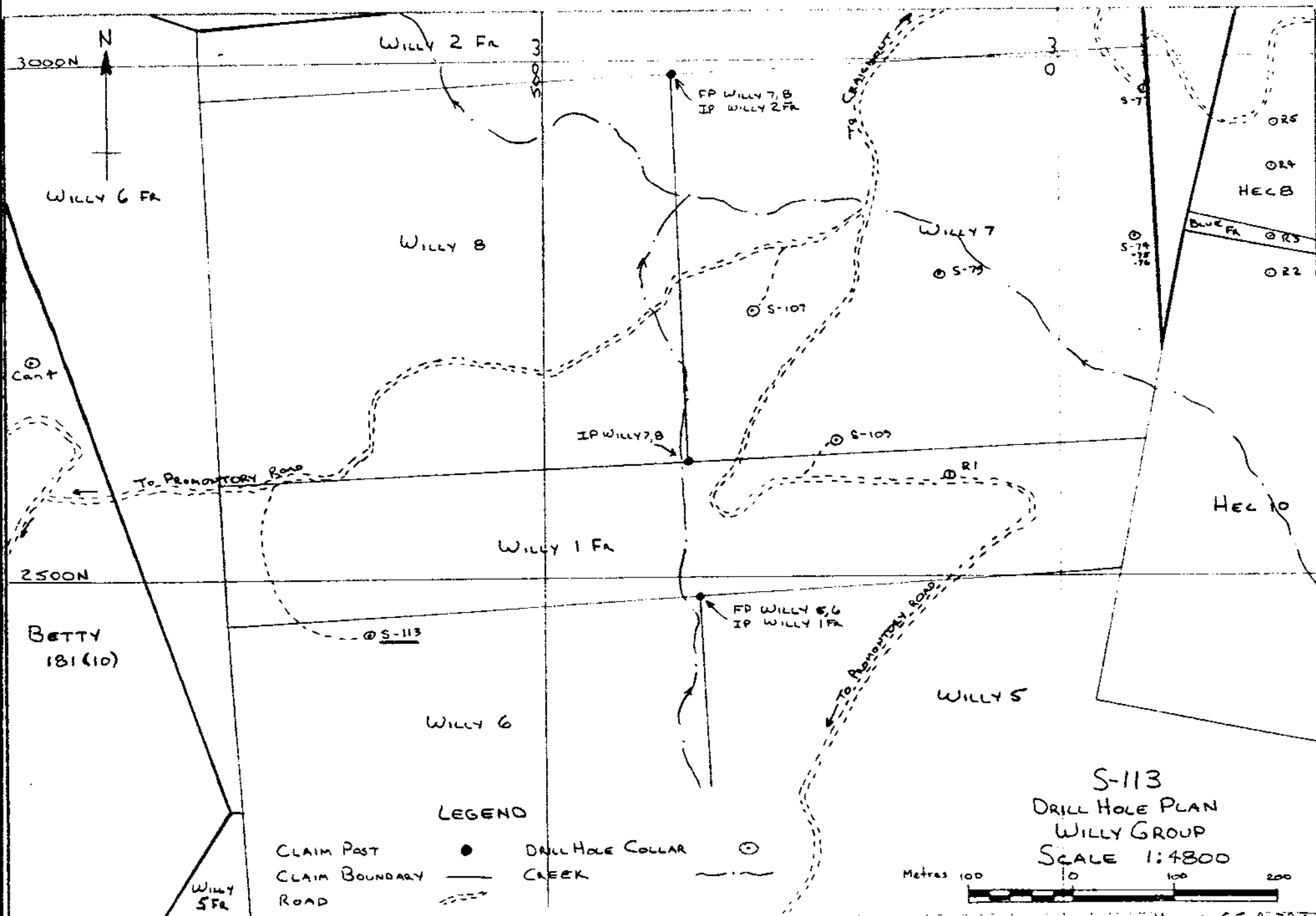
- Claim Post ●
- Claim Boundary ———
- Road - - - - -
- Drill Hole Collar ○

S-III  
**DRILL HOLE PLAN**  
**WILLY GROUP**



MAP No. GE-A-72

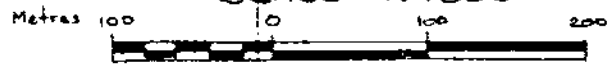




**LEGEND**

CLAIM POST	●	DRILL HOLE COLLAR	○
CLAIM BOUNDARY	—	CREEK	~
ROAD	- - -		

S-113  
 DRILL HOLE PLAN  
 WILLY GROUP  
 SCALE 1:4800



Purpose of Diamond Drilling (cont'd)

wedged out by Mine Section 2660. (See Drawing GE-A-72 and also Assessment Report of Diamond Drilling on the Green Group of Mineral Claims, Craigmont Mines Limited, 6 June 1978.)

Hole S-113, was collared on Craigmont True N-S Section 2200W, primarily for mapping purposes in an area of sparse outcrop between previously drilled holes. See Drawing GE-A-72A. This hole is some 500m west and 300m south of holes S-107 and S-109 as reported in Assessment Report of Diamond Drilling on the Willy Group of Mineral Claims, Craigmont Mines Limited, 9 May 1978. Hole Can 4, drilled by Canex Exploration in the summer of 1967 is 300m south and 300m west of this hole. It was hoped that the small erratic intrusion intersected in holes S-107 and S-109 might broaden to the west. Again, any limestones intersected here were expected to be within the southern dacite unit.

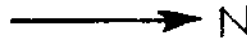
All drilling was done under contract by Connors Drilling Limited. The total price paid to Connors included all aspects of drilling - set-up, footage fee, water supply, down-the-hole supplies lost or consumed, field cost for mixing mud, testing, etc., core boxes, supplies left in the hole at Craigmonts request. Connors also supplied a D-6 cat for road construction and maintenance, site preparation and reclamation, plowing snow and moving drills. Payment was based on a monthly rental plus an hourly use charge.

