



Jay-Bee Oil & Gas

Pleasants County

P5 pad

P5S1U

C&L

Design: C&L

QES Survey Report

14 June, 2019



05/13/2022



Survey Report



Company:	Jay-Bee Oil & Gas	Local Co-ordinate Reference:	Well P5S1U
Project:	Pleasants County	TVD Reference:	WELL @ 888.7usft (Patterson #581)
Site:	P5 pad	MD Reference:	WELL @ 888.7usft (Patterson #581)
Well:	P5S1U	North Reference:	Grid
Wellbore:	C&L	Survey Calculation Method:	Minimum Curvature
Design:	C&L	Database:	EDM 5000.1 Single User Db

Project	Pleasants 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	P5 pad				
Site Position:		Northing:	337,356.19 usft	Latitude:	39° 24' 55.845 N
From:	Map	Easting:	1,523,500.43 usft	Longitude:	81° 4' 30.636 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.00 °

Well	P5S1U					
Well Position	+N/-S	0.0 usft	Northing:	337,337.52 usft	Latitude:	39° 24' 55.666 N
	+E/-W	0.0 usft	Easting:	1,523,529.25 usft	Longitude:	81° 4' 30.265 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	868.1 usft

Wellbore	C&L				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	5/8/2019	-8.08	66.47	51,653.70000000

Design	C&L				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	9,133.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	147.58	

Survey Program	Date	6/14/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
50.0	350.0	Gyro (Pilot Hole)	GYRO-NS	OWSG Gyrocompass Gyro	
421.0	9,133.0	MWD (Pilot Hole)	OWSG MWD - Standard	OWSG MWD - Standard	
9,153.0	18,714.0	QES MWD C&L (C&L)	OWSG MWD - Standard	OWSG 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)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
50.0	0.10	191.50	50.0	0.0	0.0	0.0	0.20	0.20	0.00	
100.0	0.23	186.62	100.0	-0.2	0.0	0.1	0.26	0.26	-9.76	
150.0	0.05	122.54	150.0	-0.3	0.0	0.2	0.43	-0.36	-128.16	
200.0	0.26	158.10	200.0	-0.4	0.0	0.4	0.44	0.42	71.12	
250.0	0.15	179.81	250.0	-0.6	0.1	0.5	0.27	-0.22	43.42	
300.0	0.51	181.36	300.0	-0.9	0.1	0.8	0.72	0.72	3.10	
350.0	0.52	183.69	350.0	-1.3	0.1	1.1	0.05	0.02	4.66	
421.0	0.55	187.22	421.0	-2.0	0.0	1.7	0.06	0.04	4.97	



