

Longs Peak Resources  
Project: Weld County, Co (NAD 83)  
Site: Jaco East Pad  
Well: Jaco East 1807-8CH  
Wellbore: Wellbore #1  
Plan: Design #1 (Jaco East 1807-8CH/Wellbore #1)



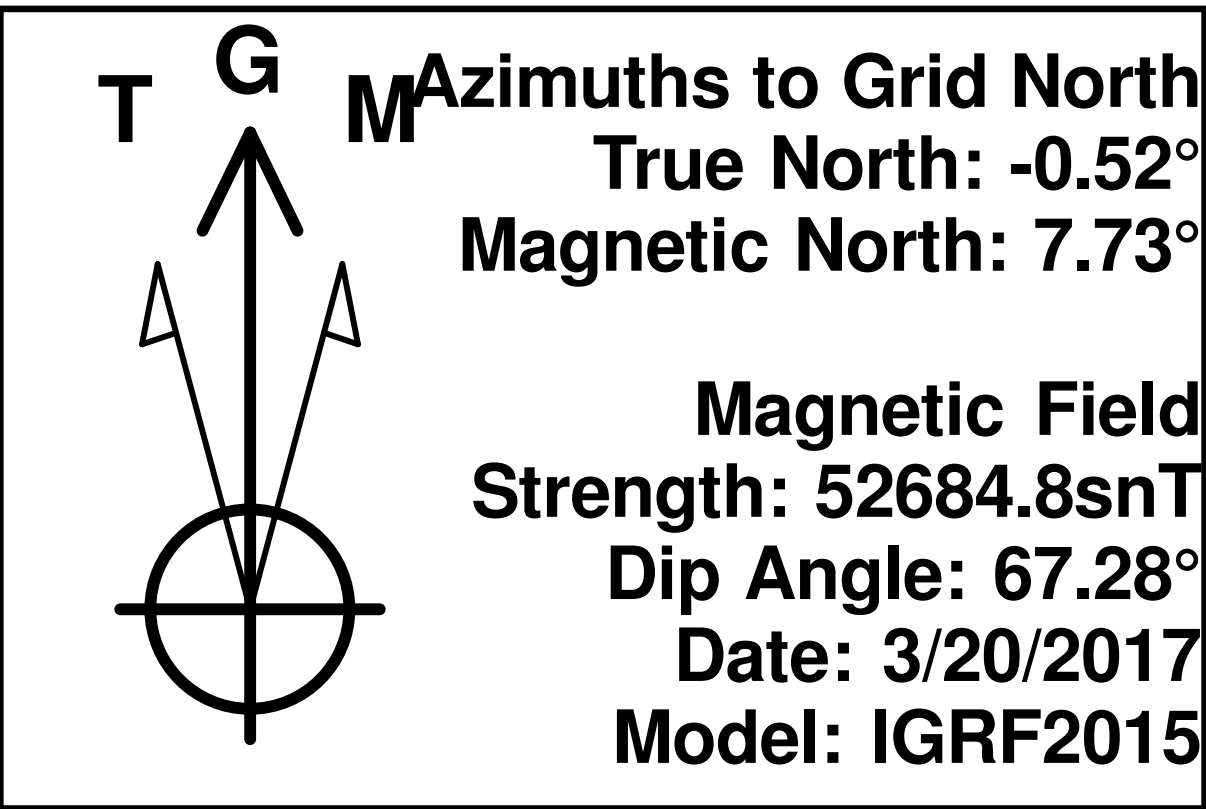
WELL DETAILS: Jaco East 1807-8CH

Ground Elevation:: 5596.00  
RKB Elevation: KB=25' @ 5621.00ft  
Rig Name:

