

Company Name: Newbourn Oil Company
 Red Hills West 21 W0CN Fed Com #1H
 Lea County, New Mexico (Nad 83)
 Rig: Patterson 8230
 Created By: Shane Robbins
 Date: 2/12/2019

Red Hills West 21 W0CN Fed Com #1H
 Lea County, New Mexico (Nad 83)
 Q190102 & WT-190095
 Design #1



HOBBS OIL
 MAY 15 2019
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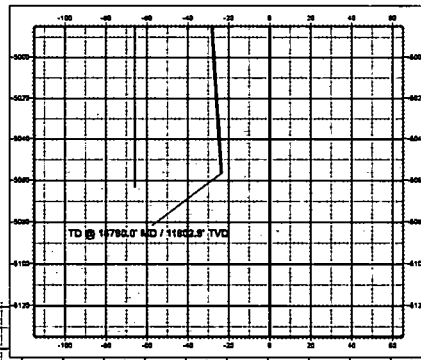


WELL DETAILS: Red Hills West 21 W0CN Fed Com #1H					
		3153.9			
+N/A	+E/W	Northing	Eastings	Latitude	Longitude

PROJECT DETAILS: Lea 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		

DESIGN ANNOTATIONS									
MD	Inc	Azi	TVD	+N/A	+E/W	VSec	Departure	Annotation	
4435.0	0.00	0.00	4435.0	0.0	0.0	0.0	0.0	Build 2°/100'	
4517.5	1.65	333.28	4517.5	1.1	-0.5	-1.1	1.2	EOB @ 1.65° Inc / 333.28° Azm	
11217.8	1.65	333.28	11216.0	173.3	-87.3	-172.2	184.1	Drop 2°/100'	
11300.3	0.00	0.00	11297.5	174.4	-87.8	-174.3	185.2	EOB @ Vert / Build 12°/100'	
12048.3	89.88	179.76	11775.0	-303.1	-85.8	303.1	871.7	EOB @ 89.88° Inc / 179.76° Azm / 11775' TVD	
16803.9	89.88	179.76	11785.0	-5062.6	-65.6	6063.1	5432.3	TD @ 16810' MD / 11785' TVD	

ANNOTATIONS									
MD	Inc	Azi	TVD	+N/A	+E/W	VSec	Departure	Annotation	
707.0	4.60	71.47	708.2	9.0	24.9	-8.3	25.0	Gyro Tie In @ 707.0 MD / 708.2' TVD	
7893.1	3.18	327.81	7878.2	84.6	-60.2	-83.8	228.8	Cross 100' FNL @ 7893.1' MD / 7878.2' TVD	
11589.5	38.30	177.61	11570.4	84.3	-191.5	-83.0	380.8	Cross 100' FNL @ 11589.5' MD / 11570.4' TVD	
16790.0	88.80	178.30	11802.9	-5056.9	-32.7	5056.5	5530.3	TD @ 16790.0' MD / 11802.9' TVD	



GM Azimuths to Grid North

Correction: 6.48°
 Magnetic Field
 Strength: 47653.4snT
 Dip Angle: 59.85°
 Date: 1/17/2019
 Model: IGRF2015

Vertical Section at 180.74° (200 usf/in)



Mewbourne Oil Company

Lea County, New Mexico (Nad 83)

Sec 21 T26S R32E

Red Hills West 21 W0CN Fed Com #1H

Wellbore #1

Design: Wellbore #1

QES Survey Report

12 February, 2019



Survey Report



Company: Mewbourne Oil Company
Project: Lea County, New Mexico (Nad 83)
Site: Sec 21 T26S R32E
Well: Red Hills West 21 W0CN Fed Com #1H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Red Hills West 21 W0CN Fed Com #1H
TVD Reference: WELL @ 3180.0usft (Patterson #230)
MD Reference: WELL @ 3180.0usft (Patterson #230)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Project	Lea 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 21 T26S R32E				
Site Position:		Northing:	377,097.00 usft	Latitude:	32° 2' 6.186 N
From:	Map	Easting:	742,879.00 usft	Longitude:	103° 40' 58.559 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.35 °

Well	Red Hills West 21 W0CN Fed Com #1H					
Well Position	+N/-S	0.0 usft	Northing:	377,097.00 usft	Latitude:	32° 2' 6.186 N
	+E/-W	0.0 usft	Easting:	742,879.00 usft	Longitude:	103° 40' 58.559 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,153.0 usft