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Wellbore:	C&L	Survey Calculation Method:	Minimum Curvature
Design:	C&L	Database:	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)	
516.0	1.12	143.60	516.0	-3.2	0.5	2.9	0.86	0.60	-45.92	
610.0	0.79	159.80	610.0	-4.5	1.3	4.5	0.45	-0.35	17.23	
705.0	0.57	174.93	705.0	-5.6	1.5	5.6	0.30	-0.23	15.93	
800.0	0.81	83.83	800.0	-6.0	2.2	6.3	1.05	0.25	-95.89	
895.0	1.91	16.98	894.9	-4.4	3.4	5.5	1.85	1.16	-70.37	
990.0	2.99	340.20	989.9	-0.6	3.0	2.1	1.95	1.14	-38.72	
1,084.0	2.90	311.12	1,083.7	3.3	0.4	-2.6	1.58	-0.10	-30.94	
1,179.0	1.56	270.23	1,178.7	4.9	-2.7	-5.6	2.11	-1.41	-43.04	
1,277.0	1.27	167.57	1,276.6	3.8	-3.8	-5.3	2.26	-0.30	-104.76	
1,371.0	0.99	118.20	1,370.6	2.4	-2.9	-3.6	1.04	-0.30	-52.52	
1,466.0	0.27	229.89	1,465.6	1.9	-2.3	-2.9	1.18	-0.76	117.57	
1,560.0	1.05	307.65	1,559.6	2.3	-3.2	-3.6	1.09	0.83	82.72	
1,654.0	1.89	256.79	1,653.6	2.4	-5.4	-5.0	1.57	0.89	-54.11	
1,749.0	1.80	218.72	1,748.5	0.9	-7.8	-5.0	1.27	-0.09	-40.07	
1,796.0	0.85	170.36	1,795.5	0.0	-8.3	-4.4	2.96	-2.02	-102.89	
1,843.0	2.13	77.93	1,842.5	-0.2	-7.3	-3.8	4.95	2.72	-196.66	
1,938.0	2.42	42.86	1,937.5	1.7	-4.2	-3.7	1.47	0.31	-36.92	
1,985.0	0.91	347.80	1,984.4	2.8	-3.7	-4.3	4.34	-3.21	-117.15	
2,033.0	1.94	255.67	2,032.4	2.9	-4.5	-4.9	4.53	2.15	-191.94	
2,080.0	2.79	228.73	2,079.4	2.0	-6.2	-5.0	2.93	1.81	-57.32	
2,215.0	3.32	157.89	2,214.2	-3.8	-7.2	-0.6	2.64	0.39	-52.47	
2,310.0	2.38	153.96	2,309.1	-8.1	-5.2	4.0	1.01	-0.99	-4.14	
2,405.0	1.37	40.77	2,404.1	-9.0	-3.6	5.7	3.35	-1.06	-119.15	
2,499.0	1.35	356.29	2,498.1	-7.1	-3.0	4.4	1.10	-0.02	-47.32	
2,594.0	0.73	226.43	2,593.1	-6.4	-3.5	3.5	2.00	-0.65	-136.69	
2,689.0	1.07	168.79	2,688.0	-7.7	-3.8	4.5	0.97	0.36	-60.67	
2,784.0	0.53	36.52	2,783.0	-8.2	-3.3	5.1	1.56	-0.57	-139.23	
2,878.0	1.47	355.84	2,877.0	-6.6	-3.2	3.9	1.19	1.00	-43.28	
2,973.0	0.66	59.24	2,972.0	-5.1	-2.8	2.8	1.38	-0.85	66.74	
3,068.0	0.84	140.81	3,067.0	-5.4	-1.9	3.6	1.04	0.19	85.86	
3,163.0	0.42	105.12	3,162.0	-6.0	-1.1	4.5	0.59	-0.44	-37.57	
3,258.0	0.66	6.59	3,257.0	-5.6	-0.7	4.3	0.88	0.25	-103.72	
3,352.0	0.55	10.31	3,351.0	-4.6	-0.5	3.6	0.12	-0.12	3.96	
3,450.0	0.33	142.66	3,449.0	-4.4	-0.3	3.5	0.83	-0.22	135.05	
3,545.0	0.08	121.12	3,544.0	-4.6	-0.1	3.9	0.27	-0.26	-22.67	
3,639.0	0.73	20.30	3,638.0	-4.1	0.2	3.5	0.80	0.69	-107.26	
3,734.0	0.39	352.10	3,733.0	-3.2	0.4	2.9	0.45	-0.36	-29.68	
3,829.0	0.57	223.89	3,828.0	-3.2	0.0	2.7	0.91	0.19	-134.96	
3,924.0	0.37	189.60	3,923.0	-3.9	-0.4	3.0	0.35	-0.21	-36.09	
4,019.0	0.45	51.84	4,018.0	-3.9	-0.1	3.2	0.81	0.08	-145.01	
4,113.0	0.18	351.88	4,112.0	-3.5	0.1	3.1	0.42	-0.29	-63.79	
4,208.0	1.16	238.12	4,207.0	-3.9	-0.7	2.9	1.31	1.03	-119.75	
4,303.0	1.21	230.92	4,301.9	-5.0	-2.3	3.0	0.17	0.05	-7.58	



