



NM OIL CONSERVATION
ARTESIA DISTRICT

MAY 04 2017

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30-015-43800

Mewbourne Oil Company

Eddy County, New Mexico

Sec 12, T-26-S, R-31-E

Big Sinks 1 W1PA Fed Com #2H

Wellbore #1

Survey: MWD Surveys

QES Survey Report

03 February, 2017



Quintana Energy Services

11390 FM 830
Willis, TX 77318
Phone: (936) 856-4332
Fax: (936) 856-8678



Survey Certification Sheet

Company	Job Number	Date
Mewbourne Oil Company	WT-170072	2/3/2017

Lease	Well Name	County & State
Sec12,T-26-S,R-31-E	Big Sinks 1 W1PAFedCom #2H	Eddy, NM

API No.	Survey Depth Range	Survey Type
30-015-43800	11105 feet to 17430 feet MD	MWD

Sidetrack Information	Directional Supervisor/Surveyor
N/A	Agee Combs

Certification Statement

The data and calculations for this survey have been checked by me and conform to the standards and procedures set forth by Quintana Energy Services (QES). This report represents a true and correct directional survey of this well based on the original data obtained at the well site. Wellbore coordinates are calculated using minimum curvature.

Christopher Hughes

Digitally signed by Christopher Hughes
DN: cn=Christopher Hughes, o=QES, ou=compliance,
email=chrish@qeslp.com, c=US
Date: 2017.02.03 11:53:43 -06'00'

Christopher Hughes
MWD Compliance Manager
Quintana Energy Services

Survey Report

QES

Company: Mewbourne Oil Company
Project: Eddy County, New Mexico
Site: Sec 12, T-26-S, R-31-E
Well: Big Sinks 1 W1PA Fed Com #2H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Big Sinks 1 W1PA Fed Com #2H
TVD Reference: WELL @ 3288.0usft (Patterson #243)
MD Reference: WELL @ 3288.0usft (Patterson #243)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM5002

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 12, T-26-S, R-31-E

Site Position: **From:** Map **Position Uncertainty:** 0.0 usft
Northing: 387,349.30 usft **Easting:** 688,866.40 usft **Slot Radius:** 13-3/16 "
Latitude: 32° 3' 48.500 N **Longitude:** 103° 43' 25.180 W **Grid Convergence:** 0.32 °

Well Big Sinks 1 W1PA Fed Com #2H

Well Position **+N/-S** 0.0 usft **+E/-W** 0.0 usft **Position Uncertainty** 0.0 usft
Wellhead Elevation: 0.0 usft
Ground Level: 3,261.0 usft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	12/30/2016	7.06	59.90	47,875

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)	Direction (°)
	0.0	0.0	0.0	359.68

Survey Program **Date** 1/30/2017

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	11,105.0	GYRO (Wellbore #1)	Good_gyro	Good Gyro
11,350.0	17,430.0	MWD Surveys (Wellbore #1)	MWD default	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)
Gyro Tie-In @ 11105' MD / 11100' TVD									
11,105.0	1.48	222.95	11,099.8	-207.2	50.9	-207.5	0.00	0.00	0.00
11,350.0	2.30	258.60	11,344.6	-210.5	43.9	-210.7	0.57	0.33	14.55
11,389.0	1.90	259.50	11,383.6	-210.7	42.5	-211.0	1.03	-1.03	2.31
11,451.0	2.90	303.60	11,445.6	-210.1	40.2	-210.3	3.27	1.61	71.13
11,482.0	5.90	339.50	11,476.5	-208.1	38.9	-208.3	12.70	9.68	115.81
11,514.0	8.80	352.10	11,508.2	-204.2	38.0	-204.4	10.32	9.06	39.38
11,545.0	13.20	354.80	11,538.6	-198.3	37.4	-198.5	14.29	14.19	8.71
11,576.0	17.10	355.80	11,568.6	-190.2	36.7	-190.4	12.61	12.58	3.23
11,607.0	19.80	358.30	11,598.0	-180.4	36.2	-180.6	9.07	8.71	8.06

Survey Report

QES

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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM5002

