

OPERATOR MEWBOURNE OIL COMPANY
WELL/LEASE COOKSEY PA STATE COM 1H
COUNTY EDDY

041-0115

STATE OF NEW MEXICO
DEVIATION REPORT

15 39427

422	1.00
941	2.60
1,361	3.20
2,175	4.50
2,471	4.00
2,818	3.20
3,318	2.18
3,827	1.48
4,268	1.50
4,679	1.17
5,656	1.24
6,129	0.55
6,630	0.62



STATE OF TEXAS

COUNTY OF MIDLAND

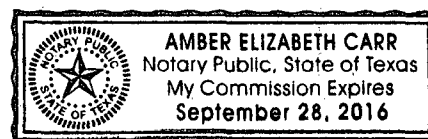
BY: Steve Moore

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

9/20/13

, by

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





Company: Mewbourne Oil Company
Lease/Well: Cooksey 36 PA State Com/No. 001H



Rig Name: Patterson #41
State/County: New Mexico/Eddy
Latitude: 32.08, Longitude: -104.14
GRID North is 0.10 Degrees East of True North
VS-Azi: 0.00 Degrees

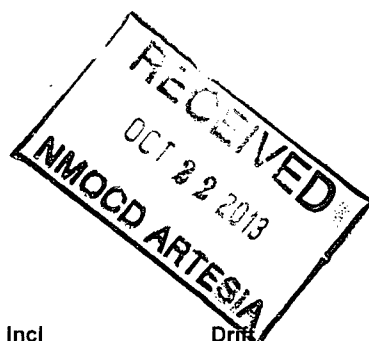
Depth Reference : R.K.B. Height of 10 ft.

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: finalreport.ut
Minimum Curvature Method
Report Date/Time: 9/11/2013 / 14:20

Vaughn Energy Services
Midland, TX
817-741-3610

Surveyor: Joshua Kirby
Cooksey 36 PA State Com No. 001H / API 30-015-39427



Measured Depth FT	Incl Angle Deg	Dir Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.73	203.85	100.00	-0.58	-0.26	-0.58	0.63	203.85	0.73
200.00	1.20	196.56	199.98	-2.16	-0.81	-2.16	2.31	200.55	0.49
300.00	1.32	192.56	299.96	-4.29	-1.36	-4.29	4.50	197.58	0.15
400.00	1.85	194.52	399.92	-6.98	-2.02	-6.98	7.27	196.11	0.54
500.00	2.68	196.88	499.84	-10.78	-3.10	-10.78	11.22	196.04	0.83
600.00	3.09	204.03	599.71	-15.48	-4.88	-15.48	16.23	197.48	0.55
700.00	2.48	210.03	699.60	-19.82	-7.06	-19.82	21.04	199.60	0.68
800.00	2.36	208.32	799.51	-23.50	-9.11	-23.50	25.21	201.20	0.14
900.00	2.38	195.09	899.42	-27.31	-10.63	-27.31	29.31	201.26	0.55
1000.00	2.47	191.73	999.33	-31.42	-11.61	-31.42	33.50	200.27	0.17
1100.00	2.14	184.71	1099.25	-35.39	-12.20	-35.39	37.44	199.02	0.43
1200.00	2.07	193.68	1199.18	-39.01	-12.78	-39.01	41.05	198.14	0.34
1300.00	2.09	195.31	1299.12	-42.53	-13.69	-42.53	44.68	197.84	0.06
1400.00	2.39	196.19	1399.04	-46.29	-14.75	-46.29	48.59	197.68	0.30
1500.00	2.14	186.26	1498.96	-50.16	-15.54	-50.16	52.51	197.21	0.47
1600.00	2.99	149.67	1598.87	-54.26	-14.42	-54.26	56.15	194.89	1.80
1700.00	3.70	109.94	1698.71	-57.61	-10.08	-57.61	58.49	189.92	2.37
1800.00	4.22	108.03	1798.47	-59.85	-3.54	-59.85	59.96	183.39	0.54