Results and Interpretations

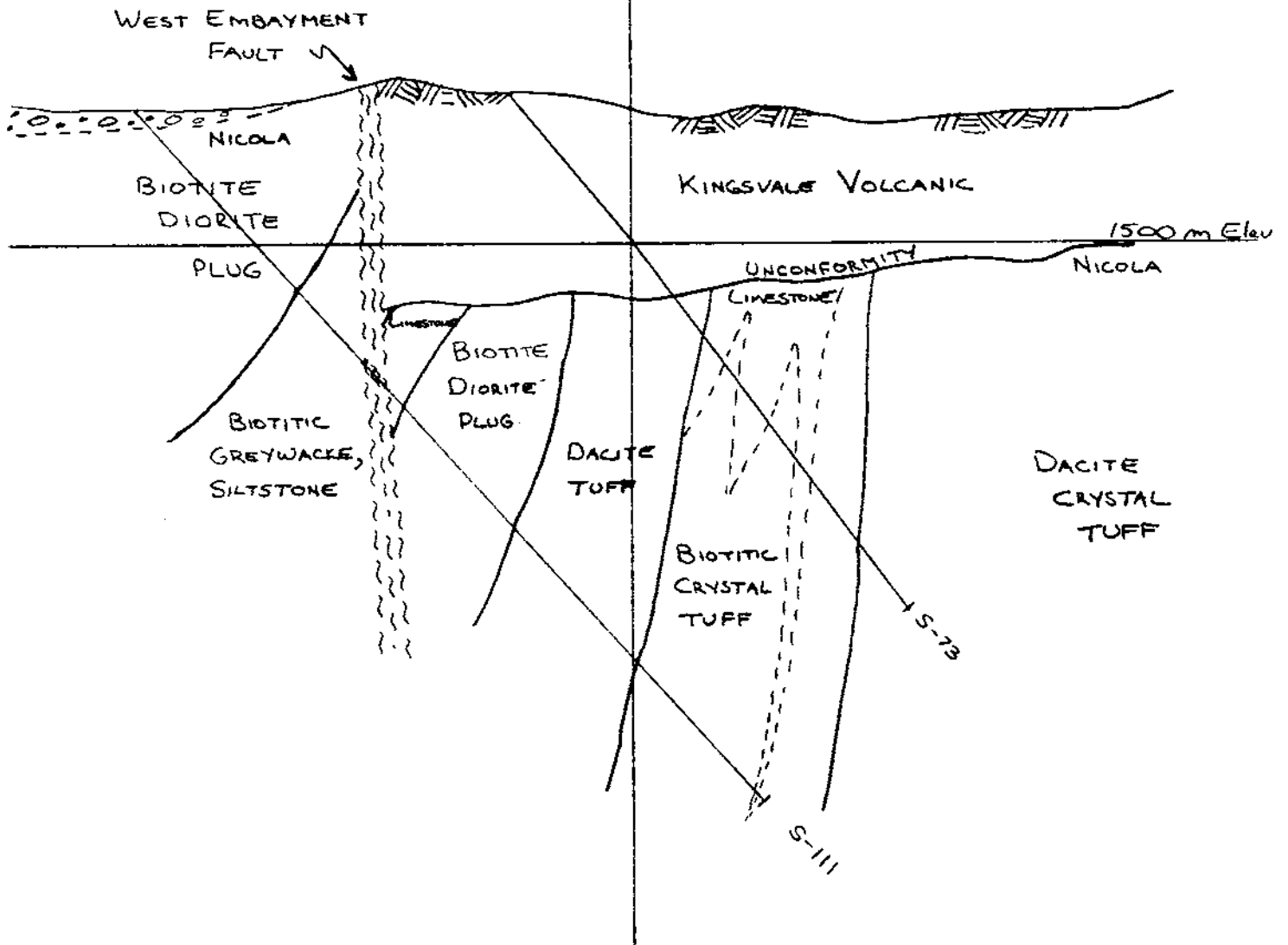
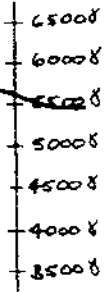
Hole S-111 - Section 1177E.

Hole S-111, azimuth 004<sup>o</sup>, was collared 150m south of the Winney Creek-West Embayment Fault. This fault is near vertical and trends 135<sup>o</sup>. Movement along this fault is left lateral,

3000m N



MAG PROFILE  
JALANDER  
(VERTICAL FIELD)



SECTION 1177 E  
(TRUE N-S)

SCALE : 1:4800



Map No. GE-A-72B

Results and Interpretations (cont'd)

probably with no vertical component. Horizontal displacement is uncertain.

The hole cut 21m of overburden and then 129m of biotite diorites. Thin sections indicate the diorite to be intrusive, not dioritized sediments. This is the same erratic intrusion as cut in hole S-109. The hole then cut 69m of biotite greywackes/tuffs before intersecting the expected fault. After 27m of fault gouge, the hole encountered 23m of limestones and 13m of greywackes before intersecting the same biotite diorite intrusion as encountered on the south side of the fault. 116m of diorite were cut before the hole entered 169m of dacitic tuffs and then bottomed at 683.4m after cutting 98m of biotitic dacite crystal tuffs. Only 30 cm of limestone were cut in the last 267m of hole. The limestone from hole S-73 apparently wedged out down dip. Several dark andesite/basalt dikes were cut throughout the hole. These are feeders to the Kingsvale Group.

