

OPERATOR MEWBOURNE OIL COMPANY
WELL/LEASE BLACK LAKE 5 PA ST COM 001H
COUNTY EDDY

041-0114

STATE OF NEW MEXICO
DEVIATION REPORT

15-41124

469	1.78
889	1.54
1,201	1.92
1,865	4.31
2,021	4.00
2,383	3.25
2,857	1.62
3,329	0.63
3,802	0.53
4,275	0.50
4,716	1.21
5,189	0.85
5,663	0.93
6,131	0.95
6,685	4.00
6,953	3.80



BY: *Steve Moore*

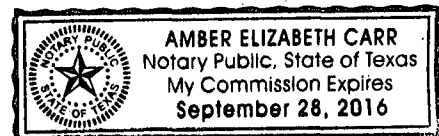
STATE OF TEXAS

COUNTY OF MIDLAND

The foregoing instrument was acknowledged before me on
Steve Moore on behalf of Patterson-UTi Drilling Company LLC.

8/21/13, by

Amber Elizabeth Carr
Notary Public for Midland County, Texas
My Commission Expires:





A Gyrodata Directional Survey

FINAL DEFINITIVE COPY

for

MEWBOURNE OIL COMPANY

Lease: BLACK LAKE 5 PA STATE COM Well: 1H, 4 1/2" XH DRILLPIPE
Location: PATTERSON DRILLING RIG 41, EDDY COUNTY, NEW MEXICO

Job Number: MD0813GVCW496

Run Date: 15 Aug 2013

Report Generated: 04 Oct 2013 11:34

Surveyor: Marlin Willeford, Josh Hill

Calculation Method: MINIMUM CURVATURE

Survey surface coordinates obtained from: Company Man

Survey Latitude: 32.152314 deg. N Longitude: 104.102169 deg. W

Azimuth Correction:

Gyro: -0.12000 deg to Grid North

Proposed Well Direction: 359.930 deg

Depth Reference: Rotary Table

Air Gap (RKB to Ground / RKB to MSL): 16.00

Vertical Section Calculated from Well Head Location

Closure Calculated from Well Head Location

Horizontal Coordinates Calculated from Well Head Location

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Location: PATTERSON DRILLING RIG 41, EDDY COUNTY, NEW MEXICO

Job Number: MD0813GVCW496

MEASURED DEPTH feet	I N C L deg.	AZIMUTH deg.	BORE HOLE BEARING deg. min.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. AZIMUTH feet deg.	HORIZONTAL COORDINATES feet
0.00	0.00	0.00	N 0 0 E	0.00	0.00	0.0 0.0	0.00 N 0.00 E
100.00	0.46	96.63	S 83 22 E	0.46	100.00	0.4 96.6	0.05 S 0.40 E
200.00	0.71	94.95	S 85 3 E	0.24	199.99	1.4 95.9	0.15 S 1.42 E
300.00	0.74	89.04	N 89 2 E	0.08	299.99	2.7 94.0	0.19 S 2.68 E
400.00	0.81	95.75	S 84 15 E	0.11	399.98	4.0 93.5	0.25 S 4.03 E
500.00	0.90	89.71	N 89 43 E	0.12	499.97	5.5 93.3	0.32 S 5.52 E
600.00	0.60	68.61	N 68 37 E	0.40	599.96	6.8 91.0	0.12 S 6.79 E
700.00	0.49	50.45	N 50 27 E	0.20	699.95	7.6 87.4	0.34 N 7.60 E
800.00	0.53	47.41	N 47 25 E	0.05	799.95	8.3 83.6	0.92 N 8.27 E
900.00	0.62	66.34	N 66 20 E	0.21	899.94	9.2 81.0	1.45 N 9.10 E
1000.00	0.49	121.45	S 58 33 E	0.52	999.94	10.1 81.8	1.44 N 9.96 E
1100.00	0.65	178.21	S 1 48 E	0.56	1099.94	10.4 86.4	0.65 N 10.34 E
1200.00	0.53	186.21	S 6 13 W	0.14	1199.93	10.3 92.1	0.38 S 10.31 E
1300.00	0.42	184.07	S 4 4 W	0.11	1299.93	10.3 96.7	1.21 S 10.23 E
1400.00	0.33	175.25	S 4 45 E	0.11	1399.92	10.4 100.3	1.87 S 10.23 E
1500.00	0.30	165.30	S 14 42 E	0.06	1499.92	10.6 103.1	2.41 S 10.32 E
1600.00	0.54	122.75	S 57 15 E	0.38	1599.92	11.2 105.1	2.92 S 10.78 E
1700.00	3.17	89.03	N 89 2 E	2.73	1699.86	14.3 102.6	3.13 S 13.95 E
1800.00	4.14	83.29	N 83 17 E	1.04	1799.66	20.5 97.5	2.66 S 20.30 E
1900.00	5.27	77.62	N 77 37 E	1.21	1899.32	28.4 92.5	1.25 S 28.37 E
2000.00	6.25	77.04	N 77 3 E	0.98	1998.81	38.2 88.6	0.95 N 38.15 E

A Gyrodata Directional Survey

MEWBOURNE OIL COMPANY

Lease: BLACK LAKE 5 PA STATE COM Well: 1H, 4 1/2" XH DRILLPIPE

Location: PATTERSON DRILLING RIG 41, EDDY COUNTY, NEW MEXICO

Job Number: MD0813GVCW496

MEASURED DEPTH feet	I N C L deg.	AZIMUTH deg.	BORE HOLE BEARING deg. min.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. AZIMUTH feet deg.	HORIZONTAL COORDINATES feet
2100.00	6.43	78.38	N 78 23 E	0.23	2098.20	49.0 86.1	3.30 N 48.94 E
2200.00	6.58	79.75	N 79 45 E	0.22	2197.56	60.3 84.8	5.44 N 60.06 E
2300.00	5.31	79.89	N 79 53 E	1.27	2297.02	70.6 84.1	7.28 N 70.25 E
2400.00	3.97	79.19	N 79 11 E	1.34	2396.69	78.7 83.6	8.74 N 78.20 E
2500.00	2.74	78.32	N 78 19 E	1.23	2496.52	84.5 83.3	9.87 N 83.95 E
2600.00	2.46	77.88	N 77 53 E	0.29	2596.41	89.0 83.0	10.81 N 88.39 E
2700.00	2.22	78.93	N 78 56 E	0.24	2696.33	93.1 82.8	11.63 N 92.39 E
2800.00	1.71	75.36	N 75 22 E	0.53	2796.27	96.5 82.6	12.38 N 95.73 E
2900.00	1.54	71.71	N 71 42 E	0.19	2896.23	99.3 82.4	13.18 N 98.45 E
3000.00	1.32	71.85	N 71 51 E	0.22	2996.20	101.8 82.1	13.96 N 100.82 E
3100.00	0.85	69.16	N 69 10 E	0.48	3096.18	103.6 81.9	14.58 N 102.61 E
3200.00	0.50	60.20	N 60 12 E	0.36	3196.17	104.8 81.7	15.06 N 103.68 E
3300.00	0.21	14.01	N 14 1 E	0.39	3296.17	105.3 81.6	15.46 N 104.11 E
3400.00	0.29	356.71	N 3 18 W	0.11	3396.17	105.3 81.3	15.90 N 104.14 E
3500.00	0.23	326.45	N 33 33 W	0.15	3496.17	105.3 81.1	16.32 N 104.01 E
3600.00	0.25	323.70	N 36 18 W	0.02	3596.17	105.1 80.9	16.67 N 103.77 E
3700.00	0.26	327.64	N 32 22 W	0.02	3696.17	104.9 80.7	17.03 N 103.52 E
3800.00	0.34	296.15	N 63 51 W	0.18	3796.17	104.6 80.4	17.36 N 103.13 E
3900.00	0.36	296.99	N 63 1 W	0.02	3896.16	104.1 80.2	17.63 N 102.58 E
4000.00	0.13	240.47	S 60 28 W	0.31	3996.16	103.7 80.2	17.72 N 102.20 E
4100.00	0.19	226.29	S 46 18 W	0.07	4096.16	103.5 80.2	17.55 N 101.98 E
4200.00	0.18	240.28	S 60 17 W	0.04	4196.16	103.2 80.3	17.36 N 101.73 E