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1900.00	5.71	104.46	1898.09	-62.23	4.78	-62.23	62.42	175.61	1.52
2000.00	6.84	109.93	1997.49	-65.51	15.19	-65.51	67.24	166.94	1.27
2100.00	7.68	105.07	2096.69	-69.27	27.24	-69.27	74.44	158.53	1.04
2200.00	6.44	104.78	2195.93	-72.44	39.13	-72.44	82.33	151.63	1.24
2300.00	4.84	101.87	2295.44	-74.74	48.69	-74.74	89.20	146.92	1.62
2400.00	4.11	100.93	2395.14	-76.29	56.33	-76.29	94.83	143.56	0.74
2500.00	3.60	105.53	2494.91	-77.81	62.87	-77.81	100.03	141.06	0.59
2600.00	2.87	106.53	2594.75	-79.36	68.29	-79.36	104.70	139.29	0.73
2700.00	2.70	104.37	2694.63	-80.66	72.97	-80.66	108.77	137.86	0.20
2800.00	2.55	107.85	2794.53	-81.93	77.38	-81.93	112.69	136.64	0.22
2900.00	2.43	101.58	2894.44	-83.03	81.57	-83.03	116.40	135.51	0.30
3000.00	2.40	102.05	2994.35	-83.90	85.70	-83.90	119.93	134.39	0.04
3100.00	2.00	109.20	3094.27	-84.91	89.39	-84.91	123.29	133.53	0.48
3200.00	1.44	112.56	3194.23	-85.96	92.20	-85.96	126.06	133.00	0.56
3300.00	1.48	115.34	3294.19	-87.00	94.53	-87.00	128.47	132.62	0.08
3400.00	1.35	111.58	3394.16	-87.99	96.80	-87.99	130.81	132.27	0.16
3500.00	1.20	108.19	3494.14	-88.75	98.89	-88.75	132.87	131.91	0.17
3600.00	1.16	103.56	3594.12	-89.31	100.87	-89.31	134.73	131.52	0.10
3700.00	0.95	122.03	3694.10	-89.99	102.57	-89.99	136.45	131.26	0.40
3800.00	1.06	127.71	3794.09	-91.00	104.00	-91.00	138.19	131.19	0.15
3900.00	0.81	136.39	3894.07	-92.08	105.22	-92.08	139.82	131.19	0.29
4000.00	0.84	149.50	3994.06	-93.22	106.08	-93.22	141.22	131.31	0.19
4100.00	0.66	150.77	4094.05	-94.35	106.73	-94.35	142.46	131.48	0.18
4200.00	0.66	155.82	4194.05	-95.38	107.25	-95.38	143.53	131.65	0.06
4300.00	0.76	160.39	4294.04	-96.54	107.71	-96.54	144.64	131.87	0.11
4400.00	0.83	176.77	4394.03	-97.88	107.97	-97.88	145.74	132.19	0.24
4500.00	0.80	173.42	4494.02	-99.29	108.09	-99.29	146.78	132.57	0.06
4600.00	0.72	195.91	4594.01	-100.59	108.00	-100.59	147.59	132.97	0.31
4700.00	0.80	191.73	4694.00	-101.89	107.69	-101.89	148.25	133.41	0.09
4800.00	0.69	197.46	4793.99	-103.15	107.36	-103.15	148.88	133.85	0.13
4900.00	0.77	187.04	4893.99	-104.39	107.10	-104.39	149.56	134.27	0.15
5000.00	0.74	183.06	4993.98	-105.71	106.98	-105.71	150.40	134.66	0.06
5100.00	0.75	179.23	5093.97	-107.01	106.95	-107.01	151.30	135.02	0.05
5200.00	0.85	174.98	5193.96	-108.41	107.03	-108.41	152.34	135.37	0.12
5300.00	1.02	167.80	5293.95	-110.01	107.28	-110.01	153.66	135.72	0.21
5400.00	0.74	155.81	5393.93	-111.47	107.73	-111.47	155.02	135.98	0.33
5500.00	1.03	161.10	5493.92	-112.90	108.29	-112.90	156.44	136.20	0.30
5600.00	1.06	170.94	5593.91	-114.66	108.72	-114.66	158.01	136.52	0.18
5700.00	1.03	189.80	5693.89	-116.47	108.72	-116.47	159.32	136.97	0.34

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
5800.00	1.20	218.58	5793.87	-118.17	107.91	-118.17	160.03	137.60	0.58
5900.00	1.33	234.65	5893.85	-119.66	106.31	-119.66	160.06	138.38	0.38
6000.00	1.40	229.82	5993.82	-121.12	104.43	-121.12	159.92	139.23	0.14
6100.00	1.06	237.51	6093.79	-122.41	102.71	-122.41	159.79	140.00	0.38
6200.00	0.84	249.10	6193.78	-123.17	101.24	-123.17	159.44	140.58	0.29
6300.00	0.72	256.96	6293.77	-123.57	99.95	-123.57	158.93	141.03	0.16
6400.00	1.12	283.73	6393.76	-123.48	98.38	-123.48	157.88	141.45	0.58
6500.00	0.98	281.59	6493.74	-123.08	96.59	-123.08	156.45	141.88	0.14
6600.00	1.43	278.91	6593.72	-122.71	94.52	-122.71	154.89	142.40	0.45
6700.00	2.10	303.89	6693.67	-121.50	91.77	-121.50	152.26	142.94	1.00
6800.00	2.58	293.71	6793.59	-119.57	88.18	-119.57	148.57	143.59	0.64
6900.00	2.03	285.71	6893.51	-118.19	84.41	-118.19	145.24	144.46	0.64
7000.00	1.65	291.80	6993.46	-117.17	81.38	-117.17	142.66	145.22	0.43
7100.00	1.58	254.21	7093.42	-117.02	78.72	-117.02	141.03	146.07	1.04
7200.00	2.05	206.31	7193.38	-119.00	76.59	-119.00	141.52	147.23	1.54
7228.00	2.03	204.35	7221.36	-119.90	76.17	-119.90	142.05	147.58	0.26

Mewbourne Oil Co

Eddy County, New Mexico

Sec 36, T25S, R27E

Cooksey 36 PA State Com #1H

Wellbore #1

Design: Wellbore #1

DDC Survey Report

16 September, 2013



DDC
Survey Report



Company:	Mewbourne Oil Co	Local Co-ordinate Reference:	Well Cooksey 36 PA State Com #1H
Project:	Eddy County, New Mexico	TVD Reference:	WELL @ 3105.0usft (Patterson #75)
Site:	Sec 36, T25S, R27E	MD Reference:	WELL @ 3105.0usft (Patterson #75)
Well:	Cooksey 36 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		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Sec 36, T25S, R27E		
Site Position:		Northing:	392,778.32 usft
From:	Map	Easting:	561,175.38 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 4' 46.954 N
		Longitude:	104° 8' 10.949 W
		Grid Convergence:	0.10 °

