



Jay-Bee Oil & Gas

Tyler County

Larry Pad

Larry 03 U

Curve & Lateral

Design: Wellbore #1

QES Survey Report

03 February, 2017

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Environmental Protection





Survey Report



Company:	Jay-Bee Oil & Gas	Local Co-ordinate Reference:	Well Larry 03 U
Project:	Tyler County	TVD Reference:	well @ 738.4usft (Nomac #81)
Site:	Larry Pad	MD Reference:	well @ 738.4usft (Nomac #81)
Well:	Larry 03 U	North Reference:	Grid
Wellbore:	Curve & Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM5002

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	Larry Pad				
Site Position:		Northing:	358,188.64 usft	Latitude:	39° 28' 30.707 N
From:	Map	Easting:	1,578,758.47 usft	Longitude:	80° 52' 50.681 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.88 °

Well	Larry 03 U					
Well Position	+N/-S	0.0 usft	Northing:	358,198.23 usft	Latitude:	39° 28' 30.802 N
	+E/-W	0.0 usft	Easting:	1,578,761.28 usft	Longitude:	80° 52' 50.647 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	713.4 usft	

Wellbore	Curve & Lateral				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/31/2016	-8.48	66.79	52,112

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	10,362.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0		

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Survey Program	Date	12/29/2016			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
422.0	10,362.0	MWD (Pilot Hole)	MWD default	MWD - Standard	
10,397.0	17,956.0	MWD Surveys (Curve & Lateral)	MWD default	MWD - Standard	

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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)		
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
422.0	2.65	1.27	421.8	9.8	0.2	-9.4	0.63	0.63	0.00		
516.0	2.10	356.10	515.8	13.6	0.1	-13.2	0.63	-0.59	-5.50		
563.0	1.70	344.60	562.7	15.2	-0.1	-14.7	1.17	-0.85	-24.47		
611.0	1.80	350.61	610.7	16.6	-0.4	-16.2	0.44	0.21	12.52		
658.0	2.39	346.13	657.7	18.3	-0.8	-17.9	1.30	1.26	-9.53		
706.0	2.35	343.67	705.6	20.2	-1.3	-19.9	0.23	-0.08	-5.13		
753.0	2.18	329.35	752.6	21.9	-2.0	-21.7	1.25	-0.36	-30.47		
800.0	2.14	334.22	799.6	23.5	-2.8	-23.4	0.40	-0.09	10.36		
847.0	3.08	323.79	846.5	25.3	-4.0	-25.5	2.23	2.00	-22.19		



