

MAR 19780015: SLAVE LAKE

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STEEN RIVER DIAMOND DRILL PROGRAM

ALBERTA NTS 84N

March, 1978

19780615

ECONOMIC MINERALS
FILE REPORT No
PB-AF-011 (1)
~~PB-AF-012 (1)~~
~~PB-AF-013 (1)~~
PB-AF-014 (1)

DUPLICATE COPY

R. K. Germundson

P. A. Fischer

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INTRODUCTION

Gulf Minerals Canada Limited, Suite 1400-110 Yonge Street, Toronto, Ontario, drilled five NQ and HQ stratigraphic evaluation tests in northwestern Alberta during August to November, 1977, (Figure 1). Land holdings consisted of four Quartz Mineral Exploration Permits, (Map 1).

The five holes were spudded in glacial overburden and bottomed either in the lower beds of the Winterburn Formation or in the top of the Fort Simpson Group, (Summary Sheet). The contractor was Connor's Drilling Limited, Edmonton.

The holes were logged stratigraphically (Appendix A), and geophysically (see pocket). The carbonates of the Devonian section were analysed for copper, lead and zinc. Selected samples of the Cretaceous section were analysed for a variety of elements, (Appendix B).

All of the holes were drilled adjacent to the MacKenzie Highway. The main supply center was High Level 40 to 70 miles south of the program area.

GEOLOGY AND MINERALIZATION

Gulfmin Anita EV 1-4, 10-32 and one of 3-3 bottomed within the upper shale beds of the Fort Simpson Group (See Table of Formations). The contact with the overlying Winterburn Group (basal Nisku Formation is gradational. The Nisku is overlain by a thin shale bed (10-14 feet thick) which has been termed the Calmar Formation on several Canadian Stratigraphic logs from the area. The Calmar is a persistent shale unit and is used as a marker bed.

Gulf Minerals Canada Limited

AREA OF ACTIVITIES

BASE METALS

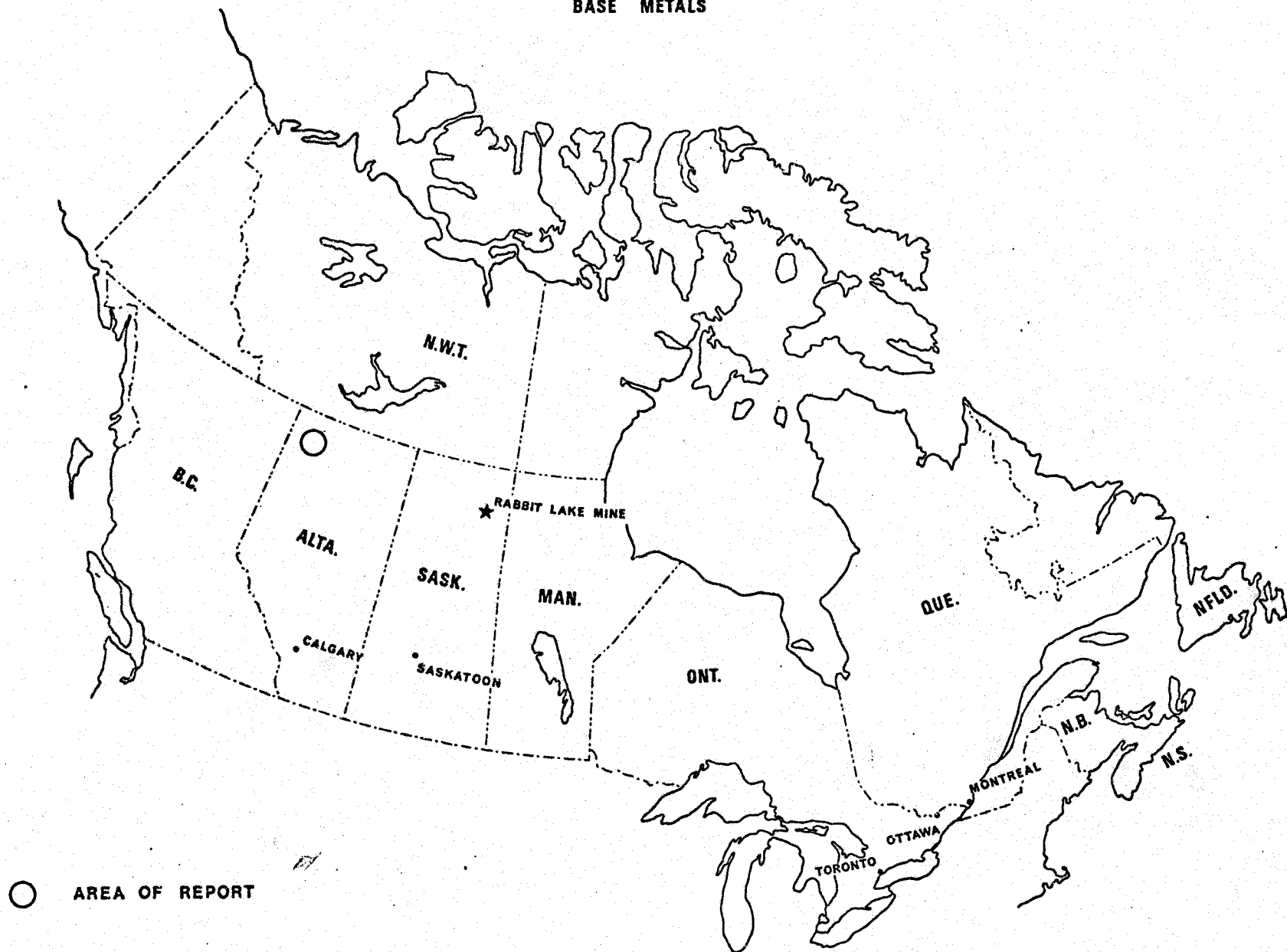
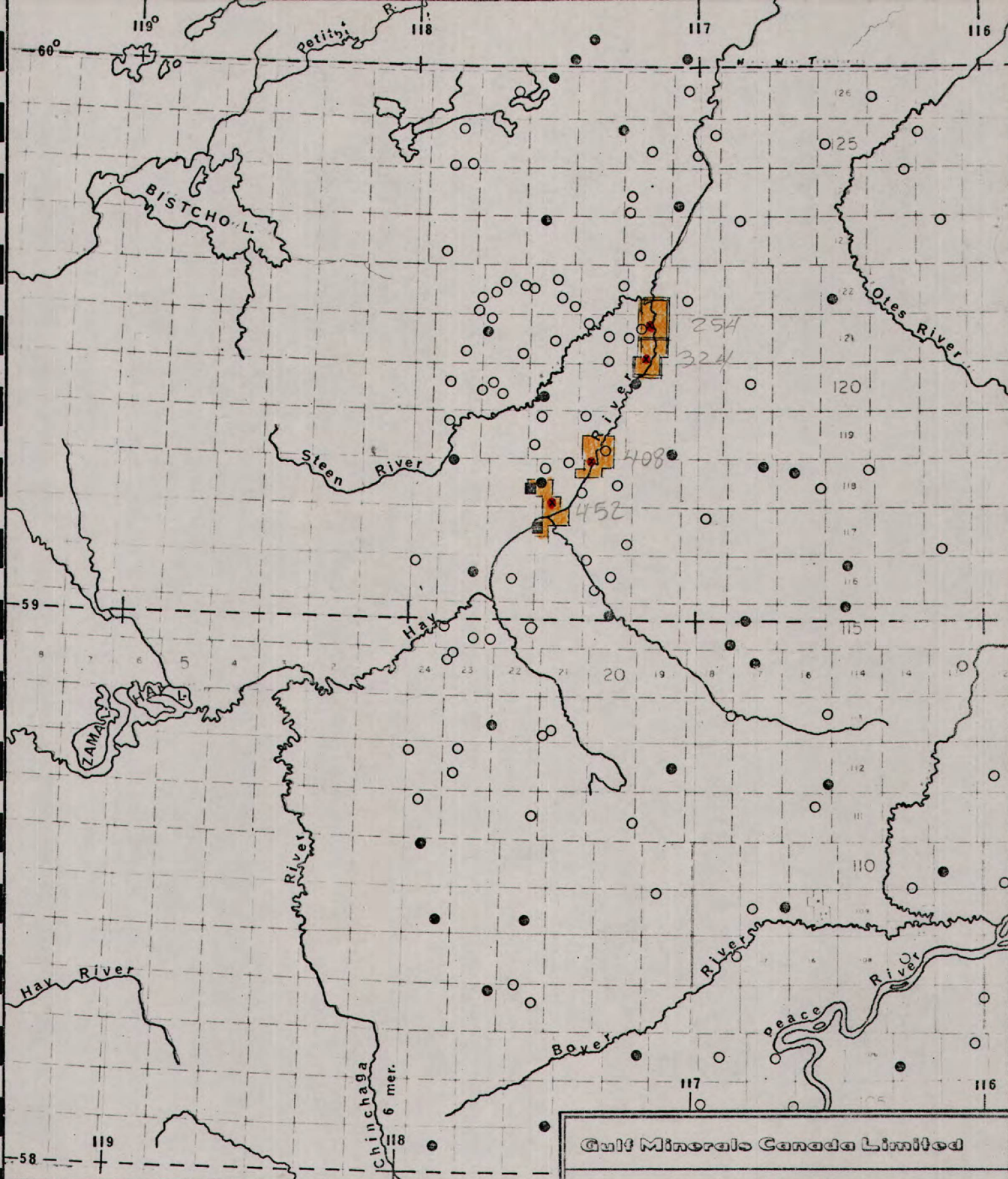


FIGURE 1

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LEGEND

- - OIL WELLS
- - GULFMIN ANITA EV WELLS
- - Quartz Mineral Permits

84 NW	
M	N
L	K

Gulf Minerals Canada Limited			
Basin Rim Project			
MAP 1: STEEN PROJECT			
DATE:	SCALE:	DRAWN BY:	NTS
Mar. / 78	1" = 15 miles	Germundson	84 N

19780015

GULFMIN ANITA EV. SUMMARY SHEET

LOCATION	7-27-121-19WS	3-3-121-19W5	3-3-121-19WS	10-32-118-20WS	1-4-118-21WS
SURFACE ELEV.	980.2	995.1	995.7	1073.0	1090.6
KB	985	1000	1001	1078	1096
TD	460'	418'	722'	918'	1058'
SPUDDED	15 Aug/77	26 Aug/77	4 Sept/77	14 Sept/77	24 Sept/77
RIG RELEASED	24 Aug/77	2 Sept/77	11 Sept/77	24 Sept/77	11 Oct/77
DEPTH OF SURFACE CASING	185'	185'	185'	235'	232'
& SIZE OF CSG	3 1/2"	3 1/2"	4 1/2"	4 1/2"	4 1/2"
CEMENTED WITH	13 Sax Fondu	13 Sax Fondu	9 Sax Fondu	9 Sax Fondu	13 Sax Fondu
CRETACEOUS TOP	124'	115'	114'	119'	205'
DEVONIAN TOP	254'	324'	324'	402'	452'
CEMENT PLUG (1)	0-193*	0-418'	622-722	818-918'	0-463'*
CEMENTED WITH	9 Sax Portland	20 Sax Portland	2 Sax Fondu	2 Sax Portland	1 Sax Fondu 9 Sax Portland
PLUG (2)		*Hole caved in & cemented	0-265'*	0-350	
CEMENTED WITH		Short of requirements	8 Sax Fondu	1 Sax Fondu 8 Sax Portland	
LOGS	Grv & Dens.	None	Grv, Dens, Cal, Foc. Beam	Grv, Dens, Cal, Foc. Beam	Grv, Dens, Cal, Foc. Beam

NOVEMBER 14, 1977.

