Diamond Drilling

010

Township of ZAVITZ

Report Nº: 11

Work performed by: Gulf Minerals Canada Limited

Claim Nº	Hole Nº	Footage	Date	Note
L 381308	Z-1	546.0'	Nov/75	(1) (2) ✓
L 371765	Z-2	527.0'	Oct/75	(1) ✓
L 353177-8	Z-3	706.0'	Oct/75	(1) ✓
L 371763-4	Z-4	677.0'	Oct/75	(1) ✓
L 353178	Z-5 (6)	554.0'	Oct/75	(1) ✓
L 371763	Z-7	618.0'	Nov/75	(1) ✓
L 353177	Z-8	402.0'	Nov/75	(1) ✓
L 381311	Z-9	507.0'	Nov/75	(1)

Notes:

(1) #48-76

(2) #277-75

#48/76

Gulf Minerals Canada Limited

ZAVITZ TOWNSHIP
EXPLORATORY DRILLING PROGRAM
(ALLERSTON OPTION)

C

M. V. White
February, 1976

Gulf Minerals Canada Limited

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ZAVITZ DRILLING PROGRAM

INTRODUCTION

Two blocks of claims in the south eastern part of Zavitz Township, District of Timmiskaming, Ontario, were optioned from Ralph Allerston of Timmins because of their potential for containing a possibly economic volcanogenic massive sulphide deposit.

Geological mapping and detailed magnetometer and E.M. surveys completed by Falconbrdige in 1974 indicated a number of conductors that were potential drill targets. Plans by Falconbridge to drill the property were never realized. Allerston offered the property to Gulf in 1975, and 5,000 feet of exploratory drilling were undertaken to test its potential.

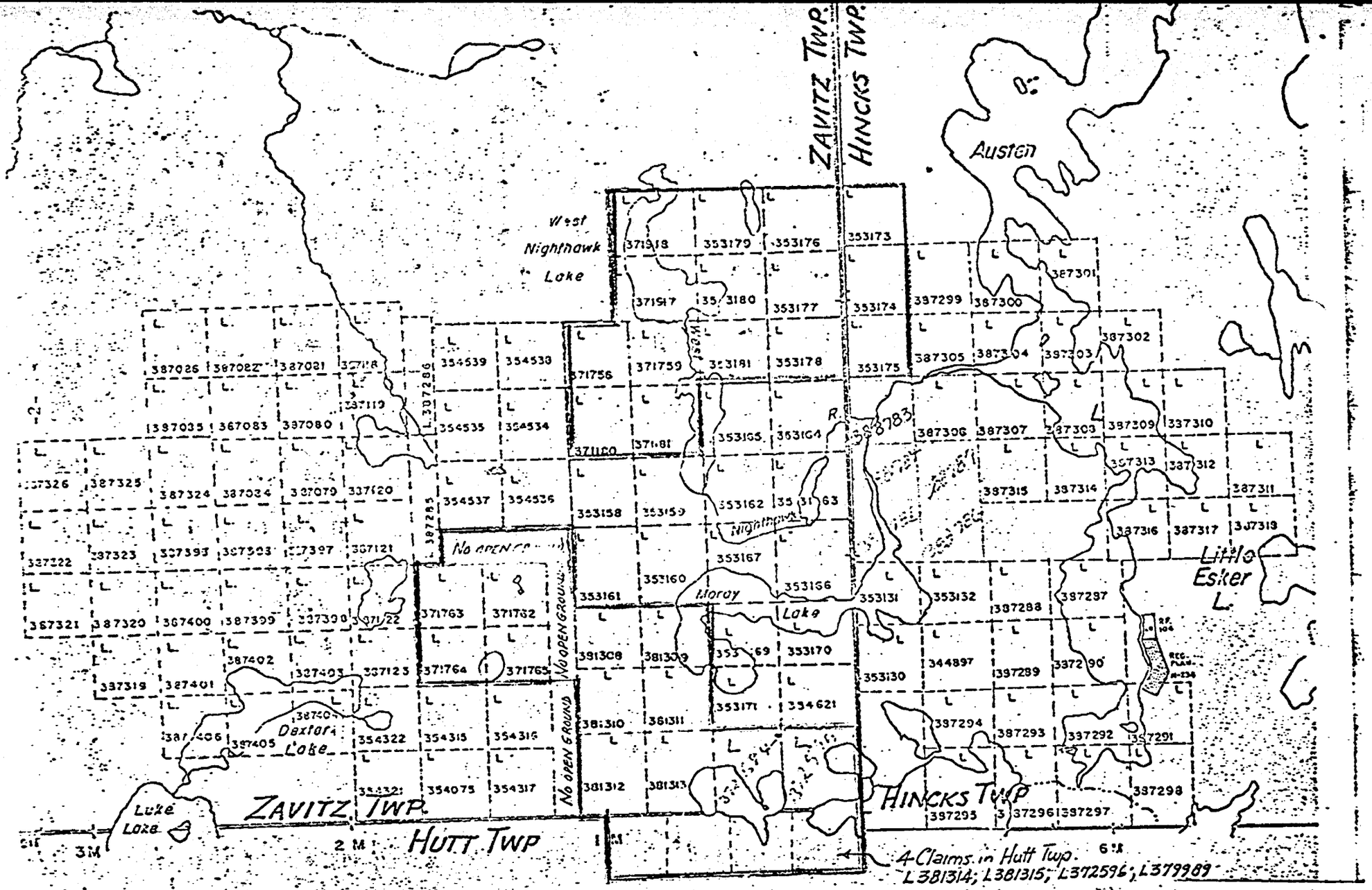
LOCATION AND ACCESS

The claims are located at the south east corner of Zavitz Township, approximately 30 miles south west of Timmins, Ontario. Latitude 48°02', Longitude 81°07'. N.T.S. reference 42 A/3. Access to the property is provided by logging roads connecting the well travelled Timmins-Matachewan road traversing the south part of Zavitz Township.

The claim groups are referred to here as the South Claim Group and the North Claim Group, comprising 15 claims totalling approximately 600 acres, and 16 claims totalling approximately 640 acres respectively. Figure 1 locates the individual claims which are as follows:

North Group: L353173 to L353181;L371180; L371181; L371158; L371159; L371917; L371918.

South Group: L371762 to L371765; L372594 to L37596; L379989; L381308 to L381315.



Twp. (M.943)

ALLERSTON OPTION
ZAVITZ - HINCKS - HUTT TWPS

15 Claims N. Block
16 Claims S. Block

Fig: 1

DIAMOND DRILLING

Four thousand, nine hundred and eighty-nine feet of AQ diamond drilling were completed on the property intersecting the most significant conductors. Tables I and II indicate pertinent drilling information. Most conductors intersected were caused by graphitic horizons. Holes DDH Z-3 and DDH Z-6 on the North Group intersected 15 feet and 5 feet respectively of massive sulphide, however no economic mineralization was encountered.

Assaying of pertinent rock types intersected in the drill holes indicated no significant mineralization. Up to 0.32% zinc and 0.005 oz./ton gold were encountered in graphitic horizons on the North Group and up to 0.20% nickel was encountered in the ultramafic sills intersected on the South Group. These values are not significantly anomalous for the respective rock types. Assay values are reported in Table III.

TABLE I

CAUSES OF SPECIFIC ANOMALIES

ANOMALY	CAUSE
A	Graphite - No sulphides.
B	Graphite - No sulphides
C	Contact of ultramafic and felsic volcanic - disseminated sulphides.
D	Contact of ultramafic and felsic volcanic- massive pyrrhotite.
E	Graphitic argillite - No sulphides.
T	Graphite and disseminated sulphides
U	Graphite - + disseminated sulphides
V	Graphite and massive sulphide.
W	Graphite + disseminated sulphide.
X	Graphite + massive sulphides.
Y	Minor graphitic zone _ disseminated pyrite + pyrrhotite.

TABLE II

EXPLORATORY DRILL PROGRAM - ZAVITZ

NORTH GROUP

HOLE	CO-ORDINATES	DIP	BEARING	DATE COMPLETE	LENGTH	ROCK TYPES
Z-3	4+00N 40+00E	50°	180°	Oct. 28/75	706'	Mafic volcanic, graphitic argillite, massive sulfide.
Z-6	1+00S 36+00E	50°	180°	Nov. 11/75	554'	Mafic volcanic, graphitic argillite, massive sulfide.
Z-8	12+00N 42+00E	50°	165°	Nov. 13/75	402'	Graphitic argillite, mafic volcanic, conglomerate.
Z-10	8+00N 50+00E	50°	180°	Nov. 19/75	452'	Conglomerate, graphite, mafic volcanic.

TABLE II

EXPLORATORY DRILL PROGRAM - ZAVITZ

SOUTH GROUP

HOLE	CO-ORDINATES	DIP	BEARING	DATE COMPLETE	LENGTH	ROCK TYPES
Z-1	8+00N 6+00W	50°	180°	Nov. 9/75	546'	Felsic volcanic, ultra-mafic, agglomerate granite, graphitic argillite.
Z-2	11+30N 18+00W	70°	180°	Oct. 25/75	527'	Felsic volcanic, graphitic argillite graphite, ultra-mafic.
Z-4	6+40N 32+00W	75°	180°	Nov. 5/75	677'	Graphitic argillite, ag-glomerate ultramafic.
Z-7	17+30N 34+00W	65°	180°	Nov. 11/75	618'	Banded argillite, graphite.
Z-9	0+00 6+00E	50°	205°	Nov. 15/75	507'	Ultramafic, felsic volcanic.