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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)
895.0	3.33	319.43	894.5	27.4	-5.6	-27.9	0.73	0.52	-9.08
942.0	3.75	313.90	941.4	29.5	-7.6	-30.4	1.15	0.89	-11.77
990.0	3.58	304.25	989.3	31.4	-10.0	-32.9	1.33	-0.35	-20.10
1,037.0	4.16	300.77	1,036.2	33.1	-12.7	-35.2	1.33	1.23	-7.40
1,084.0	4.86	307.42	1,083.0	35.2	-15.7	-38.0	1.86	1.49	14.15
1,131.0	5.01	305.55	1,129.8	37.6	-19.0	-41.1	0.47	0.32	-3.98
1,178.0	5.06	302.35	1,176.7	39.9	-22.4	-44.2	0.61	0.11	-6.81
1,225.0	5.53	302.52	1,223.5	42.2	-26.1	-47.4	1.00	1.00	0.36
1,273.0	5.57	306.48	1,271.2	44.8	-29.9	-50.9	0.80	0.08	8.25
1,320.0	5.23	307.11	1,318.0	47.5	-33.4	-54.4	0.73	-0.72	1.34
1,367.0	5.19	303.71	1,364.8	50.0	-36.9	-57.6	0.66	-0.09	-7.23
1,414.0	6.03	297.14	1,411.6	52.3	-40.9	-60.9	2.25	1.79	-13.98
1,462.0	5.82	296.37	1,459.3	54.5	-45.3	-64.1	0.47	-0.44	-1.60
1,509.0	6.13	293.40	1,506.1	56.6	-49.7	-67.2	0.93	0.66	-6.32
1,557.0	6.35	292.14	1,553.8	58.6	-54.5	-70.4	0.54	0.46	-2.63
1,651.0	5.90	291.88	1,647.3	62.3	-63.8	-76.4	0.48	-0.48	-0.28
1,746.0	5.23	285.08	1,741.8	65.3	-72.6	-81.4	0.99	-0.71	-7.16
1,840.0	5.56	284.21	1,835.4	67.5	-81.1	-85.7	0.36	0.35	-0.93
1,935.0	5.32	291.88	1,930.0	70.3	-89.7	-90.6	0.81	-0.25	8.07
1,992.0	4.88	292.40	1,986.8	72.2	-94.3	-93.6	0.78	-0.77	0.91
2,062.0	4.67	297.40	2,056.5	74.6	-99.6	-97.3	0.67	-0.30	7.14
2,126.0	5.05	304.40	2,120.3	77.4	-104.3	-101.2	1.10	0.59	10.94
2,220.0	6.46	304.44	2,213.8	82.8	-112.0	-108.3	1.50	1.50	0.04
2,315.0	6.33	300.28	2,308.2	88.4	-121.0	-116.0	0.51	-0.14	4.38
2,409.0	6.54	297.33	2,401.6	93.5	-130.2	-123.2	0.42	0.22	-3.14
2,503.0	6.24	297.33	2,495.0	98.3	-139.5	-130.2	0.32	-0.32	0.00
2,601.0	6.39	289.67	2,592.4	102.6	-149.4	-136.8	0.87	0.15	-7.82
2,696.0	6.78	296.24	2,686.8	106.8	-159.4	-143.5	0.89	0.11	6.92
2,790.0	6.69	304.95	2,780.2	112.4	-168.8	-151.3	1.09	-0.10	9.27
2,883.0	7.06	310.35	2,872.5	119.2	-177.6	-160.1	0.80	0.40	5.81
2,978.0	6.94	307.03	2,966.8	126.5	-186.7	-169.3	0.44	-0.13	-3.49
3,073.0	7.21	307.09	3,061.1	133.5	-196.0	-178.5	0.28	0.28	0.06
3,167.0	7.04	303.60	3,154.4	140.3	-205.5	-187.4	0.49	-0.18	-3.71
3,262.0	7.09	301.57	3,248.6	146.5	-215.3	-196.0	0.27	0.05	-2.14
3,357.0	6.35	309.04	3,343.0	152.9	-224.4	-204.5	1.20	-0.78	7.86
3,455.0	6.16	312.96	3,440.4	159.9	-232.5	-213.3	0.48	-0.19	4.00
3,549.0	6.91	310.75	3,533.8	167.1	-240.5	-222.2	0.84	0.80	-2.35
3,644.0	7.58	307.64	3,628.0	174.6	-249.7	-231.8	0.82	0.71	-3.27
3,739.0	8.20	308.24	3,722.1	182.6	-260.0	-242.2	0.66	0.65	0.63
3,834.0	7.65	306.24	3,816.2	190.6	-270.5	-252.5	0.65	-0.58	-2.11
3,928.0	6.58	305.76	3,909.5	197.4	-279.9	-261.5	1.14	-1.14	-0.51
4,023.0	6.38	309.95	4,003.9	204.0	-288.3	-269.9	0.54	-0.21	4.41
4,118.0	6.98	309.78	4,098.2	211.1	-296.8	-278.9	0.63	0.63	-0.18