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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)	
4,398.0	0.82	265.47	4,396.9	-5.7	-3.8	2.8	0.75	-0.41	36.37	
4,493.0	1.09	351.97	4,491.9	-4.9	-4.6	1.7	1.39	0.28	91.05	
4,587.0	0.81	35.00	4,585.9	-3.5	-4.3	0.6	0.79	-0.30	45.78	
4,685.0	0.97	93.43	4,683.9	-2.9	-3.1	0.8	0.90	0.16	59.62	
4,780.0	1.08	110.62	4,778.9	-3.3	-1.4	2.0	0.34	0.12	18.09	
4,874.0	0.70	69.78	4,872.9	-3.4	-0.1	2.8	0.76	-0.40	-43.45	
4,969.0	0.77	62.11	4,967.9	-2.9	1.0	3.0	0.13	0.07	-8.07	
5,064.0	1.12	85.49	5,062.9	-2.6	2.5	3.5	0.54	0.37	24.61	
5,159.0	1.00	103.58	5,157.8	-2.7	4.3	4.5	0.37	-0.13	19.04	
5,254.0	0.26	36.92	5,252.8	-2.7	5.2	5.1	0.98	-0.78	-70.17	
5,349.0	1.09	354.22	5,347.8	-1.6	5.2	4.2	0.96	0.87	-44.95	
5,443.0	0.71	17.36	5,441.8	-0.2	5.3	3.0	0.55	-0.40	24.62	
5,538.0	0.13	192.57	5,536.8	0.3	5.5	2.7	0.88	-0.61	184.43	
5,633.0	0.14	344.49	5,631.8	0.3	5.4	2.7	0.28	0.01	159.92	
5,728.0	0.25	358.36	5,726.8	0.6	5.4	2.4	0.13	0.12	14.60	
5,822.0	0.02	310.69	5,820.8	0.8	5.4	2.2	0.25	-0.24	-50.71	
5,917.0	0.28	163.44	5,915.8	0.6	5.4	2.4	0.31	0.27	-155.00	
6,015.0	0.27	152.53	6,013.8	0.2	5.6	2.8	0.05	-0.01	-11.13	
6,110.0	0.30	94.09	6,108.8	0.0	5.9	3.2	0.29	0.03	-61.52	
6,204.0	0.14	79.77	6,202.8	0.0	6.3	3.4	0.18	-0.17	-15.23	
6,299.0	0.07	14.15	6,297.8	0.0	6.4	3.4	0.13	-0.07	-69.07	
6,394.0	0.18	315.64	6,392.8	0.2	6.3	3.2	0.16	0.12	-61.59	
6,488.0	0.38	327.47	6,486.8	0.6	6.1	2.8	0.22	0.21	12.59	
6,584.0	0.31	311.99	6,582.8	1.0	5.7	2.2	0.12	-0.07	-16.13	
6,678.0	1.03	335.68	6,676.8	1.9	5.2	1.1	0.80	0.77	25.20	
6,773.0	3.28	356.91	6,771.7	5.4	4.7	-2.1	2.47	2.37	22.35	
6,867.0	6.43	11.23	6,865.4	13.3	5.5	-8.2	3.57	3.35	15.23	
6,962.0	10.64	16.82	6,959.3	26.9	9.1	-17.8	4.51	4.43	5.88	
7,057.0	15.07	16.71	7,051.9	47.1	15.2	-31.6	4.66	4.66	-0.12	
7,152.0	18.06	16.03	7,142.9	73.1	22.8	-49.5	3.15	3.15	-0.72	
7,249.0	18.71	19.08	7,235.0	102.3	32.1	-69.1	1.20	0.67	3.14	
7,344.0	18.81	23.33	7,325.0	130.8	43.1	-87.3	1.44	0.11	4.47	
7,438.0	16.80	24.86	7,414.5	157.0	54.8	-103.1	2.20	-2.14	1.63	
7,521.0	15.35	21.11	7,494.2	178.1	63.8	-116.1	2.15	-1.75	-4.52	
7,616.0	16.19	16.91	7,585.6	202.5	72.2	-132.2	1.49	0.88	-4.42	
7,710.0	17.71	16.23	7,675.5	228.8	80.0	-150.2	1.63	1.62	-0.72	
7,805.0	18.99	17.63	7,765.7	257.4	88.7	-169.7	1.42	1.35	1.47	
7,900.0	19.97	23.72	7,855.3	287.0	99.9	-188.7	2.37	1.03	6.41	
7,995.0	19.33	29.54	7,944.8	315.5	114.2	-205.1	2.17	-0.67	6.13	
8,090.0	18.08	28.96	8,034.7	342.1	129.1	-219.5	1.33	-1.32	-0.61	
8,185.0	17.77	23.87	8,125.1	368.3	142.1	-234.7	1.68	-0.33	-5.36	
8,374.0	17.90	18.49	8,305.1	422.2	163.0	-269.0	0.87	0.07	-2.85	
8,471.0	17.36	17.77	8,397.5	450.1	172.1	-287.6	0.60	-0.56	-0.74	