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MEWBOURNE OIL COMPANY

Lease: BLACK LAKE 5 PA STATE COM Well: 1H, 4 1/2" XH DRILLPIPE

Location: PATTERSON DRILLING RIG 41, EDDY COUNTY, NEW MEXICO

Job Number: MD0813GVCW496

MEASURED DEPTH feet	I N C L deg.	AZIMUTH deg.	BORE HOLE BEARING deg. min.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. AZIMUTH feet deg.	HORIZONTAL COORDINATES feet
4300.00	0.17	226.42	S 46 25 W	0.04	4296.16	102.9 80.4	17.18 N 101.49 E
4400.00	0.35	207.41	S 27 25 W	0.20	4396.16	102.6 80.6	16.81 N 101.24 E
4500.00	0.40	201.19	S 21 11 W	0.06	4496.16	102.3 80.9	16.21 N 100.97 E
4600.00	0.53	198.76	S 18 45 W	0.13	4596.16	101.9 81.3	15.44 N 100.70 E
4700.00	0.93	226.59	S 46 36 W	0.52	4696.15	101.0 81.8	14.45 N 99.96 E
4800.00	0.96	238.55	S 58 33 W	0.20	4796.13	99.6 82.2	13.45 N 98.66 E
4900.00	0.96	245.05	S 65 3 W	0.11	4896.12	98.0 82.6	12.67 N 97.19 E
5000.00	0.88	247.40	S 67 24 W	0.08	4996.11	96.5 82.8	12.02 N 95.72 E
5100.00	0.91	243.78	S 63 47 W	0.06	5096.09	95.0 83.1	11.37 N 94.29 E
5200.00	0.81	244.38	S 64 23 W	0.11	5196.08	93.6 83.4	10.71 N 92.95 E
5300.00	0.84	250.91	S 70 55 W	0.10	5296.07	92.2 83.7	10.17 N 91.62 E
5400.00	0.98	243.98	S 63 59 W	0.17	5396.06	90.7 84.0	9.56 N 90.16 E
5500.00	0.88	224.29	S 44 17 W	0.33	5496.05	89.3 84.5	8.63 N 88.85 E
5600.00	1.10	215.37	S 35 22 W	0.27	5596.03	88.1 85.2	7.30 N 87.76 E
5700.00	1.49	195.78	S 15 47 W	0.59	5696.01	87.0 86.5	5.26 N 86.85 E
5800.00	1.45	198.22	S 18 13 W	0.08	5795.97	86.1 88.1	2.81 N 86.10 E
5900.00	1.37	193.23	S 13 14 W	0.14	5895.94	85.4 89.7	0.45 N 85.43 E
6000.00	1.07	188.54	S 8 33 W	0.32	5995.92	85.0 91.1	1.63 S 85.02 E
6100.00	0.25	144.53	S 35 28 E	0.91	6095.91	85.1 91.8	2.73 S 85.01 E
6200.00	1.54	0.97	N 0 58 E	1.74	6195.90	85.2 91.1	1.56 S 85.16 E
6300.00	2.07	1.04	N 1 2 E	0.53	6295.85	85.2 88.9	1.58 N 85.21 E

A Gyrodata Directional Survey

MEWBOURNE OIL COMPANY

Lease: BLACK LAKE 5 PA STATE COM Well: 1H, 4 1/2" XH DRILLPIPE

Location: PATTERSON DRILLING RIG 41, EDDY COUNTY, NEW MEXICO

Job Number: MD0813GVCW496

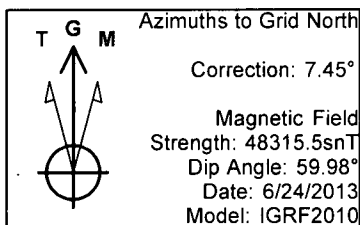
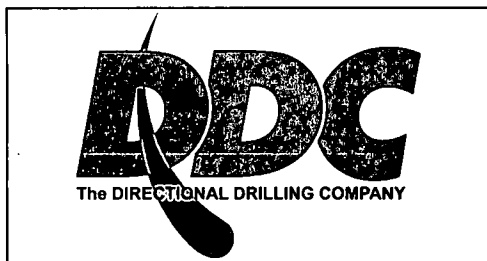
MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	BORE HOLE BEARING deg. min.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. feet	AZIMUTH deg.	HORIZONTAL COORDINATES feet
6400.00	1.93	352.90	N 7 6 W	0.32	6395.79	85.2	86.6	5.05 N 85.04 E
6500.00	2.96	338.82	N 21 11 W	1.19	6495.70	84.4	83.8	9.12 N 83.90 E
6600.00	3.27	336.83	N 23 10 W	0.33	6595.55	83.1	80.2	14.15 N 81.84 E
6700.00	2.94	342.18	N 17 49 W	0.44	6695.41	82.2	76.5	19.22 N 79.93 E
6800.00	2.71	342.27	N 17 44 W	0.23	6795.29	82.0	73.0	23.91 N 78.43 E
6900.00	2.52	333.59	N 26 25 W	0.44	6895.18	81.7	69.9	28.13 N 76.73 E
7000.00	2.55	328.60	N 31 24 W	0.22	6995.08	81.2	66.8	32.00 N 74.60 E
7100.00	1.99	316.87	N 43 8 W	0.72	7095.01	80.4	64.1	35.16 N 72.25 E
7200.00	1.52	267.18	S 87 11 W	1.53	7194.96	78.7	62.5	36.36 N 69.74 E
7300.00	1.48	265.87	S 85 52 W	0.06	7294.93	76.3	61.7	36.20 N 67.13 E

Final Station Closure: Distance: 76.27 ft Az: 61.66 deg.