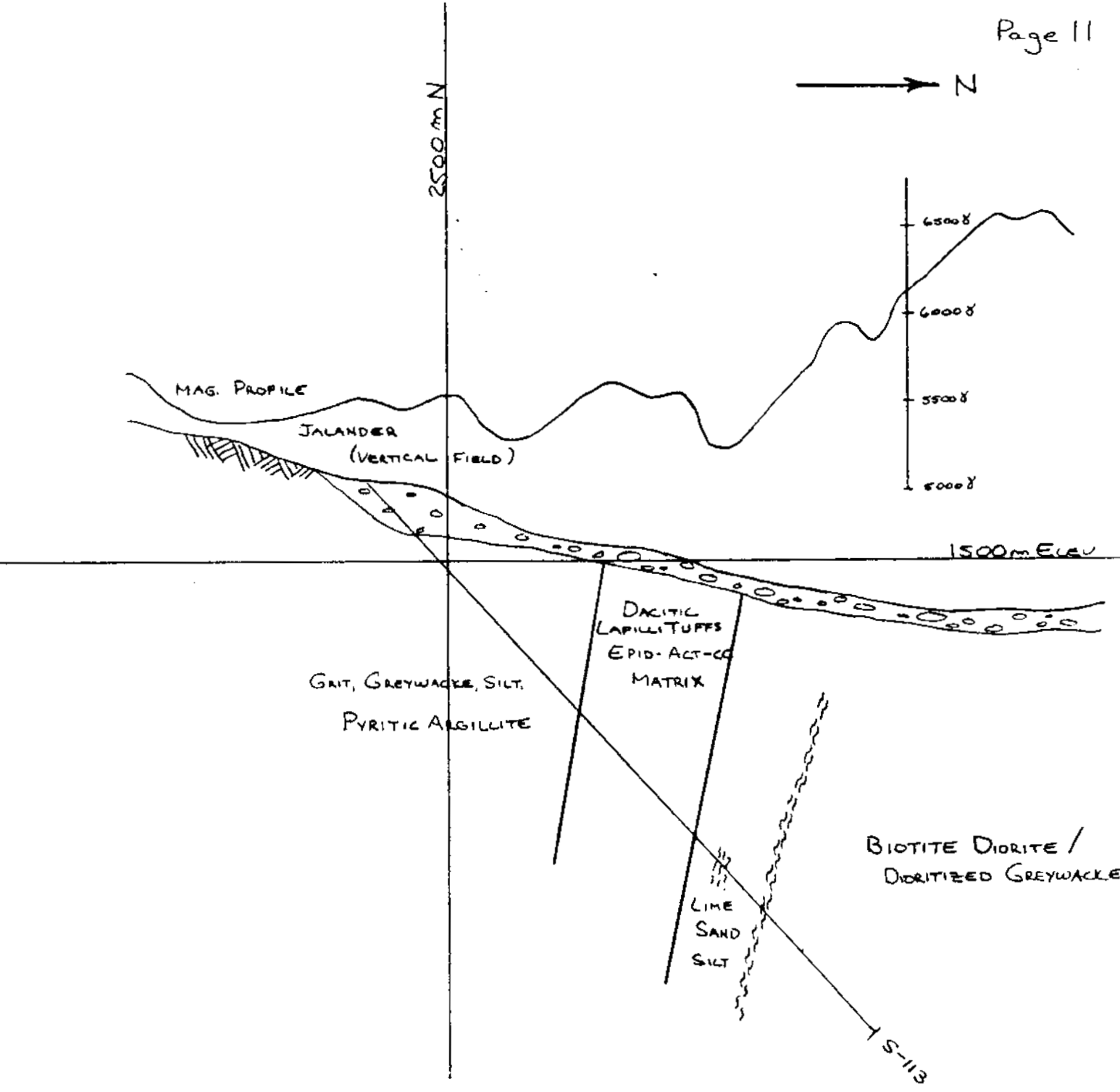
No skarn was intercepted and no mineralization was noted, and no core was assayed.

As difficulties were anticipated in crossing the major fault, the core barrel and bit were drilled out rather than pulling rods and placing casing at 284m to reduce to NQ. This operation was repeated again at 587m to reduce to BQ.

On backing out of the hole, both sets of rods required blasting and 97 NQ rods and 17 HQ rods were left in the hole.

Hole S-113 - Section 2200W.

Hole S-113, azimuth 004<sup>o</sup>, was drilled for mapping purposes. The first 62m were overburden, but bedrock humps were hit at least three times. The next 222m were varicolored



SECTION 2200 W  
(TRUE N-S)

SCALE: 1:4800



Results and Interpretations (cont'd)

grits, greywackes, siltstones and argillites, generally with 3-5% pyrite. The hole then cut 143m of dacitic lapilli tuffs with an epidote-actinolite-calcium carbonate matrix. The next 89m were limestones and lime sands/silts with dacitic fragments. This limy section was in fault contact with a 4lm wide biotite diorite intrusion. The last 100m of hole was dioritized greywacke, cut by several granitic dikes. This last 14lm was well fractured by zeolite veinings. The hole bottomed at 650m. Scattered basalt/andesite Kingsvale feeders were intersected.

Correlation of geology from this hole with geology from holes S-107 and S-109 is difficult and a satisfactory explanation is not yet established. It appears that a fault of similar size and attitude to the west embayment fault exists between S-107 and S-113, but this causes discrepancies with known surficial geology along the summit and south sides of Promontory Hills. This hole does not correlate with Can 4 either, and a satisfactory explanation is lacking.

No copper mineralization was noted and no core was assayed. 12 HQ rods used as overburden casing broke and were left in the hole.

The hole collars were surveyed by transit and chain and tied into Craigmonts grid. The collar co-ordinates are:

Hole	S-111	S-113
Size	0-284 NQ 284-587 NQ 587-683 BQ	NQ
Latitude	2640.93	2440.90
Departure	354.17 E	681.41W

Results and Interpretations (cont'd)

## Collar co-ordinates (cont'd):

Elevation	1585.20	1564.16
Dip	-47 <sup>o</sup>	-46 <sup>o</sup>
Length	683.4m	650.4m

Down the hole survey information is recorded on the drill logs.

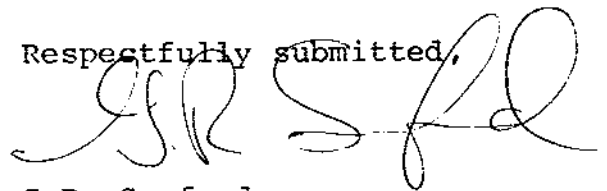
CONCLUSIONS

The hoped for extension of the limestone on Section 1177E was not encountered. It had wedged out down dip. Some measure of the offset along the West Embayment fault can be obtained from the offset of the erratic biotite diorite intrusion.

Hole S-113 supported the known fact that the geology of Promontory Hills is complex. Instead of confirming known outcrop and drill hole geology, the information obtained from this hole only poses more questions.

All core is currently stored at the Craigmont mine site. Diamond drill logs are attached as Appendices II and III.

Respectfully submitted,



G.R. Sanford,

Senior Mine Geologist.

ITEMIZED COST STATEMENT.

All drilling by Connors Drilling Limited.

Hole S-111

683.4 meters of HQ, NQ, BQ coring	
1 April 1978 - 31 May 1978	\$ 89,228.18
Cat rental and usage (prorated)	2,384.00
Total	91,612.18
Cost/metre	\$ 134.05

Hole S-113

650.4 meters of NQ coring	
24 April 1978 - 30 May 1978	\$ 51,090.78
Cat rental and usage (prorated)	2,350.00
Total	53,440.78
Cost/metre	\$ 82.17

Supervision, drill core logging, report preparation - G.R. Sanford	\$ 947.04
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Total Cost	\$ 146,000
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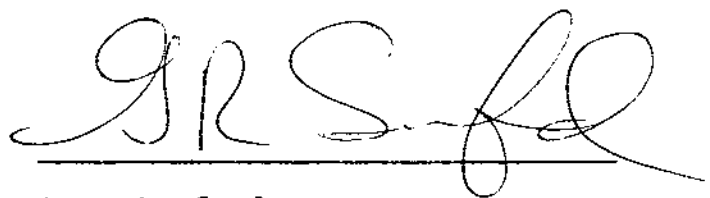
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STATEMENT OF QUALIFICATIONS

I, Gerald R. Sanford, of 1901 Parker Drive, Merritt, B.C. state that -

1. I graduated from the University of British Columbia in 1969, obtaining a Bachelor of Applied Science Degree in Geological Engineering.
2. I am registered as an Engineer in Training with the Association of Professional Engineers of British Columbia.
3. I have been continuously employed in the mining industry since graduation from University.
4. I am currently employed by Cragmont Mines Limited as the Senior Mine Geologist at the Merritt mine site.

