

MINISTRY OF NORTHERN  
DEVELOPMENT AND MINES

AUG 03 1994

INCENTIVES OFFICE

**Application**

**For**

**Grant 1994**

**Under**

**The Ontario Mineral Incentive Program**

**(O.M.I.P.)**

OM94-082



## **INDEX**

Introductory Letter	p.1
O.M.I.P. Application For Grant	p.2 & 3
Designated Program Certificate	p.4
Location and Access	p.5
Topography, General Geological Setting	p.6
Previous Work	p.7
Study Method, Project Geology	p.8
Structure Geology - Mile 12 Site	p.9
Summary of Diamond Drilling, Plugger and Sampling	p.10
Stripping, Cleaning & Trail Construction on M-12 Property	p.11
Observations and Conclusions	p.12
Project Expenditure Details	p.13 - 15

## **Illustrations**

1. Location map	
2. Claim maps	
3. D.D.H. sections	(A1 0009 to A1 0014)
4. Location of Quartz exposure	(D4 - 0001)
5. Site work completed	(D4 - 002)
6. M-12 West Site geology	(D4 - 0003)
7. M-12 East Site geology	(D4 - 0004)
8. M-12 work and sample location	(D4 - 0005)
9. D.D.H. logs	(16 pages)

Incentive Office  
Mining and Land Management Branch  
Ministry of Northern Development and Mines  
5<sup>th</sup> Floor, 933 Ramsey Lake Road  
Sudbury, Ontario  
P3E 6B5

Attention: Ed Solonyka

**Re: Application for Grant 1994  
O.M.I.P. #94-082**

Dear Sir:

On behalf of Quartec Mineral Development Inc. I am enclosing the corporation's application for Grant 1994. This grant application is the result of the company's proposed mineral exploration program (submitted on the O.M.I.P. application for designation form, March 22, 1994) having been successfully approved May 11, 1994.

This detailed exploration program would not be possible without financial assistance from the Ontario Government's O.M.I.P. program.

The subject areas (M-12 and M-19) evaluated and discussed in this report were previously investigated for base and precious metals. A very limited Quartz exploration program was also carried out on the M-12 location in 1987 (see section on previous work). The M-12 and M-19 locations are two of the several properties investigated in 1992 and both were selected as targets for detailed work during the 1994 field season. Of these two selected targets M-12 was chosen as the primary area of exploration.

Exploration activities were carried out for the period April 18, 1994 through June 28, 1994.

The project was designed to investigate and to assess the economic potential of High Purity Quartz, unfortunately the M-12 exploration study did not meet the expectation of initial preliminary Quartz samples. The final results indicated that although satisfactory in low titanium content there existed high iron and aluminum metals. The M-12 project is now disqualified for the production of silicon metal.

However, the results of M-12 did prove that the product can still be used for smelter flux.

I respectfully submit this application for grant 1994.

Yours truly,



N.A. Cecutti, President

## Location and Access

M-12 is located in Cadeau township (Sudbury Mining Division) and is covered by mining claim block #1179609 and work permit #E066/94. The property consists of some 120 acres.

M-19, located in Boon township (Sudbury Mining Division), consists of some 320 acres. It is covered by mining claim block #1179415.

The areas are bounded by latitude  $46^{\circ} 20'N$  to  $46^{\circ} 24'N$  and longitude  $82^{\circ} 11'W$  to  $82^{\circ} 14'W$  (see location map)

Access to the areas are via hwy 17 (west) for a distance of 60 miles from Sudbury to the town of Massey, thence along the wide and well travelled gravel secondary highway #553.

From the 12 mile point on #553, the M-12 site is reached by turning west on a narrow gravel road for 1.8km.

From the 17 mile point on #553, the M-19 site is reached by travelling approximately .53km due east through the woods or along a trail at the 18 mile marker .80km east and .40km south.



## Topography

The relief of the area varies. Higher elevations are mainly the result of weather resistant rocks, which are normally exposed as dome shaped bodies. These bodies generally trend east-west. Glacial striae observed showed groves at NE 38 43 . Some of the dome shaped resistant rocks show almost vertical dip and therefore rough topography was observed in these areas. The lower ground is underlain with quartzite and schist, while the higher ground is of diorite hard quartzite and granite.

## General Geological Setting

The area lies north of the Murray fault and is underlain by archean granite, keewatin, greenstone and huronian sediments. The area hosts several mafic intrusions which were emplaced into archean plutonic rocks (algonan granite and parisien lake synite) and mafic to felsic metavolcanics (Jensen 1990).

In places gabbro occurring as dikes, stocks and sills intruding the greenstone.

Gabbro dykes and sills are generally medium to coarse grained and trend east and, south east. Where they intrude the metavolcanic rock the foliation observed is believed to be caused by regional metamorphism.

Field observations indicate that the metamorphosed greenstone is intruded by granite in most instances while in other cases the granite occurs with greenstone. The granite exhibits distinct pink and grey colours. The pink granite contains a large proportion of plagioclase. It is medium grained and highly feldspathic. The grey granite is also medium grained and contains a higher proportion of mafic material, inclusions of granite gneiss (probably by migmatization of quartzite) were observed. Greenstone in the area varies from green to black in colour and is in places interbedded with metasediments. It is shaly, highly silicified and contains disseminated pyrite and chalcopyrite.

Huronian Quartzites, orthoquartzite and slates are shattered in places and invariably contain disseminated pyrite and chalcopyrite mineralisation.

## Previous Work

### M-12 Location:

A number of very old pits and trenches were observed, especially in the east end of the property. As these pits and trenches were filled in it was not possible to determine dimensions.

It would appear that these old openings were made to trace sulfide mineralisation. They were all opened in the vicinity of Quartz/Greenstone (Diorite) contact and in the area of shear zones. Fine disseminated pyrite, chalcopyrite and marcasite grains were found around old pits and trenches.

It is not known who established old pits and trenches prior to September 1969 when Massey prospector Stan Withers established 2 shallow pits at location at extreme east end.

In October 1987 Carmen Ward of Massey, Ontario and G. Lavallee of Montreal, Quebec drilled 26 airtract holes along the strike of the West Quartz body. It is reported that these holes were established to collect dust samples, which were assayed at S.K.W.'s Quebec lab. The intention was to establish reserves of high purity Quartz. The holes, drilling method, and sampling procedures were not well controlled. It is believed that the samples were contaminated.

### M-19 Location

Again, several old pits and trenches were found at this location. These openings were made on gossan zones. None of the old gossan zone had dimension greater than 20ft X 6ft. Minerals found around the openings (oxidised zone) were pyrite, chalcopyrite, pyrrhotite and pentlandite. (massive to disseminated)

Most of the old workings (pits/trenches) were carried out by L.T. Withers of Massey, Ontario (verbal communication with Carmen Ward - 1994)

## Study Method

### M-12 Location

In this location a good trail was established around the quartz body of interest (see Quartz location map). The complete area was then stripped, in order to provide rock exposure. An off-set east-west base line for a length of 1,700ft was established (along strike) and picketed at 100ft intervals.

North-south compass lines were established and flagged. This reference was used to map the geology and structural features.

### M-19 Location

A reference base line was established, (see sample map) for a length of 1,800ft and flagged at 100ft intervals. This base line was established for prospecting and sampling purposes as no detail geological mapping was carried out at this location.

## Project Geology

### M-12 Location

A body of Quartz interrupted by greenstone (greenschist, diorite) with a strike length of 2,000ft, and width varying from 60ft to 120ft was mapped. The quartz occurs as a sill like body between granite, granite gneiss and gabbro to the south and greenstone and pink granite bodies to the north. In the west zone the white quartz appears as a massive body intermixed in sections with pods and stringers of diorite, the same condition exists on the easterly zone.

The central zone from O + 50 east to 4 + 30 east the quartz body is fractured and is intersected by altered greenstone dykes and sometimes vertical slabs. In other areas the quartz is broken up by a series of narrow parallel and subparallel bands of greenschist intrusions.

This quartz body striking in an east west direction with a steep dip ( $80^{\circ}$  -  $85^{\circ}$ ) exhibits a white to rusty-whitish colour and is medium grained in the fractured sections and clean white to pinkish colour, it is coarse grained in the massive sections. In the vicinity of 0 + 12 ft to 35 ft the quartz vein appears sheeted, and is interlayered with altered chlorite bands. There are several narrow shear zones in this vicinity and they are in most cases parallel to foliation. Mapping revealed that in places where dykes cut the quartz, the result is fracturing and schistosity. Furthermore throughout the entire body most of the quartz occurs as a thin layer capping the greenstone.

## Structural Geology - 12 Mile Site

The quartz is in a discontinuous ridge striking approximately  $120^{\circ}$ . The north side slopes steeply into the overburden at slopes greater than 45. The south side has low exposed faces disappearing into the overburden. The overburden to the south slopes southward and has the occasional granite outcrop.

Zones of dark chloritic schist cut through the quartz at strikes varying from  $90^{\circ}$  to  $110^{\circ}$  magnetic azimuth. The schist zones vary in width up to one meter and dip almost vertical. They form shallow eroded trenches in places, especially where intersected by fractures. Vertical fractures at strikes of  $50^{\circ}$  and  $160^{\circ}$  cut the quartz.

The quartz varies in colour from white to pink to green to dark grey. Chloritic inclusions occur between the schist zones.

### Summary of diamond drilling

At the Mile 12 site eight diamond drill holes were drilled between May 27<sup>th</sup>, and June 28<sup>th</sup>, 1994. The total length of the drilling was 423.8ft which includes 38ft of casing. The size of all holes was BQ. The location of the holes is shown on drawing D4-0002.

The following table shows the individual details of the holes.

Hole	Dip	Azimuth	Length	Casing	Start	Finished	Collar Location
M1	-45	205	86.5'	5'	27 May	3 June	17.85mN -30 mE
M2	-70	205	43.0'	4'	4 June	7 June	18.15mN -30 mE
M3	-45	205	32.0'	4'	10 June	13 June	13.4 mN -48 mE
M4	-90	-	42.0'	5'	14 June	15 June	14.2 mN -48 mE
M5	-45	205	80.5'	5'	16 June	21 June	-2.0 mN 37.8mE
M6	-90	-	19.6'	5'	21 June	22 June	-7.8 mN 37.8mE
M7	-45	25	65.2'	5'	23 June	27 June	-5.8 mN 60.6mE
M8	-45	205	55.0'	5'	27 June	28 June	-4.7 mN 43.5mE

Here Azimuth is measured from magnetic north. The collar locations were measured along a baseline originating at NAD coordinates 17 - 406007mE 5131351mN in a direction 115 from magnetic north.

### Summary of Plugger, Jackleg and Blasting

At the Mile 12 site 420 plugger holes were drilled and blasted to establish 14 pits. The holes were drilled on 3ft centre for an average depth of 8ft. The total pit area drilled and blasted was 102 sq metres. The blasting produced broken rock volume of 115 cubic meters. It should be noted that 113 drill holes established were not blasted. The location of the area of holes blasted is shown on drawing D4-0002.

