

OWED

COUNTY	LEA	FIELD	Townsend	STATE	NM MN 04795
OPR	GREAT WESTERN DRILG. CO.			MAP	
1 Lowe - State					
Sec 17, T-16-S, R-35-E				CO-ORD	
330' FNL, 330' FEL of Sec					
Re-Spd 1-26-72		CLASS		OWDF E	
Re-Cmp 4-19-72		FORMATION	DATUM	FORMATION	DATUM
CSG & SX - TUBING					
11 3/4" at 367' w/850 sx					
8 5/8" at 4649' w/2200 sx					
5 1/2" at 10,565' w/375 sx					
4 1/2" at 12,581' w/500 sx					
LOGS EL GR RA IND HC A					
TD 12,581'					

IP (Morrow) Perfs 12,449-465' CAOFP 2750 MCFGPD. GOR 46,000
 Grav (gas) .710; (cond) 64; SIWHP 4670#

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CONT. Big West PROP DEPTH 11,900' TYPE RT
 DATE

F.R. 1-18-72; Opr's Elev. 4033' DF
 PD 11,900' RT (Morrow)
 Contractor - Big West
 BHL: 1977' FNL, 898' FEL of Sec
 (Orig. Pure Oil Co. #1 State - Lea "C", comp
 7-22-55 thru (Cisco) Perfs 10,508-548',
 OTD 10,566', OPB 10,560', Plugged Producer 10-20-70)
 2-1-72 TD 10,566'; Drlg. by @ 7292'
 Drilled off w/Dyna Drill @ 7292'
 2-7-72 TD 10,566'; STTD 7671'; Trip
 Drilled to 7889' & went back in old hole to 7922'
 PB to 7373' w/150 sx
 Drilled off w/Turbodrill @ 7622'
 2-14-72 TD 10,566'; Drlg. by @ 8314' 1m & sh
 2-21-72 TD 10,566'; Drlg. by @ 9350' 1m & sh

2-28-72 TD 10,566'; Drig. by @ 10,245' lm & sh
13-72 Drig. 11,420' lm & sh
DST 11,238-396', open 3 hrs 15 mins, rec 60'
oil + 30' G&OCM + 590' sli G&OCM, 1 hr ISIP
5244#, FP 332-332#, 2 hr FSIP 1135#, HP 5289-
5289#
3-20-72 Drig. 11,916' lm
3-27-72 TD 12,082'; Fshg
4-3-72 Drig. 12,301' sd & sh
4-10-72 TD 12,581'; Prep DST (Morrow)
4-17-72 TD 12,581'; Prep Perf
DST (Morrow) 12,423-576', open 2 hrs 30 mins,
GTS during pre-flow @ max 570 MCFGPD thru
1/4" chk, SFP 280#, rec 1379' HGCM, (Sampler
rec 200 cc's cond & mud) 1 hr ISIP 6282#,

4-17-72 Continued
FP 663-1228#, 2 hr FSIP 6283#, HP 6842-
6842#
Ran 4 1/2" Casing
4-24-72 TD 12,581'; Tstg
Perf 12,449-465' w/2 SPF
Flwd @ 2516 MCFGPD thru 12/64" chk, 30 min
SITP 3200#
Flwd @ 3 1/2 B cond PH in 2 hrs thru 1/4" chk,
5-1-72 TD 12,581'; WO OCC Potential
CAOF 2750 MCFGPD (12,449-465')
5-8-72 TD 12,581'; COMPLETE
(Morrow) FOUR POINT GAUGES:
Flwd 637 MCFGPD, 7/16" orifice, 1 hr, TP 4220#
Flwd 1158 MCFGPD, 5/8" orifice, 1 hr, TP 3701#
Flwd 1755 MCFGPD, 5/8" orifice, 1 hr, TP 2944#
Flwd 2517 MCFGPD, 5/8" orifice, 1½ hrs, TP 1639#

WHIPSTOCK INC.

