

# EE3

Well Name: **Grizzly 3-36H**

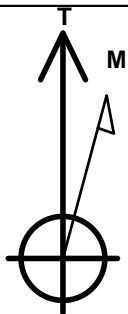
Surface Location: Grizzly 3-36H Pad Sec.36-T8N-R81W  
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
 Ground Elevation: 8188.0  

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1473268.10	2739176.43	40.628724	-106.439683	

  
 RKB - 13' WELL @ 8201.0ft (RKB - 13')

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 215'FNL & 1213'FWL	1.0	0.0	0.0	Point
BHL 600'FSL & 600'FWL	5371.0	-4493.1	-657.7	Point



Azimuths to True North  
 Magnetic North: 9.28°

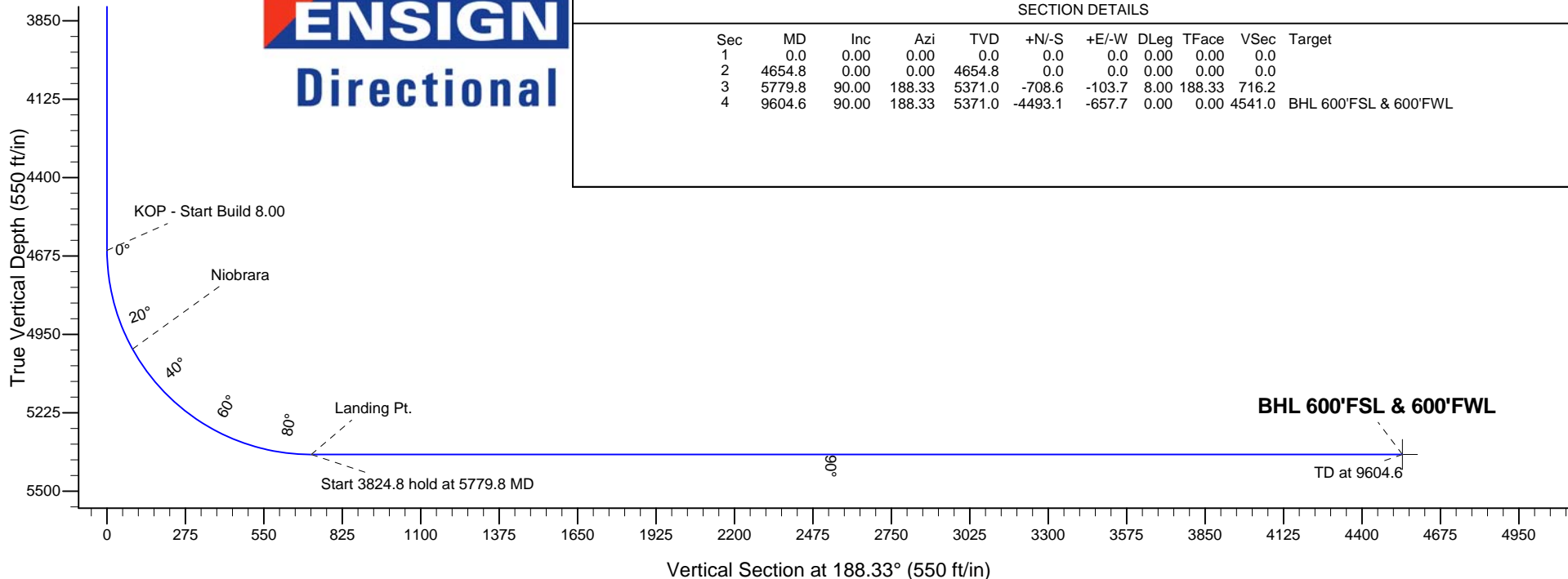
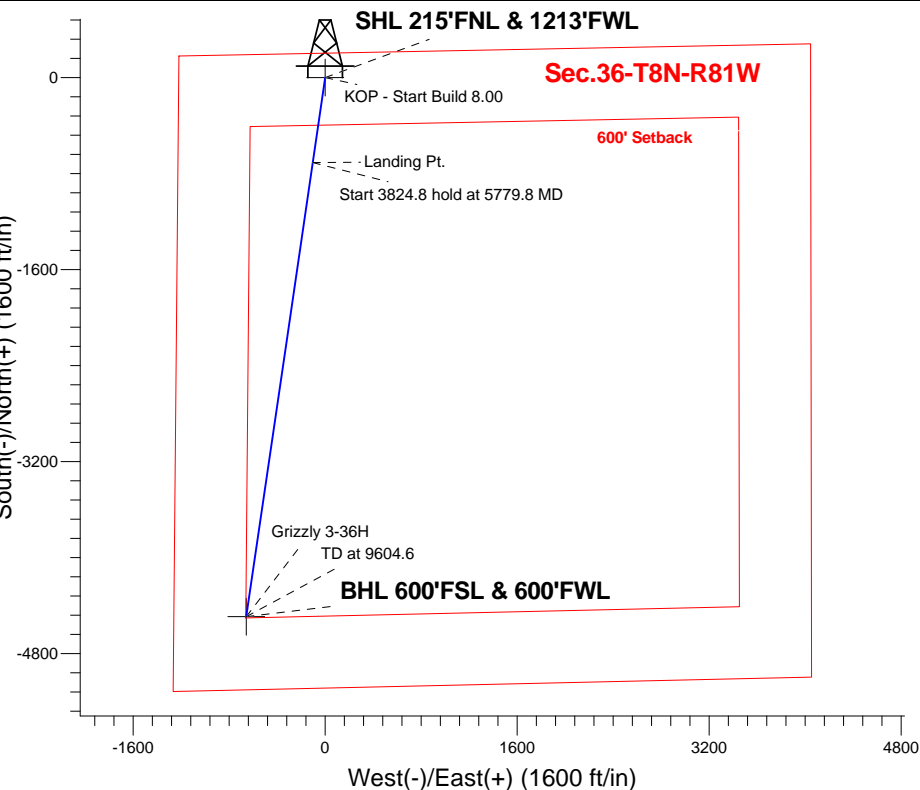
Magnetic Field  
 Strength: 52669.6snT  
 Dip Angle: 66.84°  
 Date: 12/22/2014  
 Model: IGRF2010