Well	Cooksey 36 PA State Com #1H		
Well Position	+N/-S	0.0 usft	Northing: 392,778.08 usft
	+E/-W	0.0 usft	Easting: 561,005.50 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 4' 46.954 N
		Longitude:	104° 8' 10.923 W
		Ground Level:	3,085.0 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	4/18/2013	7.61
			Dip Angle (°)
			59.91
			Field Strength (nT)
			48,285

Design	Wellbore #1		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction (°)
			1.28

Survey Program	Date	9/16/2013		
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
100.0	7,228.0	Gyro (Wellbore #1)	Good_gyro	Good Gyro
7,313.0	12,370.0	DDC MWD (Wellbore #1)	MWD default	MWD - Standard

Survey										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Vertical Section	Dogleg Rate	Build Rate	Turn Rate	
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.73	203.85	100.0	-0.6	-0.3	-0.6	0.73	0.73	0.00	
200.0	1.20	196.56	200.0	-2.2	-0.8	-2.2	0.48	0.47	-7.29	
300.0	1.32	192.56	300.0	-4.3	-1.4	-4.3	0.15	0.12	-4.00	
400.0	1.85	194.52	399.9	-7.0	-2.0	-7.0	0.53	0.53	1.96	
500.0	2.68	196.88	499.8	-10.8	-3.1	-10.9	0.84	0.83	2.36	
600.0	3.09	204.03	599.7	-15.5	-4.9	-15.6	0.54	0.41	7.15	
700.0	2.48	210.03	699.6	-19.8	-7.1	-20.0	0.68	-0.61	6.00	
800.0	2.36	208.32	799.5	-23.5	-9.1	-23.7	0.14	-0.12	-1.71	
900.0	2.38	195.09	899.4	-27.3	-10.6	-27.6	0.55	0.02	-13.23	

DDC
Survey Report



Company:	Mewbourne Oil Co	Local Co-ordinate Reference:	Well Cooksey 36 PA State Com #1H
Project:	Eddy County, New Mexico	TVD Reference:	WELL @ 3105.0usft (Patterson #75)
Site:	Sec 36, T25S, R27E	MD Reference:	WELL @ 3105.0usft (Patterson #75)
Well:	Cooksey 36 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	2.47	191.73	999.3	-31.4	-11.6	-31.7	0.17	0.09	-3.36
1,100.0	2.14	184.71	1,099.3	-35.4	-12.2	-35.7	0.43	-0.33	-7.02
1,200.0	2.07	193.68	1,199.2	-39.0	-12.8	-39.3	0.34	-0.07	8.97
1,300.0	2.09	195.31	1,299.1	-42.5	-13.7	-42.8	0.06	0.02	1.63
1,400.0	2.39	196.19	1,399.0	-46.3	-14.8	-46.6	0.30	0.30	0.88
1,500.0	2.14	186.26	1,499.0	-50.2	-15.5	-50.5	0.46	-0.25	-9.93
1,600.0	2.99	149.67	1,598.9	-54.3	-14.4	-54.6	1.80	0.85	-36.59
1,700.0	3.70	109.94	1,698.7	-57.6	-10.1	-57.8	2.37	0.71	-39.73
1,800.0	4.22	108.03	1,798.5	-59.9	-3.5	-59.9	0.54	0.52	-1.91
1,900.0	5.71	104.46	1,898.1	-62.2	4.8	-62.1	1.52	1.49	-3.57
2,000.0	6.84	109.93	1,997.5	-65.5	15.2	-65.2	1.28	1.13	5.47
2,100.0	7.68	105.07	2,096.7	-69.3	27.2	-68.6	1.04	0.84	-4.86
2,200.0	6.44	104.78	2,195.9	-72.4	39.1	-71.5	1.24	-1.24	-0.29
2,300.0	4.84	101.87	2,295.4	-74.7	48.7	-73.6	1.62	-1.60	-2.91
2,400.0	4.11	100.93	2,395.1	-76.3	56.3	-75.0	0.73	-0.73	-0.94
2,500.0	3.60	105.53	2,494.9	-77.8	62.9	-76.4	0.60	-0.51	4.60
2,600.0	2.87	106.53	2,594.8	-79.4	68.3	-77.8	0.73	-0.73	1.00
2,700.0	2.70	104.37	2,694.6	-80.7	73.0	-79.0	0.20	-0.17	-2.16
2,800.0	2.55	107.85	2,794.5	-81.9	77.4	-80.2	0.22	-0.15	3.48
2,900.0	2.43	101.58	2,894.4	-83.0	81.6	-81.2	0.30	-0.12	-6.27
3,000.0	2.40	102.05	2,994.3	-83.9	85.7	-82.0	0.04	-0.03	0.47
3,100.0	2.00	109.20	3,094.3	-84.9	89.4	-82.9	0.48	-0.40	7.15
3,200.0	1.44	112.56	3,194.2	-86.0	92.2	-83.9	0.57	-0.56	3.36
3,300.0	1.48	115.34	3,294.2	-87.0	94.5	-84.9	0.08	0.04	2.78
3,400.0	1.35	111.58	3,394.2	-88.0	96.8	-85.8	0.16	-0.13	-3.76
3,500.0	1.20	108.19	3,494.1	-88.7	98.9	-86.5	0.17	-0.15	-3.39
3,600.0	1.16	103.56	3,594.1	-89.3	100.8	-87.0	0.10	-0.04	-4.63
3,700.0	0.95	122.03	3,694.1	-90.0	102.5	-87.7	0.40	-0.21	18.47
3,800.0	1.06	127.71	3,794.1	-91.0	104.0	-88.6	0.15	0.11	5.68
3,900.0	0.81	136.39	3,894.1	-92.1	105.2	-89.7	0.29	-0.25	8.68
4,000.0	0.84	149.50	3,994.1	-93.2	106.0	-90.8	0.19	0.03	13.11
4,100.0	0.66	150.77	4,094.1	-94.3	106.7	-91.9	0.18	-0.18	1.27
4,200.0	0.66	155.82	4,194.0	-95.4	107.2	-93.0	0.06	0.00	5.05
4,300.0	0.76	160.39	4,294.0	-96.5	107.7	-94.1	0.11	0.10	4.57
4,400.0	0.83	176.77	4,394.0	-97.9	107.9	-95.4	0.24	0.07	16.38
4,500.0	0.80	173.42	4,494.0	-99.3	108.1	-96.8	0.06	-0.03	-3.35
4,600.0	0.72	195.91	4,594.0	-100.6	108.0	-98.1	0.31	-0.08	22.49
4,700.0	0.80	191.73	4,694.0	-101.9	107.6	-99.4	0.10	0.08	-4.18
4,800.0	0.69	197.46	4,794.0	-103.1	107.3	-100.7	0.13	-0.11	5.73
4,900.0	0.77	187.04	4,894.0	-104.4	107.1	-102.0	0.15	0.08	-10.42
5,000.0	0.74	183.06	4,994.0	-105.7	106.9	-103.3	0.06	-0.03	-3.98
5,100.0	0.75	179.23	5,094.0	-107.0	106.9	-104.6	0.05	0.01	-3.83
5,200.0	0.85	174.98	5,194.0	-108.4	107.0	-106.0	0.12	0.10	-4.25