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8,566.0	15.41	18.47	8,488.6	475.6	180.5	-304.7	2.06	-2.05	0.74	
8,660.0	13.96	21.61	8,579.6	498.0	188.6	-319.2	1.76	-1.54	3.34	
8,754.0	14.02	25.14	8,670.8	518.8	197.6	-332.0	0.91	0.06	3.76	
8,849.0	14.58	27.62	8,762.8	539.8	208.1	-344.1	0.87	0.59	2.61	
8,943.0	15.61	30.53	8,853.6	561.2	220.0	-355.8	1.36	1.10	3.10	
9,038.0	17.05	30.09	8,944.8	584.3	233.4	-368.0	1.52	1.52	-0.46	
C&L Tie-in @ 9133.0' MD / 9035.3' TVD										
9,133.0	18.43	26.02	9,035.3	609.8	247.0	-382.3	1.95	1.45	-4.28	
9,153.0	23.00	42.40	9,054.0	615.5	251.0	-385.0	36.70	22.85	81.90	
9,200.0	26.90	35.90	9,096.6	630.9	263.5	-391.3	10.13	8.30	-13.83	
9,248.0	26.40	33.50	9,139.5	648.6	275.7	-399.7	2.47	-1.04	-5.00	
9,295.0	23.20	29.80	9,182.1	665.4	286.1	-408.3	7.56	-6.81	-7.87	
9,343.0	20.40	28.60	9,226.7	680.9	294.8	-416.7	5.91	-5.83	-2.50	
9,390.0	18.20	26.10	9,271.1	694.7	302.0	-424.5	5.00	-4.68	-5.32	
9,437.0	15.90	24.00	9,316.0	707.2	307.8	-431.9	5.07	-4.89	-4.47	
9,484.0	13.80	21.70	9,361.4	718.3	312.5	-438.8	4.64	-4.47	-4.89	
9,532.0	12.40	19.90	9,408.2	728.5	316.4	-445.3	3.04	-2.92	-3.75	
9,579.0	11.40	19.90	9,454.2	737.6	319.7	-451.2	2.13	-2.13	0.00	
9,628.0	11.10	30.80	9,502.2	746.2	323.7	-456.3	4.38	-0.61	22.24	
9,675.0	11.50	47.40	9,548.3	753.2	329.5	-459.2	6.95	0.85	35.32	
9,723.0	12.10	67.60	9,595.3	758.4	337.7	-459.1	8.65	1.25	42.08	
9,770.0	13.30	86.50	9,641.2	760.6	347.6	-455.6	9.16	2.55	40.21	
9,817.0	14.70	102.60	9,686.8	759.6	358.8	-448.8	8.77	2.98	34.26	
9,864.0	16.90	115.90	9,732.1	755.3	370.8	-438.8	8.99	4.68	28.30	
9,912.0	19.90	125.90	9,777.6	747.5	383.7	-425.2	9.05	6.25	20.83	
9,959.0	23.30	133.00	9,821.3	736.5	397.0	-408.8	9.11	7.23	15.11	
10,007.0	27.30	137.50	9,864.7	721.9	411.4	-388.8	9.24	8.33	9.38	
10,054.0	31.70	140.80	9,905.6	704.4	426.5	-365.9	9.98	9.36	7.02	
10,102.0	37.00	143.20	9,945.2	683.0	443.1	-338.9	11.39	11.04	5.00	
10,149.0	42.80	145.00	9,981.3	658.6	460.8	-308.9	12.58	12.34	3.83	
10,197.0	48.70	144.90	10,014.7	630.4	480.5	-274.5	12.29	12.29	-0.21	
10,244.0	52.30	144.50	10,044.6	600.8	501.5	-238.3	7.69	7.66	-0.85	
10,292.0	56.00	144.10	10,072.7	569.3	524.2	-199.5	7.74	7.71	-0.83	
10,339.0	59.70	142.90	10,097.7	537.3	547.8	-159.8	8.16	7.87	-2.55	
10,386.0	64.60	143.40	10,119.7	504.0	572.7	-118.4	10.47	10.43	1.06	
10,433.0	68.70	144.40	10,138.3	469.2	598.2	-75.3	8.94	8.72	2.13	
10,481.0	71.70	145.10	10,154.6	432.3	624.2	-30.2	6.40	6.25	1.46	
10,528.0	74.60	146.30	10,168.2	395.1	649.6	14.7	6.64	6.17	2.55	
10,576.0	77.70	147.80	10,179.7	356.0	674.9	61.3	7.14	6.46	3.13	
10,623.0	79.70	148.60	10,188.9	316.9	699.2	107.4	4.57	4.26	1.70	
10,671.0	80.80	148.50	10,197.0	276.5	723.9	154.7	2.30	2.29	-0.21	
10,718.0	80.70	150.90	10,204.6	236.5	747.3	201.1	5.04	-0.21	5.11	
10,765.0	80.30	152.50	10,212.3	195.6	769.2	247.3	3.46	-0.85	3.40	
10,812.0	80.70	152.30	10,220.1	154.6	790.7	293.5	0.95	0.85	-0.43	



