



# **Longs Peak Resources**

**Weld County, Co (NAD 83)**

**Matira East Pad**

**Matira East 3019-10CH**

**Wellbore #1**

**Plan: Plan #1**

## **Standard Survey Report**

**22 February, 2017**



# Integrity Directional Services, LLC

## Survey Report



<b>Company:</b>	Longs Peak Resources	<b>Local Co-ordinate Reference:</b>	Well Matira East 3019-10CH
<b>Project:</b>	Weld County, Co (NAD 83)	<b>TVD Reference:</b>	KB=25' @ 6033.00ft
<b>Site:</b>	Matira East Pad	<b>MD Reference:</b>	KB=25' @ 6033.00ft
<b>Well:</b>	Matira East 3019-10CH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	EDM 5000.1 Multi User Db

<b>Project</b>	Weld County, Co (NAD 83)		
<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>	Colorado Northern Zone		

Site	Matira East Pad				
Site Position:		Northing:	1,598,041.7220 usft	Latitude:	40° 58' 20.136 N
From:	Lat/Long	Easting:	3,220,446.6213 usft	Longitude:	104° 42' 6.228 W
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.52 °

Well	Matira East 3019-10CH					
Well Position	+N/-S	0.00 ft	Northing:	1,598,042.4353 usfi	Latitude:	40° 58' 20.136 N
	+E/-W	0.00 ft	Easting:	3,220,526.7043 usfi	Longitude:	104° 42' 5.184 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	6,008.00 ft

<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	2/21/2017	8.26	67.33	52,720

<b>Design</b>	Plan #1				
<b>Audit Notes:</b>					
<b>Version:</b>		<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00		1.32

<b>Survey Tool Program</b>	<b>Date</b>	2/21/2017			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
0.00	19,397.88	Plan #1 (Wellbore #1)	MWD	MWD - Standard	

<b>Planned Survey</b>									
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00

# Integrity Directional Services, LLC

## Survey Report



<b>Company:</b>	Longs Peak Resources	<b>Local Co-ordinate Reference:</b>	Well Matira East 3019-10CH
<b>Project:</b>	Weld County, Co (NAD 83)	<b>TVD Reference:</b>	KB=25' @ 6033.00ft
<b>Site:</b>	Matira East Pad	<b>MD Reference:</b>	KB=25' @ 6033.00ft
<b>Well:</b>	Matira East 3019-10CH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	EDM 5000.1 Multi User Db

### Planned 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)
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build 2.00</b>									
2,700.00	2.00	162.81	2,699.98	-1.67	0.52	-1.65	2.00	2.00	0.00
2,800.00	4.00	162.81	2,799.84	-6.67	2.06	-6.62	2.00	2.00	0.00
2,900.00	6.00	162.81	2,899.45	-14.99	4.64	-14.88	2.00	2.00	0.00
2,929.44	6.59	162.81	2,928.71	-18.08	5.59	-17.94	2.00	2.00	0.00
<b>Start 5444.89 hold at 2929.44 MD</b>									
3,000.00	6.59	162.81	2,998.81	-25.81	7.99	-25.62	0.00	0.00	0.00
3,100.00	6.59	162.81	3,098.15	-36.77	11.38	-36.50	0.00	0.00	0.00
3,200.00	6.59	162.81	3,197.49	-47.73	14.77	-47.38	0.00	0.00	0.00
3,300.00	6.59	162.81	3,296.83	-58.69	18.16	-58.26	0.00	0.00	0.00
3,400.00	6.59	162.81	3,396.17	-69.66	21.56	-69.14	0.00	0.00	0.00
3,500.00	6.59	162.81	3,495.51	-80.62	24.95	-80.02	0.00	0.00	0.00
3,600.00	6.59	162.81	3,594.85	-91.58	28.34	-90.90	0.00	0.00	0.00
3,700.00	6.59	162.81	3,694.19	-102.54	31.73	-101.78	0.00	0.00	0.00
3,800.00	6.59	162.81	3,793.52	-113.50	35.12	-112.67	0.00	0.00	0.00
3,900.00	6.59	162.81	3,892.86	-124.46	38.52	-123.55	0.00	0.00	0.00
4,000.00	6.59	162.81	3,992.20	-135.42	41.91	-134.43	0.00	0.00	0.00
4,100.00	6.59	162.81	4,091.54	-146.39	45.30	-145.31	0.00	0.00	0.00
4,200.00	6.59	162.81	4,190.88	-157.35	48.69	-156.19	0.00	0.00	0.00
4,300.00	6.59	162.81	4,290.22	-168.31	52.08	-167.07	0.00	0.00	0.00
4,400.00	6.59	162.81	4,389.56	-179.27	55.48	-177.95	0.00	0.00	0.00
4,500.00	6.59	162.81	4,488.90	-190.23	58.87	-188.83	0.00	0.00	0.00
4,600.00	6.59	162.81	4,588.24	-201.19	62.26	-199.71	0.00	0.00	0.00
4,700.00	6.59	162.81	4,687.58	-212.15	65.65	-210.59	0.00	0.00	0.00
4,800.00	6.59	162.81	4,786.92	-223.12	69.04	-221.47	0.00	0.00	0.00
4,900.00	6.59	162.81	4,886.26	-234.08	72.44	-232.35	0.00	0.00	0.00
5,000.00	6.59	162.81	4,985.60	-245.04	75.83	-243.23	0.00	0.00	0.00

