

Longs Peak Resources
Project: Weld County, CO
Site: Southblock Ph 2 - Oxnard East Pad SEC.31-T12N-R66W
Well: Oxnard East 3130-12CH
Wellbore: Wellbore #1
Design: Design #1
Lat: 40.95912°N
Long: 104.81220°W
Pad GL: 5978.0
KB: GL 5976 + 25 KB @ 6001.0usft

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2600.0	0.00	0.00	2600.0	0.0	0.0	0.00	0.00	0.0	
3069.2	9.38	194.96	3067.1	-37.0	-9.9	2.00	194.96	-36.9	
7716.2	9.38	194.96	7651.9	-769.0	-205.5	0.00	0.00	-766.4	
8185.4	0.00	0.00	8119.0	-806.0	-215.4	2.00	180.00	-803.3	
8685.4	0.00	0.00	8619.0	-806.0	-215.4	0.00	0.00	-803.3	
9585.4	90.00	0.55	9192.0	-233.1	-209.9	10.00	0.55	-230.5	
19416.2	90.00	0.55	9192.0	9597.3	-116.0	0.00	0.00	9598.0	

WELL DETAILS: Oxnard East 3130-12CH

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1592998.54	3189977.52	40.95912°N	104.81220°W	

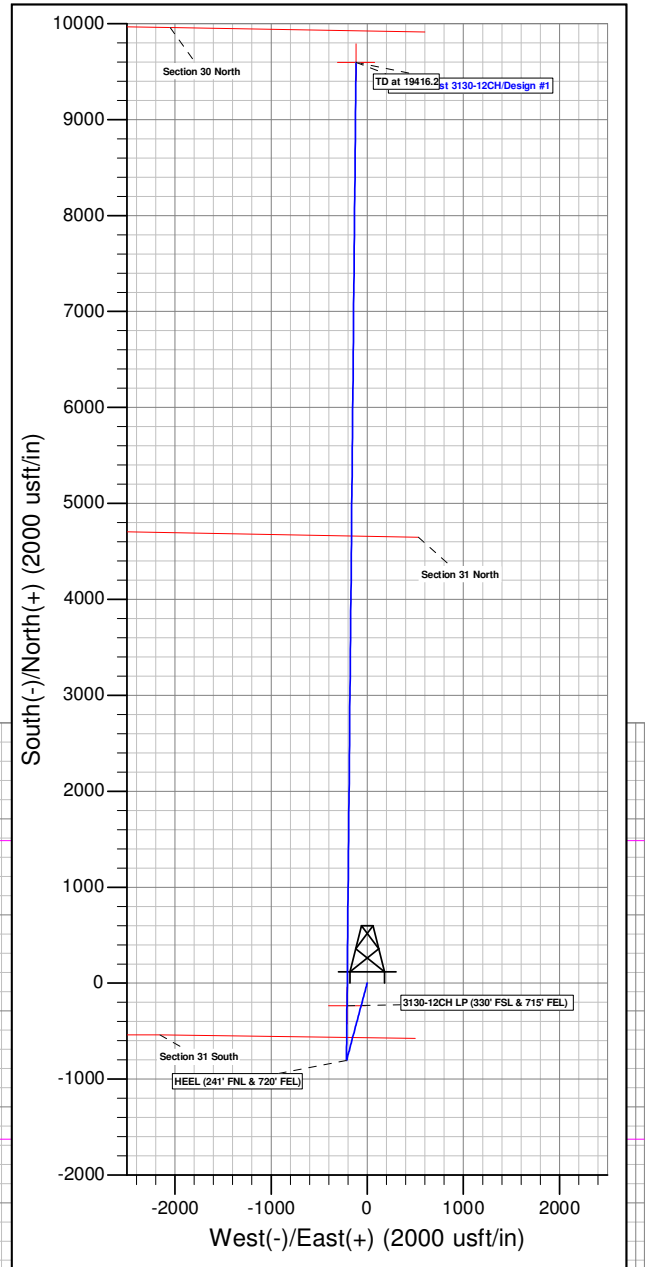
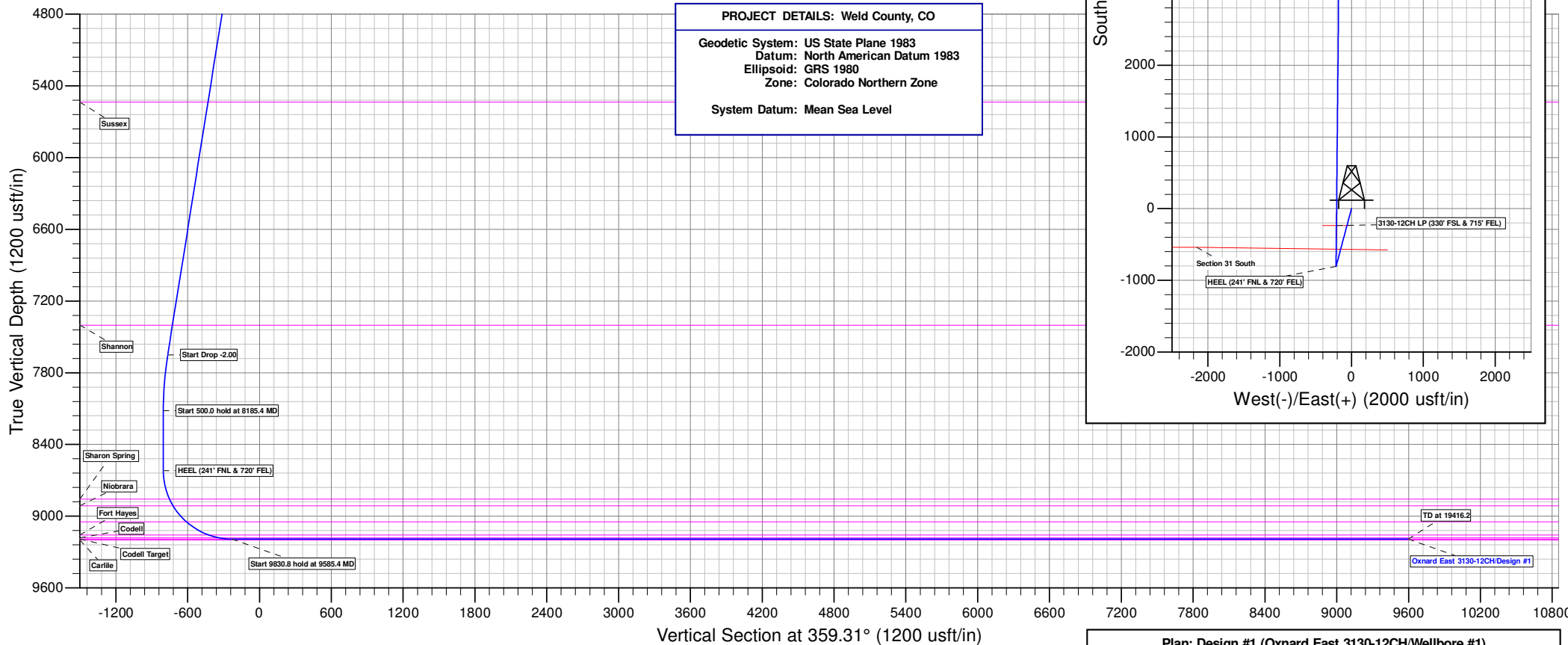
WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
3130-12CH BHL	9192.0	9597.3	-116.0	40.98546°N	104.81262°W	Point
3130-12CH LP	9192.0	-233.2	-209.9	40.95848°N	104.81296°W	Point