Wellbore	Wellbore #1					
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength	
			(°)	(°)	(nT)	
	IGRF2015	1/17/2019	6.82	59.85	47,653.37715251	

Design	Wellbore #1					
Audit Notes:						
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction		
	(usft)	(usft)	(usft)	(°)		
	0.0	0.0	0.0	180.74		

Survey Program	Date 2/12/2019				
From	To	Survey (Wellbore)	Tool Name	Description	
(usft)	(usft)				
104.0	707.0	Gyros (Wellbore #1)	GYRO-NS	OWSG Gyrocompass Gyro	
738.0	16,790.0	QES MWD Survey (Wellbore #1)	MWD default	MWD - Standard	

Survey									
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate
(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
104.0	0.80	194.47	104.0	-0.7	-0.2	0.7	0.77	0.77	0.00
228.0	1.70	62.47	228.0	-0.7	1.2	0.7	1.87	0.73	-106.45
348.0	2.30	62.47	347.9	1.2	4.9	-1.3	0.50	0.50	0.00
409.0	2.50	72.47	408.9	2.2	7.3	-2.3	0.76	0.33	16.39
464.0	3.20	66.47	463.8	3.2	9.9	-3.3	1.38	1.27	-10.91
526.0	3.20	65.47	525.7	4.6	13.0	-4.8	0.09	0.00	-1.61
586.0	3.60	70.47	585.6	5.9	16.3	-6.1	0.83	0.67	8.33
646.0	4.50	69.49	645.4	7.4	20.3	-7.6	1.50	1.50	-1.63
Gyro Tie In @ 707.0'MD / 706.2' TVD									

Survey Report



Company: Mewbourne Oil Company
 Project: Lea County, New Mexico (Nad 83)
 Site: Sec 21 T26S R32E
 Well: Red Hills West 21 W0CN Fed Com #1H
 Wellbore: Wellbore #1
 Design: Wellbore #1

