



**REPORT
of
SUB-SURFACE
DIRECTIONAL
SURVEY**

DIAMOND SHAMROCK EXPLORATION
COMPANY

FEDERAL 191-45 NO. 1
WELL NAME

LEA COUNTY, NEW MEXICO
LOCATION

JOB NUMBER
WT1085-S0451

TYPE OF SURVEY
MAGNETIC MULTI SHOT SURVEY

DATE
10-23-85

SURVEY BY
GARY DESPAIN

OFFICE
WEST TEXAS

EASTMAN WHIPSTOCK, INC.

RECORD OF SURVEY

FOR

* OPERATOR : DIAMOND DRILLING CORPORATION *
* WELL NAME : FEDERAL *
* LOCATION : LEA COUNTY, NEW MEXICO *
* JOB NUMBER : *
* RIG : *
* DECLINATION : 0.00 E *

EW DISTRICT : WEST TEXAS DISTRICT

DIAMOND SHAMROCK EXPLORATION

FEDERAL 121-45 NO. 1

LEA COUNTY, NEW MEXICO

DATE PRINTED : 23-OCT-85

OUR REF. NO. : S00223.4DZ

PAGE NO. 2

DECLINATION : 0.00 JOB NUMBER :

MEASURED DEPTH	DRIFT ANGLE D M	DRIFT DIRECTION D M	COURSE LENGTH	TRUE VERTICAL DEPTH	R E C T A N G U L A R C O O R D I N A T E S	DOGLEG SEVERITY
88.00	0 45	S 47 0 W	0.00	88.00	0.00 N 0.00 E	0.00
181.39	0 45	S 55 0 W	93.39	181.38	0.77 S 0.95 W	0.11
274.78	0 45	N 47 0 E	93.39	274.76	0.14 S 1.46 W	1.60
368.17	0 30	N 36 0 W	93.39	368.15	0.79 N 1.37 W	0.91
461.56	0 45	S 8 0 E	93.39	461.53	0.51 N 2.06 W	1.30
554.95	0 30	S 43 0 W	93.39	554.92	0.43 S 2.36 W	0.62
648.34	1 0	S 77 0 W	93.39	648.30	1.03 S 3.40 W	0.69
741.73	0 45	S 21 0 W	93.39	741.68	1.93 S 4.43 W	0.91
835.12	1 0	S 62 0 W	93.39	835.06	2.97 S 5.36 W	0.70
928.51	1 0	N 82 0 W	93.39	928.43	3.25 S 6.94 W	0.66
1021.90	0 45	N 45 0 W	93.39	1021.81	0.63 S 8.19 W	0.65
1115.29	1 15	N 56 0 W	93.39	1115.19	0.59 S 9.45 W	0.57
1208.68	1 0	N 62 0 W	93.39	1208.59	0.65 S 11.02 W	0.30
1302.07	2 15	N 52 0 W	93.39	1301.91	0.79 N 13.24 W	1.37
1395.46	2 0	N 33 0 W	93.39	1395.24	3.33 N 15.56 W	0.80
1488.85	3 0	N 26 0 W	93.39	1488.54	6.88 N 17.57 W	1.12
1582.24	3 0	N 16 0 W	93.39	1581.80	11.43 N 19.32 W	0.56
1675.63	3 15	N 14 0 W	93.39	1675.05	16.35 N 20.64 W	0.29
1769.00	4 30	N 1 0 E	93.37	1768.20	22.61 N 21.35 W	1.71
1835.00	5 0	N 2 0 E	66.00	1833.98	28.07 N 21.21 W	0.77

CLOSURE - DISTANCE : 35.18

DIRECTION : N 37 4 W

REPORT UNITS : Feet

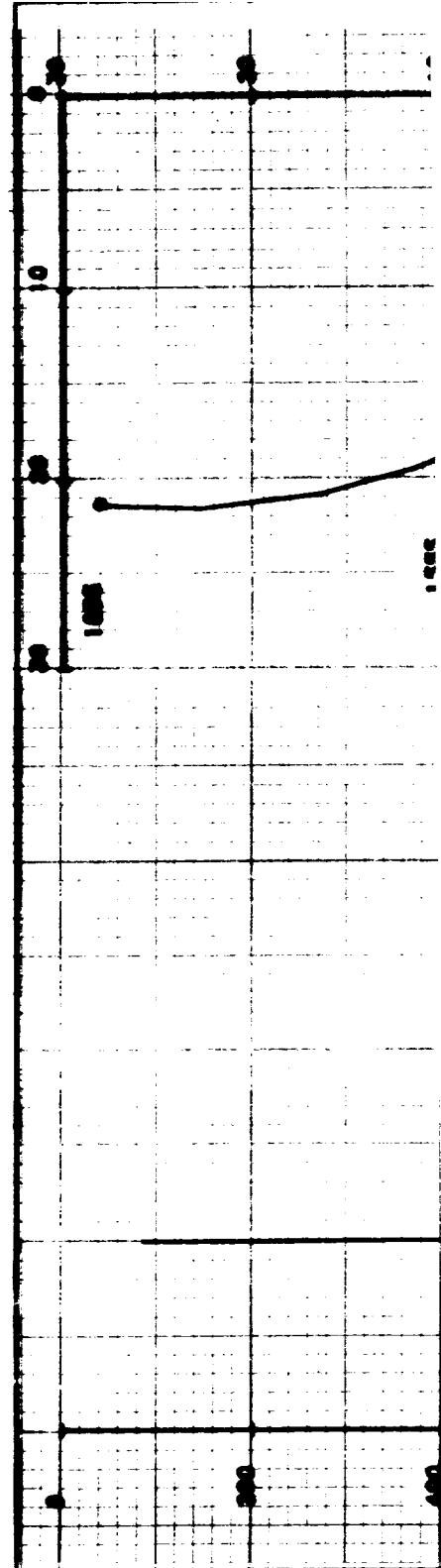
SURVEY CALCULATION METHOD : Radius of curvature

SURVEY RUN INFORMATION

MAGNETIC MULTI SHOT SURVEY
SURVEYOR: GARY DESPAIN

WT1085-S0451

(0'-1835')





(915) 563-0511

P.O. Box 6341/Terminal Station/Midland, TX 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 October 21, 1985 thru October 22, 1985 conduct or supervise the taking of a Magnetic Multi Shot survey by the method of magnetic orientation from a depth of 0 feet to 1835 feet, with recordings of inclination and direction being obtained at approximate intervals of 93 feet.

This survey was conducted at the request of Diamond Shamrock Exploration for their Federal 191-45 No. 1, Lea County, State of Texas, 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.

Ray Cray

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 03 day of JANUARY, 1986



Timothy R. Stephens
Notary Public, State of Texas
My Commission Expires 4-1-89

Timothy R. Stephens
Notary Public in and for the
County of Midland, Texas
My commission expires