

30-025-44508

HOBBS, NM

MAY 16 2018

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**CAZA OPERATING, LLC**

Lea County, NM (NAD83) NMEZ

Sioux 36 State

#5H

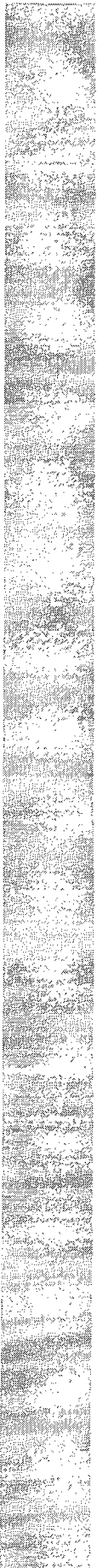
OH

Design: OH

**Standard Survey Report**

24 April, 2018

11/20/2017 10:00 AM 30-025-44508



# Survey Report

<b>Company:</b> CAZA OPERATING, LLC	<b>Local Co-ordinate Reference:</b> Well #5H
<b>Project:</b> Lea County, NM (NAD83) NMEZ	<b>TVD Reference:</b> RKB @ 3131.00usft (Bison 17 - RKB=23')
<b>Site:</b> Sioux 36 State	<b>MD Reference:</b> RKB @ 3131.00usft (Bison 17 - RKB=23')
<b>Well:</b> #5H	<b>North Reference:</b> Grid
<b>Wellbore:</b> OH	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> OH	<b>Database:</b> EDM 5000.14 Single User Db

<b>Project:</b> Lea County, NM (NAD83) NMEZ	
<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> New Mexico Eastern Zone	

<b>Site:</b> Sioux 36 State		
<b>Site Position:</b>	<b>Northing:</b> 399,366.40 usft	<b>Latitude:</b> 32° 5' 38.233 N
<b>From:</b> Map	<b>Easting:</b> 852,457.20 usft	<b>Longitude:</b> 103° 19' 43.246 W
<b>Position Uncertainty:</b> 0.00 usft	<b>Slot Radius:</b> 13-3/16 "	<b>Grid Convergence:</b> 0.53 °

<b>Well:</b> #5H			
<b>Well Position</b>	<b>+N-S</b> 0.00 usft	<b>Northing:</b> 399,366.40 usft	<b>Latitude:</b> 32° 5' 38.233 N
	<b>+E-W</b> 0.00 usft	<b>Easting:</b> 852,457.20 usft	<b>Longitude:</b> 103° 19' 43.246 W
<b>Position Uncertainty</b>	0.00 usft	<b>Wellhead Elevation:</b> usft	<b>Ground Level:</b> 3,108.00 usft

<b>Wellbore:</b> OH					
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b>	<b>Dip Angle</b>	<b>Field Strength</b>
	IGRF2015	03/13/18	(°) 6.75	(°) 59.97	(nT) 47,812.71639891

<b>Design:</b> OH				
<b>Audit Notes:</b>				
<b>Version:</b> 1.0	<b>Phase:</b> ACTUAL	<b>Tie On Depth:</b> 0.00		
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N-S</b>	<b>+E-W</b>	<b>Direction</b>
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	179.62

<b>Survey Program</b>	<b>Date</b> 04/24/18			
<b>From</b>	<b>To</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
166.00	16,825.00	Survey #1 - VON MWD (OH)	MWD	MWD - Standard
16,905.00	16,905.00	Survey #2 - PTB (OH)	BLIND	OWSG BLIND

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SHL(S36S#5H)									
24.20	0.05	101.05	24.20	0.00	0.01	0.00	0.20	0.20	0.00
SHL(S36S#1H)									
166.00	0.33	101.05	166.00	-0.09	0.47	0.09	0.20	0.20	0.00
279.00	0.53	83.48	279.00	-0.09	1.31	0.10	0.21	0.18	-15.55
370.00	0.20	30.13	369.99	0.09	1.81	-0.08	0.48	-0.36	-58.63
424.00	0.68	256.53	423.99	0.10	1.54	-0.09	1.54	0.89	-247.41
514.00	1.78	272.88	513.97	0.04	-0.37	-0.05	1.27	1.22	18.17

