



# **Jay-Bee Oil & Gas**

**Pleasants County**

**P4 Pad**

**P4S4U**

**Wellbore #1**

**Design: Wellbore #1**

## **QES Survey Report**

**15 February, 2019**



**06/18/2021**



Survey Report



<b>Company:</b>	Jay-Bee Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well P4S4U
<b>Project:</b>	Pleasants County	<b>TVD Reference:</b>	Well @ 977.8usft (20.6' RKB)
<b>Site:</b>	P4 Pad	<b>MD Reference:</b>	Well @ 977.8usft (20.6' RKB)
<b>Well:</b>	P4S4U	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db

<b>Project</b>	Pleasants County		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	West Virginia Northern Zone		

<b>Site</b>	P4 Pad				
<b>Site Position:</b>		<b>Northing:</b>	341,266.74 usft	<b>Latitude:</b>	39° 25' 34.766 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,525,094.26 usft	<b>Longitude:</b>	81° 4' 11.201 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	-1.00 °

<b>Well</b>	P4S4U					
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	341,253.19 usft	<b>Latitude:</b>	39° 25' 34.638 N
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	1,525,127.04 usft	<b>Longitude:</b>	81° 4' 10.780 W
<b>Position Uncertainty</b>	0.0 usft	<b>Wellhead Elevation:</b>	usft	<b>Ground Level:</b>	957.2 usft	

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	1/12/2019	-8.42	66.59	51,850.49543933

<b>Design</b>	Wellbore #1				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	9,506.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0		153.36

<b>Survey Program</b>	Date 2/15/2019				
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
65.0	349.0	VES Gyro (Pilot Hole)	GYRO-NS	OWSG Gyrocompass Gyro	
425.0	9,506.0	PH Corrected (Pilot Hole)	OWSG MWD - Standard	OWSG MWD - Standard	
9,546.0	20,285.0	QES MWD (Wellbore #1)	OWSG MWD - Standard	OWSG MWD - Standard	

<b>Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
65.0	0.36	27.40	65.0	0.2	0.1	-0.1	0.55	0.55	0.00	
160.0	1.08	248.80	160.0	0.1	-0.6	-0.4	1.44	0.76	-145.89	
253.0	1.44	237.60	253.0	-0.8	-2.4	-0.3	0.47	0.39	2.04	
349.0	2.35	248.24	348.9	-2.2	-5.3	-0.4	1.01	0.95	2.04	
425.0	0.92	221.35	424.9	-3.2	-7.1	-0.3	2.09	-1.88	-1.88	
520.0	1.04	227.12	519.9	-4.4	-8.2	0.2	0.16	0.16	6.07	
614.0	1.19	227.81	613.9	-5.6	-9.6	0.7	0.16	0.16	0.73	
709.0	0.99	233.37	708.8	-6.8	-11.0	1.1	0.24	-0.21	5.85	