19780015

PERIOD	CENTRAL PLAINS	NORTHWEST PLAINS	NORTHEAST PLAINS
QUATERNARY	River gravel, soil glacial deposits, drift lake fill, reworked Oligocene conglomerates		
CRETACEOUS	COLORADO Lower Upper CLEARWATER	SMOKY G. MUSKIKI CARDIUM KASKAPAU POUCE COUPE DOE CR. DUNVEGAN	LA BICHE Second white speckled shale Fish scale zone VIKING PELICAN JOLI FOU GRAND RAPIDS Colony (St. Edouard) Sparky (Borrowdale, Wainwright, Vermilion) GP sandstone ISLAY LLOYDMINSTER Cummings shale Cummings sandstone
		FORT ST. JOHN GROUP SHAFTSBURY PEACE RIVER SPIRIT RIVER PADDY CADOTTE HARMON NOTIKEWAN FALMER WILRICH BLUESKY	Fish scale zone PADDY CADOTTE HARMON NOTIKEWAN FALMER WILRICH BLUESKY
DEVONIAN	UPPER	WABAMUN Cross. Mbr. BIG VALLEY STETTLER GRAMINA BLUERIDGE CALMAR NISKU CAMROSE WOODBEND IRETON LEDUC DUVERNAY MAJEAU LK. Basal Reef Basal Cooking Lake COOKING LAKE	WABAMUN WINTERBURN TROUT RIVER KAKISKA REDKNIFE Jean Member WOODBEND IRETON LEDUC FORT SIMPSON MUSKWA BEAVERHILL LAKE SLAVE POINT
		BH. LK. SWAN HILLS WATERWAYS FORT VERMILION WATT MOUNTAIN GILWOOD	WABAMUN WINTERBURN WOODBEND HONDO GROS MONT IRETON TATHLINA TWIN FALLS HAY RIVER BH. LK. MILDRED MOBERLY CHRISTINA CALMUT FIREBAG SLAVE POINT FT. VM.
	MIDDLE	ELK POINT WATT MOUNTAIN PRAIRE WINNIPEGOSIS CONTACT RAPIDS COLD LAKE ERNESTINA LAKE LOTSBERG Basal red beds	ELK POINT Upper WATT MOUNTAIN SULPHUR POINT MUSKEG Rainbow Mbr. Zama Member KEG RIVER CHINCHAGA COLD LAKE ERNESTINA Basal red beds granite wash
	LOWER	ELK POINT WATT MOUNTAIN PRAIRE WINNIPEGOSIS CONTACT RAPIDS COLD LAKE ERNESTINA LAKE LOTSBERG 3rd & 4th salt Basal red beds	ELK POINT Lower WATT MOUNTAIN SULPHUR POINT MUSKEG Rainbow Mbr. Zama Member KEG RIVER CHINCHAGA COLD LAKE ERNESTINA Basal red beds granite wash

TABLE OF FORMATIONS

The mainly carbonate sequence above the Calmar commonly contains numerous thin argillaceous beds. Most of this sequence is equivalent to the upper part of the Winterburn Group (Graminia Formation). In drill holes 1-4 and 10-32 (the southernmost holes) more porous beds of the Wabamun Formation overly the Winterburn.

This entire Devonian sequence represents a shallow shelf deposit.

Very little original porosity is preserved because of the introduction of early diagenetic cement. Minor, secondary moldic porosity is developed locally.

Fracturing and veining are for the most part absent. The greatest amount of fracturing occurs beneath the Devonian - Cretaceous unconformity at the 3-3 locations.

Pyrite is the most common sulphide in the Devonian sequence and occurs along fractures and as a replacement of fossil fragments. Most of the pyrite is associated with argillaceous beds.

A 1/2 inch bleb of galena is present at 584 feet in the deeper hole of 3-3.

Gas puffs from the upper beds of the Nisku Formation occurred in 7-27 and both holes of 3-3.

The Devonian - Cretaceous unconformity is a sharp contact. Limestone "rip-up clasts" were noted up to 15 feet above the unconformity in the 3-3 locations.

The basal Cretaceous beds are comprised of interbedded sandstones and shales. A sequence of bentonitic mudstones overly the sandstone section.

Pyrite and glauconite are most abundant in the sandstone sequence.

Overburden thickness varies between 115 and 205 feet.

One hole of the 3-3 locations was abandoned short of requirements.

GEOCHEMISTRY

The geochemical analyses are in Appendix B. No significant copper, lead or zinc anomalies are present in the Devonian. The best values (zinc) occur at the base of the Graminia in 10-32 (220 ppm) and 1-4 (63 ppm). The 10 foot sample (580' to 590') in 3-3 includes the galena occurrence; the highest lead value (70 ppm) from the carbonates is from this sample.

Sequences of the Cretaceous bentonitic mudstones were sampled. The results in Appendix B have very high values for zinc, iron and copper as well as for barium, manganese and nickel.

GEOPHYSICS

The geophysical logs, as noted in the summary sheet, show, for example, the following:

- (1) The persistent nature of the Calmar Formation.
- (2) The sharp Devonian-Cretaceous unconformity.
- (3) The greater radioactivity of the bentonitic mudstones (gamma).
- (4) The caving associated with the Cretaceous section (Caliper).

SUMMARY AND CONCLUSIONS

The Steen diamond drill program of northwestern Alberta tested the Devonian section comprised of the Wabamun Formation, and the Winterburn and Fort Simpson Groups.

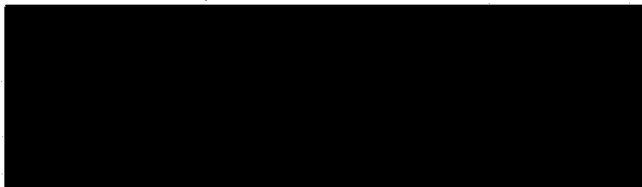
Bentonitic beds within the Cretaceous, the Devonian-Cretaceous unconformity and shale units in the Devonian are well-defined lithologically and geophysically.

No significant geochemical analyses are present.

RECOMMENDATIONS

No further follow-up exploration is warranted at this time.

Respectfully submitted,



R. K. Germundson, Ph.D.

Pat Fischer

March 23, 1978

APPENDIX A



Gulf Minerals Canada Limited

DIAMOND DRILL RECORD

D.D.H. NO. 7-27-121-19 W5
 SHEET 1 OF 2

PROPERTY Gulfmin Anita Ev (Steen R.)
 LATITUDE _____
 LONGITUDE _____
 ELEVATION 980.2' (G.L.)

BEARING—TRUE _____
 DIP -90°
 FINAL DEPTH 460'
 CORE SIZE NQ 182-460'

DATE STARTED August 15, 1977
 DATE COMPLETED August 24, 1977
 DRILLED BY Connor's Drilling
 LOGGED BY P. A. Fischer

DATE: _____ SIGNED: _____

DEPTH FEET	F'TAGE CORED	F'TAGE REC'D	FORMATION	DESCRIPTION	DEPTH	BED'G & FOLIA	REMARKS SAMPLES ETC.
0	- 180			Surface Casing - 3 1/2" cemented with 13 Sax Fondu			
182	- 185 (3')		Cretaceous Ft. St. John Gp.	Sandstone, dark green grey, glauconitic, moderately rounded quartz grains, fine-medium grained, faint fine laminations, pyritiferous, grading to:			
185	- 215 (30')		Cretaceous Ft. St. John Gp.	Siltstone, grey, sl. glauconitic, laminated, high clay matrix, pyritic.			
215	- 225 (10')		Cretaceous Ft. St. John Gp.	Shale and claystone, dark grey, laminated, silty, sl. glauconitic.			
225	- 231.5 (6.5')		Cretaceous Ft. St. John Gp.	Sandstone, dark green, glauconitic, friable, clay matrix, pyritic, moderately rounded quartz grains.			
231.5	- 235.5 (4')		Cretaceous Ft. St. John Gp.	Shale, dark grey, silty, calcite veining present.			
235.5	- 254 (18.5')		Cretaceous Ft. St. John Gp.	Siltstone, dark grey to grey, rounded quartz grains, high clay matrix, sl. glauconitic, carbonaceous material present, 1' shale bed rich in carbonaceous material at base.			
254	- 285 (32')		Devonian Winterburn	Limestone, grey brown, shaly intercalations, gypn coloured, stylolitic fossiliferous - brachs, gast, crinacorals, ? bry, some bitumen pyrite after fossils.			
285	- 297 (12')		Calmar	Shale, green grey, calcareous, lst intercalations, pyritic fossiliferous			



Gulf Minerals Canada Limited
DIAMOND DRILL RECORD

D.D.H. NO. 3-3-121-19 W5
SHEET 1 OF 1

PROPERTY Gulfmin (Steen River) Anita
LATITUDE _____
LONGITUDE _____
ELEVATION 995.7' G.L.

BEARING - TRUE _____
DIP -90°
FINAL DEPTH 722'
CORE SIZE HQ 185-335 NQ 335-722

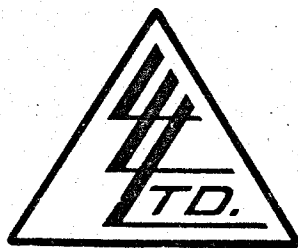
DATE STARTED August 26, 1977
DATE COMPLETED September 2, 1977
DRILLED BY Connor's Drilling
LOGGED BY P. A. Fischer

DATE: _____ SIGNED: _____

DEPTH FEET	F'TAGE CORED	F'TAGE REC'D	FORMATION	DESCRIPTION	DEPTH	BED'G & FOLIA	REMARKS SAMPLES ETC.
0	- 185			Surface casing - 4 1/2" cemented with 9 Sax Fondu			
185	- 249 (64')		Cretaceous Ft. St. John Gp.	Shales and mudstones, black, bentonite seams, finely laminated, pyritiferous in places.			
249	- 285 (36')		Cretaceous Ft. St. John Gp.	Siltstone, grey-dark grey, high clay matrix, glauconitic in part, some shale interbeds, bedding gradation to sandstone.			
285	- 294 (9')		Cretaceous Ft. St. John Gp.	Sandstone, dark green, glauconitic, fine-medium grained.			
294	- 308.5 (12.5')		Cretaceous Ft. St. John Gp.	Siltstone, grey, glauconitic, hydrocarbon bearing, high clay matrix.			
308.5	- 312 (3.5')		Cretaceous Ft. St. John Gp.	Shale and claystone, highly fossiliferous - clambed coquina.			
312	- 324 (12')		Cretaceous Ft. St. John Gp.	Shale to sandstone gradation, coaly fragments, limestone rid-up clasts present (up to 313') in siltstone, rock is mainly siltstone.			
324	- 384 (60')		Devonian Winterburn	Limestone - grey-brown, shaly intercalations - green-grey colour, stylolitic, fossiliferous - brachs, gast, corals, crin?, bry. Pyrite after fossils.			
384	- 393 (9')		Calmar	Shale, green-grey, clacareous, lst intercalations, fossiliferous, pyritic			
393	- 625 (232')		Nisku	Limestone, as above, minor shaly interbeds Galena @ 583.5' ? Sphal. @ 593.5'			
625	- 722 (97)		Fort Simpson	Shale, limestone interbeds up to 3' thick, ave. 1 1/2'. Shale has limestone interclasts, lst. is v. shaley.			
	535'	522.6'	(97.69%)				

APPENDIX B

To: GULF MINERALS CANADA LIMITED,
 Ste. 1400, 110 Yonge Street,
 Toronto, Ontario.
 ATTN: Dr. R.K. Germundson
 cc: P.A. Fischer



File No. 14032
 Date September 13, 1977
 Samples Rock Geochems

AFE #7446
 P.O. # 7532

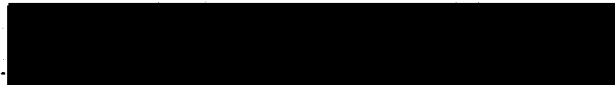
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GULFMIN ANITA EV 7-27-121-19 W5

SAMPLE No.	PPM		Footage	PPM	
	Cu			Pb	Zn
AB-7001	19		254'-250'	32	14
7002	15		260'-270'	35	13
7003	14		270'-280'	41	17
7004	15		280'-289'	46	42
7005	11		298'-310'	34	16
7006	12		310'-320'	31	18
7007	14		320'-330'	33	21
7008	13		330'-340'	39	22
7009	10		340'-350'	33	17
7010	13		350'-360'	32	23
7011	15		360'-370'	36	24
7012	14		370'-380'	40	26
7013	13		380'-390'	36	21
7014	12		390'-400'	38	23
7015	14		400'-409'	35	30
7016	14		410'-420'	32	21
7017	13		420'-430'	35	32
7018	12		430'-440'	35	29
7019	15		440'-450'	35	28
7020	16		450'-460'	33	26

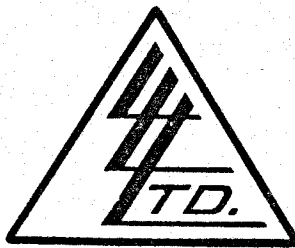
I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

Rejects Retained one month.
 Pulps Retained one month
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 Suite 1400, 110 Yonge Street,
 Toronto, Ontario M5C 1T4
 ATTN: Dr. R.K. Germundson
 cc: Mrs. P.A. Fischer