DDC Survey Report



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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	1.02	167.80	5,293.9	-110.0	107.2	-107.6	0.21	0.17	-7.18	
5,400.0	0.74	155.81	5,393.9	-111.4	107.7	-109.0	0.33	-0.28	-11.99	
5,500.0	1.03	161.10	5,493.9	-112.9	108.3	-110.4	0.30	0.29	5.29	
5,600.0	1.06	170.94	5,593.9	-114.6	108.7	-112.2	0.18	0.03	9.84	
5,700.0	1.03	189.80	5,693.9	-116.4	108.7	-114.0	0.34	-0.03	18.86	
5,800.0	1.20	218.58	5,793.9	-118.1	107.9	-115.7	0.58	0.17	28.78	
5,900.0	1.33	234.65	5,893.8	-119.6	106.3	-117.2	0.38	0.13	16.07	
6,000.0	1.40	229.82	5,993.8	-121.1	104.4	-118.7	0.13	0.07	-4.83	
6,100.0	1.06	237.51	6,093.8	-122.4	102.7	-120.1	0.38	-0.34	7.69	
6,200.0	0.84	249.10	6,193.8	-123.1	101.2	-120.9	0.29	-0.22	11.59	
6,300.0	0.72	256.96	6,293.8	-123.5	99.9	-121.3	0.16	-0.12	7.86	
6,400.0	1.12	283.73	6,393.8	-123.5	98.4	-121.2	0.58	0.40	26.77	
6,500.0	0.98	281.59	6,493.7	-123.1	96.6	-120.9	0.15	-0.14	-2.14	
6,600.0	1.43	278.91	6,593.7	-122.7	94.5	-120.5	0.45	0.45	-2.68	
6,700.0	2.10	303.89	6,693.7	-121.5	91.8	-119.4	1.01	0.67	24.98	
6,800.0	2.58	293.71	6,793.6	-119.5	88.2	-117.5	0.63	0.48	-10.18	
6,900.0	2.03	285.71	6,893.5	-118.2	84.4	-116.2	0.64	-0.55	-8.00	
7,000.0	1.65	291.80	6,993.5	-117.1	81.4	-115.3	0.43	-0.38	6.09	
7,100.0	1.58	254.21	7,093.4	-117.0	78.7	-115.2	1.04	-0.07	-37.59	
7,200.0	2.05	206.31	7,193.4	-119.0	76.6	-117.2	1.53	0.47	-47.90	
Tie into Gyro @ 7228' MD / 7221' TVD										
7,228.0	2.03	204.35	7,221.4	-119.9	76.2	-118.1	0.26	-0.07	-7.00	
7,313.0	1.60	358.30	7,306.3	-120.1	75.5	-118.3	4.16	-0.51	181.12	
7,344.0	6.10	18.50	7,337.3	-118.1	76.0	-116.3	14.94	14.52	65.16	
7,376.0	10.30	14.10	7,368.9	-113.7	77.2	-111.9	13.26	13.13	-13.75	
7,407.0	13.40	5.70	7,399.3	-107.4	78.3	-105.6	11.42	10.00	-27.10	
7,439.0	17.30	2.10	7,430.1	-99.0	78.8	-97.2	12.54	12.19	-11.25	
7,470.0	21.50	4.00	7,459.4	-88.7	79.4	-86.9	13.70	13.55	6.13	
7,502.0	25.80	3.00	7,488.7	-75.9	80.2	-74.1	13.50	13.44	-3.13	
7,533.0	29.20	359.00	7,516.2	-61.6	80.4	-59.8	12.48	10.97	-12.90	
7,565.0	31.30	356.80	7,543.8	-45.5	79.8	-43.7	7.42	6.56	-6.88	
7,596.0	33.80	356.30	7,569.9	-28.8	78.8	-27.0	8.11	8.06	-1.61	
7,628.0	37.80	356.80	7,595.9	-10.1	77.7	-8.4	12.53	12.50	1.56	
Crossed Hard Line @ 7645' MD / 7609' TVD										
7,644.6	39.46	357.50	7,608.8	0.2	77.1	1.9	10.33	9.99	4.20	
7,660.0	41.00	358.10	7,620.6	10.2	76.8	11.9	10.33	10.01	3.92	
7,691.0	44.50	359.00	7,643.4	31.2	76.2	32.9	11.46	11.29	2.90	
7,722.0	46.00	359.30	7,665.2	53.2	75.9	54.9	4.89	4.84	0.97	
7,754.0	48.20	359.80	7,687.0	76.6	75.7	78.3	6.97	6.88	1.56	
7,785.0	51.00	0.60	7,707.1	100.2	75.8	101.9	9.24	9.03	2.58	
7,817.0	53.40	0.40	7,726.7	125.5	76.0	127.2	7.52	7.50	-0.63	
7,849.0	56.00	359.90	7,745.2	151.6	76.1	153.3	8.22	8.13	-1.56	
7,880.0	59.00	359.80	7,761.8	177.8	76.0	179.4	9.68	9.68	-0.32	
7,912.0	62.30	0.00	7,777.5	205.7	76.0	207.3	10.33	10.31	0.63	