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 3130-12CH/Wellbore #1)

Created By: Stephanie Sneesby

Date: 18:00, September 10 2017

Longs Peak Resources

Weld County, CO

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

Oxnard East 3130-12CH

Wellbore #1

Plan: Design #1

Standard Planning Report

10 September, 2017

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Oxnard East 3130-12CH
Company:	Longs Peak Resources	TVD Reference:	GL 5976 + 25 KB @ 6001.0usft
Project:	Weld County, CO	MD Reference:	GL 5976 + 25 KB @ 6001.0usft
Site:	Southblock Ph 2 - Oxnard East Pad SEC.31-T12N-R66W	North Reference:	True
Well:	Oxnard East 3130-12CH	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	Latitude:	40.95960°N
From:	Lat/Long	Easting:	3,189,473.48 usft	Longitude:	104.81402°W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.44

Well	Oxnard East 3130-12CH					
Well Position	+N/-S	-174.9 usft	Northing:	1,592,998.53 usft	Latitude:	40.95912°N
	+E/-W	502.7 usft	Easting:	3,189,977.52 usft	Longitude:	104.81220°W
Position Uncertainty		0.0 usft	Wellhead Elevation:	25.0 usft	Ground Level:	5,978.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	9.10	67.55	53,580.25188160
	IGRF2015	6/18/2017	8.28	67.29	52,665.68513483

Design	Design #1				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	359.31	

Plan Survey Tool Program	Date	9/10/2017			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.0	19,415.6	Design #1 (Wellbore #1)		