File No. 14149
 Date September 28, 1977
 Samples Core

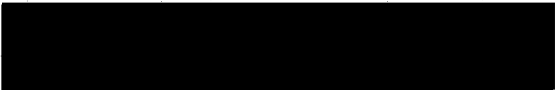
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GULF MIN ANITA EV 3-3-121-19 W5

SAMPLE No.	PPM Cu	Footage	PPM Pb	PPM Zn
AB-7021	40	324'-330'	46	17
AB-7022	20	330'-340'	40	39
AB-7023	18	340'-350'	39	15
AB-7024	20	350'-360'	39	16
AB-7025	17	360'-370'	43	18
AB-7026	15	370'-380'	46	24
AB-7027	16	393'-400'	40	15
AB-7028	16	400'-410'	39	16
AB-7029	17	410'-420'	36	15
AB-7030	19	420'-430'	39	22
AB-7031	14	430'-440'	42	21
AB-7032	14	440'-450'	41	19
AB-7033	17	450'-460'	41	29
AB-7034	16	460'-470'	46	21
AB-7035	15	470'-480'	45	15
AB-7036	16	480'-490'	41	16
AB-7037	16	490'-500'	40	17
AB-7038	19	500'-508'	41	28
AB-7039	16	512'-520'	42	48
AB-7040	14	520'-530'	43	27
AB-7041	13	530'-540'	47	27
AB-7042	18	540'-550'	44	27
AB-7043	18	550'-560'	41	24
AB-7044	12	560'-572'	36	12
AB-7045	14	575'-580'	41	21
AB-7046	15	580'-590'	70	25
AB-7047	16	590'-595'	43	24
AB-7048	14	599.5'-606'	44	18

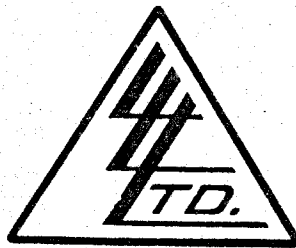
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 cc: P.A. Fischer



File No. 14229
 Date October 12, 1977
 Samples Rock Geochems

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GULF MIN ANITA EV 10-32-118-20 W5

Page # 1

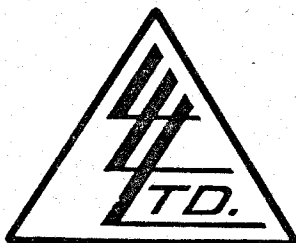
SAMPLE No.	PPM Cu	Footage	PPM Pb	PPM Zn
<u>"Rock Geochems"</u>				
AB 7049	16	408'-420'	57	17
7050	14	420'-430'	54	16
7051	13	430'-440'	41	15
7052	12	440'-450'	40	14
7053	23	450'-460'	55	17
7054	22	460'-470'	44	24
7055	21	470'-480'	41	37
7056	21	480'-490'	41	58
7057	16	490'-500'	41	15
7058	16	500'-510'	39	12
7059	19	510'-520'	40	20
7060	20	520'-530'	37	17
7061	19	530'-540'	38	27
7062	21	540'-550'	37	16
7063	17	550'-560'	38	46
7064	17	560'-570'	36	10
7065	15	570'-580'	36	10
7066	17	580'-590'	35	9
7067	20	590'-600'	35	10
7068	20	600'-610'	37	36
7069	18	610'-620'	30	25
7070	20	620'-630'	30	18
7071	17	630'-640'	30	19
7072	22	640'-650'	32	29
7073	24	650'-660'	32	31
7074	22	660'-670'	33	27
7075	19	670'-680'	32	16
7076	17	680'-690'	47	18
7077	18	690'-700'	33	22

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Page # 2

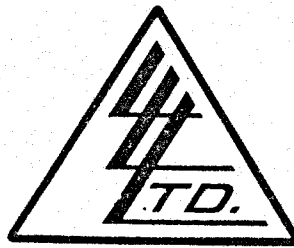
SAMPLE No.	PPM	Footage	PPM	PPM
	Cu		Pb	Zn
AB 7078	22	700'-708.5'	39	220
7079	24	719'-730'	47	19
7080	23	730'-740'	34	20
7081	28	740'-750'	36	28
7082	25	750'-760'	43	32
7083	24	760'-770'	36	21
7084	21	770'-780'	41	24
7085	22	780'-790'	36	31
7086	29	790'-800'	49	40
7087	22	800'-810'	35	16
7088	20	810'-820'	31	19
7089	22	820'-833'	31	26
7090	22	850'-860'	37	27
7091	18	860'-872'	41	36

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 cc: P.A. Fischer



File No. 14338
 Date October 31, 1977
 Samples Core Geochems

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GULF MIN ANITA EV 1-4-118-21 W-5

Page # 1

SAMPLE No.	PPM Cu	Footage	PPM Pb	PPM Zn
<u>"Core Geochems"</u>				
AB-7092	14	452'-460'	38	20
7093	13	460'-470'	34	18
7094	13	470'-480'	33	27
7095	12	480'-490'	36	12
7096	12	490'-500'	35	12
7097	13	500'-510'	38	10
7098	12	510'-520'	36	12
7099	13	520'-530'	41	11
7100	7	530'-540'	51	13
7101	9	540'-550'	34	8
7102	10	550'-560'	33	9
7103	11	560'-570'	35	10
7104	12	570'-580'	31	13
7105	11	580'-590'	49	9
7106	10	590'-600'	36	10
7107	50	600'-610'	57	38
7108	15	610'-620'	40	10
7109	17	620'-630'	41	12
7110	10	630'-640'	36	8
7111	10	640'-650'	44	15
7112	12	650'-660'	38	20
7113	12	660'-670'	37	10
7114	12	670'-680'	37	12
7115	11	680'-690'	34	9
7116	11	690'-700'	35	10
7117	10	700'-710'	32	11
7118	12	710'-720'	35	18
7119	10	720'-730'	34	12
7120	14	730'-740'	36	16
7121	11	740'-750'	34	11

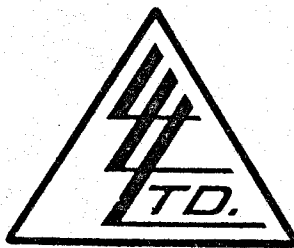
I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

Rejects Retained one month.
 Pulps Retained one month
 unless specific arrangements
 made in advance.



Licensed Assayer of British Columbia

To: GULF MINERALS CANADA LIMITED,
 te. 1400, 110 Yonge Street,
 Toronto, Ontario M5C 1T4
 TTN: Dr. R.K. Germundson
 cc: P.A. Fischer



File No. 14338
 Date October 31, 1977
 Samples Core Geochems

Certificate of
ASSAY OF
LORING LABORATORIES LTD.

Page # 2

SAMPLE No.	PPM	Footage	PPM	PPM
	Cu		Pb	Zn
AB-7122	10	750'-760'	32	11
7123	12	760'-770'	34	12
7124	12	770'-780'	33	13
7125	11	780'-790'	33	27
7126	11	790'-800'	32	21
7127	10	800'-810'	31	22
7128	11	810'-820'	37	26
7129	13	820'-830'	30	20
7130	12	830'-840'	32	50
7131	7	840'-850'	43	26
7132	9	850'-860'	40	19
7133	9	860'-870'	44	21
7134	8	870'-880'	43	26
7135	8	880'-890'	45	20
7136	7	890'-900'	45	26
7137	9	900'-905'	43	63
7138	7	918'-930'	47	23
7139	8	930'-940'	44	45
7140	8	940'-950'	46	25
7141	10	950'-960'	41	34
7142	10	960'-970'	48	36
7143	9	970'-980'	49	30
7144	8	980'-990'	48	23
7145	8	990'-1003'	44	22
7146	8	1012'-1020	50	23
7147	10	1020-1030'	47	25
7148	10	1030'-1036'	43	41

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

Rejects Retained one month.

Pulps Retained one month
 unless specific arrangements
 made in advance.

X-RAY ASSAY LABORATORIES

LIMITED

45 LESMILL ROAD

DON MILLS ONTARIO M3B 2T8

445-5755

Certificate of Analysis

NO. 2496 PAGE 1 of 6

TO. GULF MINERALS CDA LIMITED
Suite 1400, 110 Yonge St.,
TORONTO, Ont. M5C 1T4

RECEIVED

DEC 7 1977

GULF MINERALS
CANADA LIMITED
TORONTO - EXPLORATION
DEPARTMENT

Attn: Ken Germundson

RECEIVED Nov. 28/77

INVOICE NO. 2496

SAMPLE(S) OF 59 s. core SUBMITTED TO US SHOW RESULTS AS FOLLOWS:

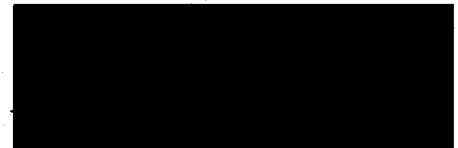
Sample	Mnppm	Feppm	Nippm	Cuppm	Znppm	Cdppm	Bappm
10-32					630		
					820		
					480		
					400		
					360		
					620		
	72		120	110	630	9	
	230		150	170	530		
					730	14	
	280		63	170	680		
					310	3	
	63		86	85	250		
					170	x	
					190		
	220	31400	30	22	110	x	400
	120	19900	14	20	72	x	400
	53	24400	16	17	72	x	400
1-4					450		
					740		
					450		
					500		
					540		
					570		
	82		120	310	650	8	
	78		110	99	500	6	
	210		140	170	640	14	
					430		
	210		110	150	240	x	

X-RAY ASSAY LABORATORIES LIMITED

DATE

Dec. 6/77.

CERTIFIED BY



X-RAY ASSAY LABORATORIES

LIMITED

45 LESMILL ROAD

DON MILLS ONTARIO M3B 2T8

445-5755

Certificate of Analysis

NO. 2496

PAGE

2 of 6

Sample	Mnppm	Feppm	Nippm	Cuppm	Znppm	Cdppm	Bappm
1-4					160		
					180		
	400-410				170	x	500
	410-420				90	x	400
	420-426	1120	32300	55	43		
	426-430	75	17900	22	17		
	430-440	220	31500	24	17		
	440-452	110	19300	7	12		
7-27	190-200	170	14000	9	11		
	200-210	100	20000	23	20		
	210-215	74	17700	16	15		
	215-225	53	21800	24	18		
	225-2315	44	72500	18	18		
	2315-2355	210	17500	23	25		
	2355-245	210	7300	6	10		
	245-254	1	3400	x	8		
2-3	190-200	200		99	110		
	200-210	120		150	190		
	210-220	150		62	190		
	220-230				490		
	230-240				160		
	240-250				170		
	250-260	160	29400	34	25		
	260-267	73	20100	17	21		
	267-270	24	15800	8	12		
	270-280	88	21100	11	12		
	280-285	55	22000	15	13		
	285-290	100	83500	16	14		
	290-295	69	48700	14	15		
	295-300	82	28900	15	22		

Dec. 6/77.

X-RAY ASSAY LABORATORIES LIMITED

DATE

CERTIFIED BY

ASSAYERS - ANALYTICAL CHEMISTS - SPECTROGRAPHERS

X-RAY ASSAY LABORATORIES

LIMITED

45 LESMILL ROAD

DON MILLS ONTARIO M3B 2T8

445-5755

Certificate of Analysis

NO. 2496

PAGE 6 of 6

Sample	Hgppb	Pbppm	U ₃ O ₈ ppm
--------	-------	-------	-----------------------------------

2-3

300-3085	60	10	
3085-317	50	5	
317-323	20	10	

Note: x = less than 10ppb Hg

X-RAY ASSAY LABORATORIES LIMITED

DATE

Dec. 6/77.

CERTIFIED BY

ASSAYERS - ANALYTICAL CHEMISTS - SPECTROGRAPHERS

X-RAY ASSAY LABORATORIES

LIMITED

45 LESMILL ROAD

DON MILLS ONTARIO M3B 2T8

445-5755

Certificate of Analysis

NO. 2496

PAGE

5 of 6

Sample	Hgppb	Pbppm	U ₃ O ₈ ppm
--------	-------	-------	-----------------------------------

1-4

400-410

410-420

420-426

70

15

426-430

20

10

430-440

20

10

440-452

10

10

7-27

190-200

10

20

200-210

10

10

210-215

10

15

215-225

20

15

225-2315

30

20

2315-2355

60

10

2355-245

40

10

245-254

x

5

2-3

190-200

15

200-210

25

210-220

20

220-230

230-240

240-250

250-260

20

20

260-267

10

15

267-270

10

10

270-280

10

20

280-285

10

10

285-290

10

15

290-295

20

5

295-300

20

5

Dec. 6/77

X-RAY ASSAY LABORATORIES LIMITED

DATE

CERTIFIED BY

X-RAY ASSAY LABORATORIES

LIMITED

45 LESMILL ROAD

DON MILLS ONTARIO M3B 2T8

445-5755

Certificate of Analysis

NO. 2496 PAGE 4 of 6

Sample	Hgppb	Pbppm	U ₃ O ₈ ppm
--------	-------	-------	-----------------------------------

10-32

240-250			
250-260			
260-270			
270-280			
280-290			
290-300			
300-310		20	
310-320			
320-330		25	
330-340			
340-350		25	
350-360			
360-370		40	
370-380			
380-390	20	30	
390-400	10	15	
400-408	10	30	

1-4

280-290			
290-300			
310-320			
320-330			
330-340			
340-350			
350-360		35	34
360-370		10	29
370-380		10	35
380-390			
390-400		15	

X-RAY ASSAY LABORATORIES LIMITED

Dec. 6/77.