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Survey Report



<b>Company:</b>	Jay-Bee Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well P4S4U
<b>Project:</b>	Pleasants County	<b>TVD Reference:</b>	Well @ 977.8usft (20.6' RKB)
<b>Site:</b>	P4 Pad	<b>MD Reference:</b>	Well @ 977.8usft (20.6' RKB)
<b>Well:</b>	P4S4U	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	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)	
803.0	1.07	231.30	802.8	-7.8	-12.3	1.5	0.09	0.09	-2.20	
898.0	0.88	206.89	897.8	-9.0	-13.3	2.1	0.48	-0.20	-25.69	
993.0	1.18	75.95	992.8	-9.4	-12.7	2.7	1.98	0.32	-137.83	
1,087.0	2.07	55.46	1,086.8	-8.2	-10.4	2.7	1.12	0.95	-21.80	
1,182.0	1.71	31.52	1,181.7	-6.1	-8.2	1.7	0.90	-0.38	-25.20	
1,277.0	1.41	23.98	1,276.7	-3.8	-7.0	0.2	0.38	-0.32	-7.94	
1,372.0	1.17	13.92	1,371.7	-1.8	-6.3	-1.2	0.35	-0.25	-10.59	
1,466.0	1.64	41.43	1,465.6	0.2	-5.2	-2.5	0.86	0.50	29.27	
1,561.0	2.25	40.94	1,560.6	2.6	-3.1	-3.7	0.64	0.64	-0.52	
1,656.0	2.20	36.66	1,655.5	5.5	-0.7	-5.2	0.18	-0.05	-4.51	
1,751.0	1.19	80.91	1,750.5	7.1	1.3	-5.7	1.67	-1.06	46.58	
1,845.0	2.30	133.95	1,844.4	5.9	3.6	-3.7	1.97	1.18	56.43	
1,940.0	2.98	131.41	1,939.3	3.0	6.9	0.4	0.73	0.72	-2.67	
2,034.0	2.56	148.28	2,033.2	-0.4	9.8	4.8	0.97	-0.45	17.95	
2,066.0	2.49	167.25	2,065.2	-1.7	10.3	6.2	2.61	-0.22	59.28	
2,220.0	4.64	189.60	2,218.9	-11.1	10.0	14.4	1.64	1.40	14.51	
2,314.0	1.35	194.46	2,312.7	-15.9	9.1	18.3	3.51	-3.50	5.17	
2,409.0	1.27	308.75	2,407.7	-16.4	8.0	18.2	2.32	-0.08	120.31	
2,504.0	3.20	305.20	2,502.6	-14.2	5.0	14.9	2.04	2.03	-3.74	
2,599.0	3.45	313.84	2,597.5	-10.7	0.8	9.9	0.59	0.26	9.09	
2,693.0	2.42	325.49	2,691.4	-7.1	-2.4	5.3	1.26	-1.10	12.39	
2,788.0	0.77	4.08	2,786.3	-4.8	-3.5	2.7	1.98	-1.74	40.62	
2,883.0	0.97	106.08	2,881.3	-4.4	-2.6	2.7	1.43	0.21	107.37	
2,978.0	0.96	77.56	2,976.3	-4.4	-1.1	3.5	0.50	-0.01	-30.02	
3,072.0	1.21	332.60	3,070.3	-3.4	-0.8	2.7	1.84	0.27	-111.66	
3,167.0	1.50	301.75	3,165.3	-1.8	-2.3	0.6	0.81	0.31	-32.47	
3,261.0	0.71	177.01	3,259.3	-1.8	-3.3	0.1	2.12	-0.84	-132.70	
3,356.0	1.65	122.52	3,354.2	-3.1	-2.1	1.8	1.44	0.99	-57.36	
3,451.0	1.13	35.59	3,449.2	-3.1	-0.4	2.5	2.05	-0.55	-91.51	
3,545.0	1.81	347.53	3,543.2	-0.9	-0.2	0.7	1.43	0.72	-51.13	
3,639.0	2.45	9.70	3,637.1	2.6	-0.2	-2.4	1.10	0.68	23.59	
3,734.0	1.74	30.79	3,732.1	5.8	0.9	-4.8	1.09	-0.75	22.20	
3,828.0	1.80	60.80	3,826.0	7.8	2.9	-5.6	0.98	0.06	31.93	
3,926.0	2.00	111.95	3,924.0	7.9	5.8	-4.4	1.68	0.20	52.19	
4,019.0	1.89	123.37	4,016.9	6.4	8.6	-1.9	0.43	-0.12	12.28	
4,114.0	0.48	190.83	4,111.9	5.2	9.9	-0.2	1.86	-1.48	71.01	
4,209.0	1.33	260.19	4,206.9	4.6	8.7	-0.2	1.31	0.89	73.01	
4,303.0	1.87	257.16	4,300.9	4.1	6.1	-0.9	0.58	0.57	-3.22	
4,398.0	2.16	189.60	4,395.8	2.0	4.3	0.2	2.37	0.31	-71.12	
4,493.0	3.67	148.14	4,490.7	-2.4	5.6	4.7	2.63	-0.43	-43.64	
4,588.0	4.10	137.83	4,585.5	-7.5	9.5	11.0	0.86	-0.43	-10.85	
4,682.0	3.70	129.70	4,679.3	-11.9	14.1	17.0	0.73	-0.43	-43.65	
4,777.0	2.30	119.18	4,774.1	-14.8	18.1	21.4	1.58	-0.43	-11.07	