Planning Report

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Project:	Weld County, CO	MD Reference:	GL 5976 + 25 KB @ 6001.0usft
Site:	Southblock Ph 2 - Oxnard East Pad SEC.31-T12N-R66W	North Reference:	True
Well:	Oxnard East 3130-12CH	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	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00		
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.00	0.00	0.00	0.00		
3,069.2	9.38	194.96	3,067.1	-37.0	-9.9	2.00	2.00	0.00	194.96		
7,716.2	9.38	194.96	7,651.9	-769.0	-205.5	0.00	0.00	0.00	0.00		
8,185.4	0.00	0.00	8,119.0	-806.0	-215.4	2.00	-2.00	0.00	180.00		
8,685.4	0.00	0.00	8,619.0	-806.0	-215.4	0.00	0.00	0.00	0.00		
9,585.4	90.00	0.55	9,192.0	-233.1	-209.9	10.00	10.00	0.00	0.55	3130-12CH BHL	
19,416.2	90.00	0.55	9,192.0	9,597.3	-116.0	0.00	0.00	0.00	0.00	3130-12CH BHL	

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Project:	Weld County, CO	MD Reference:	GL 5976 + 25 KB @ 6001.0usft
Site:	Southblock Ph 2 - Oxnard East Pad SEC.31-T12N-R66W	North Reference:	True
Well:	Oxnard East 3130-12CH	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)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,120.0	0.00	0.00	2,120.0	0.0	0.0	0.0	0.00	0.00	0.00	
Fox Hills										
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,394.0	0.00	0.00	2,394.0	0.0	0.0	0.0	0.00	0.00	0.00	
Pierre										
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,700.0	2.00	194.96	2,700.0	-1.7	-0.5	-1.7	2.00	2.00	0.00	
2,749.1	2.98	194.96	2,749.0	-3.7	-1.0	-3.7	2.00	2.00	0.00	
Teapot										
2,800.0	4.00	194.96	2,799.8	-6.7	-1.8	-6.7	2.00	2.00	0.00	
2,900.0	6.00	194.96	2,899.5	-15.2	-4.1	-15.1	2.00	2.00	0.00	
3,000.0	8.00	194.96	2,998.7	-26.9	-7.2	-26.8	2.00	2.00	0.00	
3,069.2	9.38	194.96	3,067.1	-37.0	-9.9	-36.9	2.00	2.00	0.00	
3,100.0	9.38	194.96	3,097.5	-41.9	-11.2	-41.8	0.00	0.00	0.00	
3,200.0	9.38	194.96	3,196.2	-57.6	-15.4	-57.4	0.00	0.00	0.00	
3,300.0	9.38	194.96	3,294.8	-73.4	-19.6	-73.1	0.00	0.00	0.00	
3,400.0	9.38	194.96	3,393.5	-89.1	-23.8	-88.8	0.00	0.00	0.00	
3,500.0	9.38	194.96	3,492.1	-104.9	-28.0	-104.5	0.00	0.00	0.00	
3,600.0	9.38	194.96	3,590.8	-120.6	-32.2	-120.2	0.00	0.00	0.00	
3,700.0	9.38	194.96	3,689.5	-136.4	-36.5	-135.9	0.00	0.00	0.00	
3,800.0	9.38	194.96	3,788.1	-152.1	-40.7	-151.6	0.00	0.00	0.00	
3,900.0	9.38	194.96	3,886.8	-167.9	-44.9	-167.3	0.00	0.00	0.00	
4,000.0	9.38	194.96	3,985.5	-183.6	-49.1	-183.0	0.00	0.00	0.00	
4,100.0	9.38	194.96	4,084.1	-199.4	-53.3	-198.7	0.00	0.00	0.00	
4,200.0	9.38	194.96	4,182.8	-215.1	-57.5	-214.4	0.00	0.00	0.00	
4,300.0	9.38	194.96	4,281.4	-230.9	-61.7	-230.1	0.00	0.00	0.00	
4,400.0	9.38	194.96	4,380.1	-246.6	-65.9	-245.8	0.00	0.00	0.00	
4,500.0	9.38	194.96	4,478.8	-262.4	-70.1	-261.5	0.00	0.00	0.00	