Survey Report



Company:	Jay-Bee Oil & Gas	Local Co-ordinate Reference:	Well P5S1U
Project:	Pleasants County	TVD Reference:	WELL @ 888.7usft (Patterson #581)
Site:	P5 pad	MD Reference:	WELL @ 888.7usft (Patterson #581)
Well:	P5S1U	North Reference:	Grid
Wellbore:	C&L	Survey Calculation Method:	Minimum Curvature
Design:	C&L	Database:	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)
10,861.0	81.80	152.40	10,227.6	111.7	813.2	341.8	2.25	2.24	0.20
10,908.0	84.80	154.60	10,233.0	69.9	834.0	388.2	7.90	6.38	4.68
10,955.0	86.00	155.20	10,236.8	27.5	853.9	434.6	2.85	2.55	1.28
11,050.0	89.10	156.90	10,240.9	-59.3	892.4	528.5	3.72	3.26	1.79
11,145.0	89.60	154.60	10,241.9	-145.9	931.4	622.5	2.48	0.53	-2.42
11,239.0	89.80	152.00	10,242.4	-229.8	973.7	716.0	2.77	0.21	-2.77
11,334.0	89.50	150.90	10,243.0	-313.3	1,019.1	810.8	1.20	-0.32	-1.16
11,429.0	88.70	150.10	10,244.5	-395.9	1,065.8	905.7	1.19	-0.84	-0.84
11,524.0	89.60	150.20	10,245.9	-478.3	1,113.1	1,000.6	0.95	0.95	0.11
11,618.0	89.20	149.60	10,246.9	-559.6	1,160.2	1,094.5	0.77	-0.43	-0.64
11,713.0	87.90	151.20	10,249.3	-642.2	1,207.2	1,189.3	2.17	-1.37	1.68
11,808.0	88.10	153.10	10,252.6	-726.2	1,251.5	1,284.0	2.01	0.21	2.00
11,903.0	89.50	153.20	10,254.6	-810.9	1,294.4	1,378.5	1.48	1.47	0.11
11,998.0	88.80	154.10	10,256.0	-896.0	1,336.6	1,473.0	1.20	-0.74	0.95
12,092.0	90.20	153.70	10,256.8	-980.4	1,377.9	1,566.4	1.55	1.49	-0.43
12,187.0	90.60	153.00	10,256.2	-1,065.3	1,420.5	1,660.9	0.85	0.42	-0.74
12,282.0	91.10	153.20	10,254.8	-1,150.0	1,463.5	1,755.4	0.57	0.53	0.21
12,377.0	90.50	153.20	10,253.4	-1,234.8	1,506.3	1,850.0	0.63	-0.63	0.00
12,471.0	91.00	153.50	10,252.2	-1,318.8	1,548.5	1,943.5	0.62	0.53	0.32