A handwritten signature in cursive script, appearing to read 'G.R. Sanford', written over a horizontal line.

G.R. Sanford,  
Senior Mine Geologist.

APPENDIX I  
CORE LOGGING STANDARDS

APPENDIX ICORE LOGGING STANDARDS

As far as possible, terminology in these logs conforms to accepted Geological Standards, i.e. No mine terms are used.

Particle Sizes

## Clastic Sediments

Clay	< 1/256 mm
Silt	1/256 - 1/16 mm
Sand	1/16 - 2 mm
Grit	2 - 4 mm
Pebble	4 - 16 mm

## Pyroclastics

Tuffs (Fine ash)	< 1/4 mm
Lithic Tuff (Coarse ash)	1/4 - 4 mm
Lapilli Tuff	4 - 32 mm

## Igneous Rocks

Fine Grained	< 1 mm
Medium Grained	1 - 5 mm
Coarse Grained	5 - 30 mm

ROCK TYPE

Limestone: Carbonate rocks containing <10% impurities.

Impure limestone: 10 - 50% impurities.

Limy Rock: 50 - 90% impurities.

Clastic Sediment: Sediments consisting of rock and crystal fragments in a clastic matrix subdivided according to grain size.

Biotitic Unit: Clastic and limy rocks containing >10% chocolate brown, generally fine grained biotite matrix. Subdivided according to composition of host, i.e. dacite lapilli in biotitic matrix.

Greywacke: Clastic rocks of predominately sand sized fragments in a dark silty matrix.

Dacite: Light colored pyroclastic and flow rocks commonly containing quartz phenocrysts.

Andesite: Dark colored pyroclastic and flow rocks commonly containing pyroxene phenocrysts.

Skarn: Any rock containing >30% skarn minerals.

Skarnified Rock: Any rock containing 10 - 30% skarn minerals.

Dioritization: Dioritic texture in clastic rocks as a result of recrystallization.

APPENDIX II  
DIAMOND DRILL LOGS  
HOLE S-111

--- DIAMOND DRILL LOG.

Grid No. West Embayment Property Craigmont Mines Limited Section No. 1177E Hole No. S-111

Started	4 April 1978	Bearing	003°53'	Dips	-47°	Lat.	2640.93	Elevation	1585.20	Location	Hec 10
Completed	31 May 1978	Length	683.4m	Surface Hole	X	Dep.	354.17E	Level		Logged by	G.R. Sanford
Standpipe		Casing		Underground Hole		Remarks	Survey data last page.				1/10

FOOTAGE		Core Re- covered	Description	Assay				Average Values
From	To							
0	21.3		Overburden. Triconed 3-7/8". Case HW. Start HQ.					
21.3	31.1	60	Fine to medium grained, massive dark grey biotite diorite. 5% Porphyro- blasts biotite to 1cm. Local saussurite and chlorite related to fractures gives light greenish color. Some veinlet epidote. Limonite stained fractures. Occassional patch to 1mm of red hematite. Joints to 10cm.					
31.1	36.9	95	Very coarse grained hornblende diorite. 30% coarse mafics, but fine grained light greenish feldspar quartz matrix. Sharp contacts with dioritized greywackes, greywackes bleached near contact. Patchy vein related epidote. Joints +10cm.					
36.9	39.9	95	Buff grey to greenish, fine to medium grained massive dioritized arkose. 5-10% mafics, 5% epidote in matrix (saussuritization). Joints to 10cm.					
39.9	40.8	95	Green gouge with fragments of varicolored greywacke. Somewhat limy. Joints to 5cm.					
40.8	50.3	90	Dark grey, very coarse grained, massive biotite diorite. 5-10% porphyroblastic biotite. Minor hornblende. Scattered grains to 1mm of red hematite. Generally as 21.3-31.1. Joints +10cm.					

-- DIAMOND DRILL LOG.

Grid No. \_\_\_\_\_ Property \_\_\_\_\_ Section No. \_\_\_\_\_ Hole No. S-111

Started	Bearing	Dips	Lat.	Elevation	Location
Completed	Length	Surface Hole	Dep.	Level	Logged by
Standpipe	Casing	Underground Hole	Remarks	2/10	

FOOTAGE		Core Re- covered	Description	Assay			Average Values
From	To						
50.3	52.1	98	Very coarse grained, grey, massive biotite diorite. Extremely recrystallized, some biotite clots altering to hornblende. Similar to 31.1-36.9, only biotitic. 30-40% mafics, biotite porphyroblasts to 8mm. Scattered grains pyrite, red hematite. Joints +10cm.				
52.1	169.2	95	Dark grey to greenish fine to medium grained, massive biotite diorite Matrix mostly feldspathic, but rock fragments of various types, generally <2mm. 5% sporadic biotite porphyroblasts to 8mm, generally 2-3mm. Minor patches and veinlets with epidote-chlorite. Some light greenish alteration due to saussuritization, especially near veinlets. Some biotite altering to chlorite. Scattered grains red hematite in biotite. Very occasional dacitic lapilli. Slightly magnetic. <1% magnetite. Joints to 10cm.				
169.2	180.1	95	Medium to coarse grained dark grey to greenish hornblende diorite. Matrix greenish 3-4% epidote. 172.5-173.4 gouge. Gougy contact with next interval. Joints to 10cm.				

--- DIAMOND DRILL LOG.

Grid No. \_\_\_\_\_ Property \_\_\_\_\_ Section No. \_\_\_\_\_ Hole No. S-111

Started	Bearing	Dips	Lat.	Elevation	Location
Completed	Length	Surface Hole	Dep.	Level	Logged by
Standpipe	Casing	Underground Hole	Remarks	3/10	

FOOTAGE		Core Re- covered	Description	Assay				Average Values
From	To							
180.1	199.6	95	Very fine grained to silty, middle to dark grey massive greywacke/tuff, now dioritized, 10-15% biotite. 2-3% pyrite, mostly on fractures. Locally fragmental texture - dark grey, aphanitic fragments in a fine grained, dioritic groundmass. Local patches epidote to 10cm. From 189 on becomes finer grained, locally brownish, biotitic. Joints +10cm.					
199.6	200.9	98	Black to drab greenish, very fine grained, weakly porphyritic (feldspar +augite) basalt dike. Sheared contacts 10mm wide at 45° to core axis (TCA). Joints to 10cm.					
200.9	206.3	95	Dark grey to light greenish, very fine grained biotitic greywacke/siltstone, locally with dacite and biotitic silt fragments. As 180.1-199.6. 3% disseminated pyrite. Some bleaching associated with fractures and veinings. 10-15% biotite. Joints +10cm.					
206.3	207.6	98	Dark, fine grained, mottled siltstone. 10% pyrite associated with patchy epidote (5%), chlorite (20%), 3-5% pyrrhotite, minor chalcopyrite with pyrite. Joints +10cm.					



