

Magpie Operating, Inc.

Well Name: **Campion 5-6 1H**

Surface Location: Campion Pad Sec.5-T4N-R68W

North American Datum 1983 , US State Plane 1983, Colorado Northern Zone

Ground Elevation: 5068.0

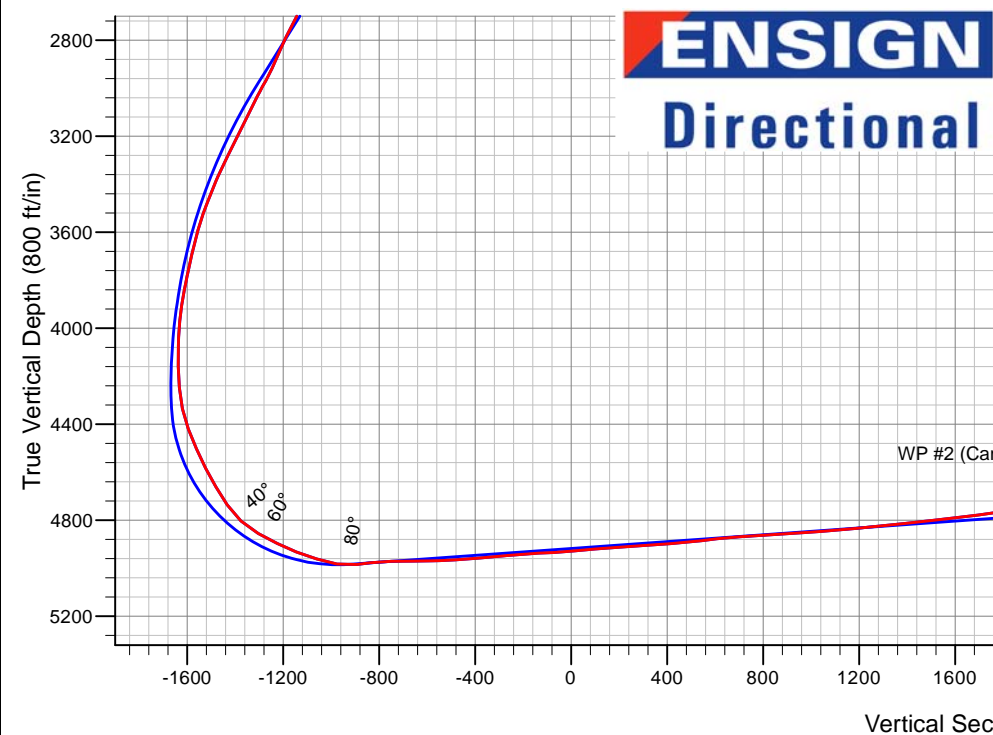
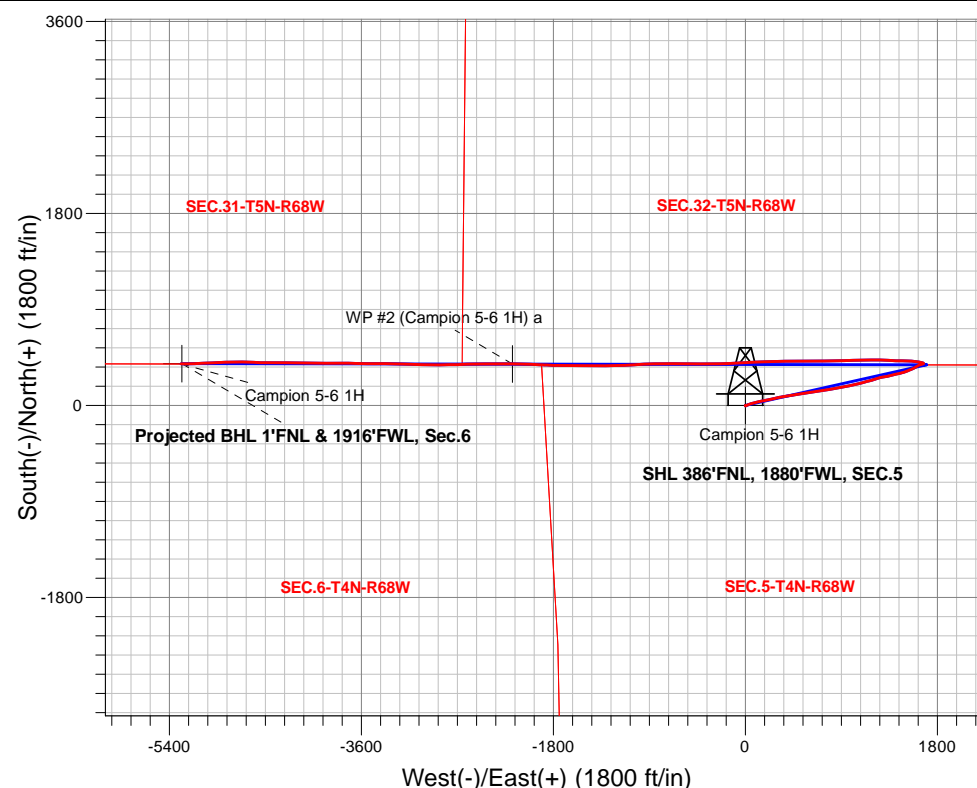
+N/-S+E/-W Northing Easting Latitude Longitude Slot