Local Co-ordinate Reference: Well Red Hills West 21 W0CN Fed Com #1H
 TVD Reference: WELL @ 3180.0usft (Patterson #230)
 MD Reference: WELL @ 3180.0usft (Patterson #230)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 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)
707.0	4.60	71.47	706.2	9.0	24.9	-9.3	0.31	0.16	3.25
738.0	4.80	69.20	737.1	9.8	27.2	-10.2	0.88	0.65	-7.32
833.0	4.10	55.50	831.9	13.2	33.8	-13.6	1.33	-0.74	-14.42
928.0	2.80	39.50	926.7	16.9	38.0	-17.4	1.69	-1.37	-16.84
1,022.0	1.90	45.20	1,020.6	19.8	40.6	-20.3	0.99	-0.96	6.06
1,117.0	0.70	29.20	1,115.6	21.4	42.0	-21.9	1.31	-1.26	-16.84
1,212.0	0.40	40.60	1,210.6	22.1	42.5	-22.7	0.33	-0.32	12.00
1,401.0	0.20	119.90	1,399.6	22.5	43.2	-23.0	0.22	-0.11	41.96
1,590.0	0.30	279.80	1,588.6	22.4	43.0	-22.9	0.26	0.05	84.60
1,779.0	0.20	302.00	1,777.6	22.7	42.2	-23.2	0.07	-0.05	11.75
1,968.0	0.30	210.00	1,966.6	22.4	41.7	-22.9	0.19	0.05	-48.68
2,157.0	0.20	119.20	2,155.6	21.8	41.8	-22.3	0.19	-0.05	-48.04
2,346.0	0.20	174.00	2,344.6	21.3	42.1	-21.9	0.10	0.00	28.99
2,534.0	0.40	216.40	2,532.6	20.5	41.7	-21.0	0.15	0.11	22.55
2,723.0	0.30	282.30	2,721.6	20.0	40.9	-20.6	0.21	-0.05	34.87
2,912.0	0.10	78.20	2,910.6	20.2	40.5	-20.7	0.21	-0.11	82.49
3,101.0	1.10	93.30	3,099.5	20.1	42.5	-20.7	0.53	0.53	7.99
3,290.0	1.00	82.80	3,288.5	20.2	45.9	-20.8	0.11	-0.05	-5.56
3,478.0	0.70	79.80	3,476.5	20.6	48.7	-21.2	0.16	-0.16	-1.60
3,667.0	0.60	85.90	3,665.5	20.9	50.8	-21.6	0.08	-0.05	3.23
3,856.0	1.00	112.70	3,854.5	20.3	53.3	-21.0	0.28	0.21	14.18
4,045.0	1.10	133.20	4,043.4	18.5	56.2	-19.2	0.20	0.05	10.85
4,234.0	1.50	144.80	4,232.4	15.2	58.9	-15.9	0.25	0.21	6.14
4,340.0	0.80	139.00	4,338.4	13.5	60.2	-14.3	0.67	-0.66	-5.47
4,521.0	1.20	255.40	4,519.3	12.1	59.2	-12.8	0.95	0.22	64.31
4,710.0	2.10	287.90	4,708.3	12.6	54.0	-13.3	0.67	0.48	17.20
4,900.0	1.90	301.40	4,898.2	15.3	48.0	-18.0	0.27	-0.11	7.11
4,995.0	2.00	303.90	4,993.1	17.1	45.3	-17.7	0.14	0.11	2.63
5,089.0	1.90	298.60	5,087.0	18.7	42.6	-19.3	0.22	-0.11	-5.64
5,184.0	1.90	294.60	5,182.0	20.2	39.7	-20.7	0.14	0.00	-4.21
5,278.0	1.90	292.60	5,275.9	21.4	36.9	-21.9	0.07	0.00	-2.13
5,373.0	1.90	289.00	5,370.9	22.5	33.9	-23.0	0.13	0.00	-3.79
5,467.0	1.90	294.40	5,464.8	23.7	31.0	-24.1	0.19	0.00	5.74
5,562.0	1.90	288.30	5,559.8	24.8	28.1	-25.2	0.21	0.00	-6.42
5,657.0	2.50	303.50	5,654.7	26.5	24.9	-26.8	0.88	0.63	16.00
5,752.0	2.60	307.60	5,749.6	28.9	21.5	-29.2	0.22	0.11	4.32
5,847.0	2.50	301.60	5,844.5	31.3	18.0	-31.5	0.30	-0.11	-6.32
5,941.0	2.50	305.70	5,938.4	33.6	14.6	-33.8	0.19	0.00	4.36
6,036.0	2.00	297.60	6,033.4	35.6	11.4	-35.7	0.62	-0.53	-8.53
6,130.0	2.10	293.20	6,127.3	37.0	8.4	-37.1	0.20	0.11	-4.68
6,224.0	2.10	294.20	6,221.2	38.4	5.2	-38.5	0.04	0.00	1.06
6,318.0	2.20	285.30	6,316.2	39.6	1.9	-39.6	0.37	0.11	-9.37
6,414.0	1.60	290.00	6,411.1	40.5	-1.1	-40.5	0.65	-0.63	4.95