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5,100.00	6.59	162.81	5,084.94	-256.00	79.22	-254.11	0.00	0.00	0.00
5,200.00	6.59	162.81	5,184.28	-266.96	82.61	-264.99	0.00	0.00	0.00
5,300.00	6.59	162.81	5,283.62	-277.92	86.00	-275.87	0.00	0.00	0.00
5,400.00	6.59	162.81	5,382.96	-288.88	89.40	-286.76	0.00	0.00	0.00
5,500.00	6.59	162.81	5,482.30	-299.85	92.79	-297.64	0.00	0.00	0.00
5,600.00	6.59	162.81	5,581.64	-310.81	96.18	-308.52	0.00	0.00	0.00
5,700.00	6.59	162.81	5,680.98	-321.77	99.57	-319.40	0.00	0.00	0.00
5,800.00	6.59	162.81	5,780.32	-332.73	102.96	-330.28	0.00	0.00	0.00
5,900.00	6.59	162.81	5,879.65	-343.69	106.36	-341.16	0.00	0.00	0.00
6,000.00	6.59	162.81	5,978.99	-354.65	109.75	-352.04	0.00	0.00	0.00
6,100.00	6.59	162.81	6,078.33	-365.61	113.14	-362.92	0.00	0.00	0.00
6,200.00	6.59	162.81	6,177.67	-376.58	116.53	-373.80	0.00	0.00	0.00
6,300.00	6.59	162.81	6,277.01	-387.54	119.92	-384.68	0.00	0.00	0.00
6,400.00	6.59	162.81	6,376.35	-398.50	123.32	-395.56	0.00	0.00	0.00
6,500.00	6.59	162.81	6,475.69	-409.46	126.71	-406.44	0.00	0.00	0.00
6,600.00	6.59	162.81	6,575.03	-420.42	130.10	-417.32	0.00	0.00	0.00
6,700.00	6.59	162.81	6,674.37	-431.38	133.49	-428.20	0.00	0.00	0.00
6,800.00	6.59	162.81	6,773.71	-442.34	136.89	-439.08	0.00	0.00	0.00
6,900.00	6.59	162.81	6,873.05	-453.31	140.28	-449.97	0.00	0.00	0.00
7,000.00	6.59	162.81	6,972.39	-464.27	143.67	-460.85	0.00	0.00	0.00
7,100.00	6.59	162.81	7,071.73	-475.23	147.06	-471.73	0.00	0.00	0.00
7,200.00	6.59	162.81	7,171.07	-486.19	150.45	-482.61	0.00	0.00	0.00
7,300.00	6.59	162.81	7,270.41	-497.15	153.85	-493.49	0.00	0.00	0.00
7,400.00	6.59	162.81	7,369.75	-508.11	157.24	-504.37	0.00	0.00	0.00
7,500.00	6.59	162.81	7,469.09	-519.07	160.63	-515.25	0.00	0.00	0.00
7,600.00	6.59	162.81	7,568.43	-530.04	164.02	-526.13	0.00	0.00	0.00
7,700.00	6.59	162.81	7,667.77	-541.00	167.41	-537.01	0.00	0.00	0.00
7,800.00	6.59	162.81	7,767.11	-551.96	170.81	-547.89	0.00	0.00	0.00
7,900.00	6.59	162.81	7,866.45	-562.92	174.20	-558.77	0.00	0.00	0.00
8,000.00	6.59	162.81	7,965.78	-573.88	177.59	-569.65	0.00	0.00	0.00
8,100.00	6.59	162.81	8,065.12	-584.84	180.98	-580.53	0.00	0.00	0.00
8,200.00	6.59	162.81	8,164.46	-595.80	184.37	-591.41	0.00	0.00	0.00
8,300.00	6.59	162.81	8,263.80	-606.77	187.77	-602.29	0.00	0.00	0.00
8,374.33	6.59	162.81	8,337.64	-614.91	190.29	-610.38	0.00	0.00	0.00
<b>Start DLS 10.00 TFO -162.60</b>									
8,400.00	4.21	152.29	8,363.20	-617.16	191.16	-612.60	10.00	-9.27	-40.95
8,500.00	6.58	17.42	8,462.99	-614.94	194.59	-610.30	10.00	2.37	-134.87
8,600.00	16.39	6.80	8,560.87	-595.41	197.98	-590.71	10.00	9.82	-10.62
8,700.00	26.35	4.07	8,653.88	-559.17	201.24	-554.41	10.00	9.95	-2.73
8,800.00	36.32	2.77	8,739.19	-507.33	204.25	-502.50	10.00	9.98	-1.30
8,900.00	46.31	1.98	8,814.21	-441.45	206.94	-436.58	10.00	9.99	-0.80
9,000.00	56.30	1.41	8,876.65	-363.53	209.22	-358.63	10.00	9.99	-0.57
9,100.00	66.29	0.96	8,924.61	-275.95	211.01	-271.03	10.00	9.99	-0.45
9,200.00	76.29	0.58	8,956.65	-181.36	212.27	-176.44	10.00	9.99	-0.38