DATE

CERTIFIED BY

X-RAY ASSAY LABORATORIES

LIMITED

45 LESMILL ROAD

DON MILLS ONTARIO M3B 2T8

445-5755

Certificate of Analysis

NO. 2496

PAGE

3 of 6

Sample	Mnppm	Feppm	Nippm	Cuppm	Znppm	Cdppm	Bappm
2-3 300-3085	120	20600	18	40	74	x	500
3085-317	390	26500	13	18	66	x	400
317-323	120	10300	15	14	55	x	400

Note: x = less than 1ppm Cd

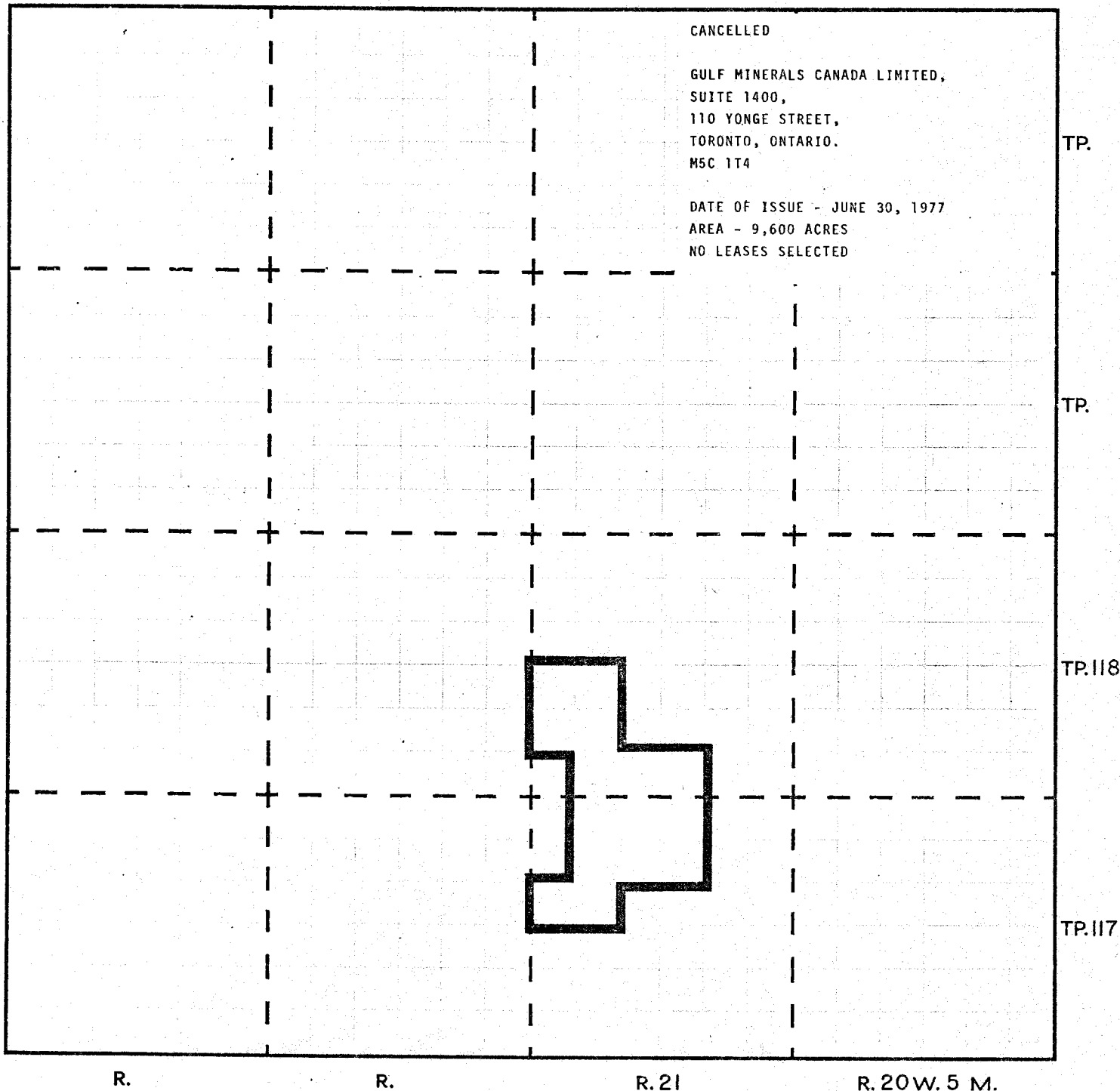
X-RAY ASSAY LABORATORIES LIMITED

DATE

Dec. 6/77.

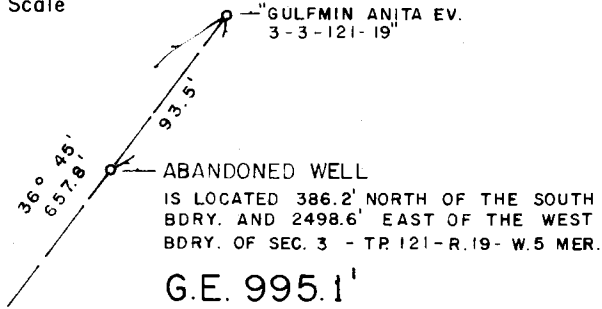
CERTIFIED BY

QUARTZ MINERAL EXPLORATION PERMIT NO. 6877060001



DETAIL

Not to Scale



G.E. 995.1'

LEASE ON ROAD BED OF ABANDONED HIGHWAY

WELL LOCATION
"GULFMIN ANITA EV
3 - 3 - 121 - 19"

Abandoned Well
See "DETAIL"



Fd. P. Pit. M.
33-120-19

479.0'
ASSUMED 270°00'
Fd. P. N 1/4 34
Pit. M.

**PLAN SHOWING WELL LOCATION FOR
GULF MINERALS CANADA LIMITED
"GULFMIN ANITA EV 3 - 3 - 121 - 19"
IN theor. L.S. 3 - SEC. 3 - TP. 121 - R. 19 - W. 5 th MER.**

**SCALE: 1 INCH = 400 FEET.
GROUND ELEV.: 995.7'**

BRASS CAP POSTS FOUND SHOWN THUS.....● P
TRAVERSE STATIONS PLANTED SHOWN THUS.....△
12" SPIKES PLANTED SHOWN THUS.....◊

For:
GULF MINERALS CANADA LIMITED.

NOTE:

LEVEL CIRCUIT IS CLOSED TO GEODETIC DATUM AND IS REFERRED TO TOP OF BRASS CAP AT N. 1/4 SEC. 34 - 120 - 19 - 5. (ELEV: 989.87)

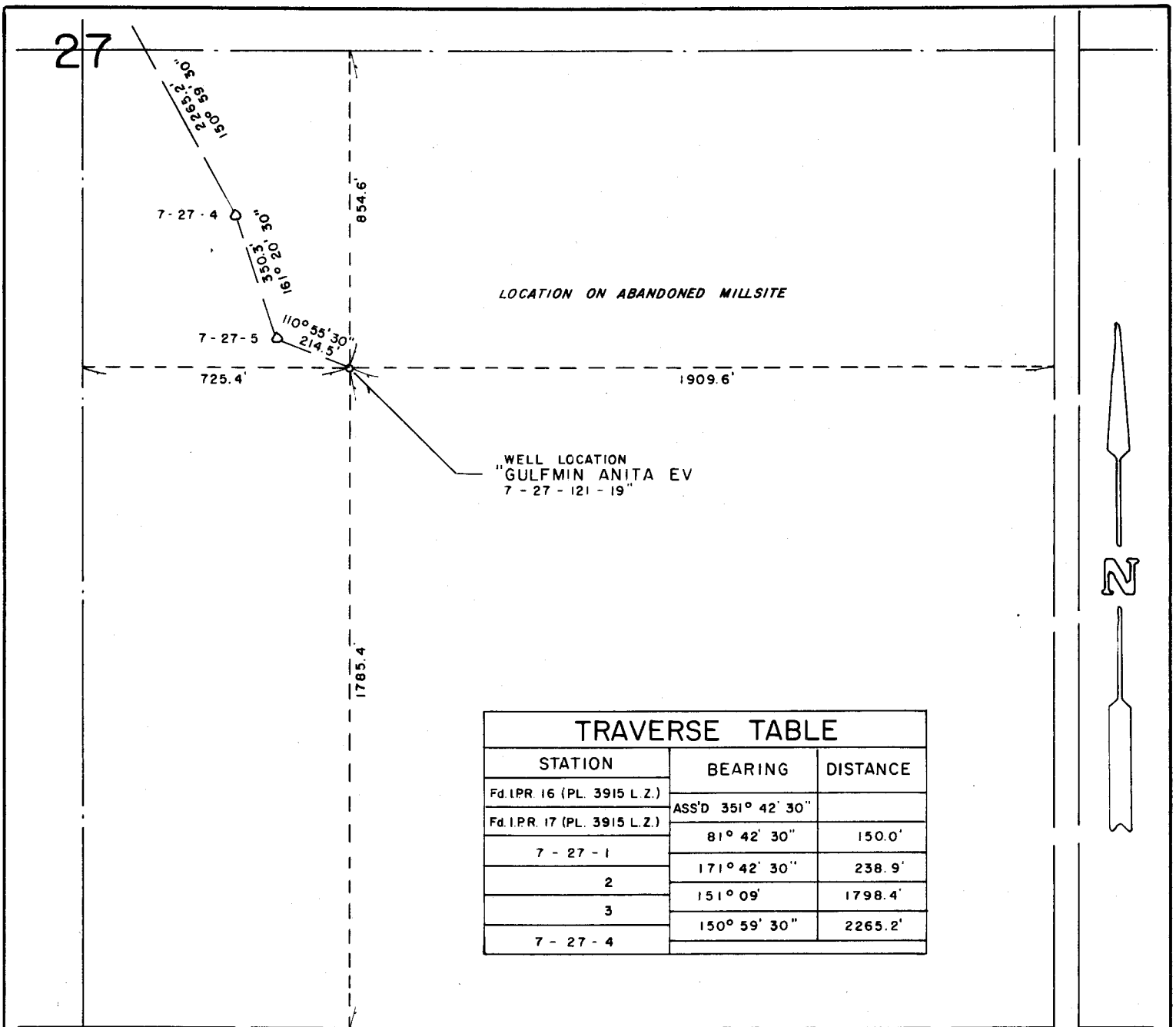
CO-ORDINATES:

WELL IS LOCATED 461.1' NORTH OF THE SOUTH BDRY. AND 2554.6' EAST OF THE WEST BDRY. OF SEC. 3 - TP. 121 - R. 19 - W. 5 th MER.

I CERTIFY THAT THE SURVEY REPRESENTED BY THIS PLAN IS CORRECT AND TRUE TO THE BEST OF MY KNOWLEDGE, AND WAS COMPLETED ON THE 30 DAY OF SEPT., 1977.

ALBERTA LAND SURVEYOR

WITNESS



PLAN SHOWING WELL LOCATION FOR
GULF MINERALS CANADA LIMITED
"GULFMIN ANITA EV 7-27-121-19"
IN theor. L.S. 7 -SEC. 27 -TP. 121 -R. 19 -W. 5 th MER.

SCALE: 1 INCH = 400 FEET.
GROUND ELEV: 980.2'

STATUTORY IRON POSTS FOUND SHOWN THUS.....●
TRAVERSE STATIONS PLANTED SHOWN THUS.....△
12" SPIKES PLANTED SHOWN THUS.....○

For:
GULF MINERALS CANADA LIMITED

NOTE:
LEVEL CIRCUIT IS CLOSED TO GEODETIC DATUM
AND IS REFERRED TO B.M. No. 850-H. (ELEV: 999.44)

CO-ORDINATES:
WELL IS LOCATED 1785.4' NORTH OF THE SOUTH
BDRY. AND 1909.6' WEST OF THE EAST BDRY. OF
SEC. 27 - TP. 121 - R. 19 - W. 5 th MER.

