



**REPORT
of
SUB-SURFACE
DIRECTIONAL
SURVEY**

AMOCO PRODUCTION COMPANY
COMPANY

SOUTH HOBBS UNIT WELL NO. 185
WELL NAME

LEA COUNTY, NEW MEXICO
LOCATION

<u>JOB NUMBER</u>	<u>TYPE OF SURVEY</u>	<u>DATE</u>
WT0185-S0162	MAGNETIC MULTI SHOT SURVEY	10-JAN-85
WT0185-S0166	MAGNETIC MULTI SHOT SURVEY	12-JAN-85
132M285010	MAGNETIC MULTI SHOT SURVEY	24-JAN-85

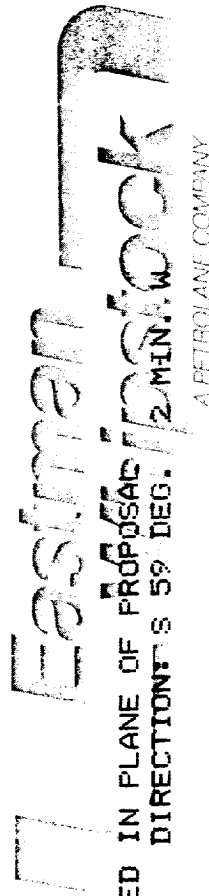
SURVEY BY
STEVE COVINGTON
STEVE COVINGTON
TROY DUNCAN

OFFICE
WEST TEXAS

RECEIVED
FEB 13 1985
HOBBS OFFICE

AMOCO PRODUCTION COMPANY
SOUTH HOBBS UNIT WELL NO. 185
LEA COUNTY, NEW MEXICO BD2-166
JAN. 10, 1985

EASTMAN WHIPSTOCK, INC.	
MAGNETIC MULTI SHOT SURVEY	WT0185-S0162
SURVEYOR: STEVE COVINGTON	(28'-1487')
MAGNETIC MULTI-SHOT SURVEY	WT0185-S0166
SURVEYOR: STEVE COVINGTON	(1487'-2995')
SCIENTIFIC DRILLING	
MAGNETIC MULTI SHOT SURVEY	132M285010
SURVEYOR: TROY DUNCAN	(2995'-4306')



VERTICAL SECTION CALCULATED IN PLANE OF PROPOSED
DIRECTION: S 59 DEG. E

RECORD OF SURVEY

RADIUS OF CURVATURE METHOD

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FEB 18 1985
C. J. C. C. C.
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OCO PRODUCTION COMPANY
UTL HOBBS UNIT WELL NO. 185
A COUNTY, NEW MEXICO BD2-166

COMPUTATION PAGE NO. 1
TIME DATE
08:08:55 11-FEB-85

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		DOGLEG SEVERITY DG/100FT
						FEET	FEET	
0.	0 0	0	0.	0.00	0.00	0.00	0.00	0.00
28.	0 45	N 84 W	28.	28.00	0.15	0.02 N	0.18 W	2.68
89.	0 15	N 6 E	61.	89.00	0.21	0.39 N	0.48 W	1.30
149.	1 30	N 34 E	60.	148.99	-0.49	1.24 N	0.17 W	2.14
209.	1 45	N 55 E	60.	208.96	-2.13	2.45 N	1.01 E	1.07
269.	2 15	N 56 E	60.	268.93	-4.22	3.64 N	2.74 E	0.84
330.	1 45	N 64 E	61.	329.89	-6.35	4.70 N	4.58 E	0.94
390.	1 45	N 50 E	60.	389.86	-8.17	5.70 N	6.11 E	0.71
450.	1 45	N 70 E	60.	449.83	-10.00	6.61 N	7.69 E	1.01
511.	1 30	N 68 E	61.	510.81	-11.70	7.23 N	9.31 E	0.42
571.	1 15	N 65 E	60.	570.79	-13.13	7.80 N	10.63 E	0.43
631.	1 30	N 65 E	60.	630.78	-14.56	8.41 N	11.93 E	0.42
691.	1 45	N 79 E	60.	690.75	-16.21	8.93 N	13.55 E	0.78
752.	1 0	N 79 E	61.	751.73	-17.59	9.21 N	14.98 E	1.23
812.	0 45	S 89 E	60.	811.73	-18.41	9.29 N	15.89 E	0.51
872.	1 15	N 74 E	60.	871.72	-19.37	9.43 N	16.93 E	0.96
933.	1 30	N 61 E	61.	932.70	-20.81	9.99 N	18.28 E	0.65
993.	1 15	N 89 E	60.	992.68	-22.18	10.36 N	19.65 E	1.18
1053.	1 15	N 49 E	60.	1052.67	-23.44	10.82 N	20.85 E	1.42
1114.	1 0	N 56 E	61.	1113.66	-24.63	11.55 N	21.80 E	0.47
1174.	0 45	N 56 E	60.	1173.65	-25.55	12.06 N	22.56 E	0.42
1234.	0 30	S 77 E	60.	1233.64	-26.14	12.17 N	23.18 E	0.91
1294.	0 30	N 50 E	60.	1293.64	-26.63	12.29 N	23.68 E	0.74
1355.	0 15	N 72 E	61.	1354.64	-27.02	12.48 N	24.02 E	0.47
1415.	1 15	S 66 E	60.	1414.64	-27.66	12.44 N	24.79 E	1.80
1447.	1 15	S 71 E	32.	1446.63	-28.09	12.19 N	25.44 E	0.34
1487.	1 0	S 80 E	40.	1486.62	-28.64	11.99 N	26.20 E	0.76
1550.	1 0	S 69 E	63.	1549.61	-29.39	11.70 N	27.26 E	0.30
1611.	1 0	S 84 E	61.	1610.60	-30.15	11.45 N	28.29 E	0.43
1673.	0 45	N 60 E	62.	1672.59	-31.03	11.64 N	29.20 E	0.95