TABLE III

SAMPLES AND ASSAY RESULTS

HOLE	DEPTH	LENGTH	GOLD oz/ton	SILVER oz/ton	COPPER %	LEAD %	ZINC %	NICKEL %	ROCK TYPE
Z-2	263.6-265.6	2	0.005	trace	0.02	0.01	0.05	0.02	G
Z-2	265.6-266.6	1			0.01	0.01	0.04	0.02	Breccia
Z-2	266.6-269.4	3				trace	0.05	0.02	Breccia
Z-2	289-299	1				trace	0.02	0.01	Breccia
Z-2	308-310.5	2.5		trace	0.01	trace	0.13	0.03	Breccia
Z-2	317 - 319	2			0.03	trace	0.04	0.01	G
Z-2	319-320.5	1.5		trace	0.01	0.01	0.04	0.01	G
Z-2	320.5-327	7.5			0.01	0.01	0.09	0.06	Qtz. Vein
Z-2	332-344	12	0.01	0.01	0.01	0.01	0.01	0.01	Breccia
Z-2	344-348	4			0.01	trace	0.01	0.01	Breccia
Z-2	352-357	5			0.01	trace	0.01	0.07	Breccia
Z-2	362-372	10			0.01	trace	0.01	0.19	Breccia
Z-2	372-382	10			0.01	0.02	0.04	0.18	Breccia
Z-2	382-392	10			0.01	0.02	0.03	0.21	Breccia
Z-2	392-402	10			0.01	0.03	0.03	0.17	Breccia
Z-2	402-412	10				0.02	0.03	0.18	Breccia
Z-2	412-422	10			0.01	0.02	0.02	0.18	Breccia
Z-2	422-432	10				0.02	0.02	0.18	Breccia
Z-2	432-442	10				0.01	0.02	0.23	Breccia
Z-2	298-308	10				trace	0.01	0.01	FV
Z-3	210-212	2	0.005	0.01	0.01	0.01	0.07	0.02	MS
Z-3	212-214	2	0.005	0.01	0.01	0.01	0.05	0.01	MS & G

SAMPLES AND ASSAY RESULTS

HOLE	DEPTH	LENGTH Ft.	GOLD oz/ton	SILVER oz/ton	COPPER %	LEAD %	ZINC %	NICKEL %	ROCK TYPE
Z-1	46-47	1				trace	0.01	trace	FV
Z-1	67-68	1				trace	0.01	0.09	UM
Z-1	111-112	1				trace	trace	0.19	UM
Z-1	196-197	1				trace	trace	0.19	UM
Z-1	232-233	1				trace	trace	0.01	FV
Z-1	253-254	1					trace	0.01	FV
Z-1	282-283	1					trace	0.01	FV
Z-1	304-305	1				trace	0.02	0.01	G
Z-1	305-306	1		trace		trace	0.02	0.01	G
Z-1	310-311	1		trace	0.02	0.01	0.15	0.04	G
Z-1	311-312	1		0.05	0.02	0.02	0.14	0.03	G
Z-1	312-313	1		0.10	0.04	0.02	0.28	0.02	G
Z-1	313-314	1		0.07	0.01	0.01	0.03	0.02	G
Z-1	314-315	1		trace	0.01	trace	0.02	0.02	G
Z-1	315-316	1		trace	0.01	trace	0.03	0.01	G
Z-1	316-317	1		trace	0.01	trace	0.06	0.02	G
Z-1	320-321	1				trace	0.01	0.01	FV
Z-1	366-367	1				trace	0.01	0.01	FV
Z-1	380-381	1				trace	0.01	0.01	FV
Z-1	398-399	1				trace	0.01	0.01	FV
Z-1	407-411	1		trace	0.01	trace	0.04	0.01	G
Z-1	421.6-423	1.4		trace	0.01	trace	0.02	0.02	G
Z-1	481-482	1			0.01	trace	0.01	0.02	FV
Z-1	542-543	1					trace	0.24	UM

SAMPLES AND ASSAY RESULTS

HOLE	DEPTH	LENGTH Ft.	GOLD oz/ton	SILVER oz/ton	COPPER %	LEAD %	ZINC %	NICKEL %	ROCK TYPE
Z-3	215.5-221	6.5		trace	0.01	0.01	0.05	0.01	MS
Z-3	326-329.5	3.5	0.005	0.02	0.01	0.01	0.05	0.01	MS & G
Z-3	448-453	5			0.02	0.01		0.02	G
Z-3	590-595	5	0.005	trace	0.05	0.01	0.24	0.02	G
Z-3	528-529	1		trace	0.04	0.01	0.19	0.02	G
Z-3	529-539	10		trace	0.03	0.01	0.18	0.02	G
Z-3	561-562	1			0.04	0.01	0.32	0.02	G
Z-3	629-639	10		0.02	0.03	0.01	0.16	0.02	G
Z-4	179-184	5			0.01	trace	0.01	0.01	G
Z-4	201-204	3	0.01	0.09	0.02	0.02	0.03	0.01	G & MS
Z-4	611-616	5					trace	0.23	UM
Z-4	652-653	1			0.01	trace	0.01	0.01	FV
Z-5(6)	170-175	5		0.01	0.03	trace	0.24	0.02	G
Z-5	318-319	1			0.02	trace	0.02		MV
Z-5	374-379	5			0.02	trace	0.10	0.01	G
Z-5	425-426	1			0.02	trace	0.01	0.02	MV
Z-5	553.5-554	0.5			0.03	trace	trace	0.01	Silica
Z-7	200-205	5			0.01	0.01	0.01	0.01	GA
Z-7	390-395	5			0.01	0.01	0.01	0.01	GA
Z-7	487-491	4				0.01	0.01	trace	GA
Z-7	553-558	5			0.01	trace	0.02	0.01	G

SAMPLES AND ASSAY RESULTS

HOLE	DEPTH	LENGTH Ft.	GOLD oz/ton	SILVER oz/ton	COPPER %	LEAD %	ZINC %	NICKEL %	ROCK TYPE
Z-8	275-280	5			0.01	0.01	0.04	0.01	G
Z-8	70-75	5			0.01	trace	0.01	0.04	Cng.
Z-8	176-181	5			0.02	0.01	0.02	0.02	Cng.
Z-8	342-347	5			0.01	trace	0.01	0.02	Cng.
Z-9	32.5-37.5	5.5		trace		trace	0.01	0.14	UM
Z-9	87-92	5				trace	trace	0.15	UM
Z-9	163-168	5		trace	0.01	trace	trace	0.29	UM
Z-9	245-250	5				trace	0.01	0.25	UM
Z-9	344-348	4			0.01	trace	0.01	0.01	FV
Z-9	470-475	5			0.01	trace	0.01	0.01	FV
Z-10	34.5-39.5	5			0.01	trace	0.01	0.01	Cng.
Z-10	159-171	12			0.02	0.01	0.14	0.01	G & MS
Z-10	171-176	5		0.01	0.02	0.01	0.14	0.01	MS & G
Z-10	176.5-181.5	5			0.02	trace	0.04	0.01	GA
Z-10	238-243	5			0.02	trace	0.03	0.02	MV & G
Z-10	475-480	5		trace	0.02		0.01	0.01	MV

UM = Ultramafic Intrusives
MV = Mafic Volcanic
FV = Felsic Volcanic
G = Graphite
GA = Graphitic Argillite
MS = Massive Sulphide
Cng. = Conglomerate

TABLE IV

GENERAL DESCRIPTION OF ROCK TYPES

Diabase Dikes:	General medium grained grey rocks with ophitic features. Essentially unaltered.
Syenite:	Pink, medium to coarse grained felsic intrusive rock. Abundant pink feldspar and altered amphibole, 64% SiO_2. 8% total alkalis (Na_2O & K_2O).
Conglomerate:	Various rock fragments up to 12 inches in diameter in a fine grained chloritic matrix. Matrix occasionally quite silicic. Fragments of mafic volcanics, felsic volcanics and intrusives. Blebs of sulphide common. Rare chert fragments. Fragments rounded to elongate. General matrix composition resembles that of a mafic volcanic (basalt). Thin sections show clastic texture with angular felsic lithic fragments in a fine matrix of plagioclase and chlorite + actinolite (basaltic volcanic). Opaques (sulphides and magnetite) abundant. (Fine grained disseminations 20 - 40%).
Graphitic argillites: (Interbedded with volcanic sequences)	Finely laminated sediment consisting of alternate laminations of fine grained quartzo-feldspathic material and fine stringers of graphite. Proportion of graphite varies from 5 - 95%. Massive pyrite-pyrrhotite beds within graphite units. Consist of aggregates of pyrite grains, with interstitial graphite and fine grained pyrite and bands of fine grained pyrite. Sedimentary deposits of exhalative origin.
Felsic Volcanics	Agglomerates: Fine to coarse greenish grey to white fragmental units of dacitic and rhyolitic composition. Most abundant felsic volcanic unit. Porphyritic (Flow) units. Massive greenish white volcanic rock with white feldspar phenocrysts up to 2 mm. in size.

TABLE IV

Felsic Volcanics: (cont'd)	Feldspar phenocrysts - (plagioclase) euhedral to ragged show abundant saussuritic and sericitic alteration. Matrix of fine grained recrystallized quartzo-feldspathic material. Degree of alteration and recrystallization varies from place to place.
Mafic Volcanics:	Fine grained, greenish grey to black - pillowed and brecciated basaltic lava flaws. Consist of intergrown actinolite - chlorite and plagioclase feldspar. Rocks often vesicular with vesicles filled with radiating chlorite. Opaque minerals (sulphides and magnetite) if present interstitial to breccia fragments and/or pillow rims (i.e. volcanic origin).
Ultramafic Intrusives:	Dark green-black medium grained intrusive rocks. Relict olivine outlines readily visible in thin section - now predominantly serpentine, talc and magnetite. (90% of rock). Some chloritic and carbonate alteration.

GEOLOGY

Descriptions of individual rock units are presented in TABLE IV.

South Claim Group:

The claims are underlain by mafic to ultramafic sills and dacite to rhyolitic felsic volcanics. The felsic volcanics are mostly comprised of agglomerates, and rarely quartz-feldspar porphyry (flows?). No significant metamorphic alteration is evident at the ultramafic intrusive - volcanic interface suggesting the intrusive may have crystallized prior to the deposition of the volcanics. Graphitic argillites overlie the volcanic sequence. Drilling indicates that the north 1/3 of the claim group covered by pleistocene material is underlain by these argillic meta-sediments. Earlier mapping indicated this northern position was underlain by volcanic rocks and hence had some inherent potential for sulphide deposits.

Economic Potential

The apparent absence of a mafic-felsic volcanic interface lends little potential to the claims for a volcanogenic massive sulphide. Low nickel values were encountered in the ultramafic intrusive but nothing of economic interest is indicated.

North Claim Group:

The claims are underlain by pillowed and brecciated basalts which are overlain by graphitic sediments and a narrow unit of volcaniclastic conglomerate. Disseminations of pyrite and pyrrhotite are common.

Massive pyritic units are often encountered in the graphitic rocks but they are barren of economic minerals. Sedimentary textures in the sulphides such as bedding and colloidal, granular aggregates of pyrite grains attest to their sedimentary origin probably a result of volcanic exhalative activity. Interstitial sulphides and silica between breccia fragments in the

basaltic pillow breccias (observed in thin section) also suggest a primary volcanic origin for the sulphides. The matrix material of the conglomerate unit has strong chemical similarities with the surrounding basalts suggesting a close volcanic affinity for this rock type, rather then a purely clastic origin. The conglomerates and the blebs and disseminations of pyrite and pyrrhotite found in them are probably essentially derived from reworked volcanic material.