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## Survey Report



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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)
9,300.00	86.28	0.22	8,971.79	-82.65	212.96	-77.73	10.00	9.99	-0.35
9,337.23	90.00	0.10	8,973.00	-45.44	213.06	-40.54	10.00	9.99	-0.34
<b>Start 10060.65 hold at 9337.23 MD</b>									
9,400.00	90.00	0.10	8,973.00	17.33	213.17	22.22	0.00	0.00	0.00
9,500.00	90.00	0.10	8,973.00	117.33	213.34	122.19	0.00	0.00	0.00
9,600.00	90.00	0.10	8,973.00	217.33	213.50	222.17	0.00	0.00	0.00
9,700.00	90.00	0.10	8,973.00	317.33	213.67	322.15	0.00	0.00	0.00
9,800.00	90.00	0.10	8,973.00	417.33	213.84	422.13	0.00	0.00	0.00
9,900.00	90.00	0.10	8,973.00	517.33	214.01	522.10	0.00	0.00	0.00
10,000.00	90.00	0.10	8,973.00	617.33	214.18	622.08	0.00	0.00	0.00
10,100.00	90.00	0.10	8,973.00	717.33	214.35	722.06	0.00	0.00	0.00
10,200.00	90.00	0.10	8,973.00	817.33	214.52	822.04	0.00	0.00	0.00
10,300.00	90.00	0.10	8,973.00	917.33	214.69	922.01	0.00	0.00	0.00
10,400.00	90.00	0.10	8,973.00	1,017.33	214.85	1,021.99	0.00	0.00	0.00
10,500.00	90.00	0.10	8,973.00	1,117.33	215.02	1,121.97	0.00	0.00	0.00
10,600.00	90.00	0.10	8,973.00	1,217.33	215.19	1,221.95	0.00	0.00	0.00
10,700.00	90.00	0.10	8,973.00	1,317.33	215.36	1,321.92	0.00	0.00	0.00
10,800.00	90.00	0.10	8,973.00	1,417.33	215.53	1,421.90	0.00	0.00	0.00
10,900.00	90.00	0.10	8,973.00	1,517.33	215.70	1,521.88	0.00	0.00	0.00
11,000.00	90.00	0.10	8,973.00	1,617.32	215.87	1,621.86	0.00	0.00	0.00
11,100.00	90.00	0.10	8,973.00	1,717.32	216.03	1,721.83	0.00	0.00	0.00
11,200.00	90.00	0.10	8,973.00	1,817.32	216.20	1,821.81	0.00	0.00	0.00
11,300.00	90.00	0.10	8,973.00	1,917.32	216.37	1,921.79	0.00	0.00	0.00
11,400.00	90.00	0.10	8,973.00	2,017.32	216.54	2,021.76	0.00	0.00	0.00