0.0 0.0 1370042.353130758.98 40.348218 -105.030862

WELL @ 5088.0ft

FINAL SURVEY

Projected Bottom Hole Location
12,052'MD 4705'TVD 390'N & 5290'W of SHL
92.0 degree Incl @ 269.2 degree AZM



Campion Pad Sec.5-T4N-R68W
 Campion 5-6 1H
 Wellbore #1
 8:08, August 19 2019

ANNOTATIONS

No annotation data is available.

LEGEND

- ◆ Campion 5-6 1H, Wellbore #1, Plan #6 (7-26-19) V0
- Wellbore #1
- Survey #1

WP #2 (Campion 5-6 1H) a

Campion 5-6 1H

Campion 5-6 1H

Projected BHL 1'FNL & 1916'FWL, Sec.6

Vertical Section at 274.24° (800 ft/in)



Magpie Operating, Inc.

SEC.5-T4N-R68W

Campion Pad Sec.5-T4N-R68W

Campion 5-6 1H

Wellbore #1

Survey: Survey #1

Standard Survey Report

19 August, 2019

Company:	Magpie Operating, Inc.	Local Co-ordinate Reference:	Well Campion 5-6 1H
Project:	SEC.5-T4N-R68W	TVD Reference:	WELL @ 5088.0ft
Site:	Campion Pad Sec.5-T4N-R68W	MD Reference:	WELL @ 5088.0ft
Well:	Campion 5-6 1H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	US_EDM

Project	SEC.5-T4N-R68W, Weld County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site		Campion Pad Sec.5-T4N-R68W				
Site Position:		Northing:	1,370,042.37	usft	Latitude:	40.348218
From:	Lat/Long	Easting:	3,130,758.98	usft	Longitude:	-105.030862
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "		Grid Convergence:	0.30 °

Well	Campion 5-6 1H				
Well Position	+N/-S	0.0 ft	Northing:	1,370,042.35 usft	Latitude: 40.348218
	+E/-W	0.0 ft	Easting:	3,130,758.98 usft	Longitude: -105.030862
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level: 5,068.0 ft

Wellbore		Wellbore #1			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	7/15/2019	8.33	66.57	52,103

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	4,768.0	0.0	0.0	274.24	

Survey Program		Date	8/19/2019		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
145.0	12,052.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

Survey										
	Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	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
	145.0	0.70	232.50	145.0	-0.5	-0.7	0.7	0.48	0.48	0.00
	234.0	1.00	171.80	234.0	-1.6	-1.0	0.9	1.01	0.34	-68.20
	322.0	2.20	110.00	322.0	-3.0	0.7	-0.9	2.20	1.36	-70.23
	411.0	5.40	64.80	410.8	-1.8	6.1	-6.2	4.67	3.60	-50.79
	499.0	8.90	65.00	498.1	2.9	16.0	-15.7	3.98	3.98	0.23
	588.0	11.40	67.30	585.7	9.2	30.3	-29.6	2.85	2.81	2.58
	677.0	14.90	72.60	672.3	16.0	49.4	-48.1	4.16	3.93	5.96
766.0	18.30	75.50	757.6	22.9	73.8	-71.9	3.93	3.82	3.26	
855.0	20.40	78.20	841.6	29.6	102.6	-100.1	2.56	2.36	3.03	