-- DIAMOND DRILL LOG.

Grid No. \_\_\_\_\_ Property \_\_\_\_\_ Section No. \_\_\_\_\_ Hole No. S-111

Started	Bearing	Dips	Lat.	Elevation	Location
Completed	Length	Surface Hole	Dep.	Level	Logged by
Standpipe	Casing	Underground Hole	Remarks	4/10	

FOOTAGE		Core Re- covered	Description	Assay				Average Values
From	To							
207.6	218.8	95	Light to middle grey green, coarse to medium grained greywacke. Poorly sorted, partly dioritized. Matrix mostly feldspar crystals with 10% biotite. Some fragments of biotitic siltstone. Minor pyrite. Broken, joints to 5cm.					
218.8	228.3	80	Massive, middle grey, very fine grained to medium grained, weakly dioritized greywacke. 20cm patch of epidote - K-spar at upper contact. <10% biotite, 1% pyrite. Bleached adjacent to veinings. Joints to 10cm, broken.					
228.3	234.4	80	Light grey, medium grained diorite-quartz diorite. Equigranular, mafic poor ≈10%. Pyrite on fractures, 2% epidote. Fairly broken, joints to 5cm.					
234.4	243.8	95	Massive, medium grey, very fine grained dioritized greywacke/siltstone. 10% biotite, bleached, 1% pyrite. At 241, 60cm drab greenish aphanitic andesite dike with wall rock fragments to 3cm diam. Sharp undulatory contacts. Joints to 10cm.					
243.8	248.7	90	Fine grained, dark greenish biotitic siltstone/tuff. Locally intensely chloritized (20% chlorite). Some epidote alteration. Banded 40° TCA at 246.9. Calcite veinings. Joints to 10cm, broken.					

-- DIAMOND DRILL LOG.

Grid No. \_\_\_\_\_ Property \_\_\_\_\_ Section No. \_\_\_\_\_ Hole No. S-111

Started	Bearing	Dips	Lat.	Elevation	Location
Completed	Length	Surface Hole	Dep.	Level	Logged by
Standpipe	Casing	Underground Hole	Remarks	5/10	

FOOTAGE		Core Re- covered	Description	Assay			Average Values
From	To						
248.7	275.8	85	Predominately brown, oxidized gouge. Fragments of biotitic siltstone with pyrite and chloritized rock. Joints <1cm.				
275.8	299.0	75	70% medium grained white crystalline limestone. Minor stylolites, wispy chloritic veinings. Patchy limonitic zones. 30% gougy to badly broken fine grained biotitic greywackes (285.9-290.5, 294.4-296.6). 285.9-290.5, 1m core recovered, mostly gouge. Two chloritic mud shears to 1m wide 280.7-282.9. 296.6-297.2 gouge. Joints +10cm.  At 283.5, reduce to NQ, drill out core barrel.				
299.0	312.1	95	Medium grained, grey green, massive greywacke, 10-15% lime and 15% sporadic patches of coarse grained garnet (10%), epidote (5%) skarn. Mostly skarn 304.8-308.8. 2% local red hematite in skarn interval. 1% pyrite. Joints to 10cm.				
312.1	322.5	95	Grey greenish, coarse grained equigranular biotite diorite. 20% large ragged biotite crystals, minor hornblende. Generally continuous feldspar matrix, not discrete grains. Calcite veinlets. Gouged and broken, joints to 5cm.				

--- DIAMOND DRILL LOG.

Grid No. \_\_\_\_\_ Property \_\_\_\_\_ Section No. \_\_\_\_\_ Hole No. S-111

Started	Bearing	Dips	Lat.	Elevation	Location
Completed	Length	Surface Hole	Dep.	Level	Logged by
Standpipe	Casing	Underground Hole	Remarks	6/10	

FOOTAGE		Core Re- covered	Description	Assay				Average Values
From	To							
322.5	348.1	98	Mid grey to greenish, coarse grained equigranular biotite (20-30%) ±hornblende diorite. Biotite crystals to 5mm. Calcite veinlets, pervasive light green alteration. 344.1-348.1 broken and gouged. Joints +10cm.					
348.1	384.7	98	Somewhat darker medium grained biotite (15%), hornblende (5%) diorite. 5% porphyritic clots biotite. Minor patchy epidote. Matrix generally indistinguishable. Scattered calcite, pinkish zeolite veinings. Some pyrite on fractures, minor blobs red hematite. Weakly magnetic (<1%). Joints +10cm.					
384.7	416.4	98	Grey green, coarse to medium grained, equigranular, inhomogenous biotite diorite ±hornblende. Rough 10m banding of different grain sizes. Finer grained matrix has fuzzy feldspars. Good, sharp contact with next unit. Zeolite and calcite veinings, some sections more intense. Joints +10cm.					
416.4	437.4	98	Buff to light grey aphanitic dacite tuff. Massive, very siliceous. Less than 5% angular to rounded feldspar crystals to 2mm, stained pinkish. 1% pyrite, minor chlorite, epidote. Sericite, pyrite on fractures. Occasional fragment to 2cm of darker material. Fairly intensely fractured, joints +10cm.					

-- DIAMOND DRILL LOG.