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Survey										
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4,872.0	1.78	127.97	4,869.1	-16.6	20.9	24.3	0.64	-0.55	9.25	
4,967.0	1.79	96.53	4,964.0	-17.7	23.6	26.4	1.02	0.01	-33.09	
5,065.0	0.74	71.50	5,062.0	-17.7	25.7	27.3	1.19	-1.07	-25.54	
5,160.0	0.36	123.66	5,157.0	-17.7	26.5	27.7	0.62	-0.40	54.91	
5,254.0	1.39	139.78	5,251.0	-18.7	27.5	29.0	1.12	1.10	17.15	
5,349.0	0.94	280.31	5,346.0	-19.4	27.5	29.7	2.31	-0.47	147.93	
5,444.0	1.25	343.40	5,441.0	-18.3	26.4	28.2	1.24	0.33	66.41	
5,538.0	2.66	357.99	5,534.9	-15.1	26.1	25.2	1.58	1.50	15.52	
5,633.0	1.82	355.48	5,629.8	-11.4	25.9	21.8	0.89	-0.88	-2.64	
5,728.0	0.88	271.78	5,724.8	-9.9	25.0	20.1	2.03	-0.99	-88.11	
5,822.0	0.86	300.84	5,818.8	-9.5	23.7	19.1	0.46	-0.02	30.91	
5,917.0	1.14	341.57	5,913.8	-8.3	22.8	17.6	0.78	0.29	42.87	
6,106.0	2.18	333.52	6,102.7	-3.3	20.6	12.1	0.56	0.55	-4.26	
6,295.0	3.41	339.97	6,291.5	5.2	17.1	3.0	0.67	0.65	3.41	
6,389.0	3.09	329.35	6,385.3	10.0	14.8	-2.3	0.72	-0.34	-11.30	
6,485.0	1.91	316.56	6,481.2	13.4	12.4	-6.5	1.35	-1.23	-13.32	
6,579.0	1.04	310.32	6,575.2	15.1	10.7	-8.7	0.94	-0.93	-6.64	
6,769.0	0.27	70.78	6,765.2	16.4	9.8	-10.3	0.63	-0.41	63.40	
6,958.0	0.61	92.28	6,954.2	16.5	11.2	-9.7	0.20	0.18	11.38	
7,053.0	1.25	339.52	7,049.2	17.4	11.3	-10.5	1.67	0.67	-118.69	
7,147.0	5.17	335.71	7,143.0	22.3	9.2	-15.8	4.17	4.17	-4.05	
7,242.0	8.73	335.85	7,237.3	32.7	4.5	-27.2	3.75	3.75	0.15	
7,337.0	11.25	333.92	7,330.9	47.7	-2.5	-43.7	2.68	2.65	-2.03	
7,432.0	12.59	330.65	7,423.8	65.0	-11.7	-63.3	1.58	1.41	-3.44	
7,527.0	12.81	330.52	7,516.5	83.2	-21.9	-84.2	0.23	0.23	-0.14	
7,621.0	13.30	334.38	7,608.1	102.0	-31.7	-105.4	1.06	0.52	4.11	
7,770.0	14.58	332.41	7,752.7	134.1	-47.8	-141.3	0.92	0.86	-1.32	
7,906.0	15.76	327.07	7,883.9	164.8	-65.8	-176.8	1.34	0.87	-3.93	
8,001.0	15.80	321.68	7,975.3	185.7	-80.8	-202.3	1.54	0.04	-5.67	
8,098.0	14.77	314.14	8,068.9	204.7	-97.9	-226.9	2.31	-1.06	-7.77	
8,192.0	12.24	309.13	8,160.3	219.4	-114.2	-247.3	2.96	-2.69	-5.33	
8,287.0	10.72	312.32	8,253.4	231.7	-128.6	-264.7	1.73	-1.60	3.36	
8,382.0	10.76	322.81	8,346.8	244.7	-140.4	-281.7	2.06	0.04	11.04	
8,477.0	12.60	324.43	8,439.8	260.2	-151.8	-300.6	1.97	1.94	1.71	
8,572.0	11.95	327.17	8,532.6	276.9	-163.2	-320.6	0.92	-0.68	2.88	
8,666.0	11.22	335.22	8,624.7	293.3	-172.3	-339.5	1.89	-0.78	8.56	
8,761.0	12.31	339.89	8,717.7	311.2	-179.7	-358.8	1.52	1.15	4.92	
8,856.0	12.47	333.99	8,810.5	330.0	-187.6	-379.1	1.34	0.17	-6.21	
8,950.0	11.11	328.54	8,902.5	346.8	-196.8	-398.3	1.87		5.80	
9,045.0	10.27	332.31	8,995.9	362.1	-205.5	-415.8	1.15		3.97	
9,140.0	11.36	334.32	9,089.2	378.1	-213.5	-433.7	1.21	1.15	2.12	
9,235.0	11.50	333.56	9,182.3	395.0	-221.8	-452.5	0.22		0.80	
9,298.0	12.01	335.18	9,244.0	406.5	-227.3	-465.3	0.96	0.81	2.57	