11,500.00	90.00	0.10	8,973.00	2,117.32	216.71	2,121.74	0.00	0.00	0.00
11,600.00	90.00	0.10	8,973.00	2,217.32	216.88	2,221.72	0.00	0.00	0.00
11,700.00	90.00	0.10	8,973.00	2,317.32	217.05	2,321.70	0.00	0.00	0.00
11,800.00	90.00	0.10	8,973.00	2,417.32	217.22	2,421.67	0.00	0.00	0.00
11,900.00	90.00	0.10	8,973.00	2,517.32	217.38	2,521.65	0.00	0.00	0.00
12,000.00	90.00	0.10	8,973.00	2,617.32	217.55	2,621.63	0.00	0.00	0.00
12,100.00	90.00	0.10	8,973.00	2,717.32	217.72	2,721.61	0.00	0.00	0.00
12,200.00	90.00	0.10	8,973.00	2,817.32	217.89	2,821.58	0.00	0.00	0.00
12,300.00	90.00	0.10	8,973.00	2,917.32	218.06	2,921.56	0.00	0.00	0.00
12,400.00	90.00	0.10	8,973.00	3,017.32	218.23	3,021.54	0.00	0.00	0.00
12,500.00	90.00	0.10	8,973.00	3,117.32	218.40	3,121.52	0.00	0.00	0.00
12,600.00	90.00	0.10	8,973.00	3,217.32	218.57	3,221.49	0.00	0.00	0.00
12,700.00	90.00	0.10	8,973.00	3,317.32	218.73	3,321.47	0.00	0.00	0.00
12,800.00	90.00	0.10	8,973.00	3,417.32	218.90	3,421.45	0.00	0.00	0.00
12,900.00	90.00	0.10	8,973.00	3,517.32	219.07	3,521.43	0.00	0.00	0.00
13,000.00	90.00	0.10	8,973.00	3,617.32	219.24	3,621.40	0.00	0.00	0.00
13,100.00	90.00	0.10	8,973.00	3,717.32	219.41	3,721.38	0.00	0.00	0.00
13,200.00	90.00	0.10	8,973.00	3,817.32	219.58	3,821.36	0.00	0.00	0.00
13,300.00	90.00	0.10	8,973.00	3,917.32	219.75	3,921.33	0.00	0.00	0.00

# Integrity Directional Services, LLC

## Survey Report



<b>Company:</b>	Longs Peak Resources	<b>Local Co-ordinate Reference:</b>	Well Matira East 3019-10CH
<b>Project:</b>	Weld County, Co (NAD 83)	<b>TVD Reference:</b>	KB=25' @ 6033.00ft
<b>Site:</b>	Matira East Pad	<b>MD Reference:</b>	KB=25' @ 6033.00ft
<b>Well:</b>	Matira East 3019-10CH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	EDM 5000.1 Multi User Db