MIDLAND, TEXAS 79702

STATE OF Texas
COUNTY OF Midland

I, Glen Harbert, in the employ of the Directional Drilling Department of Whipstock, Inc., did on the days of 2-7, 19 72, thru 4-8, 19 72, conduct or supervise the taking of a Single-Shot Directional Survey by the method of Magnetic Oriented Survey from a depth of 9773 feet to 12581 feet, with records of inclination being taken at approximately every 93 feet.

This survey was conducted at the request of Great Eastern Drilling Company, for their Love State, Well No. 1, survey, Lea, County, State of New Mexico, in the Lea Field.

I 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 survey was made.



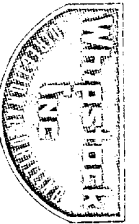
Glen Harbert

STATE OF Texas
COUNTY OF Midland

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

Subscribed and sworn to before me this 4/12/72 day of April, 19 72.

James B. Coats Jr.
Notary Public in and for Midland, CO.



WHIPSTOCK, INC. . . .

. . . a growing force in directional drilling

COMPANY: Great Western

LOCATION: Lowe State #1

DATE: 4/11/72

COUNTY : Lea CO., New Mexico

PAGE 1 of 3

MEAS. DEPTH	COURSE LENGTH	DRIFT ANGLE	VERTICAL DEPTH	COURSE DEVIATION	DIRECTION DEVIATION	TOTAL COORDINATES			
						NORTH	SOUTH	EAST	WEST
7669	104	5°	7667.40	9.07	S58W	91.08			58.42
7773	37	6°45	7771.00	4.35	S31W	86.27			46.07
7810	62	7°45	7807.74	8.36	S18E	82.54			48.31
7872	62	9°15	7869.17	9.97	S8W	74.59			50.89
8049	95	11°30	7930.36	16.13	S6E	64.72			52.28
8090	61	11°30	8023.61	12.16	S14E	46.77			49.75
8154	64	12°15	8083.39	13.58	S2E	34.97			46.31
8216	62	13°30	8145.93	14.47	S3E	21.48			45.59
8279	63	14°15	8206.22	15.51	S6E	6.95			45.59
8365	46	14°45	8267.28	11.11	S3W		8.48		43.97
8402	77	14°45	8311.76	22.19	S6W		42.21		44.59
8466	64	14°30	8385.49	19.25	S8W		61.31		46.91
8519	63	16°30	8446.53	11.99	S4W		81.25		49.58
8591	62	19°15	8506.27	20.44	S2W		101.68		50.98
8658	67	20°15	8564.80	23.19	S4W		121.11		51.70
8755	95	22°	8627.67	35.59	South		160.40		53.31
8846	93	23°15	8715.74	37.46	S2E		197.84		55.31
8909	63	25°15	8800.86	26.62	S2E		224.44		52.00
8970	61	25°30	8857.96	27.22	S1W		251.66		51.07
9042	72	26°30	8912.55	30.71	S4W		282.30		51.54
9134	92	25°15	8977.67	31.15	S12W		319.62		53.68
9198	64	24°30	9061.39	42.22	S13W		346.22		61.61
9291	93	27°15	9129.28	47.30	S10W		387.80		75.08
9385	94	28°30	9202.14	44.85	S7W		432.31		80.54
9453	68	29°45	9284.75	45.69	S8W		464.56		85.13
9548	95	28°45	9344.22	45.67	S10W		507.96		93.06
9643	95	28°45	9427.51		S7W		555.31		98.62
			9510.80						

COORDINATE SHEET



WHIPSTOCK, INC.