Planning Report

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Company:	Longs Peak Resources	TVD Reference:	GL 5976 + 25 KB @ 6001.0usft
Project:	Weld County, CO	MD Reference:	GL 5976 + 25 KB @ 6001.0usft
Site:	Southblock Ph 2 - Oxnard East Pad SEC.31-T12N-R66W	North Reference:	True
Well:	Oxnard East 3130-12CH	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)
4,600.0	9.38	194.96	4,577.4	-278.1	-74.3	-277.2	0.00	0.00	0.00
4,661.4	9.38	194.96	4,638.0	-287.8	-76.9	-286.9	0.00	0.00	0.00
Parkman									
4,700.0	9.38	194.96	4,676.1	-293.9	-78.5	-292.9	0.00	0.00	0.00
4,800.0	9.38	194.96	4,774.7	-309.6	-82.8	-308.6	0.00	0.00	0.00
4,900.0	9.38	194.96	4,873.4	-325.4	-87.0	-324.3	0.00	0.00	0.00
5,000.0	9.38	194.96	4,972.1	-341.2	-91.2	-340.0	0.00	0.00	0.00
5,100.0	9.38	194.96	5,070.7	-356.9	-95.4	-355.7	0.00	0.00	0.00
5,200.0	9.38	194.96	5,169.4	-372.7	-99.6	-371.4	0.00	0.00	0.00
5,300.0	9.38	194.96	5,268.1	-388.4	-103.8	-387.1	0.00	0.00	0.00
5,400.0	9.38	194.96	5,366.7	-404.2	-108.0	-402.8	0.00	0.00	0.00
5,500.0	9.38	194.96	5,465.4	-419.9	-112.2	-418.5	0.00	0.00	0.00
5,573.6	9.38	194.96	5,538.0	-431.5	-115.3	-430.1	0.00	0.00	0.00
Sussex									
5,600.0	9.38	194.96	5,564.0	-435.7	-116.4	-434.2	0.00	0.00	0.00
5,700.0	9.38	194.96	5,662.7	-451.4	-120.6	-449.9	0.00	0.00	0.00
5,800.0	9.38	194.96	5,761.4	-467.2	-124.8	-465.6	0.00	0.00	0.00
5,900.0	9.38	194.96	5,860.0	-482.9	-129.1	-481.3	0.00	0.00	0.00
6,000.0	9.38	194.96	5,958.7	-498.7	-133.3	-497.0	0.00	0.00	0.00
6,100.0	9.38	194.96	6,057.4	-514.4	-137.5	-512.7	0.00	0.00	0.00
6,200.0	9.38	194.96	6,156.0	-530.2	-141.7	-528.4	0.00	0.00	0.00
6,300.0	9.38	194.96	6,254.7	-545.9	-145.9	-544.1	0.00	0.00	0.00
6,400.0	9.38	194.96	6,353.3	-561.7	-150.1	-559.8	0.00	0.00	0.00
6,500.0	9.38	194.96	6,452.0	-577.4	-154.3	-575.5	0.00	0.00	0.00
6,600.0	9.38	194.96	6,550.7	-593.2	-158.5	-591.2	0.00	0.00	0.00
6,700.0	9.38	194.96	6,649.3	-608.9	-162.7	-606.9	0.00	0.00	0.00
6,800.0	9.38	194.96	6,748.0	-624.7	-166.9	-622.6	0.00	0.00	0.00
6,900.0	9.38	194.96	6,846.7	-640.4	-171.1	-638.3	0.00	0.00	0.00
7,000.0	9.38	194.96	6,945.3	-656.2	-175.4	-654.0	0.00	0.00	0.00
7,100.0	9.38	194.96	7,044.0	-671.9	-179.6	-669.7	0.00	0.00	0.00
7,200.0	9.38	194.96	7,142.6	-687.7	-183.8	-685.4	0.00	0.00	0.00
7,300.0	9.38	194.96	7,241.3	-703.4	-188.0	-701.1	0.00	0.00	0.00
7,400.0	9.38	194.96	7,340.0	-719.2	-192.2	-716.8	0.00	0.00	0.00
7,463.9	9.38	194.96	7,403.0	-729.2	-194.9	-726.8	0.00	0.00	0.00
Shannon									
7,500.0	9.38	194.96	7,438.6	-734.9	-196.4	-732.5	0.00	0.00	0.00
7,600.0	9.38	194.96	7,537.3	-750.7	-200.6	-748.2	0.00	0.00	0.00
7,700.0	9.38	194.96	7,635.9	-766.4	-204.8	-763.9	0.00	0.00	0.00
7,716.2	9.38	194.96	7,651.9	-769.0	-205.5	-766.4	0.00	0.00	0.00
7,800.0	7.71	194.96	7,734.8	-781.0	-208.7	-778.4	2.00	-2.00	0.00
7,900.0	5.71	194.96	7,834.1	-792.3	-211.7	-789.7	2.00	-2.00	0.00
8,000.0	3.71	194.96	7,933.8	-800.2	-213.9	-797.6	2.00	-2.00	0.00
8,100.0	1.71	194.96	8,033.6	-804.8	-215.1	-802.1	2.00	-2.00	0.00
8,185.4	0.00	0.00	8,119.0	-806.0	-215.4	-803.3	2.00	-2.00	0.00
8,200.0	0.00	0.00	8,133.6	-806.0	-215.4	-803.3	0.00	0.00	0.00
8,300.0	0.00	0.00	8,233.6	-806.0	-215.4	-803.3	0.00	0.00	0.00
8,400.0	0.00	0.00	8,333.6	-806.0	-215.4	-803.3	0.00	0.00	0.00
8,500.0	0.00	0.00	8,433.6	-806.0	-215.4	-803.3	0.00	0.00	0.00
8,600.0	0.00	0.00	8,533.6	-806.0	-215.4	-803.3	0.00	0.00	0.00
8,685.4	0.00	0.00	8,619.0	-806.0	-215.4	-803.3	0.00	0.00	0.00
8,700.0	1.46	0.55	8,633.6	-805.8	-215.4	-803.2	10.00	10.00	0.00
8,750.0	6.46	0.55	8,683.5	-802.4	-215.4	-799.7	10.00	10.00	0.00
8,800.0	11.46	0.55	8,732.9	-794.6	-215.3	-791.9	10.00	10.00	0.00