Survey Report



Company: Mewbourne Oil Company
Project: Lea County, New Mexico (Nad 83)
Site: Sec 21 T26S R32E
Well: Red Hills West 21 WOCN Fed Com #1H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Red Hills West 21 WOCN Fed Com #1H
TVD Reference: WELL @ 3180.0usft (Patterson #230)
MD Reference: WELL @ 3180.0usft (Patterson #230)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)
6,508.0	1.50	284.90	6,505.1	41.3	-3.5	-41.2	0.18	-0.11	-5.43
6,602.0	2.30	299.00	6,599.0	42.5	-6.4	-42.4	0.98	0.85	15.00
6,697.0	2.60	292.80	6,693.9	44.3	-10.0	-44.1	0.42	0.32	-6.53
6,792.0	2.60	289.30	6,788.8	45.8	-14.1	-45.6	0.17	0.00	-3.68
6,886.0	3.00	286.30	6,882.7	47.2	-18.4	-47.0	0.45	0.43	-3.19
6,981.0	3.30	297.20	6,977.6	49.2	-23.2	-48.9	0.70	0.32	11.47
7,075.0	3.50	294.90	7,071.4	51.6	-28.3	-51.2	0.26	0.21	-2.45
7,170.0	3.60	297.90	7,166.2	54.2	-33.5	-53.8	0.22	0.11	3.16
7,264.0	3.20	299.50	7,260.1	56.9	-38.4	-56.4	0.44	-0.43	1.70
7,359.0	3.30	317.80	7,354.9	60.2	-42.6	-59.7	1.09	0.11	19.26
7,454.0	3.30	321.10	7,449.8	64.4	-46.1	-63.8	0.20	0.00	3.47
7,548.0	3.20	314.30	7,543.6	68.3	-49.7	-67.7	0.42	-0.11	-7.23
7,643.0	3.20	328.90	7,638.5	72.4	-53.0	-71.8	0.86	0.00	15.37
7,737.0	3.60	330.80	7,732.3	77.3	-55.7	-76.5	0.44	0.43	2.02
7,831.0	3.30	327.80	7,826.1	82.1	-58.6	-81.4	0.37	-0.32	-3.19
Cross 100' FNL@ 7883.1' MD / 7878.2' TVD									
7,883.1	3.19	327.91	7,878.2	84.6	-60.2	-83.8	0.21	-0.21	0.21
7,925.0	3.10	328.00	7,920.0	86.6	-61.4	-85.8	0.21	-0.21	0.22
8,019.0	2.90	328.00	8,013.9	90.7	-64.0	-89.9	0.21	-0.21	0.00
8,114.0	2.70	325.20	8,108.8	94.6	-66.6	-93.8	0.25	-0.21	-2.95
8,208.0	2.50	325.00	8,202.7	98.1	-69.0	-97.2	0.21	-0.21	-0.21
8,302.0	2.60	319.70	8,296.6	101.4	-71.6	-100.5	0.27	0.11	-5.64
8,397.0	1.90	323.60	8,391.5	104.3	-73.9	-103.4	0.75	-0.74	4.11
8,491.0	1.80	323.40	8,485.4	106.8	-75.7	-105.8	0.11	-0.11	-0.21
8,585.0	2.30	337.60	8,579.4	109.7	-77.3	-108.7	0.75	0.53	15.11
8,680.0	2.40	326.40	8,674.3	113.1	-78.1	-112.1	0.49	0.11	-11.79
8,775.0	1.60	323.10	8,769.2	115.8	-81.0	-114.8	0.85	-0.84	-3.47
8,869.0	1.00	357.20	8,863.2	117.7	-81.9	-116.6	1.01	-0.84	38.28
8,964.0	0.40	347.10	8,958.2	118.9	-82.0	-117.8	0.64	-0.63	-10.63
9,058.0	1.30	286.90	9,052.2	119.5	-83.1	-118.4	1.23	0.96	-64.04
9,153.0	1.70	279.80	9,147.2	120.0	-85.5	-118.9	0.46	0.42	-7.47
9,247.0	2.00	307.80	9,241.1	121.3	-88.2	-120.1	1.00	0.32	29.79
9,342.0	1.90	330.60	9,336.1	123.7	-90.2	-122.5	0.82	-0.11	24.00
9,437.0	1.90	327.60	9,431.0	126.4	-91.9	-125.2	0.10	0.00	-3.16
9,531.0	1.10	323.60	9,525.0	128.4	-93.2	-127.2	0.86	-0.85	-4.26
9,625.0	0.50	353.10	9,619.0	129.6	-93.8	-128.3	0.75	-0.64	31.38
9,719.0	0.30	90.80	9,713.0	130.0	-93.6	-128.7	0.66	-0.21	103.94
9,814.0	1.10	39.30	9,808.0	130.7	-92.8	-129.4	0.99	0.84	-54.21
9,909.0	0.70	339.90	9,903.0	131.9	-92.4	-130.7	1.01	-0.42	-62.53
10,004.0	1.70	300.00	9,997.9	133.2	-93.8	-131.9	1.31	1.05	-42.00
10,099.0	1.40	312.50	10,092.9	134.6	-95.9	-133.4	0.47	-0.32	13.16
10,193.0	1.40	358.40	10,186.9	136.6	-96.8	-135.3	1.16	0.00	48.83
10,287.0	1.30	14.90	10,280.8	138.7	-96.5	-137.5	0.43	-0.11	17.55
10,382.0	1.40	357.30	10,375.8	140.9	-96.3	-139.7	0.45	0.11	-18.53



