



**REPORT
of
SUB-SURFACE
DIRECTIONAL
SURVEY**

AMOCO PRODUCTION COMPANY
COMPANY

SOUTH HOBBS UNIT COOP. WELL NO. 12
WELL NAME

LEA COUNTY, NEW MEXICO BD2-117
LOCATION

<u>JOB NUMBER</u>	<u>TYPE OF SURVEY</u>	<u>DATE</u>
WT1084-S0047	MAGNETIC MULTI SHOT SURVEY	15-OCT-84
WT1084-S0055	" "	19-OCT-84
132-M-1084-106	" "	24-OCT-84

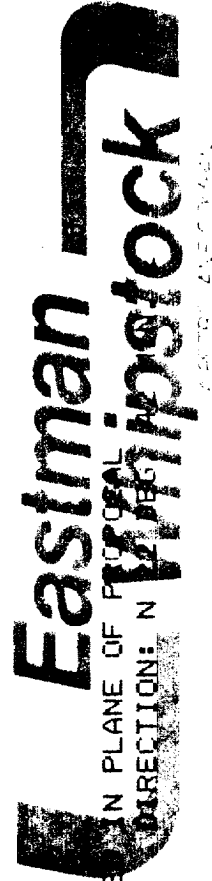
SURVEY BY
GARY DeSPAIN, GARY DeSPAIN
NED PAINTER

OFFICE
WEST TEXAS

AMOCO PRODUCTION COMPANY
SOUTH HOBBS UNIT COOP. WELL NO. 12
LEA COUNTY, NEW MEXICO BD2-117
OCTOBER 14, 1984

EASTMAN WHIPSTOCK, INC.
MAGNETIC MULTI SHOT SURVEY WT1084-S0047
SURVEYOR: GARY DESPAIN (0-1603')
MAGNETIC MULTI-SHOT SURVEY WT1084-S0055
SURVEYOR: GARY DESPAIN (1603'-3180')

AMF / SCIENTIFIC DRILLING
MAGNETIC MULTI SHOT SURVEY 132-M-1084-106
SURVEYOR: NED PAINTER (3220'-4395')