## Survey Report

<b>Company:</b>	CAZA OPERATING, LLC	<b>Local Co-ordinate Reference:</b>	Well #5H
<b>Project:</b>	Lea County, NM (NAD83) NMEZ	<b>TVD Reference:</b>	RKB @ 3131.00usft (Bison 17 - RKB=23')
<b>Site:</b>	Sioux 36 State	<b>MD Reference:</b>	RKB @ 3131.00usft (Bison 17 - RKB=23')
<b>Well:</b>	#5H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.14 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)
578.00	2.62	261.01	577.92	-0.14	-2.81	0.12	1.49	1.31	-18.55
641.00	3.16	267.08	640.84	-0.45	-5.97	0.41	0.98	0.86	9.63
741.00	3.98	261.72	740.65	-1.09	-12.16	1.01	0.88	0.82	-5.36
843.00	3.63	261.89	842.42	-2.05	-18.85	1.93	0.34	-0.34	0.17
938.00	3.54	271.56	937.24	-2.40	-24.76	2.23	0.64	-0.09	10.18
1,033.00	3.63	287.29	1,032.06	-1.43	-30.57	1.22	1.04	0.09	16.56
1,129.00	3.87	292.04	1,127.85	0.69	-36.47	-0.94	0.41	0.25	4.95
1,224.00	3.85	287.65	1,222.63	2.86	-42.48	-3.15	0.31	-0.02	-4.62
1,319.00	3.71	290.37	1,317.43	4.90	-48.40	-5.22	0.24	-0.15	2.86
1,414.00	3.74	287.91	1,412.23	6.92	-54.23	-7.29	0.17	0.03	-2.59
1,510.00	3.56	287.56	1,508.03	8.79	-60.05	-9.19	0.19	-0.19	-0.36
1,605.00	3.49	294.06	1,602.85	10.85	-65.51	-11.29	0.43	-0.07	6.84
1,700.00	3.30	295.73	1,697.69	13.22	-70.61	-13.69	0.23	-0.20	1.76
1,795.00	3.14	291.95	1,792.54	15.38	-75.49	-15.88	0.28	-0.17	-3.98
1,891.00	2.86	296.26	1,888.41	17.42	-80.07	-17.96	0.37	-0.29	4.49
1,986.00	2.00	301.62	1,983.32	19.34	-83.61	-19.90	0.94	-0.91	5.64
2,081.00	1.69	339.50	2,078.27	21.52	-85.51	-22.09	1.30	-0.33	39.87
2,177.00	1.34	26.26	2,174.24	23.85	-85.51	-24.42	1.30	-0.36	48.71
2,272.00	1.41	46.03	2,269.22	25.66	-84.18	-26.22	0.50	0.07	20.81
2,367.00	1.36	33.11	2,364.19	27.42	-82.72	-27.97	0.33	-0.05	-13.60
2,462.00	1.30	35.14	2,459.16	29.24	-81.49	-29.79	0.08	-0.06	2.14
2,558.00	1.69	44.54	2,555.13	31.14	-79.87	-31.67	0.48	0.41	9.79
2,652.00	1.47	67.92	2,649.10	32.58	-77.78	-33.10	0.72	-0.23	24.87
2,747.00	1.56	67.04	2,744.06	33.55	-75.46	-34.05	0.10	0.09	-0.93
2,842.00	1.16	78.38	2,839.04	34.24	-73.32	-34.73	0.51	-0.42	11.94
2,936.00	1.78	79.08	2,933.00	34.71	-70.96	-35.19	0.66	0.66	0.74
3,031.00	2.42	92.70	3,027.94	34.90	-67.51	-35.35	0.85	0.67	14.34
3,126.00	1.98	105.36	3,122.87	34.37	-63.92	-34.79	0.69	-0.46	13.33
3,221.00	0.90	133.93	3,217.84	33.42	-61.80	-33.83	1.33	-1.14	30.07
3,315.00	1.01	46.03	3,311.83	33.48	-60.67	-33.88	1.41	0.12	-93.51
3,410.00	0.46	79.52	3,406.82	34.13	-59.69	-34.53	0.71	-0.58	35.25
3,506.00	2.11	237.81	3,502.80	33.26	-60.81	-33.66	2.65	1.72	164.89
3,601.00	2.29	245.11	3,597.74	31.53	-64.01	-31.95	0.35	0.19	7.68
3,695.00	1.65	246.69	3,691.68	30.20	-66.96	-30.65	0.68	-0.68	1.68
3,789.00	2.44	255.83	3,785.62	29.18	-70.14	-29.64	0.91	0.84	9.72
3,883.00	1.12	273.76	3,879.57	28.75	-73.00	-29.23	1.51	-1.40	19.07
3,979.00	0.73	302.59	3,975.56	29.14	-74.45	-29.63	0.62	-0.41	30.03
4,074.00	0.86	305.40	4,070.55	29.88	-75.54	-30.38	0.14	0.14	2.96
4,169.00	2.02	284.04	4,165.52	30.70	-77.75	-31.21	1.32	1.22	-22.48
4,265.00	2.55	297.49	4,261.44	32.09	-81.28	-32.63	0.78	0.55	14.01
4,360.00	2.15	351.28	4,356.37	34.83	-83.43	-35.39	2.27	-0.42	56.62
4,455.00	1.43	13.69	4,451.33	37.74	-83.42	-38.30	1.04	-0.76	23.59
4,550.00	0.11	98.42	4,546.32	38.88	-83.05	-39.43	1.50	-1.39	89.19

