

Longs Peak Resources
Project: Weld County, CO
Site: Southblock Ph 2 - Oxnard East Pad SEC.31-T12N-R66W
Well: Oxnard East 0607-8CH
Wellbore: Wellbore #1
Design: Design #1
Lat: 40.95863°N
Long: 104.81278°W
Pad GL: 5974.0
KB: 5974+25KB @ 5999.0usft

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
8.0	0.00	0.00	8.0	0.0	0.0	0.00	0.00	0.0	
2608.0	0.00	0.00	2608.0	0.0	0.0	0.00	0.00	0.0	
3580.1	19.44	265.59	3561.5	-12.6	-162.9	2.00	265.59	36.8	
7397.7	19.44	265.59	7161.5	-110.3	-1429.7	0.00	0.00	322.7	
8369.8	0.00	0.00	8115.0	-122.9	-1592.6	2.00	180.00	359.5	
8869.8	0.00	0.00	8615.0	-122.9	-1592.6	0.00	0.00	359.5	
9769.8	90.00	180.12	9188.0	-695.9	-1593.8	10.00	180.12	926.2	
19753.1	90.00	180.12	9188.0	-10679.2	-1613.8	0.00	0.00	10800.5	

WELL DETAILS: Oxnard East 0607-8CH

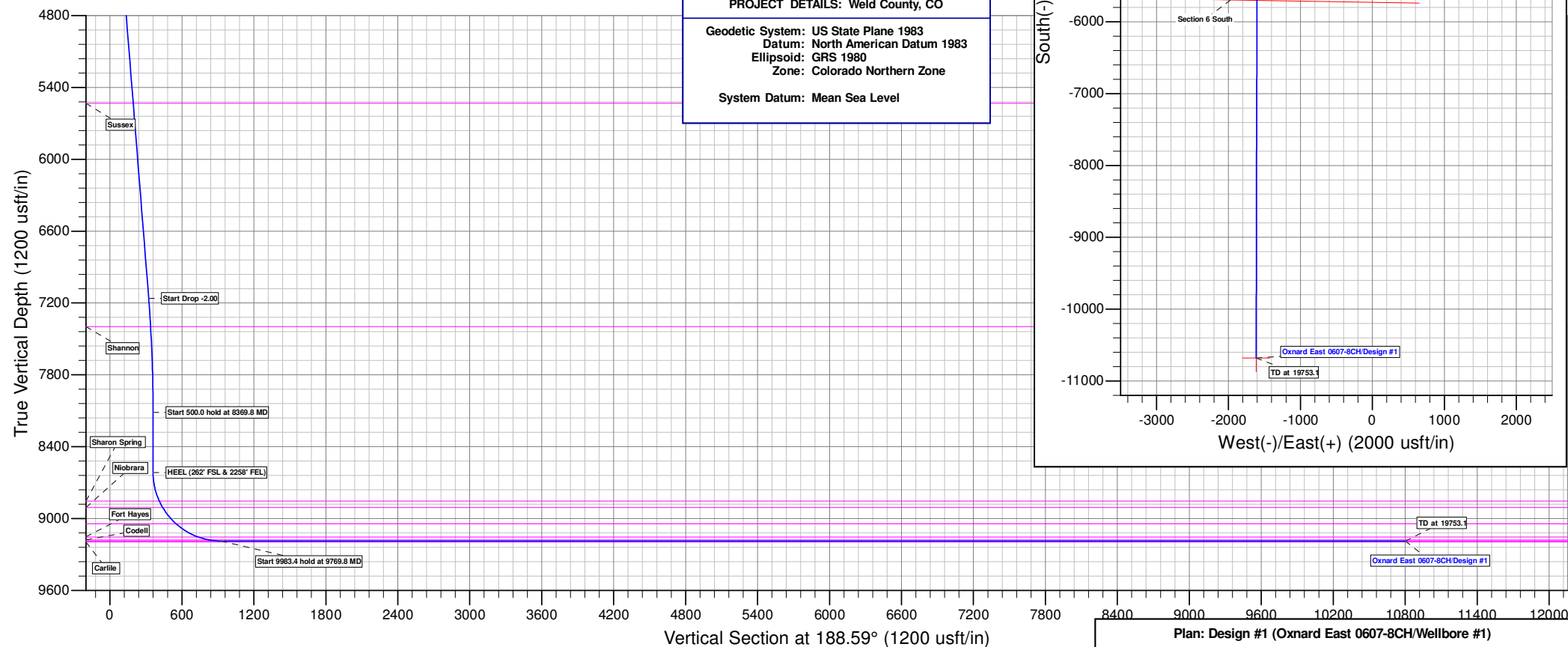
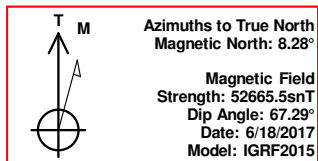
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1592818.75	3189818.71	40.95863°N	104.81278°W	