DDC
Survey Report



Company:	Mewbourne Oil Co	Local Co-ordinate Reference:	Well Cooksey 36 PA State Com #1H
Project:	Eddy County, New Mexico	TVD Reference:	WELL @ 3105.0usft (Patterson #75)
Site:	Sec 36, T25S, R27E	MD Reference:	WELL @ 3105.0usft (Patterson #75)
Well:	Cooksey 36 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)	
7,944.0	65.10	1.10	7,791.7	234.4	76.3	236.0	9.28	8.75	3.44	
7,975.0	68.00	1.20	7,804.0	262.8	76.8	264.4	9.36	9.35	0.32	
8,007.0	71.10	1.10	7,815.2	292.8	77.4	294.4	9.69	9.69	-0.31	
8,038.0	73.60	1.70	7,824.6	322.3	78.2	324.0	8.27	8.06	1.94	
8,070.0	76.60	1.90	7,832.8	353.2	79.1	354.9	9.39	9.38	0.63	
8,101.0	78.50	1.90	7,839.5	383.4	80.1	385.1	6.13	6.13	0.00	
8,133.0	80.20	1.60	7,845.4	414.9	81.1	416.6	5.39	5.31	-0.94	
8,151.0	82.40	0.70	7,848.1	432.7	81.4	434.4	13.18	12.22	-5.00	
8,254.0	89.00	358.40	7,855.9	535.3	80.6	537.0	6.78	6.41	-2.23	
8,285.0	89.10	358.10	7,856.4	566.3	79.7	567.9	1.02	0.32	-0.97	
8,380.0	90.50	357.40	7,856.7	661.2	76.0	662.7	1.65	1.47	-0.74	
8,475.0	90.90	357.40	7,855.5	756.1	71.6	757.5	0.42	0.42	0.00	
8,570.0	91.70	359.10	7,853.4	851.0	68.7	852.4	1.98	0.84	1.79	
8,665.0	91.20	1.90	7,851.0	946.0	69.6	947.3	2.99	-0.53	2.95	
8,760.0	91.20	1.40	7,849.0	1,040.9	72.3	1,042.3	0.53	0.00	-0.53	
8,855.0	88.60	1.60	7,849.2	1,135.9	74.8	1,137.3	2.74	-2.74	0.21	
8,950.0	89.20	1.40	7,851.0	1,230.8	77.3	1,232.3	0.67	0.63	-0.21	
9,045.0	89.20	1.90	7,852.3	1,325.8	80.0	1,327.3	0.53	0.00	0.53	
9,139.0	87.80	0.90	7,854.8	1,419.7	82.3	1,421.2	1.83	-1.49	-1.06	
9,234.0	88.70	0.90	7,857.7	1,514.7	83.8	1,516.2	0.95	0.95	0.00	
9,329.0	89.60	0.70	7,859.1	1,609.7	85.1	1,611.2	0.97	0.95	-0.21	
9,424.0	90.50	1.20	7,859.0	1,704.6	86.7	1,706.2	1.08	0.95	0.53	
9,519.0	89.70	358.60	7,858.8	1,799.6	86.5	1,801.1	2.86	-0.84	-2.74	
9,614.0	89.60	356.70	7,859.4	1,894.5	82.6	1,895.9	2.00	-0.11	-2.00	
9,708.0	90.50	358.10	7,859.3	1,988.4	78.4	1,989.7	1.77	0.96	1.49	
9,803.0	91.50	358.10	7,857.7	2,083.4	75.2	2,084.5	1.05	1.05	0.00	
9,898.0	90.00	357.50	7,856.4	2,178.3	71.6	2,179.4	1.70	-1.58	-0.63	
9,993.0	90.10	359.80	7,856.3	2,273.3	69.3	2,274.2	2.42	0.11	2.42	
10,088.0	90.40	1.10	7,855.9	2,368.3	70.1	2,369.2	1.40	0.32	1.37	
10,183.0	88.80	359.60	7,856.6	2,463.2	70.7	2,464.2	2.31	-1.68	-1.58	
10,278.0	88.80	359.00	7,858.6	2,558.2	69.5	2,559.1	0.63	0.00	-0.63	
10,373.0	90.90	0.20	7,858.8	2,653.2	68.8	2,654.1	2.55	2.21	1.26	
10,468.0	90.00	0.50	7,858.1	2,748.2	69.4	2,749.1	1.00	-0.95	0.32	
10,562.0	91.20	1.40	7,857.1	2,842.2	71.0	2,843.1	1.60	1.28	0.96	
10,657.0	87.60	0.30	7,858.1	2,937.1	72.4	2,938.0	3.96	-3.79	-1.16	
10,752.0	88.00	0.30	7,861.7	3,032.1	72.9	3,032.9	0.42	0.42	0.00	
10,846.0	88.70	0.00	7,864.4	3,126.0	73.1	3,126.9	0.81	0.74	-0.32	
10,940.0	89.50	0.20	7,865.9	3,220.0	73.3	3,220.9	0.88	0.85	0.21	
11,035.0	90.40	359.50	7,866.0	3,315.0	73.1	3,315.8	1.20	0.95	-0.74	
11,130.0	91.20	0.90	7,864.7	3,410.0	73.4	3,410.8	1.70	0.84	1.47	
11,225.0	90.40	1.10	7,863.4	3,505.0	75.0	3,505.8	0.87	-0.84	0.21	
11,320.0	90.70	1.20	7,862.4	3,600.0	76.9	3,600.8	0.33	0.32	0.11	
11,415.0	91.40	0.30	7,860.7	3,694.9	78.2	3,695.8	1.20	0.74	-0.95	

