

ABRAXAS PETROLEUM CORPORATION

**Ward County, TX
Woodberry 3
101H - Slot 101H**

Wellbore #1

Design: Wellbore #1

Standard Survey Report

23 April, 2019

Survey Report

Company:	ABRAXAS PETROLEUM CORPORATION	Local Co-ordinate Reference:	Well 101H - Slot 101H
Project:	Ward County, TX	TVD Reference:	2653+28 @ 2681.00usft (Patterson 228)
Site:	Woodberry 3	MD Reference:	2653+28 @ 2681.00usft (Patterson 228)
Well:	101H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.14 Multi User

Project	Ward County, TX		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Texas Central 4203		

Site		Woodberry 3			
Site Position:		Northing:	699,423.82 usft	Latitude:	31.55950
From:	Map	Easting:	1,126,385.01 usft	Longitude:	-103.13841
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	-1.44 °

Well	101H - Slot 101H					
Well Position	+N/-S	0.00 usft	Northing:	699,423.82 usft	Latitude:	31.55950
	+E/-W	0.00 usft	Easting:	1,126,385.01 usft	Longitude:	-103.13841
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	2,653.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	2/15/2019	7.12	59.52	47,535

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	253.71	

Survey Program	Date	4/23/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
140.00	16,249.00	Survey #1 (Wellbore #1)	MWD+HRGM	OWSG MWD + HRGM	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
140.00	0.90	172.40	139.99	-1.09	0.15	0.17	0.64	0.64	0.00	
First Premier MWD Survey										
231.00	1.10	173.50	230.98	-2.67	0.34	0.42	0.22	0.22	1.21	
328.00	0.70	151.60	327.97	-4.11	0.73	0.46	0.54	-0.41	-22.58	
415.00	0.70	162.90	414.96	-5.09	1.14	0.34	0.16	0.00	12.99	
507.00	0.80	176.60	506.95	-6.27	1.34	0.47	0.22	0.11	14.89	
598.00	0.90	188.20	597.94	-7.61	1.27	0.91	0.22	0.11	12.75	
690.00	0.80	186.00	689.93	-8.96	1.10	1.45	0.11	-0.11	-2.39	
780.00	0.50	193.30	779.93	-9.97	0.95	1.89	0.35	-0.33	8.11	
871.00	0.40	181.10	870.93	-10.67	0.85	2.18	0.15	-0.11	-13.41	

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Design:	Wellbore #1	Database:	EDM 5000.14 Multi User