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Well:	Campion 5-6 1H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	US_EDM

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
944.0	22.10	79.00	924.5	35.9	134.2	-131.1	1.94	1.91	0.90
1,033.0	23.80	77.20	1,006.5	43.1	168.1	-164.5	2.07	1.91	-2.02
1,121.0	25.70	75.90	1,086.4	51.7	203.9	-199.6	2.25	2.16	-1.48
1,210.0	26.90	78.30	1,166.2	60.5	242.4	-237.2	1.80	1.35	2.70
1,299.0	25.60	78.10	1,246.0	68.5	280.9	-275.1	1.46	-1.46	-0.22
1,388.0	28.40	79.30	1,325.3	76.4	320.5	-314.0	3.20	3.15	1.35
1,472.0	30.50	80.40	1,398.4	83.7	361.2	-354.0	2.58	2.50	1.31
1,564.0	31.20	80.30	1,477.4	91.6	407.7	-399.8	0.76	0.76	-0.11
1,652.0	31.00	79.60	1,552.8	99.5	452.5	-443.8	0.47	-0.23	-0.80
1,741.0	33.40	82.80	1,628.1	106.7	499.3	-490.0	3.31	2.70	3.60
1,830.0	32.30	81.10	1,702.8	113.5	547.1	-537.2	1.61	-1.24	-1.91
1,919.0	35.40	82.80	1,776.8	120.4	596.2	-585.6	3.64	3.48	1.91
2,008.0	34.60	82.20	1,849.7	127.1	646.8	-635.6	0.98	-0.90	-0.67
2,097.0	33.50	81.40	1,923.4	134.2	696.1	-684.3	1.33	-1.24	-0.90
2,186.0	33.20	80.20	1,997.7	142.0	744.4	-731.9	0.81	-0.34	-1.35
2,274.0	32.80	79.60	2,071.5	150.4	791.6	-778.3	0.59	-0.45	-0.68
2,363.0	32.10	79.00	2,146.6	159.3	838.5	-824.4	0.87	-0.79	-0.67
2,452.0	30.50	78.80	2,222.7	168.2	883.9	-869.0	1.80	-1.80	-0.22
2,541.0	29.50	78.60	2,299.8	176.9	927.5	-911.9	1.13	-1.12	-0.22
2,630.0	30.90	80.30	2,376.7	185.1	971.5	-955.2	1.84	1.57	1.91
2,719.0	32.40	77.00	2,452.5	194.3	1,017.3	-1,000.2	2.57	1.69	-3.71
2,807.0	32.20	76.40	2,526.8	205.1	1,063.1	-1,045.0	0.43	-0.23	-0.68
2,896.0	31.50	75.50	2,602.4	216.5	1,108.6	-1,089.6	0.95	-0.79	-1.01
2,985.0	29.30	74.00	2,679.2	228.3	1,152.1	-1,132.0	2.61	-2.47	-1.69
3,074.0	28.60	74.90	2,757.1	239.9	1,193.6	-1,172.6	0.93	-0.79	1.01
3,162.0	25.10	70.10	2,835.6	251.7	1,231.5	-1,209.5	4.68	-3.98	-5.45
3,251.0	26.30	77.40	2,915.8	262.4	1,268.5	-1,245.6	3.80	1.35	8.20
3,340.0	29.90	81.20	2,994.3	270.1	1,309.7	-1,286.1	4.52	4.04	4.27
3,429.0	27.30	77.20	3,072.4	278.1	1,351.5	-1,327.2	3.63	-2.92	-4.49
3,517.0	26.20	76.20	3,151.0	287.2	1,390.0	-1,365.0	1.35	-1.25	-1.14
3,606.0	28.60	77.00	3,230.0	296.6	1,429.9	-1,404.0	2.73	2.70	0.90
3,695.0	27.60	74.20	3,308.5	307.0	1,470.5	-1,443.7	1.86	-1.12	-3.15
3,784.0	24.90	69.40	3,388.4	319.3	1,507.9	-1,480.1	3.86	-3.03	-5.39
3,872.0	23.50	67.80	3,468.6	332.4	1,541.5	-1,512.6	1.76	-1.59	-1.82
3,961.0	20.70	63.10	3,551.1	346.2	1,571.9	-1,542.0	3.72	-3.15	-5.28
4,050.0	16.90	59.10	3,635.3	360.0	1,597.1	-1,566.1	4.51	-4.27	-4.49
4,139.0	15.30	59.90	3,720.8	372.5	1,618.3	-1,586.3	1.81	-1.80	0.90
4,227.0	12.70	69.80	3,806.2	381.7	1,637.5	-1,604.7	4.01	-2.95	11.25
4,316.0	9.30	79.30	3,893.6	386.4	1,653.7	-1,620.6	4.32	-3.82	10.67
4,405.0	5.50	63.30	3,981.8	389.7	1,664.6	-1,631.2	4.82	-4.27	-17.98
4,494.0	2.50	63.80	4,070.6	392.4	1,670.1	-1,636.5	3.37	-3.37	0.56
4,583.0	2.20	320.60	4,159.6	394.6	1,670.8	-1,637.0	4.14	-0.34	-115.96
4,671.0	5.00	296.70	4,247.4	397.6	1,666.3	-1,632.3	3.54	3.18	-27.16
4,760.0	12.30	284.90	4,335.3	401.8	1,653.7	-1,619.4	8.40	8.20	-13.26