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5.80  
3.97  
1.15  
2.12  
0.80  
2.57

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Survey Report



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<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db

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)	
9,411.0	14.20	333.90	9,354.0	429.7	-238.4	-490.9	1.95	1.94	-1.13	
<b>PH Tie In @ 9506.0'MD / 9446.7' TVD</b>										
9,506.0	11.00	334.20	9,446.7	448.3	-247.5	-511.7	3.37	-3.37	0.32	
9,546.0	15.60	319.40	9,485.7	455.8	-252.6	-520.7	14.22	11.50	-37.00	
9,578.0	16.90	309.20	9,516.4	462.0	-259.0	-529.1	9.78	4.06	-31.88	
9,626.0	14.20	292.10	9,562.7	468.7	-269.9	-539.9	11.03	-5.63	-35.63	
9,673.0	8.90	280.00	9,608.7	471.5	-278.8	-546.4	12.34	-11.28	-25.74	
9,721.0	5.10	250.20	9,656.3	471.4	-284.5	-548.9	10.70	-7.92	-62.08	
9,768.0	6.50	204.70	9,703.1	468.3	-287.6	-547.5	9.92	2.98	-96.81	
9,815.0	9.40	178.40	9,749.7	462.0	-288.6	-542.3	9.75	6.17	-55.96	
9,862.0	13.70	165.00	9,795.7	452.8	-287.0	-533.4	10.73	9.15	-28.51	
9,910.0	18.50	161.90	9,841.8	440.0	-283.2	-520.3	10.16	10.00	-6.46	
9,957.0	22.90	158.50	9,885.8	424.4	-277.5	-503.8	9.70	9.36	-7.23	
10,005.0	27.80	154.20	9,929.2	405.7	-269.2	-483.3	10.90	10.21	-8.96	
10,052.0	33.40	152.40	9,969.6	384.3	-258.4	-459.4	12.07	11.91	-3.83	
10,100.0	39.50	151.30	10,008.2	359.2	-245.0	-430.9	12.78	12.71	-2.29	
10,147.0	43.40	150.90	10,043.4	332.0	-229.9	-399.8	8.32	8.30	-0.85	
10,195.0	46.70	149.10	10,077.3	302.5	-212.9	-365.9	7.37	6.88	-3.75	
10,242.0	50.40	149.20	10,108.4	272.3	-194.9	-330.8	7.87	7.87	0.21	
10,289.0	54.10	148.70	10,137.2	240.5	-175.7	-293.7	7.92	7.87	-1.06	
10,336.0	58.10	147.80	10,163.4	207.3	-155.2	-254.9	8.66	8.51	-1.91	
10,384.0	61.80	147.50	10,187.4	172.2	-133.0	-213.6	7.73	7.71	-0.63	