DDC
Survey Report



Company:	Mewbourne Oil Co	Local Co-ordinate Reference:	Well Cooksey 36 PA State Com #1H
Project:	Eddy County, New Mexico	TVD Reference:	WELL @ 3105.0usft (Patterson #75)
Site:	Sec 36, T25S, R27E	MD Reference:	WELL @ 3105.0usft (Patterson #75)
Well:	Cooksey 36.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)
11,510.0	92.90	0.00	7,857.1	3,789.9	78.4	3,790.7	1.61	1.58	-0.32
11,573.0	92.30	1.20	7,854.3	3,852.8	79.1	3,853.6	2.13	-0.95	1.90
11,636.0	87.70	0.70	7,854.3	3,915.8	80.1	3,916.6	7.34	-7.30	-0.79
11,700.0	89.20	0.50	7,856.0	3,979.7	80.8	3,980.6	2.36	2.34	-0.31
11,763.0	87.80	359.50	7,857.7	4,042.7	80.8	4,043.5	2.73	-2.22	-1.59
11,826.0	88.80	359.60	7,859.5	4,105.7	80.3	4,106.5	1.60	1.59	0.16
11,889.0	89.80	0.20	7,860.3	4,168.7	80.2	4,169.4	1.85	1.59	0.95
11,952.0	88.10	358.20	7,861.5	4,231.7	79.3	4,232.4	4.17	-2.70	-3.17
12,016.0	88.50	357.00	7,863.4	4,295.6	76.7	4,296.2	1.98	0.63	-1.88
12,079.0	88.70	356.70	7,864.9	4,358.5	73.2	4,359.0	0.57	0.32	-0.48
12,142.0	91.30	357.20	7,864.9	4,421.4	69.8	4,421.8	4.20	4.13	0.79
12,205.0	90.90	359.00	7,863.7	4,484.3	67.8	4,484.7	2.93	-0.63	2.86
12,268.0	91.60	359.60	7,862.3	4,547.3	67.0	4,547.7	1.46	1.11	0.95
12,320.0	92.40	358.40	7,860.5	4,599.3	66.1	4,599.6	2.77	1.54	-2.31
TD @ 12370' MD / 7858' TVD									
12,370.0	92.40	358.40	7,858.4	4,649.2	64.7	4,649.5	0.00	0.00	0.00

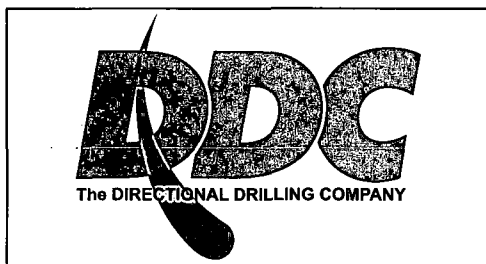
Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N-S (usft)	+E-W (usft)	Comment	
7,228.0	7,221.4	-119.9	76.2	Tie into Gyro @ 7228' MD / 7221' TVD	
7,644.6	7,608.8	0.2	77.1	Crossed Hard Line @ 7645' MD / 7609' TVD	
12,370.0	7,858.4	4,649.2	64.7	TD @ 12370' MD / 7858' TVD	

Checked By: _____	Approved By: _____	Date: _____
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Company Name: Mewbourne Oil Co
Cooksey 36 PA State Com #1H
Eddy County, New Mexico
Rig: Patterson #75
Created By: James Dawson
Date: 9/16/2013

Cooksey 36 PA State Com #1H
Eddy County, New Mexico
Q130359 & WT-13705
Design #5

Mewbourne Oil Company



GM Azimuths to Grid North
Correction: 7.50°

Magnetic Field
Strength: 48285.3snT
Dip Angle: 59.91°
Date: 4/18/2013
Model: IGRF2010