Economic Potential

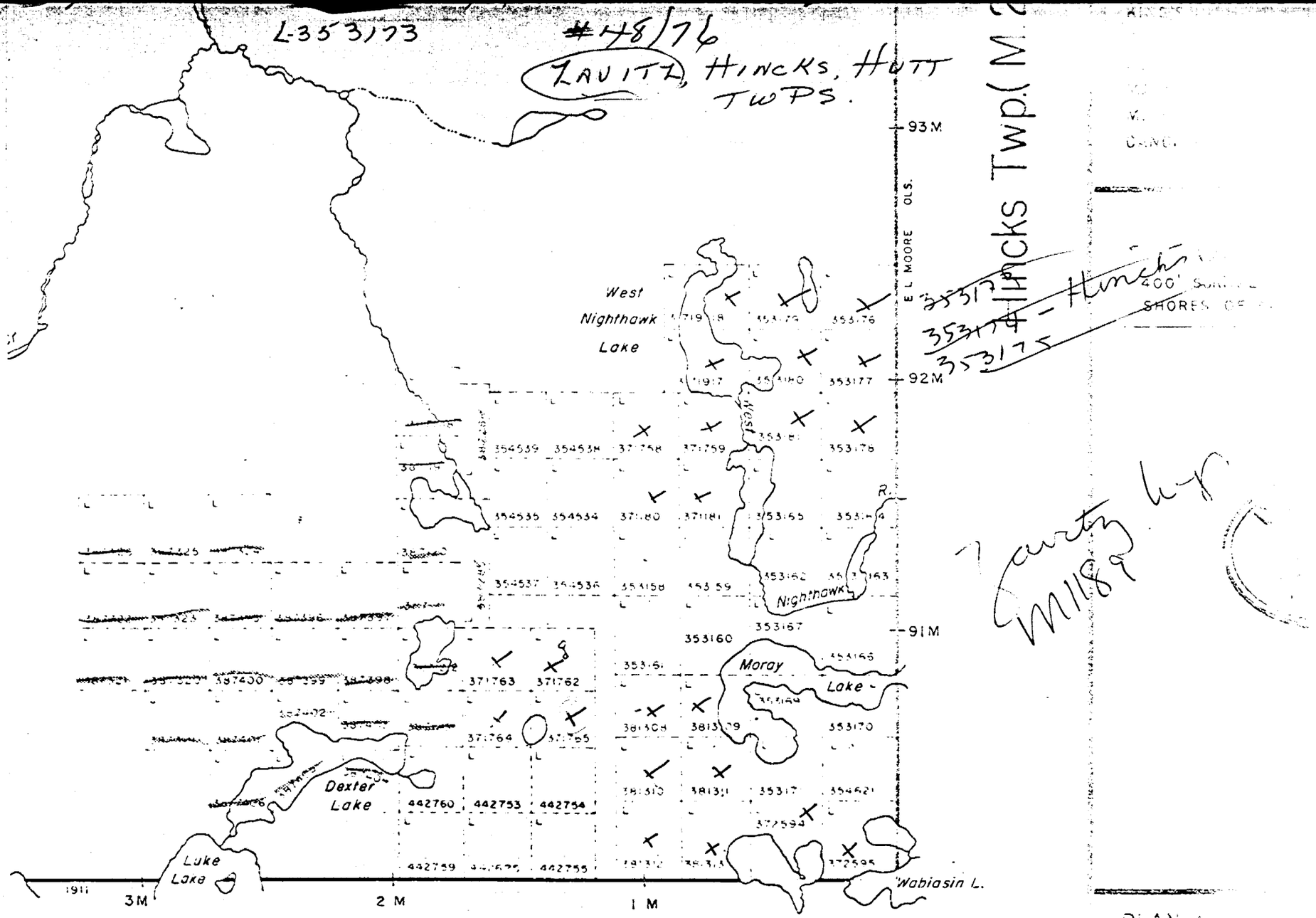
The area has little economic potential. Barren sulphides and some low zinc values within the graphitic horizons may have a volcanic source, but economic minerals are not sufficiently abundant to warrant further exploration.

CONCLUSIONS AND RECOMMENDATIONS

Some low metal values were detected on the property but these were not significantly anomalous for the rock types examined, suggesting there is little possibility of defining an economic deposit within the property boundaries. No further work is recommended.

L-353173 #48/76

LAVITT, HINCKS, HUTT TWPS.



353173 - Hincks
353174 - Hincks
353175

400' SHORES OF

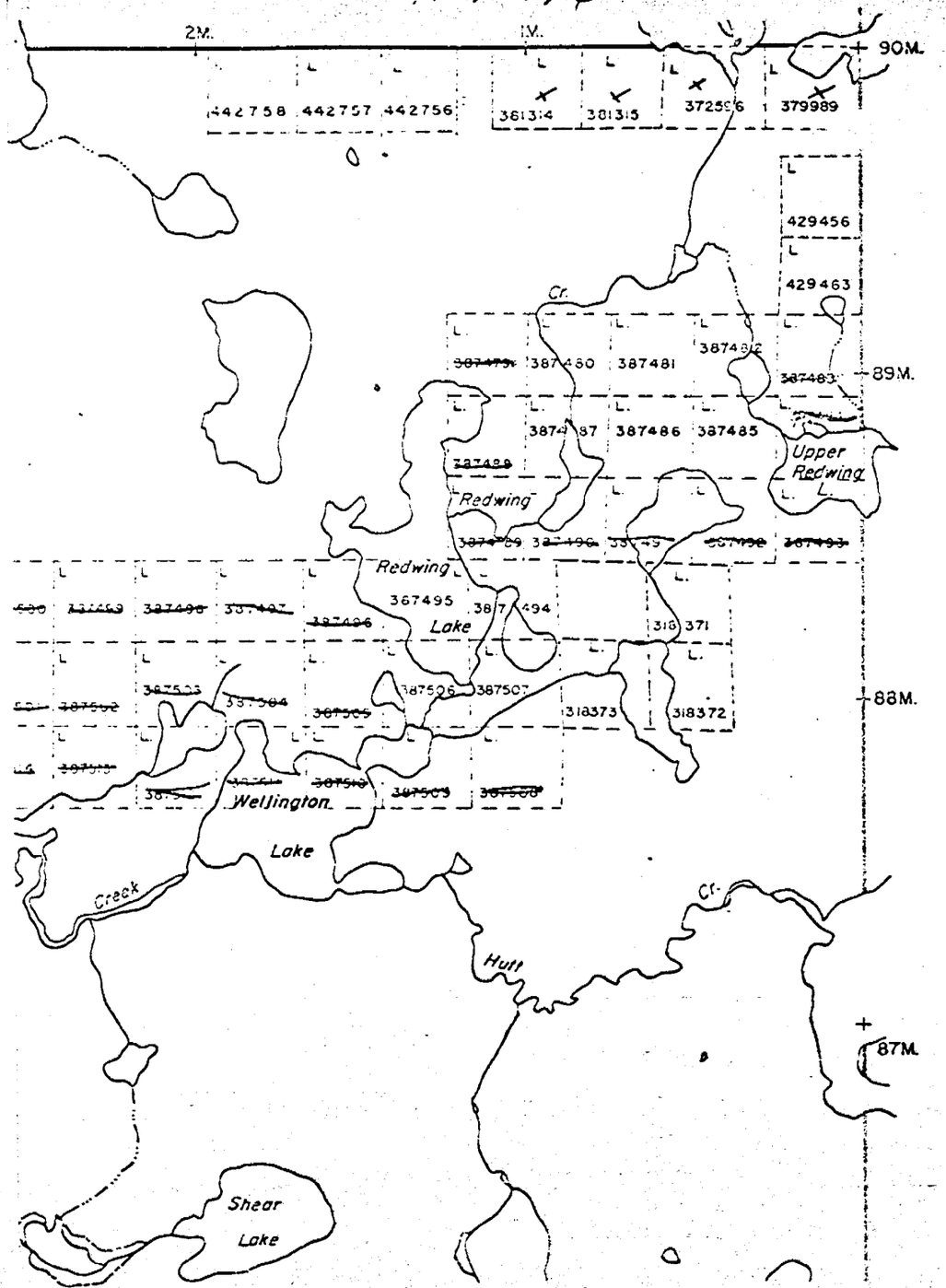
County Lot
M1189

PLAN

MINISTRY

†† Twp.(M.943)

#48176



MONTROSE TWP. M-237

Lakes and Rivers

Hull

DATE OF ISSUE
DEC 30 1975

LEGEND

PATENTED LAND	Ⓟ or Ⓟ*
PATENTED FOR SURFACE RIGHTS ONLY	Ⓢ*
LEASE	Ⓛ
LICENSE OF OCCUPATION	L.O.
CROWN LAND SALES	C.S.
LOCATED LAND	Loc.
CANCELLED	C.
MINING RIGHTS ONLY	M.R.O.
SURFACE RIGHTS ONLY	S.R.O.
HIGHWAY & ROUTE NO.	7

Gulf Minerals Canada Limited
DIAMOND DRILL RECORD

D.D.H. NO. Z-1
SHEET 1 OF 3

PROPERTY ZAVITZ - SOUTH GROUP
LATITUDE 0+8N
LONGITUDE 0+6W
ELEVATION

BEARING—TRUE 180°
DIP 50°
FINAL DEPTH 546'
CORE SIZE AQ

DATE STARTED November 6, 1975
DATE COMPLETED November 9, 1975
DRILLED BY Morissette
LOGGED BY M. White, A.S. Chaykowski

DATE: SIGNED

DEPTH FEET	F'TAGE CORED	F'TAGE REC'D	FORMATION	DESCRIPTION	DEPTH	BED'G & FOLIA	REMARKS SAMPLES ETC.
0	24		Overburden				
24	61		Felsic Volcanic	Light greenish grey in color and fine grained; some sections are darker in color due to a more prominant chloritic alteration. Certain sections have a characteristic agglomeritic texture. Fragments range in size from 0.5 mm. to 3 cm. and are either lighter or darker in color than the matrix. Calcitic alteration is common. Small calcite veinlets cut the core at 55° to 60°. Finely disseminated pyrite makes up 1%.		55° 60°	46-47 Pb=tr. Zn=.01;Ni=tr.
61	215		Ultramafic	Grey green to dark green black, fine to medium grained, massive in appearance with abundant chlorite actinolite and serpentinite alteration. Talc and calcite veinlets are common as is finely disseminated euhedral pyrite making up 1% of the section. The whole section is strongly magnetic.			67-68 Pb=tr.;Zn=.01 Ni=.09 111-112 Pb=tr.;Zn=tr. Ni=.19 196-197 Pb=tr.;Zn=tr. Ni=.19
				128 - 133 Syenite? Grey to pinkish grey, fine to medium grained intrusive. Feldspar phenocrysts, up to 5 mm. in size are visible in a greyish groundmass that contains minor pyrite.			
				61 - 133 Calcite veinlets at 60° to the core.		65°	
				173 - 183 Calcite veinlets at 85% to the core		85°	
				213 - 215 Core fractured and broken			

