

EE3

Well Name: **Rich 2-32H**

Surface Location: Rich 2-32H Pad Sec.32-T7N-R80W

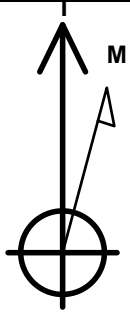
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 8205.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1436692.66	2750799.43	40.528664	-106.396479	
RKB - 23' WELL @ 8228.0ft (RKB - 23')						

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
Sectionline	1.0	-750.0	200.0	Polygon
Setback BHL 600'	1.0	-5625.5	-1800.0	Polygon
SHL 750'FSL & 2340'FEL, Sec.32	1.0	0.0	0.0	Point
BHL 610'FSL & 1960'FWL, Sec.5	7248.0	-5615.5	-1623.1	Point



Azimuths to True North
Magnetic North: 9.27°

Magnetic Field
Strength: 52641.4nT
Dip Angle: 66.77°
Date: 10/14/2014
Model: IGRF2010

Rich 2-32H Pad Sec.32-T7N-R80W
Rich 2-32H
Plan #1 (10-14-14)
11:11, October 14 2014

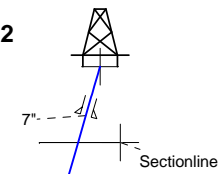
ANNOTATIONS

TVD	MD	Annotation
7071.8	7071.8	KOP - Start Build 12.00
7548.5	7848.6	Start 5349.6 hold at 7848.6 MD
7248.0	13198.2	TD at 13198.2

SHL 750'FSL & 2340'FEL, Sec.32

South(-)/North(+) (1900 ft/in)

Casing Pt. 266'FSL
& 2480'FEL, Sec.32

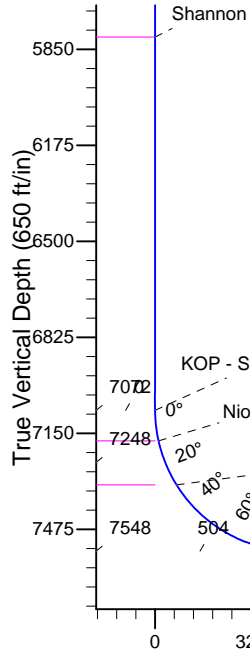


Rich 2-32H

BHL 610'FSL & 1960'FWL, Sec.5

Setback BHL 600'

West(-)/East(+) (1900 ft/in)



ENSIGN
Directional

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	7071.8	0.00	0.00	7071.8	0.0	0.0	0.00	0.00	0.0	
3	7848.6	93.22	196.12	7548.5	-484.5	-140.0	12.00	196.12	504.3	
4	13198.2	93.22	196.12	7248.0	-5615.5	-1623.1	0.00	0.00	5845.4	BHL 610'FSL & 1960'FWL, Sec.5

BHL 610'FSL & 1960'FWL, Sec.5

5845

TD at 13198.2

Vertical Section at 196.12° (650 ft/in)



EE3

SEC.32-T7N-R80W

Rich 2-32H Pad Sec.32-T7N-R80W

Rich 2-32H

Wellbore #1

Plan: Plan #1 (10-14-14)

Standard Planning Report

14 October, 2014



Database:	Landmark	Local Co-ordinate Reference:	Well Rich 2-32H
Company:	EE3	TVD Reference:	WELL @ 8228.0ft (RKB - 23')
Project:	SEC.32-T7N-R80W	MD Reference:	WELL @ 8228.0ft (RKB - 23')
Site:	Rich 2-32H Pad Sec.32-T7N-R80W	North Reference:	True
Well:	Rich 2-32H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (10-14-14)		

Project	SEC.32-T7N-R80W, Jackson 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						Rich 2-32H Pad Sec.32-T7N-R80W											
Site Position:						Northing:			1,436,692.67 ft			Latitude:			40.528664		
From:			Lat/Long			Easting:			2,750,799.43 ft			Longitude:			-106.396479		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			-0.58 °		

Well	Rich 2-32H					
Well Position	+N/-S	0.0 ft	Northing:	1,436,692.66 ft	Latitude:	40.528664
	+E/-W	0.0 ft	Easting:	2,750,799.43 ft	Longitude:	-106.396479
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	8,205.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/14/2014	9.27	66.77	52,641

Design	Plan #1 (10-14-14)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	196.12