PROJECT DETAILS: Eddy County, New Mexico

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

WELL DETAILS: Cooksey 36 PA State Com #1H

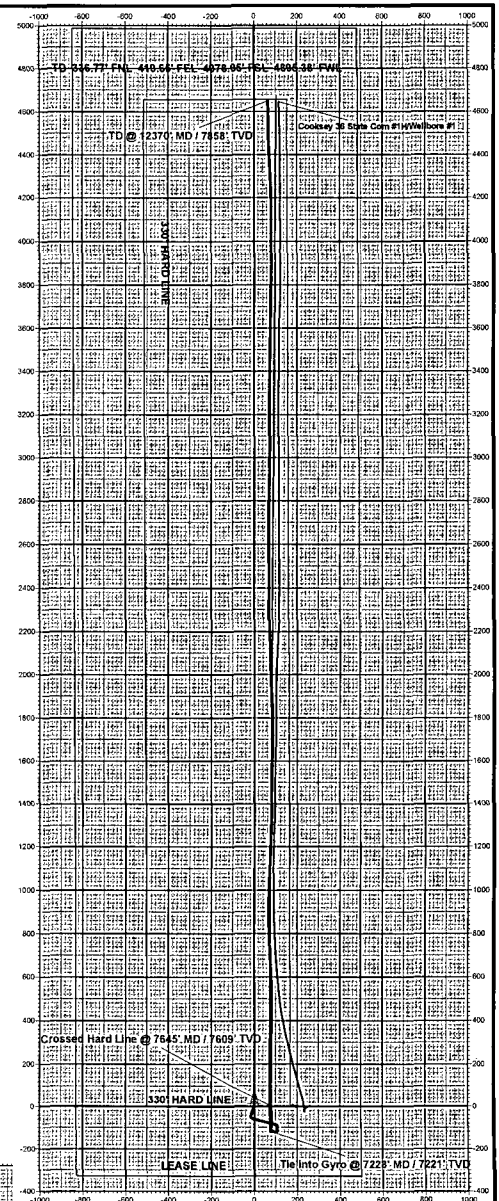
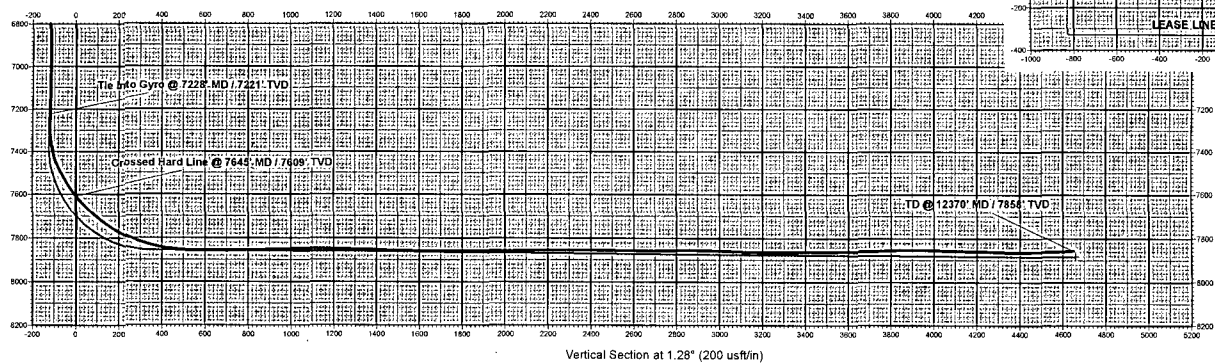
Ground Level: 3085.0
Northing: 592778.08 Easting: 561095.50 Latitude: 32° 4' 46.954 N Longitude: 104° 8' 10.923 W

DESIGN TARGET DETAILS

Name	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude
PBHL Cooksey 36 State Com #2H Design #4 - plan hits target center	7855.0	4656.0	104.0	397434.06	561109.53	32° 5' 33.030 N	104° 8' 9.615 W

ANNOTATIONS

MD	Inc	Azi	TVD	+N-S	+E-W	Vsect	Departure	Tie into Gyro	Annotation
7228.0	2.05	204.35	7221.4	-119.9	78.2	-116.1	248.2	Tie into Gyro @ 7228' MD / 7221' TVD	
7644.5	39.46	357.50	7609.8	0.2	77.1	1.9	371.0	Crossed Hard Line @ 7645' MD / 7609' TVD	
12370.0	92.40	350.40	7858.4	4649.2	64.7	4649.5	5022.0	TD @ 12370' MD / 7858' TVD	



Operating Company Mewbourne
 Well Name & Number Cooksey 36 PA St Com #1H
 Sales Ticket Number 5796421
 Date 9/15/2013

Company Rep Sandy Bass
 Field Santo Nino
 BOT Service Rep Joseph Haynes
 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	8,205.00	9,960	6,230
Top Liner	4.500	13.50	110000	3.920	3.795	LT&C	0.01492	4,380.32	12,410	10,680
Bott Liner										

TVD	7,862.00	KOP	7,748.00	Open Hole	6.125	Casing Vol. (bbl)	
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Carry Fluid Weight (ppg)	8.4	Propan 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)
Liner Top	1	JR Setting Sleeve_RH Profile	7965.48	4.00	5.750	4.000				

