



**REPORT
of
SUB-SURFACE
DIRECTIONAL
SURVEY**

HARVEY YATES COMPANY

COMPANY

YOUNG DEEP NO. 8

A-9-18-32

WELL NAME

LEA COUNTY, NEW MEXICO

LOCATION

JOB NUMBER

TYPE OF SURVEY

DATE

430-0678

GYROSCOPIC MULTI SHOT SURVEY

10-22-87

SURVEY BY
GARY DESPAIN

OFFICE
WEST TEXAS BASE

EASTMAN CHRISTENSEN

RECORD OF SURVEY

FOR

* * * * *

OPERATOR	:	HARVEY E. YATES
WELL NAME	:	YOUNG DEEP NO. 8
LOCATION	:	LEA COUNTY, NEW MEXICO
JOB NUMBER	:	
RIG	:	
DECLINATION	:	10.00 E

* * * * *

EC DISTRICT : WEST TEXAS BASE



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HARVEY E. YATES
YOUNG DEEP NO. 8
LEA COUNTY, NEW MEXICO

DATE PRINTED : 23-OCT-87
OUR REF. NO. : S01202.7HZ

PAGE NO. 2

DECLINATION : 10.00 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	C L O S U R E DISTANCE	D I R E C T I O N D M	DOGLEG SEVERITY
0.00	0 0	N 0	0.00	0.00	0.00 E	0.00	S 90	0.00
100.00	0 15	N 41	100.00	100.00	0.14 W	0.22	N 41	0.25
200.00	0 30	N 55	100.00	200.00	0.63 W	0.87	N 46	0.26
300.00	0 30	N 61	100.00	299.99	1.06 N	1.73	N 52	0.05
400.00	0 45	N 71	100.00	399.99	1.51 N	2.81	N 57	0.2
500.00	0 30	N 56	100.00	499.98	1.99 N	3.89	N 59	0.30
600.00	0 30	N 56	100.00	599.98	2.48 N	4.76	N 58	0.00
700.00	0 30	N 52	100.00	699.97	2.99 N	5.63	N 57	0.03
800.00	0 30	N 53	100.00	799.97	3.53 N	6.50	N 57	0.01
900.00	0 30	N 56	100.00	899.97	4.03 N	7.37	N 56	0.03
1000.00	0 45	N 37	100.00	999.96	4.78 N	8.45	N 55	0.32
1100.00	0 45	N 50	100.00	1099.95	5.73 N	9.73	N 53	0.17
1200.00	0 45	N 52	100.00	1199.94	6.55 N	11.03	N 53	0.03
1300.00	0 30	N 32	100.00	1299.94	7.36 N	12.10	N 52	0.33
1400.00	0 30	N 7	100.00	1399.93	8.18 N	12.84	N 50	0.22
1500.00	0 30	N 1	100.00	1499.93	9.05 N	13.44	N 47	0.07
1600.00	0 30	N 30	100.00	1599.93	9.88 N	13.85	N 44	0.25
1700.00	0 30	N 40	100.00	1699.92	10.59 N	14.04	N 41	0.0
1800.00	0 30	N 31	100.00	1799.92	11.30 N	14.27	N 37	0.08
1900.00	0 30	N 48	100.00	1899.91	11.97 N	14.48	N 34	0.15
2000.00	0 15	N 57	100.00	1999.91	12.37 N	14.54	N 31	0.26
2100.00	0 30	N 41	100.00	2099.91	12.80 N	14.66	N 29	0.27
2200.00	0 45	N 34	100.00	2199.90	13.67 N	15.12	N 25	0.26
2300.00	0 45	N 47	100.00	2299.90	14.66 N	15.70	N 20	0.17
2400.00	1 15	N 29	100.00	2399.88	16.03 N	16.67	N 15	0.58
2500.00	1 15	N 24	100.00	2499.86	17.98 N	18.34	N 11	0.11
2600.00	1 15	N 14	100.00	2599.83	20.04 N	20.25	N 8	0.22
2700.00	1 0	N 11	100.00	2699.81	21.99 N	22.17	N 7	0.54
2800.00	1 0	N 31	100.00	2799.80	23.61 N	23.86	N 8	0.35
2900.00	1 0	N 57	100.00	2899.78	24.86 N	25.29	N 10	0.45

CONTINUED ON NEXT PAGE ...



