

SUB-SURFACE
DIRECTIONAL
SURVEY
REPORT

AMOCO PRODUCTION COMPANY

COMPANY

SHU WELL NO. 173

WELL NAME

LEA COUNTY, NEW MEXICO

STATE AND COUNTY

CERTIFIED REPORT

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MEASURED	INCL.	HOLE	COURSE	VERTICAL	INCL.	RECTANGULAR	C L U S U R E	DOG-LEG
DEPTH	ANGLE	DIRECTION	LENGTH	DEPTH	SECTION	CORDINATES	DIRECTION	SEVERITY
FEET	DEGS.	DEGS.	FEET	FEET	FEET	N/S	FEET	DEGS.
1447.00	2.25	S 16.00 W	63.00	1446.71	2.26	19.24 S	2.21 E	19.37at S 06.55 E
1509.00	2.75	S 25.00 W	62.00	1508.65	1.32	21.77 S	1.27 E	21.81at S 03.32 E
1572.00	2.00	S 20.00 W	63.00	1571.59	.33	24.19 S	.27 E	24.19at S 00.63 E
1605.00	2.00	S 30.00 W	33.00	1604.57	.15	25.23 S	.22 W	25.23at S 00.49 W
1677.00	.75	S 66.00 W	92.00	1676.55	1.76	26.68 S	1.83 W	26.74at S 03.92 W
1759.00	1.25	S 24.00 E	62.00	1758.54	2.11	27.59 S	2.18 W	27.68at S 04.52 W
1822.00	3.50	N 89.00 E	63.00	1821.48	.03	28.91 S	.10 W	28.91at S 00.20 W
1884.00	6.75	N 88.00 E	62.00	1883.22	5.51	28.77 S	5.43 E	29.28at S 10.69 E
1946.00	8.00	N 74.00 E	62.00	1944.71	13.35	27.53 S	13.27 E	30.56at S 25.74 E
2009.00	10.25	N 75.00 E	63.00	2006.91	22.97	24.86 S	22.90 E	33.80at S 42.65 E
2071.00	11.50	N 71.00 E	62.00	2067.79	34.14	21.44 S	34.08 E	40.27at S 57.83 E
2133.00	13.00	N 75.00 E	62.00	2128.38	46.71	17.59 S	46.66 E	49.87at S 69.34 E
2196.00	14.25	N 74.00 E	63.00	2189.60	61.00	13.63 S	60.96 E	62.47at S 77.39 E
2258.00	15.50	N 74.00 E	62.00	2249.53	76.28	9.24 S	76.26 E	76.82at S 83.09 E
2320.00	16.75	N 75.00 E	62.00	2309.09	92.87	4.64 S	92.85 E	92.97at S 87.13 E
2382.00	18.25	N 73.00 E	62.00	2368.21	110.77	.50 N	110.77 E	110.77at N 89.74 E
2445.00	18.50	N 73.00 E	63.00	2428.00	129.75	6.31 N	129.77 E	129.92at N 87.21 E
2507.00	19.00	N 72.00 E	62.00	2486.71	148.74	12.30 N	148.77 E	149.26at N 85.27 E
2569.00	20.00	N 75.00 E	62.00	2545.15	168.57	18.18 N	168.61 E	169.59at N 83.84 E
2632.00	19.75	N 75.00 E	63.00	2604.40	189.24	23.72 N	189.30 E	190.78at N 82.85 E
2694.00	19.50	N 74.00 E	62.00	2662.80	209.29	29.28 N	209.37 E	211.41at N 82.03 E
2756.00	19.25	N 73.00 E	62.00	2721.29	229.00	35.13 N	229.09 E	231.77at N 81.20 E
2819.00	19.25	N 74.00 E	63.00	2780.77	248.90	41.02 N	249.00 E	252.36at N 80.64 E
2881.00	19.75	N 76.00 E	62.00	2839.21	268.87	46.38 N	268.99 E	272.96at N 80.21 E
2943.00	19.00	N 74.00 E	62.00	2897.70	288.72	51.70 N	288.86 E	293.45at N 79.85 E

