

RECEIVED

STATE OF TEXAS
COUNTY/ ~~DAKOTA~~ OF ECTOR

NOV 19 1964

I/We, Carl Kisinger, Jr.

O. C. C.
ARTESIA, OFFICE

_____ in the employ of the Directional Surveying Department of
Sperry Sun Well Surveying Company, did on the 13th day of July 1964
and the 10th day of September 1964
and the _____ day of _____ 19____
and the _____ day of _____ 19____

respectively conduct or supervise the taking of a Multi-shot/ ~~XXXXXXXX~~ Directional survey by method indicated:

from a depth of Zero feet to 4440 feet by Gyroscopic/ ~~XXXXXXXX~~ Survey
depth of 3900 feet to 6102 feet by ~~XXXXXXXX~~/Magnetic/ ~~XXXXXXXX~~ Survey
depth of _____ feet to _____ feet by Gyroscopic/Magnetic/Oriented Survey
depth of _____ feet to _____ feet by Gyroscopic/Magnetic/Oriented Survey
with records of inclination and direction of inclination being taken at approximately every 100 feet.

This survey was conducted at the request of BTA Oil Producers,

for their Gulf State Limited Well No. 1
990 ft fr SOUTH & 2310 ft fr EAST lines,
Section 16, T 18 S, R 27 E Survey. Eddy County/ ~~XXXXX~~ Parish,

State of New Mexico, in the Empire Abo Field.

I/We certify that this is a true and correct report of such survey and that it affords a true and correct representation of our findings as to the nature and conditions of the well at the time the ~~XXXXXXXX~~ survey/surveys were made.

Carl Kisinger, Jr.

STATE OF TEXAS
COUNTY/ ~~DAKOTA~~ OF ECTOR

Before me the undersigned authority ~~XXXXXXXX~~ on this day personally appeared Carl Kisinger, Jr.
known to me to be the person/ ~~XXXXX~~ whose name is/ ~~XXXXXXXX~~ subscribed to this instrument, who after being
by me duly sworn on oath, states that he has/ ~~XXXXXXXX~~ knowledge of all the facts stated above and that the same
is a true and correct statement of the facts therein recited.

Subscribed and sworn to before me this the 11th day of September 1964.

Annie Mae Hill
ANNIE MAE HILL

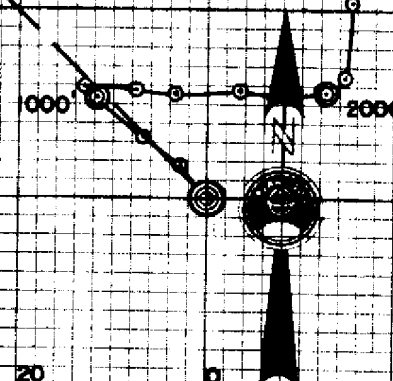
Notary Public in and for ECTOR COUNTY

SPERRY-SUN WELL SURVEYING COMPANY
HORIZONTAL PROJECTION

MS-3924
6102'
T.V.D. = 6079.86'