Grizzly 3-36H Pad Sec.36-T8N-R81W  
 Grizzly 3-36H  
 Plan #1 (12-22-14)  
 11:04, December 23 2014

### ANNOTATIONS

TVD	MD	Annotation
4654.8	4654.8	KOP - Start Build 8.00
5371.0	5779.8	Start 3824.8 hold at 5779.8 MD
5371.0	5779.8	Landing Pt.
5371.0	9604.6	TD at 9604.6

South(-)/North(+) (1600 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	4654.8	0.00	0.00	4654.8	0.0	0.0	0.00	0.00	0.0	
3	5779.8	90.00	188.33	5371.0	-708.6	-103.7	8.00	188.33	716.2	
4	9604.6	90.00	188.33	5371.0	-4493.1	-657.7	0.00	0.00	4541.0	BHL 600'FSL & 600'FWL



**EE3**

**SEC.36-T8N-R81W**

**Grizzly 3-36H Pad Sec.36-T8N-R81W**

**Grizzly 3-36H**

**Wellbore #1**

**Plan: Plan #1 (12-22-14)**

## **Standard Planning Report**

**23 December, 2014**



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Grizzly 3-36H
<b>Company:</b>	EE3	<b>TVD Reference:</b>	WELL @ 8201.0ft (RKB - 13')
<b>Project:</b>	SEC.36-T8N-R81W	<b>MD Reference:</b>	WELL @ 8201.0ft (RKB - 13')
<b>Site:</b>	Grizzly 3-36H Pad Sec.36-T8N-R81W	<b>North Reference:</b>	True
<b>Well:</b>	Grizzly 3-36H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (12-22-14)		

<b>Project</b>	SEC.36-T8N-R81W, Jackson County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		