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape Point
0607-8CH BHL	9188.0	-10679.2	-1613.8	40.92932°N	104.61862°W	
0607-8CH LP	9188.0	-695.8	-1593.8	40.95672°N	104.81855°W	

PROJECT DETAILS: Weld County, CO

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level



Plan: Design #1 (Oxnard East 0607-8CH/Wellbore #1)

Created By: Stephanie Sneesby Date: 18:32, September 11 2017

Longs Peak Resources

Weld County, CO

Southblock Ph 2 - Oxnard East Pad SEC.31-T12N-R66W

Oxnard East 0607-8CH

Wellbore #1

Plan: Design #1

Standard Planning Report

11 September, 2017

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Oxnard East 0607-8CH
Company:	Longs Peak Resources	TVD Reference:	5974+25KB @ 5999.0usft
Project:	Weld County, CO	MD Reference:	5974+25KB @ 5999.0usft
Site:	Southblock Ph 2 - Oxnard East Pad SEC.31-T12N-R66W	North Reference:	True
Well:	Oxnard East 0607-8CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	Weld County, CO, ,		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	Southblock Ph 2 - Oxnard East Pad SEC.31-T12N-R66W		
Site Position:		Northing:	1,593,169.53 usft
From:	Lat/Long	Easting:	3,189,473.48 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	40.95960°N
		Longitude:	104.81402°W
		Grid Convergence:	0.44 °

Well	Oxnard East 0607-8CH					
Well Position	+N/-S	-353.4 usft	Northing:	1,592,818.75 usft	Latitude:	40.95863°N
	+E/-W	342.5 usft	Easting:	3,189,818.71 usft	Longitude:	104.81278°W
Position Uncertainty		0.0 usft	Wellhead Elevation:	25.0 usft	Ground Level:	5,974.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	9.10	67.55	53,580.03728598
	IGRF2015	6/18/2017	8.28	67.29	52,665.47179969

Design	Design #1				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	8.0	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	8.0	0.0	0.0	188.59	

Plan Survey Tool Program	Date	9/11/2017			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	8.0	19,753.2	Design #1 (Wellbore #1)		

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Oxnard East 0607-8CH
Company:	Longs Peak Resources	TVD Reference:	5974+25KB @ 5999.0usft
Project:	Weld County, CO	MD Reference:	5974+25KB @ 5999.0usft
Site:	Southblock Ph 2 - Oxnard East Pad SEC.31-T12N-R66W	North Reference:	True
Well:	Oxnard East 0607-8CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
8.0	0.00	0.00	8.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,608.0	0.00	0.00	2,608.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,580.1	19.44	265.59	3,561.5	-12.6	-162.9	2.00	2.00	0.00	265.59	
7,397.7	19.44	265.59	7,161.5	-110.3	-1,429.7	0.00	0.00	0.00	0.00	
8,369.8	0.00	0.00	8,115.0	-122.9	-1,592.6	2.00	-2.00	0.00	180.00	
8,869.8	0.00	0.00	8,615.0	-122.9	-1,592.6	0.00	0.00	0.00	0.00	
9,769.8	90.00	180.12	9,188.0	-695.9	-1,593.8	10.00	10.00	0.00	180.12	0607-8CH BHL
19,753.1	90.00	180.12	9,188.0	-10,679.2	-1,613.8	0.00	0.00	0.00	0.00	0607-8CH BHL