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MEASURED	INCL.	HOLE	COURSE	VERTICAL	TRUE	VERTICAL	SECTION	N/S	feet	E/W	FEET	DIRECTION	DEGS.	DISTANCE	CL	U	S	R	E	DOG-LEG
DEPTH	ANGLE	DIRECTION	LENGTH	DEPTH	DEPTH	FEET	FEET													
3006.00	19.75	N 76.00 E	63.00	2957.13		308.90		57.11 N	309.05 E		314.28at	N 79.52 E								1.59
3068.00	19.00	N 77.00 E	62.00	3015.62		328.88		61.91 N	329.05 E		334.82at	N 79.34 E								1.32
3130.00	18.50	N 74.00 E	62.00	3074.33		348.16		66.90 N	348.34 E		354.71at	N 79.12 E								1.75
3193.00	18.75	N 76.00 E	63.00	3134.03		367.58		72.11 N	367.77 E		374.78at	N 78.90 E								1.09
3233.00	19.00	N 75.00 E	40.00	3171.88		380.10		75.35 N	380.30 E		387.69at	N 78.79 E								1.02
3261.00	17.75	N 85.00 E	40.00	3217.43		394.98		77.98 N	395.18 E		402.80at	N 78.83 E								7.05
3343.00	18.50	S 85.00 E	62.00	3276.35		414.24		77.98 N	414.45 E		421.72at	N 79.34 E								5.15
3405.00	20.50	S 79.00 E	62.00	3334.79		434.73		75.10 N	434.93 E		441.37at	N 80.20 E								4.56
3467.00	20.75	S 80.00 E	62.00	3392.82		456.22		71.12 N	456.40 E		461.91at	N 81.14 E								.70
3529.00	20.50	S 80.00 E	62.00	3450.85		477.73		67.32 N	477.91 E		482.63at	N 81.96 E								.40
3591.00	20.25	S 79.00 E	62.00	3508.97		498.97		63.39 N	499.14 E		503.14at	N 82.76 E								.69
3652.00	20.00	S 79.00 E	61.00	3566.24		519.58		59.39 N	519.74 E		523.12at	N 83.48 E								.41
3714.00	20.00	S 80.00 E	62.00	3624.50		540.44		55.52 N	540.59 E		543.43at	N 84.13 E								.55
3776.00	20.00	S 79.00 E	62.00	3682.76		561.30		51.66 N	561.44 E		563.81at	N 84.74 E								.55
3838.00	20.00	S 79.00 E	62.00	3741.03		582.13		47.61 N	582.25 E		584.20at	N 85.32 E								0.00
3900.00	20.00	S 79.00 E	62.00	3799.29		602.95		43.56 N	603.07 E		604.64at	N 85.86 E								0.00
3962.00	20.00	S 80.00 E	62.00	3857.55		623.81		39.70 N	623.92 E		625.18at	N 86.35 E								.55
4024.00	20.25	S 79.00 E	62.00	3915.76		644.80		35.81 N	644.89 E		645.87at	N 86.82 E								.69
4086.00	20.75	S 80.00 E	62.00	3973.84		666.16		31.86 N	666.24 E		667.00at	N 87.26 E								.90
4148.00	21.00	S 78.00 E	62.00	4031.77		687.85		27.64 N	687.93 E		688.48at	N 87.69 E								1.22
4210.00	21.50	S 80.00 E	62.00	4089.55		709.92		23.35 N	709.99 E		710.37at	N 88.11 E								1.42
4272.00	22.25	S 79.00 E	62.00	4147.09		732.65		19.14 N	732.70 E		732.95at	N 88.50 E								1.35
4334.00	22.50	S 79.00 E	62.00	4204.42		755.83		14.64 N	755.87 E		756.01at	N 88.89 E								.40
4396.00	23.75	S 78.00 E	62.00	4261.43		779.70		9.79 N	779.73 E		779.79at	N 89.28 E								2.11
4435.00	23.75	S 78.00 E	39.00	4297.13		795.07		6.52 N	795.09 E		795.12at	N 89.53 E								0.00