Company Name: Mewbourne Oil Co
Black Lake 5 PA State Com #1H
Eddy County, New Mexico (Nad 83)
Rig: Patterson #41
Created By: TIFFANI MIZELL
Date: 8/23/2013

Black Lake 5 PA State Com #1H
Eddy County, New Mexico (Nad 83)
Q130550 & WT-13619
Design #2

Mewbourne Oil Company



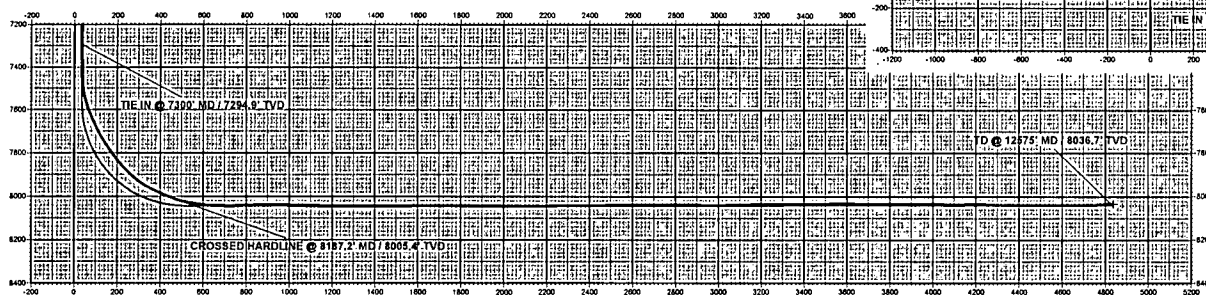
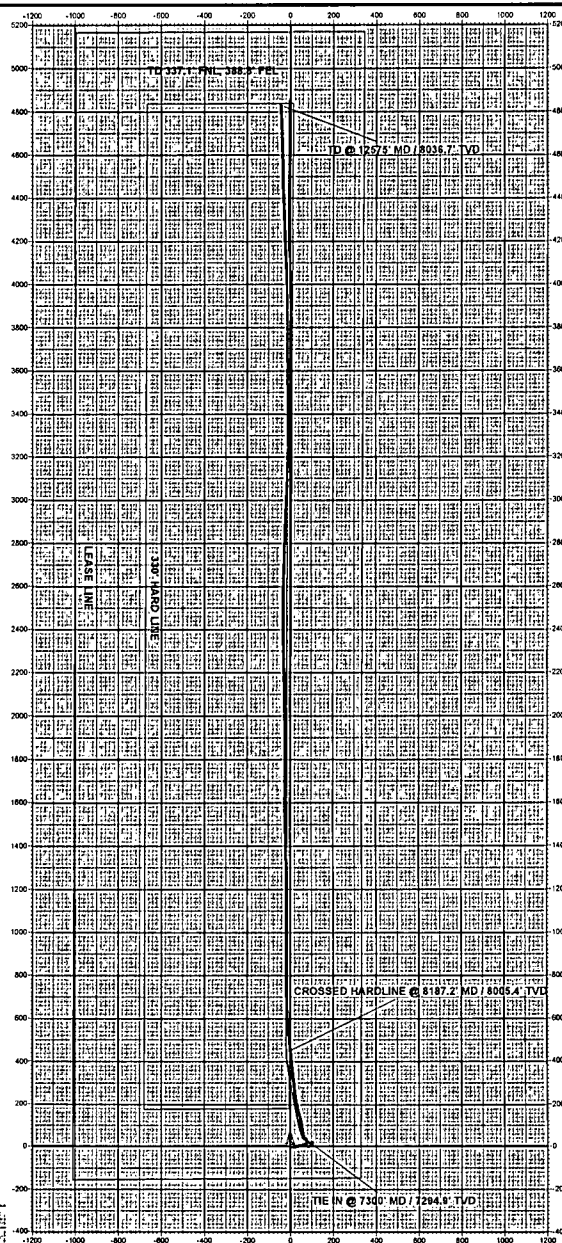
PROJECT DETAILS: Eddy County, New Mexico (Nad 83)

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level

WELL DETAILS: Black Lake 5 PA State Com #1H				
		Ground Level:	2581.0	
+N-S	+E-W	Northing	Easting	Latitude
0.0	0.0	419223.80	612877.00	32° 9' 8.329 N 104° 6' 7.809 W

DESIGN TARGET DETAILS							
Name	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude
PBHL Black Lake 5 PA State Com #1H DW2	8036.0	4935.9	-4.0	424059.69	612870.36	32° 9' 56.185 N	104° 6' 7.769 W
- plan hits target center							

ANNOTATIONS									
MD	Inc	Azi	TVD	+N-S	+E-W	Vsect	Departure	Annotation	
7300.0	1.48	265.87	7294.9	36.2	67.2	34.1	195.2	TIE IN @ 7300' MD / 7294.9' TVD	
9187.2	59.43	354.46	8005.4	447.7	1.4	447.7	609.4	CROSSED HARDLINE @ 9187.2' MD / 8005.4' TVD	
12575.0	91.40	357.40	8036.7	4928.7	-44.9	4928.9	4992.4	TD @ 12575' MD / 8036.7' TVD	



Vertical Section at 359.93° (200 usf/in)

Mewbourne Oil Co

Eddy County, New Mexico (Nad 83)

Sec 5, T25S, R28E

Black Lake 5 PA State Com #1H

Wellbore #1

Design: Wellbore #1

DDC Survey Report

23 August, 2013



DDC Survey Report



Company:	Mewbourne Oil Co	Local Co-ordinate Reference:	Well Black Lake 5 PA State Com #1H
Project:	Eddy County, New Mexico (Nad 83)	TVD Reference:	WELL @ 3001.0usft (Patterson #41)
Site:	Sec 5, T25S, R28E	MD Reference:	WELL @ 3001.0usft (Patterson #41)
Well:	Black Lake 5 PA State Com #1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Project	Eddy County, New Mexico (Nad 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Sec 5, T25S, R28E		
Site Position:		Northing:	419,223.80 usft
From:	Map	Easting:	612,877.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 9' 8.329 N
		Longitude:	104° 6' 7.809 W
		Grid Convergence:	0.12 °

Well	Black Lake 5 PA State Com #1H		
Well Position	+N/-S	0.0 usft	Northing: 419,223.80 usft
	+E/-W	0.0 usft	Easting: 612,877.00 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 9' 8.329 N
		Longitude:	104° 6' 7.809 W
		Ground Level:	2,981.0 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2010	6/24/2013	7.58
			Dip Angle (°)
			59.98
			Field Strength (nT)
			48,315

Design	Wellbore #1		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.0	0.0	0.0
			Direction (°)
			359.93

Survey Program	Date 8/23/2013		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
100.0	7,300.0	Gyro (Wellbore #1)	Good_gyro
7,443.0	12,575.0	MWD (Wellbore #1)	MWD default
			Description
			Good Gyro
			MWD - Standard

