

Company Name: Jay-Bee Oil & Gas
 Dopey 4
 Tyler County
 Rig: Patterson #581
 Created By: Chase Chambers
 Date: 2/9/2018

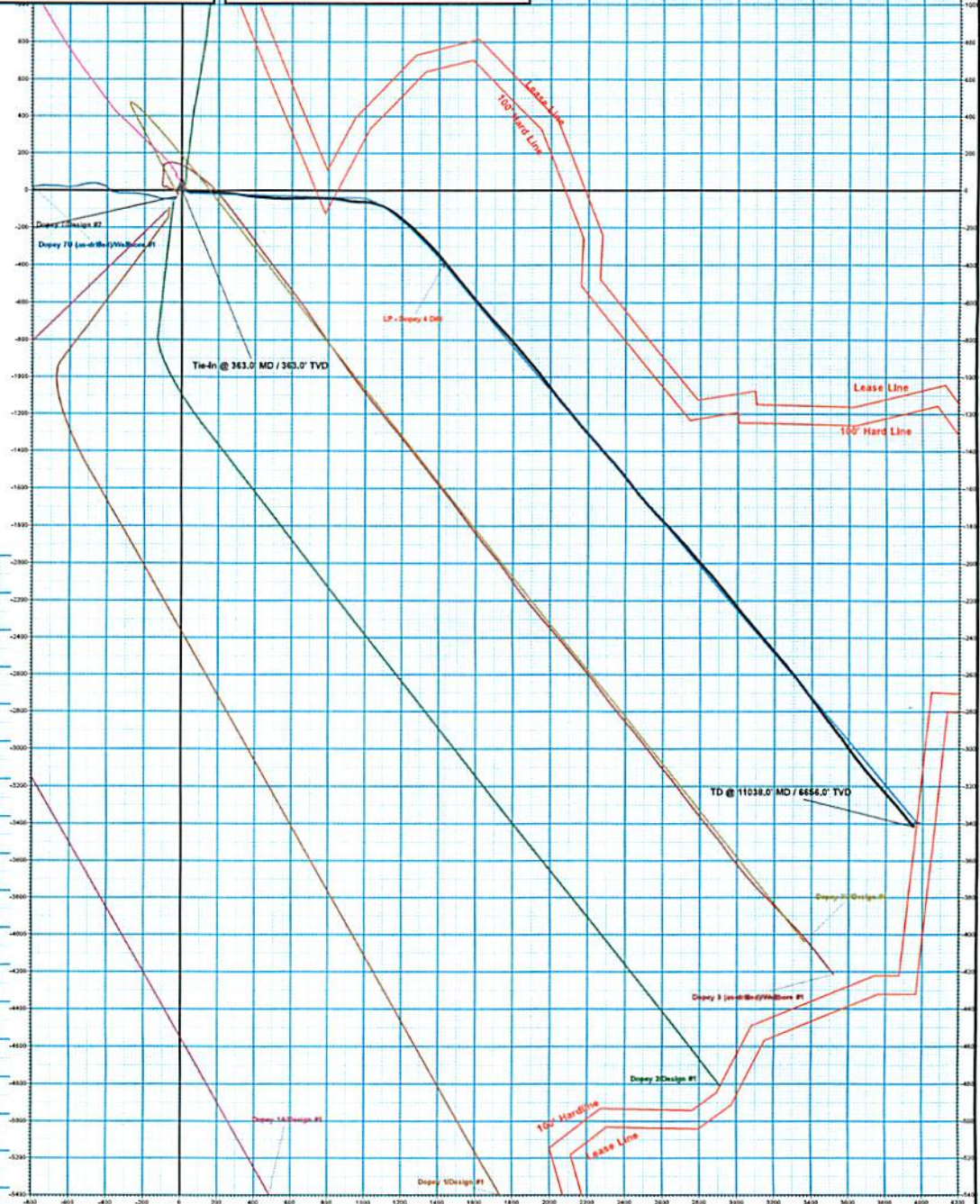
Dopey 4
 Tyler County
 Q180151 & AM-180133
 Design #4

PROJECT DETAILS: Tyler County
 Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: West Virginia Northern Zone
 System Datum: Mean Sea Level

WELL DETAILS: Dopey 4
 Ground Level: 910.7
 Easting: 160918.22
 Latitude: 39° 26' 17.789 N
 Longitude: 80° 48' 20.812 W



G
M **T**
 Azimuths to Grid North
 True North: 0.81°
 Magnetic North: -7.78°
 Magnetic Field
 Strength: 51935.3snT
 Dip Angle: 66.64°
 Date: 1/27/2018
 Model: IGRF2015