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Design:	Wellbore #1	Database:	US_EDM

Survey										
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4,849.0	20.30	280.60	4,420.7	407.1	1,629.3	-1,594.7	9.08	8.99	-4.83	
4,938.0	24.00	278.00	4,503.1	412.5	1,596.2	-1,561.3	4.30	4.16	-2.92	
5,027.0	27.20	272.30	4,583.4	415.8	1,557.9	-1,522.9	4.53	3.60	-6.40	
5,116.0	30.30	272.40	4,661.4	417.6	1,515.1	-1,480.1	3.48	3.48	0.11	
5,204.0	33.70	270.50	4,736.0	418.7	1,468.5	-1,433.5	4.03	3.86	-2.16	
5,293.0	47.60	270.80	4,803.4	419.4	1,410.7	-1,375.8	15.62	15.62	0.34	
5,382.0	60.60	273.70	4,855.4	422.4	1,338.8	-1,303.9	14.84	14.61	3.26	
5,471.0	63.70	271.10	4,897.0	425.6	1,260.2	-1,225.3	4.34	3.48	-2.92	
5,560.0	68.60	269.50	4,933.0	426.0	1,178.9	-1,144.1	5.75	5.51	-1.80	
5,649.0	72.90	268.80	4,962.3	424.8	1,094.9	-1,060.4	4.89	4.83	-0.79	
5,737.0	80.10	268.30	4,982.9	422.6	1,009.4	-975.4	8.20	8.18	-0.57	
5,820.0	96.60	270.40	4,985.2	421.7	926.7	-893.0	20.04	19.88	2.53	
5,878.0	97.60	265.30	4,978.1	419.5	869.2	-835.8	8.89	1.72	-8.79	
5,965.0	90.90	270.60	4,971.6	416.4	782.6	-749.6	9.81	-7.70	6.09	
6,050.0	89.80	269.80	4,971.1	416.7	697.6	-664.9	1.60	-1.29	-0.94	
6,135.0	91.30	269.50	4,970.3	416.2	612.6	-580.1	1.80	1.76	-0.35	
6,220.0	93.50	269.80	4,966.7	415.7	527.7	-495.5	2.61	2.59	0.35	
6,306.0	95.30	269.40	4,960.1	415.1	441.9	-410.0	2.14	2.09	-0.47	
6,391.0	95.10	268.50	4,952.4	413.6	357.3	-325.7	1.08	-0.24	-1.06	
6,475.0	94.00	268.90	4,945.8	411.7	273.6	-242.4	1.39	-1.31	0.48	
6,560.0	93.80	268.10	4,940.0	409.4	188.8	-158.0	0.97	-0.24	-0.94	
6,647.0	92.90	267.30	4,934.9	405.9	102.0	-71.7	1.38	-1.03	-0.92	
6,733.0	95.60	267.50	4,928.5	402.1	16.4	13.4	3.15	3.14	0.23	
6,820.0	95.10	267.10	4,920.4	398.0	-70.2	99.4	0.73	-0.57	-0.46	
6,905.0	94.00	266.80	4,913.7	393.5	-154.8	183.4	1.34	-1.29	-0.35	
6,992.0	93.00	269.90	4,908.4	391.0	-241.6	269.8	3.74	-1.15	3.56	
7,077.0	94.30	269.80	4,903.0	390.7	-326.4	354.4	1.53	1.53	-0.12	
7,162.0	95.60	269.50	4,895.6	390.2	-411.1	438.8	1.57	1.53	-0.35	
7,247.0	95.60	269.50	4,887.3	389.5	-495.6	523.1	0.00	0.00	0.00	
7,332.0	96.60	271.10	4,878.3	389.9	-580.2	607.4	2.21	1.18	1.88	
7,425.0	93.80	272.10	4,869.9	392.5	-672.7	699.9	3.20	-3.01	1.08	
7,518.0	93.80	268.30	4,863.7	392.8	-765.5	792.5	4.08	0.00	-4.09	
7,611.0	93.30	268.10	4,857.9	389.9	-858.3	884.8	0.58	-0.54	-0.22	
7,704.0	94.80	267.30	4,851.4	386.2	-951.0	976.9	1.83	1.61	-0.86	
7,796.0	93.30	266.10	4,844.9	380.9	-1,042.6	1,067.9	2.09	-1.63	-1.30	
7,889.0	95.70	268.10	4,837.6	376.2	-1,135.2	1,159.9	3.35	2.58	2.15	
7,982.0	95.80	269.90	4,828.3	374.6	-1,227.7	1,252.0	1.93	0.11	1.94	
8,074.0	96.00	269.40	4,818.8	374.1	-1,319.2	1,343.2	0.58	0.22	-0.54	
8,166.0	96.10	269.10	4,809.1	372.9	-1,410.7	1,434.4	0.34	0.11	-0.33	
8,258.0	96.30	271.20	4,799.2	373.1	-1,502.1	1,525.6	2.28	0.22	2.28	
8,344.0	96.80	270.60	4,789.4	374.4	-1,587.6	1,610.9	0.90	0.58	-0.70	
8,429.0	97.40	270.30	4,778.9	375.1	-1,671.9	1,695.1	0.79	0.71	-0.35	
8,514.0	96.70	270.80	4,768.4	375.9	-1,756.3	1,779.3	1.01	-0.82	0.59	