Survey Report



Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Red Hills West 21 WDCN Fed Com #1H
Project:	Lea County, New Mexico (Nad 83)	TVD Reference:	WELL @ 3180.0usft (Patterson #230)
Site:	Sec 21 T26S R32E	MD Reference:	WELL @ 3180.0usft (Patterson #230)
Well:	Red Hills West 21 WDCN Fed 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)
10,476.0	1.00	303.40	10,469.8	142.5	-97.1	-141.3	1.22	-0.43	-57.34
10,571.0	0.20	275.40	10,564.8	143.0	-97.9	-141.7	0.87	-0.84	-29.47
10,666.0	1.00	59.20	10,659.8	143.5	-97.4	-142.2	1.23	0.84	151.37
10,760.0	1.20	49.40	10,753.8	144.5	-95.9	-143.3	0.29	0.21	-10.43
10,855.0	1.20	44.10	10,848.8	145.9	-94.5	-144.6	0.12	0.00	-5.58
10,949.0	0.60	28.80	10,942.7	147.0	-93.5	-145.8	0.68	-0.64	-16.28
11,044.0	0.80	291.60	11,037.7	147.7	-93.9	-146.5	1.11	0.21	-102.32
11,139.0	1.10	271.20	11,132.7	148.0	-95.4	-146.7	0.47	0.32	-21.47
11,198.0	1.10	264.40	11,191.7	147.9	-96.6	-146.7	0.22	0.00	-11.53
11,259.0	0.90	257.10	11,252.7	147.8	-97.6	-146.5	0.39	-0.33	-11.97
11,291.0	0.10	246.20	11,284.7	147.7	-97.9	-146.4	2.51	-2.50	-34.06
11,323.0	1.70	199.30	11,316.7	147.2	-98.1	-145.9	5.10	5.00	-146.56
11,354.0	2.60	198.10	11,347.7	146.1	-98.5	-144.8	2.91	2.90	-3.87
11,386.0	3.50	177.50	11,379.6	144.5	-98.6	-143.2	4.39	2.81	-64.38
11,416.0	6.00	183.00	11,409.5	142.0	-98.7	-140.7	8.46	8.33	18.33
11,448.0	7.80	190.20	11,441.3	138.2	-99.1	-136.9	6.23	5.63	22.50
11,479.0	14.40	181.70	11,471.7	132.2	-99.6	-130.9	21.88	21.29	-27.42
11,511.0	21.30	184.60	11,502.1	122.5	-100.2	-121.2	21.73	21.56	9.06
11,542.0	27.30	183.70	11,530.4	109.7	-101.1	-108.4	19.39	19.35	-2.90
11,574.0	34.00	180.50	11,557.9	93.5	-101.7	-92.1	21.54	20.94	-10.00
Cross 100' FNL@ 11589.5' MD / 11570.4' TVD									
11,589.5	38.38	177.61	11,570.4	84.3	-101.5	-83.0	30.30	28.24	-18.62
11,606.0	43.10	175.10	11,582.9	73.6	-100.8	-72.3	30.30	28.62	-15.24
11,637.0	49.20	169.40	11,604.4	51.4	-97.8	-50.2	23.71	19.68	-18.39
11,669.0	52.90	168.90	11,624.5	27.0	-93.1	-25.8	11.63	11.56	-1.56
11,701.0	56.10	172.20	11,643.1	1.3	-88.8	-0.2	13.05	10.00	10.31
11,732.0	59.00	172.10	11,659.7	-24.8	-85.2	25.7	9.36	9.35	-0.32
11,764.0	63.80	170.80	11,675.0	-52.4	-81.1	53.4	15.42	15.00	-4.06
11,795.0	68.20	170.30	11,687.6	-80.3	-76.4	81.3	14.27	14.19	-1.61
11,827.0	73.90	169.40	11,698.0	-110.1	-71.1	111.0	18.01	17.81	-2.81
11,859.0	75.60	171.20	11,706.4	-140.5	-65.9	141.3	7.59	5.31	5.63
11,890.0	77.10	173.50	11,713.7	-170.4	-61.9	171.1	8.68	4.84	7.42
11,922.0	78.20	175.40	11,720.6	-201.5	-58.8	202.2	6.74	3.44	5.94
11,953.0	78.70	177.00	11,726.8	-231.8	-56.8	232.5	5.31	1.61	5.16
11,984.0	78.60	177.30	11,732.9	-262.1	-55.3	262.8	1.00	-0.32	0.97
12,016.0	78.30	177.50	11,739.3	-293.4	-53.9	294.1	1.12	-0.94	0.63
12,047.0	78.70	177.30	11,745.5	-323.8	-52.5	324.4	1.44	1.29	-0.65
12,079.0	78.90	177.30	11,751.7	-355.1	-51.0	355.8	0.63	0.63	0.00
12,110.0	80.70	177.50	11,757.2	-385.6	-49.7	386.2	5.84	5.81	0.65
12,142.0	82.20	178.20	11,762.0	-417.2	-48.5	417.8	5.16	4.69	2.19
12,173.0	83.70	179.30	11,765.8	-448.0	-47.8	448.6	5.98	4.84	3.55
12,205.0	85.70	179.60	11,768.7	-478.9	-47.5	480.4	6.32	6.25	0.94
12,237.0	86.10	179.10	11,771.0	-511.8	-47.1	512.3	2.00	1.25	-1.56