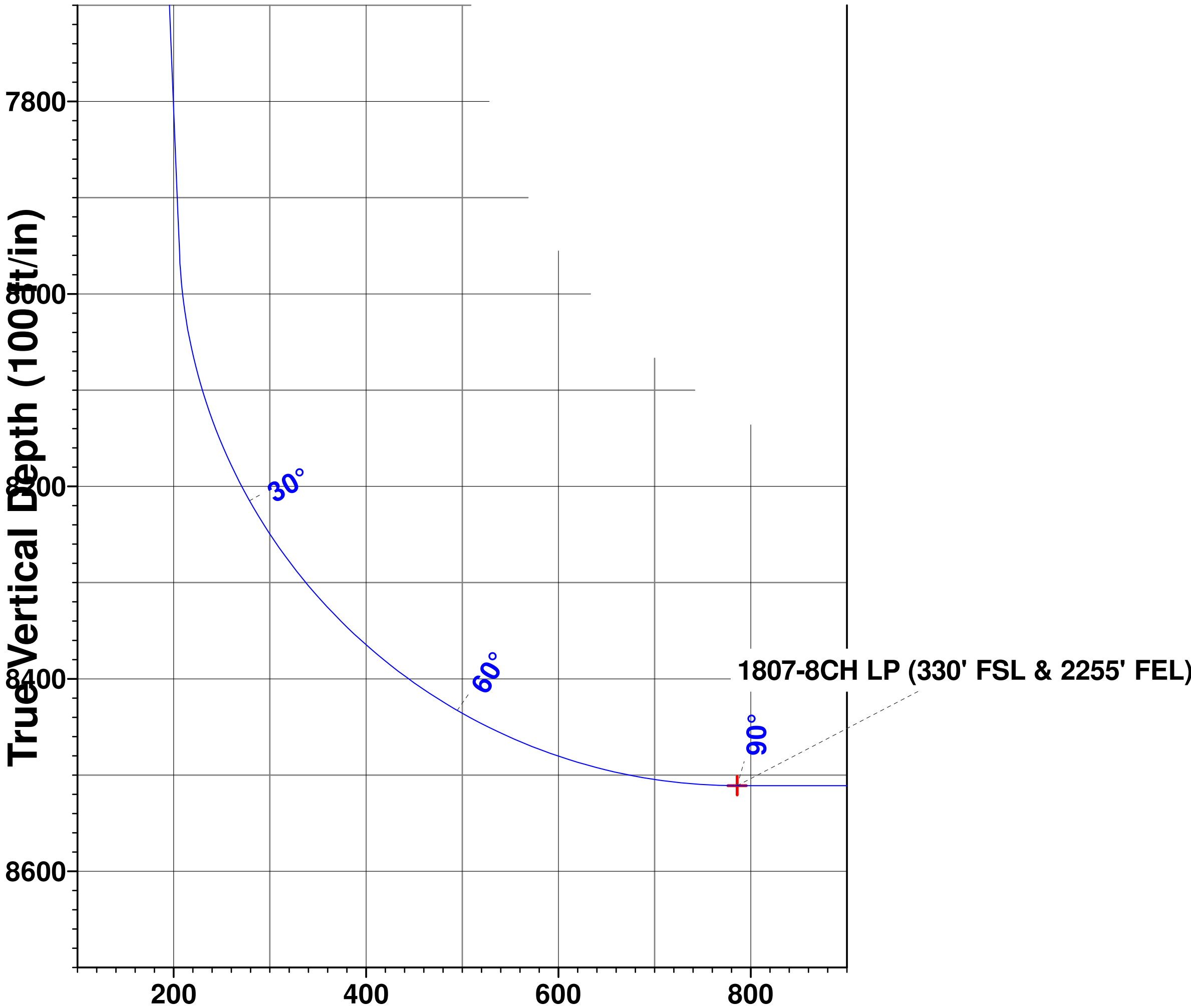
Northing	Easting	Latitude	Longitude
1576300.6851	3220962.9863	40° 54' 45.288 N	104° 42' 2.052 W

Planned Section Details

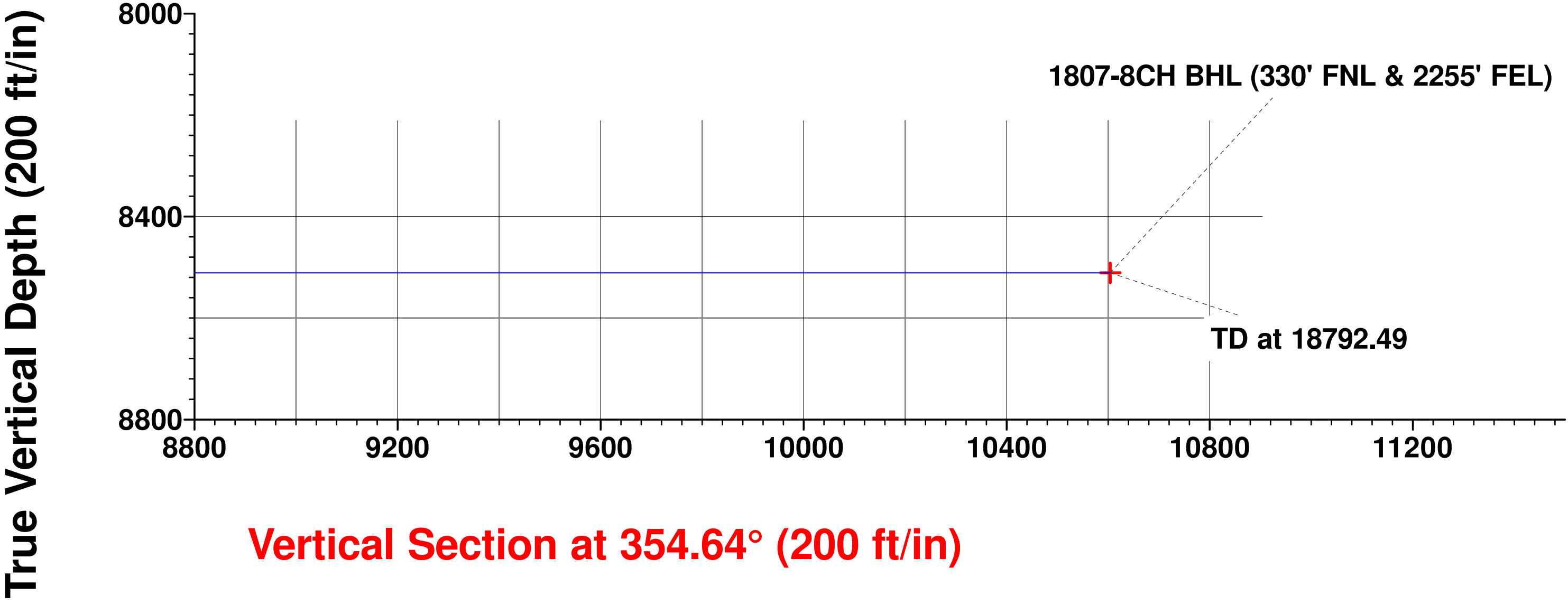
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	2600.00	0.00	0.00	2600.00	0.00	0.00	0.00	0.00	0.00
3	3114.01	10.28	277.52	3111.26	6.02	-45.59	2.00	277.52	10.25
4	8041.87	10.28	277.52	7960.00	121.05	-917.48	0.00	0.00	206.21
5	8928.75	90.00	0.14	8511.00	694.11	-1015.15	10.00	82.74	785.88
6	18792.49	90.00	0.14	8511.00	10557.82	-990.39	0.00	0.00	10604.17