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8,599.0	95.90	271.90	4,759.1	377.9	-1,840.7	1,863.6	1.59	-0.94	1.29
8,685.0	92.90	273.20	4,752.5	381.7	-1,926.4	1,949.3	3.80	-3.49	1.51
8,769.0	90.00	272.30	4,750.4	385.8	-2,010.2	2,033.3	3.61	-3.45	-1.07
8,854.0	88.50	271.80	4,751.5	388.8	-2,095.2	2,118.2	1.86	-1.76	-0.59
8,940.0	88.40	270.30	4,753.8	390.4	-2,181.1	2,204.0	1.75	-0.12	-1.74
9,025.0	91.50	269.70	4,753.9	390.4	-2,266.1	2,288.8	3.71	3.65	-0.71
9,112.0	92.70	269.50	4,750.7	389.8	-2,353.0	2,375.4	1.40	1.38	-0.23
9,197.0	90.90	269.70	4,748.0	389.2	-2,438.0	2,460.1	2.13	-2.12	0.24
9,282.0	90.60	268.70	4,746.9	388.0	-2,523.0	2,544.8	1.23	-0.35	-1.18
9,368.0	90.50	268.60	4,746.1	386.0	-2,609.0	2,630.4	0.16	-0.12	-0.12
9,453.0	90.90	268.80	4,745.0	384.0	-2,693.9	2,715.0	0.53	0.47	0.24
9,538.0	89.20	269.50	4,745.0	382.8	-2,778.9	2,799.6	2.16	-2.00	0.82
9,623.0	88.40	269.40	4,746.8	381.9	-2,863.9	2,884.3	0.95	-0.94	-0.12
9,708.0	88.50	270.40	4,749.1	381.8	-2,948.9	2,969.0	1.18	0.12	1.18
9,795.0	91.90	271.40	4,748.7	383.2	-3,035.8	3,055.9	4.07	3.91	1.15
9,881.0	92.60	271.70	4,745.4	385.5	-3,121.7	3,141.7	0.89	0.81	0.35
9,966.0	90.80	271.80	4,742.8	388.1	-3,206.7	3,226.6	2.12	-2.12	0.12
10,053.0	90.30	271.40	4,742.0	390.5	-3,293.6	3,313.5	0.74	-0.57	-0.46
10,138.0	89.20	270.20	4,742.4	391.7	-3,378.6	3,398.3	1.92	-1.29	-1.41
10,223.0	90.30	270.30	4,742.8	392.1	-3,463.6	3,483.1	1.30	1.29	0.12
10,308.0	90.40	270.60	4,742.2	392.7	-3,548.6	3,567.9	0.37	0.12	0.35
10,393.0	88.90	270.80	4,742.8	393.8	-3,633.6	3,652.8	1.78	-1.76	0.24
10,479.0	92.00	270.90	4,742.1	395.1	-3,719.6	3,738.6	3.61	3.60	0.12
10,563.0	94.20	269.80	4,737.5	395.6	-3,803.4	3,822.3	2.93	2.62	-1.31
10,648.0	95.30	270.20	4,730.5	395.6	-3,888.1	3,906.7	1.38	1.29	0.47
10,733.0	96.90	270.10	4,721.5	395.8	-3,972.7	3,991.0	1.89	1.88	-0.12
10,818.0	93.80	270.50	4,713.5	396.2	-4,057.3	4,075.5	3.68	-3.65	0.47
10,903.0	91.00	271.20	4,710.0	397.5	-4,142.2	4,160.2	3.40	-3.29	0.82