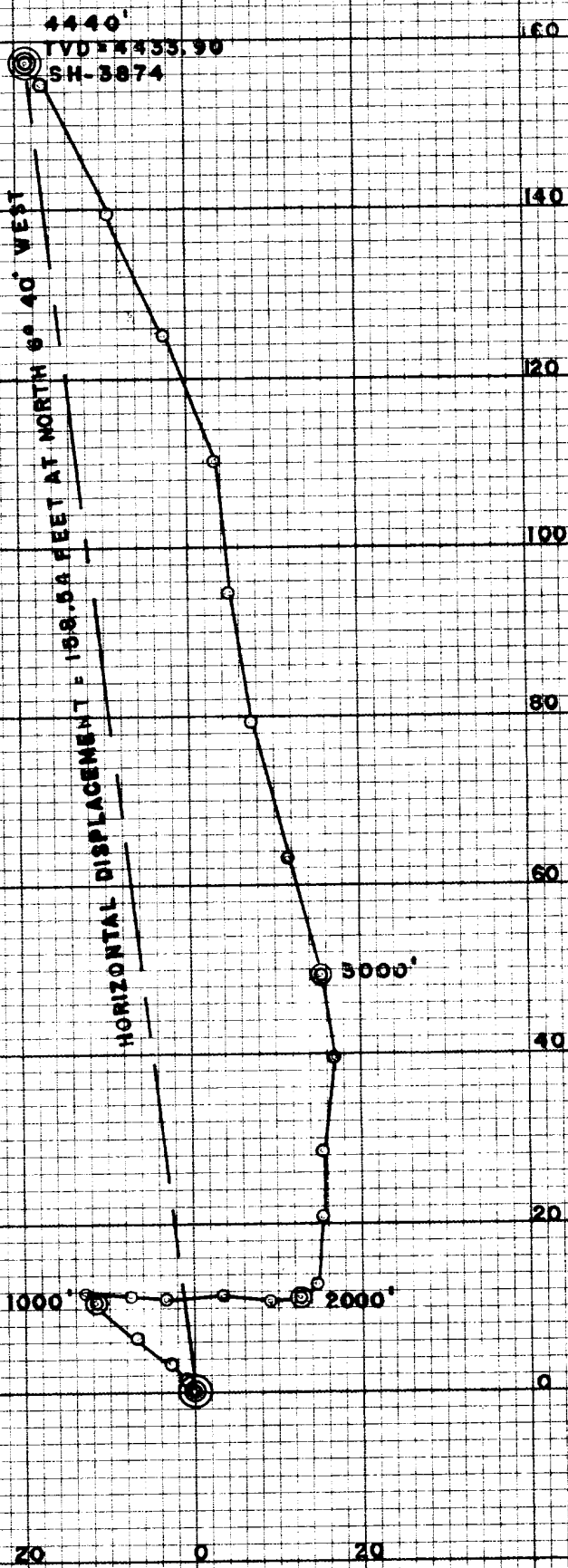
HORIZONTAL DISPLACEMENT - 201.92 FEET AT NORTH 85° 16' WEST

BTA OIL PRODUCERS
GULF STATE LIMITED WELL NO. 11
EMPIRE ABO FIELD
EDDY COUNTY, NEW MEXICO
GYROSCOPIC MULTISHOT SURVEY SH-3874
ZERO - 3900' JULY 15, 1964
MAGNETIC MULTISHOT SURVEY MS-3924
3900' - 6102' SEPTEMBER 10, 1964
SCALE 1" = 20'
DRAWN BY: *10/11*
CHECKED BY: *9/11*



SPERRY-SUN WELL SURVEYING COMPANY
HORIZONTAL PROJECTION

BYA OIL PRODUCERS
GULF STATE LIMITED WELL NO 1
EMPIRE ABO FIELD
EDDY COUNTY, NEW MEXICO
GYROSCOPIC MULTISHOT SURVEY SH-3874
ZERO - 4440
JULY 13, 1964
SCALE 1" = 20'



BTA OIL PRODUCERS
GULF STATE LIMITED N° 1

WIRE 980

EDDY COUNTY, NEW MEXICO

Gyrosopic

MultisHOT

SHEET NO.

SURVEY
JOB NO.