### Planned 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)
13,400.00	90.00	0.10	8,973.00	4,017.32	219.91	4,021.31	0.00	0.00	0.00
13,500.00	90.00	0.10	8,973.00	4,117.32	220.08	4,121.29	0.00	0.00	0.00
13,600.00	90.00	0.10	8,973.00	4,217.32	220.25	4,221.27	0.00	0.00	0.00
13,700.00	90.00	0.10	8,973.00	4,317.32	220.42	4,321.24	0.00	0.00	0.00
13,800.00	90.00	0.10	8,973.00	4,417.32	220.59	4,421.22	0.00	0.00	0.00
13,900.00	90.00	0.10	8,973.00	4,517.32	220.76	4,521.20	0.00	0.00	0.00
14,000.00	90.00	0.10	8,973.00	4,617.32	220.93	4,621.18	0.00	0.00	0.00
14,100.00	90.00	0.10	8,973.00	4,717.32	221.10	4,721.15	0.00	0.00	0.00
14,200.00	90.00	0.10	8,973.00	4,817.32	221.26	4,821.13	0.00	0.00	0.00
14,300.00	90.00	0.10	8,973.00	4,917.32	221.43	4,921.11	0.00	0.00	0.00
14,400.00	90.00	0.10	8,973.00	5,017.32	221.60	5,021.09	0.00	0.00	0.00
14,500.00	90.00	0.10	8,973.00	5,117.32	221.77	5,121.06	0.00	0.00	0.00
14,600.00	90.00	0.10	8,973.00	5,217.32	221.94	5,221.04	0.00	0.00	0.00
14,700.00	90.00	0.10	8,973.00	5,317.32	222.11	5,321.02	0.00	0.00	0.00
14,800.00	90.00	0.10	8,973.00	5,417.32	222.28	5,421.00	0.00	0.00	0.00
14,900.00	90.00	0.10	8,973.00	5,517.32	222.45	5,520.97	0.00	0.00	0.00
15,000.00	90.00	0.10	8,973.00	5,617.32	222.61	5,620.95	0.00	0.00	0.00
15,100.00	90.00	0.10	8,973.00	5,717.32	222.78	5,720.93	0.00	0.00	0.00
15,200.00	90.00	0.10	8,973.00	5,817.32	222.95	5,820.90	0.00	0.00	0.00
15,300.00	90.00	0.10	8,973.00	5,917.32	223.12	5,920.88	0.00	0.00	0.00
15,400.00	90.00	0.10	8,973.00	6,017.32	223.29	6,020.86	0.00	0.00	0.00
15,500.00	90.00	0.10	8,973.00	6,117.32	223.46	6,120.84	0.00	0.00	0.00
15,600.00	90.00	0.10	8,973.00	6,217.32	223.63	6,220.81	0.00	0.00	0.00
15,700.00	90.00	0.10	8,973.00	6,317.32	223.79	6,320.79	0.00	0.00	0.00
15,800.00	90.00	0.10	8,973.00	6,417.32	223.96	6,420.77	0.00	0.00	0.00
15,900.00	90.00	0.10	8,973.00	6,517.32	224.13	6,520.75	0.00	0.00	0.00
16,000.00	90.00	0.10	8,973.00	6,617.32	224.30	6,620.72	0.00	0.00	0.00
16,100.00	90.00	0.10	8,973.00	6,717.32	224.47	6,720.70	0.00	0.00	0.00
16,200.00	90.00	0.10	8,973.00	6,817.32	224.64	6,820.68	0.00	0.00	0.00
16,300.00	90.00	0.10	8,973.00	6,917.32	224.81	6,920.66	0.00	0.00	0.00
16,400.00	90.00	0.10	8,973.00	7,017.32	224.98	7,020.63	0.00	0.00	0.00
16,500.00	90.00	0.10	8,973.00	7,117.32	225.14	7,120.61	0.00	0.00	0.00
16,600.00	90.00	0.10	8,973.00	7,217.32	225.31	7,220.59	0.00	0.00	0.00
16,700.00	90.00	0.10	8,973.00	7,317.32	225.48	7,320.57	0.00	0.00	0.00
16,800.00	90.00	0.10	8,973.00	7,417.32	225.65	7,420.54	0.00	0.00	0.00
16,900.00	90.00	0.10	8,973.00	7,517.32	225.82	7,520.52	0.00	0.00	0.00
17,000.00	90.00	0.10	8,973.00	7,617.32	225.99	7,620.50	0.00	0.00	0.00
17,100.00	90.00	0.10	8,973.00	7,717.32	226.16	7,720.47	0.00	0.00	0.00
17,200.00	90.00	0.10	8,973.00	7,817.32	226.33	7,820.45	0.00	0.00	0.00
17,300.00	90.00	0.10	8,973.00	7,917.32	226.49	7,920.43	0.00	0.00	0.00
17,400.00	90.00	0.10	8,973.00	8,017.32	226.66	8,020.41	0.00	0.00	0.00
17,500.00	90.00	0.10	8,973.00	8,117.32	226.83	8,120.38	0.00	0.00	0.00
17,600.00	90.00	0.10	8,973.00	8,217.32	227.00	8,220.36	0.00	0.00	0.00