HARVEY E. YATES
YOUNG DEEP NO. 8
LEA COUNTY, NEW MEXICO

DECLINATION : 10.00 JOB NUMBER :
DATE PRINTED : 23-OCT-87
OUR REF. NO. : S01232.7HZ

PAGE NO. 3

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	C L O S U R E DISTANCE D M	DIRECTION D M	DOGLEG SEVERITY
3000.00	1 0	N 46	100.00	2999.77	25.94 N	6.01 W	N 13 2 W	0.19
3100.00	0 45	N 49	100.00	3099.76	26.97 N	7.13 W	N 14 49 W	0.25
3200.00	0 30	N 35	100.00	3199.75	27.78 N	7.86 W	N 15 46 W	0.29
3300.00	0 30	N 27	100.00	3299.75	28.53 N	8.31 W	N 16 15 W	0.07
3400.00	0 30	N 29	100.00	3399.74	29.30 N	8.72 W	N 16 35 W	0.0
3500.00	0 30	N 35	100.00	3499.74	30.04 N	9.18 W	N 17 0 W	0.05
3600.00	0 45	N 34	100.00	3599.73	30.94 N	9.80 W	N 17 35 W	0.25
3700.00	0 45	N 36	100.00	3699.72	32.01 N	10.55 W	N 18 15 W	0.03
3800.00	0 30	N 42	100.00	3799.72	32.86 N	11.24 W	N 18 53 W	0.26
3900.00	0 30	N 56	100.00	3899.71	33.43 N	11.90 W	N 19 35 W	0.12
4000.00	0 45	N 50	100.00	3999.71	34.09 N	12.77 W	N 20 32 W	0.26
4100.00	1 0	N 49	100.00	4099.70	35.08 N	13.93 W	N 21 40 W	0.25
4200.00	1 0	N 55	100.00	4199.68	36.15 N	15.31 W	N 22 57 W	0.10
4300.00	1 0	N 49	100.00	4299.67	37.23 N	16.68 W	N 24 8 W	0.10
4400.00	1 0	N 43	100.00	4399.65	38.44 N	17.93 W	N 25 1 W	0.10
4500.00	1 15	N 35	100.00	4499.63	39.97 N	19.17 W	N 25 38 W	0.29
4600.00	1 0	N 36	100.00	4599.61	41.56 N	20.31 W	N 26 3 W	0.25
4700.00	1 15	N 45	100.00	4699.59	43.06 N	21.59 W	N 26 38 W	0.3
4800.00	1 15	N 35	100.00	4799.57	44.73 N	22.99 W	N 27 12 W	0.2
4900.00	1 15	N 37	100.00	4899.54	46.49 N	24.27 W	N 27 34 W	0.04
5000.00	1 0	N 29	100.00	4999.52	48.14 N	25.34 W	N 27 16 W	0.29
5100.00	1 15	N 33	100.00	5099.50	49.82 N	26.35 W	N 27 52 W	0.26
5200.00	1 15	N 34	100.00	5199.48	51.64 N	27.55 W	N 28 5 W	0.02
5300.00	1 15	N 47	100.00	5299.46	53.29 N	28.97 W	N 28 31 W	0.28
5400.00	1 15	N 48	100.00	5399.43	54.77 N	30.57 W	N 29 10 W	0.02
5500.00	1 30	N 45	100.00	5499.40	56.42 N	32.31 W	N 29 48 W	0.26
5600.00	1 45	N 48	100.00	5599.36	58.95 N	32.25 W	N 28 41 W	2.36
5700.00	1 30	N 47	100.00	5699.32	61.48 N	32.23 W	N 27 40 W	2.40
5800.00	1 30	N 51	100.00	5799.29	63.19 N	34.20 W	N 28 25 W	0.10
5900.00	1 30	N 45	100.00	5899.25	64.94 N	36.15 W	N 29 6 W	0.16

CONTINUED ON NEXT PAGE ...