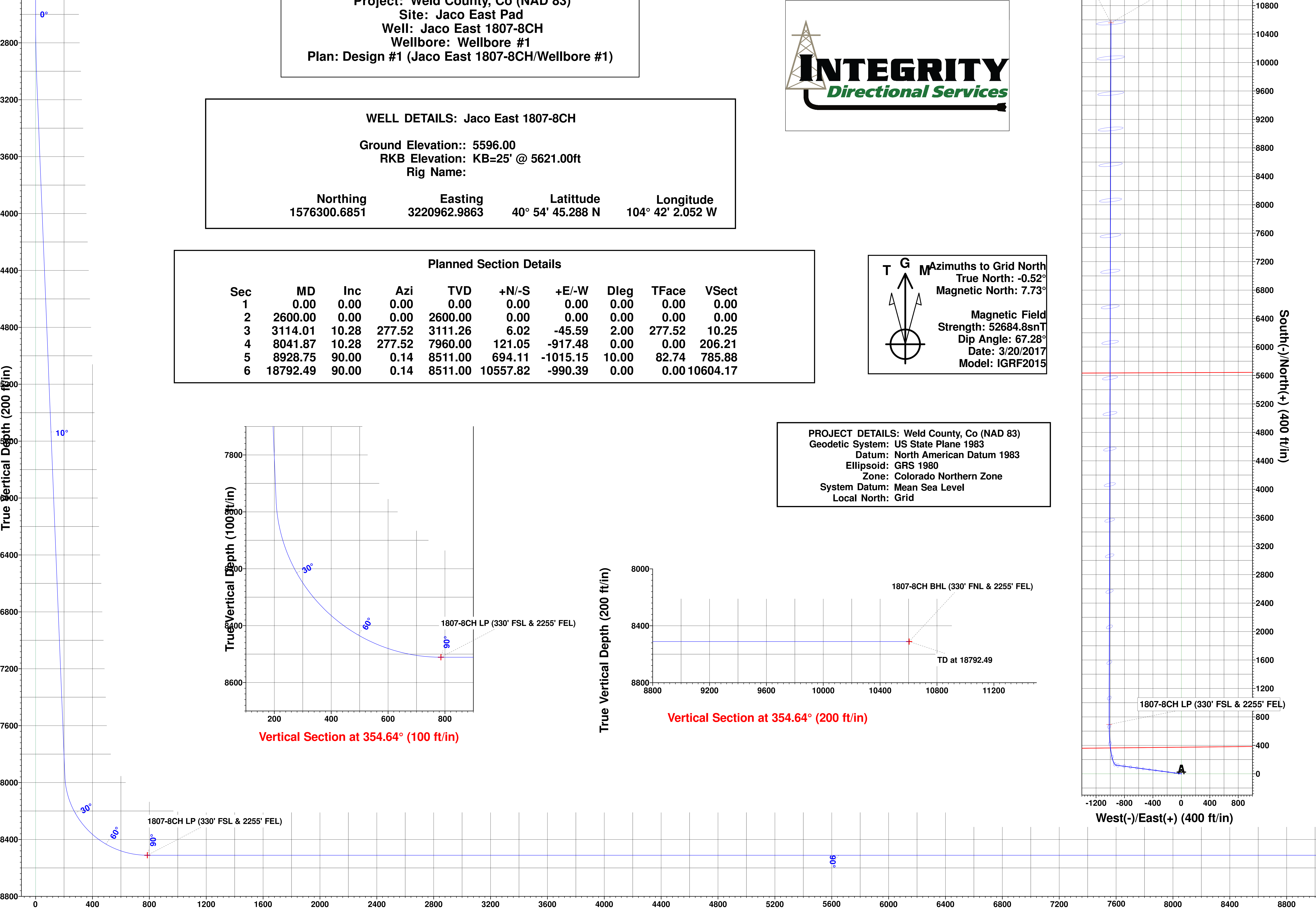
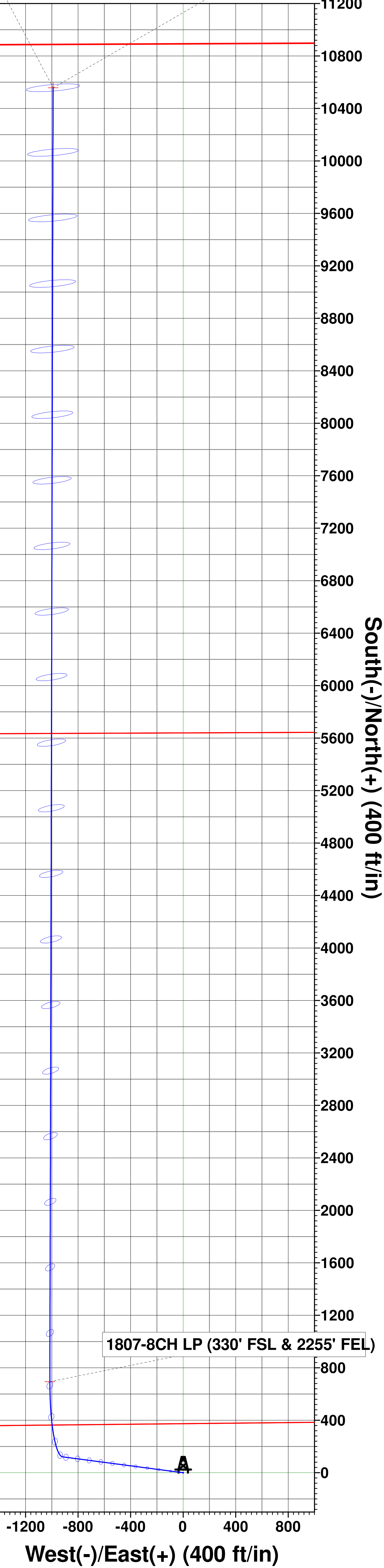
PROJECT DETAILS: Weld County, Co (NAD 83)  
Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone  
System Datum: Mean Sea Level  
Local North: Grid



