



HOBES OCD

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BTA Oil Producers, LLC

Lea County, NM

Sec 1, T26S, R32E

8105 JV-P Mesa #11H

Wellbore #1

Survey: MWD Surveys

QES Survey Report

06 January, 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
BTA Oil Producers	WT-160604	1/6/2017

Lease	Well Name	County & State
Sec1,T26S,R32E	8105 JV-P Mesa #11H	Lea, NM

API No.	Survey Depth Range	Survey Type
30-025-42847	9018 feet to 14944 feet MD	MWD

Sidetrack Information	Directional Supervisor/Surveyor
N/A	Daniel Longoria

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

A handwritten signature in black ink, appearing to read 'CHRISTOPHER HUGHES', is written over the printed name.

Christopher Hughes

MWD Compliance Manager

Quintana Energy Services

Digitally signed by Christopher Hughes

DN: cn=Christopher Hughes, o=QES,

ou=compliance, email=chrish@qeslp.com, c=US

Date: 2017.01.06 12:14:21 -06'00'



Survey Report



Company:	BTA Oil Producers, LLC	Local Co-ordinate Reference:	Well 8105 JV-P Mesa #11H
Project:	Lea County, NM	TVD Reference:	WELL @ 3349.0usft (Nomac #94)
Site:	Sec 1, T26S, R32E	MD Reference:	WELL @ 3349.0usft (Nomac #94)
Well:	8105 JV-P Mesa #11H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM5002

Project	Lea County, NM		
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 1, T26S, R32E		
Site Position:		Northing:	388,292.70 usft
From:	Map	Easting:	716,059.40 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 3' 56.206 N
		Longitude:	103° 38' 9.118 W
		Grid Convergence:	0.37 °

Well	8105 JV-P Mesa #11H		
Well Position	+N/-S	0.0 usft	Northing: 388,358.20 usft
	+E/-W	0.0 usft	Easting: 718,070.90 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Latitude:	32° 3' 56.725 N
		Longitude:	103° 37' 45.738 W
		Ground Level:	3,324.0 usft

Wellbore	Wellbore #1		
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	12/8/2016	7.03	59.91	47,892

Design	Wellbore #1		
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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	179.62

Survey Program		Date 1/4/2017	
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
100.0	9,018.0	Gyro (Wellbore #1)	Good_gyro
9,063.0	14,944.0	MWD Surveys (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)
Gyro Tie-In @ 9018' MD / 9016' TVD									
9,018.0	0.77	268.34	9,016.2	4.8	-70.8	-5.2	0.00	0.00	0.00
9,063.0	1.00	277.20	9,061.2	4.8	-71.5	-5.3	0.59	0.51	19.69
9,158.0	1.50	200.70	9,156.2	3.8	-72.7	-4.2	1.68	0.53	-80.53
9,253.0	13.90	185.10	9,250.1	-8.8	-74.2	8.3	13.12	13.05	-16.42
9,348.0	23.20	181.00	9,340.1	-39.0	-75.5	38.5	9.88	9.79	-4.32
9,443.0	29.70	180.30	9,425.1	-81.3	-76.0	80.7	6.85	6.84	-0.74
9,538.0	38.70	179.80	9,503.6	-134.6	-76.0	134.1	9.48	9.47	-0.53
9,633.0	48.40	182.60	9,572.4	-199.9	-77.5	199.4	10.41	10.21	2.95
9,728.0	55.20	183.80	9,631.1	-274.4	-81.7	273.9	7.23	7.16	1.26