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)
11,639.0	24.00	358.50	11,627.6	-168.5	35.9	-168.7	13.13	13.13	0.63
11,670.0	26.40	355.70	11,655.7	-155.3	35.2	-155.5	8.64	7.74	-9.03
11,701.0	29.70	354.40	11,683.0	-140.8	34.0	-141.0	10.83	10.65	-4.19
11,733.0	34.00	352.90	11,710.2	-124.0	32.1	-124.2	13.66	13.44	-4.69
11,764.0	38.20	353.20	11,735.3	-105.9	29.9	-106.1	13.56	13.55	0.97
11,795.0	41.20	353.90	11,759.1	-86.2	27.7	-86.4	9.78	9.68	2.26
11,827.0	46.30	354.60	11,782.2	-64.2	25.4	-64.4	16.01	15.94	2.19
11,858.0	49.30	354.80	11,803.0	-41.3	23.3	-41.5	9.69	9.68	0.65
11,889.0	52.10	355.30	11,822.7	-17.4	21.3	-17.6	9.12	9.03	1.61
11,921.0	56.40	355.30	11,841.4	8.4	19.1	8.3	13.44	13.44	0.00
11,952.0	60.40	354.30	11,857.6	34.7	16.7	34.6	13.19	12.90	-3.23
11,983.0	64.00	354.30	11,872.1	62.0	14.0	61.9	11.61	11.61	0.00
12,014.0	65.20	354.40	11,885.4	89.9	11.2	89.8	3.88	3.87	0.32
12,045.0	67.30	355.10	11,897.8	118.1	8.7	118.1	7.08	6.77	2.26
12,077.0	67.90	355.50	11,910.0	147.6	6.2	147.6	2.20	1.88	1.25
12,108.0	68.00	355.70	11,921.7	176.3	4.0	176.2	0.68	0.32	0.65
12,150.0	68.40	356.00	11,937.3	215.1	1.2	215.1	1.16	0.95	0.71
12,204.0	68.40	355.30	11,957.2	265.2	-2.6	265.2	1.21	0.00	-1.30
12,235.0	68.50	356.00	11,968.5	294.0	-4.8	294.0	2.12	0.32	2.26
12,267.0	68.50	356.40	11,980.3	323.7	-6.8	323.7	1.16	0.00	1.25
12,298.0	68.20	356.50	11,991.7	352.4	-8.5	352.5	1.01	-0.97	0.32
12,329.0	69.30	355.80	12,002.9	381.3	-10.5	381.3	4.13	3.55	-2.26
12,360.0	70.20	355.00	12,013.7	410.2	-12.8	410.3	3.78	2.90	-2.58
12,392.0	71.40	354.30	12,024.2	440.3	-15.6	440.4	4.28	3.75	-2.19
12,423.0	73.10	353.20	12,033.6	469.7	-18.9	469.8	6.44	5.48	-3.55
12,455.0	75.60	352.30	12,042.3	500.2	-22.7	500.4	8.27	7.81	-2.81
12,486.0	77.90	351.60	12,049.4	530.1	-27.0	530.3	7.74	7.42	-2.26
12,517.0	80.60	350.70	12,055.2	560.2	-31.7	560.4	9.16	8.71	-2.90
12,548.0	82.80	349.90	12,059.6	590.4	-36.8	590.6	7.54	7.10	-2.58
12,580.0	86.30	350.20	12,062.7	621.8	-42.3	622.0	10.98	10.94	0.94
12,611.0	88.10	350.20	12,064.2	652.3	-47.6	652.6	5.81	5.81	0.00
12,642.0	90.20	352.10	12,064.6	682.9	-52.4	683.2	9.13	6.77	6.13
12,737.0	90.00	350.00	12,064.5	777.4	-62.2	777.8	4.11	-0.21	4.11
12,831.0	86.50	359.20	12,067.4	871.3	-66.1	871.6	5.04	-3.72	3.40
12,925.0	85.70	358.80	12,073.7	965.0	-67.8	965.4	0.95	-0.85	-0.43
13,019.0	90.10	358.50	12,077.2	1,058.9	-70.0	1,059.3	4.69	4.68	-0.32
13,112.0	91.10	358.80	12,076.2	1,151.9	-72.2	1,152.3	1.12	1.08	0.32
13,206.0	91.40	0.10	12,074.2	1,245.9	-73.1	1,246.2	1.42	0.32	1.38
13,299.0	90.40	359.50	12,072.7	1,338.8	-73.4	1,339.2	1.25	-1.08	-0.65
13,393.0	83.40	359.50	12,077.8	1,432.6	-74.2	1,433.0	7.45	-7.45	0.00
13,487.0	83.20	359.20	12,088.8	1,526.0	-75.3	1,526.4	0.38	-0.21	-0.32
13,581.0	91.80	0.20	12,092.8	1,619.8	-75.8	1,620.2	9.21	9.15	1.06
13,674.0	93.20	0.90	12,088.8	1,712.7	-74.9	1,713.1	1.68	1.51	0.75