DIAMOND DRILL RECORD—CONTINUATION SHEET

D.D.H. NO. Z-1

SHEET 2 OF 3

DEPTH FEET	F'TAGE CORED	F'TAGE REC'D	FORMATION	DESCRIPTION	DEPTH	BED'G & FOLIA	REMARKS SAMPLES ETC.
215	309		Felsic Volcanic (Agglomerate)	Massive to fragmental felsic rock, generally grey to light greenish grey in color. Fragments are common and vary in size from 0.5 cm. to 5 cm. The proportion of fragments and matrix is variable; fragments are usually subrounded to angular and slightly darker in color than the matrix. Minor calcite alteration is prevalent. Minor amounts (1%) of finely disseminated pyrite is present.			232-233 Pb=tr. Zn=tr.;Ni=.01 253-254 Zn=tr.Ni=.01 282-283 Zn=tr.;Ni=.01 304-305 Pb=tr.;Zn=.02 Ni=.01 305-306 Ag=tr.;Pb=tr. Zn=.02;Ni=.01
309	317		Graphite	Finely laminated black banded sediment containing up to 10% massive pyrite. Calcite is abundant and makes up to 10% of this section.			310-311 Ag=tr.;Cu=.02 Pb=.01;Zn=.15 Ni=.04 311-312 Ag=0.05;Cu=.02 Pb=.02;Zn=.14 Ni=.03 312-313 Ag=.10;Cu=.04 Pb=.02;Zn=.28 Ni=.02 313-314 Ag=.07;Cu=.01 Pb=.01;Zn=.03;Ni=.02 314-315 Ag=tr.;Cu=.01 Pb=tr.;Zn=.02;Ni=.02 315-316 Ag=tr.;Cu=.01 Pb=tr.;Zn=.03;Ni=.01 316-317 Ag=tr.;Cu=.01 Pb=tr.;Zn=.05;Ni=.02
317	407		Agglomerate	Similar to section 215 - 309 except section 317 - 363 contains abundant fine grained fragments. Blebs of pyrrhotite (1%) and finely disseminated pyrite (1%) is present.			320-321 Pb=tr.;Zn=.01 Ni=.01 366-367 Pb=tr.;Zn=.01 Ni=.01 380-381 Pb=tr.;Zn=.01 Ni=.01 398-399 Pb=tr.;Zn=.01 Ni=.01

DIAMOND DRILL RECORD—CONTINUATION SHEET

D.D.H. NO. 2-1

SHEET 3 OF 3

DEPTH FEET	F'TAGE CORED	F'TAGE REC'D	FORMATION	DESCRIPTION	DEPTH	BED'G & FOLIA	REMARKS SAMPLES ETC.
407	412		Graphite	Same as section 309 - 317 with up to 5% pyrite. Band of pyrite at an angle of 60° with the core.		60°	407-411 Ag=tr.;Cu=.01 Pb=tr.;Zn=.04;Ni=.01
412	422		Agglomerate	Same as previous sections. Calcite veinlets at 60° to the core.		60°	
422	427		Graphite	Same as previous sections. Pyrite band at 45° to core angle.		45°	421.6-423 Ag=tr.;Cu=.01 Pb=tr.;Zn=.02;Ni=.02
427	435		Graphitic Argillite	Banded fine grained sediment with alternate black graphitic bands and white to grey quartzite bands. Banding (primary) at approx. 45° to the core angle. Minor pyrite (1%) and calcite alteration as veinlets is present.		45°	
435	526		Felsic Volcanic (Agglomerate)	Grey to greenish in color, massive and fine grained to agglomerate in nature.			481-482 Cu=.01;Pb=tr. Zn=.01;Ni=.02
				435 - 451 Massive and porphyritic			
				454 - 526 Agglomeritic with felsic fragments 1 cm. to 8 cm. in size. The fragments are angular to subrounded containing euhedral plagioclase phenocrysts. Larger fragments occur in a darker fine grained matrix consisting mostly of fine fragments. Minor pyrite and pyrrhotite is common occuring as blebs and lenses.			
				439 - 439.4 Graphitic section with 1% euhedral pyrite.			
				451 - 454 Graphitic zone with 2% fine grained pyrite.			
526	546		Ultramafic	Same as previous section i.e. 610 - 215.			542-543 Zn=tr. Ni=.24
546				END OF HOLE			

GULF MINERALS COMPANY

DIAMOND DRILL RECORD

D.D.H. NO. Z-2
SHEET 1 OF 2

PROPERTY ZAVITZ - SOUTH GROUP
LATITUDE 11+30N
LONGITUDE 18+00W
ELEVATION

BEARING — TRUE 180°
DIP Collar -70°
FINAL DEPTH 527'
CORE SIZE AQ

DATE STARTED October 10, 1975
DATE COMPLETED October 25, 1975
DRILLED BY Morissette
LOGGED BY M. White, A.S. Chaykowski

DATE: SIGNED

DEPTH FEET	F'TAGE CORED	F'TAGE REC'D	FORMATION	DESCRIPTION	DEPTH	BED'G & FOLIA	REMARKS SAMPLES ETC.
0	190.0		Overburden				
190	238.6		Felsic Volcanic	Grey in color. Banded to massive, fine grained felsic sediment with some fracturing. Minor disseminated pyrite.			
				Bedding	217.0	65°	
				Foliation	217.0	50°	
				232.6 - 236.6 (4 ft.) Ground core.			
238.6	272.0		Graphitic Argillite	Black banded sediment with alternate black and white bands of finely laminated argillite (graphitic) and fine grained quartzite respectively. Banding is contorted in places. Oxide staining is common. Core broken and crushed.			263.6-265.6 Au=.005 Ag=tr.;Cu=.02 Pb=.01;Zn=.05 Ni=.02
				263.6 - 265.4 Graphite with up to 5% pyrite			265.6-266.6 Cu=.01 Pb=.01;Zn=.04 Ni=.02
				265.4 - 269.4 Brecciated rock with abundant oxide staining and greenish talcose mineral.			
				239.2 - 246.2)			266.6-269.4 Pb=tr. Zn=.05;Ni=.02
				259.6 - 263.6) Ground core.			308-310.5 Ag=tr.;Cu=.01
				269.4 - 272.0)			Pb=tr.;Zn=.13;Ni=.03
272	317.0		Felsic Volcanic	Grey to white, fine grained, essentially massive felsic rock. It is highly brecciated with abundant vugs and calcite alteration. Oxide stains and up to 10% pyrite (disseminated) is prevalent.			289-299 Pb=tr. Zn=.02;Ni=.01
				292 - 297 Ground core.			299-308 Pb=tr. Zn=.01;Ni=.01
317	332		Graphite	Crushed graphite section with abundant oxide stains and quartz veining			317 - 319 -Cu=.03;Zn=.04 Ni=.01;Pb=tr.
				321 - 326 Ground core.			319-320.5 Ag=tr.;Cu=.01 Pb=.01;Zn=.04 Ni=.01
							320.5-327 Cu=.01;Pb=.01 Zn=.09;Ni=.06

DIAMOND DRILL RECORD—CONTINUATION SHEET

DEPTH FEET	F'TAGE CORED	F'TAGE REC'D	FORMATION	DESCRIPTION	DEPTH	BED'G & FOLIA	REMARKS SAMPLES ETC.
332	460	60%	?	Highly crushed and brecciated zone consisting of white to green friable material with abundant oxide stain.			332-344 Au=.01; Ag=.01 Cu=.01;Pb=.01 Ni=.01;Zn=.01
				343 - 460 Crushed white to pinkish friable rock.			
				352 - 356 Ground core.			344-348 Cu=.01;Pb=tr. Zn=.01;Ni=.01
				357 - 367 Seam.			
				372 - 377 Ground core.			352-357 Cu=.01;Pb=tr. Zn=.01;Ni=.07
				387 - 397)			
				400 - 407)			362-372 Cu=.01;Pb=tr. Zn=.01;Ni=.19
				408.4 - 412)			
				420 - 423)			372-382 Cu=.01;Pb=.02 Zn=.04;Ni=.18
				425 - 427) Ground core			
				431.4 - 434)			382-392 Cu=.01;Pb=.02 Zn=.03;Ni=.21
				437.6 - 438)			
				445 - 447)			392-402 Cu=.01;Pb=.03 Zn=.03;Ni=.17
							402-412 Pb=.02;Zn=.03 Ni=.18
							412-422 Cu=.01;Pb=.02 Zn=.02;Ni=.18
460	524	98%	Felsic Volcanic	Greyish white to greenish in color. Massive, fine grained granular to agglomeratic in character. Fragmented sections consist of up to 30% angular to subrounded fragments set in a fine grained matrix. Minor disseminated pyrite and calcite alteration is present.			422-432 Pb=.02;Zn=.02 Ni=.18
							432-442 Pb=.01;Zn=.02 Ni=.23
				484 Calcite veinlet at 60° to core angle	484	60°	
524	527		Ultramafic	Dark green to green black in color. It is fine grained and serpentinized.			
527'				END OF HOLE			

DIAMOND DRILL RECORD

D.D.H. NO. 25
SHEET 1 OF 2

PROPERTY ZAVITZ - NORTH GROUP
LATITUDE 4+00N
LONGITUDE 40+00E
ELEVATION

BEARING — TRUE 180°
DIP 50° and at 250' 48°
FINAL DEPTH 706'
CORE SIZE AQ

DATE STARTED October 21, 1975
DATE COMPLETED October 28, 1975
DRILLED BY Morissette
LOGGED BY M. White, A.S. Chaykowski

DATE: SIGNED

DEPTH FEET	F'TAGE CORED	F'TAGE REC'D	FORMATION	DESCRIPTION	DEPTH	BED'G & FOLIA	REMARKS SAMPLES ETC.
0	6		Overburden				
6	132		Mafic Volcanic	Greenish grey to greenish black in color with abundant chlorite, epidote and calcite alteration. Calcite veinlets abundant. It is fine grained with up to 1% finely disseminated sulfides (pyrite, pyrrhotite, trace chalco-pyrite). 102 - 117 Finely banded, very fine grained, green black tuff. One to two percent finely disseminated sulfides. 102.2 - 102.4 Massive pyrite and pyrrhotite.			
132	182		Graphitic Argillite	Contact with above unit at 45° to core angle. Fine grained, banded argillitic rock with alternate dark and light bands of black graphite and grey to white quartzite respectively. Calcite common. Sulfides are abundant (5%) occurring as bands, lenses and blebs of pyrite, pyrrhotite and trace chalco-pyrite.			
182	210		Mafic Volcanic	Grey lava similar to section 6 - 132. It is fine grained, massive to brecciated to brecciated greenish. 182 - 188) Brecciated volcanic with 10 to 20% pyrite 194.5 - 196.5) and pyrrhotite occurring as blebs. 200 - 205)			
210	221.4		Massive Sulfide	Essentially composed of pyrite with minor pyrrhotite rich bands. The sulfides occur as sedimentary aggregates of grains up to 2 cm. in size, which show distinct banding in places. 212 - 212.7 Graphitic section 213.8 - 215.1 Graphitic argillite with approx. 5% sulphides.			210-212 Au=.005 Ag=.01;Cu=.01 Pb=.01;Zn=.07 Ni=.02 212-214 Au=.005;Ag=.01 Cu=.01;Pb=.01 Zn=.05;Ni=.01