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Site:	Southblock Ph 2 - Oxnard East Pad SEC.31-T12N-R66W	North Reference:	True
Well:	Oxnard East 3130-12CH	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)
8,850.0	16.46	0.55	8,781.4	-782.5	-215.2	-779.9	10.00	10.00	0.00
8,900.0	21.46	0.55	8,828.7	-766.3	-215.0	-763.6	10.00	10.00	0.00
8,931.9	24.65	0.55	8,858.0	-753.8	-214.9	-751.1	10.00	10.00	0.00
Sharon Spring									
8,950.0	26.46	0.55	8,874.3	-746.0	-214.8	-743.3	10.00	10.00	0.00
8,994.1	30.87	0.55	8,913.0	-724.8	-214.6	-722.2	10.00	10.00	0.00
Niobrara									
9,000.0	31.46	0.55	8,918.1	-721.8	-214.6	-719.1	10.00	10.00	0.00
9,050.0	36.46	0.55	8,959.5	-693.8	-214.3	-691.2	10.00	10.00	0.00
9,100.0	41.46	0.55	8,998.4	-662.4	-214.0	-659.8	10.00	10.00	0.00
9,150.0	46.46	0.55	9,034.4	-627.7	-213.7	-625.1	10.00	10.00	0.00
9,170.2	48.48	0.55	9,048.0	-612.8	-213.6	-610.2	10.00	10.00	0.00
Niobrara Target									
9,200.0	51.46	0.55	9,067.2	-590.0	-213.3	-587.4	10.00	10.00	0.00
9,250.0	56.46	0.55	9,096.6	-549.6	-212.9	-547.0	10.00	10.00	0.00
9,300.0	61.46	0.55	9,122.4	-506.8	-212.5	-504.2	10.00	10.00	0.00
9,350.0	66.46	0.55	9,144.3	-461.9	-212.1	-459.3	10.00	10.00	0.00
9,387.1	70.17	0.55	9,158.0	-427.4	-211.8	-424.8	10.00	10.00	0.00
Fort Hayes									
9,400.0	71.46	0.55	9,162.2	-415.2	-211.7	-412.6	10.00	10.00	0.00
9,450.0	76.46	0.55	9,176.0	-367.2	-211.2	-364.6	10.00	10.00	0.00
9,483.9	79.86	0.55	9,183.0	-334.0	-210.9	-331.4	10.00	10.00	0.00
Codell									
9,500.0	81.46	0.55	9,185.6	-318.1	-210.7	-315.5	10.00	10.00	0.00
9,550.0	86.46	0.55	9,190.9	-268.4	-210.3	-265.8	10.00	10.00	0.00
9,585.3	89.99	0.55	9,192.0	-233.2	-209.9	-230.6	10.00	10.00	0.00
3130-12CH LP									
9,585.4	90.00	0.55	9,192.0	-233.1	-209.9	-230.5	10.00	10.00	0.00
Codell Target									
9,600.0	90.00	0.55	9,192.0	-218.4	-209.8	-215.9	0.00	0.00	0.00
9,700.0	90.00	0.55	9,192.0	-118.4	-208.8	-115.9	0.00	0.00	0.00
9,800.0	90.00	0.55	9,192.0	-18.4	-207.9	-15.9	0.00	0.00	0.00
9,900.0	90.00	0.55	9,192.0	81.6	-206.9	84.0	0.00	0.00	0.00
10,000.0	90.00	0.55	9,192.0	181.5	-206.0	184.0	0.00	0.00	0.00
10,100.0	90.00	0.55	9,192.0	281.5	-205.0	284.0	0.00	0.00	0.00
10,200.0	90.00	0.55	9,192.0	381.5	-204.0	384.0	0.00	0.00	0.00
10,300.0	90.00	0.55	9,192.0	481.5	-203.1	484.0	0.00	0.00	0.00
10,400.0	90.00	0.55	9,192.0	581.5	-202.1	583.9	0.00	0.00	0.00
10,500.0	90.00	0.55	9,192.0	681.5	-201.2	683.9	0.00	0.00	0.00
10,600.0	90.00	0.55	9,192.0	781.5	-200.2	783.9	0.00	0.00	0.00
10,700.0	90.00	0.55	9,192.0	881.5	-199.3	883.9	0.00	0.00	0.00