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Oxnard East 0607-8CH
Company:	Longs Peak Resources	TVD Reference:	5974+25KB @ 5999.0usft
Project:	Weld County, CO	MD Reference:	5974+25KB @ 5999.0usft
Site:	Southblock Ph 2 - Oxnard East Pad SEC.31-T12N-R66W	North Reference:	True
Well:	Oxnard East 0607-8CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned 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)
8.0	0.00	0.00	8.0	0.0	0.0	0.0	0.00	0.00	0.00
108.0	0.00	0.00	108.0	0.0	0.0	0.0	0.00	0.00	0.00
208.0	0.00	0.00	208.0	0.0	0.0	0.0	0.00	0.00	0.00
308.0	0.00	0.00	308.0	0.0	0.0	0.0	0.00	0.00	0.00
408.0	0.00	0.00	408.0	0.0	0.0	0.0	0.00	0.00	0.00
508.0	0.00	0.00	508.0	0.0	0.0	0.0	0.00	0.00	0.00
608.0	0.00	0.00	608.0	0.0	0.0	0.0	0.00	0.00	0.00
708.0	0.00	0.00	708.0	0.0	0.0	0.0	0.00	0.00	0.00
808.0	0.00	0.00	808.0	0.0	0.0	0.0	0.00	0.00	0.00
908.0	0.00	0.00	908.0	0.0	0.0	0.0	0.00	0.00	0.00
1,008.0	0.00	0.00	1,008.0	0.0	0.0	0.0	0.00	0.00	0.00
1,108.0	0.00	0.00	1,108.0	0.0	0.0	0.0	0.00	0.00	0.00
1,208.0	0.00	0.00	1,208.0	0.0	0.0	0.0	0.00	0.00	0.00
1,308.0	0.00	0.00	1,308.0	0.0	0.0	0.0	0.00	0.00	0.00
1,408.0	0.00	0.00	1,408.0	0.0	0.0	0.0	0.00	0.00	0.00
1,508.0	0.00	0.00	1,508.0	0.0	0.0	0.0	0.00	0.00	0.00
1,608.0	0.00	0.00	1,608.0	0.0	0.0	0.0	0.00	0.00	0.00
1,708.0	0.00	0.00	1,708.0	0.0	0.0	0.0	0.00	0.00	0.00
1,808.0	0.00	0.00	1,808.0	0.0	0.0	0.0	0.00	0.00	0.00
1,908.0	0.00	0.00	1,908.0	0.0	0.0	0.0	0.00	0.00	0.00
2,008.0	0.00	0.00	2,008.0	0.0	0.0	0.0	0.00	0.00	0.00
2,108.0	0.00	0.00	2,108.0	0.0	0.0	0.0	0.00	0.00	0.00
2,116.0	0.00	0.00	2,116.0	0.0	0.0	0.0	0.00	0.00	0.00
Fox Hills									
2,208.0	0.00	0.00	2,208.0	0.0	0.0	0.0	0.00	0.00	0.00
2,308.0	0.00	0.00	2,308.0	0.0	0.0	0.0	0.00	0.00	0.00
2,390.0	0.00	0.00	2,390.0	0.0	0.0	0.0	0.00	0.00	0.00
Pierre									
2,408.0	0.00	0.00	2,408.0	0.0	0.0	0.0	0.00	0.00	0.00
2,508.0	0.00	0.00	2,508.0	0.0	0.0	0.0	0.00	0.00	0.00
2,608.0	0.00	0.00	2,608.0	0.0	0.0	0.0	0.00	0.00	0.00
2,708.0	2.00	265.59	2,708.0	-0.1	-1.7	0.4	2.00	2.00	0.00
2,745.1	2.74	265.59	2,745.0	-0.3	-3.3	0.7	2.00	2.00	0.00
Teapot									
2,808.0	4.00	265.59	2,807.8	-0.5	-7.0	1.6	2.00	2.00	0.00
2,908.0	6.00	265.59	2,907.5	-1.2	-15.6	3.5	2.00	2.00	0.00
3,008.0	8.00	265.59	3,006.7	-2.1	-27.8	6.3	2.00	2.00	0.00
3,108.0	10.00	265.59	3,105.5	-3.3	-43.4	9.8	2.00	2.00	0.00
3,208.0	12.00	265.59	3,203.6	-4.8	-62.4	14.1	2.00	2.00	0.00
3,308.0	14.00	265.59	3,301.1	-6.5	-84.8	19.2	2.00	2.00	0.00
3,408.0	16.00	265.59	3,397.6	-8.5	-110.6	25.0	2.00	2.00	0.00
3,508.0	18.00	265.59	3,493.3	-10.8	-139.8	31.6	2.00	2.00	0.00
3,580.1	19.44	265.59	3,561.5	-12.6	-162.9	36.8	2.00	2.00	0.00
3,608.0	19.44	265.59	3,587.9	-13.3	-172.1	38.9	0.00	0.00	0.00
3,708.0	19.44	265.59	3,682.2	-15.8	-205.3	46.3	0.00	0.00	0.00
3,808.0	19.44	265.59	3,776.5	-18.4	-238.5	53.8	0.00	0.00	0.00
3,908.0	19.44	265.59	3,870.8	-21.0	-271.7	61.3	0.00	0.00	0.00
4,008.0	19.44	265.59	3,965.1	-23.5	-304.9	68.8	0.00	0.00	0.00
4,108.0	19.44	265.59	4,059.4	-26.1	-338.1	76.3	0.00	0.00	0.00
4,208.0	19.44	265.59	4,153.7	-28.6	-371.2	83.8	0.00	0.00	0.00
4,308.0	19.44	265.59	4,248.0	-31.2	-404.4	91.3	0.00	0.00	0.00
4,408.0	19.44	265.59	4,342.2	-33.8	-437.6	98.8	0.00	0.00	0.00
4,508.0	19.44	265.59	4,436.5	-36.3	-470.8	106.3	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Oxnard East 0607-8CH
Company:	Longs Peak Resources	TVD Reference:	5974+25KB @ 5999.0usft
Project:	Weld County, CO	MD Reference:	5974+25KB @ 5999.0usft