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
7,071.8	0.00	0.00	7,071.8	0.0	0.0	0.00	0.00	0.00	0.00	
7,848.6	93.22	196.12	7,548.5	-484.5	-140.0	12.00	12.00	0.00	196.12	
13,198.2	93.22	196.12	7,248.0	-5,615.5	-1,623.1	0.00	0.00	0.00	0.00	BHL 610'FSL & 196

Database:	Landmark	Local Co-ordinate Reference:	Well Rich 2-32H
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Project:	SEC.32-T7N-R80W	MD Reference:	WELL @ 8228.0ft (RKB - 23')
Site:	Rich 2-32H Pad Sec.32-T7N-R80W	North Reference:	True
Well:	Rich 2-32H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (10-14-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
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
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,228.0	0.00	0.00	2,228.0	0.0	0.0	0.0	0.00	0.00	0.00
Midcoal									
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
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	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,008.0	0.00	0.00	3,008.0	0.0	0.0	0.0	0.00	0.00	0.00
Suddeth coal									
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00

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Company:	EE3	TVD Reference:	WELL @ 8228.0ft (RKB - 23')
Project:	SEC.32-T7N-R80W	MD Reference:	WELL @ 8228.0ft (RKB - 23')
Site:	Rich 2-32H Pad Sec.32-T7N-R80W	North Reference:	True
Well:	Rich 2-32H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (10-14-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00
5,508.0	0.00	0.00	5,508.0	0.0	0.0	0.0	0.00	0.00	0.00
Sussex									
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00
5,808.0	0.00	0.00	5,808.0	0.0	0.0	0.0	0.00	0.00	0.00
Shannon									
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	0.00
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	0.00
6,100.0	0.00	0.00	6,100.0	0.0	0.0	0.0	0.00	0.00	0.00
6,200.0	0.00	0.00	6,200.0	0.0	0.0	0.0	0.00	0.00	0.00
6,300.0	0.00	0.00	6,300.0	0.0	0.0	0.0	0.00	0.00	0.00
6,400.0	0.00	0.00	6,400.0	0.0	0.0	0.0	0.00	0.00	0.00
6,500.0	0.00	0.00	6,500.0	0.0	0.0	0.0	0.00	0.00	0.00
6,600.0	0.00	0.00	6,600.0	0.0	0.0	0.0	0.00	0.00	0.00
6,700.0	0.00	0.00	6,700.0	0.0	0.0	0.0	0.00	0.00	0.00
6,800.0	0.00	0.00	6,800.0	0.0	0.0	0.0	0.00	0.00	0.00
6,900.0	0.00	0.00	6,900.0	0.0	0.0	0.0	0.00	0.00	0.00
7,000.0	0.00	0.00	7,000.0	0.0	0.0	0.0	0.00	0.00	0.00
7,071.8	0.00	0.00	7,071.8	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 12.00									
7,100.0	3.39	196.12	7,100.0	-0.8	-0.2	0.8	12.00	12.00	0.00
7,175.8	12.49	196.12	7,175.0	-10.8	-3.1	11.3	12.00	12.00	0.00
Niobrara									
7,200.0	15.39	196.12	7,198.5	-16.4	-4.8	17.1	12.00	12.00	0.00
7,300.0	27.39	196.12	7,291.4	-51.4	-14.9	53.5	12.00	12.00	0.00
7,337.5	31.89	196.12	7,324.0	-69.2	-20.0	72.1	12.00	12.00	0.00
Carlisle									
7,400.0	39.39	196.12	7,374.8	-104.2	-30.1	108.4	12.00	12.00	0.00
7,500.0	51.39	196.12	7,444.9	-172.4	-49.8	179.5	12.00	12.00	0.00
7,600.0	63.39	196.12	7,498.7	-253.2	-73.2	263.6	12.00	12.00	0.00
7,700.0	75.39	196.12	7,533.8	-343.0	-99.1	357.0	12.00	12.00	0.00
7,800.0	87.39	196.12	7,548.7	-437.8	-126.5	455.7	12.00	12.00	0.00
7,848.6	93.22	196.12	7,548.5	-484.4	-140.0	504.3	12.00	12.00	0.00
Start 5349.6 hold at 7848.6 MD - 7"									
7,900.0	93.22	196.12	7,545.6	-533.7	-154.3	555.6	0.00	0.00	0.00
8,000.0	93.22	196.12	7,540.0	-629.7	-182.0	655.4	0.00	0.00	0.00
8,100.0	93.22	196.12	7,534.4	-725.6	-209.7	755.3	0.00	0.00	0.00
8,200.0	93.22	196.12	7,528.7	-821.5	-237.4	855.1	0.00	0.00	0.00
8,300.0	93.22	196.12	7,523.1	-917.4	-265.2	955.0	0.00	0.00	0.00
8,400.0	93.22	196.12	7,517.5	-1,013.3	-292.9	1,054.8	0.00	0.00	0.00
8,500.0	93.22	196.12	7,511.9	-1,109.2	-320.6	1,154.6	0.00	0.00	0.00
8,600.0	93.22	196.12	7,506.3	-1,205.2	-348.3	1,254.5	0.00	0.00	0.00
8,700.0	93.22	196.12	7,500.7	-1,301.1	-376.1	1,354.3	0.00	0.00	0.00
8,800.0	93.22	196.12	7,495.0	-1,397.0	-403.8	1,454.2	0.00	0.00	0.00
8,900.0	93.22	196.12	7,489.4	-1,492.9	-431.5	1,554.0	0.00	0.00	0.00
9,000.0	93.22	196.12	7,483.8	-1,588.8	-459.2	1,653.9	0.00	0.00	0.00