10,800.0	90.00	0.55	9,192.0	981.5	-198.3	983.8	0.00	0.00	0.00
10,900.0	90.00	0.55	9,192.0	1,081.5	-197.4	1,083.8	0.00	0.00	0.00
11,000.0	90.00	0.55	9,192.0	1,181.5	-196.4	1,183.8	0.00	0.00	0.00
11,100.0	90.00	0.55	9,192.0	1,281.5	-195.4	1,283.8	0.00	0.00	0.00
11,200.0	90.00	0.55	9,192.0	1,381.5	-194.5	1,383.7	0.00	0.00	0.00
11,300.0	90.00	0.55	9,192.0	1,481.5	-193.5	1,483.7	0.00	0.00	0.00
11,400.0	90.00	0.55	9,192.0	1,581.5	-192.6	1,583.7	0.00	0.00	0.00
11,500.0	90.00	0.55	9,192.0	1,681.5	-191.6	1,683.7	0.00	0.00	0.00
11,600.0	90.00	0.55	9,192.0	1,781.5	-190.7	1,783.6	0.00	0.00	0.00
11,700.0	90.00	0.55	9,192.0	1,881.5	-189.7	1,883.6	0.00	0.00	0.00
11,800.0	90.00	0.55	9,192.0	1,981.5	-188.8	1,983.6	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Oxnard East 3130-12CH
Company:	Longs Peak Resources	TVD Reference:	GL 5976 + 25 KB @ 6001.0usft
Project:	Weld County, CO	MD Reference:	GL 5976 + 25 KB @ 6001.0usft
Site:	Southblock Ph 2 - Oxnard East Pad SEC.31-T12N-R66W	North Reference:	True
Well:	Oxnard East 3130-12CH	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)
11,900.0	90.00	0.55	9,192.0	2,081.5	-187.8	2,083.6	0.00	0.00	0.00
12,000.0	90.00	0.55	9,192.0	2,181.5	-186.8	2,183.6	0.00	0.00	0.00
12,100.0	90.00	0.55	9,192.0	2,281.5	-185.9	2,283.5	0.00	0.00	0.00
12,200.0	90.00	0.55	9,192.0	2,381.4	-184.9	2,383.5	0.00	0.00	0.00
12,300.0	90.00	0.55	9,192.0	2,481.4	-184.0	2,483.5	0.00	0.00	0.00
12,400.0	90.00	0.55	9,192.0	2,581.4	-183.0	2,583.5	0.00	0.00	0.00
12,500.0	90.00	0.55	9,192.0	2,681.4	-182.1	2,683.4	0.00	0.00	0.00
12,600.0	90.00	0.55	9,192.0	2,781.4	-181.1	2,783.4	0.00	0.00	0.00
12,700.0	90.00	0.55	9,192.0	2,881.4	-180.2	2,883.4	0.00	0.00	0.00
12,800.0	90.00	0.55	9,192.0	2,981.4	-179.2	2,983.4	0.00	0.00	0.00
12,900.0	90.00	0.55	9,192.0	3,081.4	-178.2	3,083.3	0.00	0.00	0.00
13,000.0	90.00	0.55	9,192.0	3,181.4	-177.3	3,183.3	0.00	0.00	0.00
13,100.0	90.00	0.55	9,192.0	3,281.4	-176.3	3,283.3	0.00	0.00	0.00
13,200.0	90.00	0.55	9,192.0	3,381.4	-175.4	3,383.3	0.00	0.00	0.00
13,300.0	90.00	0.55	9,192.0	3,481.4	-174.4	3,483.3	0.00	0.00	0.00
13,400.0	90.00	0.55	9,192.0	3,581.4	-173.5	3,583.2	0.00	0.00	0.00
13,500.0	90.00	0.55	9,192.0	3,681.4	-172.5	3,683.2	0.00	0.00	0.00
13,600.0	90.00	0.55	9,192.0	3,781.4	-171.6	3,783.2	0.00	0.00	0.00
13,700.0	90.00	0.55	9,192.0	3,881.4	-170.6	3,883.2	0.00	0.00	0.00
13,800.0	90.00	0.55	9,192.0	3,981.4	-169.6	3,983.1	0.00	0.00	0.00
13,900.0	90.00	0.55	9,192.0	4,081.4	-168.7	4,083.1	0.00	0.00	0.00
14,000.0	90.00	0.55	9,192.0	4,181.4	-167.7	4,183.1	0.00	0.00	0.00
14,100.0	90.00	0.55	9,192.0	4,281.4	-166.8	4,283.1	0.00	0.00	0.00