### Sampling

A total of 16 samples were taken from the D.D. Holes and sent to Falconbridge and S.K.W. labs for analysis.

Sample numbers, intersections and results are listed on core log sheets.

## Stripping, Clearing and Trail Construction on M-12 Property

A program to clear brush and strip overburden from the quartz body on M-12 was initiated on May 3, 1994 the purpose of which was to expose the outcrop and to allow detailed geological mapping. The method of operation consisted of a three man crew cutting and clearing with chain saws. This was followed up by stripping with a backhoe (where possible) and manual stripping of thin overburden with hoes. A total area of 16 Ha of brush was cleared for the purpose of removing overburden, and the mobilization of equipment throughout the site. Also a total area of 50217m<sup>2</sup> of overburden was removed to expose the outcrop. A result of this project was 622m of trail to allow the movement of the backhoe, diamond drill and blasting equipment along the work site. The work above entailed 79 days of work.

The associated greenstone (greenschist/diorite) is medium to fine grained and varies in colour from fresh green to a very dark green. It appears that the siliceous solution given off when the diorite magma cooled found lines of weakness along bedding planes of the argillicious greenstone and deposited the disseminated pyrite and chalcopyrite found. In places the greenstone is eroded to rubble but the quartz in all cases obviously invaded the greenstone, resisted erosion, and stand out as knobs.

### M-19 Location

This area was not mapped. While sampling the quartz body, rock types observed were felsic metamorphosed rocks, feldspathic granite, gabbro and anorthosite.

## Observations and Conclusions

The program was carried out from April 18, 1994 to June 28, 1994.

Geological services were provided by John Clark P.Eng. of Massey, Ontario who was assisted by Ed Rose P. Geol. of Trefstone Corp. and several trainee field assistants.

M-12 quartz body strikes east-west for 2,000ft with an average width of 90ft.

The geological survey and drilling revealed that for the most part the excellent quartz observed on surface has thickness of no more than 6ft and is in fact a cap over greenstone. (detail mapping, trenching and possibly diamond drilling need to be carried out on the M-19 site).

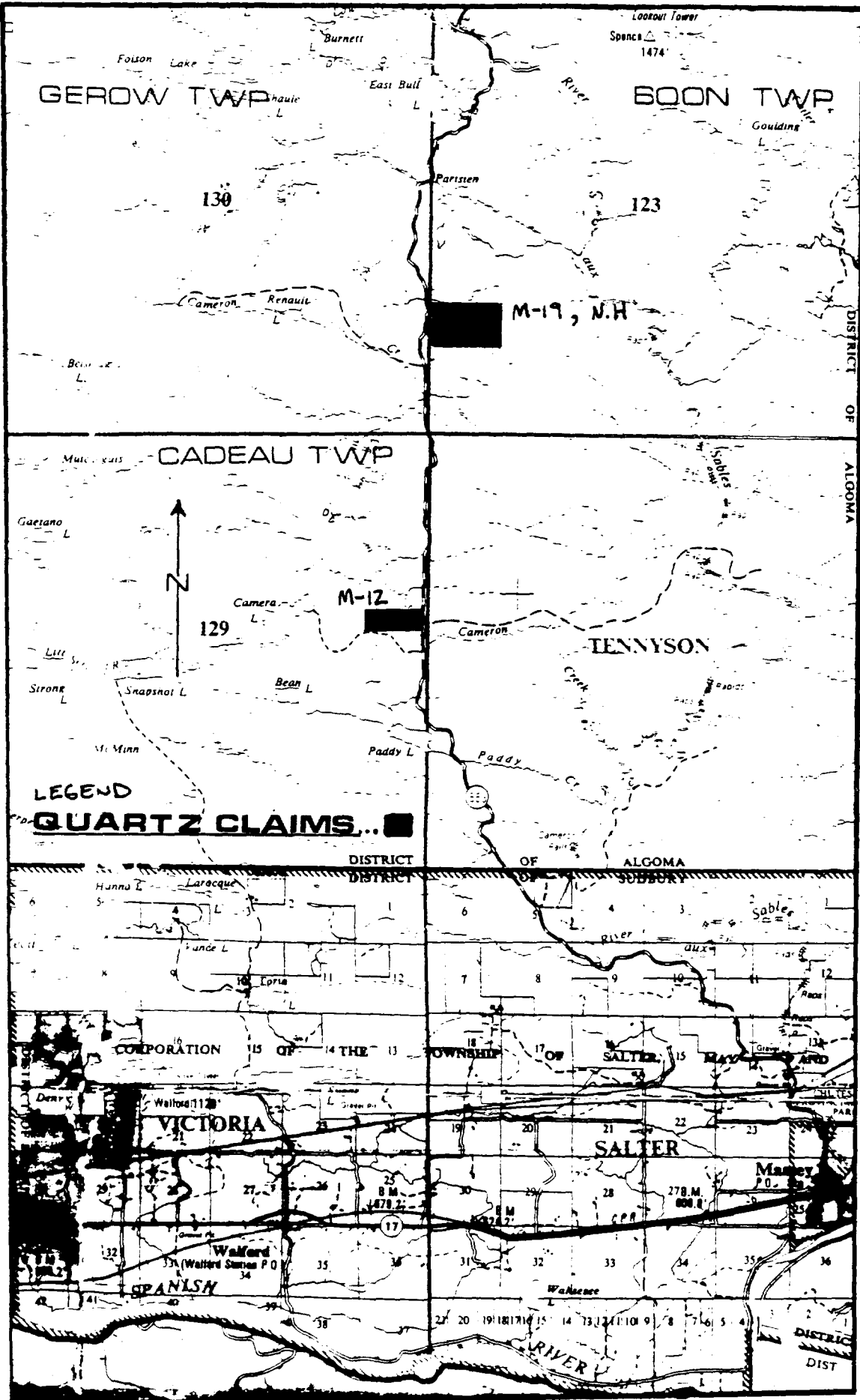
Although the  $TiO_2$  samples values (see drill log) are low and within the limits required by the silicon metal customer, the high  $Al_2O_3$  and  $Fe_2O_3$  content disqualify the quartz for the production of silicon metal.

The exposed area of quartz on the three ridges at the 12 mile site is 9173 sq meters, a quarrying depth of 12 meters gives a total rock volume of 110,076 cu metres or 286,716 tonnes.

From the diamond drill holes it is estimated 45% of this is quartz taking out the zones of schist giving a total reserve of quartz of 129,000 tonnes.

The quartz material is suitable for smelter flux, concrete products and landscape material.

By June 28, 1994 it appeared that the product was not suitable for the primary market of high silica quartz. At that time exploration ceased. No diamond drilling was done on the East end of the property. If diamond drilling did occur on the East end and if holes drilled were deeper than the probability of increased reserves for a secondary market would be greater than 129,000 tonnes.



SCALE: 1" = 2 MILES



John Clark P.Eng. Geologist

Telephone (705) 865-2818

105 First Street  
Massey  
Ontario  
POP 1P0

27 July 1994

To:

Mr. Norm Cecutti, C.A.  
President  
Quartec Mineral Developments Inc.  
2008 Lasalle Blvd.  
Sudbury

Here is a list of drawings I have supplied for the site work done in Cadeau and Boon Townships North of Massey.

Drawing #	Title	Scale
A1-0009	12 MILE SITE DIAMOND DRILL HOLES	1:1000
A1-0010	12 MILE SITE DRILL HOLES M1, M2	1:100
A1-0011	12 MILE SITE DRILL HOLES M3, M4	1:100
A1-0012	12 MILE SITE DRILL HOLES M5, M6	1:100
A1-0013	12 MILE SITE DRILL HOLE M7	1:100
A1-0014	12 MILE SITE DRILL HOLE M8	1:100
D4-0001	12 MILE SITE LOCATION OF QUARTZ EXPOSURE	1:5000
D4-0002A	12 MILE SITE SITE WORK COMPLETED	1:1000
D4-0003	12 MILE SITE GEOLOGY WEST SITE AREA	1:500
D4-0004	12 MILE SITE GEOLOGY EAST SITE AREA	1:500
D4-0005	19 MILE SITE WORK AND SAMPLE LOCATION	1:5000

The size of A1 drawings being 8.5" x 11.0", and D4 being 22" x 34"

A1-0009 is a plan showing the location and direction of all the diamond drill holes drilled on the 12 Mile Site.

A1-0010 to A1-0014 are sections through the diamond drill holes showing the dip and some interpretation to the surface.

D4-0001 is a map showing the location of the 12 Mile Site quartz and claim relative to Highway 553 North of Massey.

D4-0002A shows the work completed at the 12 Mile Site. This includes bush cutting, overburden stripping, trail making, line marking, pit and face drilling and blasting, plugger/jackleg holes drilled that were not blasted and diamond drilling.

D4-0003 shows the surface geology of the Western half of the 12 Mile Site quartz exposure.

D4-0004 shows the surface geology of the Eastern half of the 12 Mile Site quartz exposure.

D4-0005 is a map of the 19 Mile Site in Boon Township showing the location of chip samples taken from the surface and the base line marked.

Yours truly,

*John Clark*

DECLARATION

I, John Clark, of the town of Massey, Ontario, Canada, hereby state:

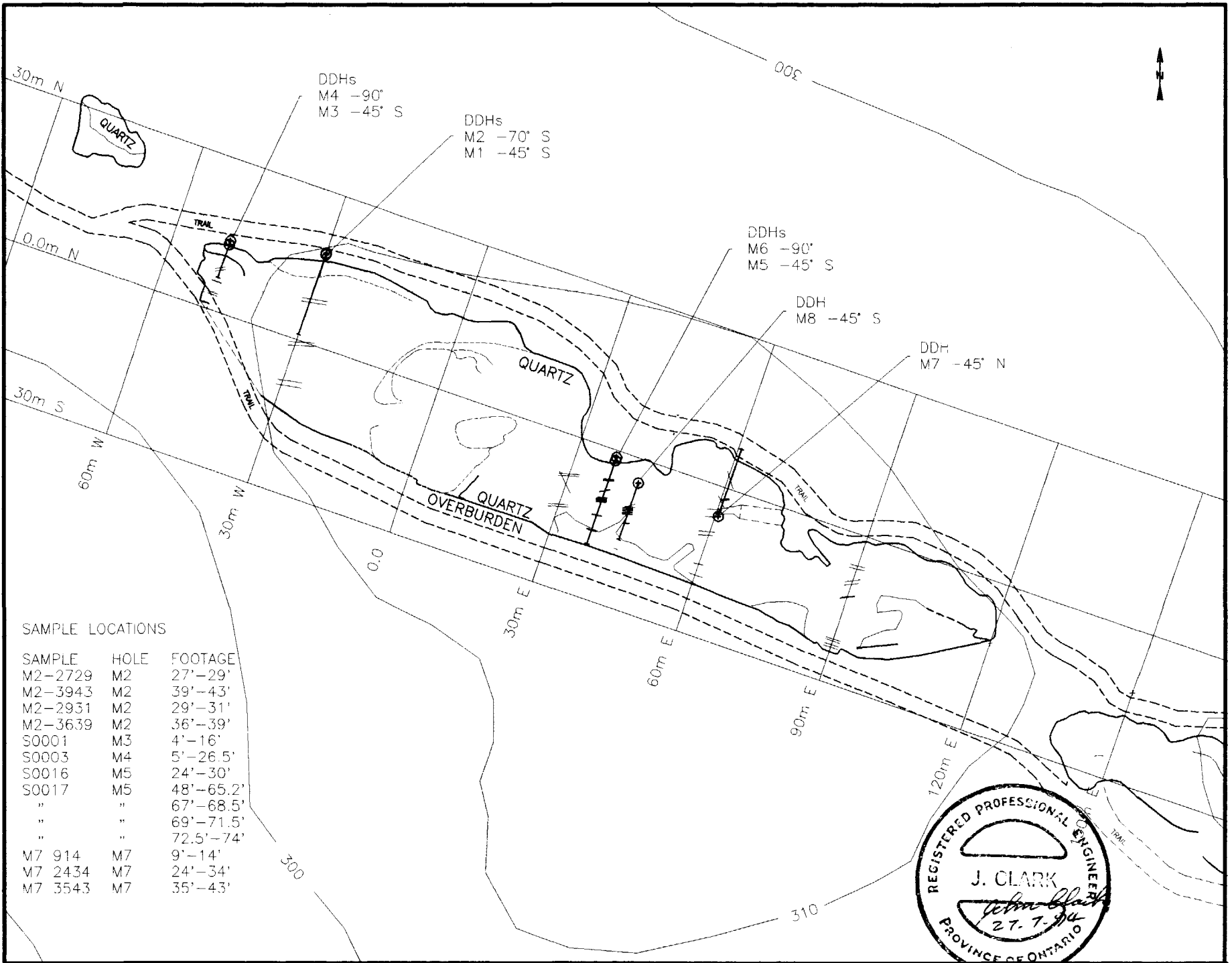
1. that I am a Professional Engineer registered in the Province of Ontario as a Geologist and that my licence to practice is not now, and never has been, in a state of suspension or revocation,
2. that I have practised my profession as a Geologist continuously since 1971 and as a Professional Engineer since 1974,
3. that I have received the degree of Bachelor of Science in Geology from Queen's University in Canada,
4. that I do not now have, and do not anticipate receiving, any direct or indirect financial interest in the property referred to in this report.

Respectfully submitted,



27. 7. 94

John Clark



DDHs  
M4 -90°  
M3 -45° S

DDHs  
M2 -70° S  
M1 -45° S

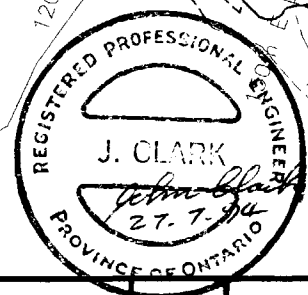
DDHs  
M6 -90°  
M5 -45° S

DDH  
M8 -45° S

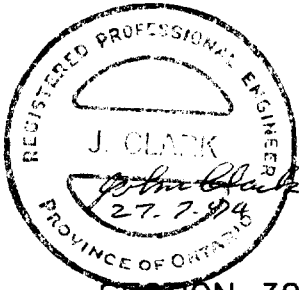
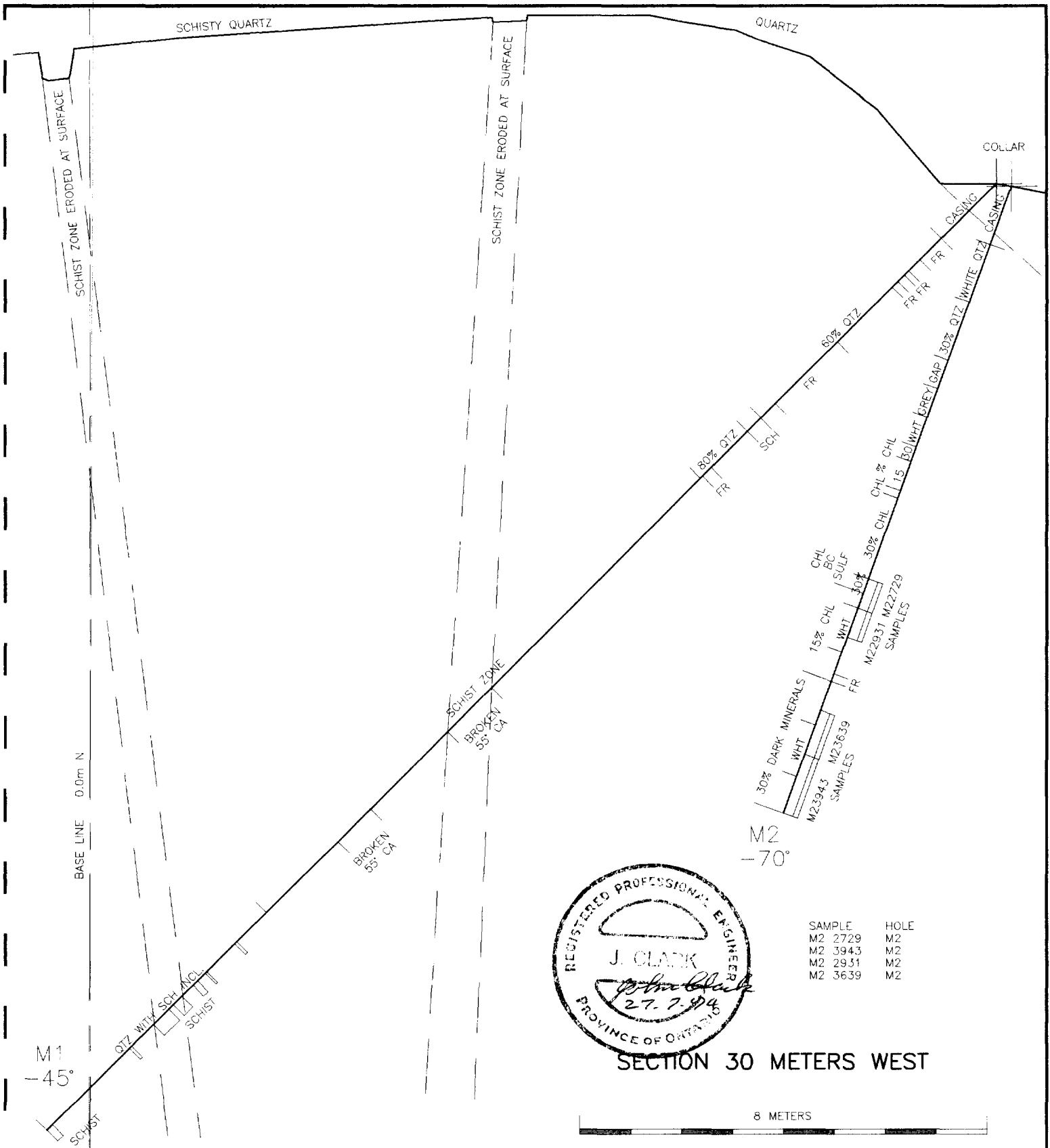
DDH  
M7 -45° N

SAMPLE LOCATIONS

SAMPLE	HOLE	FOOTAGE
M2-2729	M2	27'-29'
M2-3943	M2	39'-43'
M2-2931	M2	29'-31'
M2-3639	M2	36'-39'
S0001	M3	4'-16'
S0003	M4	5'-26.5'
S0016	M5	24'-30'
S0017	M5	48'-65.2'
"	"	67'-68.5'
"	"	69'-71.5'
"	"	72.5'-74'
M7 914	M7	9'-14'
M7 2434	M7	24'-34'
M7 3543	M7	35'-43'



<b>QUARTEC MINERAL DEVELOPMENTS INC.</b>	DRAWN BY <b>J. CLARK</b>	DATE <b>30.6.94</b>	SCALE <b>1:1000</b>	TITLE <b>12 MILE SITE DIAMOND DRILL HOLES</b>	FILE <b>A1</b>	DWG NUMBER <b>0009</b>	REV. 