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Site:	Sec 1, T26S, R32E	MD Reference:	WELL @ 3349.0usft (Nomac #94)
Well:	8105 JV-P Mesa #11H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	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)
9,823.0	61.20	180.70	9,681.1	-355.1	-84.8	354.5	6.90	6.32	-3.26
9,917.0	68.90	178.40	9,720.8	-440.2	-84.1	439.6	8.49	8.19	-2.45
10,012.0	79.90	180.00	9,746.3	-531.6	-82.9	531.0	11.69	11.58	1.68
10,107.0	87.50	180.10	9,756.7	-625.9	-82.9	625.4	8.00	8.00	0.11
10,227.0	87.30	179.60	9,762.1	-745.8	-82.6	745.2	0.45	-0.17	-0.42
10,322.0	88.80	179.60	9,765.4	-840.7	-82.0	840.2	1.58	1.58	0.00
10,417.0	88.60	179.40	9,767.5	-935.7	-81.1	935.1	0.30	-0.21	-0.21
10,512.0	89.30	180.10	9,769.3	-1,030.7	-80.7	1,030.1	1.04	0.74	0.74
10,607.0	88.70	177.70	9,770.9	-1,125.7	-78.9	1,125.1	2.60	-0.63	-2.53
10,702.0	89.10	177.70	9,772.7	-1,220.6	-75.1	1,220.0	0.42	0.42	0.00
10,797.0	89.40	177.70	9,774.0	-1,315.5	-71.3	1,315.0	0.32	0.32	0.00
10,892.0	90.00	177.90	9,774.5	-1,410.4	-67.6	1,409.9	0.67	0.63	0.21
10,987.0	88.60	177.70	9,775.6	-1,505.3	-64.0	1,504.9	1.49	-1.47	-0.21
11,082.0	87.80	178.70	9,778.6	-1,600.2	-61.0	1,599.8	1.35	-0.84	1.05
11,177.0	88.50	179.40	9,781.7	-1,695.2	-59.4	1,694.7	1.04	0.74	0.74
11,272.0	86.70	177.50	9,785.7	-1,790.0	-56.9	1,789.6	2.75	-1.89	-2.00
11,367.0	87.20	178.40	9,790.7	-1,884.8	-53.5	1,884.4	1.08	0.53	0.95
11,462.0	87.60	179.10	9,795.0	-1,979.7	-51.4	1,979.3	0.85	0.42	0.74
11,557.0	87.20	178.90	9,799.3	-2,074.6	-49.7	2,074.2	0.47	-0.42	-0.21
11,651.0	87.90	179.60	9,803.4	-2,168.5	-48.5	2,168.1	1.05	0.74	0.74
11,746.0	88.20	178.90	9,806.6	-2,263.4	-47.3	2,263.1	0.80	0.32	-0.74
11,841.0	88.10	179.40	9,809.7	-2,358.4	-45.9	2,358.0	0.54	-0.11	0.53
11,936.0	88.80	178.40	9,812.2	-2,453.3	-44.0	2,453.0	1.28	0.74	-1.05
12,031.0	90.00	177.30	9,813.2	-2,548.3	-40.5	2,547.9	1.71	1.26	-1.16
12,126.0	90.40	177.30	9,812.9	-2,643.1	-36.0	2,642.9	0.42	0.42	0.00
12,221.0	90.40	177.20	9,812.2	-2,738.0	-31.4	2,737.8	0.11	0.00	-0.11
12,316.0	90.50	177.20	9,811.5	-2,832.9	-26.8	2,832.7	0.11	0.11	0.00
12,411.0	90.50	177.90	9,810.7	-2,927.8	-22.7	2,927.6	0.74	0.00	0.74
12,505.0	90.60	178.00	9,809.7	-3,021.8	-19.4	3,021.6	0.15	0.11	0.11
12,600.0	91.00	178.20	9,808.4	-3,116.7	-16.2	3,116.5	0.47	0.42	0.21
12,695.0	89.30	177.90	9,808.2	-3,211.6	-13.0	3,211.5	1.82	-1.79	-0.32
12,790.0	90.60	177.70	9,808.3	-3,306.6	-9.3	3,306.4	1.38	1.37	-0.21
12,885.0	90.40	177.50	9,807.4	-3,401.5	-5.4	3,401.4	0.30	-0.21	-0.21
12,980.0	88.70	178.00	9,808.2	-3,496.4	-1.6	3,496.3	1.87	-1.79	0.53
13,075.0	88.30	177.50	9,810.7	-3,591.3	2.1	3,591.2	0.67	-0.42	-0.53
13,170.0	88.50	178.70	9,813.3	-3,686.2	5.2	3,686.2	1.28	0.21	1.26
13,265.0	88.50	178.70	9,815.8	-3,781.2	7.4	3,781.1	0.00	0.00	0.00
13,360.0	88.40	179.60	9,818.4	-3,876.1	8.8	3,876.1	0.95	-0.11	0.95
13,455.0	88.80	179.80	9,820.7	-3,971.1	9.3	3,971.0	0.47	0.42	0.21
13,550.0	89.30	179.80	9,822.3	-4,066.1	9.6	4,066.0	0.53	0.53	0.00
13,645.0	89.30	180.00	9,823.4	-4,161.1	9.8	4,161.0	0.21	0.00	0.21
13,740.0	90.10	180.00	9,823.9	-4,256.1	9.8	4,256.0	0.84	0.84	0.00
13,835.0	90.10	180.10	9,823.8	-4,351.1	9.7	4,351.0	0.11	0.00	0.11



Survey Report



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Design: Wellbore #1

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Survey

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13,930.0	91.00	180.90	9,822.8	-4,446.0	8.9	4,446.0	1.27	0.95	0.84
14,025.0	89.80	179.10	9,822.2	-4,541.0	8.9	4,541.0	2.28	-1.26	-1.89
14,119.0	90.20	179.30	9,822.2	-4,635.0	10.2	4,635.0	0.48	0.43	0.21
14,214.0	89.70	178.90	9,822.3	-4,730.0	11.7	4,730.0	0.67	-0.53	-0.42
14,309.0	89.70	179.30	9,822.8	-4,825.0	13.2	4,825.0	0.42	0.00	0.42
14,404.0	90.00	179.30	9,823.0	-4,920.0	14.3	4,920.0	0.32	0.32	0.00
14,499.0	90.00	179.10	9,823.0	-5,015.0	15.7	5,015.0	0.21	0.00	-0.21
14,594.0	90.10	179.80	9,822.9	-5,110.0	16.6	5,110.0	0.74	0.11	0.74
14,689.0	90.60	180.30	9,822.3	-5,205.0	16.5	5,205.0	0.74	0.53	0.53
14,784.0	89.30	178.90	9,822.4	-5,300.0	17.2	5,300.0	2.01	-1.37	-1.47
14,879.0	89.60	179.60	9,823.3	-5,395.0	18.4	5,395.0	0.80	0.32	0.74
TD @ 14944' MD / 9824' TVD									
14,944.0	89.60	179.60	9,823.8	-5,460.0	18.9	5,460.0	0.00	0.00	0.00

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9,018.0	9,016.2	4.8	-70.8	Gyro Tie-In @ 9018' MD / 9016' TVD
14,944.0	9,823.8	-5,460.0	18.9	TD @ 14944' MD / 9824' TVD

Checked By: _____ Approved By: _____ Date: _____