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4,213.0	8.04	308.77	4,192.4	218.9	-306.4	-289.0	1.12	1.12	-1.06	
4,308.0	8.06	301.33	4,286.5	226.5	-317.3	-299.1	1.10	0.02	-7.83	
4,403.0	7.40	295.18	4,380.6	232.6	-328.5	-307.8	1.11	-0.69	-6.47	
4,501.0	5.78	295.73	4,478.0	237.4	-338.7	-315.0	1.65	-1.65	0.56	
4,595.0	6.37	300.03	4,571.5	242.1	-347.5	-321.7	0.79	0.63	4.57	
4,690.0	5.65	298.53	4,665.9	247.0	-356.1	-328.6	0.78	-0.76	-1.58	
4,785.0	5.92	303.02	4,760.4	251.9	-364.3	-335.4	0.55	0.28	4.73	
4,880.0	5.75	300.70	4,855.0	257.0	-372.5	-342.4	0.31	-0.18	-2.44	
4,976.0	5.49	301.10	4,950.5	261.8	-380.6	-349.1	0.27	-0.27	0.42	
5,071.0	6.00	304.34	5,045.0	266.9	-388.6	-356.1	0.64	0.54	3.41	
5,166.0	5.58	301.99	5,139.5	272.2	-396.6	-363.2	0.51	-0.44	-2.47	
5,261.0	6.28	304.22	5,234.0	277.6	-404.8	-370.5	0.78	0.74	2.35	
5,358.0	6.28	294.84	5,330.4	282.8	-414.0	-377.8	1.06	0.00	-9.67	
5,453.0	7.14	287.79	5,424.8	286.8	-424.4	-384.3	1.25	0.91	-7.42	
5,548.0	6.54	291.38	5,519.1	290.5	-435.0	-390.6	0.78	-0.63	3.78	
5,643.0	5.58	301.99	5,613.6	295.0	-444.0	-397.2	1.55	-1.01	11.17	
5,738.0	5.47	307.90	5,708.1	300.2	-451.5	-404.1	0.61	-0.12	6.22	
5,833.0	6.36	307.49	5,802.6	306.2	-459.2	-411.8	0.94	0.94	-0.43	
5,929.0	6.29	299.81	5,898.1	312.0	-468.0	-419.7	0.88	-0.07	-8.00	
6,024.0	5.43	290.19	5,992.6	316.2	-476.7	-425.9	1.37	-0.91	-10.13	
6,118.0	4.18	292.36	6,086.2	319.0	-484.1	-430.5	1.34	-1.33	2.31	
6,213.0	3.20	297.57	6,181.0	321.5	-489.6	-434.4	1.09	-1.03	5.48	
6,307.0	3.06	290.21	6,274.9	323.6	-494.3	-437.6	0.45	-0.15	-7.83	
6,402.0	2.93	294.86	6,369.8	325.5	-498.9	-440.6	0.29	-0.14	4.89	
6,496.0	3.05	289.72	6,463.6	327.4	-503.4	-443.5	0.31	0.13	-5.47	
6,591.0	3.24	293.46	6,558.5	329.3	-508.3	-446.6	0.29	0.20	3.94	
6,686.0	1.67	310.66	6,653.4	331.3	-511.8	-449.4	1.81	-1.65	18.11	
6,781.0	1.09	326.20	6,748.4	332.9	-513.3	-451.3	0.72	-0.61	16.36	
6,867.0	1.22	313.62	6,834.4	334.2	-514.5	-452.9	0.33	0.15	-14.63	
6,962.0	1.44	324.43	6,929.3	335.9	-515.9	-454.9	0.35	0.23	11.38	
7,151.0	1.61	324.58	7,118.3	340.0	-518.8	-459.6	0.09	0.09	0.08	
7,438.0	2.81	297.34	7,405.1	346.5	-527.4	-468.0	0.54	0.42	-9.49	
7,628.0	1.94	313.28	7,594.9	350.9	-533.9	-473.9	0.57	-0.46	8.39	
7,818.0	0.91	286.54	7,784.8	353.5	-537.7	-477.4	0.63	-0.54	-14.07	
8,105.0	0.79	296.47	8,071.8	355.0	-541.6	-479.9	0.07	-0.04	3.46	
8,390.0	0.23	348.63	8,356.8	356.5	-543.5	-481.7	0.24	-0.20	18.30	
8,675.0	0.29	37.13	8,641.8	357.6	-543.2	-482.7	0.08	0.02	17.02	
8,956.0	0.47	342.17	8,922.8	359.3	-543.1	-484.3	0.14	0.06	-19.56	
9,239.0	0.87	354.79	9,205.8	362.5	-543.6	-487.6	0.15	0.14	4.46	
9,522.0	1.94	357.55	9,488.7	369.4	-544.0	-494.4	0.38	0.38	0.98	
9,806.0	0.46	14.40	9,772.6	375.3	-544.0	-500.1	0.53	-0.52	5.93	
9,901.0	0.61	32.30	9,867.6	376.1	-543.6	-500.8	0.23	0.16	18.84	
9,983.0	1.00	40.30	9,949.6	377.0	-542.9	-501.5	0.49	0.48	9.76	