Site						Grizzly 3-36H Pad Sec.36-T8N-R81W											
<b>Site Position:</b>						<b>Northing:</b>			1,473,268.12 ft			<b>Latitude:</b>			40.628724		
<b>From:</b>			Lat/Long			<b>Easting:</b>			2,739,176.43 ft			<b>Longitude:</b>			-106.439683		
<b>Position Uncertainty:</b>			0.0 ft			<b>Slot Radius:</b>			"			<b>Grid Convergence:</b>			-0.61 °		

Well	Grizzly 3-36H					
Well Position	+N/-S	0.0 ft	Northing:	1,473,268.10 ft	Latitude:	40.628724
	+E/-W	0.0 ft	Easting:	2,739,176.43 ft	Longitude:	-106.439683
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	8,188.0 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>
	IGRF2010	12/22/2014	9.28	66.84	52,670

<b>Design</b>	Plan #1 (12-22-14)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	188.33

<b>Plan Sections</b>										
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	
4,654.8	0.00	0.00	4,654.8	0.0	0.0	0.00	0.00	0.00	0.00	
5,779.8	90.00	188.33	5,371.0	-708.6	-103.7	8.00	8.00	0.00	188.33	
9,604.6	90.00	188.33	5,371.0	-4,493.1	-657.7	0.00	0.00	0.00	0.00	BHL 600'FSL & 600'

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Grizzly 3-36H
<b>Company:</b>	EE3	<b>TVD Reference:</b>	WELL @ 8201.0ft (RKB - 13')
<b>Project:</b>	SEC.36-T8N-R81W	<b>MD Reference:</b>	WELL @ 8201.0ft (RKB - 13')
<b>Site:</b>	Grizzly 3-36H Pad Sec.36-T8N-R81W	<b>North Reference:</b>	True
<b>Well:</b>	Grizzly 3-36H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (12-22-14)		

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
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>SHL 215'FNL &amp; 1213'FWL</b>									
51.0	0.00	0.00	51.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Midcoal</b>									
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
831.0	0.00	0.00	831.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Suddeth Coal</b>									
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
2,300.0	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
3,100.0	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
3,331.0	0.00	0.00	3,331.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Sussex</b>									
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
3,631.0	0.00	0.00	3,631.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Shannon</b>									
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

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Grizzly 3-36H
<b>Company:</b>	EE3	<b>TVD Reference:</b>	WELL @ 8201.0ft (RKB - 13')
<b>Project:</b>	SEC.36-T8N-R81W	<b>MD Reference:</b>	WELL @ 8201.0ft (RKB - 13')
<b>Site:</b>	Grizzly 3-36H Pad Sec.36-T8N-R81W	<b>North Reference:</b>	True
<b>Well:</b>	Grizzly 3-36H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (12-22-14)		