CLOSURE DISTANCE = 795.12 FEET.
CLOSURE DIRECTION = N 89.53 E

STATION AT 4435' MD IS A PROJECTION USING DATA FROM PREVIOUS STATION

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AMOCO PRODUCTION COMPANY

WELL #
SHU WELL NO. 173

LOCATION
LEA COUNTY, NEW MEXICO

DATE
6-10-84, 6-18-84, 6-24-84

JOB TYPE
MMS, MMS, EW-MMS

JOB #
MS-1430, MS-1438, S0415

SURVEYOR
R. RICE, L. MASSEY, G. DESPAIN

DEPTHS
0'-1805', 1805'-3233', 3233'-4396'

DECL.
10 DEGREES EAST

ELEV.
0'

FILE #
WT-K9S

FINAL STATION DATA:

MD. 4435.00

TVD. 4297.13

N/S 6.52

E/W 795.09

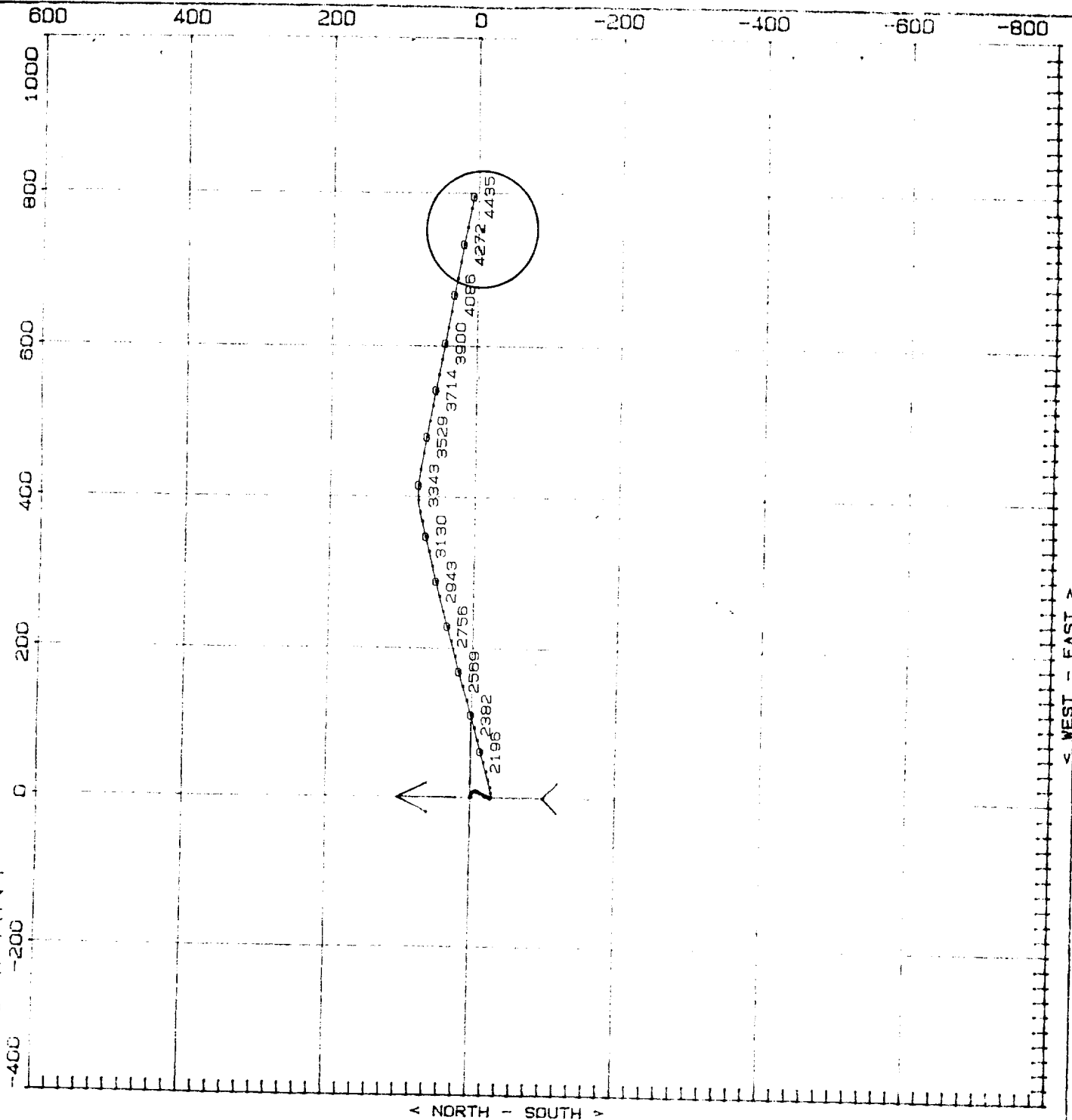
CLOSURE DISTANCE

795.12 FEET

CLOSURE DIRECTION

N 89.53 E

1 IN. = 200 FT.



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DIRECTIONAL
INVESTMENT
GUIDANCE, INC.

P. O. BOX 7238
MIDLAND, TEXAS 79708

SURVEY CERTIFICATION

STATE TEXAS

COUNTY OF MIDLAND

I, Larry Massey, in the employ of D.I.G., Inc., did on the days of June 18, 1984 through June 18, 1984 conduct or supervise the taking of a Magnetic Multishot survey by the method of magnetic orientation from a depth of 1605' feet to 3233' feet, with recordings of inclination being obtained at approximately intervals of 62' feet.

This survey was conducted at the request of Amoco Production Co. for their SHU Well No. 173, Lea County, State of New Mexico in the _____ field.

The data for this survey were obtained by me according to standards and procedures as set forth by D.I.G., Inc., and is true and correct to the best of my knowledge.

Larry Massey

The data for this survey has been examined by me and conforms to the principles and procedures as set forth by D.I.G., Inc.

Ralph A. Rice

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P. O. BOX 7238
MIDLAND, TEXAS 79708

SURVEY CERTIFICATION

STATE TEXAS

COUNTY OF MIDLAND

I, Ralph Rice, in the employ of D.I.G., Inc., did on the days of June 10, 1984 through June 10, 1984 conduct or supervise the taking of a Magnetic Multishot survey by the method of magnetic orientation from a depth of 0' feet to 1605' feet, with recordings of inclination being obtained at approximately intervals of 62' feet.