10,988.0	88.60	271.00	4,710.3	399.1	-4,227.2	4,245.1	2.83	-2.82	-0.24
11,074.0	88.90	270.50	4,712.2	400.2	-4,313.1	4,330.9	0.68	0.35	-0.58
11,160.0	89.10	271.40	4,713.7	401.7	-4,399.1	4,416.8	1.07	0.23	1.05
11,246.0	88.70	268.70	4,715.3	401.8	-4,485.1	4,502.5	3.17	-0.47	-3.14
11,331.0	89.90	271.80	4,716.3	402.1	-4,570.1	4,587.3	3.91	1.41	3.65
11,418.0	90.50	273.00	4,716.0	405.8	-4,657.0	4,674.2	1.54	0.69	1.38
11,502.0	89.40	270.50	4,716.1	408.3	-4,740.9	4,758.2	3.25	-1.31	-2.98
11,587.0	90.00	267.70	4,716.6	407.0	-4,825.9	4,842.8	3.37	0.71	-3.29
11,672.0	89.30	266.90	4,717.1	403.0	-4,910.8	4,927.2	1.25	-0.82	-0.94
11,757.0	91.80	267.10	4,716.3	398.5	-4,995.7	5,011.5	2.95	2.94	0.24
11,842.0	93.10	268.00	4,712.6	394.9	-5,080.5	5,095.8	1.86	1.53	1.06
11,927.0	91.50	268.70	4,709.2	392.5	-5,165.4	5,180.3	2.05	-1.88	0.82
11,997.0	92.00	269.20	4,707.1	391.2	-5,235.4	5,250.0	1.01	0.71	0.71
12,052.0	92.00	269.20	4,705.2	390.4	-5,290.3	5,304.7	0.00	0.00	0.00

Company:	Magpie Operating, Inc.	Local Co-ordinate Reference:	Well Campion 5-6 1H
Project:	SEC.5-T4N-R68W	TVD Reference:	WELL @ 5088.0ft
Site:	Campion Pad Sec.5-T4N-R68W	MD Reference:	WELL @ 5088.0ft
Well:	Campion 5-6 1H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	US_EDM

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL 386'FNL, 1880'FWL - survey hits target center - Point	0.00	0.00	5.0	0.0	0.0	1,370,042.37	3,130,758.98	40.348218	-105.030862
WP #2 (Campion 5-6 1H - survey misses target center by 14.4ft at 8942.0ft MD (4753.9 TVD, 390.4 N, -2183.1 E) - Point	0.00	0.00	4,768.0	387.7	-2,183.1	1,370,418.50	3,128,573.96	40.349282	-105.038695
Projected BHL 1'FNL & ' - survey misses target center by 62.5ft at 12042.3ft MD (4705.5 TVD, 390.6 N, -5280.6 E) - Point	0.00	0.00	4,768.0	391.8	-5,282.8	1,370,406.19	3,125,474.41	40.349292	-105.049815

Checked By: _____	Approved By: _____	Date: _____
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