14,200.0	90.00	0.55	9,192.0	4,381.4	-165.8	4,383.0	0.00	0.00	0.00
14,300.0	90.00	0.55	9,192.0	4,481.4	-164.9	4,483.0	0.00	0.00	0.00
14,400.0	90.00	0.55	9,192.0	4,581.3	-163.9	4,583.0	0.00	0.00	0.00
14,500.0	90.00	0.55	9,192.0	4,681.3	-163.0	4,683.0	0.00	0.00	0.00
14,600.0	90.00	0.55	9,192.0	4,781.3	-162.0	4,782.9	0.00	0.00	0.00
14,700.0	90.00	0.55	9,192.0	4,881.3	-161.0	4,882.9	0.00	0.00	0.00
14,800.0	90.00	0.55	9,192.0	4,981.3	-160.1	4,982.9	0.00	0.00	0.00
14,900.0	90.00	0.55	9,192.0	5,081.3	-159.1	5,082.9	0.00	0.00	0.00
15,000.0	90.00	0.55	9,192.0	5,181.3	-158.2	5,182.9	0.00	0.00	0.00
15,100.0	90.00	0.55	9,192.0	5,281.3	-157.2	5,282.8	0.00	0.00	0.00
15,200.0	90.00	0.55	9,192.0	5,381.3	-156.3	5,382.8	0.00	0.00	0.00
15,300.0	90.00	0.55	9,192.0	5,481.3	-155.3	5,482.8	0.00	0.00	0.00
15,400.0	90.00	0.55	9,192.0	5,581.3	-154.3	5,582.8	0.00	0.00	0.00
15,500.0	90.00	0.55	9,192.0	5,681.3	-153.4	5,682.7	0.00	0.00	0.00
15,600.0	90.00	0.55	9,192.0	5,781.3	-152.4	5,782.7	0.00	0.00	0.00
15,700.0	90.00	0.55	9,192.0	5,881.3	-151.5	5,882.7	0.00	0.00	0.00
15,800.0	90.00	0.55	9,192.0	5,981.3	-150.5	5,982.7	0.00	0.00	0.00
15,900.0	90.00	0.55	9,192.0	6,081.3	-149.6	6,082.6	0.00	0.00	0.00
16,000.0	90.00	0.55	9,192.0	6,181.3	-148.6	6,182.6	0.00	0.00	0.00
16,100.0	90.00	0.55	9,192.0	6,281.3	-147.7	6,282.6	0.00	0.00	0.00
16,200.0	90.00	0.55	9,192.0	6,381.3	-146.7	6,382.6	0.00	0.00	0.00
16,300.0	90.00	0.55	9,192.0	6,481.3	-145.7	6,482.5	0.00	0.00	0.00
16,400.0	90.00	0.55	9,192.0	6,581.3	-144.8	6,582.5	0.00	0.00	0.00
16,500.0	90.00	0.55	9,192.0	6,681.3	-143.8	6,682.5	0.00	0.00	0.00
16,600.0	90.00	0.55	9,192.0	6,781.2	-142.9	6,782.5	0.00	0.00	0.00
16,700.0	90.00	0.55	9,192.0	6,881.2	-141.9	6,882.5	0.00	0.00	0.00
16,800.0	90.00	0.55	9,192.0	6,981.2	-141.0	6,982.4	0.00	0.00	0.00
16,900.0	90.00	0.55	9,192.0	7,081.2	-140.0	7,082.4	0.00	0.00	0.00
17,000.0	90.00	0.55	9,192.0	7,181.2	-139.1	7,182.4	0.00	0.00	0.00
17,100.0	90.00	0.55	9,192.0	7,281.2	-138.1	7,282.4	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Oxnard East 3130-12CH
Company:	Longs Peak Resources	TVD Reference:	GL 5976 + 25 KB @ 6001.0usft
Project:	Weld County, CO	MD Reference:	GL 5976 + 25 KB @ 6001.0usft
Site:	Southblock Ph 2 - Oxnard East Pad SEC.31-T12N-R66W	North Reference:	True
Well:	Oxnard East 3130-12CH	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)	
17,200.0	90.00	0.55	9,192.0	7,381.2	-137.1	7,382.3	0.00	0.00	0.00	
17,300.0	90.00	0.55	9,192.0	7,481.2	-136.2	7,482.3	0.00	0.00	0.00	
17,400.0	90.00	0.55	9,192.0	7,581.2	-135.2	7,582.3	0.00	0.00	0.00	