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.46	96.63	100.0	0.0	0.4	0.0	0.46	0.46	0.00
200.0	0.71	94.95	200.0	-0.1	1.4	-0.1	0.25	0.25	-1.68
300.0	0.74	89.04	300.0	-0.2	2.7	-0.2	0.08	0.03	-5.91
400.0	0.81	95.75	400.0	-0.2	4.0	-0.3	0.11	0.07	6.71
500.0	0.90	89.71	500.0	-0.3	5.5	-0.3	0.13	0.09	-6.04
600.0	0.60	68.61	600.0	-0.1	6.8	-0.1	0.40	-0.30	-21.10
700.0	0.49	50.45	700.0	0.3	7.6	0.3	0.20	-0.11	-18.16
800.0	0.53	47.41	799.9	0.9	8.3	0.9	0.05	0.04	-3.04
900.0	0.62	66.34	899.9	1.5	9.1	1.4	0.21	0.09	18.93

DDC Survey Report



Company:	Mewbourne Oil Co	Local Co-ordinate Reference:	Well Black Lake 5 PA State Com #1H
Project:	Eddy County, New Mexico (Nad 83)	TVD Reference:	WELL @ 3001.0usft (Patterson #41)
Site:	Sec 5, T25S, R28E	MD Reference:	WELL @ 3001.0usft (Patterson #41)
Well:	Black Lake 5 PA State Com #1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,000.0	0.49	121.45	999.9	1.5	10.0	1.4	0.53	-0.13	55.11
1,100.0	0.65	178.21	1,099.9	0.7	10.4	0.6	0.56	0.16	56.76
1,200.0	0.53	186.21	1,199.9	-0.4	10.3	-0.4	0.15	-0.12	8.00
1,300.0	0.42	184.07	1,299.9	-1.2	10.2	-1.2	0.11	-0.11	-2.14
1,400.0	0.33	175.25	1,399.9	-1.8	10.2	-1.9	0.11	-0.09	-8.82
1,500.0	0.30	165.30	1,499.9	-2.4	10.3	-2.4	0.06	-0.03	-9.95
1,600.0	0.54	122.75	1,599.9	-2.9	10.8	-2.9	0.38	0.24	-42.55
1,700.0	3.17	89.02	1,699.9	-3.1	14.0	-3.1	2.74	2.63	-33.73
1,800.0	4.14	83.29	1,799.7	-2.6	20.3	-2.7	1.04	0.97	-5.73
1,900.0	5.27	77.62	1,899.3	-1.2	28.4	-1.3	1.22	1.13	-5.67
2,000.0	6.25	77.04	1,998.8	1.0	38.2	0.9	0.98	0.98	-0.58
2,100.0	6.43	78.38	2,098.2	3.3	49.0	3.3	0.23	0.18	1.34
2,200.0	6.58	79.75	2,197.6	5.5	60.1	5.4	0.22	0.15	1.37
2,300.0	5.31	79.89	2,297.0	7.3	70.3	7.2	1.27	-1.27	0.14
2,400.0	3.97	79.19	2,396.7	8.8	78.2	8.7	1.34	-1.34	-0.70
2,500.0	2.74	78.32	2,496.5	9.9	84.0	9.8	1.23	-1.23	-0.87
2,600.0	2.46	77.88	2,596.4	10.8	88.4	10.7	0.28	-0.28	-0.44
2,700.0	2.22	78.93	2,696.3	11.7	92.4	11.5	0.24	-0.24	1.05
2,800.0	1.71	75.36	2,796.3	12.4	95.8	12.3	0.52	-0.51	-3.57
2,900.0	1.54	71.71	2,896.2	13.2	98.5	13.1	0.20	-0.17	-3.65
3,000.0	1.32	71.85	2,996.2	14.0	100.8	13.9	0.22	-0.22	0.14
3,100.0	0.85	69.16	3,096.2	14.6	102.6	14.5	0.47	-0.47	-2.69
3,200.0	0.50	60.20	3,196.2	15.1	103.7	15.0	0.36	-0.35	-8.96
3,300.0	0.21	14.01	3,296.2	15.5	104.1	15.4	0.39	-0.29	-46.19
3,400.0	0.29	356.71	3,396.2	15.9	104.2	15.8	0.11	0.08	-17.30
3,500.0	0.23	326.45	3,496.2	16.3	104.0	16.2	0.15	-0.06	-30.26
3,600.0	0.25	323.70	3,596.2	16.7	103.8	16.6	0.02	0.02	-2.75
3,700.0	0.26	327.64	3,696.2	17.0	103.5	16.9	0.02	0.01	3.94
3,800.0	0.34	296.15	3,796.2	17.4	103.2	17.2	0.18	0.08	-31.49
3,900.0	0.36	296.99	3,896.2	17.6	102.6	17.5	0.02	0.02	0.84
4,000.0	0.13	240.47	3,996.2	17.7	102.2	17.6	0.31	-0.23	-56.52
4,100.0	0.19	226.29	4,096.2	17.6	102.0	17.4	0.07	0.06	-14.18
4,200.0	0.18	240.28	4,196.2	17.4	101.8	17.2	0.05	-0.01	13.99
4,300.0	0.17	226.42	4,296.2	17.2	101.5	17.1	0.04	-0.01	-13.86
4,400.0	0.35	207.41	4,396.2	16.8	101.3	16.7	0.20	0.18	-19.01
4,500.0	0.40	201.19	4,496.2	16.2	101.0	16.1	0.06	0.05	-6.22
4,600.0	0.53	198.76	4,596.2	15.5	100.7	15.3	0.13	0.13	-2.43
4,700.0	0.93	226.59	4,696.1	14.5	100.0	14.3	0.52	0.40	27.83
4,800.0	0.96	238.55	4,796.1	13.5	98.7	13.3	0.20	0.03	11.96
4,900.0	0.96	245.05	4,896.1	12.7	97.2	12.6	0.11	0.00	6.50
5,000.0	0.88	247.40	4,996.1	12.0	95.7	11.9	0.09	-0.08	2.35
5,100.0	0.91	243.78	5,096.1	11.4	94.3	11.3	0.06	0.03	-3.62
5,200.0	0.80	244.38	5,196.1	10.7	93.0	10.6	0.11	-0.11	0.60