... a growing force in directional drilling

COMPANY: Great Western

LOCATION: Lowe State #1

DATE: 4-11-72

COUNTY: Lea Co., New Mexico

PAGE 2 of 3

MEAS. DEPTH	COURSE LENGTH	DRIFT ANGLE	VERTICAL DEPTH	COURSE DEVIATION	DIRECTION DEVIATION	TOTAL COORDINATES			
						NORTH	SOUTH	EAST	WEST
9735	92	26°30	9591.65	43.90	S10W	598.55			106.25
9769	34	28°30	9621.53	16.22	S10W	614.53			109.07
9867	98	28°30	9707.65	46.76	S10W	660.58			117.19
9962	95	28°15	9791.33	44.97	S8W	705.11			123.45
10055	93	28°	9873.44	43.66	S9W	748.23			130.28
10112	87	27°	9950.96	39.50	S11W	787.00			137.82
10181	39	26°15	9985.94	17.25	S11W	803.94			141.11
10274	93	25°30	10069.88	40.04	S10W	843.37			148.07
10372	98	24°15	10159.23	40.25	S12W	882.74			156.44
10404	32	24°	10188.48	13.02	S13W	895.43			159.36
10471	67	24°	10249.67	27.25	S16W	921.62			166.87
10566	95	23°	10337.12	37.12	S17W	957.11			177.73
10660	94	22°	10424.28	35.21	S18W	990.60			188.81
10702	42	22°	10463.22	15.73	S18W	1005.56			193.48
10774	72	22°	10529.16	27.26	S21W	1031.01			203.25
10862	88	22°45	10610.41	35.44	S15W	1065.25			212.43
10962	100	23°45	10701.94	40.27	S23W	1102.32			228.17
11056	94	24°30	10787.48	38.98	S23W	1138.10			243.40
11141	95	25°30	10873.23	40.80	S21W	1176.28			258.15
11245	94	25°30	10958.77	38.98	S18W	1213.45			271.09
11277	32	24°45	10987.83	13.40	S21W	1225.96			274.89
11372	95	25°	11073.93	40.15	S23W	1262.92			290.58
11460	88	24°	11154.32	35.79	S27W	1294.81			306.83
11554	94	24°15	11240.03	38.61	S23W	1330.35			321.92
11649	95	24°15	11326.65	39.02	S27W	1365.12			339.63
11743	93	23°30	11411.94	37.08	S30W	1397.23			358.17
11836	94	24°30	11497.48	38.98	S38W	1427.54			368.17
11928	92	25°30	11580.52	39.61	S39W	1458.72			407.09
11999	71	24°30	11645.13	28.44	S41W	1480.54			426.41

COORDINATE SHEET



WHIPSTOCK, INC.

... a growing force in directional drilling

COMPANY: Great Western

LOCATION: Lower State # 1
 COUNTY: Lea Co., New Mexico

DATE: 4-11-72
 PAGE 3 of 3

MEAS. DEPTH	COURSE LENGTH	DRIFT ANGLE	VERTICAL DEPTH	COURSE DEVIATION	DIRECTION DEVIATION	TOTAL COORDINATES			
						NORTH	SOUTH	EAST	WEST
12096	97	24°	11733.74	39.45	S33W		1514.03		447.90
12187	91	24°	11816.87	37.01	S31W		1541.71		468.60
12253	66	23°15'	11877.51	26.05	S39W		1564.96		484.99
12299	46	22°45'	11919.93	17.79	S42W		1578.18		496.90
12399	100	22°30'	12012.32	38.27	S42W		1606.62		522.51
12484	85	21°	12091.67	30.46	S46W		1621.78		543.67
12581	97	19°	12183.39	31.98	S50W		1648.06		567.86
Closure 1744.04' S 19° W									

COORDINATE SHEET



"Symbol of Service"