# Survey Report

**Company:** CAZA OPERATING, LLC  
**Project:** Lea County, NM (NAD83) NMEZ  
**Site:** Sioux 36 State  
**Well:** #5H  
**Wellbore:** OH  
**Design:** OH

**Local Co-ordinate Reference:**  
**TVD Reference:**  
**MD Reference:**  
**North Reference:**  
**Survey Calculation Method:**  
**Database:**

**Well #5H**  
 RKB @ 3131.00usft (Bison 17 - RKB=23')  
 RKB @ 3131.00usft (Bison 17 - RKB=23')  
 Grid  
 Minimum Curvature  
 EDM 5000.14 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)
4,646.00	0.46	169.35	4,642.32	38.49	-82.88	-39.04	0.45	0.36	73.89
4,741.00	0.40	155.55	4,737.31	37.81	-82.68	-38.36	0.13	-0.06	-14.53
4,836.00	0.15	152.47	4,832.31	37.40	-82.48	-37.95	0.26	-0.26	-3.24
4,931.00	0.26	214.61	4,927.31	37.11	-82.55	-37.66	0.24	0.12	65.41
5,027.00	0.24	248.45	5,023.31	36.86	-82.86	-37.41	0.15	-0.02	35.25
5,121.00	0.51	266.11	5,117.31	36.76	-83.46	-37.31	0.31	0.29	18.79
5,216.00	0.42	285.18	5,212.31	36.82	-84.22	-37.38	0.19	-0.09	20.07
5,311.00	0.26	245.90	5,307.31	36.82	-84.75	-37.39	0.29	-0.17	-41.35
5,406.00	0.26	271.56	5,402.30	36.74	-85.16	-37.31	0.12	0.00	27.01
5,502.00	0.22	253.54	5,498.30	36.70	-85.56	-37.27	0.09	-0.04	-18.77
5,596.00	0.24	236.67	5,592.30	36.54	-85.89	-37.11	0.07	0.02	-17.95
5,692.00	0.22	224.54	5,688.30	36.29	-86.19	-36.87	0.05	-0.02	-12.64
5,787.00	0.13	211.53	5,783.30	36.07	-86.38	-36.65	0.10	-0.09	-13.69
5,882.00	0.09	272.53	5,878.30	35.98	-86.51	-36.56	0.12	-0.04	64.21
5,978.00	0.20	248.45	5,974.30	35.93	-86.74	-36.50	0.13	0.11	-25.08
6,073.00	0.09	198.88	6,069.30	35.79	-86.92	-36.37	0.17	-0.12	-52.18
6,168.00	0.20	228.94	6,164.30	35.61	-87.06	-36.19	0.14	0.12	31.64
6,260.66	0.26	181.83	6,256.96	35.30	-87.19	-35.88	0.21	0.06	-50.84
6,359.00	0.29	168.91	6,355.30	34.83	-87.15	-35.41	0.07	0.03	-13.14
6,453.00	0.20	179.28	6,449.30	34.43	-87.10	-35.01	0.11	-0.10	11.03
6,548.00	0.29	167.15	6,544.30	34.03	-87.05	-34.61	0.11	0.09	-12.77
6,643.00	0.35	190.09	6,639.30	33.51	-87.05	-34.09	0.15	0.06	24.15
6,738.00	0.37	151.59	6,734.29	32.96	-86.95	-33.54	0.25	0.02	-40.53
6,833.00	0.29	156.51	6,829.29	32.47	-86.71	-33.05	0.09	-0.08	5.18
6,929.00	0.35	140.17	6,925.29	32.02	-86.43	-32.60	0.11	0.06	-17.02
7,023.00	0.35	140.87	7,019.29	31.58	-86.06	-32.15	0.00	0.00	0.74
7,119.00	0.37	137.44	7,115.29	31.12	-85.67	-31.69	0.03	0.02	-3.57
7,214.00	0.64	143.15	7,210.28	30.47	-85.14	-31.04	0.29	0.28	6.01
7,309.00	0.75	144.56	7,305.28	29.54	-84.46	-30.10	0.12	0.12	1.48
7,405.00	0.73	129.62	7,401.27	28.64	-83.63	-29.19	0.20	-0.02	-15.56
7,500.00	0.75	131.20	7,496.26	27.84	-82.69	-28.39	0.03	0.02	1.66
7,593.00	0.92	127.86	7,589.25	26.98	-81.64	-27.53	0.19	0.18	-3.59
7,687.00	0.90	115.29	7,683.24	26.20	-80.38	-26.74	0.21	-0.02	-13.37
7,782.00	1.19	123.64	7,778.22	25.34	-78.88	-25.86	0.34	0.31	8.79
7,877.00	1.30	126.19	7,873.20	24.16	-77.19	-24.67	0.13	0.12	2.68
7,972.00	1.43	123.73	7,968.17	22.86	-75.34	-23.36	0.15	0.14	-2.59
8,067.00	1.56	119.86	8,063.14	21.56	-73.23	-22.05	0.17	0.14	-4.07
8,161.00	1.67	115.47	8,157.10	20.33	-70.88	-20.81	0.18	0.12	-4.67
8,256.00	1.89	118.28	8,252.06	19.00	-68.26	-19.45	0.25	0.23	2.96
8,351.00	1.32	120.04	8,347.02	17.71	-65.93	-18.15	0.60	-0.60	1.85
8,446.00	1.12	105.80	8,442.00	16.91	-64.09	-17.33	0.38	-0.21	-14.99
8,542.00	0.88	107.38	8,537.98	16.43	-62.48	-16.85	0.25	-0.25	1.65
8,637.00	0.94	103.69	8,632.97	16.03	-61.03	-16.43	0.09	0.06	-3.88
8,732.00	0.90	77.76	8,727.96	16.00	-59.54	-16.40	0.44	-0.04	-27.29