Grid No. \_\_\_\_\_ Property \_\_\_\_\_ Section No. \_\_\_\_\_ Hole No. S-111

Started		Bearing	Dips	Lat.	Elevation	Location		
Completed		Length	Surface Hole	Dep.	Level	Logged by		
Standpipe		Casing	Underground Hole	Remarks		7/10		
FOOTAGE		Core Re-covered	Description	Assay				Average Values
From	To							
437.4	454.8	98	Grey green buff dacite as previous, but with 20% contamination by dacite lapilli in matrix. Few % biotite. Zeolite, calcite breccia filling. Joints to 10cm.					
454.8	540.1	98	Grey green buff sparse crystal dacite tuff as above. Bleached white around feldspars and fractures. Locally weakly biotitic. Gouge 479.8-480.4. Fairly broken from 500 on (to 5cm). Non-magnetic. Joints to 10cm.					
540.1	541.9	98	Grey green, very fine grained, weakly feldspar-augite porphyritic andesite dike. Crystals to 1mm. Lower contact brecciated with calcite. Joints +10cm.					
541.9	583.1	85	Fine grained, purple biotitic tuff/greywacke. Locally bleached grey adjacent to fractures. Scattered patches chlorite-epidote-pyrite, trace garnet. Occasional dacite patch, some graded units. Broken throughout. 562.7-570.9 lot of gouge, mostly gravel. Joints < 5cm.					
583.1	584.9	98	Black augite porphyry basalt dike with 30cm of sheared, light grey tuff/silt 583.4-583.7. Joints +10cm.					

--- DIAMOND DRILL LOG.

Grid No. \_\_\_\_\_ Property \_\_\_\_\_ Section No. \_\_\_\_\_ Hole No. S-111

Started	Bearing	Dips	Lat.	Elevation	Location
Completed	Length	Surface Hole	Dep.	Level	Logged by
Standpipe	Casing	Underground Hole	Remarks	8/10	

FOOTAGE		Core Re- covered	Description	Assay			Average Values
From	To						
584.9	599.5	70	Mainly gouge to 592. Minor broken fragments of zeolite veined, weakly banded biotitic silt/tuff. 584.9-592.2, 25m core recovered. Joints < 2cm.  Reduce to BQ at 587.0, drill out core barrel.				
599.5	618.1	95	Grey black, zeolite veined, plagioclase ±augite porphyritic basalt dike. Joints +10cm, locally broken.				
618.1	644.3	70	Fine grained, grey brown, massive to weakly banded (30-40° TCA) biotite dacite tuff. Sparce to 10% feldspar crystals, siliceous, biotitic, aphanitic matrix. Local pyrite rich fractures 636.4-639.5. Badly broken, gougy sections throughout. Joints < 5cm.				
644.3	650.7	90	Grey green, massive, pinkish stained feldspar, minor hornblende needle porphyritic andesite dike. Some zeolite, calcite veins. Joints to 10cm.				
650.7	673.0	60	Weakly foliated (30° TCA), dark biotitic dacite crystal tuff. Pyrite, sometimes with epidote ±sercite on fractures. Gougy zone throughout, badly broken. Joints < 2cm.				

--- DIAMOND DRILL LOG.

Grid No. \_\_\_\_\_ Property \_\_\_\_\_ Section No. \_\_\_\_\_ Hole No. S-111

Started	Bearing	Dips	Lat.	Elevation	Location
Completed	Length	Surface Hole	Dep.	Level	Logged by
Standpipe	Casing	Underground Hole	Remarks	9/10	

FOOTAGE		Core Re- covered	Description	Assay			Average Values
From	To						
673.0	673.3	98	White crystalline limestone with quartz vein and margin of epidote-actinolite-garnet skarn. 30cm gouge contact with upper unit, lower sharp inconsistent. Joints +10cm.				
673.3	683.4	75	Dark grey, weakly biotitic dacite tuff and crystal tuff. Badly broken, locally gouged. Joints <5cm.				
			- End at 683.4 -				
			Blast NQ rods. 97 NQ rods, core barrel and bit lost in hole. Blast HQ rods. 17 HQ rods, core barrel and bit lost in hole.				
			<i>GRS</i>				



APPENDIX III  
DIAMOND DRILL LOGS  
HOLE S-113



--- DIAMOND DRILL LOG.

Grid No. Promontory Hill Property Craigmont Mines Limited Section No. 2200W Hole No. S-113

Started	24 April 1978	Bearing	004°18'	Dips	-46°	Lat.	2440.90	Elevation	1564.16	Location	Willy 1 Fr.
Completed	30 May 1978	Length	650.4m	Surface Hole	X	Dep.	681.41 W	Level		Logged by	G.R. Sanford
Standpipe		Casing		Underground Hole		Remarks	Survey data last page. <span style="float:right">1/13</span>				

FOOTAGE		Core Re- covered	Description	Assay				Average Values
From	To							
0	61.9	8	Overburden. Triconed 3-7/8". Probably bounced in and out of bedrock several times.					
61.9	63.7	90	Very fine grained to aphanitic, dark grey green biotitic silt with some gritty sections. 4% pyrite as cubes in matrix and along fractures as blobs to 5mm diameter. Globes of actinolite (5%)-Calcite(1%), locally bedding controlled, up to 5cm across. Bedding at 40° to core axis (TCA). No magnetite. Joints to 10cm.  Percentages expressed are % of logged interval.					
63.7	78.3	80	Light grey to greenish grit, massive, with minor dark silty interbands at 40° TCA. Grit composed almost entirely of fine grained light to dark dacite fragments, subrounded 0.5-2mm diameter in a fine grained dacitic matrix. 5% feldspar crystals. 65.2-71.3 60% core recovery, gougy and limonitic. 1% pyrite. Joints to 10cm.					

--- DIAMOND DRILL LOG.

Grid No. \_\_\_\_\_ Property \_\_\_\_\_ Section No. \_\_\_\_\_ Hole No. S-113

Started	Bearing	Dips	Lat.	Elevation	Location
Completed	Length	Surface Hole	Dep.	Level	Logged by
Standpipe	Casing	Underground Hole	Remarks		2/13

FOOTAGE		Core Re- covered	Description	Assay				Average Values
From	To							
78.3	91.1	90	Dark to mid-grey green mixed unit. Mainly very fine grained dark silt with minor wispy argillite bands and interbeds of dacitic grit and greywacke. 2% pyrite. Joints to 10cm.					
91.1	95.4	95	Dark grey to black, interbedded very fine grained greywackes and argillites. Bedding 40° TCA. Some good flame structures. Some argillite rip-ups indicate tops to top of hole. 2% disseminated coarse pyrite. Gradational contact to lower unit. Joints to 5cm, broken, limonite stained.					
95.4	98.5	98	Massive, blotchy actinolite (70%)-epidote(10%)-calcium carbonate(2%) skarn. 10% relict silt-argillite. Very fine grained actinolite with epidote-carbonate patches. Bands at 30° TCA. No pyrite, magnetite. Joints +10cm.					
98.5	117.3	95	Mainly black massive argillite with local light greenish stringy bands of very fine grained greywacke with flame structures. Minor dacite grit bands, limy bands with minor epidote. 4% disseminated pyrite cubes, minor veinlets. Some carbonate as breccia matrix. Numerous healed hairline fractures. Banded 60° TCA at 108.5, 45° TCA at 110.0. Joints +10cm.					