REPORT of SUB-SURFACE DIRECTIONAL SURVEY

Great Western Drilling Company
COMPANY

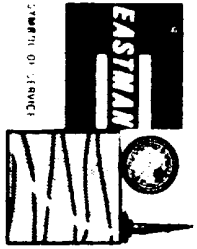
Low State Number One
WELL NAME

Lea County, New Mexico
LOCATION

JOB NUMBER	TYPE OF SURVEY	DATE
WTG 10172	GYRO.	February 7, 1972

SURVEY BY
Jerry Scheafer

OFFICE
Odessa, Texas



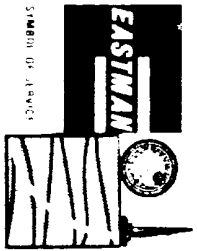
RECORD OF SURVEY

JOB NO. WTC 10172

DATE February 7, 1972

CHECKED BY

STATION	MEASURED DEPTH	DRIFT ANGLE	TRUE VERTICAL DEPTH	VERTICAL SECTION	COURSE DEVIATION	DRIFT DIRECTION	RECTANGULAR COORDINATES			
							NORTH	SOUTH	EAST	WEST
1	100	VERT.	100.00				13			41
2	200	15'					71			06
3	300	30'					06			32
4	400	15'					35			64
5	500	15'	500.00				72			88
6	600	15'					15			94
7	700	15'					54			13
8	800	15'					54			13
9	900	VERT.					54			13
10	1000	VERT.	1000.00				54			13
11	1100	VERT.					54			13
12	1200	VERT.					54			13
13	1300	VERT.					95			97
14	1400	15'					54			13
15	1500	15'	1500.00				16			59
16	1600	15'					52			35
17	1700	15'					73			97
18	1800	VERT.					73			97
19	1900	VERT.					73			97
20	2000	15'	2000.00				46			63
21	2100	VERT.					46			63
22	2200	15'					10			38
23	2300	15'					91			01
24	2400	VERT.					91			01
25	2500	15'	2500.00				49			13



RECORD OF SURVEY

JOB NO. WTC 10172

DATE February 7, 1972

CHECKED BY

STATION	MEASURED DEPTH	DRIFT ANGLE	TRUE VERTICAL DEPTH	VERTICAL SECTION	COURSE DEVIATION	DRIFT DIRECTION	RECTANGULAR COORDINATES			
							NORTH	SOUTH	EAST	WEST
26	2600	15'			44	E 47	2 19		45	
27	2700	15'			44	S 42	1 87		74	
28	2800	15'			44	N 20	2 28		89	
29	2900	15'			44	N 60	2 50		1 27	
30	3000	15'	3000 00		44	N 75	2 61		1 69	
31	3100	VERT.					2 61		1 69	
32	3200	VERT.					2 61		1 69	
33	3300	30'			87	S 15	1 77		1 46	
34	3400	30'			87	S 32	1 03		1 00	
35	3500	15'	3500 00		44	S 42	71		71	
36	3600	30'			87	S 79	54			15
37	3700	45'					88			
38	3800	1°					1 59			1 41
39	3900	1°15'			1 31	N 66				3 00
40	4000	1°30'	4000 00		1 75	N 63	2 58			4 94
41	4100	1°30'			2 18	N 61	3 85			7 23
42	4200	1°15'			2 62	N 53	5 43			9 32
43	4300	1°			2 18	N 61	6 49			11 23
44	4400	45'			1 75	N 59	7 39			12 73
45	4500	45'	4500 00		1 31	N 60	8 04			13 86
46	4600	30'			1 31	N 62	8 65			15 02
47	4640	30'	4640 00		87	N 61	9 07			15 78
					35	N 68	9 20			16 10



"Symbol of Service"