Site:	Southblock Ph 2 - Oxnard East Pad SEC.31-T12N-R66W	North Reference:	True
Well:	Oxnard East 0607-8CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned 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)
4,608.0	19.44	265.59	4,530.8	-38.9	-504.0	113.8	0.00	0.00	0.00
4,708.0	19.44	265.59	4,625.1	-41.5	-537.2	121.3	0.00	0.00	0.00
4,717.4	19.44	265.59	4,634.0	-41.7	-540.3	122.0	0.00	0.00	0.00
Parkman									
4,808.0	19.44	265.59	4,719.4	-44.0	-570.3	128.7	0.00	0.00	0.00
4,908.0	19.44	265.59	4,813.7	-46.6	-603.5	136.2	0.00	0.00	0.00
5,008.0	19.44	265.59	4,908.0	-49.1	-636.7	143.7	0.00	0.00	0.00
5,108.0	19.44	265.59	5,002.3	-51.7	-669.9	151.2	0.00	0.00	0.00
5,208.0	19.44	265.59	5,096.6	-54.3	-703.1	158.7	0.00	0.00	0.00
5,308.0	19.44	265.59	5,190.9	-56.8	-736.3	166.2	0.00	0.00	0.00
5,408.0	19.44	265.59	5,285.2	-59.4	-769.5	173.7	0.00	0.00	0.00
5,508.0	19.44	265.59	5,379.5	-61.9	-802.6	181.2	0.00	0.00	0.00
5,608.0	19.44	265.59	5,473.8	-64.5	-835.8	188.7	0.00	0.00	0.00
5,671.8	19.44	265.59	5,534.0	-66.1	-857.0	193.4	0.00	0.00	0.00
Sussex									
5,708.0	19.44	265.59	5,568.1	-67.1	-869.0	196.2	0.00	0.00	0.00
5,808.0	19.44	265.59	5,662.4	-69.6	-902.2	203.6	0.00	0.00	0.00
5,908.0	19.44	265.59	5,756.7	-72.2	-935.4	211.1	0.00	0.00	0.00
6,008.0	19.44	265.59	5,851.0	-74.7	-968.6	218.6	0.00	0.00	0.00
6,108.0	19.44	265.59	5,945.3	-77.3	-1,001.8	226.1	0.00	0.00	0.00
6,208.0	19.44	265.59	6,039.6	-79.9	-1,034.9	233.6	0.00	0.00	0.00
6,308.0	19.44	265.59	6,133.9	-82.4	-1,068.1	241.1	0.00	0.00	0.00
6,408.0	19.44	265.59	6,228.2	-85.0	-1,101.3	248.6	0.00	0.00	0.00
6,508.0	19.44	265.59	6,322.5	-87.5	-1,134.5	256.1	0.00	0.00	0.00
6,608.0	19.44	265.59	6,416.8	-90.1	-1,167.7	263.6	0.00	0.00	0.00
6,708.0	19.44	265.59	6,511.1	-92.7	-1,200.9	271.1	0.00	0.00	0.00
6,808.0	19.44	265.59	6,605.4	-95.2	-1,234.1	278.6	0.00	0.00	0.00
6,908.0	19.44	265.59	6,699.7	-97.8	-1,267.2	286.0	0.00	0.00	0.00
7,008.0	19.44	265.59	6,794.0	-100.4	-1,300.4	293.5	0.00	0.00	0.00
7,108.0	19.44	265.59	6,888.3	-102.9	-1,333.6	301.0	0.00	0.00	0.00
7,208.0	19.44	265.59	6,982.6	-105.5	-1,366.8	308.5	0.00	0.00	0.00
7,308.0	19.44	265.59	7,076.9	-108.0	-1,400.0	316.0	0.00	0.00	0.00
7,397.7	19.44	265.59	7,161.5	-110.3	-1,429.7	322.7	0.00	0.00	0.00
7,408.0	19.24	265.59	7,171.2	-110.6	-1,433.1	323.5	2.00	-2.00	0.00
7,508.0	17.24	265.59	7,266.2	-113.0	-1,464.3	330.5	2.00	-2.00	0.00
7,608.0	15.24	265.59	7,362.2	-115.2	-1,492.2	336.8	2.00	-2.00	0.00
7,646.1	14.47	265.59	7,399.0	-115.9	-1,502.0	339.0	2.00	-2.00	0.00
Shannon									
7,708.0	13.24	265.59	7,459.1	-117.0	-1,516.7	342.4	2.00	-2.00	0.00
7,808.0	11.24	265.59	7,556.8	-118.7	-1,537.9	347.1	2.00	-2.00	0.00
7,908.0	9.24	265.59	7,655.2	-120.0	-1,555.6	351.1	2.00	-2.00	0.00
8,008.0	7.24	265.59	7,754.2	-121.1	-1,569.9	354.4	2.00	-2.00	0.00
8,108.0	5.24	265.59	7,853.6	-122.0	-1,580.7	356.8	2.00	-2.00	0.00
8,208.0	3.24	265.59	7,953.3	-122.5	-1,588.0	358.5	2.00	-2.00	0.00
8,308.0	1.24	265.59	8,053.2	-122.8	-1,591.9	359.3	2.00	-2.00	0.00
8,369.8	0.00	0.00	8,115.0	-122.9	-1,592.6	359.5	2.00	-2.00	0.00
8,408.0	0.00	0.00	8,153.2	-122.9	-1,592.6	359.5	0.00	0.00	0.00
8,508.0	0.00	0.00	8,253.2	-122.9	-1,592.6	359.5	0.00	0.00	0.00
8,608.0	0.00	0.00	8,353.2	-122.9	-1,592.6	359.5	0.00	0.00	0.00
8,708.0	0.00	0.00	8,453.2	-122.9	-1,592.6	359.5	0.00	0.00	0.00
8,808.0	0.00	0.00	8,553.2	-122.9	-1,592.6	359.5	0.00	0.00	0.00
8,869.8	0.00	0.00	8,615.0	-122.9	-1,592.6	359.5	0.00	0.00	0.00
8,908.0	3.82	180.12	8,653.2	-124.2	-1,592.6	360.7	10.00	10.00	0.00