## Survey Report

<b>Company:</b> CAZA OPERATING, LLC	<b>Local Co-ordinate Reference:</b>	<b>Well #5H</b>
<b>Project:</b> Lea County, NM (NAD83) NMEZ	<b>TVD Reference:</b>	RKB @ 3131.00usft (Bison 17 - RKB=23')
<b>Site:</b> Sioux 36 State	<b>MD Reference:</b>	RKB @ 3131.00usft (Bison 17 - RKB=23')
<b>Well:</b> #5H	<b>North Reference:</b>	Grid
<b>Wellbore:</b> OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b> OH	<b>Database:</b>	EDM 5000.14 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)	
8,827.00	1.19	91.65	8,822.94	16.13	-57.83	-16.52	0.40	0.31	14.62	
8,922.00	1.23	89.10	8,917.92	16.12	-55.82	-16.49	0.07	0.04	-2.68	
9,075.00	0.90	39.09	9,070.90	17.08	-53.42	-17.43	0.62	-0.22	-32.69	
9,170.00	0.18	58.51	9,165.90	17.73	-52.82	-18.09	0.77	-0.76	20.44	
9,266.00	0.46	322.27	9,261.89	18.12	-52.93	-18.47	0.53	0.29	-100.25	
9,338.00	0.77	317.09	9,333.89	18.70	-53.44	-19.06	0.44	0.43	-7.19	
9,455.00	1.19	320.96	9,450.87	20.22	-54.74	-20.58	0.36	0.36	3.31	
9,550.00	1.05	335.02	9,545.85	21.78	-55.73	-22.15	0.32	-0.15	14.80	
9,597.00	1.19	336.51	9,592.85	22.61	-56.10	-22.99	0.30	0.30	3.17	
9,646.00	1.38	332.21	9,641.83	23.60	-56.58	-23.98	0.43	0.39	-8.78	
9,741.00	1.52	326.32	9,736.80	25.66	-57.81	-26.05	0.22	0.15	-6.20	
9,836.00	1.87	335.02	9,831.76	28.12	-59.17	-28.51	0.46	0.37	9.16	
9,931.00	2.44	334.05	9,926.69	31.34	-60.71	-31.74	0.60	0.60	-1.02	
10,027.00	2.22	330.54	10,022.61	34.80	-62.51	-35.21	0.27	-0.23	-3.66	
10,122.00	1.45	358.66	10,117.57	37.60	-63.45	-38.02	1.22	-0.81	29.60	
10,216.00	0.62	131.55	10,211.56	38.45	-63.09	-38.87	2.05	-0.88	141.37	
10,312.00	1.19	158.89	10,307.55	37.18	-62.35	-37.59	0.73	0.59	28.48	
10,407.00	1.45	146.49	10,402.52	35.25	-61.33	-35.66	0.41	0.27	-13.05	
10,503.00	1.03	125.14	10,498.50	33.74	-59.95	-34.14	0.64	-0.44	-22.24	
10,597.00	1.16	121.18	10,592.48	32.77	-58.45	-33.16	0.16	0.14	-4.21	
10,693.00	1.63	100.53	10,688.45	32.01	-56.27	-32.39	0.71	0.49	-21.51	
10,788.00	1.43	123.20	10,783.42	31.12	-53.95	-31.48	0.67	-0.21	23.86	
10,884.00	1.16	192.72	10,879.40	29.51	-53.16	-29.87	1.56	-0.28	72.42	
10,980.00	1.85	291.51	10,975.38	29.13	-54.82	-29.50	2.43	0.72	102.91	
11,075.00	3.87	308.56	11,070.26	31.69	-58.75	-32.09	2.28	2.13	17.95	
11,171.00	2.75	331.15	11,166.10	35.73	-62.40	-36.15	1.77	-1.17	23.53	
11,266.00	0.57	83.56	11,261.06	37.78	-63.03	-38.20	3.17	-2.29	118.33	
11,298.00	1.43	165.48	11,293.06	37.41	-62.77	-37.83	4.57	2.69	256.00	
11,312.00	1.14	131.11	11,307.06	37.15	-62.62	-37.57	5.77	-2.07	-245.50	
11,360.00	1.08	105.10	11,355.05	36.72	-61.83	-37.13	1.05	-0.13	-54.19	
11,408.00	3.38	155.99	11,403.01	35.31	-60.81	-35.71	5.89	4.79	106.02	
<b>KOP: 11408.00' MD, 11403.01' TVD</b>										
11,455.00	9.12	152.47	11,449.71	30.74	-58.53	-31.13	12.23	12.21	-7.49	
11,502.00	15.45	147.20	11,495.62	22.16	-53.41	-22.52	13.66	13.47	-11.21	
11,549.00	19.40	148.60	11,540.45	10.23	-45.95	-10.54	8.45	8.40	2.98	
11,590.00	22.55	153.61	11,578.73	-2.63	-38.90	2.37	8.83	7.68	12.22	
11,643.00	28.24	154.05	11,626.99	-22.27	-29.25	22.08	6.97	6.96	0.83	
11,669.00	28.59	154.32	11,650.07	-33.05	-24.04	32.89	9.05	9.04	1.04	
11,750.00	35.49	154.40	11,718.69	-71.77	-5.46	71.73	8.52	8.52	0.10	
11,798.00	41.84	157.57	11,756.15	-99.16	6.68	99.20	13.85	13.23	6.60	
11,846.00	48.19	160.20	11,790.07	-130.82	18.86	130.95	13.78	13.23	5.48	
11,894.00	52.13	160.82	11,820.82	-165.56	31.15	165.77	8.27	8.21	1.29	
11,941.00	53.22	161.70	11,849.31	-200.96	43.16	201.24	2.76	2.32	1.87	