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Company:	EE3	TVD Reference:	WELL @ 8228.0ft (RKB - 23')
Project:	SEC.32-T7N-R80W	MD Reference:	WELL @ 8228.0ft (RKB - 23')
Site:	Rich 2-32H Pad Sec.32-T7N-R80W	North Reference:	True
Well:	Rich 2-32H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (10-14-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,100.0	93.22	196.12	7,478.2	-1,684.7	-487.0	1,753.7	0.00	0.00	0.00
9,200.0	93.22	196.12	7,472.6	-1,780.7	-514.7	1,853.5	0.00	0.00	0.00
9,300.0	93.22	196.12	7,467.0	-1,876.6	-542.4	1,953.4	0.00	0.00	0.00
9,400.0	93.22	196.12	7,461.3	-1,972.5	-570.1	2,053.2	0.00	0.00	0.00
9,500.0	93.22	196.12	7,455.7	-2,068.4	-597.9	2,153.1	0.00	0.00	0.00
9,600.0	93.22	196.12	7,450.1	-2,164.3	-625.6	2,252.9	0.00	0.00	0.00
9,700.0	93.22	196.12	7,444.5	-2,260.2	-653.3	2,352.8	0.00	0.00	0.00
9,800.0	93.22	196.12	7,438.9	-2,356.1	-681.0	2,452.6	0.00	0.00	0.00
9,900.0	93.22	196.12	7,433.3	-2,452.1	-708.7	2,552.4	0.00	0.00	0.00
10,000.0	93.22	196.12	7,427.6	-2,548.0	-736.5	2,652.3	0.00	0.00	0.00
10,100.0	93.22	196.12	7,422.0	-2,643.9	-764.2	2,752.1	0.00	0.00	0.00
10,200.0	93.22	196.12	7,416.4	-2,739.8	-791.9	2,852.0	0.00	0.00	0.00
10,300.0	93.22	196.12	7,410.8	-2,835.7	-819.6	2,951.8	0.00	0.00	0.00
10,400.0	93.22	196.12	7,405.2	-2,931.6	-847.4	3,051.6	0.00	0.00	0.00
10,500.0	93.22	196.12	7,399.6	-3,027.6	-875.1	3,151.5	0.00	0.00	0.00
10,600.0	93.22	196.12	7,393.9	-3,123.5	-902.8	3,251.3	0.00	0.00	0.00
10,700.0	93.22	196.12	7,388.3	-3,219.4	-930.5	3,351.2	0.00	0.00	0.00
10,800.0	93.22	196.12	7,382.7	-3,315.3	-958.3	3,451.0	0.00	0.00	0.00
10,900.0	93.22	196.12	7,377.1	-3,411.2	-986.0	3,550.9	0.00	0.00	0.00
11,000.0	93.22	196.12	7,371.5	-3,507.1	-1,013.7	3,650.7	0.00	0.00	0.00
11,100.0	93.22	196.12	7,365.9	-3,603.1	-1,041.4	3,750.5	0.00	0.00	0.00
11,200.0	93.22	196.12	7,360.2	-3,699.0	-1,069.2	3,850.4	0.00	0.00	0.00
11,300.0	93.22	196.12	7,354.6	-3,794.9	-1,096.9	3,950.2	0.00	0.00	0.00
11,400.0	93.22	196.12	7,349.0	-3,890.8	-1,124.6	4,050.1	0.00	0.00	0.00
11,500.0	93.22	196.12	7,343.4	-3,986.7	-1,152.3	4,149.9	0.00	0.00	0.00
11,600.0	93.22	196.12	7,337.8	-4,082.6	-1,180.0	4,249.8	0.00	0.00	0.00
11,700.0	93.22	196.12	7,332.2	-4,178.6	-1,207.8	4,349.6	0.00	0.00	0.00
11,800.0	93.22	196.12	7,326.5	-4,274.5	-1,235.5	4,449.4	0.00	0.00	0.00
11,900.0	93.22	196.12	7,320.9	-4,370.4	-1,263.2	4,549.3	0.00	0.00	0.00
12,000.0	93.22	196.12	7,315.3	-4,466.3	-1,290.9	4,649.1	0.00	0.00	0.00
12,100.0	93.22	196.12	7,309.7	-4,562.2	-1,318.7	4,749.0	0.00	0.00	0.00
12,200.0	93.22	196.12	7,304.1	-4,658.1	-1,346.4	4,848.8	0.00	0.00	0.00
12,300.0	93.22	196.12	7,298.5	-4,754.0	-1,374.1	4,948.6	0.00	0.00	0.00
12,400.0	93.22	196.12	7,292.8	-4,850.0	-1,401.8	5,048.5	0.00	0.00	0.00
12,500.0	93.22	196.12	7,287.2	-4,945.9	-1,429.6	5,148.3	0.00	0.00	0.00
12,600.0	93.22	196.12	7,281.6	-5,041.8	-1,457.3	5,248.2	0.00	0.00	0.00
12,700.0	93.22	196.12	7,276.0	-5,137.7	-1,485.0	5,348.0	0.00	0.00	0.00
12,800.0	93.22	196.12	7,270.4	-5,233.6	-1,512.7	5,447.9	0.00	0.00	0.00
12,900.0	93.22	196.12	7,264.7	-5,329.5	-1,540.5	5,547.7	0.00	0.00	0.00
13,000.0	93.22	196.12	7,259.1	-5,425.5	-1,568.2	5,647.5	0.00	0.00	0.00
13,100.0	93.22	196.12	7,253.5	-5,521.4	-1,595.9	5,747.4	0.00	0.00	0.00
13,198.2	93.22	196.12	7,248.0	-5,615.5	-1,623.1	5,845.4	0.00	0.00	0.00
TD at 13198.2									