Vertical Section at 354.64° (100 ft/in)



Vertical Section at 354.64° (200 ft/in)



Vertical Section at 354.64° (200 ft/in)

# **Longs Peak Resources**

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

**Jaco East Pad**

**Jaco East 1807-8CH**

**Wellbore #1**

**Plan: Design #1**

## **Standard Survey Report**

**20 March, 2017**



# Integrity Directional Services, LLC

## Survey Report



<b>Company:</b>	Longs Peak Resources	<b>Local Co-ordinate Reference:</b>	Well Jaco East 1807-8CH
<b>Project:</b>	Weld County, Co (NAD 83)	<b>TVD Reference:</b>	KB=25' @ 5621.00ft
<b>Site:</b>	Jaco East Pad	<b>MD Reference:</b>	KB=25' @ 5621.00ft
<b>Well:</b>	Jaco East 1807-8CH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #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		

<b>Site</b>	Jaco East Pad		
<b>Site Position:</b>		<b>Northing:</b>	1,576,300.3192 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,220,921.5272 usft
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	40° 54' 45.288 N
		<b>Longitude:</b>	104° 42' 2.592 W
		<b>Grid Convergence:</b>	0.52 °

<b>Well</b>	Jaco East 1807-8CH		
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>	0.00 ft
		<b>Latitude:</b>	40° 54' 45.288 N
		<b>Longitude:</b>	104° 42' 2.052 W
		<b>Ground Level:</b>	5,596.00 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	3/20/2017	8.25	67.28	52,685

<b>Design</b>	Design #1				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<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	354.64	