Started	Bearing	Dips	Lat.	Elevation	Location
Completed	Length	Surface Hole	Dep.	Level	Logged by
Standpipe	Casing	Underground Hole	Remarks		

FOOTAGE		Core Re- covered	Description	Assay				Average Values
From	To							
117.3	123.7	98	Medium to dark grey fine grained greywacke with 10% local patches of dacite grit and minor argillite. Variety of fragments in greywacke, some dacite tuff lapilli to 5cm. 4% pyrite with minor actinolite. Joints +10cm.					
123.7	137.8	98	Massive black silt-argillite. 10% stringy greywacke bands. Variable 0-5% lime in matrix. Lot of veinlet carbonate. Beds 70° TCA at 134.7. 3% pyrite. Last 3m gouged and broken. Joints +10cm.					
137.8	156.4	90	Light brown to greenish, bleached white, massive biotitic greywacke/grit. Minor dacitic silt. Notable feldspar crystals, as well as light colored rock fragments, mainly coarse grained. Minor actinolite in sections, local epidote-calcium carbonate patches. Very sharp lower contact at 45° TCA. <1% pyrite. 50% broken and gougy sections, joints <2cm. Joints to 10cm otherwise.					

Started	Bearing	Dips	Lat.	Elevation	Location
Completed	Length	Surface Hole	Dep.	Level	Logged by
Standpipe	Casing	Underground Hole	Remarks		

FOOTAGE		Core Re- covered	Description	Assay				Average Values
From	To							
156.4	167.0	95	Mixed interval of black argillite(40%), black greywacke(40%) and light greenish grit(20%). Locally light brown, biotitic. Some narrow zones of dacite fragments. Some biotitic dacite tuffs/crystal tuffs. 1% pyrite. Joints +10cm.					
167.0	178.6	95	Dark grey, massive, very fine grained greywacke. Numerous plagioclase <sup>+</sup> -calcite veinlets. <1% pyrite. 176.2-177.4 gouge Joints +10cm.					
178.6	180.4	95	Breccia of green dacite grit with calcium carbonate matrix. Joints +10cm.					
180.4	192.6	95	Greenish grey dacite grit and crystal fragments in a very fine grained dacitic matrix. Some fragments look pyroclastic - probably reworked airfall debris. Plagioclase-calcite veining, 1% pyrite. Very sharp lower contact at 70°TCA. 182.6-183.5 gouge. Joints +10cm.					

Grid No. \_\_\_\_\_ Property \_\_\_\_\_ Section No. \_\_\_\_\_ Hole No. S-113

Started		Bearing	Dips	Lat.	Elevation	Location		
Completed		Length	Surface Hole	Dep.	Level	Logged by		
Standpipe		Casing	Underground Hole	Remarks				
FOOTAGE		Core Re- covered	Description	Assay				Average Values
From	To							
192.6	200.9	98	Black-grey, weakly banded, interbedded limy argillite (70%) and bluish grey sandy limestone (30%). 3% disseminated and fracture pyrite. Numerous calcite + pyrite veinlets. 10% lime throughout. Joints +10cm.					
200.9	203.3	95	Weakly banded greenish silt with 10% lime cut by bands of fine grained actinolite (35%) - epidote (15%) + garnet (2%) skarn. Bands 60° TCA but variable. Sharp contacts, upper at 30° TCA. 1% pyrite. Joints +10cm.					
203.3	230.7	98	Very fine grained mid grey to greenish biotitic greywacke (80%) and siltstone (20%). Generally massive, occasional patchy bands of dacite lapilli, limestone, skarn. 1% disseminated pyrite. Joints +10cm.					
230.7	243.2	98	Alternating zones of dark green-purple biotitic siltstone with 1% disseminated pyrite (80%) and brecciated siltstones with an actinolite-epidote-carbonate-pyrite matrix (20%). Actinolite 10%, epidote 2%. Joints +10cm.					

Grid No. \_\_\_\_\_ Property \_\_\_\_\_ Section No. \_\_\_\_\_ Hole No. S-113

Started		Bearing	Dips	Lat.	Elevation	Location		
Completed		Length	Surface Hole	Dep.	Level	Logged by		
Standpipe		Casing	Underground Hole	Remarks				
FOOTAGE		Core Re-covered	Description	Assay				Average Values
From	To							
243.2	258.8	98	Dark grey green altered biotitic lapilli tuff. Mainly light to dark green very fine grained wispy volcanic fragments in a light green-purple matrix. 1% pyrite, non-magnetic. Joints +10cm.					
258.8	275.2	95	Mainly black well banded pyrite(3%) argillite with 10% lime(80%) and white lime sand/lime siltstone(20%). 3% pyrite in bedding planes, concentrated in thin beds, some as veinlets. Banding (60°TCA) emphasised by grading and limy partings. From 266.7 on, predominately white lime sand with partings of black pyrite argillite. Badly broken and gougy from 270.4. Joints to 10cm.					
275.2	283.8	90	Bleached and partly skarnified mixed greenish grey silts and lapilli tuffs(80:20). Several epidote(15%)-pyrite(4%) <sup>+</sup> actinolite(5%) veinlets. Broken, sheared throughout. 276.8-277.4 gouge. Joints to 5cm.					
283.8	297.8	80	Very badly broken, locally gouged interval. Dark greenish lapilli tuff, locally bleached with 25% patches of epidote(20%), actinolite(5%) skarn as matrix. Minor limy fragments and patches. Joints < 5cm.					

6/13

Started		Bearing	Dips	Lat.	Elevation	Location		
Completed		Length	Surface Hole	Dep.	Level	Logged by		
Standpipe		Casing	Underground Hole	Remarks				
FOOTAGE		Core Re- covered	Description	Assay				Average Values
From	To							
297.8	298.7	98	Generally unaltered dark grey-purple biotitic lapilli tuff. 2% epidote. Joints to 5cm.					
298.7	305.7	98	Bleached lapilli tuff(60%) with 40% matrix of epidote(20%)- actinolite(15%)-calcite(+5%)-pyrite(1%). 3mm chalcopryrite- actinolite-calcite vein at 304.5. Joints +10cm.					
305.4	342.9	90	Fine to medium grained epidote +calcite and actinolite+calcite- pyrite skarn with 45% relict bleached light greenish dacitic siltstone and greywacke. Actinolite 30%, epidote 20% calcite 5%, pyrite 4%, trace K-Spar. Gouged and broken throughout. 338.3-342.9 mostly gouge. Joints to 5cm.					
342.9	345.6	95	70% light to dark dacite lapilli in 30% fine grained matrix of epidote(20%), actinolite(5%), calcium carbonate(5%) and pyrite(1%). 3% pyrite in lapilli. Broken to 344.1, joints ∠2cm then joints to 10cm.					
345.6	355.1	95	Grey brown, bleached green biotitic tuff/silt. Patches and veinlets of epidote(15%)-quartz(5%)-calcite(2%)-pyrite(1%) +actinolite(5%). Joints to 5cm.					