17,500.0	90.00	0.55	9,192.0	7,681.2	-134.3	7,682.3	0.00	0.00	0.00	
17,600.0	90.00	0.55	9,192.0	7,781.2	-133.3	7,782.2	0.00	0.00	0.00	
17,700.0	90.00	0.55	9,192.0	7,881.2	-132.4	7,882.2	0.00	0.00	0.00	
17,800.0	90.00	0.55	9,192.0	7,981.2	-131.4	7,982.2	0.00	0.00	0.00	
17,900.0	90.00	0.55	9,192.0	8,081.2	-130.5	8,082.2	0.00	0.00	0.00	
18,000.0	90.00	0.55	9,192.0	8,181.2	-129.5	8,182.2	0.00	0.00	0.00	
18,100.0	90.00	0.55	9,192.0	8,281.2	-128.5	8,282.1	0.00	0.00	0.00	
18,200.0	90.00	0.55	9,192.0	8,381.2	-127.6	8,382.1	0.00	0.00	0.00	
18,300.0	90.00	0.55	9,192.0	8,481.2	-126.6	8,482.1	0.00	0.00	0.00	
18,400.0	90.00	0.55	9,192.0	8,581.2	-125.7	8,582.1	0.00	0.00	0.00	
18,500.0	90.00	0.55	9,192.0	8,681.2	-124.7	8,682.0	0.00	0.00	0.00	
18,600.0	90.00	0.55	9,192.0	8,781.2	-123.8	8,782.0	0.00	0.00	0.00	
18,700.0	90.00	0.55	9,192.0	8,881.2	-122.8	8,882.0	0.00	0.00	0.00	
18,800.0	90.00	0.55	9,192.0	8,981.1	-121.9	8,982.0	0.00	0.00	0.00	
18,900.0	90.00	0.55	9,192.0	9,081.1	-120.9	9,081.9	0.00	0.00	0.00	
19,000.0	90.00	0.55	9,192.0	9,181.1	-119.9	9,181.9	0.00	0.00	0.00	
19,100.0	90.00	0.55	9,192.0	9,281.1	-119.0	9,281.9	0.00	0.00	0.00	
19,200.0	90.00	0.55	9,192.0	9,381.1	-118.0	9,381.9	0.00	0.00	0.00	
19,300.0	90.00	0.55	9,192.0	9,481.1	-117.1	9,481.8	0.00	0.00	0.00	
19,400.0	90.00	0.55	9,192.0	9,581.1	-116.1	9,581.8	0.00	0.00	0.00	
19,416.2	90.00	0.55	9,192.0	9,597.3	-116.0	9,598.0	0.00	0.00	0.00	
3130-12CH BHL										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
3130-12CH BHL	0.00	0.00	9,192.0	9,597.3	-116.0	1,602,594.62	3,189,787.12	40.98546°N	104.81262°W
- hit/miss target									
- Shape									
- Point									
3130-12CH LP	0.00	0.00	9,192.0	-233.2	-209.9	1,592,763.73	3,189,769.42	40.95848°N	104.81296°W
- hit/miss target									
- Shape									
- Point									

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Oxnard East 3130-12CH
Company:	Longs Peak Resources	TVD Reference:	GL 5976 + 25 KB @ 6001.0usft
Project:	Weld County, CO	MD Reference:	GL 5976 + 25 KB @ 6001.0usft
Site:	Southblock Ph 2 - Oxnard East Pad SEC.31-T12N-R66W	North Reference:	True
Well:	Oxnard East 3130-12CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,120.0	2,120.0	Fox Hills				
2,394.0	2,394.0	Pierre				
2,749.1	2,749.0	Teapot				
4,661.4	4,638.0	Parkman				
5,573.6	5,538.0	Sussex				
7,463.9	7,403.0	Shannon				
8,931.9	8,858.0	Sharon Spring				
8,994.1	8,913.0	Niobrara				
9,170.2	9,048.0	Niobrara Target				
9,387.1	9,158.0	Fort Hayes				
9,483.9	9,183.0	Codell				
9,585.4	9,192.0	Codell Target				