12,566.0	91.00	153.30	10,250.6	-1,403.8	1,591.0	2,038.0	0.21	0.00	-0.21
12,661.0	91.10	153.30	10,248.8	-1,488.6	1,633.7	2,132.5	0.11	0.11	0.00
12,756.0	90.70	153.90	10,247.3	-1,573.7	1,675.9	2,227.0	0.76	-0.42	0.63
12,850.0	89.80	154.00	10,246.9	-1,658.2	1,717.2	2,320.4	0.96	-0.96	0.11
12,945.0	88.20	153.30	10,248.6	-1,743.3	1,759.4	2,414.8	1.84	-1.68	-0.74
13,040.0	89.70	153.60	10,250.3	-1,828.2	1,801.8	2,509.3	1.61	1.58	0.32
13,135.0	91.50	155.10	10,249.3	-1,913.9	1,842.9	2,603.6	2.47	1.89	1.58
13,229.0	92.10	155.20	10,246.4	-1,999.1	1,882.4	2,696.8	0.65	0.64	0.11
13,324.0	91.60	155.00	10,243.3	-2,085.2	1,922.4	2,790.9	0.57	-0.53	-0.21
13,419.0	90.50	154.60	10,241.6	-2,171.2	1,962.8	2,885.1	1.23	-1.16	-0.42
13,514.0	90.50	154.30	10,240.7	-2,256.9	2,003.8	2,979.4	0.32	0.00	-0.32
13,608.0	90.30	154.00	10,240.1	-2,341.5	2,044.8	3,072.8	0.38	-0.21	-0.32
13,703.0	90.80	153.70	10,239.2	-2,426.8	2,086.7	3,167.3	0.61	0.53	-0.32
13,798.0	90.90	153.50	10,237.8	-2,511.8	2,128.9	3,261.7	0.24	0.11	-0.21
13,893.0	91.50	153.30	10,235.8	-2,596.8	2,171.4	3,356.2	0.67	0.63	-0.21
13,988.0	90.20	153.10	10,234.4	-2,681.5	2,214.3	3,450.7	1.38	-1.37	-0.21
14,083.0	89.70	152.90	10,234.4	-2,766.2	2,257.4	3,545.3	0.57	-0.53	-0.21
14,177.0	88.60	152.40	10,235.8	-2,849.7	2,300.6	3,638.9	1.29	-1.17	-0.53
14,272.0	87.30	153.10	10,239.2	-2,934.1	2,344.0	3,733.5	1.55	-1.37	0.74
14,367.0	87.30	153.20	10,243.7	-3,018.7	2,386.9	3,827.9	0.11	0.00	0.11
14,462.0	85.70	153.10	10,249.5	-3,103.3	2,429.7	3,922.3	1.69	-1.68	-0.11
14,557.0	87.80	154.00	10,254.9	-3,188.2	2,472.0	4,016.6	2.40	2.21	0.95
14,651.0	90.30	154.40	10,256.4	-3,272.9	2,512.9	4,110.0	2.69	2.66	0.43
14,746.0	90.40	153.80	10,255.9	-3,358.3	2,554.4	4,204.4	0.64	0.11	-0.63