Survey Report



Company: Mewbourne Oil Company
Project: Lea County, New Mexico (Nad 83)
Site: Sec 21 T26S R32E
Well: Red Hills West 21 W0CN Fed Com #1H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Red Hills West 21 W0CN Fed Com #1H
TVD Reference: WELL @ 3180.0usft (Patterson #230)
MD Reference: WELL @ 3180.0usft (Patterson #230)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)
12,268.0	87.90	178.80	11,772.6	-542.7	-46.6	543.3	5.89	5.81	-0.97
12,362.0	94.10	183.00	11,771.0	-636.6	-48.0	637.2	7.97	6.60	4.47
12,457.0	88.50	182.60	11,768.8	-731.5	-52.7	732.1	5.91	-5.89	-0.42
12,552.0	91.60	185.60	11,768.7	-826.2	-59.5	826.9	4.54	3.26	3.16
12,646.0	92.70	188.40	11,765.2	-919.4	-70.9	920.3	3.20	1.17	2.98
12,740.0	93.10	187.70	11,760.5	-1,012.4	-84.1	1,013.4	0.86	0.43	-0.74
12,835.0	92.90	184.60	11,755.5	-1,106.7	-94.2	1,107.8	3.27	-0.21	-3.26
12,929.0	88.00	178.80	11,754.7	-1,200.6	-97.0	1,201.7	8.08	-5.21	-6.17
13,024.0	83.60	176.80	11,761.7	-1,295.2	-93.4	1,296.3	5.09	-4.63	-2.11
13,118.0	85.50	176.30	11,770.6	-1,388.6	-87.7	1,389.6	2.09	2.02	-0.53
13,212.0	89.40	176.80	11,774.8	-1,482.3	-82.1	1,483.3	4.18	4.15	0.53
13,307.0	90.00	176.50	11,775.3	-1,577.2	-76.5	1,578.0	0.71	0.63	-0.32
13,402.0	90.80	176.30	11,774.6	-1,672.0	-70.6	1,672.8	0.87	0.84	-0.21
13,497.0	90.50	177.50	11,773.6	-1,766.8	-65.4	1,767.5	1.30	-0.32	1.26
13,591.0	89.40	178.40	11,773.7	-1,860.8	-62.1	1,861.4	1.51	-1.17	0.96
13,686.0	90.80	178.80	11,773.5	-1,955.7	-59.8	1,956.4	1.53	1.47	0.42
13,781.0	88.30	179.40	11,774.2	-2,050.7	-58.3	2,051.3	2.71	-2.63	0.63
13,875.0	85.70	178.90	11,779.2	-2,144.6	-56.9	2,145.1	2.82	-2.77	-0.53
13,970.0	90.90	178.60	11,782.0	-2,239.5	-54.8	2,240.0	5.48	5.47	-0.32
14,064.0	87.10	178.90	11,783.6	-2,333.4	-52.7	2,333.9	4.06	-4.04	0.32
14,159.0	91.10	177.50	11,785.1	-2,428.3	-49.8	2,428.8	4.46	4.21	-1.47
14,254.0	87.10	176.50	11,786.6	-2,523.2	-44.8	2,523.5	4.34	-4.21	-1.05
14,348.0	92.40	178.90	11,787.0	-2,617.1	-41.0	2,617.4	6.19	5.64	2.55
14,443.0	90.80	180.00	11,784.4	-2,712.0	-40.1	2,712.3	2.04	-1.68	1.16
14,537.0	87.60	179.10	11,785.7	-2,806.0	-39.4	2,806.3	3.54	-3.40	-0.96
14,632.0	90.70	179.80	11,787.1	-2,901.0	-38.5	2,901.2	3.35	3.26	0.74
14,726.0	91.70	180.70	11,785.1	-2,994.9	-38.9	2,995.2	1.43	1.06	0.96
14,821.0	86.10	180.00	11,786.9	-3,089.9	-39.5	3,090.1	5.94	-5.89	-0.74
14,915.0	85.10	179.80	11,794.1	-3,183.6	-39.3	3,183.8	1.08	-1.06	-0.21
15,010.0	91.90	180.50	11,796.6	-3,278.5	-39.5	3,278.8	7.20	7.16	0.74
15,104.0	91.00	180.90	11,794.2	-3,372.5	-40.7	3,372.7	1.05	-0.96	0.43
15,199.0	86.70	181.40	11,796.2	-3,467.4	-42.6	3,467.7	4.56	-4.53	0.53
15,294.0	87.50	181.00	11,801.0	-3,562.3	-44.6	3,562.5	0.94	0.84	-0.42
15,389.0	92.20	180.00	11,801.2	-3,657.2	-45.4	3,657.5	5.06	4.95	-1.05
15,483.0	92.10	180.50	11,797.7	-3,751.2	-45.8	3,751.5	0.54	-0.11	0.53
15,578.0	89.60	180.10	11,796.3	-3,846.2	-46.3	3,846.4	2.67	-2.63	-0.42
15,672.0	90.00	181.70	11,796.6	-3,940.1	-47.8	3,940.4	1.75	0.43	1.70
15,767.0	89.60	182.60	11,796.9	-4,035.1	-51.4	4,035.4	1.04	-0.42	0.95
15,862.0	88.80	183.10	11,798.3	-4,129.9	-56.1	4,130.3	0.99	-0.84	0.53
15,956.0	88.70	182.10	11,800.3	-4,223.8	-60.3	4,224.2	1.07	-0.11	-1.06
16,050.0	90.10	179.60	11,801.3	-4,317.8	-61.7	4,318.2	3.05	1.49	-2.66
16,145.0	91.40	177.90	11,800.0	-4,412.8	-59.7	4,413.2	2.25	1.37	-1.79
16,240.0	89.30	177.00	11,799.5	-4,507.7	-55.4	4,508.0	2.40	-2.21	-0.95