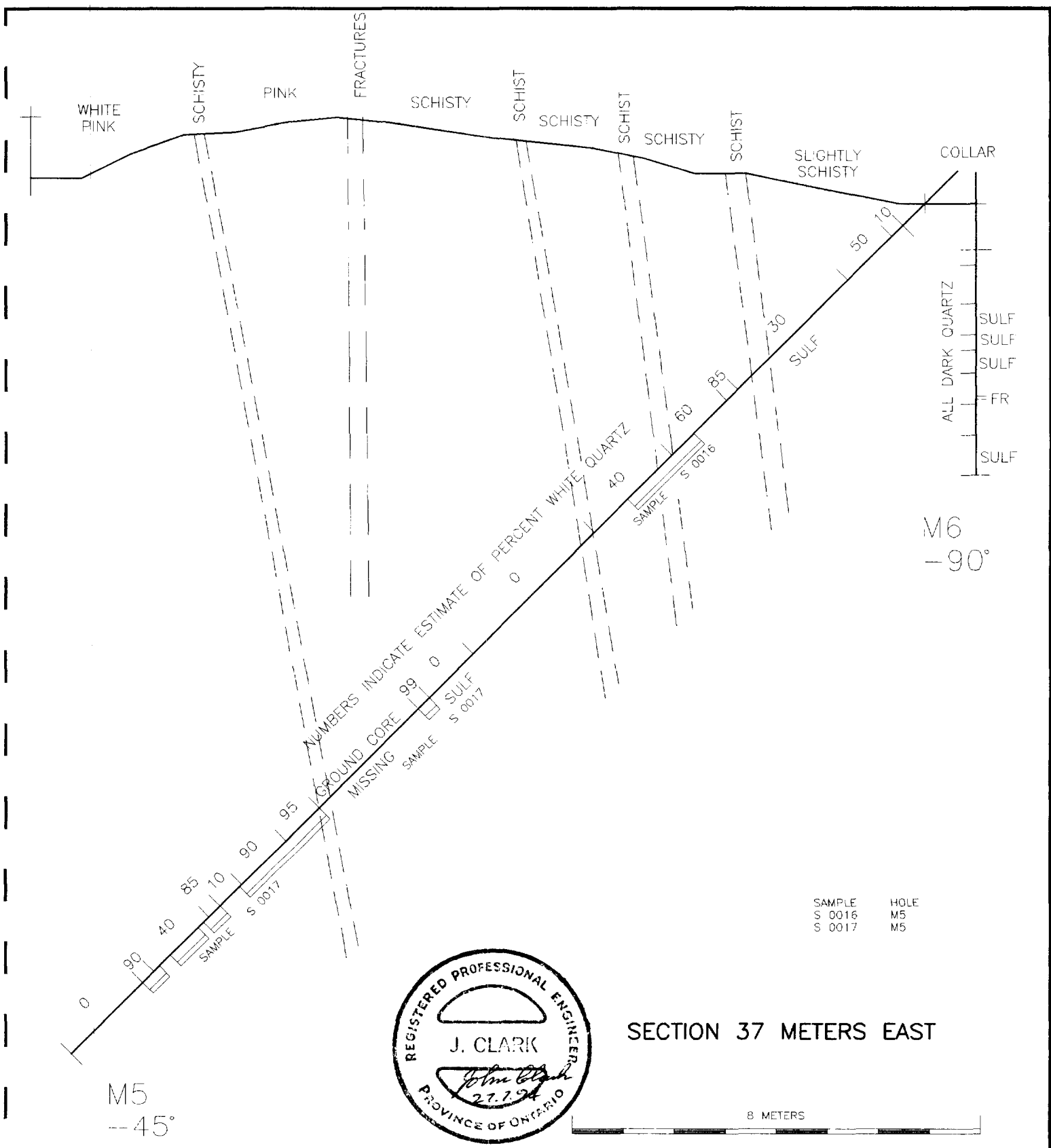


SAMPLE	HOLE
M2 2729	M2
M2 3943	M2
M2 2931	M2
M2 3639	M2

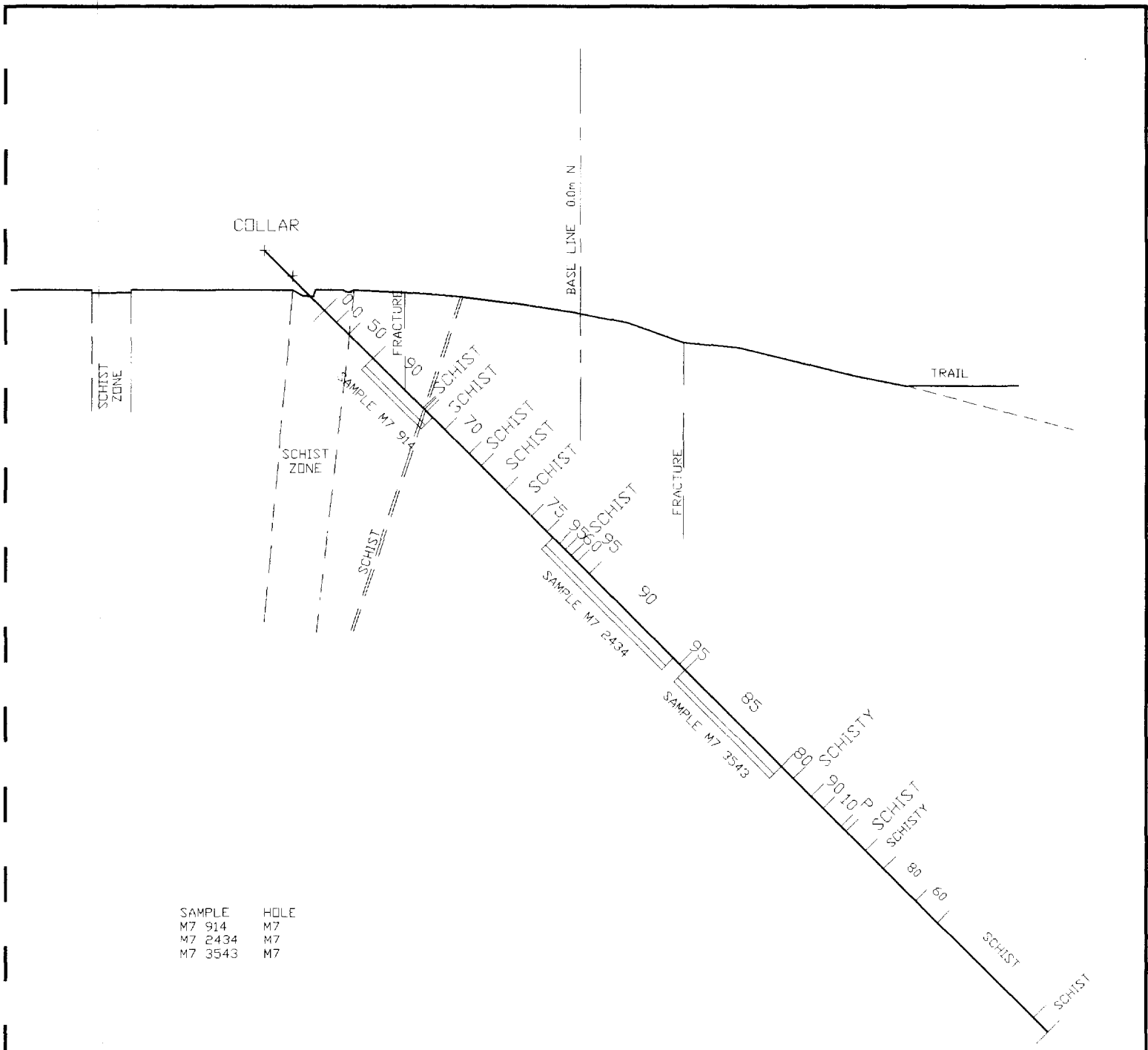
SECTION 30 METERS WEST

<b>QUARTEC MINERAL DEVELOPMENTS INC.</b>	SCALE	1:100	TITLE <b>12 MILE SITE</b> <b>DRILL HOLES M1, M2</b>	FILE	NUMBER	REV
	DRAWN BY	J.CLARK		<b>A1 0010</b>		
	DATE	30.6.94				



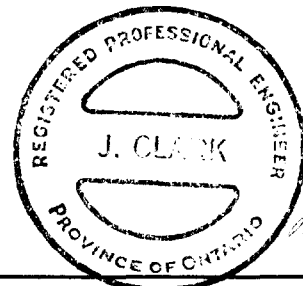


<b>QUARTEC MINERAL DEVELOPMENTS INC.</b>	SCALE	1:100	TITLE <b>12 MILE SITE</b> <b>DRILL HOLES M5, M6</b>	FILE	NUMBER	REV
	DRAWN BY	J.CLARK		A1	0012	
	DATE	30.6.94				



SECTION 60 METERS EAST

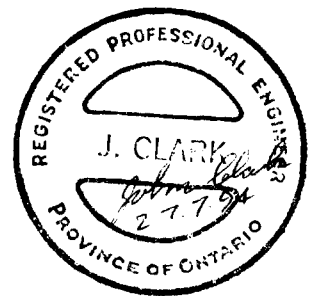
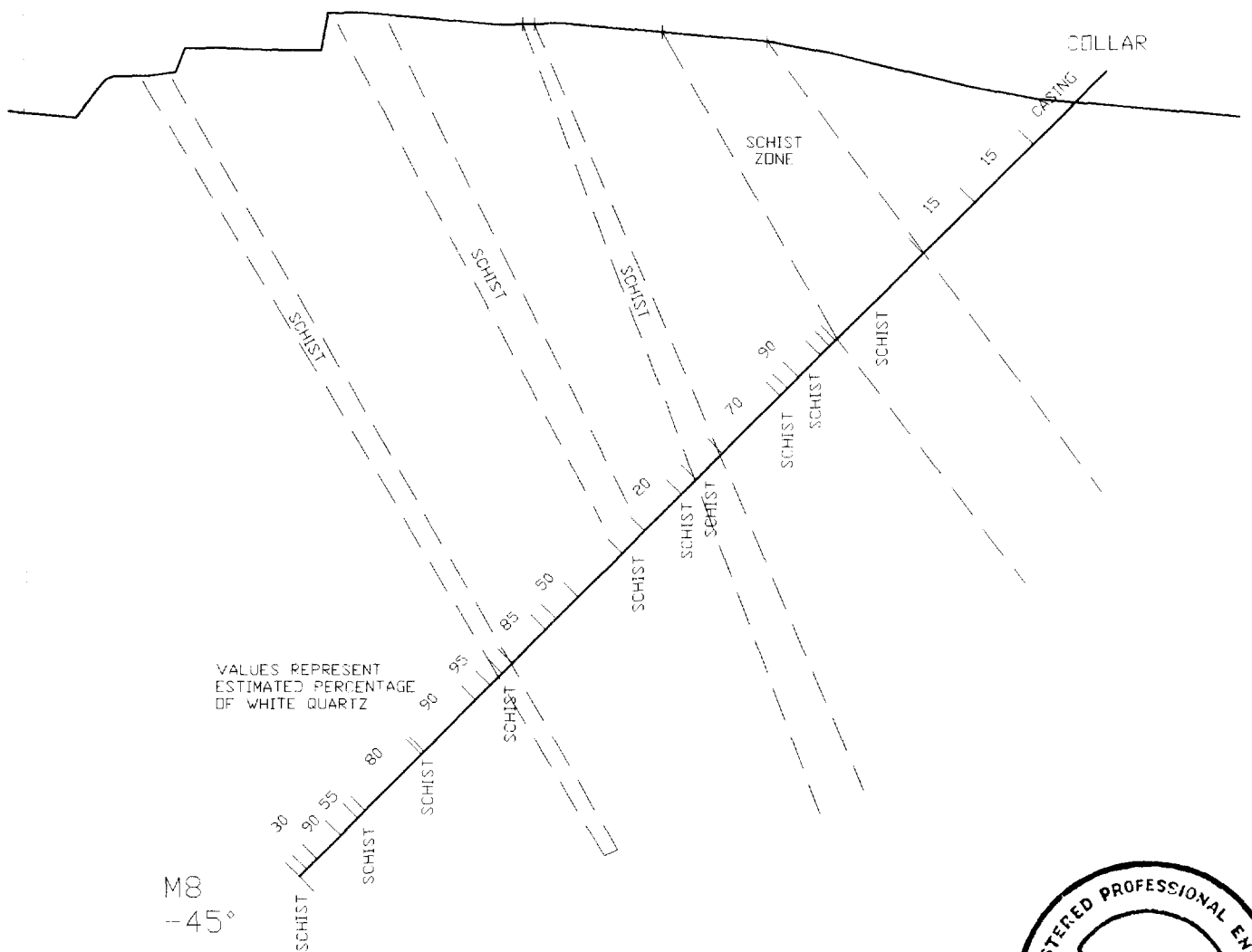
SAMPLE	HOLE
M7 914	M7
M7 2434	M7
M7 3543	M7



*John Clark*  
27.7.94

M7  
-45°

QUARTEC MINERAL DEVELOPMENTS INC.	SCALE	1:100	TITLE 12 MILE SITE DRILL HOLE M7	FILE	NUMBER	REV
	DRAWN BY	J.CLARK		A1	0013	
	DATE	30.6.94				



SECTION 43.5 METERS EAST



<b>QUARTEC MINERAL DEVELOPMENTS INC.</b>	SCALE	1:100	TITLE <b>12 MILE SITE          DRILL HOLE M8</b>	FILE	NUMBER	REV
	DRAWN BY	J.CLARK		<b>A1</b>	<b>0014</b>	
	DATE	30.6.94				



# DIAMOND DRILL LOG

## QUARTEC MINERAL DEVELOPMENTS INC.

HOLE No. M1 LOCATION MIKE 12 DIP -45 AZIMUTH 205° <sup>MAG.</sup> DATE STARTED 27 May 1994

LENGTH 86.5 FEET/METERS ft.