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10,077.0	0.90	18.60	10,043.6	378.4	-542.1	-502.6	0.39	-0.11	-23.09	
10,172.0	0.80	359.00	10,138.6	379.7	-541.9	-503.9	0.32	-0.11	-20.63	
10,267.0	0.80	346.20	10,233.6	381.0	-542.1	-505.2	0.19	0.00	-13.47	
Pilot Tie-in @ 10362' MD / 10329' TVD										
10,362.0	0.80	334.70	10,328.5	382.3	-542.5	-506.5	0.17	0.00	-12.11	
10,397.0	2.60	138.70	10,363.5	381.9	-542.1	-506.0	9.65	5.14	468.57	
10,444.0	8.10	156.50	10,410.3	378.1	-540.1	-501.8	12.09	11.70	37.87	
10,492.0	13.10	161.90	10,457.5	369.8	-537.0	-493.0	10.61	10.42	11.25	
10,539.0	15.80	164.80	10,503.0	358.6	-533.7	-481.3	5.95	5.74	6.17	
10,587.0	17.20	162.20	10,549.0	345.5	-529.8	-467.7	3.30	2.92	-5.42	
10,634.0	17.90	161.10	10,593.8	332.0	-525.4	-453.5	1.65	1.49	-2.34	
10,682.0	17.10	158.70	10,639.6	318.5	-520.4	-439.2	2.24	-1.67	-5.00	
10,729.0	21.00	161.70	10,684.0	304.0	-515.2	-423.9	8.55	8.30	6.38	
10,777.0	25.70	166.90	10,728.1	285.7	-510.2	-404.9	10.68	9.79	10.83	
10,824.0	29.60	167.90	10,769.7	264.4	-505.4	-383.1	8.36	8.30	2.13	
10,873.0	33.10	169.90	10,811.6	239.4	-500.6	-357.7	7.45	7.14	4.08	
10,920.0	37.80	172.60	10,849.8	212.5	-496.4	-330.6	10.54	10.00	5.74	
10,967.0	43.10	174.50	10,885.6	182.2	-493.0	-300.4	11.58	11.28	4.04	
11,014.0	47.90	176.50	10,918.5	148.8	-490.4	-267.4	10.65	10.21	4.26	
11,061.0	52.30	174.90	10,948.7	112.9	-487.7	-231.9	9.72	9.36	-3.40	
11,108.0	56.60	174.20	10,976.0	74.8	-484.1	-194.2	9.23	9.15	-1.49	
11,156.0	60.60	172.80	11,001.0	34.1	-479.4	-153.6	8.70	8.33	-2.92	
11,203.0	64.50	173.80	11,022.6	-7.3	-474.6	-112.3	8.51	8.30	2.13	
11,251.0	68.30	174.30	11,041.9	-51.0	-470.0	-68.8	7.97	7.92	1.04	
11,298.0	72.70	174.90	11,057.5	-95.1	-465.9	-25.1	9.44	9.36	1.28	
11,345.0	77.30	175.20	11,069.7	-140.4	-461.9	19.6	9.81	9.79	0.64	
11,392.0	80.20	175.30	11,078.9	-186.3	-458.1	65.1	6.17	6.17	0.21	
11,440.0	83.30	173.70	11,085.8	-233.6	-453.6	112.0	7.25	6.46	3.33	
11,487.0	86.60	174.70	11,089.9	-280.1	-448.8	158.2	7.33	7.02	2.13	
11,535.0	89.20	176.90	11,091.7	-328.0	-445.3	205.4	7.09	5.42	4.58	
11,629.0	93.60	173.30	11,089.4	-421.6	-437.3	298.0	6.05	4.68	-3.83	
11,724.0	88.60	167.60	11,087.5	-515.2	-421.6	392.5	7.98	-5.26	-6.00	
11,819.0	90.90	163.10	11,088.0	-607.0	-397.5	487.5	5.32	2.42	-4.74	
11,913.0	87.30	157.70	11,089.4	-695.5	-366.0	581.1	6.90	-3.83	-5.74	
11,960.0	87.20	158.60	11,091.7	-739.1	-348.6	627.7	1.92	-0.21	1.91	
12,008.0	89.70	160.60	11,093.0	-784.1	-331.8	675.4	6.67	5.21	4.17	
12,055.0	90.00	162.20	11,093.1	-828.6	-316.8	722.3	3.46	0.64	3.40	
12,103.0	88.90	161.80	11,093.6	-874.3	-302.0	770.2	2.44	-2.29	-0.83	
12,197.0	88.80	163.10	11,095.5	-963.9	-273.7	864.0	1.39	-0.11	1.38	
12,292.0	89.00	165.60	11,097.3	-1,055.3	-248.1	959.0	2.64	0.21	2.63	
12,387.0	89.10	164.40	11,098.9	-1,147.1	-223.5	1,054.0	1.27	0.11	-1.26	
12,482.0	89.20	162.70	11,100.3	-1,238.2	-196.6	1,148.9	1.79	0.11	-1.79	
12,577.0	89.60	161.50	11,101.3	-1,328.6	-167.4	1,243.7	1.33	0.42	-1.26	
12,672.0	88.30	159.90	11,103.0	-1,418.2	-136.0	1,338.4	2.17	-1.37	-1.68	