DDC Survey Report



Company:	Mewbourne Oil Co.	Local Co-ordinate Reference:	Well Black Lake 5 PA State Com #1H
Project:	Eddy County, New Mexico (Nad 83)	TVD Reference:	WELL @ 3001.0usft (Patterson #41)
Site:	Sec 5, T25S, R28E	MD Reference:	WELL @ 3001.0usft (Patterson #41)
Well:	Black Lake 5 PA State Com #1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,300.0	0.84	250.91	5,296.1	10.2	91.6	10.1	0.10	0.04	6.53
5,400.0	0.98	243.98	5,396.1	9.6	90.2	9.5	0.18	0.14	-6.93
5,500.0	0.88	224.29	5,496.0	8.6	88.9	8.5	0.33	-0.10	-19.69
5,600.0	1.10	215.37	5,596.0	7.3	87.8	7.2	0.27	0.22	-8.92
5,700.0	1.49	195.78	5,696.0	5.3	86.9	5.2	0.58	0.39	-19.59
5,800.0	1.45	198.22	5,796.0	2.8	86.1	2.7	0.07	-0.04	2.44
5,900.0	1.37	193.23	5,895.9	0.5	85.5	0.4	0.15	-0.08	-4.99
6,000.0	1.07	188.54	5,995.9	-1.6	85.1	-1.7	0.32	-0.30	-4.69
6,100.0	0.25	144.53	6,095.9	-2.7	85.0	-2.8	0.91	-0.82	-44.01
6,200.0	1.54	0.97	6,195.9	-1.6	85.2	-1.7	1.75	1.29	-143.56
6,300.0	2.07	1.04	6,295.9	1.6	85.2	1.5	0.53	0.53	0.07
6,400.0	1.93	352.90	6,395.8	5.1	85.1	5.0	0.32	-0.14	-8.14
6,500.0	2.96	338.81	6,495.7	9.1	83.9	9.0	1.19	1.03	-14.09
6,600.0	3.27	336.83	6,595.6	14.2	81.9	14.1	0.33	0.31	-1.98
6,700.0	2.94	342.18	6,695.4	19.2	80.0	19.1	0.44	-0.33	5.35
6,800.0	2.71	342.27	6,795.3	23.9	78.5	23.8	0.23	-0.23	0.09
6,900.0	2.52	333.59	6,895.2	28.2	76.8	28.1	0.44	-0.19	-8.68
7,000.0	2.55	328.60	6,995.1	32.0	74.6	31.9	0.22	0.03	-4.99
7,100.0	1.99	316.87	7,095.0	35.2	72.3	35.1	0.72	-0.56	-11.73
7,200.0	1.52	267.18	7,195.0	36.4	69.8	36.3	1.54	-0.47	-49.69
TIE IN @ 7300' MD / 7294.9' TVD									
7,300.0	1.48	265.87	7,294.9	36.2	67.2	36.1	0.05	-0.04	-1.31
7,443.0	1.70	340.80	7,437.9	38.1	64.6	38.0	1.36	0.15	52.40
7,474.0	2.50	346.50	7,468.9	39.2	64.3	39.1	2.66	2.58	18.39
7,506.0	7.00	346.10	7,500.7	41.8	63.7	41.7	14.06	14.06	-1.25
7,537.0	12.10	348.80	7,531.3	46.8	62.6	46.7	16.51	16.45	8.71
7,569.0	16.60	351.20	7,562.3	54.6	61.2	54.5	14.18	14.06	7.50
7,601.0	19.90	352.60	7,592.7	64.5	59.8	64.4	10.40	10.31	4.38
7,632.0	22.30	352.40	7,621.6	75.6	58.4	75.5	7.75	7.74	-0.65
7,664.0	24.50	351.20	7,651.0	88.2	56.6	88.1	7.03	6.88	-3.75
7,695.0	26.90	349.50	7,678.9	101.4	54.3	101.3	8.10	7.74	-5.48
7,727.0	29.40	347.20	7,707.1	116.2	51.2	116.1	8.52	7.81	-7.19
7,758.0	31.80	345.20	7,733.8	131.5	47.5	131.4	8.41	7.74	-6.45
7,790.0	34.00	344.50	7,760.7	148.3	42.9	148.2	6.98	6.88	-2.19
7,821.0	36.20	345.20	7,786.0	165.5	38.3	165.4	7.21	7.10	2.26
7,853.0	38.10	347.00	7,811.5	184.2	33.6	184.2	6.84	5.94	5.63
7,884.0	39.70	349.60	7,835.7	203.3	29.7	203.3	7.37	5.16	8.39
7,916.0	41.90	351.60	7,859.9	223.9	26.3	223.9	8.00	6.88	6.25
7,947.0	44.70	352.30	7,882.4	245.0	23.3	245.0	9.16	9.03	2.26
7,979.0	48.20	353.10	7,904.5	268.0	20.4	268.0	11.09	10.94	2.50
8,010.0	52.80	353.50	7,924.2	291.7	17.6	291.7	14.87	14.84	1.29
8,042.0	57.20	353.90	7,942.5	317.8	14.7	317.8	13.79	13.75	1.25
8,073.0	61.10	354.00	7,958.4	344.2	11.9	344.2	12.58	12.58	0.32

DDC Survey Report



Company:	Mewbourne Oil Co	Local Co-ordinate Reference:	Well Black Lake 5 PA State Com #1H
Project:	Eddy County, New Mexico (Nad 83)	TVD Reference:	WELL @ 3001.0usft (Patterson #41)
Site:	Sec 5, T25S, R28E	MD Reference:	WELL @ 3001.0usft (Patterson #41)
Well:	Black Lake 5 PA State Com #1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,105.0	64.50	354.20	7,973.1	372.5	9.0	372.5	10.64	10.63	0.63
8,136.0	66.40	354.00	7,985.9	400.6	6.1	400.6	6.16	6.13	-0.65
8,168.0	67.70	354.40	7,998.4	429.9	3.1	429.9	4.22	4.06	1.25
CROSSED HARDLINE @ 8187.2' MD / 8005.4' TVD									
8,187.2	69.43	354.46	8,005.4	447.7	1.4	447.7	9.04	9.03	0.32
8,199.0	70.50	354.50	8,009.5	458.7	0.3	458.7	9.04	9.03	0.32
8,231.0	74.00	354.00	8,019.2	489.1	-2.7	489.1	11.04	10.94	-1.56
8,262.0	77.30	354.00	8,026.9	518.9	-5.9	518.9	10.65	10.65	0.00
8,294.0	80.10	354.40	8,033.2	550.1	-9.1	550.1	8.84	8.75	1.25
8,325.0	82.40	356.10	8,037.9	580.7	-11.6	580.7	9.19	7.42	5.48
8,357.0	84.70	357.40	8,041.5	612.4	-13.4	612.4	8.24	7.19	4.06
8,386.0	87.10	358.40	8,043.6	641.3	-14.5	641.3	8.96	8.28	3.45
8,475.0	91.80	359.50	8,044.4	730.3	-16.1	730.3	5.42	5.28	1.24
8,507.0	92.10	359.30	8,043.3	762.2	-16.4	762.3	1.13	0.94	-0.63
8,538.0	92.30	359.80	8,042.1	793.2	-16.7	793.2	1.74	0.65	1.61
8,570.0	91.90	359.60	8,041.0	825.2	-16.8	825.2	1.40	-1.25	-0.63
8,602.0	90.40	359.80	8,040.3	857.2	-17.0	857.2	4.73	-4.69	0.63
8,633.0	89.60	0.20	8,040.3	888.2	-17.0	888.2	2.89	-2.58	1.29
8,665.0	88.90	0.20	8,040.8	920.2	-16.9	920.2	2.19	-2.19	0.00
8,729.0	89.40	0.00	8,041.7	984.2	-16.8	984.2	0.84	0.78	-0.31
8,792.0	88.70	0.20	8,042.7	1,047.2	-16.7	1,047.2	1.16	-1.11	0.32
8,855.0	88.90	0.00	8,044.1	1,110.2	-16.6	1,110.2	0.45	0.32	-0.32
8,918.0	89.20	359.50	8,045.1	1,173.1	-16.8	1,173.2	0.93	0.48	-0.79
8,982.0	89.50	359.60	8,045.8	1,237.1	-17.3	1,237.2	0.49	0.47	0.16
9,045.0	90.10	359.00	8,046.1	1,300.1	-18.1	1,300.2	1.35	0.95	-0.95
9,108.0	90.70	358.20	8,045.6	1,363.1	-19.6	1,363.1	1.59	0.95	-1.27
9,171.0	90.00	358.60	8,045.2	1,426.1	-21.4	1,426.1	1.28	-1.11	0.63
9,234.0	90.10	359.00	8,045.2	1,489.1	-22.7	1,489.1	0.65	0.16	0.63
9,297.0	90.60	359.10	8,044.8	1,552.1	-23.8	1,552.1	0.81	0.79	0.16
9,361.0	90.10	0.30	8,044.4	1,616.1	-24.1	1,616.1	2.03	-0.78	1.88
9,424.0	90.00	0.30	8,044.3	1,679.1	-23.8	1,679.1	0.16	-0.16	0.00
9,487.0	90.40	0.50	8,044.1	1,742.1	-23.3	1,742.1	0.71	0.63	0.32
9,550.0	89.30	0.30	8,044.3	1,805.1	-22.9	1,805.1	1.77	-1.75	-0.32
9,613.0	89.30	359.60	8,045.1	1,868.0	-22.9	1,868.1	1.11	0.00	-1.11
9,676.0	89.30	359.30	8,045.8	1,931.0	-23.5	1,931.1	0.48	0.00	-0.48
9,740.0	89.90	359.50	8,046.3	1,995.0	-24.2	1,995.1	0.99	0.94	0.31
9,803.0	90.40	359.30	8,046.1	2,058.0	-24.9	2,058.1	0.85	0.79	-0.32
9,866.0	90.80	359.30	8,045.5	2,121.0	-25.6	2,121.1	0.63	0.63	0.00
9,929.0	91.10	358.80	8,044.4	2,184.0	-26.7	2,184.0	0.93	0.48	-0.79
9,992.0	89.90	358.40	8,043.9	2,247.0	-28.2	2,247.0	2.01	-1.90	-0.63
10,056.0	89.90	358.10	8,044.0	2,311.0	-30.2	2,311.0	0.47	0.00	-0.47
10,119.0	90.30	359.80	8,043.9	2,373.9	-31.3	2,374.0	2.77	0.63	2.70
10,183.0	90.70	359.80	8,043.3	2,437.9	-31.6	2,438.0	0.63	0.63	0.00
10,246.0	91.20	359.60	8,042.3	2,500.9	-31.9	2,501.0	0.85	0.79	-0.32