10,431.0	64.90	148.60	10,208.5	136.6	-110.7	-171.7	6.92	6.60	2.34	
10,479.0	68.10	150.10	10,227.7	98.7	-88.3	-127.8	7.26	6.67	3.13	
10,526.0	72.30	152.20	10,243.6	60.0	-67.0	-83.7	9.88	8.94	4.47	
10,574.0	78.20	153.90	10,255.8	18.6	-46.0	-37.3	12.76	12.29	3.54	
10,621.0	83.60	155.80	10,263.2	-23.4	-26.3	9.1	12.16	11.49	4.04	
10,669.0	87.10	156.10	10,267.1	-67.0	-6.8	56.9	7.32	7.29	0.63	
10,763.0	88.40	154.70	10,270.8	-152.4	32.3	150.8	2.03	1.38	-1.49	
10,858.0	88.10	153.90	10,273.7	-238.0	73.5	245.7	0.90	-0.32	-0.84	
10,952.0	86.90	152.70	10,277.8	-321.9	115.7	339.6	1.80	-1.28	-1.28	
11,047.0	86.20	149.80	10,283.5	-405.0	161.3	434.4	3.13	-0.74	-3.05	
11,142.0	86.00	149.70	10,290.0	-486.9	209.1	529.0	0.24	-0.21	-0.11	
11,237.0	87.30	150.50	10,295.5	-569.1	256.3	623.6	1.61	1.37	0.84	
11,331.0	88.70	151.90	10,298.8	-651.4	301.6	717.5	2.11	1.49	1.49	
11,426.0	89.10	152.70	10,300.6	-735.5	345.7	812.5	0.94	0.42	0.84	
11,520.0	88.50	152.60	10,302.6	-819.0	388.9	906.4	0.65	-0.64	-0.11	
11,615.0	89.80	150.80	10,304.0	-902.6	434.0	1,001.4	2.34	1.37	-1.89	
11,710.0	89.50	150.70	10,304.6	-985.5	480.4	1,096.3	0.33	-0.33	-0.11	
11,805.0	90.00	150.60	10,305.0	-1,068.3	526.9	1,191.2	0.54	-1.37	1.58	
11,900.0	88.70	152.10	10,306.1	-1,151.7	572.5	1,286.1	2.09	1.37	0.11	
11,995.0	90.00	152.20	10,307.2	-1,235.7	616.9	1,381.1	1.37	0.21	0.11	
12,089.0	90.20	153.30	10,307.0	-1,319.2	659.9	1,475.1	1.19	0.83	0.17	
12,184.0	89.60	153.20	10,307.2	-1,404.1	702.6	1,570.1	0.64	0.83	0.11	

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Survey Report



<b>Company:</b>	Jay-Bee Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well P4S4U
<b>Project:</b>	Pleasants County	<b>TVD Reference:</b>	Well @ 977.8usft (20.6' RKB)
<b>Site:</b>	P4 Pad	<b>MD Reference:</b>	Well @ 977.8usft (20.6' RKB)
<b>Well:</b>	P4S4U	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db