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
962.00	0.20	216.20	961.92	-11.12	0.75	2.40	0.29	-0.22	38.57
1,057.00	0.30	239.70	1,056.92	-11.38	0.44	2.77	0.15	0.11	24.74
1,152.00	0.20	207.60	1,151.92	-11.65	0.15	3.13	0.18	-0.11	-33.79
1,246.00	0.20	169.70	1,245.92	-11.96	0.10	3.26	0.14	0.00	-40.32
1,341.00	0.50	109.90	1,340.92	-12.26	0.52	2.94	0.46	0.32	-62.95
1,397.00	0.60	101.00	1,396.92	-12.40	1.04	2.48	0.23	0.18	-15.89
1,526.00	1.10	103.10	1,525.90	-12.81	2.91	0.80	0.39	0.39	1.63
1,621.00	1.20	72.50	1,620.88	-12.72	4.74	-0.99	0.65	0.11	-32.21
1,716.00	1.60	51.10	1,715.86	-11.59	6.72	-3.20	0.69	0.42	-22.53
1,810.00	1.90	52.70	1,809.81	-9.82	8.98	-5.87	0.32	0.32	1.70
1,905.00	2.10	39.50	1,904.76	-7.52	11.34	-8.78	0.53	0.21	-13.89
1,999.00	2.10	38.40	1,998.69	-4.84	13.51	-11.61	0.04	0.00	-1.17
2,093.00	2.20	36.30	2,092.63	-2.04	15.65	-14.45	0.14	0.11	-2.23
2,187.00	2.60	54.00	2,186.54	0.67	18.44	-17.89	0.89	0.43	18.83
2,281.00	3.70	66.90	2,280.40	3.11	22.96	-22.91	1.39	1.17	13.72
2,376.00	4.70	69.50	2,375.15	5.68	29.42	-29.83	1.07	1.05	2.74
2,470.00	5.80	72.90	2,468.75	8.42	37.57	-38.42	1.22	1.17	3.62
2,564.00	6.30	75.20	2,562.23	11.14	47.09	-48.33	0.59	0.53	2.45
2,659.00	5.90	71.30	2,656.69	14.04	56.76	-58.42	0.61	-0.42	-4.11
2,753.00	5.80	71.20	2,750.20	17.12	65.83	-67.99	0.11	-0.11	-0.11
2,848.00	6.10	71.10	2,844.69	20.30	75.15	-77.83	0.32	0.32	-0.11
2,943.00	6.20	71.30	2,939.14	23.58	84.79	-87.99	0.11	0.11	0.21
3,038.00	6.20	71.90	3,033.59	26.82	94.52	-98.25	0.07	0.00	0.63
3,132.00	6.40	76.50	3,127.02	29.62	104.44	-108.55	0.58	0.21	4.89
3,226.00	6.90	79.10	3,220.39	31.91	115.08	-119.41	0.62	0.53	2.77
3,321.00	6.50	71.90	3,314.74	34.66	125.79	-130.46	0.98	-0.42	-7.58
3,415.00	6.20	74.50	3,408.16	37.67	135.74	-140.86	0.44	-0.32	2.77
3,509.00	6.30	79.50	3,501.60	39.96	145.70	-151.06	0.59	0.11	5.32
3,604.00	5.80	74.00	3,596.08	42.23	155.44	-161.05	0.81	-0.53	-5.79
3,699.00	5.40	73.60	3,690.62	44.82	164.35	-170.32	0.42	-0.42	-0.42
3,793.00	5.70	72.50	3,784.18	47.47	173.04	-179.41	0.34	0.32	-1.17
3,888.00	6.40	70.80	3,878.65	50.63	182.54	-189.42	0.76	0.74	-1.79
3,983.00	6.10	73.00	3,973.09	53.85	192.37	-199.75	0.40	-0.32	2.32
4,078.00	5.70	75.50	4,067.58	56.51	201.76	-209.51	0.50	-0.42	2.63
4,173.00	5.70	71.70	4,162.11	59.17	210.81	-218.94	0.40	0.00	-4.00
4,268.00	5.40	71.70	4,256.67	62.05	219.53	-228.13	0.32	-0.32	0.00
4,363.00	3.70	80.50	4,351.37	63.96	226.80	-235.64	1.93	-1.79	9.26
4,457.00	1.60	98.20	4,445.26	64.28	231.09	-239.84	2.37	-2.23	18.83
4,551.00	0.90	99.90	4,539.24	63.96	233.12	-241.70	0.75	-0.74	1.81
4,646.00	1.20	94.70	4,634.22	63.75	234.84	-243.30	0.33	0.32	-5.47
4,741.00	0.50	83.00	4,729.21	63.72	236.25	-244.64	0.76	-0.74	-12.32
4,806.00	0.20	348.50	4,794.21	63.87	236.51	-244.93	0.85	-0.46	-145.38
4,925.00	0.20	14.60	4,913.21	64.27	236.52	-245.05	0.08	0.00	21.93