HARVEY E. YATES
YOUNG DEEP NO. 8
LEA COUNTY, NEW MEXICO

DATE PRINTED : 03-OCT-87
OUR REF. NO. : 01232.7HZ
DECLINATION : 10.00 JOB NUMBER :

PAGE NO. 4

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	D I S T A N C E	D I R E C T I O N D M	D O G L E G S E V E R I T Y
6000.00	1 30	N 47	100.00	5999.22	66.76 N	38.03 W	N 29 40 W	0.05
6100.00	1 45	N 44	100.00	6099.18	68.75 N	40.05 W	N 30 13 W	0.26
6200.00	2 00	N 44	100.00	6199.13	71.10 N	42.32 W	N 30 46 W	0.25
6300.00	1 45	N 47	100.00	6299.07	73.40 N	44.66 W	N 31 19 W	0.27
6400.00	2 00	N 50	100.00	6399.02	75.56 N	47.11 W	N 31 56 W	0.2
6500.00	1 45	N 48	100.00	6498.97	77.71 N	49.58 W	N 32 32 W	0.26
6600.00	1 45	N 44	100.00	6598.92	79.83 N	51.77 W	N 32 58 W	0.12
6700.00	1 45	N 45	100.00	6698.87	82.01 N	53.91 W	N 33 19 W	0.03
6800.00	1 45	N 51	100.00	6798.83	84.05 N	56.18 W	N 33 46 W	0.18
6900.00	1 45	N 45	100.00	6898.78	86.09 N	58.45 W	N 34 10 W	0.18
7000.00	2 00	N 38	100.00	6998.73	88.54 N	60.62 W	N 34 24 W	0.34
7100.00	2 00	N 36	100.00	7098.67	91.33 N	62.72 W	N 34 29 W	0.07
7200.00	2 15	N 27	100.00	7198.60	94.49 N	64.65 W	N 34 23 W	0.42
7300.00	2 15	N 7	100.00	7298.52	98.22 N	65.79 W	N 33 49 W	0.78
7400.00	2 15	N 14	100.00	7398.44	102.12 N	65.56 W	N 32 42 W	0.82
7500.00	2 30	N 1	100.00	7498.36	106.22 N	65.02 W	N 31 28 W	0.59
7600.00	2 30	N 15	100.00	7598.26	110.53 N	64.41 W	N 30 14 W	0.61
7700.00	2 45	N 10	100.00	7698.16	115.00 N	63.42 W	N 28 53 W	0.3
7800.00	2 45	N 9	100.00	7798.04	119.73 N	62.63 W	N 27 37 W	0.06
7900.00	2 45	N 5	100.00	7897.93	124.49 N	62.04 W	N 26 29 W	0.19
8000.00	2 45	N 5	100.00	7997.81	129.27 N	61.62 W	N 25 29 W	0.00
8100.00	2 45	N 1	100.00	8097.69	134.06 N	61.46 W	N 24 38 W	0.29
8200.00	2 00	N 7	100.00	8197.57	139.07 N	61.19 W	N 23 45 W	0.47
8300.00	2 15	N 7	100.00	8297.42	144.48 N	60.53 W	N 22 44 W	0.25
8400.00	2 45	N 15	100.00	8397.23	150.47 N	59.37 W	N 21 32 W	0.70
8500.00	2 00	N 13	100.00	8497.01	157.02 N	57.73 W	N 20 11 W	0.28
8600.00	2 00	N 17	100.00	8596.76	163.76 N	55.93 W	N 18 51 W	0.28
8700.00	2 30	N 24	100.00	8696.55	169.88 N	53.64 W	N 17 31 W	0.68
8800.00	2 30	N 27	100.00	8796.41	174.61 N	51.38 W	N 16 24 W	1.01
8895.00	2 30	N 21	95.00	8891.32	178.39 N	49.70 W	N 15 34 W	0.28