SURVEY
DATE

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52 ± 3.874

July 13, 1964



MULTISTHOT

CORRECTED TIME	MEASURED DEPTH		ANGLE OF INCLINATION	COURSE DIV	DIRECTION OF INCLINATION		MEASURED COURSE DISPLACEMENT				TOTAL DISPLACEMENT				
	COURSE	TOTAL			OBSERVED	CORR	CORRECTED	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
09-20	100	100.00	1/4		N 10 E	0	N 10 E	43		.08		43		.08	
11-20	200	100.00	0		N 10 E	0	N 10 E	43		.08		43		.08	
18-00	300	100.00	0		N 10 E	0	N 10 E	43		.08		43		.08	
20-20	400	99.98	3/4		N 51 W		N 51 W	110		136		1.53			1.28
22-20	500	99.99	3/4		N 30 W		N 30 W	113		.65		3.66			1.93
24-40	600	99.99	3/4		N 60 W		N 60 W	.65		1.13		3.31			3.06
26-40	700	99.98	1/4		N 45 W		N 45 W	1.09		1.89		4.40			4.95
28-40	800	99.97	1/2		N 51 W		N 51 W	1.85		1.85		6.25			6.80
30-40	900	99.95	3/4		N 49 W		N 49 W	1.92		2.37		8.17			9.17
33-00	1000	99.94	3/4		N 50 W		N 50 W	2.29		2.63		10.46			11.80
39-40	1100	99.99	1/2		N 58 E		N 58 E	.54		1.13		11.11			12.93
31-40	1200	100.00	1/2		N 87 E		N 87 E		.23	4.36		11.62			12.94
44-00	1300	99.90	2 1/2		N 85 E		N 85 E		.38	4.35		11.64			17.88
46-00	1400	99.90	3 1/2		N 85 E		N 85 E			3.49		11.04			3.53
48-20	1500	99.94	2		N 81 E		N 81 E	.55		3.45		11.59			17.88
50-20	1600	99.94	2 1/2		N 83 E		N 83 E		.37	3.03		10.45			3.53
52-20	1700	99.95	1 1/2		N 83 E		N 83 E		.77	2.50		10.27			17.88
54-40	1800	99.97	1 1/2		N 84 E		N 84 E		.18	1.74		11.09			3.41
61-20	1900	99.98	1		N 62 E		N 62 E	.82		1.54		12.22			6.44
63-20	2000	99.98	5/4		N 36 E		N 36 E	1.06		.77		12.15			8.94
65-20	2100	99.99	3/4		N 45 E		N 45 E	1.23		1.23		13.38			10.68
67-20	2200	99.98	1 1/2		N 10 E		N 10 E	3.44		.61		16.82			12.22
69-00	2300	99.94	2		N 09 E		N 09 E	3.45		.55		20.27			14.83
71-20	2400	99.94	2		N 05 E		N 05 E	3.48		.30		23.75			15.38
73-20	2500	99.94	2 1/2		N 05 E		N 05 E	4.36				23.75			15.68
75-20	2600	99.90	2 1/2		N 05 E		N 05 E	4.36		.08		23.75			15.68
82-00	2700	99.88	2 3/4		N 06 E		N 06 E	4.80		.64		32.91			16.40
84-00	2800	99.81	3 1/2		N 06 E		N 06 E	6.07				38.98			16.40
86-00	2900	99.84	3 1/4		N 01 W	0	N 01 W	5.67		.10		44.65			16.30
88-00	3000	99.84	3 1/4		N 01 W		N 01 W								
056															
111															
89															
94															
062															
185															
188															
167															
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180															
106															
124															
165															
138															
128															
310															
056															

SURVEY TABULATION SHEET

CUSTOMER **BTA OIL PRODUCERS** SHEET NO. **2 OF 2**
 WELL NO. **GUIF STATE LIMITED N^o 1** SURVEY JOB NO. **SH 3874**
 FIELD **EMPIRE ABO** SURVEY DATE **JULY 13, 1964**