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TIME DATE
 08:08:55 11-FEB-85

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	DOUBLE SEVERITY DG/100FT
1734.	1 0	N 68 E	61.	1733.59	-31.96	12.05 N 30.04 E	0.46
1795.	0 45	N 60 E	61.	1794.58	-32.88	12.46 N 30.87 E	0.46
1856.	0 45	N 64 E	61.	1855.57	-33.68	12.83 N 31.58 E	0.09
1917.	1 0	N 68 E	61.	1916.57	-34.60	13.21 N 32.43 E	0.42
1978.	1 0	N 89 E	61.	1977.56	-35.60	13.42 N 33.46 E	0.60
2039.	0 45	N 78 E	61.	2038.55	-36.45	13.53 N 34.39 E	0.49
2100.	1 0	N 71 E	61.	2099.54	-37.34	13.78 N 35.28 E	0.44
2161.	1 30	N 66 E	61.	2160.53	-38.66	14.27 N 36.52 E	0.84
2222.	1 45	N 61 E	61.	2221.50	-40.38	15.04 N 38.07 E	0.47
2283.	2 30	N 56 E	61.	2282.46	-42.64	16.22 N 40.00 E	1.27
2344.	3 15	N 59 E	61.	2343.38	-45.70	17.86 N 42.58 E	1.25
2405.	3 30	N 67 E	61.	2404.28	-49.28	19.49 N 45.77 E	0.87
2466.	3 45	N 62 E	61.	2465.16	-53.12	21.15 N 49.25 E	0.66
2528.	3 45	N 64 E	62.	2527.02	-57.16	22.99 N 52.87 E	0.21
2589.	3 30	N 62 E	61.	2587.90	-61.01	24.74 N 56.30 E	0.46
2650.	3 15	N 62 E	61.	2648.80	-64.60	26.43 N 59.47 E	0.41
2711.	2 30	N 63 E	61.	2709.72	-67.65	27.84 N 62.19 E	1.23
2772.	2 15	N 52 E	61.	2770.67	-70.17	29.20 N 64.32 E	0.85
2833.	2 15	N 50 E	61.	2831.62	-72.54	30.70 N 66.18 E	0.13
2894.	2 0	N 55 E	61.	2892.58	-74.79	32.08 N 67.97 E	0.51
2955.	1 45	N 50 E	61.	2953.54	-76.77	33.30 N 69.56 E	0.49
2995.	1 30	N 52 E	40.	2993.53	-77.90	34.01 N 70.44 E	0.64
1056' TO 4306' SURVEYED BY SCIENTIFIC DRILLING.							
3056.	1 15	S 68 W	61.	3054.51	-77.91	34.89 N 69.93 E	4.46
3117.	4 45	S 53 W	61.	3115.42	-74.73	33.32 N 67.16 E	5.83
3178.	6 0	S 53 W	61.	3176.15	-69.05	29.88 N 62.60 E	2.05
3239.	6 30	S 48 W	61.	3236.79	-62.48	25.66 N 57.47 E	1.21
3300.	6 45	S 43 W	61.	3297.38	-55.64	20.73 N 52.46 E	1.03
3361.	7 30	S 39 W	61.	3357.91	-48.45	15.02 N 47.49 E	1.47

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1000 PRODUCTION COMPANY
JUTH HOBBS UNIT WELL NO. 185
BA COUNTY, NEW MEXICO BD2-166