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5,019.00	0.20	4.20	5,007.21	64.59	236.57	-245.19	0.04	0.00	-11.06	
5,114.00	0.00	54.10	5,102.21	64.76	236.58	-245.25	0.21	-0.21	0.00	
5,209.00	0.20	75.00	5,197.21	64.80	236.74	-245.42	0.21	0.21	0.00	
5,303.00	0.20	52.30	5,291.21	64.95	237.03	-245.73	0.08	0.00	-24.15	
5,398.00	0.20	58.70	5,386.21	65.13	237.30	-246.05	0.02	0.00	6.74	
5,493.00	0.20	43.00	5,481.21	65.34	237.56	-246.35	0.06	0.00	-16.53	
5,587.00	0.30	56.60	5,575.21	65.60	237.88	-246.73	0.12	0.11	14.47	
5,682.00	0.40	51.00	5,670.21	65.94	238.34	-247.27	0.11	0.11	-5.89	
5,776.00	0.30	53.00	5,764.20	66.30	238.79	-247.80	0.11	-0.11	2.13	
5,871.00	0.40	75.90	5,859.20	66.53	239.31	-248.37	0.18	0.11	24.11	
5,965.00	0.30	56.60	5,953.20	66.74	239.84	-248.93	0.16	-0.11	-20.53	
6,060.00	0.20	71.20	6,048.20	66.93	240.20	-249.33	0.12	-0.11	15.37	
6,155.00	0.10	48.80	6,143.20	67.04	240.42	-249.57	0.12	-0.11	-23.58	
6,249.00	0.20	50.00	6,237.20	67.20	240.61	-249.80	0.11	0.11	1.28	
6,345.00	0.20	116.80	6,333.20	67.23	240.89	-250.07	0.23	0.00	69.58	
6,440.00	0.20	63.10	6,428.20	67.23	241.18	-250.36	0.19	0.00	-56.53	
6,534.00	0.30	90.60	6,522.20	67.30	241.57	-250.75	0.16	0.11	29.26	
6,628.00	0.30	67.80	6,616.20	67.39	242.05	-251.24	0.13	0.00	-24.26	
6,723.00	0.50	64.60	6,711.19	67.67	242.65	-251.89	0.21	0.21	-3.37	
6,818.00	0.50	69.70	6,806.19	67.99	243.42	-252.71	0.05	0.00	5.37	
6,913.00	0.50	64.40	6,901.19	68.31	244.18	-253.54	0.05	0.00	-5.58	
7,008.00	0.50	58.70	6,996.18	68.71	244.91	-254.35	0.05	0.00	-6.00	
7,101.00	0.50	45.90	7,089.18	69.20	245.54	-255.10	0.12	0.00	-13.76	
7,196.00	0.70	48.80	7,184.17	69.87	246.28	-255.99	0.21	0.21	3.05	
7,291.00	1.00	60.60	7,279.16	70.66	247.44	-257.32	0.36	0.32	12.42	
7,385.00	1.10	62.00	7,373.15	71.48	248.95	-259.01	0.11	0.11	1.49	
7,480.00	1.10	59.00	7,468.13	72.38	250.54	-260.78	0.06	0.00	-3.16	
7,573.00	1.30	62.50	7,561.11	73.33	252.24	-262.68	0.23	0.22	3.76	
7,667.00	1.10	57.70	7,655.09	74.30	253.95	-264.59	0.24	-0.21	-5.11	
7,761.00	0.70	44.10	7,749.08	75.20	255.11	-265.96	0.48	-0.43	-14.47	
7,855.00	0.60	7.70	7,843.07	76.10	255.57	-266.66	0.44	-0.11	-38.72	
7,949.00	0.50	330.90	7,937.07	76.94	255.44	-266.77	0.38	-0.11	-39.15	
8,044.00	0.60	329.40	8,032.06	77.74	254.98	-266.55	0.11	0.11	-1.58	
8,139.00	0.60	317.80	8,127.06	78.53	254.40	-266.21	0.13	0.00	-12.21	
8,233.00	0.50	303.20	8,221.05	79.12	253.72	-265.73	0.18	-0.11	-15.53	
8,328.00	0.50	309.00	8,316.05	79.61	253.05	-265.23	0.05	0.00	6.11	
8,423.00	0.40	331.80	8,411.05	80.16	252.58	-264.92	0.21	-0.11	24.00	
8,517.00	0.70	316.20	8,505.04	80.87	252.02	-264.59	0.35	0.32	-16.60	
8,611.00	0.50	299.50	8,599.04	81.48	251.27	-264.04	0.28	-0.21	-17.77	
8,705.00	0.50	281.50	8,693.03	81.77	250.51	-263.39	0.17	0.00	-19.15	
8,800.00	0.60	225.40	8,788.03	81.50	249.75	-262.58	0.55	0.11	-59.05	
8,895.00	0.70	165.70	8,883.03	80.59	249.54	-262.13	0.69	0.11	-62.84	
8,990.00	1.00	177.50	8,978.01	79.20	249.72	-261.91	0.36	0.32	12.42	