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Survey Report



Company:	Jay-Bee Oil & Gas	Local Co-ordinate Reference:	Well Larry 03 U
Project:	Tyler County	TVD Reference:	well @ 738.4usft (Nomac #81)
Site:	Larry Pad	MD Reference:	well @ 738.4usft (Nomac #81)
Well:	Larry 03 U	North Reference:	Grid
Wellbore:	Curve & Lateral	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)	
12,767.0	90.10	163.40	11,104.3	-1,508.4	-106.1	1,433.2	4.14	1.89	3.68	
12,862.0	89.30	160.70	11,104.8	-1,598.7	-76.8	1,528.0	2.96	-0.84	-2.84	
12,957.0	89.40	160.70	11,105.9	-1,688.4	-45.4	1,622.7	0.11	0.11	0.00	
13,052.0	89.00	161.10	11,107.2	-1,778.1	-14.3	1,717.3	0.60	-0.42	0.42	
13,147.0	89.40	159.20	11,108.6	-1,867.5	17.9	1,811.9	2.04	0.42	-2.00	
13,242.0	88.00	157.10	11,110.7	-1,955.6	53.3	1,906.1	2.66	-1.47	-2.21	
13,336.0	86.70	156.60	11,115.1	-2,042.0	90.2	1,999.0	1.48	-1.38	-0.53	
13,431.0	89.10	163.90	11,118.5	-2,131.2	122.2	2,093.5	8.08	2.53	7.68	
13,526.0	89.90	164.50	11,119.4	-2,222.7	148.1	2,188.4	1.05	0.84	0.63	
13,621.0	89.00	162.20	11,120.3	-2,313.7	175.3	2,283.4	2.60	-0.95	-2.42	
13,716.0	89.70	162.70	11,121.4	-2,404.2	204.0	2,378.2	0.91	0.74	0.53	
13,810.0	89.10	157.50	11,122.3	-2,492.6	235.9	2,471.8	5.57	-0.64	-5.53	
13,905.0	88.80	158.40	11,124.1	-2,580.6	271.6	2,566.0	1.00	-0.32	0.95	
14,000.0	89.40	163.40	11,125.6	-2,670.3	302.7	2,660.6	5.30	0.63	5.26	
14,094.0	89.20	164.60	11,126.7	-2,760.7	328.6	2,754.6	1.29	-0.21	1.28	
14,188.0	89.70	163.60	11,127.6	-2,851.1	354.3	2,848.5	1.19	0.53	-1.06	
14,283.0	89.00	161.40	11,128.7	-2,941.7	382.9	2,943.4	2.43	-0.74	-2.32	
14,377.0	89.30	159.70	11,130.1	-3,030.3	414.2	3,037.1	1.84	0.32	-1.81	
14,472.0	88.80	160.20	11,131.7	-3,119.5	446.8	3,131.6	0.74	-0.53	0.53	
14,566.0	88.90	162.50	11,133.6	-3,208.6	476.8	3,225.3	2.45	0.11	2.45	
14,661.0	89.40	162.30	11,135.0	-3,299.1	505.5	3,320.2	0.57	0.53	-0.21	
14,756.0	88.50	160.50	11,136.7	-3,389.1	535.8	3,414.9	2.12	-0.95	-1.89	
14,851.0	89.70	162.50	11,138.2	-3,479.2	566.0	3,509.7	2.45	1.26	2.11	
14,945.0	88.50	160.90	11,139.7	-3,568.4	595.5	3,603.5	2.13	-1.28	-1.70	
15,039.0	89.60	162.10	11,141.2	-3,657.6	625.3	3,697.2	1.73	1.17	1.28	
15,134.0	88.40	158.60	11,142.9	-3,747.0	657.2	3,791.8	3.89	-1.26	-3.68	
15,229.0	89.60	160.80	11,144.6	-3,836.1	690.2	3,886.3	2.64	1.26	2.32	
15,324.0	89.10	161.10	11,145.6	-3,925.9	721.2	3,981.1	0.61	-0.53	0.32	
15,419.0	89.00	162.90	11,147.2	-4,016.2	750.5	4,075.9	1.90	-0.11	1.89	
15,514.0	89.50	163.10	11,148.5	-4,107.1	778.3	4,170.8	0.57	0.53	0.21	
15,609.0	89.30	162.60	11,149.4	-4,197.8	806.3	4,265.7	0.57	-0.21	-0.53	
15,704.0	89.90	163.40	11,150.1	-4,288.7	834.1	4,360.6	1.05	0.63	0.84	
15,798.0	89.80	160.30	11,150.4	-4,378.0	863.4	4,454.4	3.30	-0.11	-3.30	
15,893.0	88.40	155.30	11,151.9	-4,465.9	899.2	4,548.5	5.46	-1.47	-5.26	
15,989.0	89.50	155.80	11,153.6	-4,553.3	939.0	4,643.1	1.26	1.15	0.52	
16,083.0	89.90	158.60	11,154.1	-4,639.9	975.4	4,736.1	3.01	0.43	2.98	
16,178.0	89.40	154.90	11,154.7	-4,727.2	1,012.9	4,830.0	3.93	-0.53	-3.89	
16,273.0	89.20	153.50	11,155.8	-4,812.7	1,054.2	4,923.1	1.49	-0.21	-1.47	
16,367.0	90.20	158.50	11,156.3	-4,898.6	1,092.4	5,015.8	5.42	1.06	5.32	
16,462.0	90.20	160.40	11,156.0	-4,987.5	1,125.8	5,110.3	2.00	0.00	2.00	
16,557.0	89.30	158.00	11,156.4	-5,076.3	1,159.5	5,204.8	2.70	-0.95	-2.53	
16,651.0	90.30	159.50	11,156.7	-5,163.9	1,193.6	5,298.1	1.92	1.06	1.60	
16,746.0	89.40	161.00	11,157.0	-5,253.3	1,225.7	5,392.7	1.84	-0.95	1.58	