# Integrity Directional Services, LLC

## Survey Report



<b>Company:</b>	Longs Peak Resources	<b>Local Co-ordinate Reference:</b>	Well Matira East 3019-10CH
<b>Project:</b>	Weld County, Co (NAD 83)	<b>TVD Reference:</b>	KB=25' @ 6033.00ft
<b>Site:</b>	Matira East Pad	<b>MD Reference:</b>	KB=25' @ 6033.00ft
<b>Well:</b>	Matira East 3019-10CH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	EDM 5000.1 Multi User Db

### Planned 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)
17,700.00	90.00	0.10	8,973.00	8,317.32	227.17	8,320.34	0.00	0.00	0.00
17,800.00	90.00	0.10	8,973.00	8,417.32	227.34	8,420.32	0.00	0.00	0.00
17,900.00	90.00	0.10	8,973.00	8,517.32	227.51	8,520.29	0.00	0.00	0.00
18,000.00	90.00	0.10	8,973.00	8,617.32	227.67	8,620.27	0.00	0.00	0.00
18,100.00	90.00	0.10	8,973.00	8,717.31	227.84	8,720.25	0.00	0.00	0.00
18,200.00	90.00	0.10	8,973.00	8,817.31	228.01	8,820.23	0.00	0.00	0.00
18,300.00	90.00	0.10	8,973.00	8,917.31	228.18	8,920.20	0.00	0.00	0.00
18,400.00	90.00	0.10	8,973.00	9,017.31	228.35	9,020.18	0.00	0.00	0.00
18,500.00	90.00	0.10	8,973.00	9,117.31	228.52	9,120.16	0.00	0.00	0.00
18,600.00	90.00	0.10	8,973.00	9,217.31	228.69	9,220.14	0.00	0.00	0.00
18,700.00	90.00	0.10	8,973.00	9,317.31	228.86	9,320.11	0.00	0.00	0.00
18,800.00	90.00	0.10	8,973.00	9,417.31	229.02	9,420.09	0.00	0.00	0.00
18,900.00	90.00	0.10	8,973.00	9,517.31	229.19	9,520.07	0.00	0.00	0.00
19,000.00	90.00	0.10	8,973.00	9,617.31	229.36	9,620.04	0.00	0.00	0.00
19,100.00	90.00	0.10	8,973.00	9,717.31	229.53	9,720.02	0.00	0.00	0.00
19,200.00	90.00	0.10	8,973.00	9,817.31	229.70	9,820.00	0.00	0.00	0.00
19,300.00	90.00	0.10	8,973.00	9,917.31	229.87	9,919.98	0.00	0.00	0.00
19,397.88	90.00	0.10	8,973.00	10,015.20	230.03	10,017.84	0.00	0.00	0.00
TD at 19397.88									

### 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
3019-10CH HEEL (24	0.00	0.00	8,413.36	-618.22	192.88	1,597,424.216 5	3,220,719.585 1	40° 58' 14.011 N	104° 42' 2.742 W
- plan hits target center - Point									
3019-10CH LP (330' F	0.00	0.00	8,973.00	-45.44	213.06	1,597,996.994 0	3,220,739.765 2	40° 58' 19.668 N	104° 42' 2.412 W
- plan hits target center - Point									
3019-10CH BHL (100	0.00	0.00	8,973.00	10,015.20	230.03	1,608,057.6113	3,220,756.737 0	40° 59' 59.064 N	104° 42' 1.008 W
- plan hits target center - Point									

### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2600	2600	0	0	Start Build 2.00
2929	2929	-18	6	Start 5444.89 hold at 2929.44 MD
8374	8338	-615	190	Start DLS 10.00 TFO -162.60
9337	8973	-45	213	Start 10060.65 hold at 9337.23 MD
19,398	8973	10,015	230	TD at 19397.88



# Integrity Directional Services, LLC

## Survey Report



<b>Company:</b>	Longs Peak Resources	<b>Local Co-ordinate Reference:</b>	Well Matira East 3019-10CH
<b>Project:</b>	Weld County, Co (NAD 83)	<b>TVD Reference:</b>	KB=25' @ 6033.00ft
<b>Site:</b>	Matira East Pad	<b>MD Reference:</b>	KB=25' @ 6033.00ft
<b>Well:</b>	Matira East 3019-10CH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	EDM 5000.1 Multi User Db

Checked By: _____	Approved By: _____	Date: _____
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