Survey Report

QES

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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)
13,768.0	91.50	1.10	12,084.9	1,806.6	-73.3	1,807.0	1.82	-1.81	0.21
13,862.0	91.20	0.60	12,082.7	1,900.6	-71.9	1,901.0	0.62	-0.32	-0.53
13,956.0	91.40	359.50	12,080.6	1,994.6	-71.8	1,994.9	1.19	0.21	-1.17
14,050.0	90.90	359.00	12,078.7	2,088.5	-73.0	2,088.9	0.75	-0.53	-0.53
14,144.0	90.10	359.00	12,077.9	2,182.5	-74.6	2,182.9	0.85	-0.85	0.00
14,237.0	91.00	0.10	12,077.0	2,275.5	-75.4	2,275.9	1.53	0.97	1.18
14,331.0	90.60	359.20	12,075.7	2,369.5	-76.0	2,369.9	1.05	-0.43	-0.96
14,425.0	90.90	359.40	12,074.4	2,463.5	-77.1	2,463.9	0.38	0.32	0.21
14,518.0	90.70	358.80	12,073.2	2,556.5	-78.6	2,556.9	0.68	-0.22	-0.65
14,612.0	91.50	359.90	12,071.3	2,650.4	-79.6	2,650.8	1.45	0.85	1.17
14,706.0	92.20	359.90	12,068.3	2,744.4	-79.8	2,744.8	0.74	0.74	0.00
14,799.0	91.30	0.60	12,065.5	2,837.3	-79.4	2,837.7	1.23	-0.97	0.75
14,894.0	87.90	0.40	12,066.1	2,932.3	-78.6	2,932.7	3.59	-3.58	-0.21
14,988.0	88.30	0.60	12,069.3	3,026.3	-77.7	3,026.6	0.48	0.43	0.21
15,082.0	90.30	1.30	12,070.4	3,120.2	-76.2	3,120.6	2.25	2.13	0.74
15,175.0	89.30	0.90	12,070.7	3,213.2	-74.4	3,213.6	1.16	-1.08	-0.43
15,269.0	90.20	1.30	12,071.1	3,307.2	-72.6	3,307.5	1.05	0.96	0.43
15,363.0	90.70	1.30	12,070.4	3,401.2	-70.5	3,401.5	0.53	0.53	0.00
15,456.0	90.10	1.80	12,069.7	3,494.1	-67.9	3,494.5	0.84	-0.65	0.54
15,549.0	90.00	1.30	12,069.7	3,587.1	-65.4	3,587.4	0.55	-0.11	-0.54
15,643.0	90.00	1.10	12,069.7	3,681.1	-63.5	3,681.4	0.21	0.00	-0.21
15,736.0	88.10	359.50	12,071.2	3,774.1	-63.0	3,774.3	2.67	-2.04	-1.72
15,830.0	86.30	358.60	12,075.8	3,867.9	-64.5	3,868.2	2.14	-1.91	-0.96
15,925.0	88.70	358.80	12,079.9	3,962.8	-66.7	3,963.1	2.54	2.53	0.21
16,019.0	88.40	358.80	12,082.3	4,056.8	-68.6	4,057.1	0.32	-0.32	0.00
16,113.0	91.70	0.10	12,082.2	4,150.7	-69.5	4,151.1	3.77	3.51	1.38
16,207.0	92.30	359.40	12,079.0	4,244.7	-70.0	4,245.0	0.98	0.64	-0.74
16,300.0	93.50	359.20	12,074.3	4,337.5	-71.1	4,337.9	1.31	1.29	-0.22
16,394.0	91.30	0.10	12,070.3	4,431.5	-71.7	4,431.8	2.53	-2.34	0.96
16,487.0	89.80	0.80	12,069.4	4,524.4	-70.9	4,524.8	1.78	-1.61	0.75
16,581.0	89.30	0.60	12,070.2	4,618.4	-69.8	4,618.8	0.57	-0.53	-0.21
16,675.0	90.00	1.80	12,070.7	4,712.4	-67.8	4,712.7	1.48	0.74	1.28
16,768.0	89.80	1.10	12,070.9	4,805.4	-65.5	4,805.7	0.78	-0.22	-0.75
16,862.0	89.40	1.30	12,071.6	4,899.4	-63.5	4,899.6	0.48	-0.43	0.21
16,955.0	87.80	1.10	12,073.8	4,992.3	-61.5	4,992.6	1.73	-1.72	-0.22
17,049.0	91.80	3.00	12,074.2	5,086.2	-58.2	5,086.5	4.71	4.26	2.02
17,143.0	88.30	0.80	12,074.1	5,180.1	-55.1	5,180.4	4.40	-3.72	-2.34
17,236.0	88.30	0.40	12,076.8	5,273.1	-54.1	5,273.3	0.43	0.00	-0.43
17,331.0	92.40	0.40	12,076.3	5,368.1	-53.4	5,368.3	4.32	4.32	0.00
17,380.0	92.80	0.60	12,074.0	5,417.0	-53.0	5,417.2	0.91	0.82	0.41
TD @ 17430' MD / 12072' TVD									
17,430.0	92.80	0.60	12,071.6	5,467.0	-52.5	5,467.2	0.00	0.00	0.00