DDC Survey Report



Company:	Mewbourne Oil Co	Local Co-ordinate Reference:	Well Black Lake 5 PA State Com #1H
Project:	Eddy County, New Mexico (Nad 83)	TVD Reference:	WELL @ 3001.0usft (Patterson #41)
Site:	Sec 5, T25S, R28E	MD Reference:	WELL @ 3001.0usft (Patterson #41)
Well:	Black Lake 5 PA State Com #1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,309.0	90.70	1.20	8,041.2	2,563.9	-31.5	2,564.0	2.66	-0.79	2.54
10,373.0	89.90	1.60	8,040.9	2,627.9	-29.9	2,627.9	1.40	-1.25	0.63
10,467.0	90.50	1.90	8,040.5	2,721.8	-27.0	2,721.9	0.71	0.64	0.32
10,562.0	89.20	1.90	8,040.8	2,816.8	-23.9	2,816.8	1.37	-1.37	0.00
10,658.0	90.00	1.90	8,041.5	2,912.7	-20.7	2,912.8	0.83	0.83	0.00
10,753.0	90.40	2.60	8,041.1	3,007.7	-17.0	3,007.7	0.85	0.42	0.74
10,847.0	90.80	3.20	8,040.2	3,101.5	-12.2	3,101.6	0.77	0.43	0.64
10,942.0	90.40	1.40	8,039.2	3,196.5	-8.4	3,196.5	1.94	-0.42	-1.89
11,005.0	90.70	0.90	8,038.6	3,259.4	-7.1	3,259.4	0.93	0.48	-0.79
11,100.0	89.70	359.30	8,038.2	3,354.4	-7.0	3,354.4	1.99	-1.05	-1.68
11,163.0	90.40	359.50	8,038.2	3,417.4	-7.6	3,417.4	1.16	1.11	0.32
11,227.0	90.90	0.00	8,037.4	3,481.4	-7.9	3,481.4	1.10	0.78	0.78
11,290.0	90.20	358.60	8,036.8	3,544.4	-8.7	3,544.4	2.48	-1.11	-2.22
11,353.0	89.50	359.50	8,037.0	3,607.4	-9.7	3,607.4	1.81	-1.11	1.43
11,416.0	89.30	359.80	8,037.7	3,670.4	-10.1	3,670.4	0.57	-0.32	0.48
11,479.0	90.00	359.80	8,038.0	3,733.4	-10.3	3,733.4	1.11	1.11	0.00
11,543.0	90.10	359.30	8,038.0	3,797.4	-10.8	3,797.4	0.80	0.16	-0.78
11,606.0	90.10	359.30	8,037.9	3,860.4	-11.6	3,860.4	0.00	0.00	0.00
11,669.0	90.60	359.30	8,037.5	3,923.4	-12.4	3,923.4	0.79	0.79	0.00
11,733.0	89.50	358.10	8,037.4	3,987.4	-13.8	3,987.4	2.54	-1.72	-1.88
11,796.0	89.40	357.20	8,038.0	4,050.3	-16.4	4,050.3	1.44	-0.16	-1.43
11,860.0	89.90	357.20	8,038.4	4,114.2	-19.5	4,114.3	0.78	0.78	0.00
11,923.0	90.40	357.50	8,038.3	4,177.2	-22.4	4,177.2	0.93	0.79	0.48
12,017.0	88.90	358.10	8,038.8	4,271.1	-26.0	4,271.1	1.72	-1.60	0.64
12,112.0	89.60	358.10	8,040.1	4,366.0	-29.2	4,366.1	0.74	0.74	0.00
12,207.0	90.50	358.10	8,040.0	4,461.0	-32.3	4,461.0	0.95	0.95	0.00
12,301.0	89.50	359.00	8,040.0	4,554.9	-34.7	4,555.0	1.43	-1.06	0.96
12,396.0	90.60	358.20	8,039.9	4,649.9	-37.0	4,650.0	1.43	1.16	-0.84
12,492.0	91.00	357.00	8,038.6	4,745.8	-41.1	4,745.9	1.32	0.42	-1.25
12,521.0	91.40	357.40	8,038.0	4,774.8	-42.5	4,774.8	1.95	1.38	1.38
TD @ 12575' MD / 8036.7' TVD									
12,575.0	91.40	357.40	8,036.7	4,828.7	-44.9	4,828.8	0.00	0.00	0.00

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
7,300.0	7,294.9	36.2	67.2	TIE IN @ 7300' MD / 7294.9' TVD
8,187.2	8,005.4	447.7	1.4	CROSSED HARDLINE @ 8187.2' MD / 8005.4' TVD
12,575.0	8,036.7	4,828.7	-44.9	TD @ 12575' MD / 8036.7' TVD