This survey was conducted at the request of Amoco Production Co. for their SHU Well No. 173, Lea County, State of New Mexico in the _____ field.

The data for this survey were obtained by me according to standards and procedures as set forth by D.I.G., Inc., and is true and correct to the best of my knowledge.

Ralph Rice

The data for this survey has been examined by me and conforms to the principles and procedures as set forth by D.I.G., Inc.

Larry Massey

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(915) 563-0511
P.O. Box 6341
Terminal, Texas 79711-0341

SURVEY CERTIFICATION SHEET

STATE OF TEXAS
COUNTY OF MIDLAND

I, Gary DeSpain, in the employ of Eastman Whipstock, Inc., did on the days of June 24, 19 84 thru June 24, 19 84 conduct or supervise the taking of a Magnetic Multi Shot survey by the method of magnetic orientation from a depth of 3233 feet to 4396 feet, with recordings of inclination and direction being obtained at approximate intervals of 62 feet.

This survey was conducted at the request of Amoco Production Company for their South Hobbs Unit Well No. P73 Lea County, State of New Mexico, in the field.

This data for this survey and the calculation were obtained and performed by me according to standards and procedures as set forth by Eastman Whipstock, Inc. and is true and correct to the best of my knowledge.

Gary DeSpain
Directional Supervisor/ Surveyor

The data for this survey has been examined by me and conforms to principles and procedures set forth by Eastman Whipstock, Inc.

Tim Stephens

Before me, the undersigned authority, on this day personally appeared Gary DeSpain, 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 this instrument is a true statement of facts therein recited.

Subscribed and sworn to before me on this 26TH day of JUNE, 19 84

Ray L. Atchko
Notary Public in and for the
County of Midland, Texas
My commission expires 7/9/85



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