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)
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
4,654.8	0.00	0.00	4,654.8	0.0	0.0	0.0	0.00	0.00	0.00
<b>KOP - Start Build 8.00</b>									
4,700.0	3.62	188.33	4,700.0	-1.4	-0.2	1.4	8.00	8.00	0.00
4,800.0	11.62	188.33	4,799.0	-14.5	-2.1	14.7	8.00	8.00	0.00
4,900.0	19.62	188.33	4,895.2	-41.1	-6.0	41.6	8.00	8.00	0.00
5,000.0	27.62	188.33	4,986.8	-80.7	-11.8	81.6	8.00	8.00	0.00
5,016.1	28.91	188.33	5,001.0	-88.3	-12.9	89.2	8.00	8.00	0.00
<b>Niobrara</b>									
5,100.0	35.62	188.33	5,071.9	-132.6	-19.4	134.0	8.00	8.00	0.00
5,200.0	43.62	188.33	5,148.8	-195.6	-28.6	197.7	8.00	8.00	0.00
5,300.0	51.62	188.33	5,216.2	-268.6	-39.3	271.5	8.00	8.00	0.00
5,400.0	59.62	188.33	5,272.6	-350.2	-51.3	353.9	8.00	8.00	0.00
5,500.0	67.62	188.33	5,317.0	-438.8	-64.2	443.5	8.00	8.00	0.00
5,600.0	75.62	188.33	5,348.5	-532.6	-78.0	538.3	8.00	8.00	0.00
5,700.0	83.62	188.33	5,366.6	-629.8	-92.2	636.6	8.00	8.00	0.00
5,779.8	90.00	188.33	5,371.0	-708.6	-103.7	716.2	8.00	8.00	0.00
<b>Start 3824.8 hold at 5779.8 MD - Landing Pt.</b>									
5,800.0	90.00	188.33	5,371.0	-728.6	-106.7	736.4	0.00	0.00	0.00
5,900.0	90.00	188.33	5,371.0	-827.6	-121.1	836.4	0.00	0.00	0.00
6,000.0	90.00	188.33	5,371.0	-926.5	-135.6	936.4	0.00	0.00	0.00
6,100.0	90.00	188.33	5,371.0	-1,025.5	-150.1	1,036.4	0.00	0.00	0.00
6,200.0	90.00	188.33	5,371.0	-1,124.4	-164.6	1,136.4	0.00	0.00	0.00
6,300.0	90.00	188.33	5,371.0	-1,223.4	-179.1	1,236.4	0.00	0.00	0.00
6,400.0	90.00	188.33	5,371.0	-1,322.3	-193.6	1,336.4	0.00	0.00	0.00
6,500.0	90.00	188.33	5,371.0	-1,421.2	-208.0	1,436.4	0.00	0.00	0.00
6,600.0	90.00	188.33	5,371.0	-1,520.2	-222.5	1,536.4	0.00	0.00	0.00
6,700.0	90.00	188.33	5,371.0	-1,619.1	-237.0	1,636.4	0.00	0.00	0.00
6,800.0	90.00	188.33	5,371.0	-1,718.1	-251.5	1,736.4	0.00	0.00	0.00
6,900.0	90.00	188.33	5,371.0	-1,817.0	-266.0	1,836.4	0.00	0.00	0.00
7,000.0	90.00	188.33	5,371.0	-1,916.0	-280.5	1,936.4	0.00	0.00	0.00
7,100.0	90.00	188.33	5,371.0	-2,014.9	-294.9	2,036.4	0.00	0.00	0.00
7,200.0	90.00	188.33	5,371.0	-2,113.9	-309.4	2,136.4	0.00	0.00	0.00
7,300.0	90.00	188.33	5,371.0	-2,212.8	-323.9	2,236.4	0.00	0.00	0.00
7,400.0	90.00	188.33	5,371.0	-2,311.8	-338.4	2,336.4	0.00	0.00	0.00
7,500.0	90.00	188.33	5,371.0	-2,410.7	-352.9	2,436.4	0.00	0.00	0.00
7,600.0	90.00	188.33	5,371.0	-2,509.7	-367.4	2,536.4	0.00	0.00	0.00
7,700.0	90.00	188.33	5,371.0	-2,608.6	-381.8	2,636.4	0.00	0.00	0.00
7,800.0	90.00	188.33	5,371.0	-2,707.5	-396.3	2,736.4	0.00	0.00	0.00
7,900.0	90.00	188.33	5,371.0	-2,806.5	-410.8	2,836.4	0.00	0.00	0.00
8,000.0	90.00	188.33	5,371.0	-2,905.4	-425.3	2,936.4	0.00	0.00	0.00
8,100.0	90.00	188.33	5,371.0	-3,004.4	-439.8	3,036.4	0.00	0.00	0.00
8,200.0	90.00	188.33	5,371.0	-3,103.3	-454.3	3,136.4	0.00	0.00	0.00
8,300.0	90.00	188.33	5,371.0	-3,202.3	-468.7	3,236.4	0.00	0.00	0.00
8,400.0	90.00	188.33	5,371.0	-3,301.2	-483.2	3,336.4	0.00	0.00	0.00
8,500.0	90.00	188.33	5,371.0	-3,400.2	-497.7	3,436.4	0.00	0.00	0.00
8,600.0	90.00	188.33	5,371.0	-3,499.1	-512.2	3,536.4	0.00	0.00	0.00
8,700.0	90.00	188.33	5,371.0	-3,598.1	-526.7	3,636.4	0.00	0.00	0.00
8,800.0	90.00	188.33	5,371.0	-3,697.0	-541.2	3,736.4	0.00	0.00	0.00
8,900.0	90.00	188.33	5,371.0	-3,795.9	-555.6	3,836.4	0.00	0.00	0.00
9,000.0	90.00	188.33	5,371.0	-3,894.9	-570.1	3,936.4	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Grizzly 3-36H
<b>Company:</b>	EE3	<b>TVD Reference:</b>	WELL @ 8201.0ft (RKB - 13')
<b>Project:</b>	SEC.36-T8N-R81W	<b>MD Reference:</b>	WELL @ 8201.0ft (RKB - 13')
<b>Site:</b>	Grizzly 3-36H Pad Sec.36-T8N-R81W	<b>North Reference:</b>	True
<b>Well:</b>	Grizzly 3-36H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (12-22-14)		