DATE COMPLETED 3 June 1994

NORTH 17.85m EAST -30m ELEVATION ..... LOGGED BY JC, ER PAGE 1 of 2

From	To	Description	Sample No.						
0	5 ft	casing							
5'	21.5'	White quartz with chloritic sections Dark sections 40%							
5'	7'	fractured							
8'	8.4'	fractured							
9'	9.5'	fractured							
19.5'	20.2'	fractured							
21.5'	22.7'	Dark schist with minor quartz stringers							
22.7'	27.0'	quartz. chloritic sections 20%							
26.0'	26.8'	fractured							
27.0'	66.5'	schist zone with minor quartz stringers							
46.0'	50.0'	badly broken core along schist planes at 55° CA.							
57.0'	60.0'	"							
66.5'	86.5'	quartz with schist inclusions E.O.H. 25% of sample is dark schist as follows							



# DIAMOND DRILL LOG

## QUARTEC MINERAL DEVELOPMENTS INC.

HOLE No. M 2 LOCATION MILE 12 DIP -70° AZIMUTH 205° DATE STARTED 4 June 1994  
 LENGTH 43.0 FEET/METERS ft. DATE COMPLETED 7 June 1994  
 NORTH 18.15m EAST -30m ELEVATION ..... LOGGED BY ER JC PAGE 1 of 2

From	To	Description	Sample No.						
0	4'	CASING							
4'	27'	Quartz							
4'	8'	white quartz							
8'	12'	30% dark quartz chl. string inclusions							
12'	14'	No core Gap - reported by driller							
14'	16'	grey section							
16'	18'	white							
18'	19'	30% chl.							
19'	21'	15% chl							
21'	21.5'	broken chl. zone							
21.5'	27'	dark 30% chl.							
27'	28'	30% chl. minor sulphides broken core							
28'	34'	15% chl.							



# DIAMOND DRILL LOG

## QUARTEC MINERAL DEVELOPMENTS INC.

HOLE No. M3 LOCATION Mile 12 DIP -45° AZIMUTH 205° DATE STARTED 10 June 1994  
 LENGTH 32.0 FEET/METERS ft. DATE COMPLETED 13 June 1994  
 NORTH 13.4m EAST -48m ELEVATION ..... LOGGED BY JC PAGE 1 of 1

From	To	Description	Sample No.	% Fe <sub>2</sub> O <sub>3</sub>	% Al <sub>2</sub> O <sub>3</sub>	% CaO	% TiO <sub>2</sub>
0	4'	CASING					
4'	5.8'	white quartz					
5.8'	6.0'	chl. schist					
6.0'	6.8'	quartz. some schist					
6.8'	9.0'	white quartz					
9.0'	13.2'	quartz. 60% dark minor sulfide - marcasite					
13.2'	16.0'	quartz 5% dark					
16.0'	18.0'	quartz 40% dark					
18.0'	32.0'	very dark quartz					
"	"	fractures 45°-65° CA chl ff. minor sulf. blebs and fine disseminated sulf					
		SAMPLED:					
4'	16'	FLUX SAMPLE	S 0001	0.225	0.410	0.017	0.004
18'	32'	COMPOSITE SAMPLE FOR METAL ASSAYS	S 0002				

# DIAMOND DRILL LOG

## QUARTEC MINERAL DEVELOPMENTS INC.

HOLE No. M4 LOCATION MILE R DIP -90° AZIMUTH ..... DATE STARTED 14 June 94

LENGTH 42.0' FEET/METERS 12 DATE COMPLETED 15 June 94

NORTH 14.2m EAST -48m ELEVATION ..... LOGGED BY Jc PAGE 1 of 2

From	To	Description	Sample No.						
0	5'	CASING							
5'	6'	quartz 10% dark broken core							
6'	18'	quartz 5% dark							
18'	19'	quartz 70% dark							
19'	21'	quartz 5% dark							
21'	22'	quartz 50% dark broken. sulphide specs							
22'	25'	quartz white							
25'	26.5'	quartz 20% dark sulfide blebs							
26.5'	27'	quartz 70% dark white metallic specs							
27'	28'	quartz 5% dark							
28'	31'	quartz 50% dark							
31'	33'	quartz 15% dark							
33'	42'	quartz 60% dark sulfide specs							



# DIAMOND DRILL LOG

## QUARTEC MINERAL DEVELOPMENTS INC.

HOLE No. M5 LOCATION MILE 12 DIP -45° AZIMUTH 205° DATE STARTED 16 June 74

LENGTH 80.5' FEET/METERS FR DATE COMPLETED 21 June 74

NORTH -2m EAST 37.8m ELEVATION ..... LOGGED BY JC PAGE 1 of 2

From	To	Description	Sample No.					
0	5'	CASING						
5'	6'	quartz 90% dark broken - 2" max length some pink mins.						
6'	10'	quartz 50% dark chl fractures 1"-2" apart 40-50° CA						
10'	20'	quartz 70% dark broken chl fractures CA ~ 45° sulf at 14.5', qtz white 10'-11'						
20'	21'	quartz 15% dark. some pink broken						
21'	26'	quartz 40% dark banded sulfide specs at 21.5'						
26'	33'	quartz 60% dark sulf specs at 26', 30', 32.5'						
33'	44'	quartz black, schisty broken						
44'	48'	quartz black schisty badly broken, < 1" sulf 46'-47'						
48'	49'	quartz white calcopyrite specs						
49'	58'	Ground core - missing						
58'	61'	quartz white 5% dark badly broken						
61'	65.5'	quartz 10% dark slightly schisty						





# DIAMOND DRILL LOG

## QUARTEC MINERAL DEVELOPMENTS INC.

HOLE No. M 6 LOCATION MILE 12 DIP -90° AZIMUTH ..... DATE STARTED 21 June 94

LENGTH 19.6' FEET/METERS ft DATE COMPLETED 22 June 94

NORTH -7.8m EAST 37.8m ELEVATION ..... LOGGED BY JC PAGE 1 of 1

From	To	Description	Sample No.				
0	5'	CASING					
5'	6'	<del>Dark</del> Dark, schisty 90% dark broken < 1"					
6'	8.5'	quartz - pink, some schist inclusions					
8.5'	10.5'	schist sulfides					
10.5'	11.5'	Pink quartz, some schist sulfide specs					
11.5'	13.0'	Dark quartz Disseminated sulfides in layers					
13.0'	15.0'	Pink quartz broken 14.5' - 14.7'					
15.0'	17.0'	Dark greenish schisty fractures CA 30°					
17.0'	19.6'	sulf specs					

EDH

DIAMOND DRILL LOG  
**QUARTEC MINERAL DEVELOPMENTS INC.**

HOLE No. M7 LOCATION Mite 12 DIP -45° AZIMUTH 25° DATE STARTED 23 June 94

LENGTH 65.2' FEET/METERS ft

DATE COMPLETED 27 June 94

NORTH -5.8m EAST 60.6m ELEVATION ..... LOGGED BY JC PAGE 1 of 3

From	To	Description	Sample No.						
0'	5'	CASING							
5.0'	6.0'	dark schist. 2" pieces disseminated sulf in bands							
6.0'	7.0'	schist. badly broken							
7.0'	9.0'	dark quartz 50% dark banded							
9.0'	13.2'	white quartz 90% qtz							
13.2'	13.3'	schist							
13.3'	13.5'	white quartz							
13.5'	15.0'	dark chl. schist							
15.0'	17.0'	dark quartz. 30% dark							
17.0'	18.0'	dark schist							
18.0'	20.0'	dark schist CA 50°							
20.0'	22.2'	schist badly broken							
22.2'	23.5'	quartz 25% dark minis							

DIAMOND DRILL LOG  
**QUARTEC MINERAL DEVELOPMENTS INC.**

HOLE No. M.7 LOCATION Mile 12 DIP -45° AZIMUTH 25° DATE STARTED 23 June 1994

LENGTH 65.2 FEET/METERS ft

DATE COMPLETED 27 June 1994

NORTH -5.8m EAST 60.6m ELEVATION ..... LOGGED BY JC PAGE 2 of 3

From	To	Description	Sample No.						
23.5'	24.5'	pink quartz badly broken							
24.5'	25.0'	quartz 5% dark							
25.0'	25.5'	schist							
25.5'	26.0'	quartz 40% dark							
26.0'	27.0'	quartz 5% dark broken < 1"							
27.0'	34.5'	quartz 10% dark broken < 2"							
34.5'	35.0'	quartz 5% dark							
35.0'	43.0'	quartz 15% dark							
43.0'	44.0'	quartz banded 20% dark							
44.0'	45.5'	quartz schisty badly broken CA 15°							
45.5'	46.5'	quartz 10% dark							
46.5'	48.0'	quartz, schisty, 90% dark diss sulf in schists							
48.0'	48.9'	quartz band slightly pink							



DIAMOND DRILL LOG  
**QUARTEC MINERAL DEVELOPMENTS INC.**

HOLE No. M18 LOCATION MILE 12 DIP -45° AZIMUTH 205° DATE STARTED 27 June 94

LENGTH 55' FEET/METERS ft DATE COMPLETED 28 June 94

NORTH -4.7m EAST 43.5m ELEVATION ..... LOGGED BY JC PAGE 1 of 3

From	To	Description	Sample No.						
0	5'	CASING							
5'	9'	Dark. 85% black badly broken							
9'	12.5'	schisty 85% black							
12.5'	18.5'	schist							
18.5'	18.9'	missing driller reported sand							
18.9'	19.5'	broken core 90% black							
19.5'	21.0'	schist							
21.0'	21.8'	quartz 10% black							
21.8'	22.3'	schist							
22.3'	26.2'	Pink quartz 30% dark mins							
26.2'	28.0'	schist, broken disks CA 75°							
28.0'	29.0'	schist							
29.0'	31.5'	quartz. 80% dark minerals							

DIAMOND DRILL LOG  
**QUARTEC MINERAL DEVELOPMENTS INC.**

HOLE No. M18 LOCATION MILE 12 DIP -45° AZIMUTH 205° DATE STARTED 27 June 74

LENGTH 55' FEET/METERS ft DATE COMPLETED 28 June 74

NORTH -4.7m EAST 43.5m ELEVATION ..... LOGGED BY JC PAGE 2 of 3

From	To	Description	Sample No.						
31.5'	33.0'	schist							
33.0'	36.0'	broken schisty							
36.0'	37.5'	quartz. 50% dark							
37.5'	38.2'	schisty. broken							
38.2'	40.5'	quartz 15% dark							
40.5'	41.2'	schist							
41.2'	42.0'	quartz 15% dark							
42.0'	43.0'	quartz. white broken							
43.0'	46.5'	quartz 10% dark							
46.5'	46.7'	schist							
46.7'	50.5'	quartz. 20% dark banded							
50.5'	51.0'	schist							
51.0'	52.2'	quartz 45% dark bands							