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9,084.00	0.60	193.90	9,072.01	77.90	249.64	-261.46	0.49	-0.43	17.45	
9,178.00	0.70	193.40	9,166.00	76.86	249.38	-260.93	0.11	0.11	-0.53	
9,273.00	0.90	163.60	9,260.99	75.58	249.46	-260.65	0.48	0.21	-31.37	
9,367.00	0.60	158.60	9,354.98	74.42	249.85	-260.69	0.33	-0.32	-5.32	
9,462.00	0.70	152.90	9,449.98	73.44	250.29	-260.85	0.13	0.11	-6.00	
9,557.00	0.40	125.50	9,544.97	72.73	250.83	-261.16	0.41	-0.32	-28.84	
9,651.00	0.30	111.60	9,638.97	72.45	251.32	-261.56	0.14	-0.11	-14.79	
9,745.00	0.40	141.50	9,732.97	72.10	251.76	-261.87	0.22	0.11	31.81	
9,840.00	0.50	181.20	9,827.97	71.43	251.96	-261.88	0.34	0.11	41.79	
9,934.00	0.70	181.00	9,921.96	70.44	251.94	-261.58	0.21	0.21	-0.21	
10,029.00	0.90	178.10	10,016.95	69.12	251.95	-261.22	0.21	0.21	-3.05	
10,122.00	0.80	183.60	10,109.94	67.74	251.94	-260.82	0.14	-0.11	5.91	
10,205.00	1.60	217.40	10,192.92	66.24	251.20	-259.69	1.25	0.96	40.72	
10,237.00	4.80	239.90	10,224.87	65.21	249.76	-258.03	10.56	10.00	70.31	
10,269.00	8.10	246.00	10,256.66	63.62	246.55	-254.49	10.52	10.31	19.06	
10,300.00	10.70	248.50	10,287.24	61.68	241.87	-249.46	8.49	8.39	8.06	
10,331.00	13.50	250.00	10,317.55	59.39	235.79	-242.99	9.09	9.03	4.84	
10,363.00	16.60	250.30	10,348.45	56.57	227.98	-234.69	9.69	9.69	0.94	
10,394.00	20.10	250.70	10,377.87	53.31	218.78	-224.95	11.30	11.29	1.29	
10,426.00	23.30	251.90	10,407.60	49.53	207.57	-213.13	10.10	10.00	3.75	
10,457.00	26.20	254.00	10,435.75	45.74	195.16	-200.16	9.77	9.35	6.77	
10,489.00	28.70	255.90	10,464.14	41.92	180.92	-185.41	8.28	7.81	5.94	
10,521.00	31.60	256.50	10,491.81	38.09	165.31	-169.36	9.11	9.06	1.87	
10,552.00	34.60	255.80	10,517.78	34.03	148.88	-152.45	9.76	9.68	-2.26	
10,583.00	37.50	255.00	10,542.84	29.43	131.23	-134.21	9.48	9.35	-2.58	
10,615.00	40.70	253.80	10,567.67	24.00	111.79	-114.04	10.28	10.00	-3.75	
10,646.00	44.30	252.70	10,590.52	17.95	91.74	-93.10	11.86	11.61	-3.55	
10,678.00	47.50	252.40	10,612.79	11.06	69.82	-70.12	10.02	10.00	-0.94	
10,709.00	50.20	253.20	10,633.19	4.16	47.53	-46.79	8.92	8.71	2.58	
10,740.00	53.00	253.80	10,652.44	-2.73	24.23	-22.50	9.16	9.03	1.94	
10,772.00	55.90	254.50	10,671.04	-9.84	-0.81	3.54	9.24	9.06	2.19	
10,803.00	58.30	254.70	10,687.88	-16.75	-25.90	29.56	7.76	7.74	0.65	
10,834.00	62.20	255.70	10,703.26	-23.62	-51.92	56.46	12.89	12.58	3.23	
10,866.00	65.50	256.50	10,717.36	-30.52	-79.80	85.15	10.55	10.31	2.50	
10,898.00	68.50	256.40	10,729.86	-37.42	-108.43	114.57	9.38	9.37	-0.31	
10,929.00	71.80	256.60	10,740.39	-44.22	-136.78	143.69	10.66	10.65	0.65	
10,961.00	75.60	256.50	10,749.37	-51.37	-166.64	174.36	11.88	11.87	-0.31	
10,992.00	78.90	256.60	10,756.21	-58.40	-196.05	204.56	10.65	10.65	0.32	
11,024.00	81.30	256.90	10,761.71	-65.62	-226.73	236.03	7.56	7.50	0.94	
11,088.51	85.21	256.77	10,769.29	-80.21	-289.10	299.99	6.07	6.06	-0.20	
As-Drilled FTP										
11,178.00	90.64	256.59	10,772.52	-100.81	-376.09	389.27	6.07	6.06	-0.20	
11,272.00	88.31	253.86	10,773.38	-124.77	-466.96	483.22	3.82	-2.48	-2.90	
11,365.00	88.04	253.25	10,776.35	-151.09	-556.11	576.17	0.72	-0.29	-0.66	

Survey Report

Company:	ABRAXAS PETROLEUM CORPORATION	Local Co-ordinate Reference:	Well 101H - Slot 101H
Project:	Ward County, TX	TVD Reference:	2653+28 @ 2681.00usft (Patterson 228)
Site:	Woodberry 3	MD Reference:	2653+28 @ 2681.00usft (Patterson 228)
Well:	101H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.14 Multi User