I CERTIFY THAT THE SURVEY REPRESENTED
BY THIS PLAN IS CORRECT AND TRUE TO
THE BEST OF MY KNOWLEDGE, AND WAS
COMPLETED ON THE 30 DAY OF SEPT. 1977.

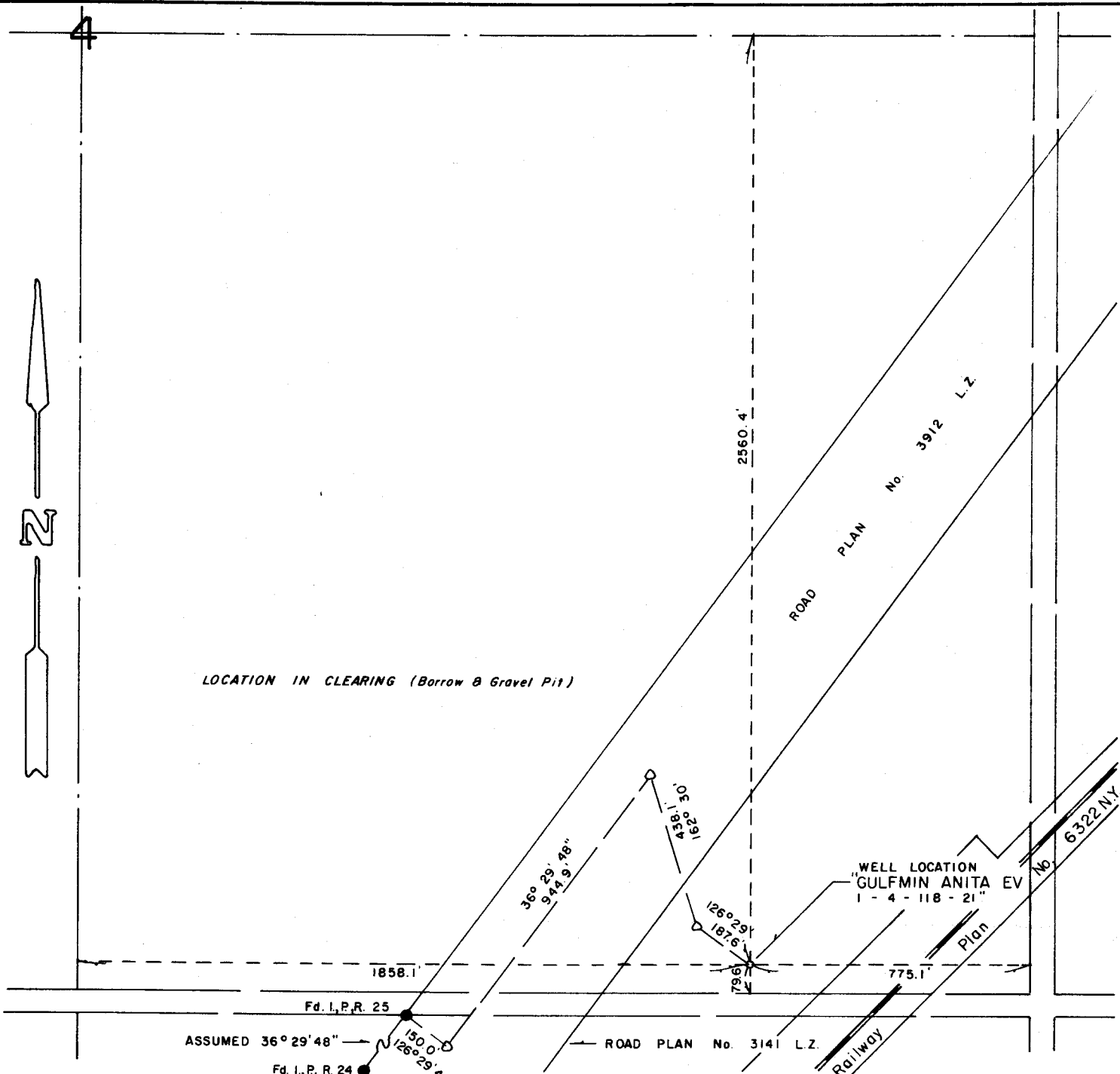
ALBERTA LAND SURVEYOR

WITNESS

4



LOCATION IN CLEARING (Borrow & Gravel Pit)



PLAN SHOWING WELL LOCATION FOR
 GULF MINERALS CANADA LIMITED
 "GULFMIN ANITA EV 1 - 4 - 118 - 21"
 IN theor. L.S. 1 - SEC. 4 - TP. 118 - R. 21 - W. 5 th MER.

SCALE: 1 INCH = 400 FEET.
 GROUND ELEV.: 1090.6'

STATUTORY IRON POSTS FOUND SHOWN THUS.....●
 TRAVERSE STATIONS PLANTED SHOWN THUS.....△
 12" SPIKES PLANTED SHOWN THUS.....○

For:
 GULF MINERALS CANADA LIMITED

NOTE:
 LEVEL CIRCUIT IS CLOSED TO GEODETIC DATUM
 AND IS REFERRED TO B.M. No. 838-H (ELEV.: 1084.91)

CO-ORDINATES:
 WELL IS LOCATED 79.6' NORTH OF THE SOUTH
 BDRY. AND 775.1' WEST OF THE EAST BDRY. OF
 SEC. 4 - TP. 118 - R. 21 - W. 5 th MER.

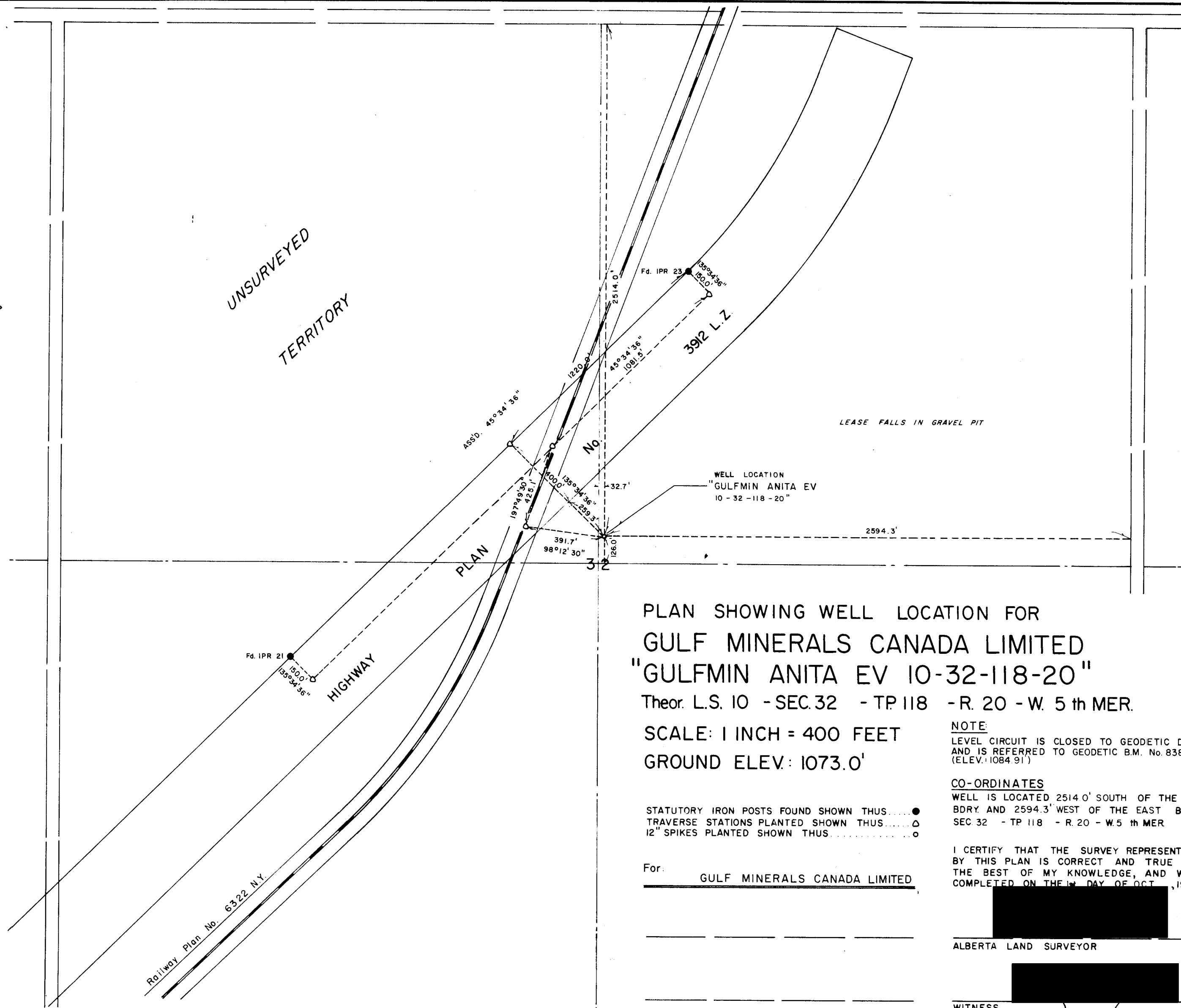
I CERTIFY THAT THE SURVEY REPRESENTED
 BY THIS PLAN IS CORRECT AND TRUE TO
 THE BEST OF MY KNOWLEDGE, AND WAS
 COMPLETED ON THE 2 DAY OF OCT. 1977.

ALBERTA LAND SURVEYOR

WITNESS



UNSURVEYED
TERRITORY



PLAN SHOWING WELL LOCATION FOR
GULF MINERALS CANADA LIMITED
"GULFMIN ANITA EV 10-32-118-20"
Theor. L.S. 10 - SEC.32 - TP 118 - R. 20 - W. 5 th MER.

SCALE: 1 INCH = 400 FEET
GROUND ELEV.: 1073.0'

NOTE
LEVEL CIRCUIT IS CLOSED TO GEODETIC DATUM
AND IS REFERRED TO GEODETIC B.M. No. 838-74
(ELEV.: 1084.91')

CO-ORDINATES
WELL IS LOCATED 2514.0' SOUTH OF THE NORTH
BDRY. AND 2594.3' WEST OF THE EAST BDY. OF
SEC 32 - TP 118 - R. 20 - W.5 th MER

STATUTORY IRON POSTS FOUND SHOWN THUS ●
TRAVERSE STATIONS PLANTED SHOWN THUS △
12" SPIKES PLANTED SHOWN THUS ○

For: GULF MINERALS CANADA LIMITED

I CERTIFY THAT THE SURVEY REPRESENTED
BY THIS PLAN IS CORRECT AND TRUE TO
THE BEST OF MY KNOWLEDGE, AND WAS
COMPLETED ON THE 1st DAY OF OCT , 1977


ALBERTA LAND SURVEYOR


WITNESS

ROKE

OIL ENTERPRISES LTD. CALGARY, ALBERTA

19780015

FILE NO. 2
 COMPANY GULF MINERALS
 LSD 3
 SEC 121
 TWP 19
 RGE 19
 W 5 M

WELL GULMANN ANITA - EV
 LOCATION 2-3-121-19-W5
 FIELD STEVEN RIVER

PROVINCE ALBERTA
 Other Services: DENIS-CAL, FBI.