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Wellbore:	Curve & Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM5002

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)
16,841.0	90.70	165.20	11,156.9	-5,344.2	1,253.3	5,487.6	4.63	1.37	4.42
16,936.0	89.70	164.70	11,156.6	-5,435.9	1,278.0	5,582.6	1.18	-1.05	-0.53
17,031.0	90.60	168.00	11,156.3	-5,528.2	1,300.4	5,677.6	3.60	0.95	3.47
17,125.0	89.80	164.70	11,156.0	-5,619.6	1,322.6	5,771.6	3.61	-0.85	-3.51
17,219.0	90.60	164.50	11,155.7	-5,710.2	1,347.5	5,865.5	0.88	0.85	-0.21
17,314.0	90.60	162.30	11,154.7	-5,801.2	1,374.7	5,960.5	2.32	0.00	-2.32
17,409.0	89.20	158.30	11,154.8	-5,890.6	1,406.7	6,055.1	4.46	-1.47	-4.21
17,504.0	91.00	160.70	11,154.7	-5,979.6	1,439.9	6,149.6	3.16	1.89	2.53
17,599.0	89.60	158.60	11,154.2	-6,068.7	1,473.0	6,244.1	2.66	-1.47	-2.21
17,694.0	89.80	154.60	11,154.7	-6,155.8	1,510.7	6,337.9	4.22	0.21	-4.21
17,788.0	90.20	155.20	11,154.7	-6,241.0	1,550.6	6,430.3	0.77	0.43	0.64
17,883.0	90.50	155.80	11,154.1	-6,327.4	1,590.0	6,523.9	0.71	0.32	0.63
17,956.0	90.50	155.80	11,153.5	-6,394.0	1,619.9	6,595.9	0.00	0.00	0.00

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
10,362.0	10,328.5	382.3	-542.5	Pilot Tie-in @ 10362' MD / 10329' TVD
17,956.0	11,153.5	-6,394.0	1,619.9	TD @ 17956' MD / 11153' TVD

Checked By: _____ Approved By: _____ Date: _____

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