## Survey Report

<b>Company:</b>	CAZA OPERATING, LLC	<b>Local Co-ordinate Reference:</b>	Well #5H
<b>Project:</b>	Lea County, NM (NAD83) NMEZ	<b>TVD Reference:</b>	RKB @ 3131.00usft (Bison 17 - RKB=23')
<b>Site:</b>	Sioux 36 State	<b>MD Reference:</b>	RKB @ 3131.00usft (Bison 17 - RKB=23')
<b>Well:</b>	#5H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.14 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)
11,988.00	54.87	161.52	11,876.91	-237.06	55.16	237.42	3.52	3.51	-0.38
12,036.00	57.82	162.23	11,903.51	-275.03	67.58	275.47	6.27	6.15	1.48
12,041.36	58.43	162.30	11,906.34	-279.36	68.97	279.82	11.46	11.40	1.36
<b>Cross 330' Offset: 12041.36' MD, 11906.34' TVD, 58.43° INC</b>									
12,083.00	63.18	162.84	11,926.64	-314.03	79.85	314.56	11.46	11.40	1.29
12,131.00	68.12	163.72	11,946.43	-355.90	92.42	356.51	10.43	10.29	1.83
12,179.00	69.00	165.48	11,963.97	-398.98	104.28	399.66	3.87	1.83	3.67
12,227.00	69.86	166.62	11,980.84	-442.59	115.11	443.35	2.86	1.79	2.38
12,274.00	74.43	168.91	11,995.25	-486.30	124.58	487.12	10.77	9.72	4.87
12,322.00	80.83	171.63	12,005.53	-532.48	132.49	533.35	14.44	13.33	5.67
12,361.00	85.88	172.51	12,010.04	-570.84	137.83	571.74	13.14	12.95	2.26
12,392.00	87.42	171.45	12,011.85	-601.48	142.14	602.41	6.03	4.97	-3.42
12,456.00	88.17	168.82	12,014.31	-664.48	153.10	665.49	4.27	1.17	-4.11
<b>EOC: 12456.00' MD, 12014.31' TVD, 88.17° INC, 168.82° AZ, 665.49' VS</b>									
12,552.00	89.48	165.92	12,016.28	-758.13	174.09	759.27	3.31	1.36	-3.02
12,648.00	89.66	161.43	12,017.00	-850.23	201.06	851.55	4.68	0.19	-4.68
12,743.00	88.76	158.71	12,018.31	-939.52	233.44	941.06	3.02	-0.95	-2.86
12,838.00	87.86	161.96	12,021.12	-1,028.93	265.39	1,030.68	3.55	-0.95	3.42
12,934.00	87.66	166.01	12,024.87	-1,121.11	291.85	1,123.04	4.22	-0.21	4.22
13,029.00	87.77	166.09	12,028.66	-1,213.24	314.73	1,215.31	0.14	0.12	0.08