**REPORT
of
SUB-SURFACE
DIRECTIONAL
SURVEY**

Great Western Drilling Company
COMPANY

Low State Number One
WELL NAME

Lea County, New Mexico
LOCATION

JOB NUMBER
WTS 10572

TYPE OF SURVEY
MMS

DATE
February 7, 1972

SURVEY BY
Ray Warner

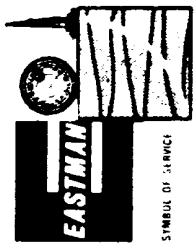
OFFICE
Odessa, Texas



RECORD OF SURVEY

JOB NO. **WTS 10572** DATE **February 7, 1972** CHECKED BY

STATION	MEASURED DEPTH	DRIFT ANGLE	TRUE VERTICAL DEPTH	VERTICAL SECTION	COURSE DEVIATION	DRIFT DIRECTION	RECTANGULAR COORDINATES			
							NORTH	SOUTH	EAST	WEST
1	4640	30'	4639 83				9 20			16 10
2	4693	1°			93	N 68 W	10 12		Survey	15 97
3	4786	1°			1 63	N 08 E	11 76			15 91
4	4879	1°			1 63	N 02 E	13 16			16 73
5	4972	1°			1 63	N 30 W	14 71			17 23
6	5065	1°	5064 74		1 63	N 18 W	16 15			18 00
7	5158	1°			1 63	N 28 W	17 68			18 56
8	5251	1°			1 63	N 20 W	19 30			18 76
9	5344	1°			1 63	N 07 W	20 87			18 34
10	5437	1°			1 63	N 15 E	22 50			18 34
11	5530	1° 15'	5529 64		2 02	NORTH	24 50			18 66
12	5623	2°			3 25	N 09 W	27 62			19 56
13	5716	2°			3 25	N 16 W	30 75			20 51
14	5809	1° 45'			2 84	N 17 W	33 45			21 34
15	5902	1° 45'			2 84	N 23 W	36 06			22 45
16	5995	1° 45'			2 84	N 13 W	38 83			23 09
17	6088	1° 45'	5994 37		2 84	N 20 W	41 50			24 06
18	6181	1° 30'			2 44	N 17 W	43 83			24 77
19	6274	1° 45'			2 84	N 33 W	46 21			26 32
20	6367	1° 45'			2 84	N 27 W	48 74			27 61



RECORD OF SURVEY

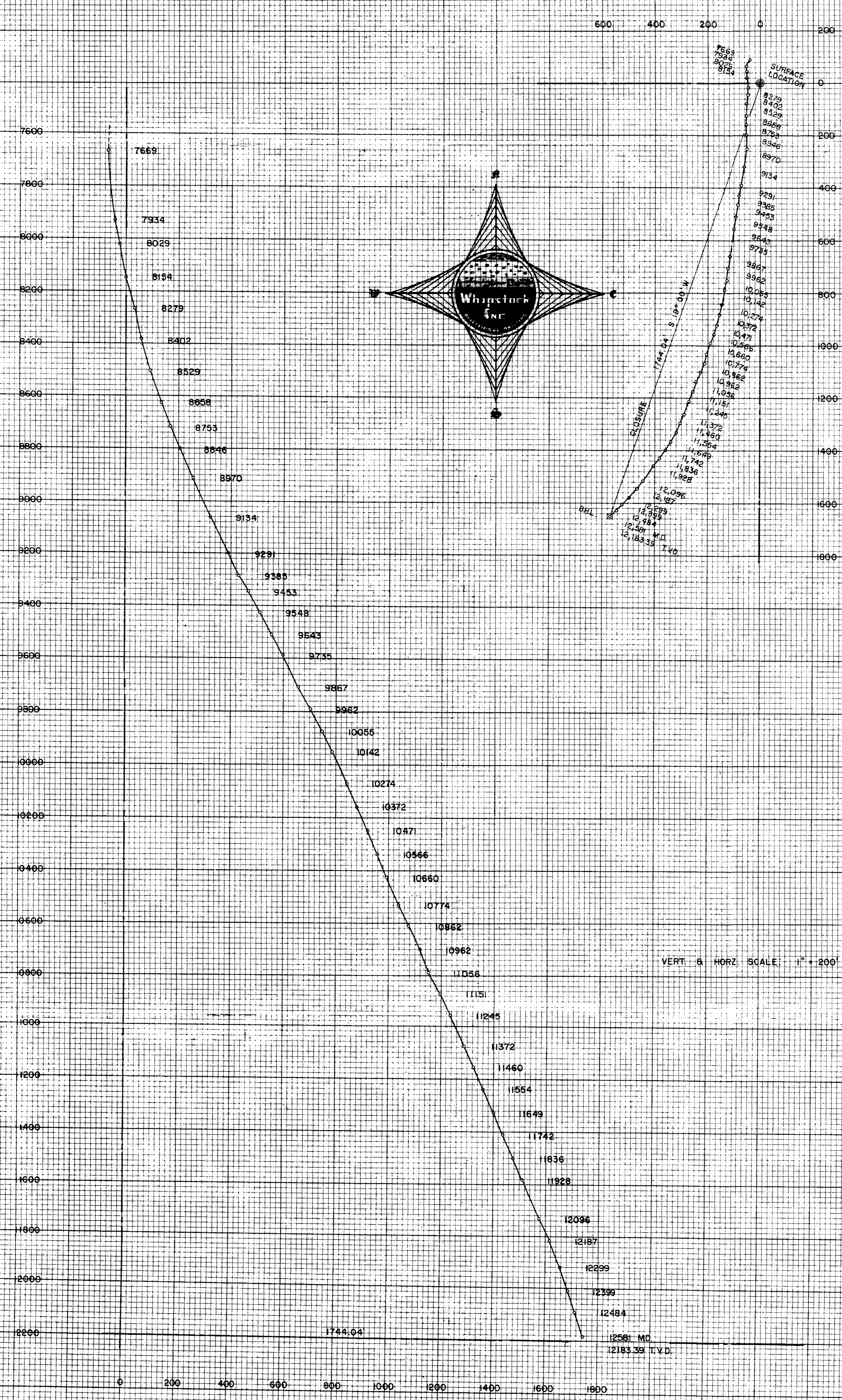
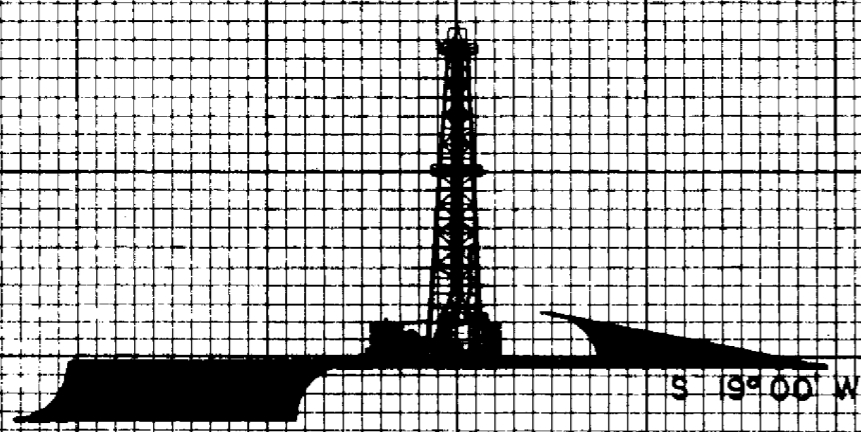
JOB NO. WTS 10572 DATE February 7, 1972 CHECKED BY _____