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Oxnard East 0607-8CH
Company:	Longs Peak Resources	TVD Reference:	5974+25KB @ 5999.0usft
Project:	Weld County, CO	MD Reference:	5974+25KB @ 5999.0usft
Site:	Southblock Ph 2 - Oxnard East Pad SEC.31-T12N-R66W	North Reference:	True
Well:	Oxnard East 0607-8CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned 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)
8,958.0	8.82	180.12	8,702.9	-129.7	-1,592.6	366.2	10.00	10.00	0.00
9,008.0	13.82	180.12	8,751.9	-139.5	-1,592.6	375.9	10.00	10.00	0.00
9,058.0	18.82	180.12	8,799.9	-153.5	-1,592.7	389.8	10.00	10.00	0.00
9,108.0	23.82	180.12	8,846.4	-171.7	-1,592.7	407.8	10.00	10.00	0.00
9,116.3	24.65	180.12	8,854.0	-175.1	-1,592.7	411.1	10.00	10.00	0.00
Sharon Spring									
9,158.0	28.82	180.12	8,891.2	-193.9	-1,592.7	429.7	10.00	10.00	0.00
9,178.5	30.87	180.12	8,909.0	-204.1	-1,592.8	439.8	10.00	10.00	0.00
Niobrara									
9,208.0	33.82	180.12	8,933.9	-219.9	-1,592.8	455.4	10.00	10.00	0.00
9,258.0	38.82	180.12	8,974.2	-249.5	-1,592.9	484.7	10.00	10.00	0.00
9,308.0	43.82	180.12	9,011.7	-282.5	-1,592.9	517.3	10.00	10.00	0.00
9,354.6	48.48	180.12	9,044.0	-316.1	-1,593.0	550.5	10.00	10.00	0.00
Niobrara Target									
9,358.0	48.82	180.12	9,046.3	-318.6	-1,593.0	553.1	10.00	10.00	0.00
9,408.0	53.82	180.12	9,077.5	-357.7	-1,593.1	591.7	10.00	10.00	0.00
9,458.0	58.82	180.12	9,105.2	-399.3	-1,593.2	632.8	10.00	10.00	0.00
9,508.0	63.82	180.12	9,129.2	-443.1	-1,593.2	676.2	10.00	10.00	0.00
9,558.0	68.82	180.12	9,149.3	-488.9	-1,593.3	721.5	10.00	10.00	0.00
9,571.5	70.17	180.12	9,154.0	-501.5	-1,593.4	734.0	10.00	10.00	0.00
Fort Hayes									
9,608.0	73.82	180.12	9,165.3	-536.2	-1,593.4	768.3	10.00	10.00	0.00
9,658.0	78.82	180.12	9,177.1	-584.8	-1,593.5	816.3	10.00	10.00	0.00
9,668.3	79.86	180.12	9,179.0	-594.9	-1,593.5	826.4	10.00	10.00	0.00
Codell									
9,708.0	83.82	180.12	9,184.6	-634.2	-1,593.6	865.2	10.00	10.00	0.00
9,758.0	88.82	180.12	9,187.8	-684.1	-1,593.7	914.6	10.00	10.00	0.00
9,769.7	90.00	180.12	9,188.0	-695.8	-1,593.8	926.2	10.00	10.00	0.00
Codell Target - 0607-8CH LP									
9,808.0	90.00	180.12	9,188.0	-734.1	-1,593.8	964.0	0.00	0.00	0.00
9,908.0	90.00	180.12	9,188.0	-834.1	-1,594.0	1,062.9	0.00	0.00	0.00
10,008.0	90.00	180.12	9,188.0	-934.1	-1,594.2	1,161.8	0.00	0.00	0.00
10,108.0	90.00	180.12	9,188.0	-1,034.1	-1,594.4	1,260.7	0.00	0.00	0.00
10,208.0	90.00	180.12	9,188.0	-1,134.1	-1,594.6	1,359.6	0.00	0.00	0.00
10,308.0	90.00	180.12	9,188.0	-1,234.1	-1,594.8	1,458.5	0.00	0.00	0.00
10,408.0	90.00	180.12	9,188.0	-1,334.1	-1,595.0	1,557.4	0.00	0.00	0.00
10,508.0	90.00	180.12	9,188.0	-1,434.1	-1,595.2	1,656.4	0.00	0.00	0.00