13,124.00	87.70	166.09	12,032.41	-1,305.38	337.55	1,307.60	0.07	-0.07	0.00
13,219.00	88.96	167.85	12,035.18	-1,397.89	358.96	1,400.25	2.28	1.33	1.85
13,314.00	89.88	169.08	12,036.14	-1,490.96	377.96	1,493.45	1.62	0.97	1.29
13,410.00	89.48	169.96	12,036.68	-1,585.36	395.42	1,587.96	1.01	-0.42	0.92
13,505.00	88.71	171.54	12,038.18	-1,679.11	410.69	1,681.81	1.85	-0.81	1.66
13,601.00	87.79	174.18	12,041.11	-1,774.31	422.61	1,777.09	2.91	-0.96	2.75
13,696.00	86.96	176.20	12,045.46	-1,868.87	430.57	1,871.70	2.30	-0.87	2.13
13,791.00	86.87	178.75	12,050.58	-1,963.63	434.75	1,966.49	2.68	-0.09	2.68
13,888.00	87.42	180.95	12,055.41	-2,060.51	435.00	2,063.36	2.34	0.57	2.27
13,983.00	87.07	182.18	12,059.97	-2,155.36	432.41	2,158.20	1.34	-0.37	1.29
14,077.00	87.15	182.09	12,064.71	-2,249.17	428.91	2,251.99	0.13	0.09	-0.10
14,173.00	87.33	181.65	12,069.34	-2,345.01	425.78	2,347.80	0.49	0.19	-0.46
14,268.00	87.22	181.21	12,073.85	-2,439.87	423.42	2,442.64	0.48	-0.12	-0.46
14,363.00	88.41	182.70	12,077.48	-2,534.75	420.18	2,537.49	2.01	1.25	1.57
14,459.00	90.12	182.00	12,078.71	-2,630.65	416.24	2,633.37	1.92	1.78	-0.73
14,554.00	90.14	181.39	12,078.49	-2,725.61	413.43	2,728.31	0.64	0.02	-0.64
14,649.00	89.15	179.89	12,079.08	-2,820.60	412.37	2,823.29	1.89	-1.04	-1.58
14,744.00	89.40	180.24	12,080.28	-2,915.59	412.26	2,918.28	0.45	0.26	0.37
14,839.00	88.80	181.91	12,081.77	-3,010.56	410.48	3,013.23	1.87	-0.63	1.76
14,935.00	87.79	181.39	12,084.63	-3,106.47	407.72	3,109.13	1.18	-1.05	-0.54
15,030.00	87.35	183.93	12,088.66	-3,201.28	403.31	3,203.90	2.71	-0.46	2.67
15,125.00	88.91	185.69	12,091.76	-3,295.89	395.35	3,298.45	2.47	1.64	1.85
15,221.00	88.63	186.13	12,093.82	-3,391.35	385.47	3,393.85	0.54	-0.29	0.46
15,316.00	90.21	186.75	12,094.78	-3,485.75	374.81	3,488.17	1.79	1.66	0.65