DIAMOND DRILL RECORD—CONTINUATION SHEET

SHEET ___

DEPTH FEET	F'TAGE CORED	F'TAGE REC'D	FORMATION	DESCRIPTION	DEPTH	BED'G & FOLIA
221.4	265.4		Graphitic Argillite	Banded argillite similar to previous section with one to five percent sulphides.		
				Bedding	40-45°	
265.4	304		Mafic Volcanic	Contact with above unit at 45° to core angle. Similar to section 182-210. It is fine grained with common fracturing and occasional narrow tuffaceous or argillite interbeds. Contains one to two percent disseminated sulfides.		
304	452		Graphitic Argillite	Banded argillite same as previous sections, with grey quartzite bands and black very fine grained graphite bands.		
				339 - 343 Fine grained granular massive quartzite sediment.		
				347 - 349 Fine grained grey diorite dyke in contact with the graphitic argillite at 25° to the core angle.		25°
				316 - 317)		
				323 - 324) Massive sulphide, same as section 210 - 221.4'		
				326 - 330)		
452	706		Graphite	Black, fine grained, finely laminated graphitic rock. Banding as found in earlier section is not prominant. Pyrite is found as bands, blebs and as fine grained disseminations comprising 5 to 10%. Calcite veinlets are common.		
706'				END OF HOLE		

GULF MINERALS COMPANY
DIAMOND DRILL RECORD

D.D.H. NO. Z-4
SHEET 1 OF 1

BEARING—TRUE 180°
DIP 70°
FINAL DEPTH 677'
CORE SIZE AQ

DATE STARTED October 26, 1975
DATE COMPLETED November 5, 1975
DRILLED BY Morisette
LOGGED BY M. White, A.S.Chaykowski

DATE: _____ SIGNED _____

DESCRIPTION	DEPTH	BED'G & FOLIA	REMARKS SAMPLES ETC.
			179-184 Cu=.01;Pb=tr.
...e blackish sediment with alternate lighter felsic bands and darker ...phitic bands. Calcite is abundant, with minor fine grained pyrite.			Zn=.01;Ni=.01
Banding at approx. 60° to the core.		60°	201-204 Au=.01;Ag=.09
			Cu=.02;Pb=.02
			Zn=.03;Ni=.01
...204 Section contains vugs with calcite crystals.			
...242 Fine grained, grey diorite dyke with trace fine grained pyrite.			
...245 Rock is broken up containing up to 5% pyrite			
...above unit at 60° to the core section, greyish white to ...ey fragmental rock containing grey to white fragments up to ...in size in a greyish fine grained matrix. Chloritic and calcitic ...ion is common. Minor fine disseminated pyrite is common. ...e veinlets cut the core section at 60°.		60°	
...green to green black in color. The section is fine to medium ...highly serpentinized and usually magnetic. Calcite veinlets ...liation at 70° and 35° to core section.		70°	611-616 Zn=tr.
		35°	Ni=.23
			652-653 Cu=.01
			Pb=tr.;Zn=.01
Talcose section, soft, greenish grey in color.			Ni=.01
...yenite dyke. Grey to pinkish grey, felsic to inter-mediate, fine grained rock with angular mafic xenoliths ...p to 6 mm. in size. Trace pyrite.			

GULF MINERALS COMPANY

DIAMOND DRILL RECORD

D.D.H. NO. Z-5 (6)
SHEET 1 OF 1

PROPERTY ZAVITZ - NORTH GROUP
LATITUDE 1+00S
LONGITUDE 36+00E
ELEVATION

BEARING—TRUE 180°
DIP 50°
FINAL DEPTH 554 ft.
CORE SIZE AQ

DATE STARTED October 29, 1975
DATE COMPLETED November 11, 1975
DRILLED BY Morissette
LOGGED BY M. White, A.S. Chaykowski

DATE: SIGNED

DEPTH FEET	F'TAGE CORED	F'TAGE REC'D	FORMATION	DESCRIPTION	DEPTH	BED'G & FOLIA	REMARKS SAMPLES ETC.
0	12		Overburden				
12	157		Mafic Volcanic	Massive, fine grained, grey to black lava with patches of pinkish white calcite. Brecciation (pillow breccia) is evident in some sections. Calcite veinlets dip at 45° to the core section. Calcite epidote and chlorite alteration is evident. Trace fine grained pyrite and pyrrhotite.		45°	
157	185		Graphitic Argillite	The section is black in color, fine grained and finely laminated. Calcite veinlets at approx. 45° to the core section. Minor pyrite and trace pyrrhotite are present.		45°	170-175 Ag=.01;Cu=.03 Pb=tr.;Zn=.24 Ni=.02
185	189		Massive Sulphide	Sulphide consists of bands and aggregates of pyrite grains (sedimentary), making up 95% of this section while 5% is interatial graphite.			
189	256		Graphitic Argillite	Same as section 157 - 185			
256	370		Mafic Volcanic	Fine grained, greenish grey, moderately altered lava. Calcification and silicification is common. Minor fine grained disseminated pyrite is present.			374-379 Cu=.02;Pb=tr. Zn=.10; Ni=.01
370	398		Graphitic Argillite	Same as previous sections. 381 - 384 Grey, fine grained massive intermediate dyke with one percent finely disseminated pyrite.			425-426 Cu=.02;Pb=tr. Zn=.01; Ni=.02
398	554		Mafic Volcanic	Mafic volcanic is same as previous sections. 550 - 554 Whitish silicified section. 553.6 - 554 Trace pyrite, pyrrhotite and chalcopyrite.			553-554 Cu=.03; Pb=tr. Zn=tr.;Ni=.01
554				END OF HOLE			

GULF MINERALS COMPANY
DIAMOND DRILL RECORD

D.D.H. NO. Z-7
SHEET 1 OF 1

PROPERTY ZAVITZ - SOUTH GROUP
LATITUDE 17+30N
LONGITUDE 34+00W
ELEVATION

BEARING—TRUE 180°
DIP 65°
FINAL DEPTH 618'
CORE SIZE AQ

DATE STARTED November 6, 1975
DATE COMPLETED November 11, 1975
DRILLED BY Morissette
LOGGED BY M. White, A.S. Chaykowski

DATE: SIGNED

DEPTH FEET	F'TAGE CORED	F'TAGE REC'D	FORMATION	DESCRIPTION	DEPTH	BED'G & FOLIA	REMARKS SAMPLES ETC.
0	71.		Overburden				
71	552		Banded Argillite	Sedimentary unit consisting of alternate greenish grey to white felsic bands and black, very fine grained argillite (graphitic ?) bands. Felsic bands are medium to fine grained and occasionally graded bedding is observed indicating tops towards the upper portions of the drill hole. Banding dips at approx. 70° to the core section in the upper portions and at 45° in the lower sections. Up to one percent finely disseminated pyrite is common, and it often occurs as fine grained cubes. Trace pyrrhotite.			200-205 Cu=.01;Pb=.01 Zn=.01;Ni=.01
						70°	390-395 Cu=.01;Pb=.01
						45°	Zn=.01;Ni=.01
							487-491 Pb=.01;Zn=.01
552	582		Graphite	Black, fine grained graphitic rock with trace pyrite. Calcite veinlets cut the core section at 70° and at 30°.			Ni=tr.
						70°	
						30°	553-558 Cu=.01;Pb=tr.
				Contact with proceeding unit at 45° to the core			Zn=.02;Ni=.01
						45°	
582	618		Banded Argillite	Grey, fine grained banded rock similar to section 71 - 552'. Banding at approx. 45° to the core section. Foliation at 45° and 90° to the core section			
						45°	
						45°	
						90°	
618				END OF HOLE			

GULF MINERALS COMPANY
DIAMOND DRILL RECORD

D.D.H. NO. Z-8
SHEET 1 OF 2

BEARING — TRUE 165°
DIP 50°
FINAL DEPTH 402'
CORE SIZE AQ

DATE STARTED November 10, 1975
DATE COMPLETED November 13, 1975
DRILLED BY Morissette
LOGGED BY M. White, A.S. Chaykowski

DATE: _____ SIGNED _____

FORMATION	DESCRIPTION	DEPTH	BED'G & FOLIA	REMARKS SAMPLES ETC.
overburden				
Sediment	Dark grey rock containing light grey felsic clasts which are			
metamorphosed	rounded to oval (deformed) in character. The clasts range in size			
graphitic	from 1 mm. to 2 cm. A prominant foliation (deformation fabric)			
argillite?)	occurs at approx. 30° to the core section. Biotite is common.		30°	
	Trace pyrite.			
	27 - 37 Fine to medium grained grey diorite dyke with biotite, plagioclase and some quartz.			
	Fine grained, greenish black lava with moderate chlorite, epidote			
	and calcite alteration. Trace fine grained pyrite and pyrrhotite.			
	Contact with proceeding unit at 45°.		45°	
	Grey sediment containing 20 to 40% rounded to subrounded clasts			70-75 Cu=0.01
	ranging in size from 1 mm. to 25 cm. Grains and pebbles of chert,			Pb=tr.;Zn=0.01
	quartz, granite, argillite, mafic volcanics and porphry are common.			Ni=0.04
	Matrix varies from a greyish felsic material to a green grey mafic			
	material. Fine grained pyrite and blebs of pyrrhotite constitute			176-181 Cu=0.02
	one to two percent.			Pb=0.01;Zn=0.02
				Ni=0.02
	Calcite veinlets cut the core at approx. 70°		70°	

DIAMOND DRILL RECORD—CONTINUATION SHEET

D.D.H. NO. Z-8

SHEET 2 OF 2

DEPTH FEET	F'TAGE CORED	F'TAGE REC'D	FORMATION	DESCRIPTION	DEPTH	BED'G & FOLIA	REMARKS SAMPLES ETC.
271	289		Graphitic Argillite	Black banded sediment with alternate black graphitic and grey felsic bands. Pyrite is fine grained and disseminated making up 3% of the section. Banding at approx. 70° to the core.			275-280 Cu=0.01;Pb=0.01 Zn=0.04;Ni=0.01
						70°	
				Silicified section with abundant calcite contains fine grained pyrite making up 2%.			
289	303		Diorite Dyke	Similar to section 27 - 37.			
303	402		Conglomerate	Similar to section 51 - 271. Matrix quite mafic resembling volcanic tuff? Mafic and felsic clasts are common ranging in size from 1 to 3 cm. in size. Foliation at 45° and 65°. Blebs of pyrite = 1% while pyrrhotite = 3%.			342-347 Cu=0.01;Pb=tr. Zn=0.01;Ni=0.02
						45°	
						65°	
				356.6 - 358.6 Graphitic section			
402				END OF HOLE			

GULF MINERALS COMPANY
DIAMOND DRILL RECORD

D.D.H. NO. Z-9
SHEET 1 OF 1

PROPERTY ZAVITZ - SOUTH GROUP
LATITUDE 0+00
LONGITUDE 6+00W E
ELEVATION

BEARING—TRUE 205°
DIP 50
FINAL DEPTH 507'
CORE SIZE AQ

DATE STARTED November 12, 1975
DATE COMPLETED November 15, 1975
DRILLED BY Morissette
LOGGED BY M. White, A.S. Chaykowski

DATE: SIGNED

DEPTH FEET	F'TAGE CORED	F'TAGE REC'D	FORMATION	DESCRIPTION	DEPTH	BED'G & FOLIA	REMARKS SAMPLES ETC.
0	13		Overburden				
13	275		Ultramafic	Green black intrusive often displaying a brownish tinge. It is fine to medium grained and commonly serpentinized. Talc and asbestos mineralization is minor. Calcite alteration is common. The section is magnetic. Calcite veinlets intersect core section at 70° and 45° (two prominant foliations?)		70° 45°	32.5-37.5 Ag=tr. Pb=tr;Zn=0.01;Ni=0.14 87-92 Pb=tr.;Zn=tr. Ni=0.15 163-168 Ag=tr.;Cu=0.01
				270 - 275 Grey green, soapy, talcose rock containing trace pyrite.			245-250 Pb=tr. Zn=0.01;Ni=0.25
275	507		Felsic Volcanic (massive to agglomeritic)	Grey to greenish grey, fine grained felsic rock, massive to agglomeritic in nature. Chlorite and calcite alteration is common. Minor amounts of finely disseminated to lensoid pods of pyrite and pyrrhotite are present along with trace amounts of chalcopyrite.			344-348 Cu=0.01 Pb=tr.;Zn=0.01 Ni=0.01
							470-475 Cu=0.01 Pb=tr.;Zn=0.01 Ni=0.01
				470 - 470.2 Massive chalcopyrite (5-10%) in quartz vein.			
507				END OF HOLE			

D.D.H. Z - 8

11+00 N.