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)
12,279.0	90.30	154.20	10,307.2	-1,489.2	744.7	1,665.1	1.28	0.74	1.05
12,374.0	89.30	154.60	10,307.6	-1,574.9	785.8	1,760.1	1.13	-1.05	0.42
12,469.0	90.30	153.80	10,307.9	-1,660.4	827.1	1,855.0	1.35	1.05	-0.84
12,563.0	89.40	153.60	10,308.2	-1,744.7	868.8	1,949.0	0.98	-0.96	-0.21
12,658.0	88.60	153.20	10,309.8	-1,829.6	911.3	2,044.0	0.94	-0.84	-0.42
12,753.0	87.10	152.60	10,313.4	-1,914.1	954.6	2,138.9	1.70	-1.58	-0.63
12,848.0	89.30	153.20	10,316.4	-1,998.7	997.8	2,233.9	2.40	2.32	0.63
12,942.0	88.70	153.70	10,318.0	-2,082.7	1,039.8	2,327.9	0.83	-0.64	0.53
13,038.0	87.20	154.20	10,321.4	-2,168.9	1,081.9	2,423.8	1.65	-1.56	0.52
13,132.0	89.00	153.10	10,324.6	-2,253.1	1,123.6	2,517.7	2.24	1.91	-1.17
13,227.0	89.80	153.20	10,325.6	-2,337.9	1,166.6	2,612.7	0.85	0.84	0.11
13,322.0	86.90	151.90	10,328.3	-2,422.1	1,210.3	2,707.7	3.35	-3.05	-1.37
13,416.0	88.90	152.30	10,331.7	-2,505.1	1,254.3	2,801.6	2.17	2.13	0.43
13,511.0	87.70	153.10	10,334.5	-2,589.5	1,297.8	2,896.5	1.52	-1.26	0.84
13,606.0	89.20	154.70	10,337.1	-2,674.8	1,339.6	2,991.5	2.31	1.58	1.68
13,701.0	91.00	156.00	10,337.0	-2,761.1	1,379.2	3,086.4	2.34	1.89	1.37
13,795.0	90.50	155.90	10,335.7	-2,847.0	1,417.5	3,180.3	0.54	-0.53	-0.11
13,890.0	90.90	153.90	10,334.6	-2,933.0	1,457.8	3,275.3	2.15	0.42	-2.11
13,985.0	91.60	154.30	10,332.5	-3,018.4	1,499.3	3,370.2	0.85	0.74	0.42
14,079.0	90.90	154.70	10,330.4	-3,103.2	1,539.8	3,464.2	0.86	-0.74	0.43
14,174.0	90.90	152.80	10,328.9	-3,188.4	1,581.8	3,559.2	2.00	0.00	-2.00
14,267.0	90.80	153.10	10,327.6	-3,271.2	1,624.1	3,652.2	0.34	-0.11	0.32
14,362.0	90.20	152.80	10,326.7	-3,355.8	1,667.3	3,747.2	0.71	-0.63	-0.32
14,457.0	89.50	152.90	10,327.0	-3,440.4	1,710.6	3,842.2	0.74	-0.74	0.11
14,551.0	89.40	153.40	10,327.9	-3,524.2	1,753.1	3,936.2	0.54	-0.11	0.53
14,645.0	90.20	153.30	10,328.2	-3,608.3	1,795.2	4,030.2	0.86	0.85	-0.11
14,740.0	89.40	153.10	10,328.5	-3,693.1	1,838.1	4,125.2	0.87	-0.84	-0.21
14,835.0	89.70	152.70	10,329.3	-3,777.6	1,881.3	4,220.2	0.53	0.32	-0.42
14,930.0	89.20	152.50	10,330.2	-3,862.0	1,925.1	4,315.1	0.57	-0.53	-0.21
15,024.0	89.50	152.10	10,331.3	-3,945.2	1,968.7	4,409.1	0.53	0.32	-0.43
15,119.0	87.70	150.10	10,333.6	-4,028.3	2,014.6	4,504.0	2.83	-1.89	-2.11
15,214.0	90.00	152.50	10,335.5	-4,111.6	2,060.2	4,598.9	3.50	2.42	2.53
15,309.0	89.70	152.50	10,335.7	-4,195.9	2,104.1	4,693.9	0.32	-0.32	0.00
15,404.0	89.80	153.00	10,336.2	-4,280.3	2,147.6	4,788.9	0.54	0.11	0.53
15,498.0	89.10	152.20	10,337.1	-4,363.8	2,190.9	4,882.9	1.13	-0.74	-0.85
15,593.0	88.50	150.40	10,339.1	-4,447.1	2,236.5	4,977.8	2.00	-0.63	-1.89
15,688.0	89.10	151.80	10,341.0	-4,530.2	2,282.4	5,072.7	1.60	0.63	1.47
15,783.0	91.70	153.00	10,340.4	-4,614.4	2,326.4	5,167.7	3.01	2.74	2.26
15,878.0	90.90	152.80	10,338.2	-4,699.0	2,369.6	5,262.6	0.87	0.87	-0.21
15,972.0	90.60	152.70	10,337.0	-4,782.5	2,412.7	5,356.6	0.34	-0.32	-0.11
16,067.0	90.40	153.90	10,336.2	-4,867.4	2,455.4	5,451.6	1.28	0.87	0.26
16,162.0	91.60	154.20	10,334.5	-4,952.8	2,496.9	5,546.6	1.30	1.26	0.32
16,256.0	90.70	153.40	10,332.6	-5,037.1	2,538.4	5,640.6	1.28	-0.96	-0.96