## Survey Report

<b>Company:</b> CAZA OPERATING, LLC	<b>Local Co-ordinate Reference:</b>	<b>Well #5H</b>
<b>Project:</b> Lea County, NM (NAD83) NMEZ	<b>TVD Reference:</b>	RKB @ 3131.00usft (Bison 17 - RKB=23')
<b>Site:</b> Sioux 36 State	<b>MD Reference:</b>	RKB @ 3131.00usft (Bison 17 - RKB=23')
<b>Well:</b> #5H	<b>North Reference:</b>	Grid
<b>Wellbore:</b> OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b> OH	<b>Database:</b>	EDM 5000.14 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)
15,411.00	88.78	185.16	12,095.62	-3,580.23	364.96	3,582.58	2.25	-1.51	-1.67
15,505.00	89.77	183.67	12,096.81	-3,673.93	357.72	3,676.24	1.90	1.05	-1.59
15,602.00	89.68	182.97	12,097.27	-3,770.77	352.11	3,773.04	0.73	-0.09	-0.72
15,697.00	91.73	183.67	12,096.10	-3,865.60	346.61	3,867.82	2.28	2.16	0.74
15,792.00	92.05	182.88	12,092.97	-3,960.39	341.18	3,962.58	0.90	0.34	-0.83
15,887.00	92.01	182.62	12,089.61	-4,055.22	336.63	4,057.38	0.28	-0.04	-0.27
15,982.00	93.77	182.26	12,084.82	-4,150.01	332.59	4,152.14	1.89	1.85	-0.38
16,078.00	94.69	183.58	12,077.74	-4,245.62	327.71	4,247.71	1.67	0.96	1.38
16,173.00	92.65	182.00	12,071.65	-4,340.31	323.10	4,342.37	2.71	-2.15	-1.66
16,268.00	91.26	180.86	12,068.41	-4,435.22	320.73	4,437.26	1.89	-1.46	-1.20
16,362.00	89.42	179.89	12,067.86	-4,529.21	320.11	4,531.24	2.21	-1.96	-1.03
16,457.00	89.29	180.07	12,068.93	-4,624.20	320.15	4,626.24	0.23	-0.14	0.19
16,552.00	89.35	179.28	12,070.05	-4,719.19	320.69	4,721.23	0.83	0.06	-0.83
16,648.00	88.74	179.28	12,071.65	-4,815.17	321.89	4,817.21	0.64	-0.64	0.00
16,721.00	88.22	178.60	12,073.59	-4,888.13	323.24	4,890.18	1.17	-0.72	-0.93
<b>Initiation Sleeve: 16721.00' MD, 88.22°INC, 12073.59' TVD</b>									
16,727.91	88.17	178.54	12,073.81	-4,895.04	323.41	4,897.09	1.17	-0.72	-0.93
<b>PBHL(S36S#5H)</b>									
16,731.92	88.14	178.50	12,073.94	-4,899.04	323.51	4,901.09	1.17	-0.72	-0.93
<b>Cross 330' Offset:16731.92' MD, 12073.94' TVD, 88.14° INC</b>									
16,733.22	88.13	178.49	12,073.98	-4,900.35	323.55	4,902.40	1.17	-0.72	-0.93