<b>Survey Tool Program</b>	<b>Date</b>	3/20/2017			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
0.00	18,792.49	Design #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 Jaco East 1807-8CH
<b>Project:</b>	Weld County, Co (NAD 83)	<b>TVD Reference:</b>	KB=25' @ 5621.00ft
<b>Site:</b>	Jaco East Pad	<b>MD Reference:</b>	KB=25' @ 5621.00ft
<b>Well:</b>	Jaco East 1807-8CH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #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
2,700.00	2.00	277.52	2,699.98	0.23	-1.73	0.39	2.00	2.00	0.00
2,800.00	4.00	277.52	2,799.84	0.91	-6.92	1.55	2.00	2.00	0.00
2,900.00	6.00	277.52	2,899.45	2.05	-15.56	3.50	2.00	2.00	0.00
3,000.00	8.00	277.52	2,998.70	3.65	-27.64	6.21	2.00	2.00	0.00
3,100.00	10.00	277.52	3,097.47	5.69	-43.15	9.70	2.00	2.00	0.00
3,114.01	10.28	277.52	3,111.26	6.02	-45.59	10.25	2.00	2.00	0.00
3,200.00	10.28	277.52	3,195.87	8.02	-60.81	13.67	0.00	0.00	0.00
3,300.00	10.28	277.52	3,294.26	10.36	-78.50	17.64	0.00	0.00	0.00
3,400.00	10.28	277.52	3,392.66	12.69	-96.19	21.62	0.00	0.00	0.00
3,500.00	10.28	277.52	3,491.05	15.03	-113.89	25.60	0.00	0.00	0.00
3,600.00	10.28	277.52	3,589.44	17.36	-131.58	29.57	0.00	0.00	0.00
3,700.00	10.28	277.52	3,687.84	19.69	-149.27	33.55	0.00	0.00	0.00
3,800.00	10.28	277.52	3,786.23	22.03	-166.97	37.53	0.00	0.00	0.00
3,900.00	10.28	277.52	3,884.63	24.36	-184.66	41.50	0.00	0.00	0.00
4,000.00	10.28	277.52	3,983.02	26.70	-202.35	45.48	0.00	0.00	0.00
4,100.00	10.28	277.52	4,081.42	29.03	-220.04	49.46	0.00	0.00	0.00
4,200.00	10.28	277.52	4,179.81	31.37	-237.74	53.43	0.00	0.00	0.00
4,300.00	10.28	277.52	4,278.21	33.70	-255.43	57.41	0.00	0.00	0.00
4,400.00	10.28	277.52	4,376.60	36.04	-273.12	61.39	0.00	0.00	0.00
4,500.00	10.28	277.52	4,475.00	38.37	-290.82	65.36	0.00	0.00	0.00
4,600.00	10.28	277.52	4,573.39	40.70	-308.51	69.34	0.00	0.00	0.00
4,700.00	10.28	277.52	4,671.79	43.04	-326.20	73.32	0.00	0.00	0.00
4,800.00	10.28	277.52	4,770.18	45.37	-343.89	77.29	0.00	0.00	0.00
4,900.00	10.28	277.52	4,868.58	47.71	-361.59	81.27	0.00	0.00	0.00
5,000.00	10.28	277.52	4,966.97	50.04	-379.28	85.25	0.00	0.00	0.00
5,100.00	10.28	277.52	5,065.36	52.38	-396.97	89.22	0.00	0.00	0.00
5,200.00	10.28	277.52	5,163.76	54.71	-414.67	93.20	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 Jaco East 1807-8CH
<b>Project:</b>	Weld County, Co (NAD 83)	<b>TVD Reference:</b>	KB=25' @ 5621.00ft
<b>Site:</b>	Jaco East Pad	<b>MD Reference:</b>	KB=25' @ 5621.00ft
<b>Well:</b>	Jaco East 1807-8CH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #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)
5,300.00	10.28	277.52	5,262.15	57.05	-432.36	97.18	0.00	0.00	0.00
5,400.00	10.28	277.52	5,360.55	59.38	-450.05	101.15	0.00	0.00	0.00
5,500.00	10.28	277.52	5,458.94	61.71	-467.75	105.13	0.00	0.00	0.00