EDDY COUNTY, NEW MEXICO

GYROSCOPIC MULTISHOT

CORRECTED TIME	MEASURED DEPTH		VERTICAL DEPTH		ANGLE OF INCLINATION	COURSE	TOTAL	DIRECTION OF INCLINATION			MEASURED COURSE DISPLACEMENT			TOTAL DISPLACEMENT				
	COURSE	TOTAL	COURSE	TOTAL				OBSERVED	CORR	CORRECTED	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
88.00	100	3000	99.86	2998.43	3 3/4	W	N 04 W	0	N 04 W	5.33					49.87		15.93	
90.00		3100	99.79	3098.83	3 3/4	W	N 13 W		N 13 W	6.39					56.24		14.46	
92.00		3200	99.69	3197.91	4 1/2	W	N 21 W		N 21 W	7.32					63.56		11.65	
94.00		3300	99.66	3297.57	4 3/4	W	N 15 W		N 15 W	8.00					71.56		9.57	
96.00		3400	99.66	3397.23	4 3/4	W	N 15 W	0	N 15 W	8.00					79.56		7.37	
102.40		3500	99.69	3496.13	4 1/2	W	N 10 W	1W	N 11 W	7.70					87.26		5.87	
105.00		3600	99.73	3596.65	4 1/4	W	N 08 W		N 09 W	7.32					94.58		4.71	
107.20		3700	99.73	3696.33	4 1/4	W	N 05 W		N 06 W	7.37					101.95		4.54	
109.20		3800	99.66	3796.64	4 3/4	W	N 09 W		N 10 W	8.16					110.11		3.10	
111.40		3900	99.69	3895.73	4 1/2	W	N 16 W		N 17 W	7.50					117.61		.81	
113.40		4000	99.69	3995.42	4 1/2	W	N 21 W		N 22 W	7.27					124.88		2.13	
115.40		4100	99.69	4095.11	4 1/2	W	N 26 W		N 27 W	6.99					131.87		5.69	
117.40		4200	99.62	4194.73	5	W	N 27 W		N 28 W	7.70					139.57		9.78	
119.40		4300	99.62	4294.35	5	W	N 27 W		N 28 W	7.70					147.27		13.87	
126.40	100	4400	99.69	4394.64	4 1/2	W	N 23 W		N 24 W	7.17					154.44		17.06	
128.20	40	4440	39.86	4433.90	4 3/4	W	N 23 W	1W	N 24 W	3.03					157.47		18.41	

HORIZONTAL DISPLACEMENT = 158.54 FEET AT NORTH 60° 40' WEST

39	88.00	100	3000	99.86	2998.43	3 3/4	W	N 04 W	0	N 04 W	5.33				49.87		15.93	
40	90.00	3100	3000	99.79	3098.83	3 3/4	W	N 13 W		N 13 W	6.39				56.24		14.46	
41	92.00	3200	3000	99.69	3197.91	4 1/2	W	N 21 W		N 21 W	7.32				63.56		11.65	
42	94.00	3300	3000	99.66	3297.57	4 3/4	W	N 15 W		N 15 W	8.00				71.56		9.57	
43	96.00	3400	3000	99.66	3397.23	4 3/4	W	N 15 W	0	N 15 W	8.00				79.56		7.37	
44	102.40	3500	3000	99.69	3496.13	4 1/2	W	N 10 W	1W	N 11 W	7.70				87.26		5.87	
45	105.00	3600	3000	99.73	3596.65	4 1/4	W	N 08 W		N 09 W	7.32				94.58		4.71	
46	107.20	3700	3000	99.73	3696.33	4 1/4	W	N 05 W		N 06 W	7.37				101.95		4.54	
47	109.20	3800	3000	99.66	3796.64	4 3/4	W	N 09 W		N 10 W	8.16				110.11		3.10	
48	111.40	3900	3000	99.69	3895.73	4 1/2	W	N 16 W		N 17 W	7.50				117.61		.81	
49	113.40	4000	3000	99.69	3995.42	4 1/2	W	N 21 W		N 22 W	7.27				124.88		2.13	
50	115.40	4100	3000	99.69	4095.11	4 1/2	W	N 26 W		N 27 W	6.99				131.87		5.69	
51	117.40	4200	3000	99.62	4194.73	5	W	N 27 W		N 28 W	7.70				139.57		9.78	
52	119.40	4300	3000	99.62	4294.35	5	W	N 27 W		N 28 W	7.70				147.27		13.87	
53	126.40	4400	3000	99.62	4394.64	4 1/2	W	N 23 W		N 24 W	7.17				154.44		17.06	
54	128.20	40	4440	39.86	4433.90	4 3/4	W	N 23 W	1W	N 24 W	3.03				157.47		18.41	

SURVEY
DATE

13. 1964

DATE
CYROSCOPE MULTISHOT

239
046
034
265
250
255
234
244
245
255

СХ ВУ.