# DIAMOND DRILL LOG

## QUARTEC MINERAL DEVELOPMENTS INC.

HOLE No. M8 LOCATION MILE 12 DIP -45° AZIMUTH 205° DATE STARTED 27 June 94

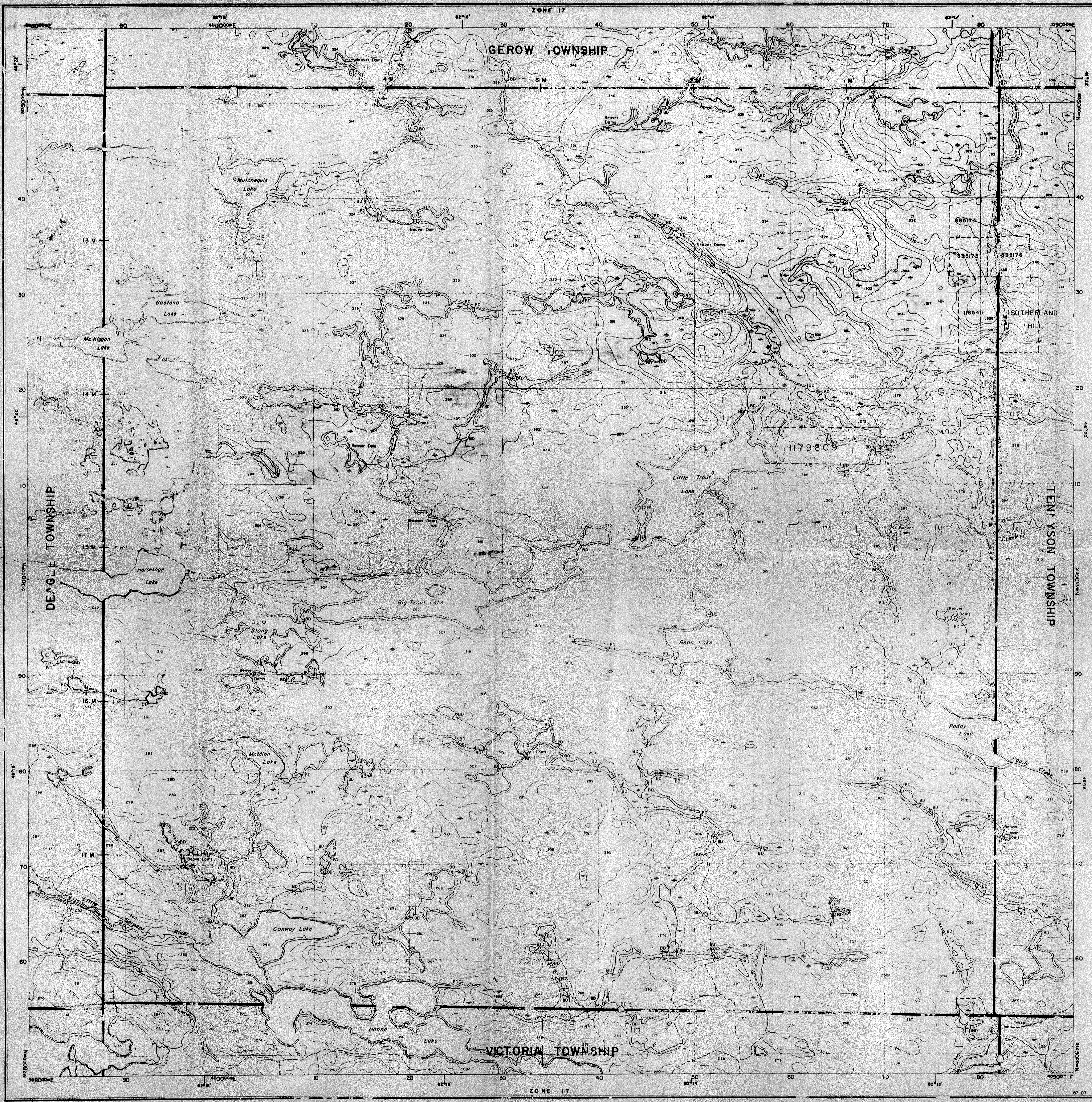
LENGTH 55' FEET/METERS ft DATE COMPLETED 28 June 94

NORTH -4.7m EAST 43.5m ELEVATION ..... LOGGED BY JC PAGE 3 of 3

From	To	Description	Sample No.				
52.7	53.8'	quartz 10% dark					
53.8'	54.5'	quartz 70% dark					
54.5'	55.0'	schist - broken					

*EDH*





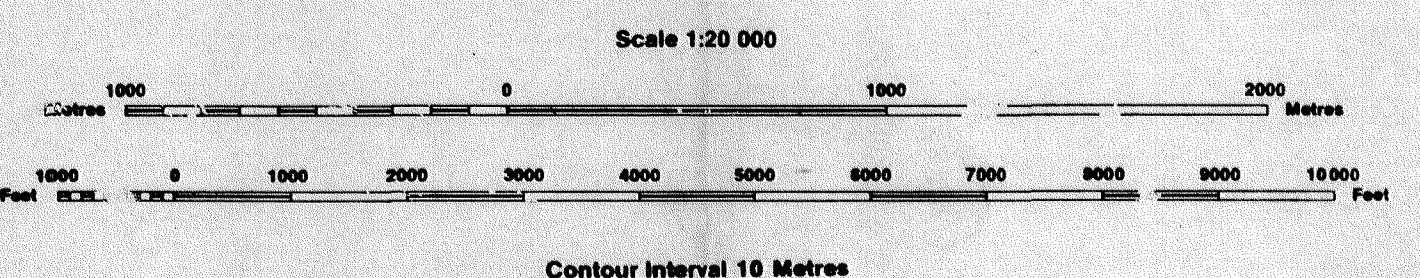
**INDEX TO LAND DISPOSITION**

PLAN  
**G-2950**  
 TOWNSHIP

DATE OF ISSUE  
**JUL 29 1992**  
 SUBURBY  
 MINING RECORDER'S OFFICE

**CADEAU**  
 0A44-082

M.N.R. ADMINISTRATIVE DISTRICT  
**ESPANOLA**  
 MINING DIVISION  
**SUDBURY**  
 LAND TITLES/REGISTRY DIVISION  
**ALGOA**



**AREAS WITHDRAWN FROM DISPOSITION**

MRO - Mining Rights Only  
 SRO - Surface Rights Only  
 M + S - Mining and Surface Rights

**SYMBOLS**

Description	Order No.	Date	Disposition	File
Boundary				
Township, Meridian, Baseline				
Road allowance; surveyed				
shoreline				
Lot/Concession; surveyed				
unsurveyed				
Parcel; surveyed				
unsurveyed				
Right-of-way; road				
railway				
utility				
Reservation				
Cliff, Pit, Pile				
Contour				
Interpolated				
Approximate				
Depression				
Control point (horizontal)				
Flooded land				
Mine shaft frame				
Pipeline (above ground)				
Railway; single track				
double track				
abandoned				
Road; highway, county, township				
access				
trail, bush				
Shoreline (original)				
transmission line				
Wooded area				

**DISPOSITION OF CROWN LANDS**

Patent	
Surface & Mining Rights	●
Surface Rights Only	○
Mining Rights Only	◐
Lease	
Surface & Mining Rights	■
Surface Rights Only	□
Mining Rights Only	◻
License of Occupation	▼
Order-in-Council	OC
Cancelled	⊙
Reservation	⊖
Sand & Gravel	⊕

THE INFORMATION THAT  
 APPEARS ON THIS MAP  
 HAS BEEN COMPILED  
 FROM VARIOUS SOURCES,  
 AND ACCURACY IS NOT  
 GUARANTEED. THOSE  
 WISHING TO STAKE  
 MINING CLAIMS SHOULD  
 CONSULT WITH THE  
 MINING RECORDER,  
 MINISTRY OF  
 NORTHERN DEVELOP-  
 MENT AND MINES, FOR  
 ADDITIONAL INFORMATION  
 ON THE STATUS OF THE  
 LANDS SHOWN HEREON.