STATION	MEASURED DEPTH	DRIFT ANGLE	TRUE VERTICAL DEPTH	VERTICAL SECTION	COURSE DEVIATION	DRIFT DIRECTION	RECTANGULAR COORDINATES				
							NORTH	SOUTH	EAST	WEST	
21	6460	1° 45'	6459		2 84	N 20 W	51 41			28 58	
22	6553	1° 30'			2 44	N 15 W	53 77			29 21	
23	6646	1° 45'			2 84	N 20 W	56 44			30 18	
24	6739	2°			3 25	N 11 W	59 63			30 80	
25	6832	2°			3 25	N 10 W	62 83			31 36	
26	6925	2°	6923		3 25	N 08 W	66 05			31 81	
27	7018	2°			3 25	N 14 W	69 20			32 60	
28	7111	2°			3 25	N 17 W	72 31			33 55	
29	7204	2°			3 25	N 16 W	75 43			34 45	
30	7297	2°			3 25	N 08 W	78 65			34 90	
31	7390	2°	7388		3 25	N 05 W	81 89			35 18	
32	7483	2°			3 25	N 17 W	85 00			36 13	
33	7576	2°			3 25	N 21 W	88 03			37 29	
34	7669	2°			3 25	N 20 W	91 08			38 40	
35	7762	2°			3 25	N 07 W	94 31			38 80	
36	7792	2°	7790		1 05	N 07 W	95 35			38 93	
Closure 103.03' North 22° 12' West											