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Survey Report



<b>Company:</b>	Jay-Bee Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well P4S4U
<b>Project:</b>	Pleasants County	<b>TVD Reference:</b>	Well @ 977.8usft (20.6' RKB)
<b>Site:</b>	P4 Pad	<b>MD Reference:</b>	Well @ 977.8usft (20.6' RKB)
<b>Well:</b>	P4S4U	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	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)	
16,351.0	89.90	153.20	10,332.1	-5,122.0	2,581.1	5,735.6	0.87	-0.84	-0.21	
16,446.0	90.20	153.20	10,332.0	-5,206.8	2,623.9	5,830.6	0.32	0.32	0.00	
16,540.0	89.70	153.10	10,332.1	-5,290.7	2,666.4	5,924.6	0.54	-0.53	-0.11	
16,635.0	90.50	152.90	10,332.0	-5,375.3	2,708.5	6,019.6	0.87	0.84	-0.21	
16,729.0	90.20	153.20	10,331.4	-5,459.1	2,752.1	6,113.6	0.45	-0.32	0.32	
16,823.0	90.10	152.50	10,331.1	-5,542.7	2,795.0	6,207.6	0.75	-0.11	-0.74	
16,918.0	89.90	152.60	10,331.1	-5,627.0	2,838.8	6,302.6	0.24	-0.21	0.11	
17,013.0	89.50	152.60	10,331.6	-5,711.4	2,882.5	6,397.5	0.42	-0.42	0.00	
17,108.0	90.20	152.80	10,331.9	-5,795.8	2,926.1	6,492.5	0.77	0.74	0.21	
17,203.0	89.10	152.30	10,332.5	-5,880.1	2,969.9	6,587.5	1.27	-1.16	-0.53	
17,298.0	89.30	153.60	10,333.8	-5,964.7	3,013.1	6,682.5	1.38	0.21	1.37	
17,392.0	91.20	155.30	10,333.4	-6,049.5	3,053.6	6,776.5	2.71	2.02	1.81	
17,487.0	90.80	155.10	10,331.7	-6,135.7	3,093.5	6,871.4	0.47	-0.42	-0.21	
17,581.0	90.40	154.70	10,330.7	-6,220.8	3,133.3	6,965.4	0.60	-0.43	-0.43	
17,676.0	88.90	152.50	10,331.3	-6,305.9	3,175.6	7,060.4	2.80	-1.58	-2.32	
17,771.0	91.30	153.40	10,331.2	-6,390.5	3,218.8	7,155.4	2.70	2.53	0.95	
17,866.0	90.70	153.40	10,329.5	-6,475.5	3,261.3	7,250.3	0.63	-0.63	0.00	
17,961.0	90.40	152.80	10,328.6	-6,560.2	3,304.3	7,345.3	0.71	-0.32	-0.63	
18,055.0	89.60	151.90	10,328.6	-6,643.4	3,347.9	7,439.3	1.28	-0.85	-0.96	
18,150.0	89.40	153.70	10,329.4	-6,727.9	3,391.3	7,534.3	1.91	-0.21	1.89	
18,244.0	88.30	154.50	10,331.3	-6,812.5	3,432.4	7,628.3	1.45	-1.17	0.85	
18,339.0	90.00	155.30	10,332.7	-6,898.5	3,472.7	7,723.2	1.98	1.79	0.84	
18,434.0	90.70	156.30	10,332.1	-6,985.1	3,511.6	7,818.1	1.28	0.74	1.05	
18,529.0	90.10	155.90	10,331.5	-7,072.0	3,550.1	7,913.0	0.76	-0.63	-0.42	