COMPUTATION

PAGE NO. 3

TIME DATE
08:08:55 11-FEB-85

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
3422.	7 45	S 33 W	61.	3418.37	-41.01	8.47 N 42.74 E	1.37
3483.	8 15	S 32 W	61.	3478.77	-33.41	1.31 N 38.18 E	0.85
3544.	7 15	S 39 W	61.	3539.22	-25.87	5.38 S 33.40 E	2.25
3605.	9 15	S 60 W	61.	3599.58	-17.29	11.03 S 26.78 E	5.88
3666.	11 15	S 56 W	61.	3659.60	-6.44	16.78 S 17.58 E	3.48
3727.	11 45	S 54 W	61.	3719.38	5.69	23.76 S 7.62 E	1.05
3788.	11 45	S 54 W	61.	3779.10	18.06	31.06 S 2.43 W	0.00
3849.	12 0	S 55 W	61.	3838.80	30.58	38.35 S 12.65 W	0.53
3910.	12 30	S 57 W	61.	3898.41	43.50	45.59 S 23.38 W	1.07
3971.	12 30	S 58 W	61.	3957.96	56.70	52.68 S 34.51 W	0.35
4032.	13 0	S 58 W	61.	4017.46	70.16	59.81 S 45.93 W	0.82
4093.	14 45	S 62 W	61.	4076.67	84.78	67.13 S 58.60 W	3.27
4154.	15 30	S 62 W	61.	4135.56	100.68	74.60 S 72.65 W	1.23
4215.	17 45	S 62 W	61.	4194.01	118.11	82.79 S 88.06 W	3.69
4276.	18 15	S 60 W	61.	4252.02	136.94	91.93 S 104.54 W	1.30
4306.	18 30	S 53 W	30.	4280.49	146.39	97.15 S 112.42 W	7.40

FINAL CLOSURE - DIRECTION: S 49 DEGS 10 MINS W
DISTANCE: 148.58 FEET

FEB 13 1985

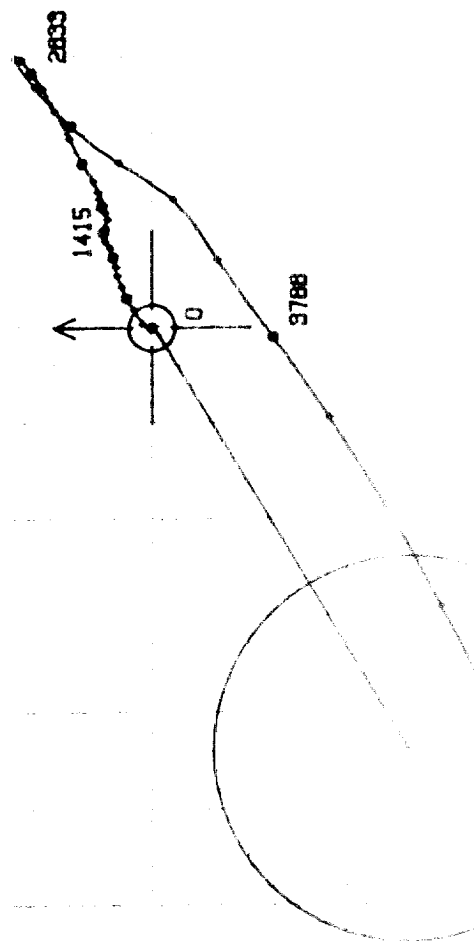
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OFFICE

AMOCO PRODUCTION COMPANY
SOUTH HOBBS UNIT WELL NO. 185
LEA COUNTY, NEW MEXICO BD2-166

EASTMAN WHIPSTOCK, INC.

HORIZONTAL PROJECTION
SCALE 1 IN. = 50 FEET
DEPTH INDICATOR: MD



FINAL STATION:
DEPTH 4306 MD. 4280-49 FVD
SOUTH 97.14 WEST 112.42
CLOSURE 148.58 S 49 10 10 W

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HOSEA C. PRICE
O.C.P.



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

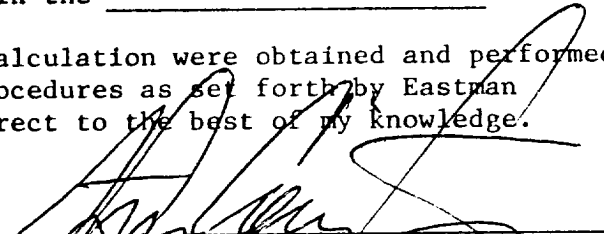
SURVEY CERTIFICATION SHEET

STATE OF TEXAS
COUNTY OF MIDLAND

I, STEVE COVINGTON, in the employ of Eastman Whipstock, Inc., did on the days of JANUARY 9, 1984 thru JANUARY 10, 1984 conduct or supervise the taking of a MAGNETIC MULTI SHOT survey by the method of magnetic orientation from a depth of 0 feet to 1487 feet, with recordings of inclination and direction being obtained at approximate intervals of 60 feet.