10,608.0	90.00	180.12	9,188.0	-1,534.1	-1,595.4	1,755.3	0.00	0.00	0.00
10,708.0	90.00	180.12	9,188.0	-1,634.1	-1,595.6	1,854.2	0.00	0.00	0.00
10,808.0	90.00	180.12	9,188.0	-1,734.1	-1,595.8	1,953.1	0.00	0.00	0.00
10,908.0	90.00	180.12	9,188.0	-1,834.1	-1,596.0	2,052.0	0.00	0.00	0.00
11,008.0	90.00	180.12	9,188.0	-1,934.1	-1,596.2	2,150.9	0.00	0.00	0.00
11,108.0	90.00	180.12	9,188.0	-2,034.1	-1,596.4	2,249.8	0.00	0.00	0.00
11,208.0	90.00	180.12	9,188.0	-2,134.1	-1,596.6	2,348.7	0.00	0.00	0.00
11,308.0	90.00	180.12	9,188.0	-2,234.1	-1,596.8	2,447.6	0.00	0.00	0.00
11,408.0	90.00	180.12	9,188.0	-2,334.1	-1,597.0	2,546.5	0.00	0.00	0.00
11,508.0	90.00	180.12	9,188.0	-2,434.1	-1,597.2	2,645.4	0.00	0.00	0.00
11,608.0	90.00	180.12	9,188.0	-2,534.1	-1,597.4	2,744.3	0.00	0.00	0.00
11,708.0	90.00	180.12	9,188.0	-2,634.1	-1,597.6	2,843.2	0.00	0.00	0.00
11,808.0	90.00	180.12	9,188.0	-2,734.1	-1,597.8	2,942.2	0.00	0.00	0.00
11,908.0	90.00	180.12	9,188.0	-2,834.1	-1,598.0	3,041.1	0.00	0.00	0.00
12,008.0	90.00	180.12	9,188.0	-2,934.1	-1,598.2	3,140.0	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Oxnard East 0607-8CH
Company:	Longs Peak Resources	TVD Reference:	5974+25KB @ 5999.0usft
Project:	Weld County, CO	MD Reference:	5974+25KB @ 5999.0usft
Site:	Southblock Ph 2 - Oxnard East Pad SEC.31-T12N-R66W	North Reference:	True
Well:	Oxnard East 0607-8CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned 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)	
12,108.0	90.00	180.12	9,188.0	-3,034.1	-1,598.4	3,238.9	0.00	0.00	0.00	
12,208.0	90.00	180.12	9,188.0	-3,134.1	-1,598.6	3,337.8	0.00	0.00	0.00	
12,308.0	90.00	180.12	9,188.0	-3,234.1	-1,598.8	3,436.7	0.00	0.00	0.00	
12,408.0	90.00	180.12	9,188.0	-3,334.1	-1,599.0	3,535.6	0.00	0.00	0.00	
12,508.0	90.00	180.12	9,188.0	-3,434.1	-1,599.2	3,634.5	0.00	0.00	0.00	
12,608.0	90.00	180.12	9,188.0	-3,534.1	-1,599.5	3,733.4	0.00	0.00	0.00	
12,708.0	90.00	180.12	9,188.0	-3,634.1	-1,599.7	3,832.3	0.00	0.00	0.00	
12,808.0	90.00	180.12	9,188.0	-3,734.1	-1,599.9	3,931.2	0.00	0.00	0.00	
12,908.0	90.00	180.12	9,188.0	-3,834.1	-1,600.1	4,030.1	0.00	0.00	0.00	
13,008.0	90.00	180.12	9,188.0	-3,934.1	-1,600.3	4,129.0	0.00	0.00	0.00	
13,108.0	90.00	180.12	9,188.0	-4,034.1	-1,600.5	4,227.9	0.00	0.00	0.00	
13,208.0	90.00	180.12	9,188.0	-4,134.1	-1,600.7	4,326.9	0.00	0.00	0.00	
13,308.0	90.00	180.12	9,188.0	-4,234.1	-1,600.9	4,425.8	0.00	0.00	0.00	
13,408.0	90.00	180.12	9,188.0	-4,334.1	-1,601.1	4,524.7	0.00	0.00	0.00	
13,508.0	90.00	180.12	9,188.0	-4,434.1	-1,601.3	4,623.6	0.00	0.00	0.00	
13,608.0	90.00	180.12	9,188.0	-4,534.1	-1,601.5	4,722.5	0.00	0.00	0.00	