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HARVEY E. YATES
 YOUNG DEEP NO. 8
 LEA COUNTY, NEW MEXICO

DATE PRINTED : 23-OCT-87
 OUR REF. NO. : 801232.7HZ
 DECLINATION : 10.00 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	C L O S U R E DISTANCE	D I R E C T I O N D M	DOGLEG SEVERITY
8908.00	2 15	N 22 0 E	13.00	8904.31	178.89 N	49.50 W	N 15 28 W	1.95
8920.00	2 30	N 19 0 E	12.00	8916.30	179.36 N	49.33 W	N 15 23 W	2.33
8930.00	2 30	N 16 0 E	10.00	8926.29	179.77 N	49.20 W	N 15 18 W	1.31
8940.00	2 15	N 17 0 E	10.00	8936.28	180.17 N	49.08 W	N 15 14 W	2.53
8950.00	2 15	N 15 0 E	10.00	8946.27	180.55 N	48.97 W	N 15 11 W	0.7
9000.00	1 45	N 14 0 E	50.00	8996.24	182.24 N	48.53 W	N 14 55 W	1.00

CLOSURE - DISTANCE : 188.59
 DIRECTION : N 14 55 W

REPORT UNITS : Feet
 SURVEY CALCULATION METHOD : Radius of curvature

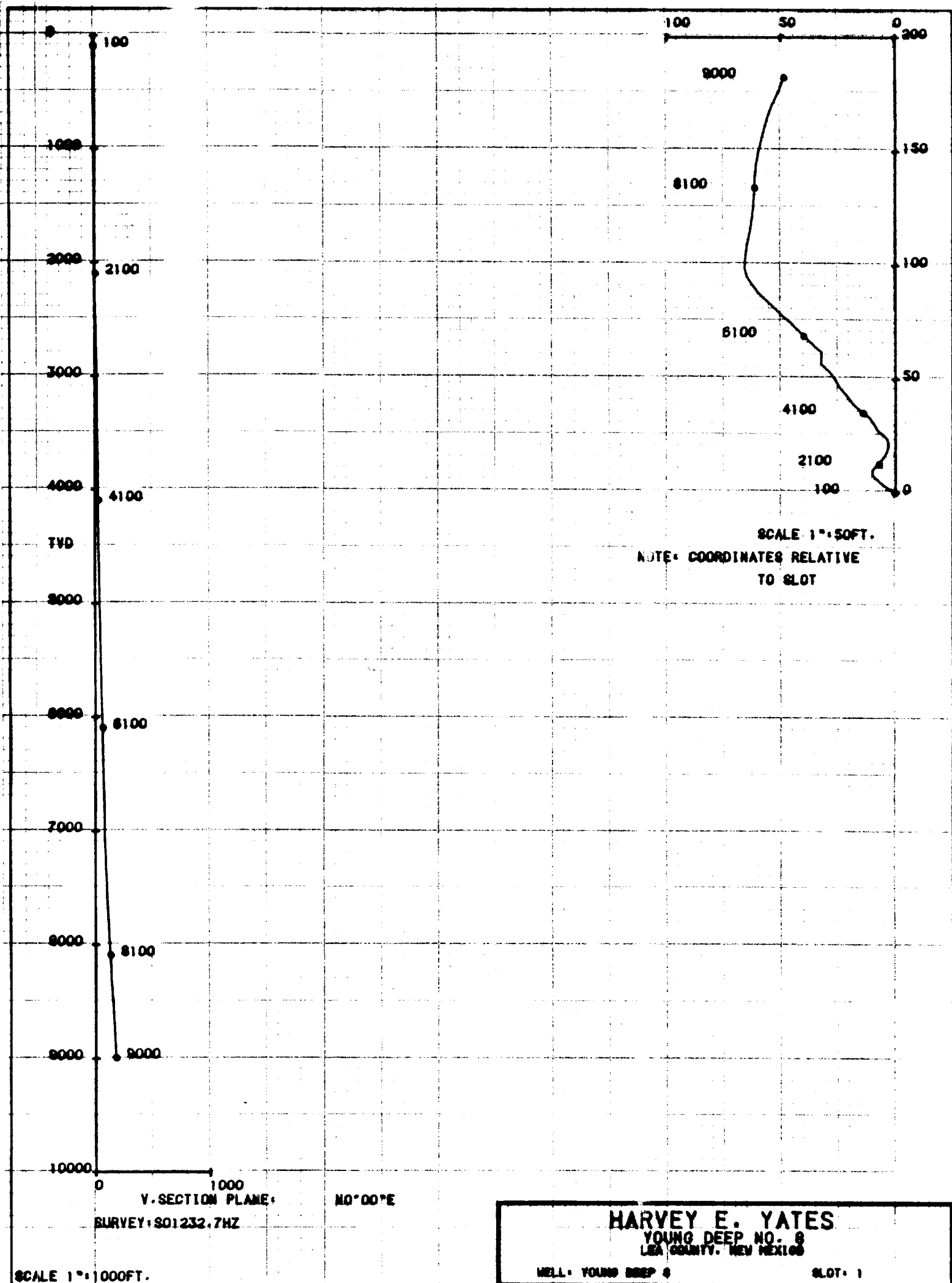
SURVEY RUN INFORMATION

=====

GYROSCOPIC MULTI SHOT SURVEY 430-0678

SURVEYOR: GARY DESPAIN (0-9000')





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2103 Market, Midland, Texas 79703, Phone: (915) 694-9517, (915) 563-0511

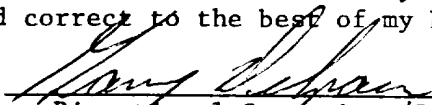
SURVEY CERTIFICATION SHEET

STATE OF TEXAS
COUNTY OF MIDLAND

I, Gary DeSpain, in the employ of Eastman Christensen, Inc. did on the days of October 22, 19 87 thru October 23, 19 87 conduct or supervise the taking of a Gyroscopic Multi Shot survey by the method of magnetic orientation from a depth of 0 feet to 9000 feet, with recordings of inclination and direction being obtained at approximate intervals of 100 feet.

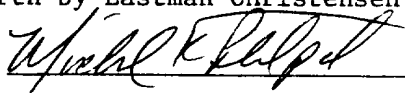
This survey was conducted at the request of Harvey E. Yates Company for their Young Deep Well No. 8, Lea County, State of New Mexico, in the _____ field.