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
11,459.00	92.40	255.36	10,775.98	-176.51	-646.58	670.13	5.15	4.64	2.24
11,553.00	88.13	250.52	10,775.55	-204.07	-736.40	764.08	6.87	-4.54	-5.15
11,647.00	86.51	248.24	10,779.95	-237.14	-824.27	857.69	2.97	-1.72	-2.43
11,741.00	84.40	246.74	10,787.39	-273.01	-910.83	950.84	2.75	-2.24	-1.60
11,835.00	91.38	250.52	10,790.85	-307.20	-998.24	1,044.33	8.44	7.43	4.02
11,929.00	92.66	254.83	10,787.54	-335.17	-1,087.89	1,138.23	4.78	1.36	4.59
12,023.00	91.69	254.57	10,783.97	-359.96	-1,178.50	1,232.15	1.07	-1.03	-0.28
12,117.00	90.29	255.36	10,782.35	-384.34	-1,269.26	1,326.11	1.71	-1.49	0.84
12,211.00	88.84	255.62	10,783.06	-407.89	-1,360.26	1,420.06	1.57	-1.54	0.28
12,306.00	85.05	254.13	10,788.12	-432.63	-1,451.82	1,514.89	4.29	-3.99	-1.57
12,400.00	88.13	255.18	10,793.71	-457.46	-1,542.30	1,608.70	3.46	3.28	1.12
12,494.00	87.03	255.80	10,797.68	-480.99	-1,633.21	1,702.56	1.34	-1.17	0.66
12,589.00	89.80	255.27	10,800.31	-504.71	-1,725.16	1,797.47	2.97	2.92	-0.56
12,682.00	88.26	253.34	10,801.89	-529.86	-1,814.67	1,890.44	2.65	-1.66	-2.08
12,776.00	89.54	253.34	10,803.69	-556.80	-1,904.71	1,984.42	1.36	1.36	0.00
12,871.00	88.04	251.58	10,805.70	-585.42	-1,995.26	2,079.37	2.43	-1.58	-1.85
12,965.00	88.09	253.25	10,808.87	-613.81	-2,084.82	2,173.29	1.78	0.05	1.78
13,060.00	85.76	251.75	10,813.97	-642.33	-2,175.28	2,268.12	2.92	-2.45	-1.58
13,154.00	85.89	252.46	10,820.81	-671.14	-2,264.50	2,361.84	0.77	0.14	0.76
13,249.00	85.49	253.86	10,827.95	-698.58	-2,355.16	2,456.56	1.53	-0.42	1.47
13,343.00	90.64	254.04	10,831.12	-724.54	-2,445.42	2,550.48	5.48	5.48	0.19
13,437.00	90.81	253.07	10,829.93	-751.15	-2,535.56	2,644.47	1.05	0.18	-1.03
13,531.00	89.23	253.25	10,829.90	-778.38	-2,625.53	2,738.46	1.69	-1.68	0.19
13,625.00	88.48	253.42	10,831.78	-805.33	-2,715.56	2,832.44	0.82	-0.80	0.18
13,720.00	86.11	254.30	10,836.26	-831.71	-2,806.71	2,927.32	2.66	-2.49	0.93
13,813.00	84.79	254.13	10,843.64	-856.93	-2,895.92	3,020.03	1.43	-1.42	-0.18
13,908.00	87.82	255.71	10,849.76	-881.59	-2,987.44	3,114.79	3.60	3.19	1.66
14,002.00	87.52	255.27	10,853.58	-905.12	-3,078.37	3,208.67	0.57	-0.32	-0.47
14,096.00	87.03	253.77	10,858.05	-930.18	-3,168.85	3,302.55	1.68	-0.52	-1.60
14,190.00	87.74	256.06	10,862.34	-954.62	-3,259.51	3,396.43	2.55	0.76	2.44
14,285.00	90.07	256.94	10,864.16	-976.79	-3,351.86	3,491.29	2.62	2.45	0.93
14,379.00	88.70	256.15	10,865.17	-998.66	-3,443.28	3,585.16	1.68	-1.46	-0.84
14,473.00	89.05	254.74	10,867.01	-1,022.28	-3,534.24	3,679.10	1.55	0.37	-1.50
14,567.00	88.35	255.09	10,869.14	-1,046.73	-3,624.98	3,773.06	0.83	-0.74	0.37
14,662.00	87.52	255.97	10,872.57	-1,070.45	-3,716.90	3,867.94	1.27	-0.87	0.93
14,756.00	86.81	255.18	10,877.22	-1,093.84	-3,807.82	3,961.78	1.13	-0.76	-0.84
14,850.00	87.65	257.03	10,881.76	-1,116.39	-3,898.96	4,055.58	2.16	0.89	1.97
14,943.00	86.90	253.86	10,886.18	-1,139.73	-3,988.86	4,148.42	3.50	-0.81	-3.41
15,038.00	88.88	252.72	10,889.68	-1,167.02	-4,079.78	4,243.35	2.40	2.08	-1.20
15,133.00	89.54	252.10	10,890.99	-1,195.73	-4,170.33	4,338.31	0.95	0.69	-0.65
15,228.00	87.91	250.96	10,893.10	-1,225.82	-4,260.41	4,433.22	2.09	-1.72	-1.20
15,321.00	87.60	250.26	10,896.75	-1,256.67	-4,348.07	4,526.01	0.82	-0.33	-0.75
15,415.00	87.52	251.05	10,900.75	-1,287.78	-4,436.68	4,619.79	0.84	-0.09	0.84