Survey Report



Company:	Jay-Bee Oil & Gas	Local Co-ordinate Reference:	Well P5S1U
Project:	Pleasants County	TVD Reference:	WELL @ 888.7usft (Patterson #581)
Site:	P5 pad	MD Reference:	WELL @ 888.7usft (Patterson #581)
Well:	P5S1U	North Reference:	Grid
Wellbore:	C&L	Survey Calculation Method:	Minimum Curvature
Design:	C&L	Database:	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)	
14,841.0	91.20	153.60	10,254.5	-3,443.5	2,596.5	4,298.8	0.87	0.84	-0.21	
14,936.0	90.80	153.90	10,252.9	-3,528.7	2,638.5	4,393.2	0.53	-0.42	0.32	
15,030.0	90.30	153.30	10,252.0	-3,612.9	2,680.3	4,486.7	0.83	-0.53	-0.64	
15,125.0	89.80	153.40	10,251.9	-3,697.8	2,722.9	4,581.2	0.54	-0.53	0.11	
15,220.0	90.80	153.40	10,251.4	-3,782.7	2,765.4	4,675.7	1.05	1.05	0.00	
15,315.0	90.80	152.60	10,250.1	-3,867.3	2,808.5	4,770.3	0.84	0.00	-0.84	
15,409.0	88.90	152.00	10,250.3	-3,950.6	2,852.2	4,864.0	2.12	-2.02	-0.64	
15,504.0	90.20	153.10	10,251.1	-4,034.9	2,896.0	4,958.6	1.79	1.37	1.16	
15,599.0	89.20	152.80	10,251.6	-4,119.5	2,939.2	5,053.2	1.10	-1.05	-0.32	
15,693.0	90.90	153.10	10,251.5	-4,203.2	2,982.0	5,146.8	1.84	1.81	0.32	
15,788.0	88.80	152.10	10,251.7	-4,287.5	3,025.7	5,241.4	2.45	-2.21	-1.05	
15,883.0	89.70	152.40	10,253.0	-4,371.6	3,069.9	5,336.1	1.00	0.95	0.32	
15,977.0	90.30	153.50	10,253.0	-4,455.3	3,112.7	5,429.7	1.33	0.64	1.17	
16,072.0	89.50	152.20	10,253.1	-4,539.8	3,156.0	5,524.3	1.61	-0.84	-1.37	
16,167.0	89.90	151.70	10,253.6	-4,623.7	3,200.7	5,619.0	0.67	0.42	-0.53	
16,262.0	90.10	151.50	10,253.6	-4,707.2	3,245.9	5,713.8	0.30	0.21	-0.21	
16,357.0	89.50	152.70	10,254.0	-4,791.2	3,290.3	5,808.5	1.41	-0.63	1.26	
16,451.0	90.20	152.60	10,254.2	-4,874.7	3,333.5	5,902.1	0.75	0.74	-0.11	
16,546.0	90.90	153.00	10,253.3	-4,959.2	3,376.9	5,996.7	0.85	0.74	0.42	
16,641.0	89.60	152.40	10,252.9	-5,043.6	3,420.5	6,091.3	1.51	-1.37	-0.63	
16,736.0	89.70	151.30	10,253.5	-5,127.3	3,465.3	6,186.0	1.16	0.11	-1.16	
16,830.0	90.10	151.10	10,253.6	-5,209.7	3,510.6	6,279.8	0.48	0.43	-0.21	
16,925.0	89.40	152.20	10,254.0	-5,293.3	3,555.7	6,374.6	1.37	-0.74	1.16	