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	Vsect	Target
1	363.0	0.66	75.80	363.0	2.2	2.1	0.00	0.00	0.2	Gyro Se-in
2	500.0	0.66	75.80	500.0	2.6	3.6	0.00	0.00	1.1	Build 4" / 100'
3	602.2	4.58	114.86	602.1	1.0	7.9	4.00	44.88	5.4	EOB @ 4.58" Inc. / 114.86° Azm
4	1084.3	4.58	114.86	1082.6	-15.2	42.8	0.00	0.00	42.4	Drop 4" / 100'
5	1198.8	0.00	360.00	1197.0	-17.1	47.0	4.00	180.00	46.8	EOB @ Vertical
6	3391.1	0.00	360.00	3389.3	-17.1	47.0	0.00	0.00	46.8	Build 4" / 100'
7	3891.1	20.00	91.53	3879.2	-19.4	133.4	4.00	91.53	113.9	EOB @ 20" Inc. / 91.53° Azm
8	6364.1	20.00	91.53	6293.1	-42.0	978.9	0.00	0.00	771.1	Build 10" / 100'
9	7132.4	90.00	139.76	6630.0	-395.6	1427.7	10.00	60.00	1340.3	EOB @ 90" Inc. / 139.76° Azm
10	11065.7	90.00	139.76	6630.0	-395.6	3968.4	0.00	0.00	5222.9	PBHL - Dopey 4 TD @ 11065.7' MD / 6630' TVD

ANNOTATIONS

MD	Inc	Azi	TVD	+N-S	+E-W	VSecDeparture	Annotation
363.0	0.66	75.80	363.0	2.2	2.1	0.2	Tie-in @ 363.0' MD / 363.0' TVD
11038.0	68.40	139.30	6656.0	-3415.0	3952.9	5223.7	5520.6 TD @ 11038.0' MD / 6656.0' TVD

DESIGN TARGET DETAILS

Name	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude
PBHL - Dopey 4	6630.0	-395.6	3968.4	34095.64	1613128.63	39° 26' 44.783 N	80° 48' 29.327 W
LP - Dopey 4 D04	6630.0	-383.0	1427.7	343084.16	1610696.96	39° 26' 14.074 N	80° 48' 2.244 W

TD @ 11038.0' MD / 6656.0' TVD

PBHL - Dopey 4



Jay-Bee Oil & Gas

Tyler County

Dopey Pad

Dopey 4

Wellbore #1

Design: Wellbore #1

QES Survey Certification Report

09 February, 2018

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Quintana Energy Services

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



Survey Certification Sheet

Company	Job Number	Date
Jay- Bee Oil& Gas	AM-180133	4/23/2018

Lease	Well Name	County & State
N/A	Dopey #4	Tyler County, West Virginia

API No.	Survey Depth Range	Survey Type
47-095-02465	363 feet to 11038 feet MD	MWD

Sidetrack Information	Directional Supervisor/Surveyor
Click here to enter text.	Steve Spicer

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: 2018.04.24 13:21:31 -05'00'

Christopher Hughes
MWD Compliance Manager
Quintana Energy Services

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QES Survey Certification Report



Company:	Jay-Bee Oil & Gas	Local Co-ordinate Reference:	Well Dopey 4
Project:	Tyler County	TVD Reference:	well @ 931.3usft (Nomac #81)
Site:	Dopey Pad	MD Reference:	well @ 931.3usft (Nomac #81)
Well:	Dopey 4	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Project	Tyler County		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	West Virginia Northern Zone		

Site	Dopey Pad				
Site Position:		Northing:	344,194.77 usft	Latitude:	39° 26' 16.836 N
From:	Lat/Long	Easting:	1,609,090.36 usft	Longitude:	80° 46' 21.360 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	-0.81 °

Well	Dopey 4					
Well Position	+N/-S	0.0 usft	Northing:	344,287.16 usft	Latitude:	39° 26' 17.759 N
	+E/-W	0.0 usft	Easting:	1,609,158.22 usft	Longitude:	80° 46' 20.512 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	910.7 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	1/27/2018	-8.59	66.64	51,935.34985648

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	130.55

Survey Program	Date	2/9/2018			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
50.0	363.0	Gyro (Wellbore #1)	GYRO-NS	OWSG Gyrocompass Gyro	RECEIVED Office of Oil and Gas MAY 7 2019
422.0	11,038.0	QES MWD Surveys (Wellbore #1)	OWSG MWD - Standard	OWSG MWD - Standard	