RECEIVED  
 JUL 19 1992  
 SUBURBY  
 MINING RECORDER'S OFFICE

IN SERVICE AUGUST 19, 1992

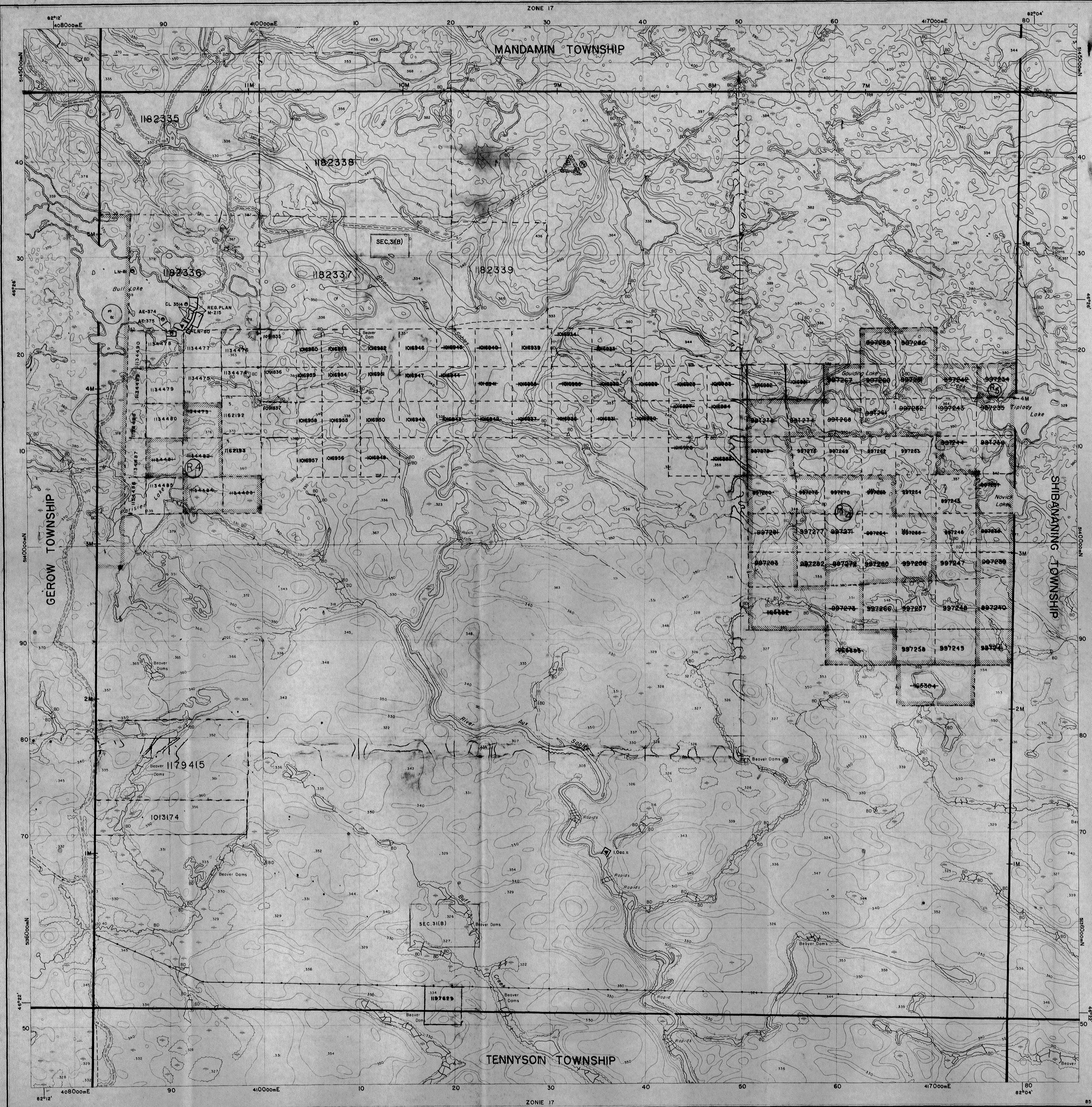
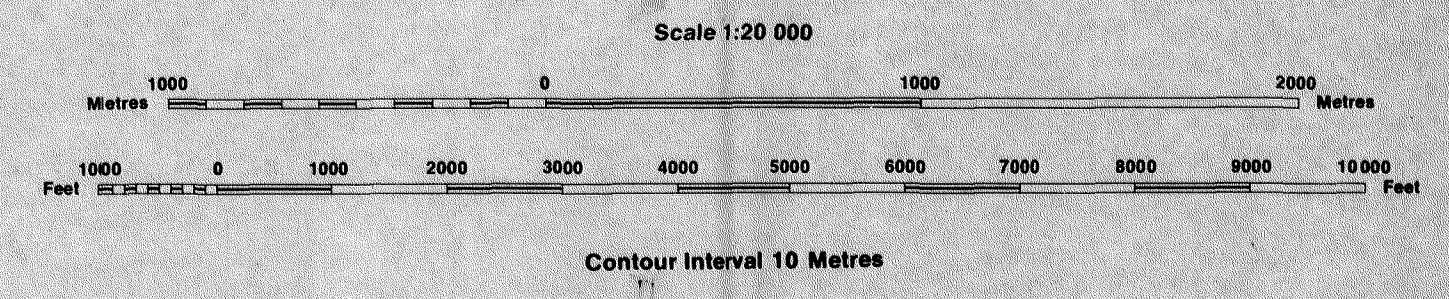


INDEX TO LAND DISPOSITION

PLAN G-3180 TOWNSHIP BOON 0194-037

DATE OF ISSUE JUL 29 1984 SHIBBURY MINING RECORDER'S OFFICE

M.N.R. ADMINISTRATIVE DISTRICT ESPANOLA MINING DIVISION SUDBURY LAND TITLES/REGISTRY DIVISION ALGOMA



SYMBOLS

- Boundary Township, Meridian, Baseline... Road allowance; surveyed... Lot/Concession; surveyed... Parcel; surveyed... Right-of-way; road... utility... Reservation... Cliff, Pit, Pile... Contour... Interpolated... Approximate... Depression... Control point (horizontal)... Flooded land... Mine head frame... Pipeline (above ground)... Railway; single track... double track... abandoned... Road; highway, county, township... access... trail, bush... Shoreline (original)... Transmission line... Wooded area

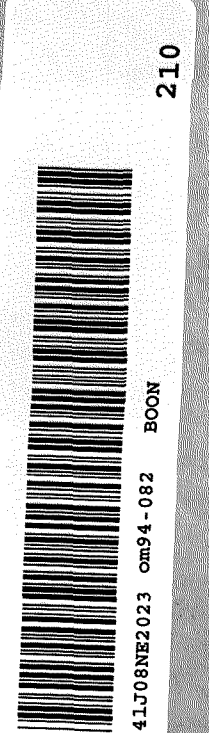
AREAS WITHDRAWN FROM DISPOSITION

Table with columns: Description, Order No., Date, Disposition, File. Includes entries for SEC. 36/80, SEC. 36/80, SEC. 185(1), and SEC. 185(1).

DISPOSITION OF CROWN LANDS

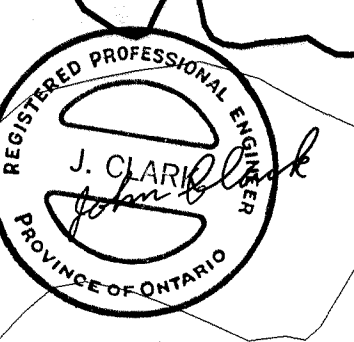
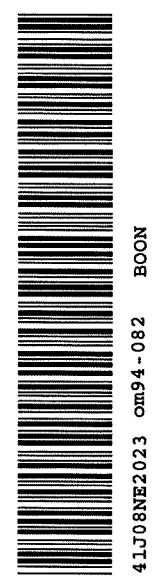
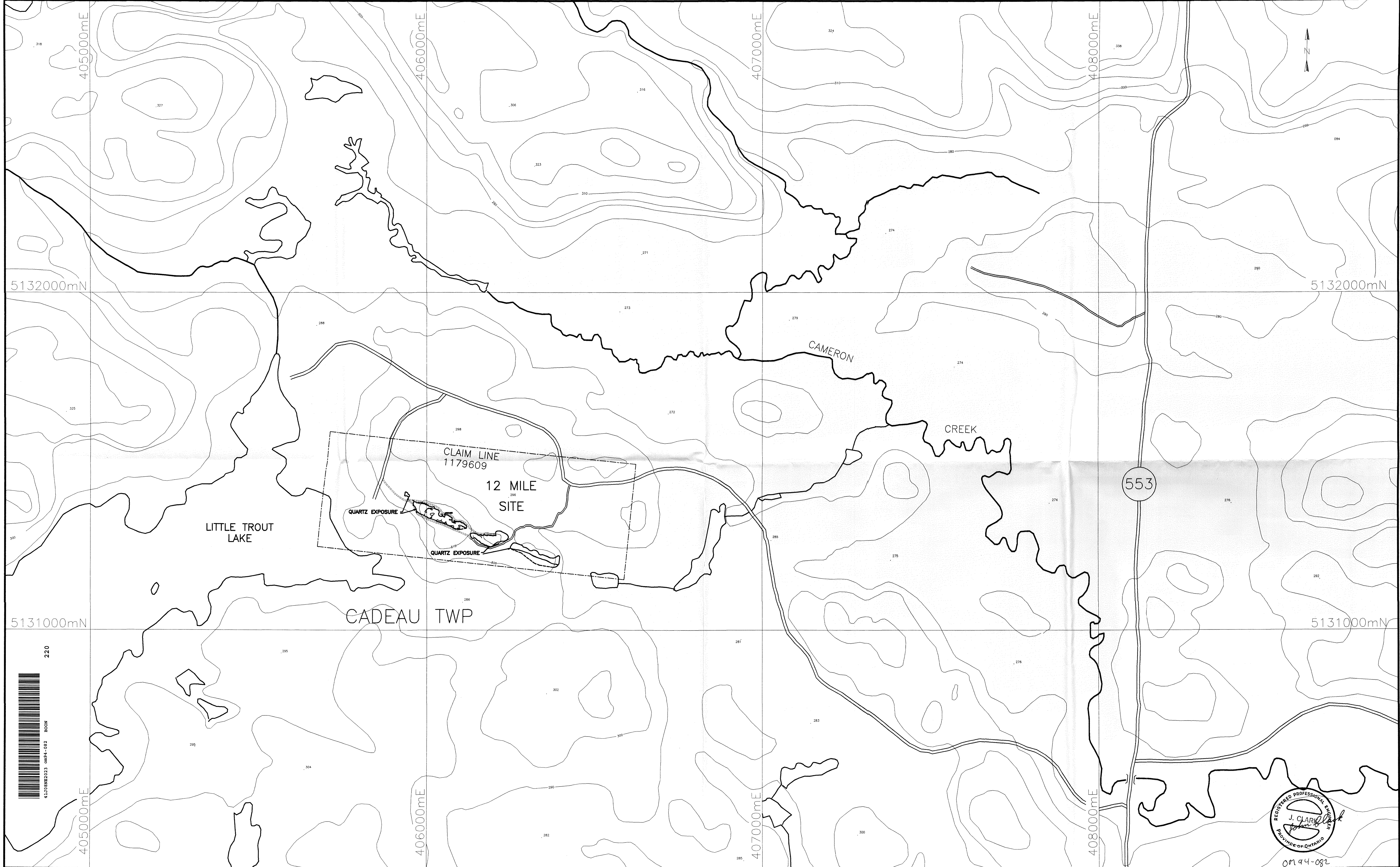
- Patent Surface & Mining Rights... Surface Rights Only... Mining Rights Only... Lease Surface & Mining Rights... Surface Rights Only... Mining Rights Only... Licence of Occupation... Order-in-Council... Cancelled... Reservation... Sand & Gravel

THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES, FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON.



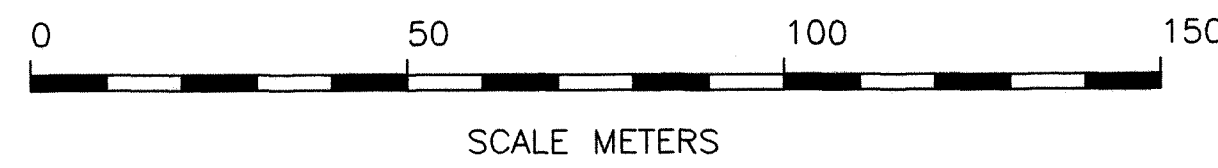
210





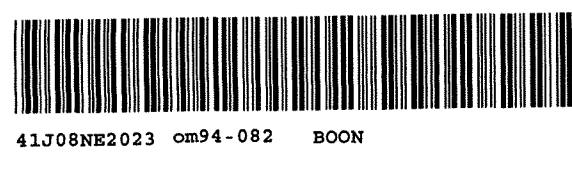
<b>QUARTEC MINERAL DEVELOPMENTS INC.</b>	SCALE	1:5000	TITLE <b>12 MILE SITE</b> <b>LOCATION OF QUARTZ EXPOSURE</b>	FILE	D4	DWG NUMBER	0001	REV.	
	DRAWN BY	J.CLARK							
	DATE	7.7.94							

LEGEND:  
 OLD ROAD  
 NEW TRAIL  
 BUSH CLEARED  
 OVERBURDEN CLEARED  
 ROCK BLASTED  
 JACKLEG HOLES } ■ 6J NUMBER DRILLED  
 NOT BLASTED }  
 PLUGGER HOLES } ■ 77P NUMBER DRILLED  
 NOT BLASTED }  
 DIAMOND DRILL HOLE  
 LINE STAKED  
 CLAIM BOUNDARY  
 QUARTZ EXPOSURE