Permanent Datum GROUND LEVEL Elev. _____
 Log Measured from TOP OF BIG FLOOR 5 Ft. Above Perm. Datum
 Well Depths Measured from BIG FLOOR

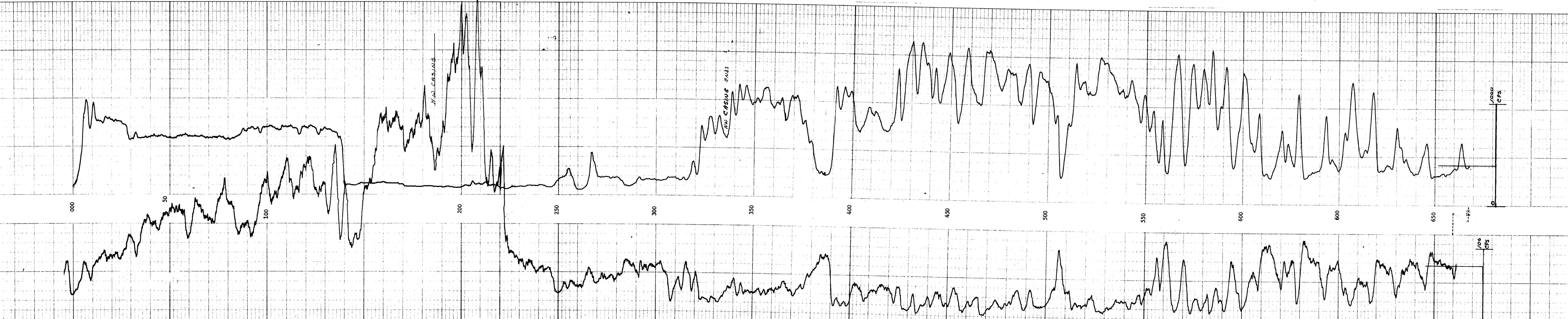
Run. No.	ONE
Date	11 SEPT 1977
First Reading	718
Last Reading	0
Footage Logged	718
Depth Reached	719
Depth Driller	720
Casing Roke	BW-186, NW-336
Casing Driller	
Fluid Type	MUD/WATER
Liquid Level	140
Min. Diam.	3"
Rm @ °F	
Operating Time	2 1/2 HOURS
Truck No.	36

RUN NO.	ONE
TOOL MODEL NO.	11
DIAMETER	1 INCH
DETECTOR MODEL NO.	11
TYPE	PROPORTIONAL
LENGTH	6 INCH
DISTANCE TO N. SOURCE	MRC-N SS-W
HOIST TRUCK NO.	36
INSTRUMENT TRUCK NO.	36
TOOL SERIAL NO.	123-001

API G. R. UNITS	14
PER LOG DIV.	14
T. C. SEC.	3
SENS. DIV. L. OR R.	0
ZERO	0
API N. UNIT	0
PER LOG DIV.	0
T. C. SEC.	3
SENS. DIV. L. OR R.	0
ZERO	0

GENERAL	DEPTH	TO	FROM	NO.
		718	186	1
		265	0	2

REMARKS: 1ST RUN - 718 UP TO 186 FT. - NEW CASING DOWN TO 336 FT. - NEW CASING OPEN HOLE ALSO, REMOTE, HOLD RAISED AT 265 FT.



ROKE

FOUNDED 1946

OIL ENTERPRISES LTD. CALGARY, ALBERTA

19780015

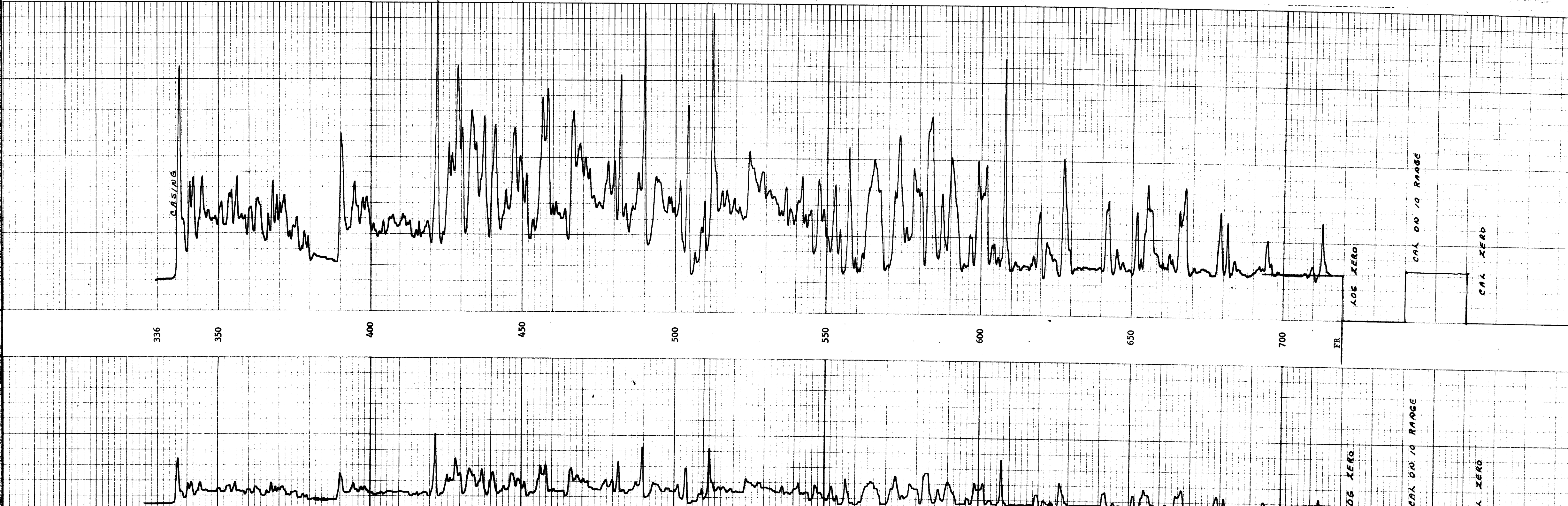
FILE NO.	COMPANY	GULF MINERALS
LSD 2	WELL	GULFMIN ANITA EV
SEC 3	LOCATION	3 - 3 - 121 - 19 - W5
TWP 121	FIELD	STEEN RIVER
RGE 19	PROVINCE	ALBERTA
W 5 M	Other Services:	GEN. INSP-CAL
Permanent Datum	GROUND LEVEL	Elev.
Log Measured from	RIG FLOOR	5 Ft. Above Perm. Datum
Well Depth Measured from	RIG FLOOR	

Run. No.	ONE
Date	11 SEP 1977
First Reading	736
Last Reading	336
Footage Logged	380
Depth Reached	739
Depth Driller	720
Casing Roke	HW-186, HW-336
Casing Driller	
Fluid Type	MUD/WATER
Liquid Level	140
Min. Diam.	3"
Rm @ °F	24.39 @ 76
Operating Time	40 MIN
Truck No.	36
Recorded By	CARLSON
Witnessed By	FRASER

LOGGED UP TO M CASTING AT 121
NO FURTHER LOG POSSIBLE FOR THIS
EQUIPMENT FAILURE

SONING GEOMETRIC FACTOR .329, PHOTO TYPE III
GEOMETRIC FACTOR .165 OHMS
FLUIDITY PEN ADJUSTED TO 3.29 DIVS
5 TO 1 RATED ON SECONDARY PEN

Depths	
--------	--



ROKE

SIDEWALL DENSILOG
CALIPER

19780015 OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO. 2
LSD 3
SEC 3
TWP 121
RGE 19
W 5 M

COMPANY **GULF MINERALS**
WELL **GULFMIN ANITA - EV**
LOCATION **2 - 3 - 121 - 19 - W5**
FIELD **STEEN RIVER**
PROVINCE **ALBERTA**

Permanent Datum **GROUND LEVEL** Elev. _____
Log Measured from **RIG FLOOR** 5 Ft. Above Perm. Datum
Well Depths Measured from **RIG FLOOR**

Other Services:
GRN, FBL
K.B. _____
CSG _____
G.L. _____

Run. No. **ONE**
Date **11 SEPT 1977**
First Reading **716**
Last Reading **0**
Footage Logged **716**
Depth Reached **719**
Depth Driller **729**
Casing Roke **BW - 186, NW-336**
Casing Driller _____
Fluid Type **MUD/WATER**
Liquid Level **140**
Min. Diam. **3"**

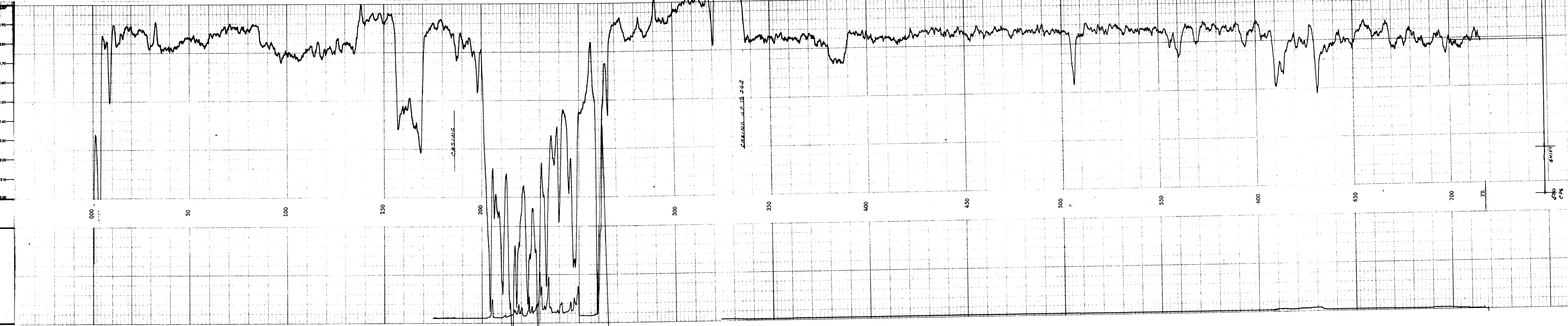
Operating Time **2 HOURS 50 MIN**
Truck No. **36**

Recorded By **CARLSON** Witnessed By **FISCHER**

RUN NO.	DEPTHS		SPEED FT/MIN	T.C. SEC.	SENS DIV.	T.C. SEC.	SENS DIV.	ZERO DIV/L OR R	ZERO CR/DIV
	FROM	TO							
1	186	716	12		3	100	4.78R	23.53	
2	0	262	12		3	100	4.78R	23.53	

REMARKS **DENS TOOL # 829**
CAL TOOL # 587
LOGGED IN TWO STAGES, 716 UP TO W CASING AT 186 FT
DRILLER FILLED W CASING, ATTEMPTED TO LOG PORTION
336 TO 186 OPEN HOLE BRIDGED AT 265 FT

GENERAL		GAMMA RAY		SIDEWALL DENSILOG	
DEPTHS	API	DEPTHS	API	DEPTHS	API
3					
4					
6					
8					
10					
12					
14					



ROKE

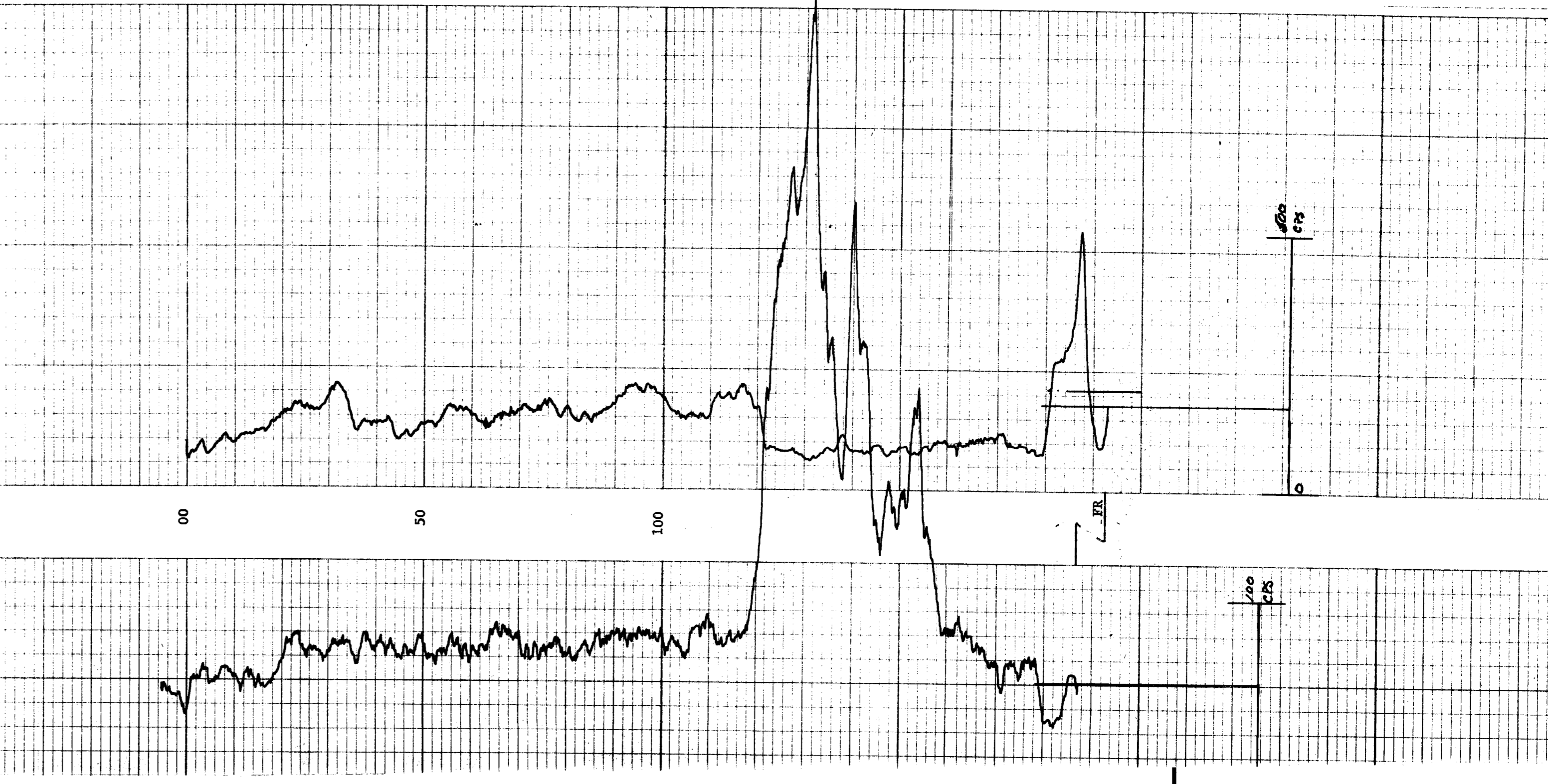
OIL ENTERPRISES LTD. CALGARY, ALBERTA

19780015

FILE NO.	COMPANY	GULF MINERALS
LOG SEC	WELL	GULFMIN - ANITA - 27
TWP	LOCATION	7/27 - 121 - 19 - W5
RGE	FIELD	STEER RIVER
M	PROVINCE	ALBERTA
Formation Datum		GROUND LEVEL
Log Measured from		GROUND LEVEL
Well Depth Measured from		