5,600.00	10.28	277.52	5,557.34	64.05	-485.44	109.11	0.00	0.00	0.00
5,700.00	10.28	277.52	5,655.73	66.38	-503.13	113.08	0.00	0.00	0.00
5,800.00	10.28	277.52	5,754.13	68.72	-520.82	117.06	0.00	0.00	0.00
5,900.00	10.28	277.52	5,852.52	71.05	-538.52	121.04	0.00	0.00	0.00
6,000.00	10.28	277.52	5,950.92	73.39	-556.21	125.01	0.00	0.00	0.00
6,100.00	10.28	277.52	6,049.31	75.72	-573.90	128.99	0.00	0.00	0.00
6,200.00	10.28	277.52	6,147.71	78.05	-591.60	132.97	0.00	0.00	0.00
6,300.00	10.28	277.52	6,246.10	80.39	-609.29	136.94	0.00	0.00	0.00
6,400.00	10.28	277.52	6,344.50	82.72	-626.98	140.92	0.00	0.00	0.00
6,500.00	10.28	277.52	6,442.89	85.06	-644.67	144.90	0.00	0.00	0.00
6,600.00	10.28	277.52	6,541.29	87.39	-662.37	148.87	0.00	0.00	0.00
6,700.00	10.28	277.52	6,639.68	89.73	-680.06	152.85	0.00	0.00	0.00
6,800.00	10.28	277.52	6,738.07	92.06	-697.75	156.83	0.00	0.00	0.00
6,900.00	10.28	277.52	6,836.47	94.40	-715.45	160.80	0.00	0.00	0.00
7,000.00	10.28	277.52	6,934.86	96.73	-733.14	164.78	0.00	0.00	0.00
7,100.00	10.28	277.52	7,033.26	99.06	-750.83	168.76	0.00	0.00	0.00
7,200.00	10.28	277.52	7,131.65	101.40	-768.53	172.73	0.00	0.00	0.00
7,300.00	10.28	277.52	7,230.05	103.73	-786.22	176.71	0.00	0.00	0.00
7,400.00	10.28	277.52	7,328.44	106.07	-803.91	180.69	0.00	0.00	0.00
7,500.00	10.28	277.52	7,426.84	108.40	-821.60	184.66	0.00	0.00	0.00
7,600.00	10.28	277.52	7,525.23	110.74	-839.30	188.64	0.00	0.00	0.00
7,700.00	10.28	277.52	7,623.63	113.07	-856.99	192.62	0.00	0.00	0.00
7,800.00	10.28	277.52	7,722.02	115.41	-874.68	196.59	0.00	0.00	0.00
7,900.00	10.28	277.52	7,820.42	117.74	-892.38	200.57	0.00	0.00	0.00
8,000.00	10.28	277.52	7,918.81	120.07	-910.07	204.55	0.00	0.00	0.00
8,041.87	10.28	277.52	7,960.00	121.05	-917.48	206.21	0.00	0.00	0.00
8,100.00	12.42	305.37	8,017.04	125.35	-927.72	211.45	10.00	3.68	47.92
8,200.00	19.85	330.26	8,113.14	146.37	-944.96	233.99	10.00	7.43	24.89
8,300.00	28.84	341.08	8,204.20	184.03	-961.24	273.00	10.00	8.99	10.82
8,400.00	38.31	346.98	8,287.45	237.18	-976.08	327.30	10.00	9.46	5.90
8,500.00	47.96	350.81	8,360.35	304.20	-989.03	395.24	10.00	9.66	3.83
8,600.00	57.71	353.62	8,420.70	383.06	-999.69	474.76	10.00	9.75	2.81
8,700.00	67.51	355.87	8,466.65	471.37	-1,007.73	563.43	10.00	9.80	2.26
8,800.00	77.33	357.83	8,496.82	566.44	-1,012.92	658.56	10.00	9.83	1.95
8,900.00	87.17	359.63	8,510.29	665.37	-1,015.09	757.27	10.00	9.84	1.81
8,928.75	90.00	0.14	8,511.00	694.11	-1,015.15	785.88	10.00	9.84	1.77
9,000.00	90.00	0.14	8,511.00	765.36	-1,014.97	856.81	0.00	0.00	0.00
9,100.00	90.00	0.14	8,511.00	865.36	-1,014.72	956.35	0.00	0.00	0.00
9,200.00	90.00	0.14	8,511.00	965.36	-1,014.47	1,055.89	0.00	0.00	0.00
9,300.00	90.00	0.14	8,511.00	1,065.36	-1,014.22	1,155.43	0.00	0.00	0.00