13,708.0	90.00	180.12	9,188.0	-4,634.1	-1,601.7	4,821.4	0.00	0.00	0.00	
13,808.0	90.00	180.12	9,188.0	-4,734.1	-1,601.9	4,920.3	0.00	0.00	0.00	
13,908.0	90.00	180.12	9,188.0	-4,834.1	-1,602.1	5,019.2	0.00	0.00	0.00	
14,008.0	90.00	180.12	9,188.0	-4,934.1	-1,602.3	5,118.1	0.00	0.00	0.00	
14,108.0	90.00	180.12	9,188.0	-5,034.1	-1,602.5	5,217.0	0.00	0.00	0.00	
14,208.0	90.00	180.12	9,188.0	-5,134.1	-1,602.7	5,315.9	0.00	0.00	0.00	
14,308.0	90.00	180.12	9,188.0	-5,234.1	-1,602.9	5,414.8	0.00	0.00	0.00	
14,408.0	90.00	180.12	9,188.0	-5,334.1	-1,603.1	5,513.7	0.00	0.00	0.00	
14,508.0	90.00	180.12	9,188.0	-5,434.1	-1,603.3	5,612.6	0.00	0.00	0.00	
14,608.0	90.00	180.12	9,188.0	-5,534.1	-1,603.5	5,711.6	0.00	0.00	0.00	
14,708.0	90.00	180.12	9,188.0	-5,634.1	-1,603.7	5,810.5	0.00	0.00	0.00	
14,808.0	90.00	180.12	9,188.0	-5,734.1	-1,603.9	5,909.4	0.00	0.00	0.00	
14,908.0	90.00	180.12	9,188.0	-5,834.1	-1,604.1	6,008.3	0.00	0.00	0.00	
15,008.0	90.00	180.12	9,188.0	-5,934.1	-1,604.3	6,107.2	0.00	0.00	0.00	
15,108.0	90.00	180.12	9,188.0	-6,034.1	-1,604.5	6,206.1	0.00	0.00	0.00	
15,208.0	90.00	180.12	9,188.0	-6,134.1	-1,604.7	6,305.0	0.00	0.00	0.00	
15,308.0	90.00	180.12	9,188.0	-6,234.1	-1,604.9	6,403.9	0.00	0.00	0.00	
15,408.0	90.00	180.12	9,188.0	-6,334.1	-1,605.1	6,502.8	0.00	0.00	0.00	
15,508.0	90.00	180.12	9,188.0	-6,434.1	-1,605.3	6,601.7	0.00	0.00	0.00	
15,608.0	90.00	180.12	9,188.0	-6,534.1	-1,605.5	6,700.6	0.00	0.00	0.00	
15,708.0	90.00	180.12	9,188.0	-6,634.1	-1,605.7	6,799.5	0.00	0.00	0.00	
15,808.0	90.00	180.12	9,188.0	-6,734.1	-1,605.9	6,898.4	0.00	0.00	0.00	
15,908.0	90.00	180.12	9,188.0	-6,834.1	-1,606.1	6,997.3	0.00	0.00	0.00	
16,008.0	90.00	180.12	9,188.0	-6,934.1	-1,606.3	7,096.3	0.00	0.00	0.00	
16,108.0	90.00	180.12	9,188.0	-7,034.1	-1,606.5	7,195.2	0.00	0.00	0.00	
16,208.0	90.00	180.12	9,188.0	-7,134.1	-1,606.7	7,294.1	0.00	0.00	0.00	
16,308.0	90.00	180.12	9,188.0	-7,234.1	-1,606.9	7,393.0	0.00	0.00	0.00	
16,408.0	90.00	180.12	9,188.0	-7,334.1	-1,607.1	7,491.9	0.00	0.00	0.00	
16,508.0	90.00	180.12	9,188.0	-7,434.1	-1,607.3	7,590.8	0.00	0.00	0.00	
16,608.0	90.00	180.12	9,188.0	-7,534.1	-1,607.5	7,689.7	0.00	0.00	0.00	
16,708.0	90.00	180.12	9,188.0	-7,634.1	-1,607.7	7,788.6	0.00	0.00	0.00	
16,808.0	90.00	180.12	9,188.0	-7,734.1	-1,607.9	7,887.5	0.00	0.00	0.00	
16,908.0	90.00	180.12	9,188.0	-7,834.1	-1,608.1	7,986.4	0.00	0.00	0.00	
17,008.0	90.00	180.12	9,188.0	-7,934.1	-1,608.3	8,085.3	0.00	0.00	0.00	
17,108.0	90.00	180.12	9,188.0	-8,034.1	-1,608.5	8,184.2	0.00	0.00	0.00	
17,208.0	90.00	180.12	9,188.0	-8,134.1	-1,608.7	8,283.1	0.00	0.00	0.00	
17,308.0	90.00	180.12	9,188.0	-8,234.1	-1,608.9	8,382.0	0.00	0.00	0.00	