Run No.	ONE
Date	3 SEP 1977
First Reading	193
Last Reading	0
Footage Logged	193
Depth Reached	193
Depth Driller	446
Casing Foot	180
Casing Driller	
Field Type	WID/HAZER
Stand Level	0
Well Diam.	3 1/2
Run @	9F
Logging Time	1 hour
Tool No.	16

EQUIPMENT DATA		LOGGING DATA	
RUN NO.	ONE	SPEED	15
LOG TYPE		TO	153
TOOL MODEL NO.		SEC	15
DIAMETER		SETTINGS	100
DETECTOR MODEL NO.		ZERO	0
TYPE		API G. R. UNITS	14
LENGTH		PER LOG DIV.	14
SOURCE MODEL NO.		SEC.	3
SERIAL NO.		SEINGS	1000
SPACING		T. C.	
TYPE		API N. UNITS	
STRENGTH		ZERO	0
		DIV. L OR R	0
		PER LOG DIV.	0
		SEC.	3
		SETTINGS	1000
		DIV. L OR R	0
		PER LOG DIV.	100



ROKE

WALL DENSLOG

19780015

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO. _____ COMPANY GULF MINERALS

LSD SEC 7/27 WELL GULFMIN - ANITA - EV

TWP 121 RGE 19 W 5 M LOCATION 7/27 - 121 - 19 - W5

FIELD STEEN RIVER Other Services: _____

PROVINCE ALBERTA GRN

Permanent Datum GROUND LEVEL Elev. _____ K.B. _____

Log Measured from GROUND LEVEL Ft. Above Perm. Datum _____ CSG _____

Well Depths Measured from _____ G.L. _____

Run. No.	ONE
Date	3 SEP 1977
First Reading	190
Last Reading	0
Footage Logged	190
Depth Reached	193
Depth Driller	460
Casing Roke	180
Casing Driller	
Fluid Type	MUD/WATER
Liquid Level	0
Min. Diam.	3 1/2
Operating Time	1 HOUR
Truck No.	36

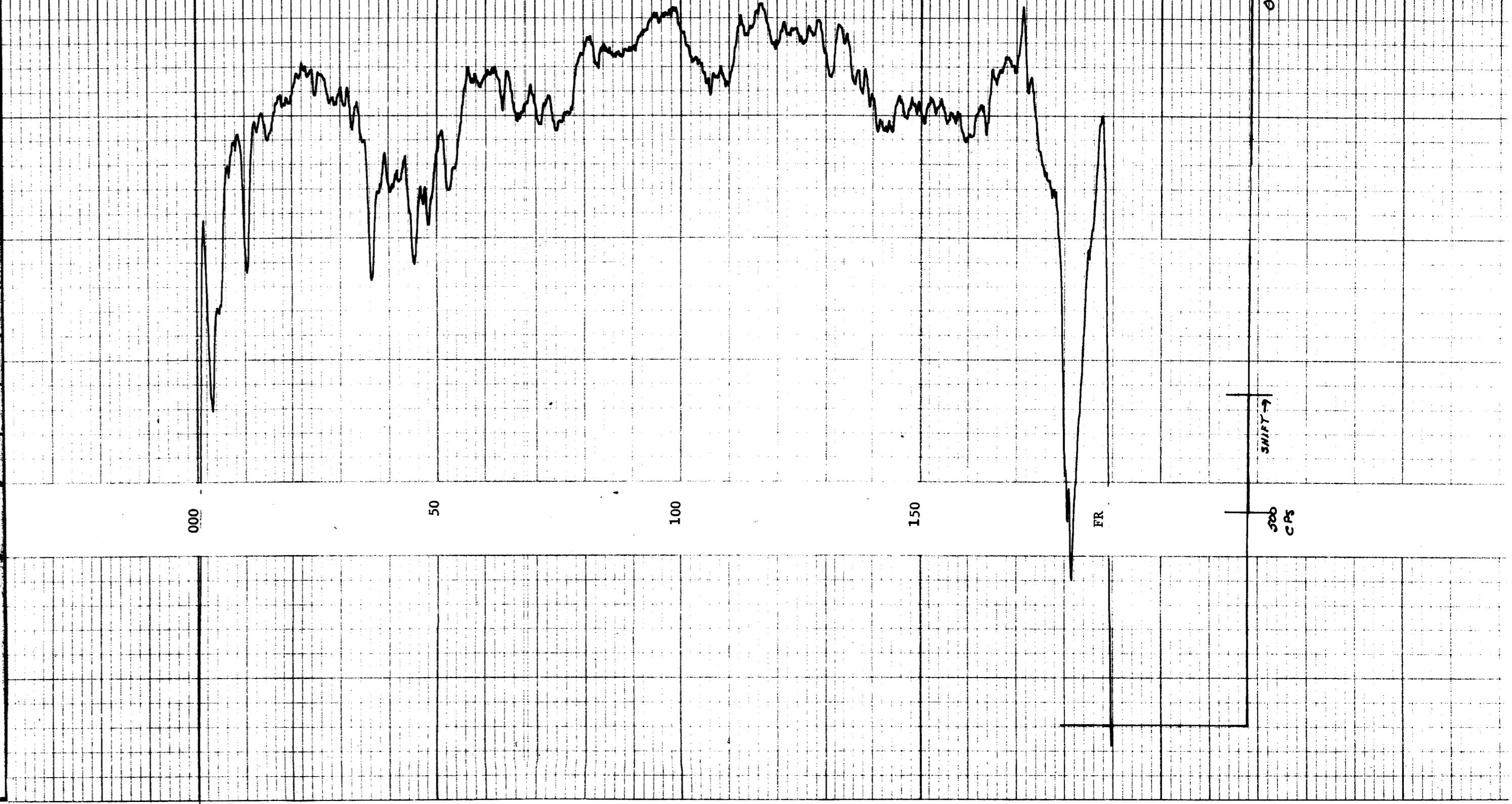
Recorded By CARLSON Witnessed By FISCHER

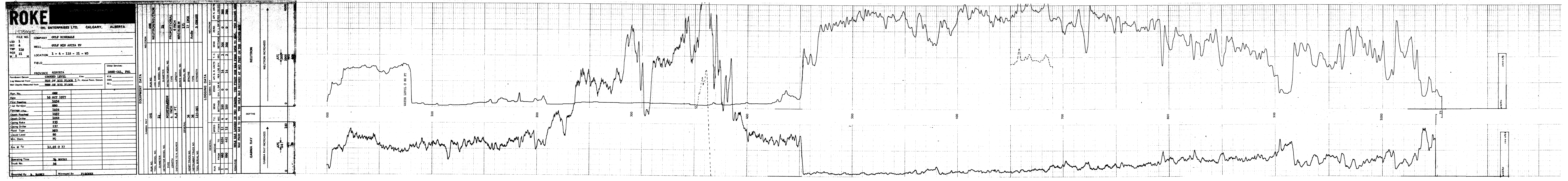
RUN NO.	GENERAL		T.C. SEC.	GAMMA RAY		SIDEWALL DENSLOG		
	FROM	TO		SPEED FT/MIN	ZERO DIV. L. OR R.	SENS SETTINGS	ZERO DIV. L. OR R.	CRP/ DIV
1	0	190	12			1000	R4.78	23.53

REMARKS DENSITY TOOL # 829 HOLE BRINED AT 193 FT

HARD ROCK SCALE

CALIPER (DIAMETER - INCHES)	BULK DENSITY (GRAMS/CC)
DEPTHS	GAMMA RAY API





ROKE
 OIL ENTERPRISES LTD. CALGARY, ALBERTA
 19780015

FILE NO. 19780015
 COMPANY GULF MINERALS
 LSD 1
 SEC 4
 TWP 118
 RGE 21
 W. 5 M

WELL GULF MIN ARTIA IV
 LOCATION 1 - 4 - 118 - 21 - W5
 FIELD

PROVINCE ALBERTA
 Permanent Datum GROUND LEVEL Elev. K.B.
 Log Measured from TOP OF RIG FLOOR 5 Ft. Above Perm. Datum CSG
 Well Depths Measured from TOP OF RIG FLOOR G.L.

Other Services: DENS-CAL, FBL

Run No. ONE
 Date 10 OCT 1977
 First Reading 1056
 Last Reading 090
 Footage Log 1056
 Depth Reached 1057
 Depth Driller 1068
 Casing Roke 235
 Casing Driller 237
 Fluid Type MUD
 Liquid Level 80
 Min. Diam. NQ
 Rm @ °F 12.05 @ 77

Operating Time 34 HOURS
 Truck No. 36

Recorded By B. BANKS Witnessed By FISCHER

EQUIPMENT DATA

LOG TYPE	ONE	NEUTRON/NEUTRON
TOOL MODEL NO.	11	11
DIAMETER	4 INCH	PROPORTIONAL 6 INCH
DETECTOR MODEL NO.	SCINTILLATION	MRC-N-S-S-W
LENGTH	5.8 FT.	171
DISTANCE TO N. SOURCE	36	AmBn
HOIST TRUCK NO.	36	3
INSTRUMENT TRUCK NO.	125-001	
TOOL SERIAL NO.		

LOGGING DATA

RUN NO.	GAMMA RAY		NEUTRON	
	FROM	TO	ZERO	APN. UNITS
1	000	462	0	0
2	465	1056	14	3

REMARKS: HOLE WAS LOGGED IN TWO SPACES. THE FIRST HOLE WAS FROM 462 TO 463. THE SECOND HOLE WAS FROM 463 TO 00. THE HOLE WAS BRIDGED AT 463 FEET ON THE SECOND RUN.