CUSTOMER

WELL NO. GULF STATE LIMITED N° 1

FIELD
EMPIRE ABO
EODY COUNTY, NEW MEXICO



31

SHEET NO

SURVEY
JOB NO.

SURVEY
DATE

40

3924

SET 10, 1764

CORRECTED TIME	MEASURED DEPTH		VERTICAL DEPTH	ANGLE OF INCLINATION	COURSE	TOTAL	DIRECTION OF INCLINATION	OBSERVED	CORRECTED	MEASURED COURSE DISPLACEMENT			TOTAL DISPLACEMENT		
	COURSE	TOTAL								NORTH	SOUTH	EAST	WEST	NORTH	SOUTH
58.00	3900	3895.73	99.69	4 1/2	3900	3895.73	TAKEN FROM	SH-3	87.4	117.61	.81	4 44			
54.20	4000	3995.42	99.76	4	4000	3995.42	N 54 W	42 W	5.25	123.44		10.60			
53.00	4100	4095.18	99.69	4 1/2	4100	4095.18	S 50 W	62 W	6.16	120.16		17.39			
51.40	4200	4194.97	99.69	4 1/2	4200	4194.97	S 48 W	60 W	6.79	116.54		24.49			
50.20	4300	4294.53	99.66	4 3/4	4300	4294.53	S 47 W	59 W	7.10	111.97		30.15			
48.40	4400	4394.32	99.79	3 3/4	4400	4394.32	S 48 W	60 W	5.66	108.70		36.71			
47.20	4500	4494.08	99.76	4 3/4	4500	4494.08	S 58 W	70 W	6.56	106.31		43.11			
45.00	4600	4593.87	99.79	4 3/4	4600	4593.87	S 66 W	78 W	6.40	104.95		50.05			
43.40	4700	4693.63	99.76	4	4700	4693.63	S 72 W	84 W	6.94	104.22		58.75			
42.20	4800	4793.25	99.62	5	4800	4793.25	S 81 W	87 W	8.70	104.68		67.24			
40.00	4900	4892.87	99.62	5 1/4	4900	4892.87	N 89 W	77 W	8.49	106.64		76.08			
39.00	5000	4992.45	99.58	5 3/4	5000	4992.45	N 87 W	75 W	8.54	109.01		85.55			
37.40	5100	5091.95	99.50	5 3/4	5100	5091.95	N 85 W	71 W	9.47	112.27		95.89			
36.40	5200	5191.31	99.36	6 1/2	5200	5191.31	N 78 W	66 W	10.34	116.87		106.55			
34.00	5300	5290.56	99.25	7 3/4	5300	5290.56	N 73 W	61 W	11.31	122.78		117.86			
33.00	5400	5389.65	99.09	7 3/4	5400	5389.65	N 69 W	57 W	11.61	130.12		129.47			
31.40	5500	5488.62	98.97	8 1/4	5500	5488.62	N 66 W	54 W	12.44	138.55		141.96			
30.20	5600	5587.39	98.77	9	5600	5587.39	N 65 W	53 W	13.30	147.96		155.26			
29.00	5700	5685.87	98.48	10 1/2	5700	5685.87	N 62 W	50 W	13.75	159.12		169.01			
26.40	5800	5784.20	98.33	10 1/2	5800	5784.20	N 61 W	49 W	14.50	171.08		183.51			
25.00	5900	5882.28	98.08	11 1/4	5900	5882.28	N 60 W	48 W	15.21	184.13		198.72			
12.22.20	6000	5980.09	97.81	12	6000	5980.09	N 59 W	47 W	15.76	198.31		214.48			
12.22.20	6102	6079.86	97.77	12	6102	6079.86	N 60 W	48 W		212.50					
HORIZONTAL DISPLACEMENT = 301.92 FEET AT NORTH 450 16' WEST															
DONE BY:	BW	BW	BW	BW	BW	BW	BW	BW	BW	BW	BW	BW	BW	BW	
CK BY:	DLS	DLS	DLS	DLS	DLS	DLS	DLS	DLS	DLS	DLS	DLS	DLS	DLS	DLS	