Database:	Landmark	Local Co-ordinate Reference:	Well Rich 2-32H
Company:	EE3	TVD Reference:	WELL @ 8228.0ft (RKB - 23')
Project:	SEC.32-T7N-R80W	MD Reference:	WELL @ 8228.0ft (RKB - 23')
Site:	Rich 2-32H Pad Sec.32-T7N-R80W	North Reference:	True
Well:	Rich 2-32H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (10-14-14)		

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
BHL 610'FSL & 1960'I - plan hits target center - Point	0.00	0.00	7,248.0	-5,615.5	-1,623.1	1,431,094.00	2,749,119.68	40.513250	-106.402316
Setback BHL 600' - plan misses target center by 5906.5ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E) - Polygon	0.00	0.00	1.0	-5,625.5	-1,800.0	1,431,085.83	2,748,942.71	40.513223	-106.402953
Point 1			1.0	0.0	0.0	1,431,085.83	2,748,942.71		
Point 2			1.0	0.0	600.0	1,431,079.77	2,749,542.66		
Sectionline - plan misses target center by 776.2ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E) - Polygon	0.00	0.00	1.0	-750.0	200.0	1,435,940.70	2,750,991.83	40.526605	-106.395760
Point 1			1.0	0.0	0.0	1,435,940.70	2,750,991.83		
Point 2			1.0	0.0	-800.0	1,435,948.79	2,750,191.90		
SHL 750'FSL & 2340'I - plan hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,436,692.67	2,750,799.43	40.528664	-106.396479

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,848.6	7,548.5	7"	7	7-1/2

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,228.0	2,228.0	Midcoal		0.00	
3,008.0	3,008.0	Suddeth coal		0.00	
5,508.0	5,508.0	Sussex		0.00	
5,808.0	5,808.0	Shannon		0.00	
7,175.8	7,175.0	Niobrara		0.00	
7,337.5	7,324.0	Carlisle		0.00	

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
7,071.8	7,071.8	0.0	0.0	KOP - Start Build 12.00
7,848.6	7,548.5	-484.5	-140.0	Start 5349.6 hold at 7848.6 MD
13,198.2	7,248.0	-5,615.5	-1,623.1	TD at 13198.2