# Integrity Directional Services, LLC

## Survey Report



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<b>Project:</b>	Weld County, Co (NAD 83)	<b>TVD Reference:</b>	KB=25' @ 5621.00ft
<b>Site:</b>	Jaco East Pad	<b>MD Reference:</b>	KB=25' @ 5621.00ft
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<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
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### 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)
9,400.00	90.00	0.14	8,511.00	1,165.36	-1,013.96	1,254.97	0.00	0.00	0.00
9,500.00	90.00	0.14	8,511.00	1,265.36	-1,013.71	1,354.50	0.00	0.00	0.00
9,600.00	90.00	0.14	8,511.00	1,365.36	-1,013.46	1,454.04	0.00	0.00	0.00
9,700.00	90.00	0.14	8,511.00	1,465.36	-1,013.21	1,553.58	0.00	0.00	0.00
9,800.00	90.00	0.14	8,511.00	1,565.36	-1,012.96	1,653.12	0.00	0.00	0.00
9,900.00	90.00	0.14	8,511.00	1,665.36	-1,012.71	1,752.66	0.00	0.00	0.00
10,000.00	90.00	0.14	8,511.00	1,765.36	-1,012.46	1,852.20	0.00	0.00	0.00
10,100.00	90.00	0.14	8,511.00	1,865.36	-1,012.21	1,951.74	0.00	0.00	0.00
10,200.00	90.00	0.14	8,511.00	1,965.36	-1,011.96	2,051.28	0.00	0.00	0.00
10,300.00	90.00	0.14	8,511.00	2,065.36	-1,011.71	2,150.82	0.00	0.00	0.00
10,400.00	90.00	0.14	8,511.00	2,165.36	-1,011.45	2,250.36	0.00	0.00	0.00
10,500.00	90.00	0.14	8,511.00	2,265.36	-1,011.20	2,349.90	0.00	0.00	0.00
10,600.00	90.00	0.14	8,511.00	2,365.36	-1,010.95	2,449.44	0.00	0.00	0.00
10,700.00	90.00	0.14	8,511.00	2,465.36	-1,010.70	2,548.97	0.00	0.00	0.00
10,800.00	90.00	0.14	8,511.00	2,565.35	-1,010.45	2,648.51	0.00	0.00	0.00
10,900.00	90.00	0.14	8,511.00	2,665.35	-1,010.20	2,748.05	0.00	0.00	0.00
11,000.00	90.00	0.14	8,511.00	2,765.35	-1,009.95	2,847.59	0.00	0.00	0.00
11,100.00	90.00	0.14	8,511.00	2,865.35	-1,009.70	2,947.13	0.00	0.00	0.00
11,200.00	90.00	0.14	8,511.00	2,965.35	-1,009.45	3,046.67	0.00	0.00	0.00
11,300.00	90.00	0.14	8,511.00	3,065.35	-1,009.20	3,146.21	0.00	0.00	0.00
11,400.00	90.00	0.14	8,511.00	3,165.35	-1,008.94	3,245.75	0.00	0.00	0.00
11,500.00	90.00	0.14	8,511.00	3,265.35	-1,008.69	3,345.29	0.00	0.00	0.00
11,600.00	90.00	0.14	8,511.00	3,365.35	-1,008.44	3,444.83	0.00	0.00	0.00
11,700.00	90.00	0.14	8,511.00	3,465.35	-1,008.19	3,544.37	0.00	0.00	0.00
11,800.00	90.00	0.14	8,511.00	3,565.35	-1,007.94	3,643.91	0.00	0.00	0.00
11,900.00	90.00	0.14	8,511.00	3,665.35	-1,007.69	3,743.44	0.00	0.00	0.00
12,000.00	90.00	0.14	8,511.00	3,765.35	-1,007.44	3,842.98	0.00	0.00	0.00
12,100.00	90.00	0.14	8,511.00	3,865.35	-1,007.19	3,942.52	0.00	0.00	0.00
12,200.00	90.00	0.14	8,511.00	3,965.35	-1,006.94	4,042.06	0.00	0.00	0.00
12,300.00	90.00	0.14	8,511.00	4,065.35	-1,006.69	4,141.60	0.00	0.00	0.00
12,400.00	90.00	0.14	8,511.00	4,165.35	-1,006.43	4,241.14	0.00	0.00	0.00
12,500.00	90.00	0.14	8,511.00	4,265.35	-1,006.18	4,340.68	0.00	0.00	0.00
12,600.00	90.00	0.14	8,511.00	4,365.35	-1,005.93	4,440.22	0.00	0.00	0.00
12,700.00	90.00	0.14	8,511.00	4,465.35	-1,005.68	4,539.76	0.00	0.00	0.00
12,800.00	90.00	0.14	8,511.00	4,565.35	-1,005.43	4,639.30	0.00	0.00	0.00
12,900.00	90.00	0.14	8,511.00	4,665.35	-1,005.18	4,738.84	0.00	0.00	0.00
13,000.00	90.00	0.14	8,511.00	4,765.35	-1,004.93	4,838.37	0.00	0.00	0.00
13,100.00	90.00	0.14	8,511.00	4,865.35	-1,004.68	4,937.91	0.00	0.00	0.00
13,200.00	90.00	0.14	8,511.00	4,965.35	-1,004.43	5,037.45	0.00	0.00	0.00
13,300.00	90.00	0.14	8,511.00	5,065.35	-1,004.17	5,136.99	0.00	0.00	0.00
13,400.00	90.00	0.14	8,511.00	5,165.35	-1,003.92	5,236.53	0.00	0.00	0.00
13,500.00	90.00	0.14	8,511.00	5,265.35	-1,003.67	5,336.07	0.00	0.00	0.00
13,600.00	90.00	0.14	8,511.00	5,365.35	-1,003.42	5,435.61	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 Jaco East 1807-8CH
<b>Project:</b>	Weld County, Co (NAD 83)	<b>TVD Reference:</b>	KB=25' @ 5621.00ft
<b>Site:</b>	Jaco East Pad	<b>MD Reference:</b>	KB=25' @ 5621.00ft
<b>Well:</b>	Jaco East 1807-8CH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #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)
13,700.00	90.00	0.14	8,511.00	5,465.35	-1,003.17	5,535.15	0.00	0.00	0.00
13,800.00	90.00	0.14	8,511.00	5,565.35	-1,002.92	5,634.69	0.00	0.00	0.00
13,900.00	90.00	0.14	8,511.00	5,665.35	-1,002.67	5,734.23	0.00	0.00	0.00
14,000.00	90.00	0.14	8,511.00	5,765.34	-1,002.42	5,833.77	0.00	0.00	0.00