18,623.0	89.30	154.10	10,332.0	-7,157.2	3,589.8	8,007.0	2.10	-0.85	-1.91	
18,718.0	89.40	154.30	10,333.0	-7,242.7	3,631.2	8,102.0	0.24	0.11	0.21	
18,813.0	89.50	154.10	10,333.9	-7,328.2	3,672.5	8,197.0	0.24	0.11	-0.21	
18,908.0	89.40	152.90	10,334.9	-7,413.2	3,714.9	8,291.9	1.27	-0.11	-1.26	
19,003.0	89.20	152.80	10,336.0	-7,497.8	3,758.2	8,386.9	0.24	-0.21	-0.11	
19,097.0	89.00	152.50	10,337.5	-7,581.2	3,801.4	8,480.9	0.38	-0.21	-0.32	
19,192.0	90.10	152.70	10,338.2	-7,665.6	3,845.1	8,575.9	1.18	1.16	0.21	
19,287.0	89.70	152.70	10,338.4	-7,750.0	3,888.7	8,670.9	0.42	-0.42	0.00	
19,381.0	89.90	153.20	10,338.7	-7,833.7	3,931.5	8,764.9	0.57	0.21	0.53	
19,476.0	89.30	153.20	10,339.4	-7,918.5	3,974.3	8,859.9	0.63	-0.63	0.00	
19,571.0	89.30	152.90	10,340.6	-8,003.2	4,017.3	8,954.9	0.32	0.00	-0.32	
19,665.0	89.10	153.00	10,341.9	-8,086.9	4,060.1	9,048.9	0.24	0.00	0.11	
19,760.0	89.10	152.70	10,343.4	-8,171.4	4,103.4	9,143.9	0.32	-0.11	-0.32	
19,855.0	89.00	152.70	10,344.9	-8,255.8	4,147.0	9,238.8	0.11	-0.11	0.00	
19,949.0	88.60	152.40	10,346.9	-8,339.2	4,190.3	9,332.8	0.53	-0.43	-0.32	
20,044.0	89.70	152.70	10,348.3	-8,423.5	4,234.1	9,427.8	1.20	1.16	0.32	
20,139.0	90.20	152.90	10,348.4	-8,508.0	4,277.5	9,522.8	0.57	0.00	0.21	
20,234.0	90.10	152.80	10,348.2	-8,592.5	4,320.9	9,617.8	0.15	0.00	-0.11	
<b>TD @ 20285.0' MD / 10348.1' TVD</b>										
20,285.0	90.10	152.80	10,348.1	-8,637.9	4,344.2	9,668.8	0.00	0.00	0.00	

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Survey Report



<b>Company:</b>	Jay-Bee Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well P4S4U
<b>Project:</b>	Pleasants County	<b>TVD Reference:</b>	Well @ 977.8usft (20.6' RKB)
<b>Site:</b>	P4 Pad	<b>MD Reference:</b>	Well @ 977.8usft (20.6' RKB)
<b>Well:</b>	P4S4U	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db

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)
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Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9,506.0	9,446.7	448.3	-247.5	PH Tie In @ 9506.0'MD / 9446.7' TVD
20,285.0	10,348.1	-8,637.9	4,344.2	TD @ 20285.0' MD / 10348.1' TVD

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

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