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	90.00	188.33	5,371.0	-3,993.8	-584.6	4,036.4	0.00	0.00	0.00	
9,200.0	90.00	188.33	5,371.0	-4,092.8	-599.1	4,136.4	0.00	0.00	0.00	
9,300.0	90.00	188.33	5,371.0	-4,191.7	-613.6	4,236.4	0.00	0.00	0.00	
9,400.0	90.00	188.33	5,371.0	-4,290.7	-628.1	4,336.4	0.00	0.00	0.00	
9,500.0	90.00	188.33	5,371.0	-4,389.6	-642.5	4,436.4	0.00	0.00	0.00	
9,600.0	90.00	188.33	5,371.0	-4,488.6	-657.0	4,536.4	0.00	0.00	0.00	
9,604.6	90.00	188.33	5,371.0	-4,493.1	-657.7	4,541.0	0.00	0.00	0.00	
BHL 600'FSL & 600'FWL										

Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude	
- hit/miss target										
- Shape										
BHL 600'FSL & 600'F	0.00	0.00	5,371.0	-4,493.1	-657.7	1,468,782.22	2,738,471.17	40.616391	-106.442052	
- plan hits target center										
- Point										
SHL 215'FNL & 1213'	0.00	0.00	1.0	0.0	0.0	1,473,268.12	2,739,176.43	40.628724	-106.439683	
- plan hits target center										
- Point										

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
51.0	51.0	Midcoal		0.00		
831.0	831.0	Suddeth Coal		0.00		
3,331.0	3,331.0	Sussex		0.00		
3,631.0	3,631.0	Shannon		0.00		
5,016.1	5,001.0	Niobrara		0.00		
	5,447.0	Carlisle		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
4,654.8	4,654.8	0.0	0.0	KOP - Start Build 8.00	
5,779.8	5,371.0	-708.6	-103.7	Start 3824.8 hold at 5779.8 MD	
5,779.8	5,371.0	-708.6	-103.7	Landing Pt.	
9,604.6	5,371.0	-4,493.1	-657.7	TD at 9604.6	

**EE3**

**SEC.36-T8N-R81W**

**Grizzly 3-36H Pad Sec.36-T8N-R81W**

**Grizzly 3-36H**

**Wellbore #1**

**Plan #1 (12-22-14)**

## **Anticollision Report**

**23 December, 2014**

<b>Company:</b>	EE3	<b>Local Co-ordinate Reference:</b>	Well Grizzly 3-36H
<b>Project:</b>	SEC.36-T8N-R81W	<b>TVD Reference:</b>	WELL @ 8201.0ft (RKB - 13')
<b>Reference Site:</b>	Grizzly 3-36H Pad Sec.36-T8N-R81W	<b>MD Reference:</b>	WELL @ 8201.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Grizzly 3-36H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (12-22-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #1 (12-22-14)		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	MD Interval 100.0ft	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 1,000.0ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b> 12/23/2014			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	9,604.6	Plan #1 (12-22-14) (Wellbore #1)	MWD	MWD - Standard