Survey Report

Company:	ABRAXAS PETROLEUM CORPORATION	Local Co-ordinate Reference:	Well 101H - Slot 101H
Project:	Ward County, TX	TVD Reference:	2653+28 @ 2681.00usft (Patterson 228)
Site:	Woodberry 3	MD Reference:	2653+28 @ 2681.00usft (Patterson 228)
Well:	101H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.14 Multi User

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
15,511.00	86.73	252.37	10,905.56	-1,317.87	-4,527.71	4,715.61	1.60	-0.82	1.37	
15,604.00	86.46	251.75	10,911.09	-1,346.46	-4,616.04	4,808.40	0.73	-0.29	-0.67	
15,699.00	88.26	253.86	10,915.46	-1,374.51	-4,706.68	4,903.28	2.92	1.89	2.22	
15,794.00	86.11	253.51	10,920.13	-1,401.17	-4,797.74	4,998.16	2.29	-2.26	-0.37	
15,887.00	86.20	253.34	10,926.36	-1,427.64	-4,886.68	5,090.95	0.21	0.10	-0.18	
15,982.00	85.05	252.37	10,933.61	-1,455.56	-4,977.19	5,185.66	1.58	-1.21	-1.02	
16,075.00	85.01	251.49	10,941.67	-1,484.30	-5,065.27	5,278.26	0.94	-0.04	-0.95	
16,170.00	85.23	250.70	10,949.75	-1,514.97	-5,154.82	5,372.82	0.86	0.23	-0.83	
16,175.95	85.06	250.56	10,950.25	-1,516.93	-5,160.41	5,378.74	3.67	-2.82	-2.36	
As-Drilled LTP										
16,181.00	84.92	250.44	10,950.70	-1,518.61	-5,165.15	5,383.76	3.67	-2.82	-2.36	
Last Premier MWD Survey										
16,249.00	84.92	250.44	10,956.72	-1,541.29	-5,228.98	5,451.39	0.00	0.00	0.00	
Projection to Bit / TD										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Woodberry 3 101H As-D	0.00	0.00	10,769.29	-80.21	-289.10	699,343.61	1,126,095.91	31.55926	-103.13933	
- hit/miss target										
- Shape										
- actual wellpath hits target center										
- Point										
Woodberry 3 101H As-D	0.00	360.00	10,950.25	-1,516.93	-5,160.41	697,906.88	1,121,224.59	31.55498	-103.15485	
- actual wellpath hits target center										
- Point										
Woodberry 3 101H As-D	0.00	0.00	10,956.72	-1,541.29	-5,228.98	697,882.53	1,121,156.03	31.55490	-103.15507	
- actual wellpath hits target center										
- Point										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
140.00	139.99	-1.09	0.15	First Premier MWD Survey	
11,088.51	10,769.29	-80.21	-289.10	As-Drilled FTP	
16,175.95	10,950.25	-1,516.93	-5,160.41	As-Drilled LTP	
16,181.00	10,950.70	-1,518.61	-5,165.15	Last Premier MWD Survey	
16,249.00	10,956.72	-1,541.29	-5,228.98	Projection to Bit / TD	

Checked By: _____	Approved By: _____	Date: _____
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