10+00 N.

9+00N.

Overburden

4

Diorite dyke

4

2

5

200'

4

Diorite dyke

5

402'

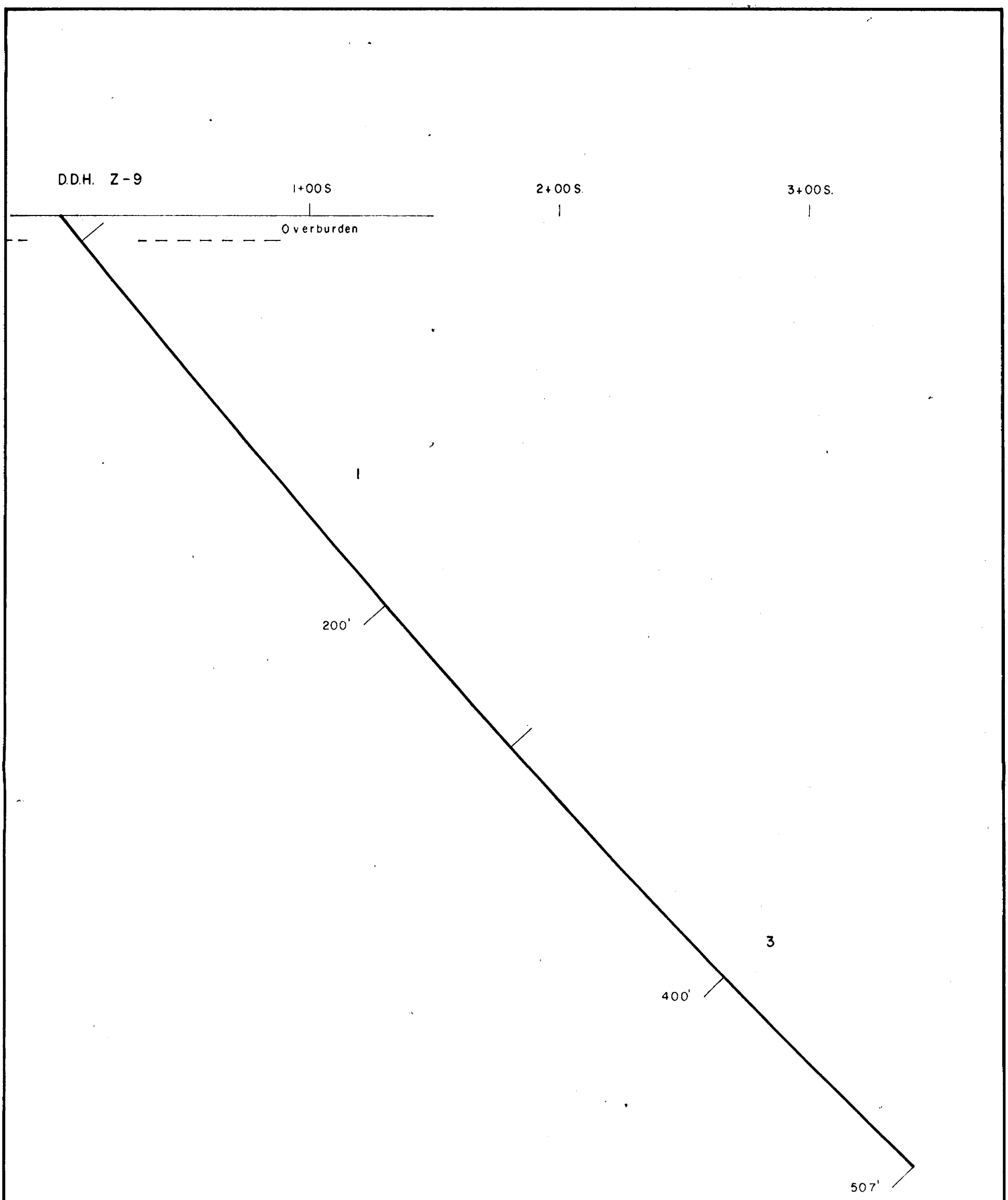
Gulf Minerals Canada Limited

ZAVITZ TWP. NORTH GROUP

DRILL SECTION 42+00E

ONTARIO

DATE:	SCALE:	DRAWN BY:	
Feb. 1976	1 in. = 40 ft.		



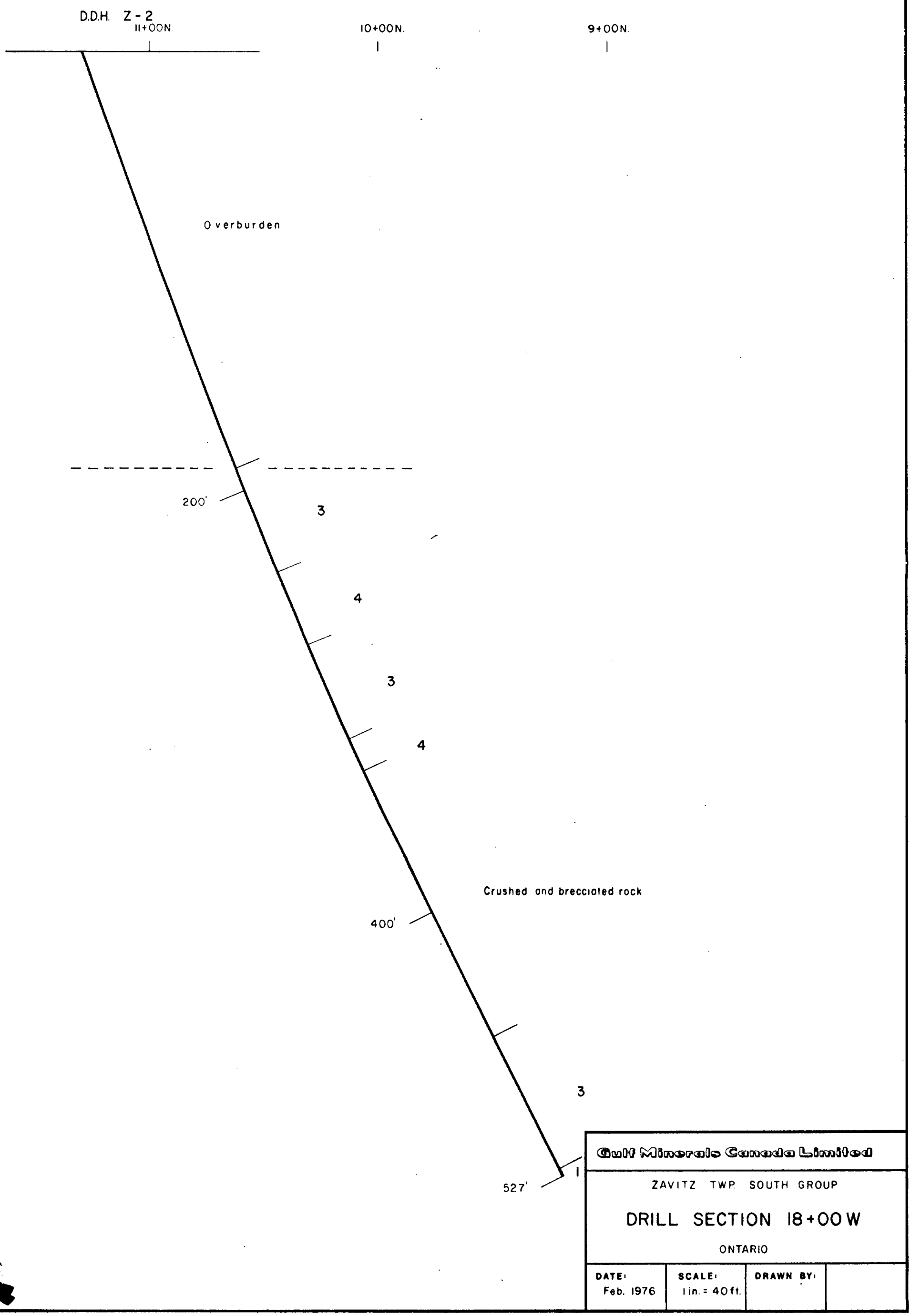
Gulf Minerals Canada Limited

ZAVITZ TWP. SOUTH GROUP

DRILL SECTION 6+00 E

ONTARIO

DATE:	SCALE:	DRAWN BY:	
Feb. 1976	1 in. = 40 ft.		



Gulf Minerals Canada Limited

ZAVITZ TWP. SOUTH GROUP

DRILL SECTION 18+00W

ONTARIO

DATE:	SCALE:	DRAWN BY:	
Feb. 1976	1 in. = 40 ft.		

D.D.H. Z – 4

6+00N.

5+00 N.

4+00N.