Survey Report



Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Red Hills West 21 W0CN Fed Com #1H
Project:	Lea County, New Mexico (Nad 83)	TVD Reference:	WELL @ 3180.0usft (Patterson #230)
Site:	Sec 21 T26S R32E	MD Reference:	WELL @ 3180.0usft (Patterson #230)
Well:	Red Hills West 21 W0CN Fed 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)
16,334.0	88.20	176.60	11,801.5	-4,601.5	-50.2	4,601.8	1.25	-1.17	-0.43
16,429.0	91.70	177.00	11,801.6	-4,696.3	-44.9	4,696.5	3.71	3.68	0.42
16,524.0	87.80	176.60	11,802.0	-4,791.2	-39.6	4,791.3	4.13	-4.11	-0.42
16,619.0	90.70	176.60	11,803.3	-4,886.0	-34.0	4,886.0	3.05	3.05	0.00
16,713.0	91.30	176.80	11,801.6	-4,979.8	-28.5	4,979.8	0.67	0.64	0.21
16,730.0	88.80	176.30	11,801.6	-4,996.8	-27.5	4,996.7	15.00	-14.71	-2.94
TD @ 16790.0' MD / 11802.9' TVD									
16,790.0	88.80	176.30	11,802.9	-5,056.6	-23.7	5,056.5	0.00	0.00	0.00

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
707.0	706.2	9.0	24.9	Gyro Tie In @ 707.0' MD / 706.2' TVD
7,883.1	7,878.2	84.6	-60.2	Cross 100' FNL @ 7883.1' MD / 7878.2' TVD
11,589.5	11,570.4	84.3	-101.5	Cross 100' FNL @ 11589.5' MD / 11570.4' TVD
16,790.0	11,802.9	-5,056.6	-23.7	TD @ 16790.0' MD / 11802.9' TVD