GENERAL

APF G. R. UNITS	T. C.	SENS	ZERO	APN. UNITS
14	4	100	0	0
14	4	100	0	0

65

ROKE

FOCUSED BEAM LOG

19780015 OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO. 1
 LSD 4
 SEC 118
 TWP 21
 RGE 5
 W 5 M

COMPANY GULF MINERALS
 WELL GULF MIN ANITA EV
 LOCATION 1 - 4 - 118 - 21 - W5
 FIELD

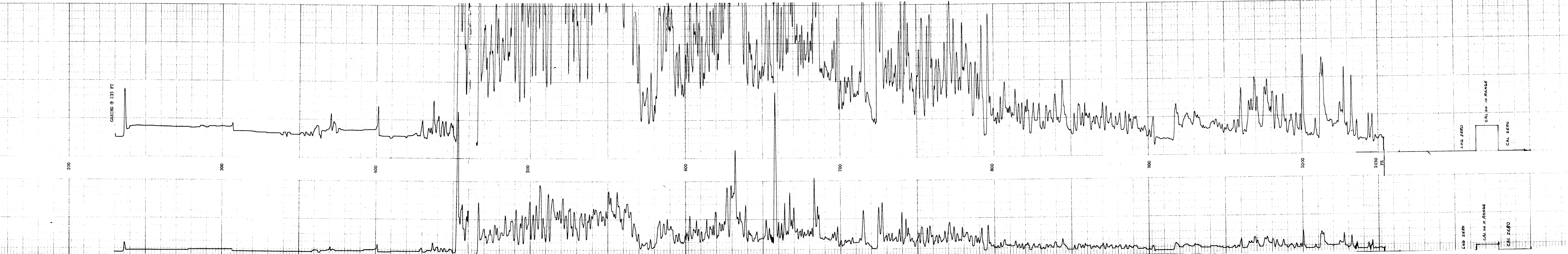
PROVINCE ALBERTA

Permanent Datum GROUND LEVEL Elev. _____ K.S. _____
 Log Measured from TOP OF RIG FLOOR 5 Ft. Above Perm. Datum C.S.G. _____
 Well Depths Measured from TOP OF RIG FLOOR G.L. _____

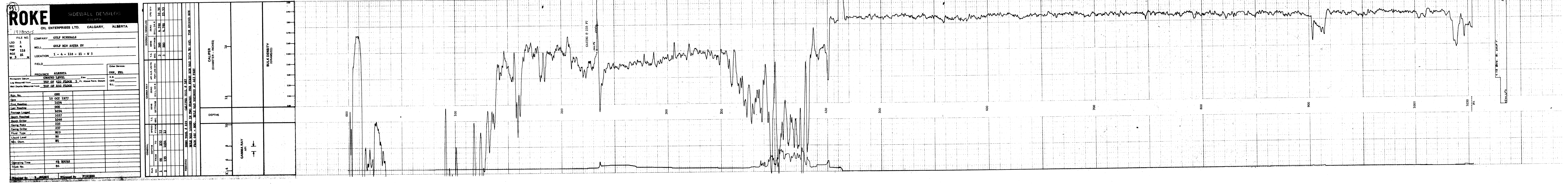
Run No.	ONE
Date	16 OCT 1977
First Reading	1054
Last Reading	235
Footage Logged	819
Depth Reached	1057
Depth Driller	1068
Casing Note	235
Casing Driller	237
Fluid Type	MUD
Liquid Level	80
Min. Diam.	NQ
Wm @ Op	12.05 @ 77
Operating Time	2 HOURS
Truck No.	36

Remarks: SONDE GEOMETRIC FACTOR .329, PROBE TYPE III HOLE WAS LOGGED IN TWO STAGES.
 PRIMARY PEN ADJUSTED TO 3.29 DIVISIONS FIRST RUN 1054 TO 465
 5 TO 1 RATIO ON SECONDARY PEN SECOND RUN 460 TO 400
 HOLE WAS BRIDGED AT 463 ON SECOND RUN

Depth	RESISTIVITY OHM METERS 10
	RESISTIVITY OHM METERS 50



Recorded By: J. BAKER Witnessed By: F. GIBSON



ROKE SIDEWALL DENSILOG
CALIPER

19780015 OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO. 19780015 COMPANY GULF MINERALS
LSD 1 SEC 4 TWP 118 RGE 21 W 5 M WELL GULF MIN ANTEA EV
LOCATION 1 - 4 - 118 - 21 - W 5
FIELD

PROVINCE ALBERTA Other Services: GRN, FBL
Permanent Datum GROUND LEVEL Elev. K.B.
Log Measured from TOP OF RIG FLOOR 5 Ft. Above Perm. Datum CSG
Well Depths Measured from TOP OF RIG FLOOR G.L.

Run No.	ONE
Date	10 OCT 1977
First Reading	1054
Last Reading	000
Footage Logged	1054
Depth Reached	1057
Depth Driller	1068
Casing Roke	235
Casing Driller	237
Fluid Type	MUD
Liquid Level	80
Min. Diam.	38

Operating Time 4 HOURS
Truck No. 96

Reported By J. JAMES Witnessed By FISCHER

GENERAL		GAMMA RAY		SIDEWALL DENSILOG	
DEPTH	TO	SENS	ZERO	T.C.	SENS
FROM	FT/MIN	DIV/L OR R	DIV/L OR R	SEC.	ZEROS
1	00	235	12	3	500
2	235	1054	12	3	500
					10.36
					4.788
					6.788
					23.33

REMARKS: DENS TOOL # 829 CALIPER TOOL # 587
HOLE WAS LOGGED IN TWO STAGES. THE FIRST RUN WAS 1054 TO 465. THE SECOND RUN FROM 460 - 000. HOLE WAS BRIDGED AT 463 FEET.

3-4	6	8	10	12	14
CALIPER (DIAMETER - INCHES)					
DEPTHS					
GAMMA RAY API					
BULK DENSITY (GRAMS/CC)					



178 SHV. R. SHIP.
5500 CPS

ROKE GAMMA RAY NEUTRON LOG
 19780015 OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO. 30
 LSD SEC 32
 TWP 18 S
 RGE 20 W
 COMPANY GULF MINERALS
 WELL GULPIN AREA - EV
 LOCATION 10 - 32 - 118 - 20 - W5
 FIELD STIKEN RIVER
 PROVINCE ALBERTA
 Permanent Datum GROUND LEVEL
 Log Measured from RIG FLOOR
 Well Depth Measured from RIG FLOOR
 Other Services: DENS-CAL, PUL
 K.B.
 G.I.

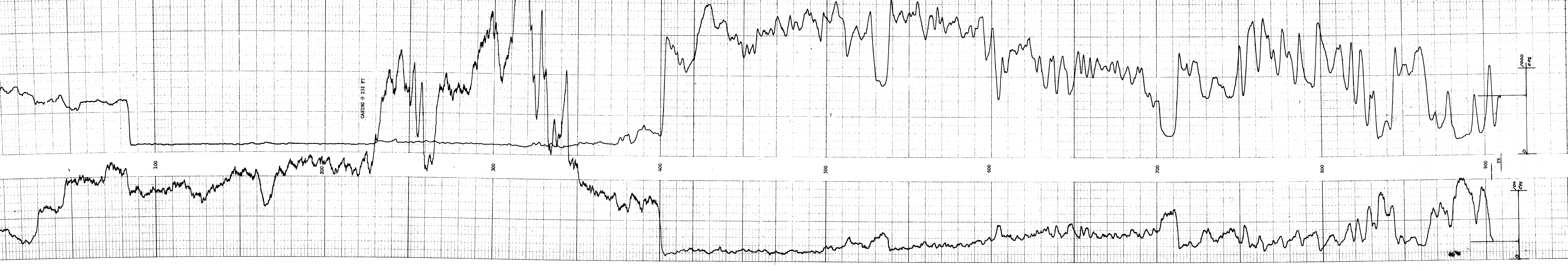
Run No. ONE
 Date 24 SEPT 1977
 First Reading 910
 Last Reading 910
 Footage Logged 911
 Depth Reached 918
 Depth Driller 232
 Ceiling Driller 235
 Fluid Type MUD/WATER
 Min. Diam. NQ
 Rm @ 4'
 Operating Time 3 HOURS
 Truck No. 36

EQUIPMENT DATA	
LOG TYPE	NEUTRON/NEUTRON
TOOL MODEL NO.	34
DIAMETER	6 INCH
DETECTOR MODEL NO.	MRC-N-SS-W
TYPE	111
LENGTH	11 FEET
SOURCE MODEL NO.	AMBA
SERIAL NO.	5 000782
SPACING	
STRENGTH	

LOGGING DATA	
GENERAL	NEUTRON
APIN. UNITS	ZERO 0
PER LOG DIV	200
APIN. UNITS	ZERO 0
PER LOG DIV	200

GENERAL	
TOOL MODEL NO.	36
DIAMETER	36
DETECTOR MODEL NO.	111
TYPE	111
LENGTH	11 FT
SOURCE MODEL NO.	AMBA
SERIAL NO.	5 000782
SPACING	
STRENGTH	

LOGGING DATA	
GENERAL	GAMMA RAY
APIN. UNITS	ZERO 0
PER LOG DIV	200
APIN. UNITS	ZERO 0
PER LOG DIV	200



ROKE

FOCUSED BEAM LOG

19780015

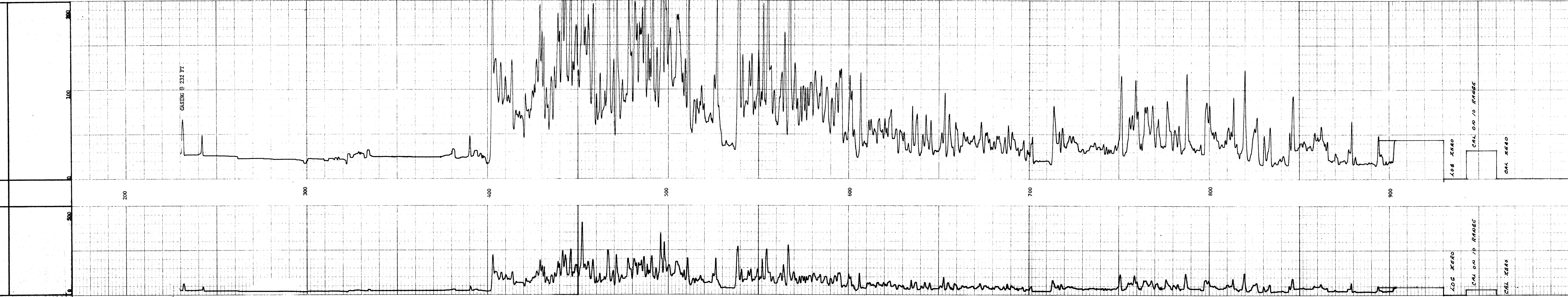
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	10	COMPANY	GULF MINERALS
LSD	32	WELL	GULFMIN ANITA - EV
SEC	118	LOCATION	10 - 32 - 118 - 20 - W5
TWP	20	FIELD	STEEN RIVER
RGE	5 M	PROVINCE	ALBERTA
W		Other Services:	GRN, DENS-CAL
Permanent Datum	GROUND LEVEL	Elev.	K.B.
Log Measured from	RIG FLOOR	5	Ft. Above Perm. Datum
Well Depths Measured from	RIG FLOOR		G.L.

Run. No.	ONE
Date	24 SEPT 1977
First Reading	904
Last Reading	232
Footage Logged	672
Depth Reached	907
Depth Driller	918
Casing Role	232
Casing Driller	235
Fluid Type	MUD/WATER
Liquid Level	
Mis. Diam.	NQ
Rsg @ °F	10.81 @ 70
Operating Time	2 HOURS
Track No.	36
Recorded By	CARLSON
Witnessed By	FISCHER

Remarks: SONDE GEOMETRIC FACTOR .329, PHOTO TYPE III
 GROUND FISH READING = 220 ORMS
 PRIMARY PER ADJUSTED TO 3.29 DIVS
 5 TO 1 RATIO ON SECONDARY PEN

WELL WAS LOGGED IN TWO STAGES



ROKE

SIDEWALL DENSITOG
CALIPER

19780015
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO. 10
LSD 32
SEC 118
TWP 20
RGE 20
W 5 M

COMPANY GULF MINERALS
WELL GULFMEN ANITA - EV
LOCATION 10 - 32 - 118 - 20 - W5
FIELD STEEN RIVER

PROVINCE ALBERTA

Permanent Datum GROUND LEVEL Elev. _____
Log Measured from RIG FLOOR 5 Ft. Above Perm. Datum
Well Depths Measured from RIG FLOOR

Other Services: GRN, FBL
K.B. _____
CSG _____
G.L. _____

Run No. ONE
Date 24 SEPT 1977
First Reading 906
Last Reading 0
Footage Logged 906
Depth Reached 909
Depth Driller 918
Casing Roke 232
Casing Driller 235
Fluid Type MUD/WATER
Liquid Level _____
Min. Diam. NQ

Operating Time 3 HOURS
Truck No. 36

Recorded By CARLSON Witnessed By FISCHER

RUN NO.	GENERAL		GAMMA RAY		SIDEWALL DENSITOG	
	FROM	TO	SPEED FT/MIN	T.C. SEC.	ZERO DIV./OR R	SENS SETTINGS
1	0	230	12	3	100	4.78R
	230	906	12	3	500	4.78R
	232	910				23.53

REMARKS: DENSITY TOOL # 829 CALIPER TOOL # 587
ROKE WAS LOGGED IN TWO STAGES

CALIPER (DIAMETER - INCHES)	14
DEPTHS	00
GAMMA RAY API	10