Zone Length		JR Sleeve_S3 Hyd Set Packer	7969.48	5.53	5.875	3.875		1670		
		4-1/2-13.5 LTC Nipple	7975.01	6.72	4.500	3.920				
20		8 Joints of 4-1/2-13.5 LTC Casing	7981.73	267.62	4.500	3.920				
	20	3.625 EX Frac Sleeve	8249.35	2.40	5.750		3.525	2286		
		1 Joint of 4-1/2-13.5 LTC Casing	8251.75	114.50	4.500	3.920				
19		Baker Open Hole Packer	8366.25	3.89	5.820	3.875		2154		
		2 Joints of 4-1/2-13.5 LTC Casing	8370.14	76.76	4.500	3.920				
	19	3.500 EX Frac Sleeve	8446.90	2.40	5.750		3.400	2286		
18		1 Joint of 4-1/2-13.5 LTC Casing	8449.30	115.25	4.500	3.920				
		Baker Open Hole Packer	8564.55	3.89	5.820	3.875		2154		
		2 Joints of 4-1/2-13.5 LTC Casing	8568.44	114.41	4.500	3.920				
17	18	3.375 EX Frac Sleeve	8682.85	2.40	5.750		3.275	2286		
		1 Joint of 4-1/2-13.5 LTC Casing	8685.25	114.67	4.500	3.920				
		Baker Open Hole Packer	8799.92	3.89	5.820	3.875		2154		
16		2 Joints of 4-1/2-13.5 LTC Casing	8803.81	75.84	4.500	3.920				
	17	3.250 EX Frac Sleeve	8879.65	2.40	5.750		3.150	2286		
		1 Joint of 4-1/2-13.5 LTC Casing	8882.05	115.11	4.500	3.920				
16		Baker Open Hole Packer	8997.16	3.89	5.820	3.875		2154		
		2 Joints of 4-1/2-13.5 LTC Casing	9001.05	115.04	4.500	3.920				
	16	3.125 EX Frac Sleeve	9116.09	2.40	5.750		3.025	2286		
		2 Joints of 4-1/2-13.5 LTC Casing	9118.49	114.34	4.500	3.920				
		Baker Open Hole Packer	9232.83	3.89	5.820	3.875		2154		

Operating Company Mewbourne
 Well Name & Number Cooksey 36 PA St Com #1H
 Sales Ticket Number 5796421

Company Rep Sandy Bass
 Field Santo Nino
 BOT Service Rep Joseph Haynes
 District Location Odessa, Texas, USA



Date 9/15/2013

	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	8,205.00	9,960	6,230
Top Liner	4.500	13.50	110000	3.920	3.795	LT&C	0.01492	4,380.32	12,410	10,680
Bott Liner										

TVD	7,862.00	KOP	7,748.00	Open Hole	6.125	Casing Vol. (bbl)	
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Carry Fluid Weight (ppg)	8.4	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)
15		2 Joints of 4-1/2-13.5 LTC Casing	9236.72	72.92	4.500	3.920				
	15	3.000 EX Frac sleeve	9309.64	2.40	5.750		2.900	2286		
		1 Joint of 4-1/2-13.5 LTC Casing	9312.04	115.35	4.500	3.920				
14		Baker Open Hole Packer	9427.39	3.89	5.820	3.875		2154		
		2 Joints of 4-1/2-13.5 LTC Casing	9431.28	114.89	4.500	3.920				
	14	2.875 EX Frac Sleeve	9546.17	2.40	5.750		2.775	2286		
13		2 Joints of 4-1/2-13.5 LTC Casing	9548.57	114.86	4.500	3.920				
		Baker Open Hole Packer	9663.43	3.89	5.820	3.875		2154		
		2 Joints of 4-1/2-13.5 LTC Casing	9667.32	76.50	4.500	3.920				
12		2.750 EX Frac Sleeve	9743.82	2.40	5.750		2.650	2286		
		1 Joint of 4-1/2-13.5 LTC Casing	9746.22	114.97	4.500	3.920				
		Baker Open Hole Packer	9861.19	3.89	5.820	3.875		2154		
11		2 Joints of 4-1/2-13.5 LTC Casing	9865.08	114.41	4.500	3.920				
	12	2.625 EX Frac Sleeve	9979.49	2.40	5.750		2.525	2286		
		2 Joints of 4-1/2-13.5 LTC Casing	9981.89	114.86	4.500	3.920				
10		Baker Open Hole Packer	10096.75	3.89	5.820	3.875		2154		
		2 Joints of 4-1/2-13.5 LTC Casing	10100.64	76.67	4.500	3.920				
	11	2.500 EX Frac Sleeve	10177.31	2.40	5.750		2.400	2286		
9		1 Joint of 4-1/2-13.5 LTC Casing	10179.71	114.44	4.500	3.920				
		Baker Open Hole Packer	10294.15	3.89	5.820	3.875		2154		
		2 Joints of 4-1/2-13.5 LTC Casing	10298.04	113.53	4.500	3.920				
	10	2.375 EX Frac Sleeve	10411.57	2.40	5.750		2.275	2286		
		2 Joints of 4-1/2-13.5 LTC Casing	10413.97	114.01	4.500	3.920				
		Baker Open Hole Packer	10527.98	3.89	5.820	3.875		2154		
		1 Joint of 4-1/2-13.5 LTC Casing	10531.87	76.01	4.500	3.920				
	9	2.250 EX Frac Sleeve	10607.88	2.40	5.750		2.150	2286		