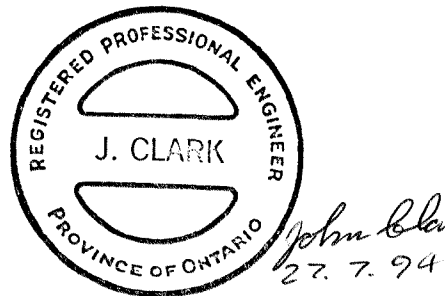
DIAMOND DRILLING				ALL BO
HOLE NUMBER	DIP	AZIMUTH MAGNETIC	LENGTH FEET	CASING FEET
M1	-45°	205°	86.5	5
M2	-70°	205°	43.0	4
M3	-45°	205°	32.0	4
M4	-90°	-	42.0	5
M5	-45°	205°	80.5	5
M6	-90°	-	19.6	5
M7	-45°	25°	65.2	5
M8	-45°	205°	55.0	5

TOTAL LENGTH OF DRILLING 423.8 FEET  
 TOTAL LENGTH OF CASING 38 FEET  
 TOTAL AREA OF BUSH CLEARED 16,420 SQ. METERS  
 TOTAL OVERBURDEN CLEARED TO ROCK SURFACE 5,027 SQ. METERS  
 TOTAL LENGTH OF NEW TRAIL CUT AND LEVELED 622 METERS  
 NUMBER OF PITS AND FACES BLASTED = 14  
 TOTAL AREA OF ROCK BLASTED 102 SQ. METERS  
 TOTAL VOLUME OF ROCK BLASTED 115 CU. METERS  
 NUMBER OF JACKLEG HOLES DRILLED BUT NOT BLASTED = 36  
 NUMBER OF PLUGGER HOLES DRILLED BUT NOT BLASTED = 77



230

TOPOGRAPHY TAKEN FROM MINISTRY OF NATURAL RESOURCES MAP BASE 1:20,000 AND AIR PHOTOGRAPHY



0894-082

<b>QUARTEC MINERAL DEVELOPMENTS INC.</b>	SCALE	1:1000	REVISION 'A' PLUGGER AND JACKLEG HOLES ADDED. 26.7.94 J.C.	TITLE <b>12 MILE SITE          SITE WORK COMPLETED</b>	FILE	D4	DWG NUMBER	0002	REV.	A
	DRAWN BY	J.CLARK								
	DATE	7.7.94								



LEGEND

QUARTZ EXPOSURE  
 TRAIL  
 FRACTURE  
 SCHIST ZONE  
 BUSH

ROCK TYPES:

QUARTZ	QTZ
WHITE QUARTZ	WQ
GREEN QUARTZ	GQ
ORANGE/PINK QTZ	PQ
DARK GREY QTZ	DGQ
FELDSPATHIC QTZ	FQ
SCHISTY QUARTZ	SHY
CHLORITIC SCHIST ZONE	CLSC
ERODED " "	ER CLSC
LIGHT	LT
DARK	DK
GRANITE	GR
DIABASE	DB
OVERBURDEN	OB

0 10 20 30 40 50  
SCALE METERS

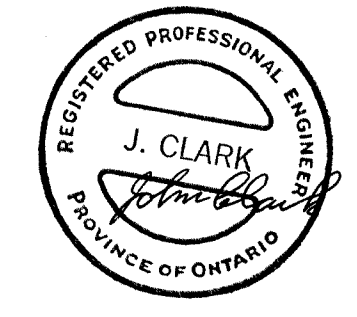
TN  
N  
Z



240

LITTLE TROUT LAKE

CLAIM 1179609 BOUNDARY



0994-082

**QUARTEC MINERAL DEVELOPMENTS INC.**

SCALE	1:500
DRAWN BY	J.CLARK
DATE	8.7.94

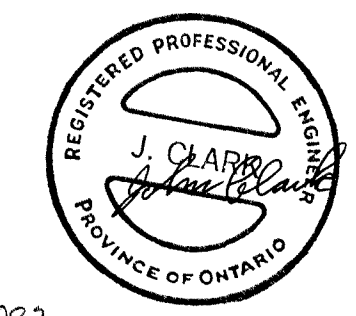
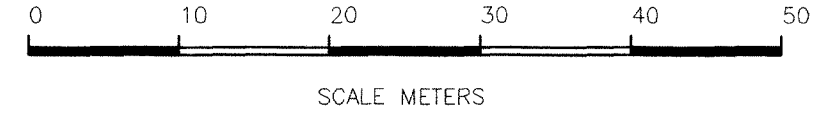
TITLE  
 12 MILE SITE  
 GEOLOGY WEST SITE AREA

FILE  
 D4

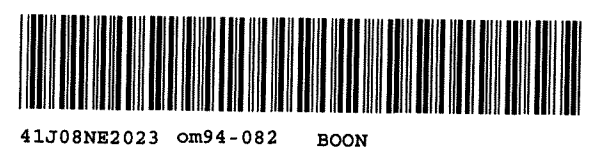
DWG NUMBER  
 0003

REV.

- LEGEND
- QUARTZ EXPOSURE  
 TRAIL  
 FRACTURE  
 SCHIST ZONE  
 BUSH
- ROCK TYPES:  
 QUARTZ QTZ  
 WHITE QUARTZ WQ  
 GREEN QUARTZ GQ  
 ORANGE/PINK QTZ PQ  
 DARK GREY QTZ DGO  
 FELDSPATHIC QTZ FLO  
 SCHISTY QUARTZ SHY  
 CHLORITIC SCHIST ZONE CLSC  
 ERODED " ER CLSC  
 LIGHT LT  
 DARK DK  
 GRANITE GR  
 DIABASE DB  
 OVERBURDEN OB



On 94-082



250

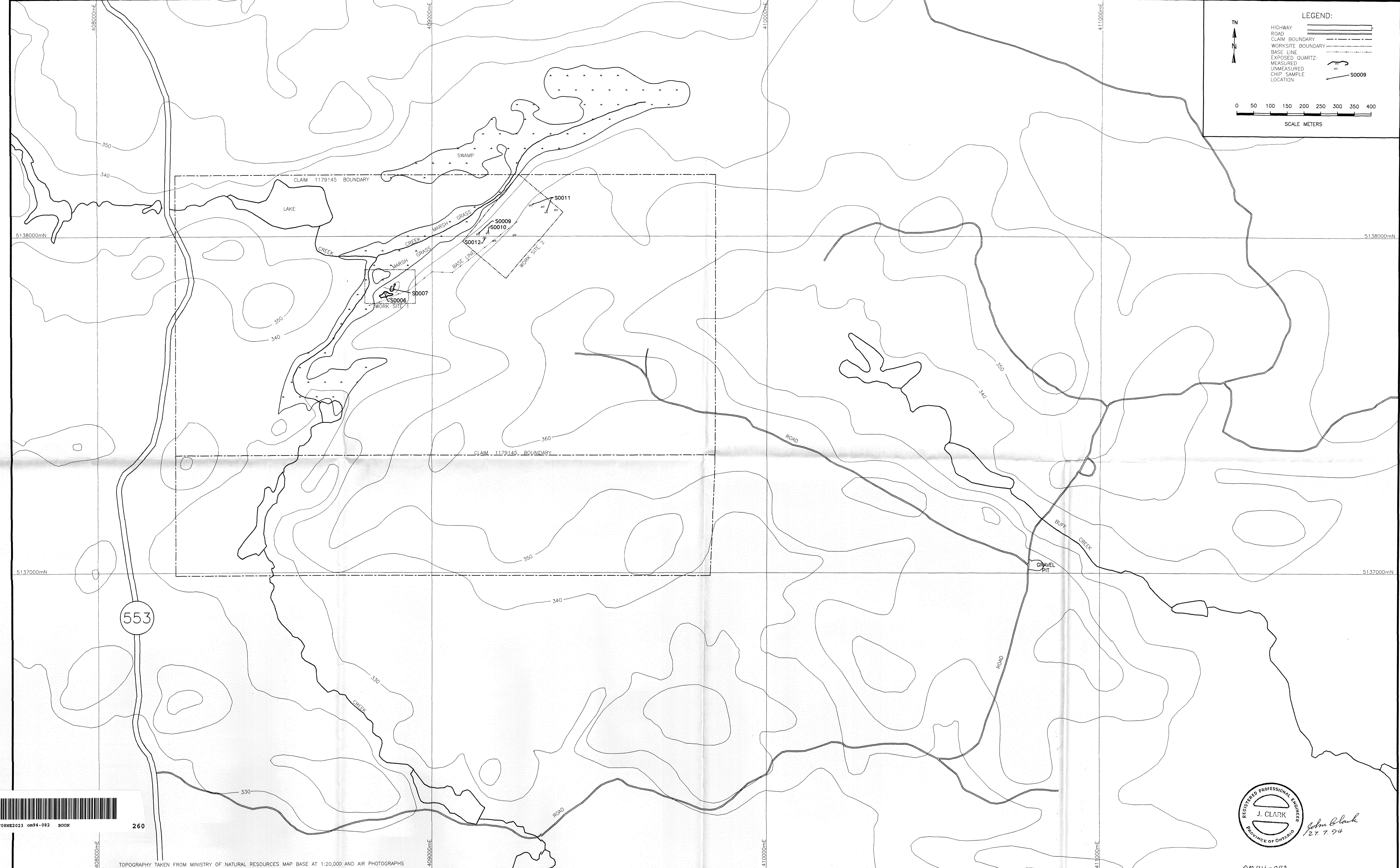
<b>QUARTEC MINERAL DEVELOPMENTS INC.</b>	SCALE	1:500	TITLE <b>12 MILE SITE          GEOLOGY EAST SITE AREA</b>	FILE	D4	DWG NUMBER	0004	REV.	
	DRAWN BY	J.CLARK							
	DATE	9.7.94							



**LEGEND:**

- HIGHWAY
- ROAD
- CLAIM BOUNDARY
- WORKSITE BOUNDARY
- BASE LINE
- EXPOSED QUARTZ:
  - MEASURED
  - UNMEASURED
  - CHIP SAMPLE LOCATION

0 50 100 150 200 250 300 350 400  
SCALE METERS



REGISTERED PROFESSIONAL ENGINEER  
**J. CLARK**  
 PROVINCE OF ONTARIO  
*John Clark*  
 27.7.94

0144-082



260

TOPOGRAPHY TAKEN FROM MINISTRY OF NATURAL RESOURCES MAP BASE AT 1:20,000 AND AIR PHOTOGRAPHS

**QUARTEC MINERAL DEVELOPMENTS INC.**

SCALE	1:5000
DRAWN BY	J.CLARK
DATE	25.7.94

TITLE  
**19 MILE SITE  
 WORK AND SAMPLE LOCATION**

FILE	D4	DWG NUMBER	0005	REV.	
------	----	------------	------	------	--