VERTICAL SECTION CALCULATED IN PLANE OF PRODUCTION
DIRECTION: N 21° E

RECORD OF SURVEY

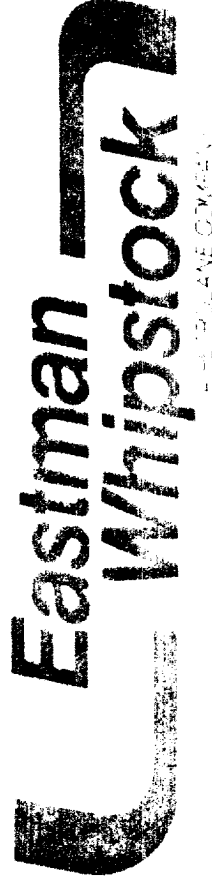
RADIUS OF CURVATURE METHOD

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D	COURSE LENGTH FEET	TRUE		VERTICAL SECTION FEET	R E C T A N G U L A R		DOGLEG SEVERITY DG/100FT
				VERTICAL DEPTH FEET	VERTICAL FEET		C O O R D I N A T E S	FEET	
0.	0 0	0	0.	0.00	0.00	0.00	0.00	0.00	0.00
71.	1 0	S 11 E	71.	71.00	-0.52	-0.52	0.61 S	0.12 E	1.41
101.	1 0	S 20 E	30.	100.99	-0.93	-0.93	1.11 S	0.26 E	0.52
162.	1 0	S 15 E	61.	161.98	-1.74	-1.74	2.13 S	0.58 E	0.14
222.	0 45	S 9 W	60.	221.98	-2.56	-2.56	3.03 S	0.63 E	0.73
283.	1 0	S 10 E	61.	282.97	-3.41	-3.41	3.96 S	0.63 E	0.62
343.	0 45	S 6 W	60.	342.96	-4.24	-4.24	4.87 S	0.67 E	0.58
404.	0 45	S 16 W	61.	403.96	-5.02	-5.02	5.66 S	0.51 E	0.21
464.	0 45	S 34 W	60.	463.95	-5.80	-5.80	6.36 S	0.18 E	0.39
525.	0 30	S 19 W	61.	524.95	-6.46	-6.46	6.96 S	0.11 W	0.49
585.	0 30	S 25	61.	585.94	-7.44	-7.44	7.44 S	0.31 W	0.09
646.	0 30	S 30	61.	646.94	-8.20	-8.20	8.20 S	0.55 W	0.07
706.	0 15	S 67 W	60.	706.94	-9.62	-9.62	9.62 S	0.84 W	0.56
767.	0 30	S 40 W	61.	767.94	-10.23	-10.23	10.23 S	1.16 W	0.49
827.	0 45	S 60 W	60.	826.94	-10.58	-10.58	8.83 S	1.66 W	0.55
888.	1 0	S 34 W	61.	887.93	-11.32	-11.32	9.45 S	2.34 W	0.76
948.	0 15	S 53 W	60.	947.93	-12.19	-12.19	9.93 S	2.73 W	1.28
1008.	0 30	S 46 W	60.	1007.92	-13.82	-13.82	10.18 S	3.08 W	0.42
1069.	1 0	S 45 W	61.	1068.92	-14.93	-14.93	10.74 S	3.65 W	0.82
1129.	0 45	S 37 W	60.	1128.91	-15.94	-15.94	11.43 S	4.25 W	0.46
1190.	1 0	S 72 W	61.	1189.90	-16.64	-16.64	11.96 S	5.00 W	0.95
1250.	1 15	S 61 W	60.	1249.89	-17.40	-17.40	12.43 S	6.08 W	0.55
1311.	1 15	S 50 W	61.	1310.88	-18.17	-18.17	13.19 S	7.17 W	0.39
1371.	1 0	S 57 W	60.	1370.87	-18.75	-18.75	13.89 S	8.12 W	0.47
1432.	0 45	S 72 W	61.	1431.86	-19.35	-19.35	14.29 S	8.96 W	0.55
1492.	1 0	S 37 W	60.	1491.85	-19.09	-19.09	14.81 S	9.69 W	0.96
1553.	0 45	S 75 W	61.	1552.84			15.32 S	10.45 W	1.01
1603.	1 0	S 50 W	50.	1602.84			15.67 S	11.12 W	0.90