<b>Summary</b>						
<b>Site Name</b>	<b>Reference Measured Depth (ft)</b>	<b>Offset Measured Depth (ft)</b>	<b>Distance Between Centres (ft)</b>	<b>Distance Between Ellipses (ft)</b>	<b>Separation Factor</b>	<b>Warning</b>
<b>Offset Well - Wellbore - Design</b>						
Grizzly 3-36H Pad Sec.36-T8N-R81W						
Peterson Ridge 6-36H - Wellbore #1 - Plan #1 (12-22-14)	4,600.0	4,600.0	70.0	49.5	3.420	CC
Peterson Ridge 6-36H - Wellbore #1 - Plan #1 (12-22-14)	4,637.0	4,637.0	70.0	49.4	3.397	ES
Peterson Ridge 6-36H - Wellbore #1 - Plan #1 (12-22-14)	4,700.0	4,698.6	70.6	49.7	3.381	SF

Offset Design		Grizzly 3-36H Pad Sec.36-T8N-R81W - Peterson Ridge 6-36H - Wellbore #1 - Plan #1 (12-22-14)										Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
0.0	0.0	0.0	0.0	0.0	0.0	89.40	0.7	69.9	70.0					
100.0	100.0	100.0	100.0	0.1	0.1	89.40	0.7	69.9	70.0	69.7	0.22	311.221		
200.0	200.0	200.0	200.0	0.3	0.3	89.40	0.7	69.9	70.0	69.3	0.67	103.740		
300.0	300.0	300.0	300.0	0.6	0.6	89.40	0.7	69.9	70.0	68.8	1.12	62.244		
400.0	400.0	400.0	400.0	0.8	0.8	89.40	0.7	69.9	70.0	68.4	1.57	44.460		
500.0	500.0	500.0	500.0	1.0	1.0	89.40	0.7	69.9	70.0	67.9	2.02	34.580		
600.0	600.0	600.0	600.0	1.2	1.2	89.40	0.7	69.9	70.0	67.5	2.47	28.293		
700.0	700.0	700.0	700.0	1.5	1.5	89.40	0.7	69.9	70.0	67.0	2.92	23.940		
800.0	800.0	800.0	800.0	1.7	1.7	89.40	0.7	69.9	70.0	66.6	3.37	20.748		
900.0	900.0	900.0	900.0	1.9	1.9	89.40	0.7	69.9	70.0	66.1	3.82	18.307		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	89.40	0.7	69.9	70.0	65.7	4.27	16.380		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	89.40	0.7	69.9	70.0	65.2	4.72	14.820		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	89.40	0.7	69.9	70.0	64.8	5.17	13.531		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	89.40	0.7	69.9	70.0	64.3	5.62	12.449		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	89.40	0.7	69.9	70.0	63.9	6.07	11.527		
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	89.40	0.7	69.9	70.0	63.4	6.52	10.732		
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	89.40	0.7	69.9	70.0	63.0	6.97	10.039		
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	89.40	0.7	69.9	70.0	62.5	7.42	9.431		
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	89.40	0.7	69.9	70.0	62.1	7.87	8.892		
1,900.0	1,900.0	1,900.0	1,900.0	4.2	4.2	89.40	0.7	69.9	70.0	61.6	8.32	8.411		
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	89.40	0.7	69.9	70.0	61.2	8.77	7.980		
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	89.40	0.7	69.9	70.0	60.7	9.22	7.591		
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	89.40	0.7	69.9	70.0	60.3	9.66	7.238		
2,300.0	2,300.0	2,300.0	2,300.0	5.1	5.1	89.40	0.7	69.9	70.0	59.8	10.11	6.916		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