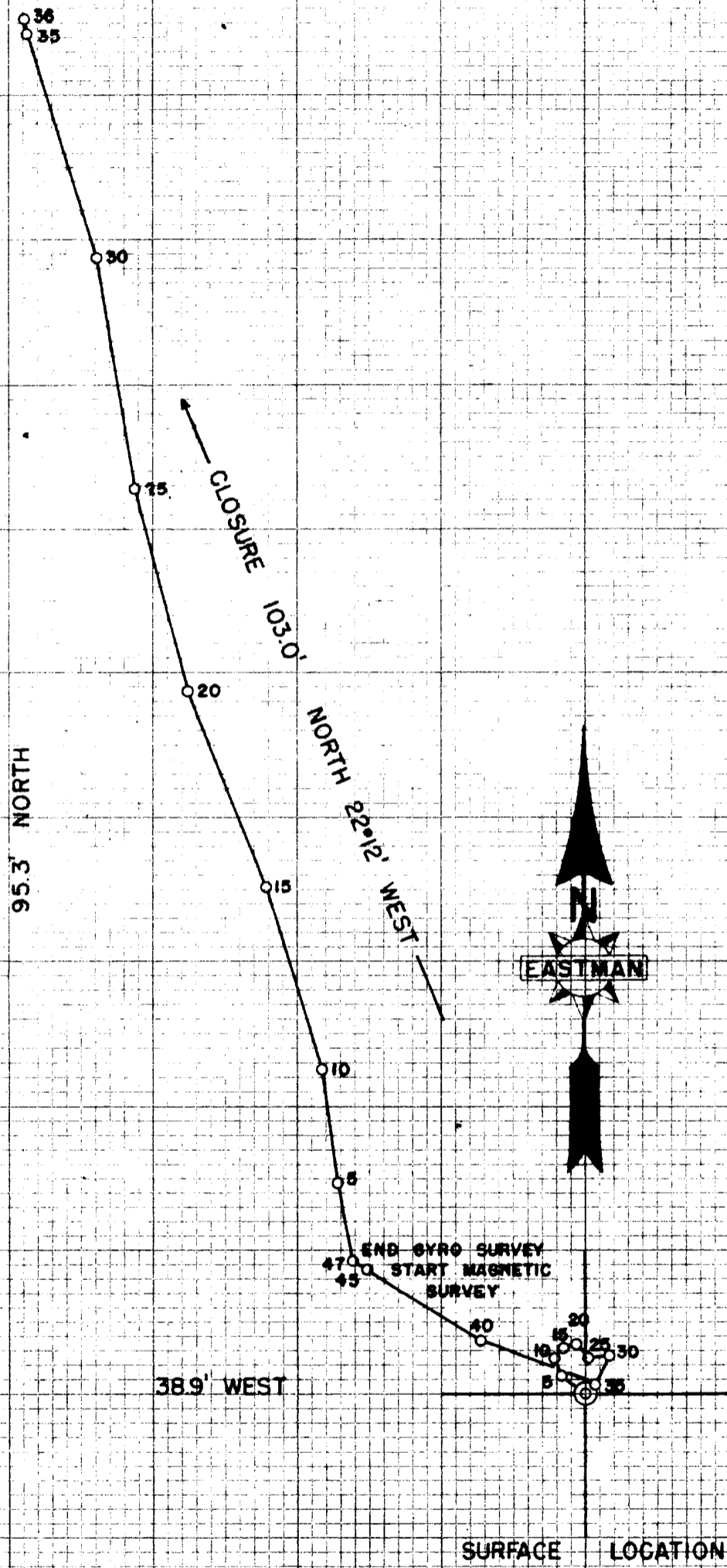
GREAT WESTERN DRILLING CO.

LOWE STATE NO. 1

LEA COUNTY, N.M.



GREAT WESTERN DRILLING CO.
LOWE STATE NO. 1
LEA CO. NEW MEXICO



SCALE 1"=10'