1653.	1 0	S 86 W	50.	1652.83			15.99 S	11.92 W	1.24
1714.	0 15	N 14 E	61.	1713.83			15.55 S	12.28 W	1.81

Eastman
Winstock

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D	COURSE LENGTH FEET	TRUE VERTICAL DEPTH FEET	VERTICAL SECTION FEET	R E C T A N G U L A R C O O R D I N A T E S FEET	DOGLEG SEVERITY DG/100FT
1775.	1 45	N 33 E	61.	1774.82	-18.03	14.58 S 11.86 W	2.48
1836.	2 30	N 40 E	61.	1835.77	-15.84	12.77 S 10.52 W	1.30
1897.	4 0	N 42 E	61.	1896.67	-12.55	10.16 S 8.25 W	2.47
1958.	5 0	N 35 E	61.	1957.49	-7.95	6.41 S 5.27 W	1.87
2019.	5 30	N 26 E	61.	2018.23	-2.43	1.61 S 2.44 W	1.58
2080.	6 15	N 29 E	61.	2078.91	3.80	3.93 N 0.44 E	1.33
2141.	7 0	N 26 E	61.	2139.50	10.81	10.17 N 3.69 E	1.35
2202.	9 0	N 24 E	61.	2199.90	19.29	17.86 N 7.28 E	3.31
2264.	10 30	N 18 E	62.	2261.01	29.78	27.66 N 11.04 E	2.92
2325.	11 45	N 16 E	61.	2320.86	41.49	38.92 N 14.48 E	2.14
2386.	13 0	N 15 E	61.	2389.75	68.57	11.51 N 17.97 E	2.08
2447.	14 0	N 15 E	61.	2449.75	88.80	21.66 E 1.64	1.64
2508.	15 15	N 13 E	61.	2509.75	88.80	25.39 E 2.21	2.21
2569.	16 0	N 12 E	61.	2569.75	88.80	28.94 E 1.31	1.31
2630.	17 0	N 12 E	61.	2616.01	116.99	32.54 E 1.64	1.64
2691.	18 15	N 12 E	61.	2674.15	135.14	36.38 E 2.05	2.05
2752.	19 0	N 13 E	61.	2731.95	154.31	40.60 E 1.34	1.34
2813.	19 30	N 12 E	61.	2789.54	174.10	44.95 E 0.98	0.98
2875.	20 0	N 10 E	62.	2847.89	194.62	48.95 E 1.36	1.36
2936.	19 45	N 8 E	61.	2905.26	214.76	52.19 E 1.19	1.19
2997.	19 15	N 9 E	61.	2962.76	234.50	55.20 E 0.99	0.99
3058.	18 45	N 9 E	61.	3020.44	253.80	58.31 E 0.82	0.82
3119.	18 30	N 6 E	61.	3078.24	272.60	60.85 E 1.62	1.62
3180.	17 45	N 6 E	61.	3136.21	290.77	62.84 E 1.23	1.23
3242.	18 0	N 17 E	62.	3195.22	309.41	66.63 E 5.45	5.45
3304.	18 0	N 30 E	62.	3254.19	328.53	74.25 E 6.47	6.47
3366.	19 30	N 34 E	62.	3312.90	348.19	84.81 E 3.19	3.19
3428.	20 0	N 31 E	62.	3371.25	368.83	96.06 E 1.82	1.82
3490.	20 15	N 29 E	62.	3429.46	389.99	106.73 E 1.18	1.18
3552.	20 30	N 28 E	62.	3487.58	411.47	117.03 E 0.69	0.69