This data for this survey and the calculation were obtained and performed by me according to standards and procedures as set forth by Eastman Christensen, 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 conforms to principles and procedures set forth by Eastman Christensen, Inc.



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 _____ day of _____, 19____

Notary Public in and for the
County of Midland, Texas
My commission expires _____

**MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT**

Form C-10,
Supersedes C-128
Effective 1-1-85

All distances must be from the outer boundaries of the Section

Operator HARVEY YATES COMPANY			Lease YOUNG BONE UNIT		Well No. 8
Unit Letter A	Section 9	Township 18 South	Range 32 East	County Lea	
Actual Footage Location of Well:					
660 feet from the North line and		860 feet from the East line			
Ground Level Elev. 2011.2	Producing Formation Bone Spring	Pool N. Young Bone Spring		Dedicated Acreage: 40 Acres	

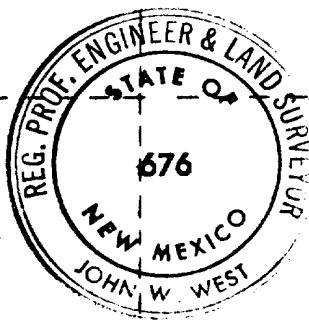
1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☒ Yes ☐ No If answer is "yes," type of consolidation Unitization

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.

Final Station: MD: 9000' TVD: 8996.24' Comp: North 182.24' West 48.53' Closure: 188.59' At A N 14° 55' W	LC-064009-d 660' 860'
Galaxy Oil Co 1/2 Gulf Oil Corp 1/2 Charlesworth 1/2 Estate USA	



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Peck Hardee

Name
Peck Hardee

Position
Engineer

Company
Harvey E. Yates Company

Date
August 17, 1981

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed
8/10/81

Registered Professional Engineer and/or Land Surveyor

John W. West

Certificate No. **JOHN W. WEST : 676**
PATRICK A. ROMERO 6863
Ronald J. Eidson 3239

330 660 990 1320 1650 1980 2310 2640 2970 3300 3630 3960 4290 4620 4950 5280 5610 5940 6270 6600

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