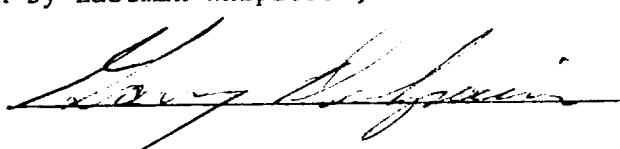
This survey was conducted at the request of AMOCO PRODUCTION COMPANY for their SOUTH HOBBS UNIT #185, LEA County, State of NEW MEXICO, in the _____ field.

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.

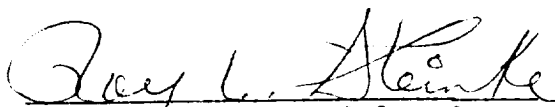


Directional Supervisor/Surveyor

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


Before me, the undersigned authority, on this day personally appeared STEVE COVINGTON, 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 11TH day of FEB., 1985.



Notary Public in and for the
County of Midland, Texas



ROY L. STEINKE
Notary Public, State of Texas
My Commission Expires July 9, 1985

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FEB 13 1985

NO. 100-100000



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

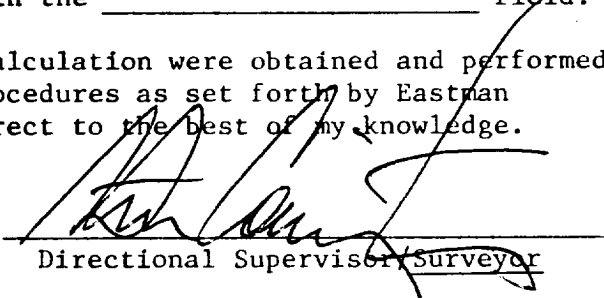
SURVEY CERTIFICATION SHEET

STATE OF TEXAS
COUNTY OF MIDLAND

I, STEVE COVINGTON, in the employ of Eastman Whipstock, Inc., did on the days of JANUARY 12, 19 85 thru JANUARY 12, 19 85 conduct or supervise the taking of a MAGNETIC MULTI SHOT survey by the method of magnetic orientation from a depth of 1487 feet to 2995 feet, with recordings of inclination and direction being obtained at approximate intervals of 61 feet.

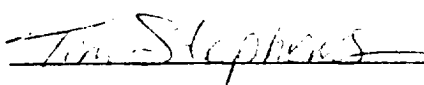
This survey was conducted at the request of AMOCO PROD. CO. for their SOUTH HOBBS UNIT 185, LEA County, State of NEW MEXICO, in the _____ field.

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.



Directional Supervisor/Surveyor

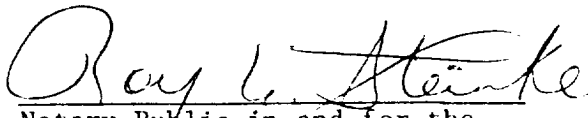
The data for this survey has been examined by me and confirms to principles and procedures set forth by Eastman Whipstock, Inc.



Tim Stephens

Before me, the undersigned authority, on this day personally appeared STEVE COVINGTON, 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 11th day of Feb, 1985.



Notary Public in and for the
County of Midland, Texas



ROY L. STEINKE
Notary Public, State of Texas
My Commission Expires July 9, 1985

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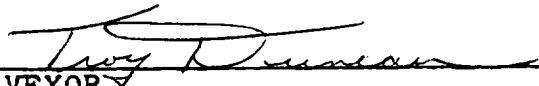
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SCIENTIFIC DRILLING CONTROLS

SURVEY CERTIFICATION

COMPANY Amoco Production WELL NAME & NO. S.H.U. #185
DATE of CERTIFICATION 2-8--85 LOCATION Lea County, New Mexico
TYPE of SURVEY Mag. Directional FROM 2995 TO 4306
JOB NUMBER 132M285010 TICKET NUMBER 100520

THE ABOVE SURVEY WAS PERFORMED BY ME ON January 24 1985
THE RESULTS OBTAINED FROM ACTUAL FIELD DATA CONFORM TO ESTABLISHED
STANDARDS AND ARE TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE.


SURVEYOR
Troy Duncan

FILM TRANSFER RECEIPT

I HEREBY ACKNOWLEDGE RECEIPT OF ORIGINAL FILM OBTAINED ON THE ABOVE
SURVEY.

DATE RECEIVED _____ 19____

COMPANY REPRESENTATIVE

SURVEY CONFIRMATION

I HAVE EXAMINED THE ABOVE SURVEY AND FOUND THE DATA AND RESULTS
ACCEPTABLE ACCORDING TO CURRENT SCIENTIFIC DRILLING CONTROLS STANDARDS.


S.D.C. REPRESENTATIVE
Troy Duncan

RECEIVED

FEB 13 1985

HOSEA C. RICE