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D	COURSE LENGTH FEET	TRUE		VERTICAL SECTION FEET	R E C T A N G U L A R		DOGLEG SEVERITY DG/100FT
				VERTICAL DEPTH FEET	VERTICAL SECTION FEET		C O R D I N A T E S	FEET	
3614.	20 45	N 25 E	62.	3545.61	433.26	416.61 N	126.77 E	1.75	
3676.	21 0	N 24 E	62.	3603.54	455.34	436.71 N	135.93 E	0.70	
3738.	21 0	N 21 E	62.	3661.42	477.55	457.23 N	144.43 E	1.73	
3800.	21 15	N 19 E	62.	3719.26	499.87	478.23 N	152.08 E	1.23	
3862.	22 0	N 23 E	62.	3776.89	522.71	499.56 N	160.26 E	2.67	
3924.	19 30	N 36 E	62.	3834.86	544.47	518.63 N	171.06 E	8.43	
3986.	19 15								

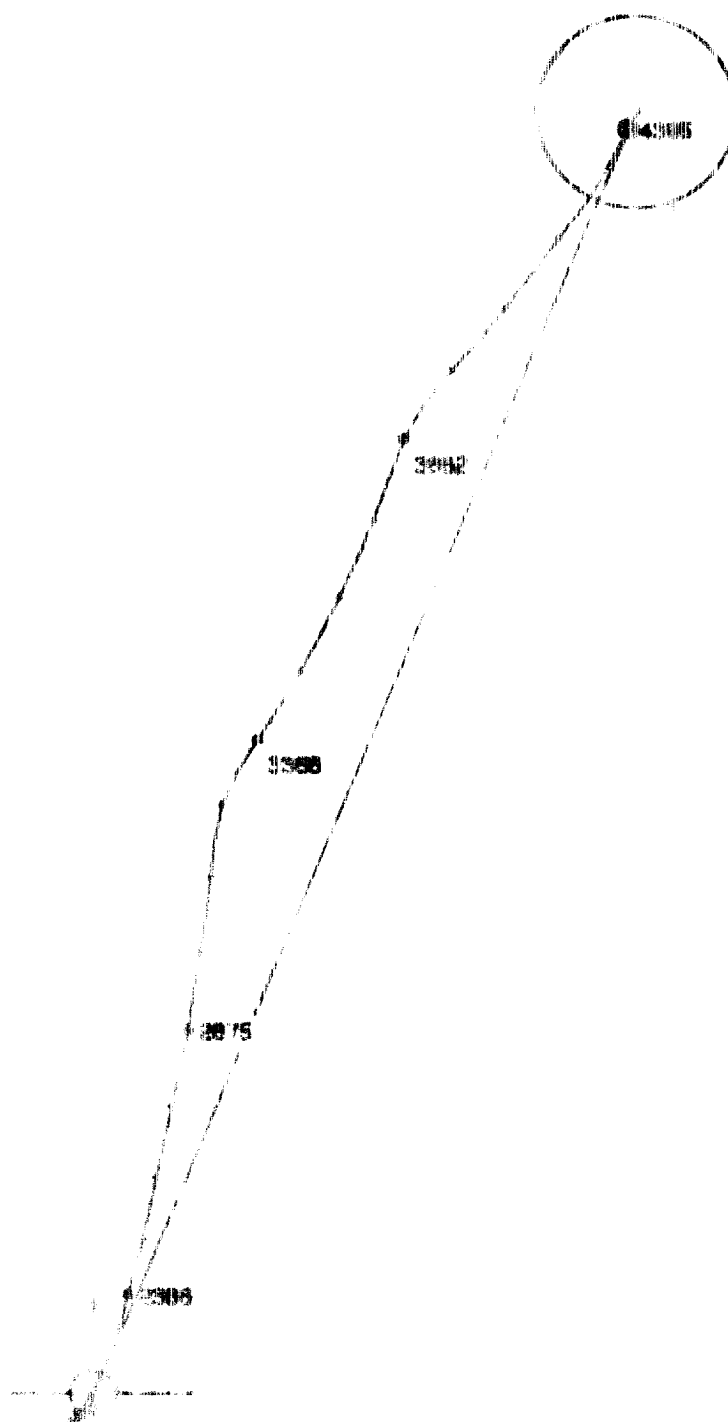


AMOCO PRODUCTION COMPANY
SOUTH HOBBS UNIT 2032, WELL NO. 12
LEA COUNTY, NEW MEXICO 302-117

EASTMAN WHIPSTICK, INC.

HORIZONTAL PROJECTION

SCALE 1 IN. = 100 FEET
DEPTH INDICATOR: MD



FINAL STATION:
DEPTH 4235 MD. 4289.86 TVD
NORTH 653.49 EAST 275.86
CLOSURE 718.56 N 22 34 34 E



SURVEY CERTIFICATION SHEET

STATE OF TEXAS
COUNTY OF MIDLAND

I, Gary DeSpain, in the employ of Eastman Whipstock, Inc., did on the days of Oct. 14, 19 84 thru Oct. 15, 19 84 conduct or supervise the taking of a Magnetic Multi Shot survey by the method of magnetic orientation from a depth of 0 feet to 1603 feet, with recordings of inclination and direction being obtained at approximate intervals of 61 feet.

This survey was conducted at the request of Amoco Production Company for their South Hobbs Coop. Well # 12, 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 confirms to principles and procedures set forth by Eastman Whipstock, Inc.

[Signature]

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 information is a true statement of facts therein recited.

Subscribed and sworn to before me on this 30th day of OCT, 19 84.

Roy L. Steinke
Notary Public in and for the
County of Midland, Texas



ROY L. STEINKE
Notary Public, State of Texas
My Commission Expires July 8, 1985



SURVEY CERTIFICATION SHEET

STATE OF TEXAS
COUNTY OF MIDLAND

I, GARY DeSPAIN, in the employ of Eastman Whipstock, Inc., did on the days of OCTOBER 19th, 1984 thru OCTOBER 19th, 1984 conduct or supervise the taking of a MAGNETIC MULTI SHOT survey by the method of magnetic orientation from a depth of 1603 feet to 3180 feet, with recordings of inclination and direction being obtained at approximate intervals of 61 feet.

This survey was conducted at the request of AMOCO PRODUCTION COMPANY for their SOUTH HOBBS UNIT COOP. WELL NO. 12. 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 confirms 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 information is a true statement of facts therein recited.

Subscribed and sworn to before me on this 30th day of OCT., 19 84.

Roy L. Steinke
Notary Public in and for the
County of Midland, Texas



ROY L. STEINKE
Notary Public, State of Texas
My Commission Expires July 8, 1985

MAGNETIC DIRECTIONAL SURVEY
FOR

JOB NUMBER: 132-N-1084-106

WELL NAME: CO-OP 12

LOCATION: LEA COUNTY, NEW MEXICO

SURVEY DATE: 10/24/84

SURVEY ENGINEER: NED PAINTER

TIE--IN INFORMATION:

METHOD OF CALCULATION: THE RADIUS OF CURVATURE

VERTICAL SECTION: CALCULATED USING PROPOSAL OF N 22-42 E

COMMENTS:

THIS SURVEY IS CORRECT TO THE BEST OF MY
KNOWLEDGE AND IS SUPPORTED BY ACTUAL FIELD DATA.

Ernest W. ...
COMPANY REPRESENTATIVE

RECEIVED

NOV -1 1984

G. C. D.
HOBBS OFFICE