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Oxnard East 0607-8CH
Company:	Longs Peak Resources	TVD Reference:	5974+25KB @ 5999.0usft
Project:	Weld County, CO	MD Reference:	5974+25KB @ 5999.0usft
Site:	Southblock Ph 2 - Oxnard East Pad SEC.31-T12N-R66W	North Reference:	True
Well:	Oxnard East 0607-8CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned 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)
17,408.0	90.00	180.12	9,188.0	-8,334.1	-1,609.1	8,481.0	0.00	0.00	0.00
17,508.0	90.00	180.12	9,188.0	-8,434.1	-1,609.3	8,579.9	0.00	0.00	0.00
17,608.0	90.00	180.12	9,188.0	-8,534.1	-1,609.5	8,678.8	0.00	0.00	0.00
17,708.0	90.00	180.12	9,188.0	-8,634.1	-1,609.7	8,777.7	0.00	0.00	0.00
17,808.0	90.00	180.12	9,188.0	-8,734.1	-1,609.9	8,876.6	0.00	0.00	0.00
17,908.0	90.00	180.12	9,188.0	-8,834.1	-1,610.1	8,975.5	0.00	0.00	0.00
18,008.0	90.00	180.12	9,188.0	-8,934.1	-1,610.3	9,074.4	0.00	0.00	0.00
18,108.0	90.00	180.12	9,188.0	-9,034.1	-1,610.5	9,173.3	0.00	0.00	0.00
18,208.0	90.00	180.12	9,188.0	-9,134.1	-1,610.7	9,272.2	0.00	0.00	0.00
18,308.0	90.00	180.12	9,188.0	-9,234.1	-1,610.9	9,371.1	0.00	0.00	0.00
18,408.0	90.00	180.12	9,188.0	-9,334.1	-1,611.1	9,470.0	0.00	0.00	0.00
18,508.0	90.00	180.12	9,188.0	-9,434.1	-1,611.3	9,568.9	0.00	0.00	0.00
18,608.0	90.00	180.12	9,188.0	-9,534.1	-1,611.5	9,667.8	0.00	0.00	0.00
18,708.0	90.00	180.12	9,188.0	-9,634.1	-1,611.7	9,766.7	0.00	0.00	0.00
18,808.0	90.00	180.12	9,188.0	-9,734.1	-1,611.9	9,865.7	0.00	0.00	0.00
18,908.0	90.00	180.12	9,188.0	-9,834.1	-1,612.1	9,964.6	0.00	0.00	0.00
19,008.0	90.00	180.12	9,188.0	-9,934.1	-1,612.3	10,063.5	0.00	0.00	0.00
19,108.0	90.00	180.12	9,188.0	-10,034.1	-1,612.5	10,162.4	0.00	0.00	0.00
19,208.0	90.00	180.12	9,188.0	-10,134.1	-1,612.7	10,261.3	0.00	0.00	0.00
19,308.0	90.00	180.12	9,188.0	-10,234.1	-1,612.9	10,360.2	0.00	0.00	0.00
19,408.0	90.00	180.12	9,188.0	-10,334.1	-1,613.1	10,459.1	0.00	0.00	0.00
19,508.0	90.00	180.12	9,188.0	-10,434.1	-1,613.3	10,558.0	0.00	0.00	0.00
19,608.0	90.00	180.12	9,188.0	-10,534.1	-1,613.5	10,656.9	0.00	0.00	0.00
19,708.0	90.00	180.12	9,188.0	-10,634.1	-1,613.7	10,755.8	0.00	0.00	0.00
19,753.1	90.00	180.12	9,188.0	-10,679.2	-1,613.8	10,800.5	0.00	0.00	0.00
0607-8CH BHL									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
0607-8CH BHL	0.00	0.00	9,188.0	-10,679.2	-1,613.8	1,582,127.34	3,188,287.72	40.92932°N	104.81862°W
- hit/miss target									
- plan hits target center									
- Point									
0607-8CH LP	0.00	0.00	9,188.0	-695.8	-1,593.8	1,592,110.57	3,188,230.34	40.95672°N	104.81855°W
- plan misses target center by 0.1usft at 9769.7usft MD (9188.0 TVD, -695.8 N, -1593.8 E)									
- Point									

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Oxnard East 0607-8CH
Company:	Longs Peak Resources	TVD Reference:	5974+25KB @ 5999.0usft
Project:	Weld County, CO	MD Reference:	5974+25KB @ 5999.0usft
Site:	Southblock Ph 2 - Oxnard East Pad SEC.31-T12N-R66W	North Reference:	True
Well:	Oxnard East 0607-8CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Formations						
	Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
	2,116.0	2,116.0	Fox Hills			
	2,390.0	2,390.0	Pierre			
	2,745.1	2,745.0	Teapot			
	4,717.4	4,634.0	Parkman			
	5,671.8	5,534.0	Sussex			
	7,646.1	7,399.0	Shannon			
	9,116.3	8,854.0	Sharon Spring			
	9,178.5	8,909.0	Niobrara			
	9,354.6	9,044.0	Niobrara Target			
	9,571.5	9,154.0	Fort Hayes			
	9,668.3	9,179.0	Codell			
	9,769.8	9,188.0	Codell Target			