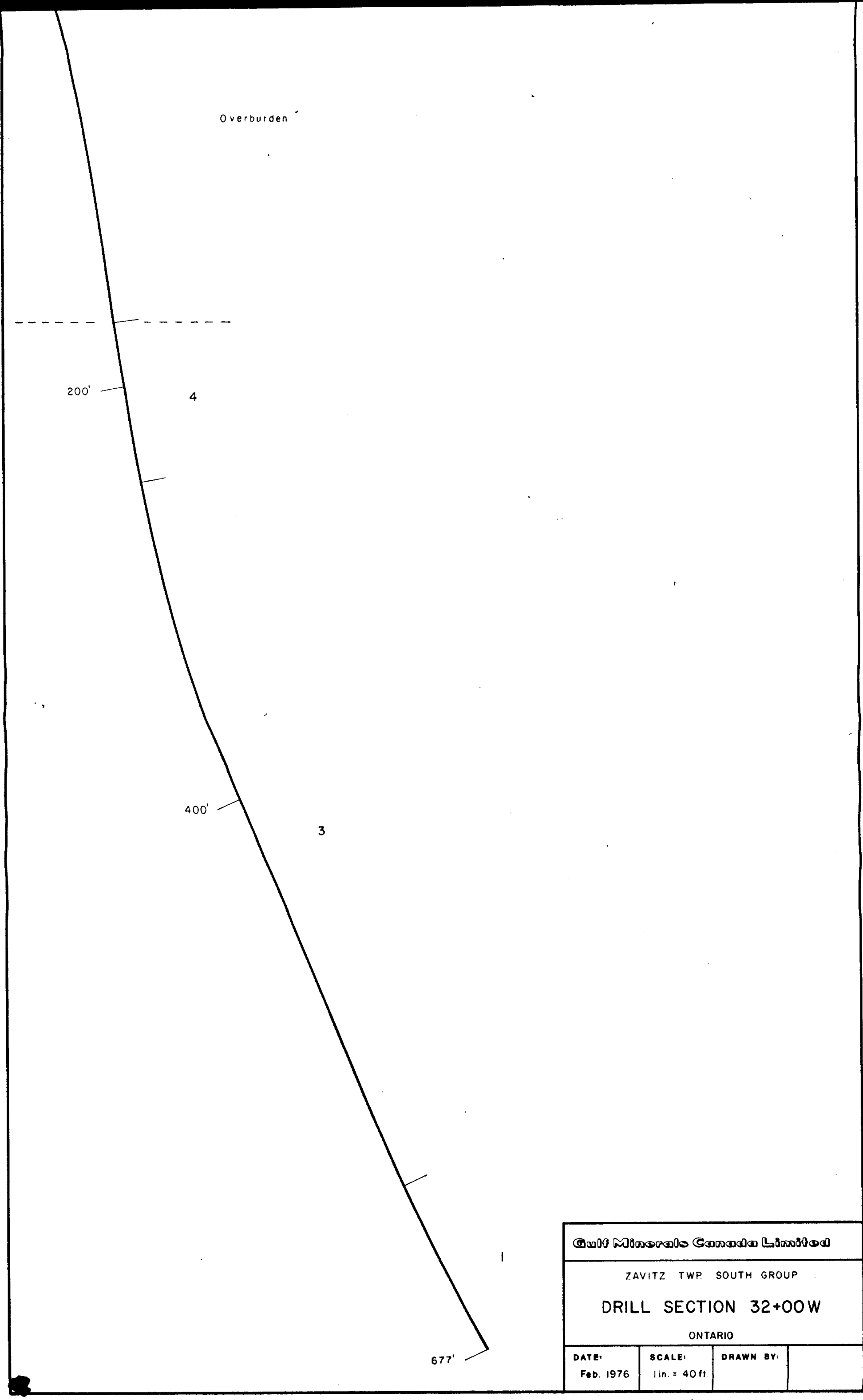
Overburden

200'

4

400'

3



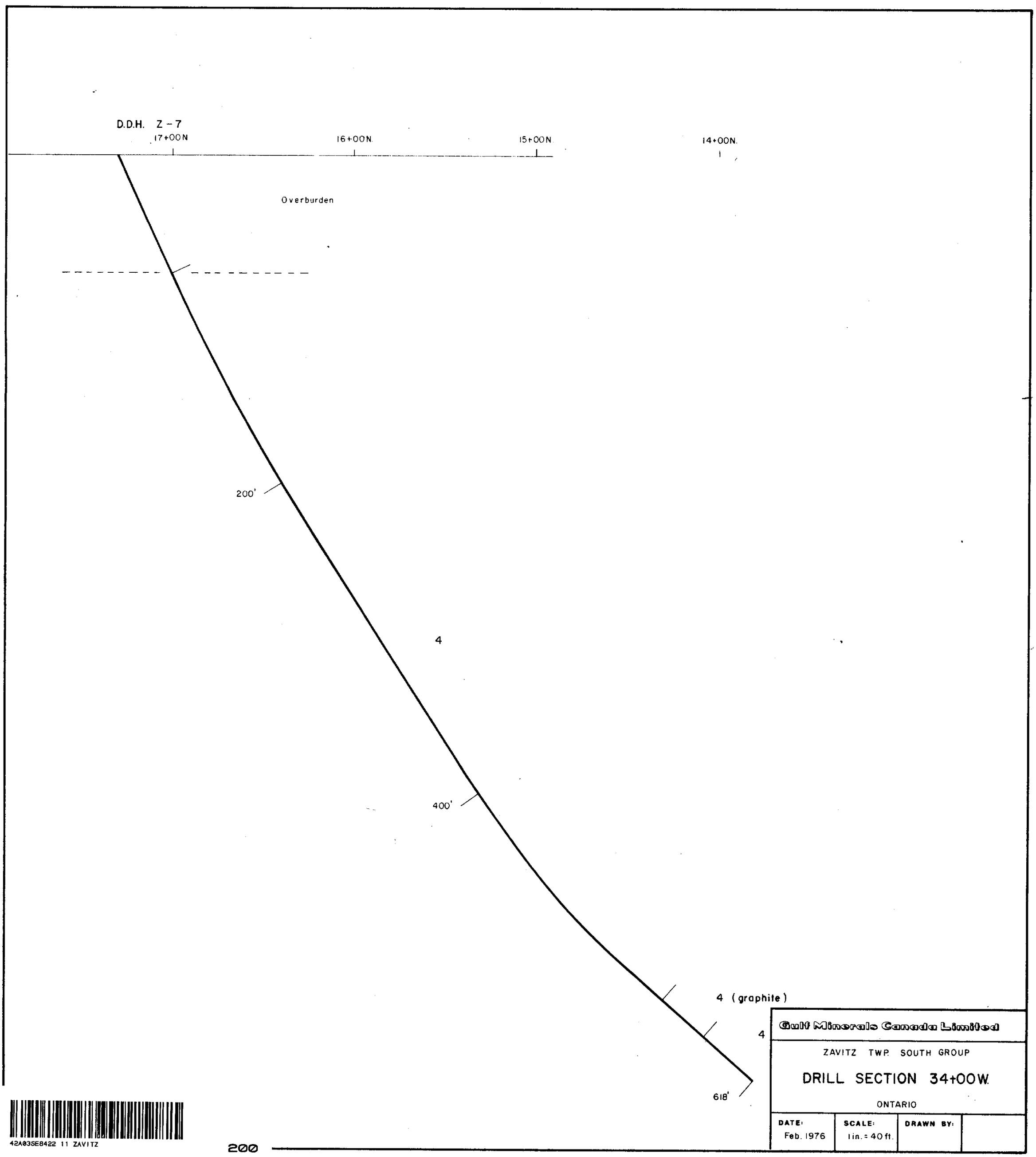
Gulf Minerals Canada Limited

ZAVITZ TWP. SOUTH GROUP

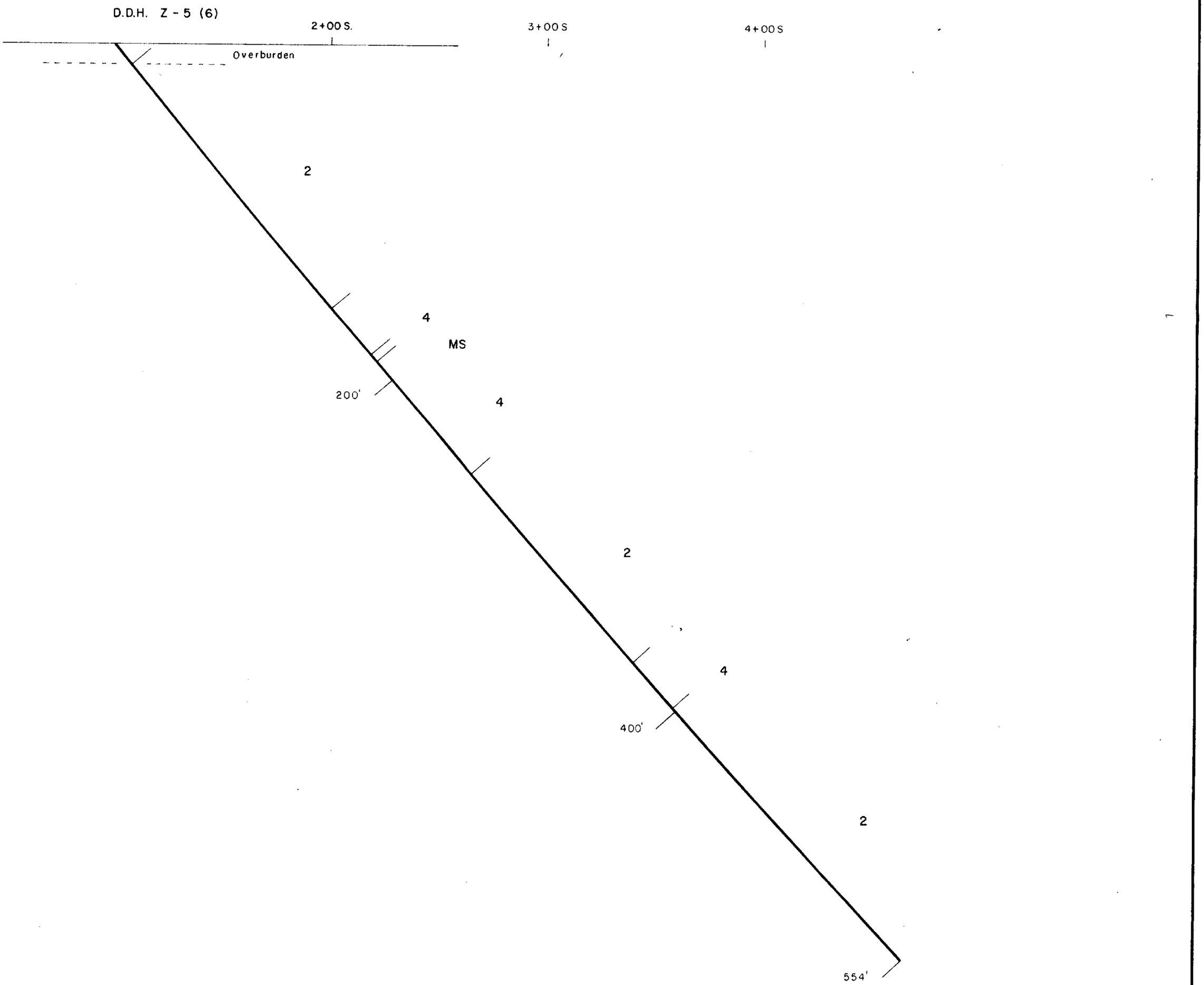
DRILL SECTION 32+00W

ONTARIO

DATE:	SCALE:	DRAWN BY:	
Feb. 1976	1 in. = 40 ft.		