Survey Report



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Database: EDM5002

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
11,105.0	11,099.8	-207.2	50.9	Gyro Tie-In @ 11105' MD / 11100' TVD
17,430.0	12,071.6	5,467.0	-52.5	TD @ 17430' MD / 12072' TVD

Checked By: _____ Approved By: _____ Date: _____

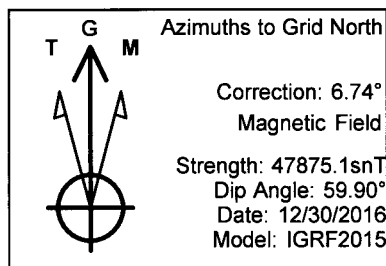
Company Name: Newbourn Oil Company
 Big Sinks 1 W1PA Fed Com #2H
 Eddy County, New Mexico
 Rig: Patterson #243
 Created By: Shane Robbins
 Date: 1/30/2017

Big Sinks 1 W1PA Fed Com #2H
 Eddy County, New Mexico
 Q170088 & WT-170072
 Design #2



WELL DETAILS: Big Sinks 1 W1PA Fed Com #2H			
		Ground Level:	3261.0
+N-S	+E-W	Northing	Easting
0.0	0.0	367348.30	688668.40
		Latitude	Longitude
		32° 5' 48.8"	103° 43' 28.190" W

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



ANNOTATIONS									
MD	Inc	Azi	TVD	+N-S	+E-W	Vsect	Departure	Annotation	
11105.0	1.48	222.95	1099.8	-207.2	50.9	-207.5	285.2	Gyro Tie-In @ 11105' MD / 11100' TVD	
12418.0	72.83	353.38	1632.2	-464.9	-18.3	465.0	975.4	Crossed Lease Line @ 12418' MD / 12032' TVD	
12754.3	89.38	356.59	2064.8	-794.7	-63.3	795.0	1308.4	Crossed Hard Line @ 12754' MD / 12085' TVD	
17430.0	92.80	0.00	2671.6	-5467.0	-52.5	5467.2	5981.4	TD @ 17430' MD / 12072' TVD	