14,100.00	90.00	0.14	8,511.00	5,865.34	-1,002.17	5,933.31	0.00	0.00	0.00
14,200.00	90.00	0.14	8,511.00	5,965.34	-1,001.92	6,032.84	0.00	0.00	0.00
14,300.00	90.00	0.14	8,511.00	6,065.34	-1,001.66	6,132.38	0.00	0.00	0.00
14,400.00	90.00	0.14	8,511.00	6,165.34	-1,001.41	6,231.92	0.00	0.00	0.00
14,500.00	90.00	0.14	8,511.00	6,265.34	-1,001.16	6,331.46	0.00	0.00	0.00
14,600.00	90.00	0.14	8,511.00	6,365.34	-1,000.91	6,431.00	0.00	0.00	0.00
14,700.00	90.00	0.14	8,511.00	6,465.34	-1,000.66	6,530.54	0.00	0.00	0.00
14,800.00	90.00	0.14	8,511.00	6,565.34	-1,000.41	6,630.08	0.00	0.00	0.00
14,900.00	90.00	0.14	8,511.00	6,665.34	-1,000.16	6,729.62	0.00	0.00	0.00
15,000.00	90.00	0.14	8,511.00	6,765.34	-999.91	6,829.16	0.00	0.00	0.00
15,100.00	90.00	0.14	8,511.00	6,865.34	-999.66	6,928.70	0.00	0.00	0.00
15,200.00	90.00	0.14	8,511.00	6,965.34	-999.41	7,028.24	0.00	0.00	0.00
15,300.00	90.00	0.14	8,511.00	7,065.34	-999.15	7,127.78	0.00	0.00	0.00
15,400.00	90.00	0.14	8,511.00	7,165.34	-998.90	7,227.31	0.00	0.00	0.00
15,500.00	90.00	0.14	8,511.00	7,265.34	-998.65	7,326.85	0.00	0.00	0.00
15,600.00	90.00	0.14	8,511.00	7,365.34	-998.40	7,426.39	0.00	0.00	0.00
15,700.00	90.00	0.14	8,511.00	7,465.34	-998.15	7,525.93	0.00	0.00	0.00
15,800.00	90.00	0.14	8,511.00	7,565.34	-997.90	7,625.47	0.00	0.00	0.00
15,900.00	90.00	0.14	8,511.00	7,665.34	-997.65	7,725.01	0.00	0.00	0.00
16,000.00	90.00	0.14	8,511.00	7,765.34	-997.40	7,824.55	0.00	0.00	0.00
16,100.00	90.00	0.14	8,511.00	7,865.34	-997.15	7,924.09	0.00	0.00	0.00
16,200.00	90.00	0.14	8,511.00	7,965.34	-996.89	8,023.63	0.00	0.00	0.00
16,300.00	90.00	0.14	8,511.00	8,065.34	-996.64	8,123.17	0.00	0.00	0.00
16,400.00	90.00	0.14	8,511.00	8,165.34	-996.39	8,222.71	0.00	0.00	0.00
16,500.00	90.00	0.14	8,511.00	8,265.34	-996.14	8,322.25	0.00	0.00	0.00
16,600.00	90.00	0.14	8,511.00	8,365.34	-995.89	8,421.78	0.00	0.00	0.00
16,700.00	90.00	0.14	8,511.00	8,465.34	-995.64	8,521.32	0.00	0.00	0.00
16,800.00	90.00	0.14	8,511.00	8,565.34	-995.39	8,620.86	0.00	0.00	0.00
16,900.00	90.00	0.14	8,511.00	8,665.34	-995.14	8,720.40	0.00	0.00	0.00
17,000.00	90.00	0.14	8,511.00	8,765.34	-994.89	8,819.94	0.00	0.00	0.00
17,100.00	90.00	0.14	8,511.00	8,865.33	-994.64	8,919.48	0.00	0.00	0.00
17,200.00	90.00	0.14	8,511.00	8,965.33	-994.38	9,019.02	0.00	0.00	0.00
17,300.00	90.00	0.14	8,511.00	9,065.33	-994.13	9,118.56	0.00	0.00	0.00
17,400.00	90.00	0.14	8,511.00	9,165.33	-993.88	9,218.10	0.00	0.00	0.00
17,500.00	90.00	0.14	8,511.00	9,265.33	-993.63	9,317.64	0.00	0.00	0.00
17,600.00	90.00	0.14	8,511.00	9,365.33	-993.38	9,417.18	0.00	0.00	0.00
17,700.00	90.00	0.14	8,511.00	9,465.33	-993.13	9,516.71	0.00	0.00	0.00
17,800.00	90.00	0.14	8,511.00	9,565.33	-992.88	9,616.25	0.00	0.00	0.00
17,900.00	90.00	0.14	8,511.00	9,665.33	-992.63	9,715.79	0.00	0.00	0.00
18,000.00	90.00	0.14	8,511.00	9,765.33	-992.38	9,815.33	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 Jaco East 1807-8CH
<b>Project:</b>	Weld County, Co (NAD 83)	<b>TVD Reference:</b>	KB=25' @ 5621.00ft
<b>Site:</b>	Jaco East Pad	<b>MD Reference:</b>	KB=25' @ 5621.00ft
<b>Well:</b>	Jaco East 1807-8CH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #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)
18,100.00	90.00	0.14	8,511.00	9,865.33	-992.13	9,914.87	0.00	0.00	0.00
18,200.00	90.00	0.14	8,511.00	9,965.33	-991.87	10,014.41	0.00	0.00	0.00
18,300.00	90.00	0.14	8,511.00	10,065.33	-991.62	10,113.95	0.00	0.00	0.00
18,400.00	90.00	0.14	8,511.00	10,165.33	-991.37	10,213.49	0.00	0.00	0.00
18,500.00	90.00	0.14	8,511.00	10,265.33	-991.12	10,313.03	0.00	0.00	0.00
18,600.00	90.00	0.14	8,511.00	10,365.33	-990.87	10,412.57	0.00	0.00	0.00
18,700.00	90.00	0.14	8,511.00	10,465.33	-990.62	10,512.11	0.00	0.00	0.00
18,792.49	90.00	0.14	8,511.00	10,557.82	-990.39	10,604.17	0.00	0.00	0.00

### Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
1807-8CH LP (330' F)	0.00	0.00	8,511.00	694.11	-1,015.15	1,576,994.790 6	3,219,947.840 4	40° 54' 52.236 N	104° 42' 15.192 W
- plan hits target center									
- Point									
1807-8CH BHL (330' I)	0.00	0.00	8,511.00	10,557.82	-990.39	1,586,858.487 3	3,219,972.601 4	40° 56' 29.688 N	104° 42' 13.716 W
- plan hits target center									
- Point									

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_