Survey									
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)		
363.0	0.66	75.80	363.0	2.2	2.1	3.0	43.87		
Tie-In @ 363.0' MD / 363.0' TVD									
422.0	1.07	100.90	422.0	2.2	3.0	3.7	53.89		
469.0	1.25	99.29	469.0	2.0	3.9	4.4	62.87		
516.0	2.90	108.45	515.9	1.5	5.5	5.8	74.42		
563.0	5.06	108.99	562.8	0.5	8.6	8.7	86.71		
611.0	5.76	111.18	610.6	-1.1	12.9	12.9	94.71		
706.0	6.21	111.88	705.1	-4.7	22.1	22.6	102.01		
801.0	4.83	111.96	799.6	-8.1	30.6	31.6	104.86		
896.0	4.45	111.13	894.3	-10.9	37.7	39.3	106.17		
990.0	4.48	110.34	988.0	-13.5	44.6	46.6	106.88		

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QES Survey Certification Report



Company: Jay-Bee Oil & Gas	Local Co-ordinate Reference: Well Dopey 4	RECEIVED Office of Oil and Gas MAY 7 2019 WV Department of Environmental Protection
Project: Tyler County	TVD Reference: well @ 931.3usft (Nomac #81)	
Site: Dopey Pad	MD Reference: well @ 931.3usft (Nomac #81)	
Well: Dopey 4	North Reference: Grid	
Wellbore: Wellbore #1	Survey Calculation Method: Minimum Curvature	
Design: Wellbore #1	Database: EDM 5000.1 Single User Db	

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)
1,085.0	2.03	112.55	1,082.9	-15.5	49.6	52.0	107.31
1,180.0	0.28	316.72	1,177.9	-15.9	51.0	53.4	107.36
1,275.0	0.70	311.30	1,272.9	-15.4	50.4	52.7	106.98
1,369.0	0.68	319.96	1,366.9	-14.6	49.6	51.7	106.38
1,464.0	0.93	312.83	1,461.8	-13.6	48.7	50.6	105.63
1,558.0	0.35	235.85	1,555.8	-13.3	47.9	49.7	105.48
1,653.0	0.22	119.29	1,650.8	-13.5	47.8	49.7	105.79
1,748.0	0.30	49.37	1,745.8	-13.4	48.2	50.0	105.60
1,842.0	0.48	67.46	1,839.8	-13.1	48.7	50.4	105.09
1,937.0	0.44	54.45	1,934.8	-12.8	49.4	51.0	104.50
2,032.0	0.65	27.71	2,029.8	-12.1	49.9	51.4	103.61
2,136.0	0.50	50.08	2,133.8	-11.3	50.5	51.8	102.57
2,231.0	0.31	108.41	2,228.8	-11.1	51.1	52.3	102.24
2,325.0	0.37	106.70	2,322.8	-11.2	51.6	52.8	102.29
2,420.0	0.21	70.72	2,417.8	-11.3	52.1	53.3	102.22
2,515.0	0.52	81.37	2,512.8	-11.2	52.7	53.8	101.96
2,610.0	0.90	70.04	2,607.8	-10.8	53.8	54.9	101.39
2,705.0	1.17	79.19	2,702.8	-10.4	55.5	56.4	100.62
2,799.0	1.72	12.19	2,796.8	-8.8	56.7	57.4	98.86
2,894.0	0.98	283.88	2,891.8	-7.3	56.2	56.7	97.35
2,989.0	0.35	105.69	2,986.7	-7.1	55.7	56.2	97.30
3,084.0	0.67	120.70	3,081.7	-7.5	56.5	57.0	97.57
3,179.0	0.39	70.30	3,176.7	-7.7	57.2	57.8	97.64
3,273.0	0.40	359.55	3,270.7	-7.2	57.5	58.0	97.17
3,368.0	2.03	81.86	3,365.7	-6.7	59.2	59.6	96.43
3,466.0	5.04	95.86	3,463.5	-6.9	65.2	65.6	96.01
3,560.0	7.57	90.70	3,556.9	-7.4	75.5	75.9	95.57
3,655.0	10.61	92.77	3,650.7	-7.9	90.5	90.8	94.96
3,749.0	13.05	91.65	3,742.7	-8.6	109.8	110.1	94.47
3,844.0	15.58	88.81	3,834.8	-8.6	133.2	133.5	93.70
3,939.0	16.61	94.19	3,926.1	-9.4	159.5	159.8	93.36
4,033.0	18.97	94.48	4,015.6	-11.5	188.2	188.5	93.51
4,128.0	19.72	93.98	4,105.2	-13.8	219.6	220.0	93.61
4,223.0	19.57	94.22	4,194.7	-16.1	251.4	251.9	93.67
4,317.0	19.86	94.19	4,283.2	-18.5	283.0	283.6	93.73
4,411.0	20.28	99.18	4,371.5	-22.2	315.0	315.8	94.03
4,506.0	18.35	97.04	4,461.1	-26.7	346.1	347.2	94.41
4,601.0	19.39	96.74	4,551.0	-30.4	376.6	377.9	94.61
4,696.0	21.83	96.97	4,639.9	-34.4	409.8	411.3	94.79
4,791.0	20.35	96.02	4,728.5	-38.2	443.8	445.4	94.92
4,886.0	21.39	95.61	4,817.3	-41.7	477.5	479.3	94.99
4,980.0	19.55	91.91	4,905.4	-43.9	510.3	512.1	94.91
5,074.0	20.75	91.73	4,993.6	-44.9	542.6	544.5	94.73
5,169.0	19.64	90.74	5,082.8	-45.6	575.4	577.2	94.53