D.D.H. Z - 5 (6)



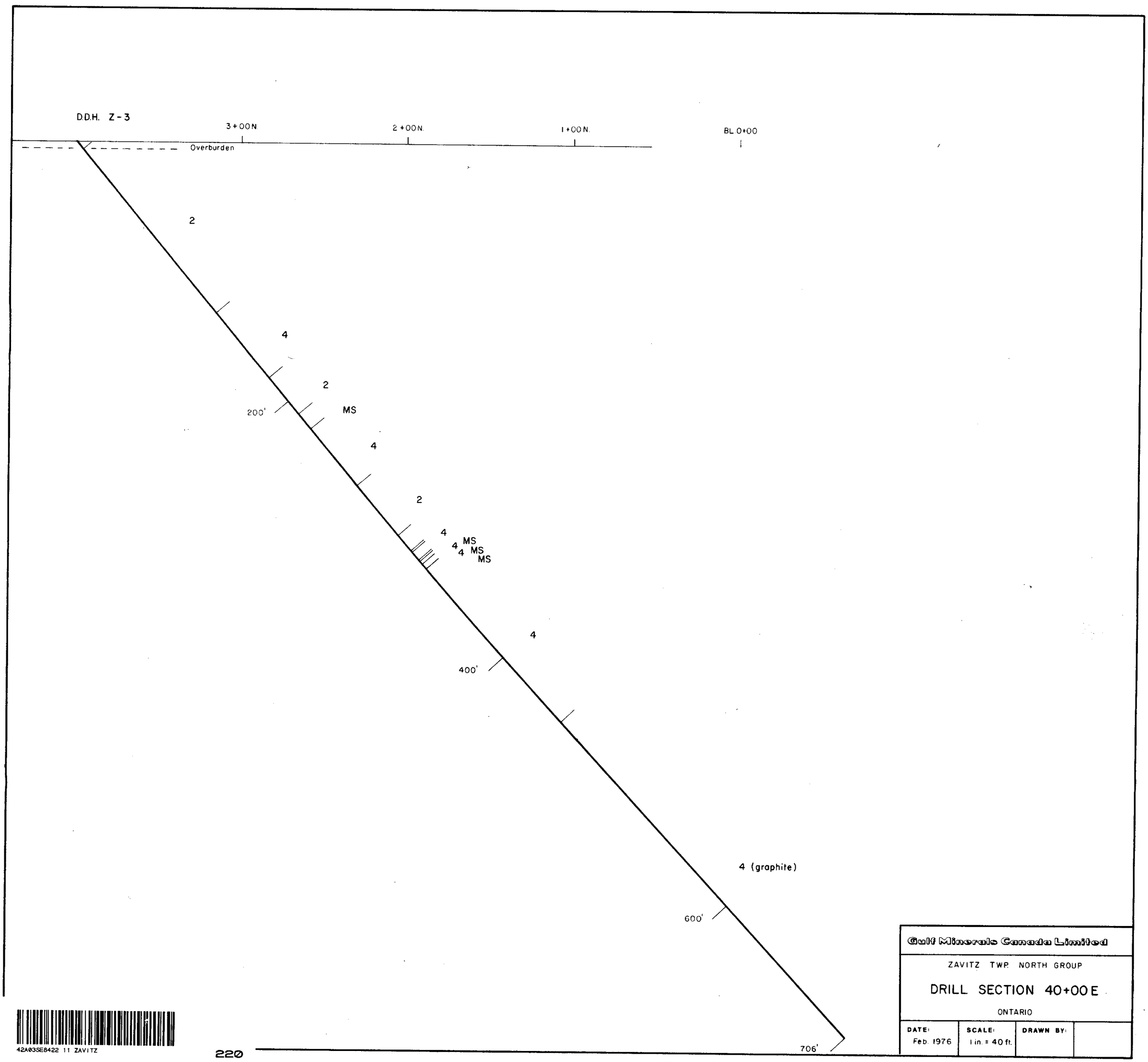
Gulf Minerals Canada Limited

ZAVITZ TWP. NORTH GROUP

DRILL SECTION 36+00 E

ONTARIO

DATE:	SCALE:	DRAWN BY:	
Feb. 1976	1 in. = 40 ft.		



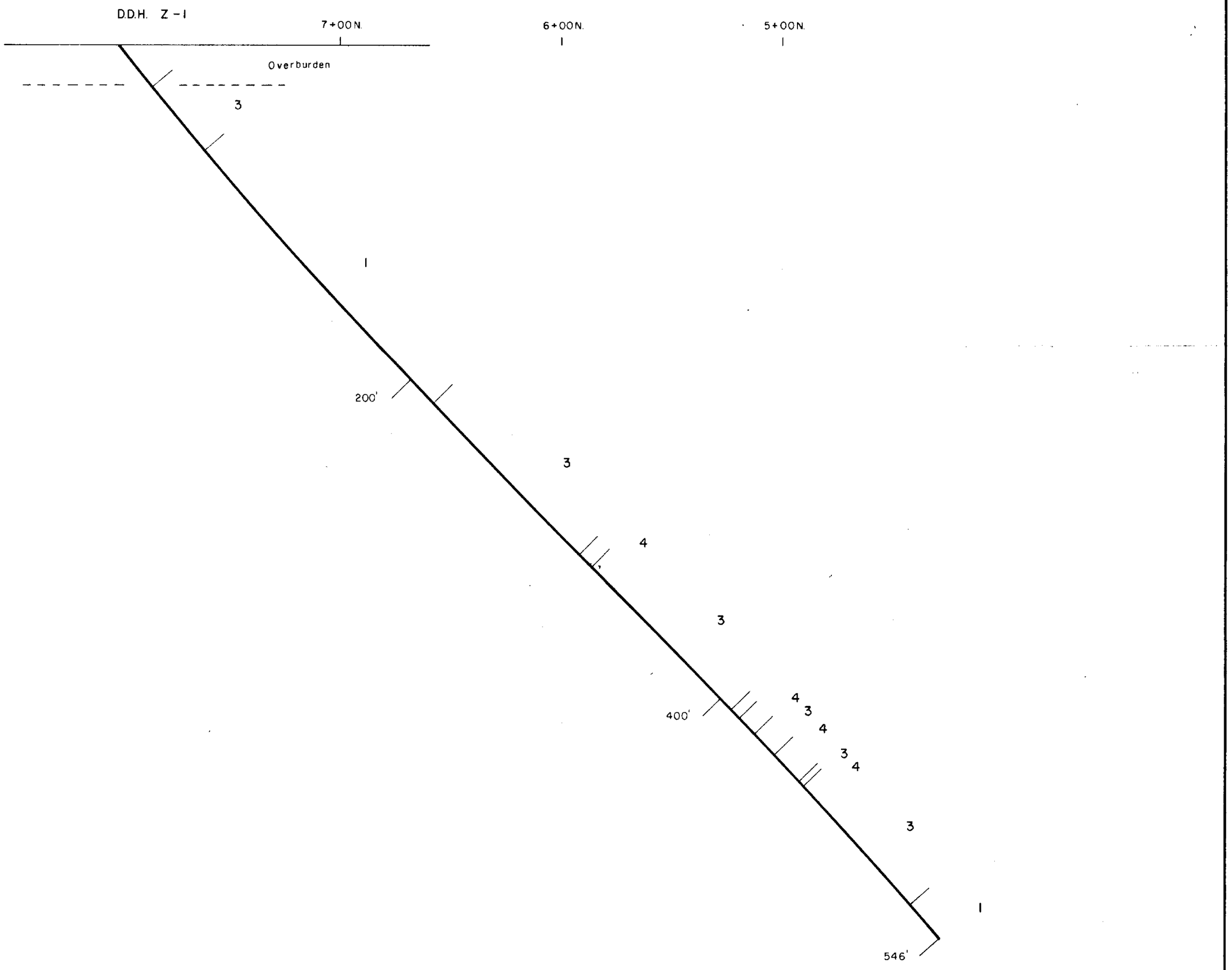
Gulf Minerals Canada Limited

ZAVITZ TWP. NORTH GROUP

DRILL SECTION 40+00 E

ONTARIO

DATE:	SCALE:	DRAWN BY:	
Feb. 1976	1 in. = 40 ft.		



Gulf Minerals Canada Limited

ZAVITZ TWP. SOUTH GROUP

DRILL SECTION 6+00W

ONTARIO

DATE:	SCALE:	DRAWN BY:	
Feb. 1976	1 in. = 40 ft.		

42A03SE8422 11 ZAVITZ

L 4+00 E
L 0+00
L 8+00 E
L 12+00 E
L 16+00 E
L 20+00 E
L 24+00 E
L 32+00 E
L 36+00 E
L 40+00 E
L 44+00 E
L 48+00 E
L 52+00 E
L 56+00 E
L 60+00 E

TL 27+00 N

BL 0+00

Chef Pond

L 28+00 E

WEST NIGHTHAWK LAKE

GAYLORD LAKE

Lakeshore

Cr.

Z

Y

X

W

V

U

Z-8

Z-10

Z-3

Z-5(6)

371918
371917
371759
371758
371180
371181

353179
353176
353173
353180
353177
353174
353181
353178
353175

Zavitz Twp.
Hincks Twp.

KEY

Quill Minerals Canada Limited

ZAVITZ TWP. NORTH GROUP

GEOLOGY

ONTARIO

DATE	SCALE	DRAWN BY	PLATE
Feb. 1976	1in. = 400ft.		

42A03SE8422 11 ZAVITZ

240

Z-7
371763
TL 13+00 W
E
graphite)
371762
Z-4
A
Z-2
3,4
Crushed, brecciated
371764
371765
L 32+00 W
L 28+00 W
L 24+00 W
L 20+00 W
L 16+00 W
L 12+00 W
L 8+00 W
L 4+00 W
L 0+00
L 4+00 E
Z-1
381308
B
381309
381310
C
Z-9
381311
D
HPO-2
381312
381313
381314
381315
372595
372594
372596
379989
Zavitz Twp.
Hutt Twp.
Zavitz Twp.
Hincks Twp.
L 8+00 E
L 12+00 E
L 16+00 E
L 18+00 E
L 22+00 E
L 26+00 E
L 30+00 E
L 34+00 E
L 38+00 E
L 42+00 E
L 46+00 E
L 50+00 E
L 54+00 E

KEY

LEGEND

YOUNGER INTRUSIVES
- 7 Diabase dykes
- 6 Syenite

VOLCANICS
- 5 Conglomerates
- 4 Graphitic argillites
- 3 Felsic volcanics
- 2 Mafic volcanics

OLDER INTRUSIVES
- 1 Ultramafic Intrusives

- Diamond drill hole
- E.M. conductor
- Fault
- MS Massive sulphide
- Geological contact (approximate)

Dell Mines Canada Limited

ZAVITZ TWP. SOUTH GROUP

GEOLOGY

ONTARIO

DATE	SCALE	DRAWN BY	PLATE
Feb 1976	1in = 400ft		

42A03SE8422 11 ZAVITZ