Checked By: _____ Approved By: _____ Date: _____

Operating Company Mewbourne
 Well Name & Number Black Lake, 5 PA St Com #1H
 Sales Ticket Number 0005748319-1

Company Rep Shirrel Noseff
 Field
 BOT Service Rep John Davis
 District Location Odessa, Texas, USA



	Size	Weight	Grade	ID	Drift	Thread	Capacity	Length	Burst	Collapse	
Casing	7.000	26.00	P-110	6.276	6.151	LT&C	0.03826	8,439.00	9,960	6,230	
Top Liner	4.500	13.50	P-110	3.920	3.795	LT&C	0.01492	4,400.80	12,410	10,680	
Bott Liner											
TVD		8,038.00		KOP		7,476.00		Open Hole		6.125	311.8
Carry Fluid Weight (ppg)			8.7		Propant Content (ppa)				Max Drill Out Size		0

	Comm. Number	Description	Depth	Length	OD	ID	Ball Seat ID	Shear Press	Max Rate (BPM)	Displ. (BBL)
Liner Top	1	JR Setting Sleeve_RH Profile	8150.20							

Zone Length										
440.5		JR Sleeve_S3 Hyd Set Packer	8150.20	9.52	5.813	3.875				
30		4-1/2-13.5 LTC Nipple	8159.72	6.70	5.000	3.920				
		9 Joints of 4-1/2-13.5 LTC Casing	8166.42	340.59	5.000	3.920				
		3.625 EX Frac Sleeve	8507.01	2.40	5.750		3.525	2286	305	312
		2 Joint of 4-1/2-13.5 LTC Casing	8509.41	77.35	5.000	3.920				
125.8		Baker Open Hole Packer	8586.76	3.89	5.820	3.875		2154		
		1 Joints of 4-1/2-13.5 LTC Casing	8590.65	38.54	5.000	3.920				
29		3.500 EX-C Frac Sleeve	8629.19	2.40	5.750		3.448	23	29	312
		2 Joint of 4-1/2-13.5 LTC Casing	8631.59	77.09	5.000	3.920				
164.2		Baker Open Hole Packer	8708.68	3.89	5.820	3.875		2154		
		2 Joints of 4-1/2-13.5 LTC Casing	8712.57	77.27	5.000	3.920				
28		3.438 EX-C Frac Sleeve	8789.84	2.40	5.750		3.385	23	28	312
		2 Joint of 4-1/2-13.5 LTC Casing	8792.24	76.75	5.000	3.920				
126		Baker Open Hole Packer	8868.99	3.89	5.820	3.875		2154		
		1 Joints of 4-1/2-13.5 LTC Casing	8872.88	38.59	5.000	3.920				
27		3.375 EX_C Frac Sleeve	8911.47	2.40	5.750		3.323	2286	271	312
		2 Joint of 4-1/2-13.5 LTC Casing	8913.87	77.18	5.000	3.920				
164.7		Baker Open Hole Packer	8991.05	3.89	5.820	3.875		2154		
		2 Joints of 4-1/2-13.5 LTC Casing	8994.94	77.25	5.000	3.920				
26		3.313 EX-C Frac Sleeve	9072.19	2.40	5.750		3.260	2286	261	312
		2 Joints of 4-1/2-13.5 LTC Casing	9074.59	77.24	5.000	3.920				
125.5		Baker Open Hole Packer	9151.83	3.89	5.820	3.875		2154		

Operating Company Mewbourne
 Well Name & Number Black Lake 5 PA St Com #1H
 Sales Ticket Number 0005748319-1
 Date 8/22/2013

Company Rep Shirrel Noseff
 Field
 BOT Service Rep John Davis
 District Location Odessa, Texas, USA



	Size	Weight	Grade	ID	Drift	Thread	Capacity	Length	Burst	Collapse
Casing	7.000	26.00	P-110	6.276	6.151	LT&C	0.03826	8,439.00	9,960	6,230
Top Liner	4.500	13.50	P-110	3.920	3.795	LT&C	0.01492	4,400.80	12,410	10,680
Bott Liner										
TVD		8,038.00	KOP		7,476.00	Open Hole		6.125	311.8	
Carry Fluid Weight (ppg)		8.7	Propant Content (ppa)					Max Drill Out Size		0

	Comm. Number	Description	Depth	Length	OD	ID	Ball Seat ID	Shear Press.	Max Rate (BPM)	Displ. (BBL)
25		1 Joints of 4-1/2-13.5 LTC Casing	9155.72	38.39	5.000	3.920				
		3.250 EX-C Frac Sleeve	9194.11	2.40	5.750		3.198	2286	251	312
126		2 Joint of 4-1/2-13.5 LTC Casing	9196.51	76.97	5.000	3.920				
		Baker Open Hole Packer	9273.48	3.89	5.820	3.875		2154		
24		1 Joints of 4-1/2-13.5 LTC Casing	9277.37	38.67	5.000	3.920				
		3.188 EX-C Frac Sleeve	9316.04	2.40	5.750		3.135	2286	241	312
164.2		2 Joints of 4-1/2-13.5 LTC Casing	9318.44	77.12	5.000	3.920				
		Baker Open Hole Packer	9395.56	3.89	5.820	3.875		2154		
23		2 Joints of 4-1/2-13.5 LTC Casing	9399.45	77.12	5.000	3.920				
		3.125 EX-C Frac Sleeve	9476.57	2.40	5.750		3.073	2286	232	312
125.7		2 Joint of 4-1/2-13.5 LTC Casing	9478.97	76.92	5.000	3.920				
		Baker Open Hole Packer	9555.89	3.89	5.820	3.875		2154		
22		1 Joints of 4-1/2-13.5 LTC Casing	9559.78	38.41	5.000	3.920				
		3.063 EX-C Frac Sleeve	9598.19	2.40	5.750		3.010	2286	222	312
164.4		2 Joints of 4-1/2-13.5 LTC Casing	9600.59	77.15	5.000	3.920				
		Baker Open Hole Packer	9677.74	3.89	5.820	3.875		2154		
21		2 Joints of 4-1/2-13.5 LTC Casing	9681.63	77.18	5.000	3.920				
		3.000 EX-C Frac sleeve	9758.81	2.40	5.750		2.948	2286	213	312
126.1		2 Joint of 4-1/2-13.5 LTC Casing	9761.21	77.07	5.000	3.920				
		Baker Open Hole Packer	9838.28	3.89	5.820	3.875		2154		
20		1 Joints of 4-1/2-13.5 LTC Casing	9842.17	38.67	5.000	3.920				
		2.938 EX-C Frac Sleeve	9880.84	2.40	5.750		2.885	2286	204	312
164.5		2 Joints of 4-1/2-13.5 LTC Casing	9883.24	77.25	5.000	3.920				
		Baker Open Hole Packer	9960.49	3.89	5.820	3.875		2154		
19		2 Joint of 4-1/2-13.5 LTC Casing	9964.38	77.24	5.000	3.920				
		2.875 EX-C Frac Sleeve	10041.62	2.40	5.750		2.823	2286	195	312