QES Survey Certification Report



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Project:	Tyler County	TVD Reference:	well @ 931.3usft (Nomac #81)
Site:	Dopey Pad	MD Reference:	well @ 931.3usft (Nomac #81)
Well:	Dopey 4	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

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Survey	MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)
	5,266.0	17.66	86.61	5,174.7	-44.9	606.4	608.1	94.24
	5,360.0	19.97	89.19	5,263.7	-43.9	636.7	638.2	93.94
	5,455.0	21.15	87.67	5,352.6	-42.9	670.0	671.4	93.67
	5,550.0	19.53	86.79	5,441.7	-41.4	703.0	704.2	93.37
	5,644.0	19.70	90.12	5,530.2	-40.5	734.5	735.7	93.16
	5,739.0	20.90	92.75	5,619.3	-41.4	767.5	768.6	93.08
	5,833.0	19.32	89.47	5,707.6	-42.0	799.8	800.9	93.01
	5,928.0	20.21	97.21	5,797.0	-43.9	831.8	832.9	93.02
	6,023.0	22.83	98.59	5,885.4	-48.8	866.3	867.7	93.22
	6,118.0	23.25	101.20	5,972.8	-55.1	902.9	904.6	93.49
	6,212.0	24.13	92.66	6,058.9	-59.6	940.3	942.2	93.63
	6,291.0	24.80	91.90	6,130.8	-60.9	973.0	974.9	93.58
	6,338.0	24.50	91.70	6,173.5	-61.6	992.6	994.5	93.55
	6,386.0	27.80	96.00	6,216.6	-63.0	1,013.7	1,015.6	93.56
	6,433.0	31.80	100.90	6,257.4	-66.5	1,036.8	1,038.9	93.67
	6,481.0	34.60	107.60	6,297.6	-73.0	1,062.2	1,064.7	93.93
	6,528.0	36.60	112.30	6,335.8	-82.4	1,087.9	1,091.0	94.33
	6,575.0	38.00	117.30	6,373.2	-94.3	1,113.7	1,117.7	94.84
	6,622.0	39.20	122.00	6,409.9	-108.8	1,139.2	1,144.3	95.46
	6,670.0	44.70	125.50	6,445.6	-126.7	1,165.8	1,172.7	96.20
	6,717.0	50.90	129.20	6,477.2	-147.9	1,193.4	1,202.5	97.06
	6,765.0	54.00	129.10	6,506.4	-171.9	1,222.9	1,234.9	98.00
	6,812.0	57.70	130.30	6,532.8	-196.7	1,252.8	1,268.2	98.92
	6,860.0	61.30	133.70	6,557.2	-224.4	1,283.5	1,303.0	99.92
	6,907.0	63.90	134.70	6,578.8	-253.5	1,313.5	1,337.7	100.92
	6,955.0	68.10	136.00	6,598.3	-284.7	1,344.3	1,374.1	101.96
	7,002.0	74.00	138.10	6,613.6	-317.2	1,374.5	1,410.7	103.00
	7,049.0	77.10	140.10	6,625.3	-351.6	1,404.3	1,447.7	104.06
	7,096.0	80.20	140.70	6,634.6	-387.1	1,433.7	1,485.0	105.11
	7,144.0	84.30	139.90	6,641.0	-423.7	1,464.1	1,524.1	106.14
	7,191.0	86.70	140.70	6,644.7	-459.8	1,494.0	1,563.1	107.11
	7,238.0	87.00	139.40	6,647.3	-495.7	1,524.1	1,602.7	108.02
	7,333.0	89.10	140.10	6,650.5	-568.2	1,585.5	1,684.2	109.72
	7,427.0	90.10	138.90	6,651.2	-639.7	1,646.5	1,766.4	111.23
	7,522.0	88.60	137.40	6,652.3	-710.4	1,709.9	1,851.6	112.56
	7,616.0	90.10	137.80	6,653.3	-779.8	1,773.3	1,937.2	113.74
	7,711.0	90.50	140.20	6,652.8	-851.5	1,835.6	2,023.5	114.89
	7,806.0	90.50	140.10	6,652.0	-924.5	1,896.4	2,109.8	115.99
	7,901.0	90.10	142.90	6,651.5	-998.8	1,955.6	2,195.9	117.06
	7,996.0	90.30	144.10	6,651.2	-1,075.2	2,012.1	2,281.3	118.12
	8,091.0	89.70	140.10	6,651.2	-1,150.1	2,070.4	2,368.4	119.05
	8,186.0	89.10	141.80	6,652.2	-1,223.9	2,130.3	2,456.8	119.88
	8,281.0	88.40	138.30	6,654.2	-1,296.7	2,191.2	2,546.2	120.61
	8,376.0	91.90	140.10	6,654.0	-1,368.6	2,253.3	2,636.4	121.27