17,020.0	89.80	151.70	10,254.7	-5,377.2	3,600.4	6,469.3	0.67	0.42	-0.53	
17,115.0	90.90	152.20	10,254.1	-5,461.0	3,645.0	6,564.0	1.27	1.16	0.53	
17,210.0	91.10	155.10	10,252.5	-5,546.1	3,687.2	6,658.5	3.06	0.21	3.05	
17,304.0	91.30	154.80	10,250.5	-5,631.2	3,727.0	6,751.7	0.38	0.21	-0.32	
17,399.0	90.90	154.10	10,248.7	-5,716.9	3,768.0	6,846.0	0.85	-0.42	-0.74	
17,493.0	90.70	155.10	10,247.4	-5,801.8	3,808.3	6,939.3	1.08	-0.21	1.06	
17,587.0	90.30	155.60	10,246.5	-5,887.3	3,847.5	7,032.4	0.68	-0.43	0.53	
17,682.0	90.10	155.50	10,246.2	-5,973.8	3,886.8	7,126.5	0.24	-0.21	-0.11	
17,776.0	90.00	153.00	10,246.1	-6,058.4	3,927.6	7,219.8	2.66	-0.11	-2.66	
17,871.0	90.00	151.40	10,246.1	-6,142.4	3,971.9	7,314.5	1.68	0.00	-1.68	
17,966.0	88.80	150.20	10,247.1	-6,225.4	4,018.3	7,409.4	1.79	-1.26	-1.26	
18,060.0	90.50	151.10	10,247.7	-6,307.3	4,064.3	7,503.2	2.05	1.81	0.96	
18,155.0	89.10	151.10	10,248.0	-6,390.5	4,110.3	7,598.0	1.47	-1.47	0.00	
18,250.0	89.90	151.70	10,248.9	-6,473.9	4,155.7	7,692.8	1.05	0.84	0.63	
18,344.0	87.80	151.10	10,250.7	-6,556.4	4,200.7	7,786.6	2.32	-2.23	-0.64	
18,439.0	89.20	152.20	10,253.2	-6,639.9	4,245.8	7,881.3	1.87	1.47	1.16	
18,534.0	89.90	152.40	10,254.0	-6,724.1	4,290.0	7,976.0	0.77	0.74	0.21	
18,628.0	90.30	152.70	10,253.8	-6,807.5	4,333.3	8,069.6	0.53	0.43	0.32	
18,660.0	90.80	152.80	10,253.5	-6,835.9	4,347.9	8,101.5	1.59	1.56	0.31	
TD @ 18714.0' MD / 10252.8' TVD										
18,714.0	90.80	152.80	10,252.8	-6,883.9	4,372.6	8,155.3	0.00	0.00	0.00	



Company:	Jay-Bee Oil & Gas	Local Co-ordinate Reference:	Well P5S1U
Project:	Pleasants County	TVD Reference:	WELL @ 888.7usft (Patterson #581)
Site:	P5 pad	MD Reference:	WELL @ 888.7usft (Patterson #581)
Well:	P5S1U	North Reference:	Grid
Wellbore:	C&L	Survey Calculation Method:	Minimum Curvature
Design:	C&L	Database:	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)

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9,133.0	9,035.3	609.8	247.0	C&L Tie-in @ 9133.0' MD / 9035.3' TVD
18,714.0	10,252.8	-6,883.9	4,372.6	TD @ 18714.0' MD / 10252.8' TVD