Operating Company Mewbourne
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 Field
 BOT Service Rep John Davis
 District Location Odessa, Texas, USA



	Size	Weight	Grade	ID	Drift	Thread	Capacity	Length	Burst	Collapse
Casing	7.000	26.00	P-110	6.276	6.151	LT&C	0.03826	8,439.00	9,960	6,230
Top Liner	4.500	13.50	P-110	3.920	3.795	LT&C	0.01492	4,400.80	12,410	10,680
Bott Liner										

TVD	8,038.00	KOP	7,476.00	Open Hole	6.125		311.8
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Carry Fluid Weight (ppg)	8.7	Propant Content (ppa)		Max Drill Out Size	0
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	Comm. Number	Description	Depth	Length	OD	ID	Ball Seat ID	Shear Press	Max Rate (BPM)	Displ. (BBL)
125.8		2 Joints of 4-1/2-13.5 LTC Casing	10044.02	77.05	5.000	3.920				
		Baker Open Hole Packer	10121.07	3.89	5.820	3.875		2154		
		1 Joint of 4-1/2-13.5 LTC Casing	10124.96	38.55	5.000	3.920				
18		2.813 EX_C Frac Sleeve	10163.51	2.40	5.750		2.760	2286	187	312
164.4		2 Joints of 4-1/2-13.5 LTC Casing	10165.91	77.04	5.000	3.920				
		Baker Open Hole Packer	10242.95	3.89	5.820	3.875		2154		
		2 Joint of 4-1/2-13.5 LTC Casing	10246.84	77.00	5.000	3.920				
17		2.750 EX_C Frac Sleeve	10323.84	2.40	5.750		2.698	2286	179	312
		2 Joints of 4-1/2-13.5 LTC Casing	10326.24	77.25	5.000	3.920				
126		Baker Open Hole Packer	10403.49	3.89	5.820	3.875		2154		
		1 Joint of 4-1/2-13.5 LTC Casing	10407.38	38.63	5.000	3.920				
16		2.688 EX_C Frac Sleeve	10446.01	2.40	5.750		2.635	2286	170	312
		2 Joints of 4-1/2-13.5 LTC Casing	10448.41	77.22	5.000	3.920				
164.4		Baker Open Hole Packer	10525.63	3.89	5.820	3.875		2154		
		2 Joints of 4-1/2-13.5 LTC Casing	10529.52	77.17	5.000	3.920				
15		2.625 EX_C Frac Sleeve	10606.69	2.40	5.750		2.573	2286	162	312
		2 Joint of 4-1/2-13.5 LTC Casing	10609.09	77.01	5.000	3.920				
125.7		Baker Open Hole Packer	10686.10	3.89	5.820	3.875		2154		
		1 Joints of 4-1/2-13.5 LTC Casing	10689.99	38.47	5.000	3.920				
14		2.563 EX_C Frac Sleeve	10728.46	2.40	5.750		2.510	2286	154	312
		2 Joints of 4-1/2-13.5 LTC Casing	10730.86	77.00	5.000	3.920				
161.7		Baker Open Hole Packer	10807.86	3.89	5.820	3.875		2154		
		2 Joints of 4-1/2-13.5 LTC Casing	10811.75	74.92	5.000	3.920				
13		2.500 EX_C Frac Sleeve	10886.67	2.40	5.750		2.448	2286	147	312
		2 Joint of 4-1/2-13.5 LTC Casing	10889.07	76.57	5.000	3.920				
125.3		Baker Open Hole Packer	10965.64	3.89	5.820	3.875		2154		

Operating Company Mewbourne
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 BOT Service Rep John Davis
 District Location Odessa, Texas, USA



	Size	Weight	Grade	ID	Drift	Thread	Capacity	Length	Burst	Collapse
Casing	7.000	26.00	P-110	6.276	6.151	LT&C	0.03826	8,439.00	9,960	6,230
Top Liner	4.500	13.50	P-110	3.920	3.795	LT&C	0.01492	4,400.80	12,410	10,680
Bott Liner										
TVD		8,038.00	KOP		7,476.00	Open Hole		6.125	311.8	
Carry Fluid Weight (ppg)		8.7	Propan Content (ppa)					Max Drill Out Size		0

	Comm. Number	Description	Depth	Length	OD	ID	Ball Seat ID	Shear Press.	Max Rate (BPM)	Displ. (BBL)
12		1 Joints of 4-1/2-13.5 LTC Casing	10969.53	38.19	5.000	3.920				
		2.438 EX_C Frac Sleeve	11007.72	2.40	5.750		2.386	2286	140	312
		2 Joints of 4-1/2-13.5 LTC Casing	11010.12	76.97	5.000	3.920				
124.9		Baker Open Hole Packer	11087.09	3.89	5.820	3.875		2154		
11		1 Joints of 4-1/2-13.5 LTC Casing	11090.98	37.53	5.000	3.920				
		2.375 EX_C Frac Sleeve	11128.51	2.40	5.750		2.323	2286	132	312
		2 Joint of 4-1/2-13.5 LTC Casing	11130.91	77.20	5.000	3.920				
164		Baker Open Hole Packer	11208.11	3.89	5.820	3.875		2154		
10		2 Joints of 4-1/2-13.5 LTC Casing	11212.00	76.91	5.000	3.920				
		2.313 EX_C Frac Sleeve	11288.91	2.40	5.750		2.261	2286	125	312
		2 Joints of 4-1/2-13.5 LTC Casing	11291.31	76.92	5.000	3.920				
125.9		Baker Open Hole Packer	11368.23	3.89	5.820	3.875		2154		
9		1 Joints of 4-1/2-13.5 LTC Casing	11372.12	38.61	5.000	3.920				
		2.250 EX Frac Sleeve	11410.73	2.40	5.750		2.150	2286	113	312
		2 Joint of 4-1/2-13.5 LTC Casing	11413.13	77.15	5.000	3.920				
164.5		Baker Open Hole Packer	11490.28	3.89	5.820	3.875		2154		
8		2 Joints of 4-1/2-13.5 LTC Casing	11494.17	77.20	5.000	3.920				
		2.125 EX Frac Sleeve	11571.37	2.40	5.750		2.025	2286	101	312
		2 Joint of 4-1/2-13.5 LTC Casing	11573.77	77.08	5.000	3.920				
125.9		Baker Open Hole Packer	11650.85	3.89	5.820	3.875		2154		
7		1 Joints of 4-1/2-13.5 LTC Casing	11654.74	38.55	5.000	3.920				
		2.000 EX Frac Sleeve	11693.29	2.40	5.750		1.900	2286	89	312
		2 Joints of 4-1/2-13.5 LTC Casing	11695.69	77.15	5.000	3.920				
164.5		Baker Open Hole Packer	11772.84	3.89	5.820	3.875		2154		
6		2 Joints of 4-1/2-13.5 LTC Casing	11776.73	77.20	5.000	3.920				
		1.875 EX Frac Sleeve	11853.93	2.40	5.750		1.775	2286	77	312

Company Rep	Shirrel Noseff
Field	
BOT Service Rep	John Davis
District Location	Odessa, Texas, USA

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