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MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)
8,471.0	91.70	138.70	6,651.0	-1,440.7	2,315.1	2,726.8	121.89
8,566.0	90.80	140.60	6,648.9	-1,513.0	2,376.6	2,817.4	122.48
8,660.0	91.30	142.10	6,647.2	-1,586.4	2,435.3	2,906.4	123.08
8,755.0	89.70	139.30	6,646.4	-1,659.9	2,495.5	2,997.1	123.63
8,850.0	89.60	136.90	6,647.0	-1,730.6	2,558.9	3,089.2	124.07
8,944.0	89.40	137.50	6,647.8	-1,799.6	2,622.8	3,180.8	124.46
9,039.0	89.00	137.20	6,649.1	-1,869.5	2,687.1	3,273.5	124.83
9,134.0	89.80	139.60	6,650.1	-1,940.5	2,750.2	3,365.9	125.21
9,228.0	89.90	137.60	6,650.4	-2,011.0	2,812.3	3,457.4	125.57
9,323.0	91.90	139.30	6,648.9	-2,082.1	2,875.3	3,550.0	125.91
9,418.0	91.30	140.90	6,646.2	-2,154.9	2,936.2	3,642.2	126.28
9,512.0	90.40	141.60	6,644.8	-2,228.2	2,995.1	3,733.0	126.65
9,607.0	90.00	140.30	6,644.5	-2,302.0	3,054.9	3,825.2	127.00
9,702.0	89.50	140.60	6,644.9	-2,375.3	3,115.4	3,917.6	127.32
9,797.0	89.80	139.70	6,645.5	-2,448.2	3,176.3	4,010.3	127.62
9,892.0	89.00	139.10	6,646.5	-2,520.3	3,238.1	4,103.3	127.89
9,986.0	90.40	143.20	6,647.0	-2,593.5	3,297.1	4,194.9	128.19
10,081.0	90.10	142.80	6,646.6	-2,669.4	3,354.2	4,286.8	128.51
10,176.0	89.90	143.50	6,646.6	-2,745.4	3,411.2	4,378.8	128.83
10,270.0	89.90	144.10	6,646.7	-2,821.3	3,466.7	4,469.6	129.14
10,365.0	89.20	140.80	6,647.5	-2,896.6	3,524.6	4,562.1	129.41
10,459.0	90.30	145.10	6,647.9	-2,971.6	3,581.2	4,653.5	129.68
10,554.0	88.80	141.70	6,648.6	-3,047.8	3,637.9	4,745.9	129.96
10,649.0	89.40	140.20	6,650.1	-3,121.6	3,697.7	4,839.1	130.17
10,744.0	89.50	137.20	6,651.0	-3,192.9	3,760.4	4,933.1	130.33
10,839.0	89.20	138.80	6,652.1	-3,263.5	3,823.9	5,027.2	130.48
10,933.0	89.20	140.40	6,653.4	-3,335.1	3,884.9	5,120.1	130.65
10,985.0	88.40	139.30	6,654.5	-3,374.8	3,918.4	5,171.4	130.74
11,038.0	88.40	139.30	6,656.0	-3,415.0	3,952.9	5,223.8	130.82

TD @ 11038.0' MD / 6656.0' TVD

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
363.0	363.0	2.2	2.1	Tie-In @ 363.0' MD / 363.0' TVD
11,038.0	6,656.0	-3,415.0	3,952.9	TD @ 11038.0' MD / 6656.0' TVD

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