<b>PBHL_660E(S36S#5H)</b>									
16,743.00	88.06	178.40	12,074.31	-4,910.11	323.81	4,912.17	1.17	-0.72	-0.93
16,811.00	90.44	178.47	12,075.20	-4,978.08	325.67	4,980.14	3.50	3.50	0.11
<b>Shoe:16811.00' MD, 88.06°INC, 12076.61' TVD</b>									
16,825.00	90.93	178.49	12,075.03	-4,992.07	326.04	4,994.14	3.50	3.50	0.11
<b>Final MWD Survey: 16825.00' MD, 12075.03' TVD</b>									
16,905.00	90.93	178.49	12,073.73	-5,072.03	328.15	5,074.11	0.00	0.00	0.00
<b>BHL: 16905.00' MD, 12073.73' TVD, 90.93° INC, 178.49° AZ, -5072.03' +N/-S, 328.15' +E/-W, 5074.11' VS - 156' FSL / 625' FWL</b>									

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
11,408.00	11,403.01	35.31	-60.81	KOP: 11408.00' MD, 11403.01' TVD
12,041.36	11,906.34	-279.36	68.97	Cross 330' Offset:12041.36' MD, 11906.34' TVD, 58.43° INC
12,456.00	12,014.31	-664.48	153.10	EOC: 12456.00' MD, 12014.31' TVD, 88.17° INC, 168.82° AZ, 665.49' VS
16,721.00	12,073.59	-4,888.13	323.24	Initiation Sleeve: 16721.00' MD, 88.22°INC, 12073.59' TVD
16,731.92	12,073.94	-4,899.04	323.51	Cross 330' Offset:16731.92' MD, 12073.94' TVD, 88.14° INC
16,811.00	12,075.20	-4,978.08	325.67	Shoe:16811.00' MD, 88.06°INC, 12076.61' TVD
16,825.00	12,075.03	-4,992.07	326.04	Final MWD Survey: 16825.00' MD, 12075.03' TVD
16,905.00	12,073.73	-5,072.03	328.15	BHL: 16905.00' MD, 12073.73' TVD, 90.93° INC, 178.49° AZ, -5072.03' +N/-S, :
16,905.00	12,073.73	-5,072.03	328.15	156' FSL / 625' FWL

Survey Report

<b>Company:</b>	CAZA OPERATING, LLC	<b>Local Co-ordinate Reference:</b>	Well #5H
<b>Project:</b>	Lea County, NM (NAD83) NMEZ	<b>TVD Reference:</b>	RKB @ 3131.00usft (Bison 17 - RKB=23')
<b>Site:</b>	Sioux 36 State	<b>MD Reference:</b>	RKB @ 3131.00usft (Bison 17 - RKB=23')
<b>Well:</b>	#5H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.14 Single User Db

Checked By: _____	Approved By: _____	Date: _____
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Surveys are true and correct to the best of my knowledge.  
Steve Morris