Started		Bearing	Dips	Lat.	Elevation	Location		
Completed		Length	Surface Hole	Dep.	Level	Logged by		
Standpipe		Casing	Underground Hole	Remarks				
FOOTAGE		Core Re- covered	Description	Assay				Average Values
From	To							
355.1	374.3	98	Light grey to greenish altered dacite lapilli tuff in a matrix of epidote(15%), actinolite(10%), quartz(3%), calcium carbonate (1%). Lapilli to 3cm, average 8mm, generally light grey. 5% limestone fragments. 1% disseminated pyrite, minor veinlets. Joints to 10cm.					
374.3	389.2	98	Dark grey green biotitic dacite lapilli tuff with lapilli to 3cm, average 8mm in a green stringy partly skarnified matrix with 2% pyrite. 5% veinlet and patches epidote, 2% actinolite. Joints +10cm.					
389.2	399.6	98	Fine to medium grained massive green plagioclase porphyry andesite dike. 2-5mm euhedral white-pink stained feldspar phenocrysts(15%). Minor hornblende needles. Upper contact 45°TCA, lower 20°TCA. 0.5-1m wall rock alteration. Joints to 10cm.					
399.6	413.9	98	As section before dike. Some limestone fragments. Actinolite 8%, epidote 2%, pyrite 2%. Joints +10cm.					
413.9	426.7	98	As above tuff, but with 10% limestone and limy argillite fragments, 15% epidote, 5% actinolite, 1% pyrite. Joints +10cm.					



Started	Bearing	Dips	Lat.	Elevation	Location
Completed	Length	Surface Hole	Dep.	Level	Logged by
Standpipe	Casing	Underground Hole	Remarks		

FOOTAGE		Core Re- covered	Description	Assay				Average Values
From	To							
426.7	444.1	95	Interbedded and brecciated blue grey lime sands(40%), silts(35%) and black argillites(25%). Bedding variable, generally 70°TCA. Joints +10cm, some chlorite gouge.					
444.1	451.7	90	Fine grained green feldspar porphyry andesite dike as previous. Feldspars pinkish, minor hornblende needles. Contacts gouged lower ≈ 45°TCA, upper 30cm gouge. Very badly broken. Joints <2cm.					
451.7	455.7	98	Medium grained, massive white crystalline limestone. Brecciated at dike contact with minor dacite lapilli tuff. Stylolitic, minor chlorite. Joints +10cm.					
455.7	471.5	90	Badly broken, gouged and muddy interval. Mostly dark green dacite lapilli tuff to 467, then becomes light grey dacite lapilli tuff with 10% lime in matrix. Some fragments lime sand/silt. Joints < 2cm.					
471.5	486.5	98	Interbedded blue grey lime sand and silts with 20% dark grey tuff and patchy dacitic grit. Beds 40-60°TCA. Joints +10cm.					



--- DIAMOND DRILL LOG.

Grid No. \_\_\_\_\_ Property \_\_\_\_\_ Section No. \_\_\_\_\_ Hole No. S-113

Started	Bearing	Dips	Lat.	Elevation	Location
Completed	Length	Surface Hole	Dep.	Level	Logged by
Standpipe	Casing	Underground Hole	Remarks		

11/13

FOOTAGE		Core Re-covered	Description	Assay				Average Values
From	To							
560.8	625.8	95	Dark grey, medium grained massive dioritized greywacke. Some gritty sections. Weakly foliate. Moderately-strongly zeolite veined. Broken throughout along zeolite veinings. 585.8-587.7 could be granitic dike, medium grained, K-Spar rich. Scattered granitic veinings to 3cm wide, all with sericite. Occasional silty lapilli fragment to 1.5cm. 2% epidote. Joints to 5cm, broken.					
625.8	630.9	98	Pink, coarse grained, equigranular granite dike or recrystallized K-Feldspar rich grit. 20% K-Spar, 10% mafics. Local chloritic shears. Upper contact undulatory at 40°TCA, lower broken, 60-70°TCA, sharp. Joints to 10cm.					
630.9	643.4	98	Dark and light grey banded, very fine grained and medium grained greywackes with scattered, definitely crosscutting granite dikes and veins(10%). Joints to 10cm.					
643.4	644.3	98	Dark grey, augite porphyry basalt dike. Sharp upper and lower contacts at 30°TCA. Minor if any chill. 15cm inclusion of dioritized greywacke. Joints to 10cm.					

--- DIAMOND DRILL LOG.

Grid No. \_\_\_\_\_ Property \_\_\_\_\_ Section No. \_\_\_\_\_ Hole No. S-113

Started	Bearing	Dips	Lat.	Elevation	Location
Completed	Length	Surface Hole	Dep.	Level	Logged by
Standpipe	Casing	Underground Hole	Remarks		12/13

FOOTAGE		Core Re-covered	Description	Assay			Average Values
From	To						
644.3	650.4	95	Mainly pink granite dike(?) with 10% scattered inclusions of weakly foliated dark dioritized greywacke 10% mafics. Joints to 5cm.				
			End at 650.4m				
			Lost 12 MW rods in overburden when casing broke.				
			<i>GRS</i>				

-- DIAMOND DRILL LOG.

Grid No. \_\_\_\_\_ Property \_\_\_\_\_ Section No. \_\_\_\_\_ Hole No. S-113

Started	Bearing	Dips	Lat.	Elevation	Location
Completed	Length	Surface Hole	Dep.	Level	Logged by
Standpipe	Casing	Underground Hole	Remarks		

13/13

FOOTAGE		Core Re-covered	Description				Assay				Average Values
From	To										
SURVEY DATA											
			<u>Depth</u>	<u>Dip</u>	<u>Azimuth</u>	<u>Method</u>					
			Collar	-46°	004° 18'	Transit					
			153.3	-45	010.5°	Tropari					
			308.8	-44	010.5°	Tropari					
			457.2	-49	011°	Tropari					
			457.2	-47	--	Acid					
			533.4	-45	--	Acid					
			609.6	-47	--	Acid					
			649.8	-47	--	Acid					