<b>Company:</b>	EE3	<b>Local Co-ordinate Reference:</b>	Well Grizzly 3-36H
<b>Project:</b>	SEC.36-T8N-R81W	<b>TVD Reference:</b>	WELL @ 8201.0ft (RKB - 13')
<b>Reference Site:</b>	Grizzly 3-36H Pad Sec.36-T8N-R81W	<b>MD Reference:</b>	WELL @ 8201.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Grizzly 3-36H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (12-22-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Grizzly 3-36H Pad Sec.36-T8N-R81W - Peterson Ridge 6-36H - Wellbore #1 - Plan #1 (12-22-14)											Offset Site Error: 0.0 ft	
Survey Program: 0-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	89.40	0.7	69.9	70.0	59.4	10.56	6.622		
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	89.40	0.7	69.9	70.0	58.9	11.01	6.351		
2,600.0	2,600.0	2,600.0	2,600.0	5.7	5.7	89.40	0.7	69.9	70.0	58.5	11.46	6.102		
2,700.0	2,700.0	2,700.0	2,700.0	6.0	6.0	89.40	0.7	69.9	70.0	58.0	11.91	5.872		
2,800.0	2,800.0	2,800.0	2,800.0	6.2	6.2	89.40	0.7	69.9	70.0	57.6	12.36	5.659		
2,900.0	2,900.0	2,900.0	2,900.0	6.4	6.4	89.40	0.7	69.9	70.0	57.1	12.81	5.460		
3,000.0	3,000.0	3,000.0	3,000.0	6.6	6.6	89.40	0.7	69.9	70.0	56.7	13.26	5.275		
3,100.0	3,100.0	3,100.0	3,100.0	6.9	6.9	89.40	0.7	69.9	70.0	56.2	13.71	5.102		
3,200.0	3,200.0	3,200.0	3,200.0	7.1	7.1	89.40	0.7	69.9	70.0	55.8	14.16	4.940		
3,300.0	3,300.0	3,300.0	3,300.0	7.3	7.3	89.40	0.7	69.9	70.0	55.3	14.61	4.788		
3,400.0	3,400.0	3,400.0	3,400.0	7.5	7.5	89.40	0.7	69.9	70.0	54.9	15.06	4.645		
3,500.0	3,500.0	3,500.0	3,500.0	7.8	7.8	89.40	0.7	69.9	70.0	54.4	15.51	4.510		
3,600.0	3,600.0	3,600.0	3,600.0	8.0	8.0	89.40	0.7	69.9	70.0	54.0	15.96	4.383		
3,700.0	3,700.0	3,700.0	3,700.0	8.2	8.2	89.40	0.7	69.9	70.0	53.5	16.41	4.263		
3,800.0	3,800.0	3,800.0	3,800.0	8.4	8.4	89.40	0.7	69.9	70.0	53.1	16.86	4.150		
3,900.0	3,900.0	3,900.0	3,900.0	8.7	8.7	89.40	0.7	69.9	70.0	52.6	17.31	4.042		
4,000.0	4,000.0	4,000.0	4,000.0	8.9	8.9	89.40	0.7	69.9	70.0	52.2	17.76	3.940		
4,100.0	4,100.0	4,100.0	4,100.0	9.1	9.1	89.40	0.7	69.9	70.0	51.7	18.21	3.842		
4,200.0	4,200.0	4,200.0	4,200.0	9.3	9.3	89.40	0.7	69.9	70.0	51.3	18.66	3.750		
4,300.0	4,300.0	4,300.0	4,300.0	9.6	9.6	89.40	0.7	69.9	70.0	50.8	19.11	3.661		
4,400.0	4,400.0	4,400.0	4,400.0	9.8	9.8	89.40	0.7	69.9	70.0	50.4	19.55	3.577		
4,500.0	4,500.0	4,500.0	4,500.0	10.0	10.0	89.40	0.7	69.9	70.0	49.9	20.00	3.497		
4,600.0	4,600.0	4,600.0	4,600.0	10.2	10.2	89.40	0.7	69.9	70.0	49.5	20.45	3.420 CC		
4,637.0	4,637.0	4,637.0	4,637.0	10.3	10.3	-99.28	0.7	69.9	70.0	49.4	20.61	3.397 ES		
4,700.0	4,700.0	4,698.6	4,698.6	10.4	10.4	-101.03	2.0	70.3	70.6	49.7	20.88	3.381 SF		
4,800.0	4,799.0	4,790.8	4,789.9	10.6	10.7	-116.75	13.1	73.5	81.0	59.8	21.18	3.824		
4,900.0	4,895.2	4,869.7	4,866.5	10.8	10.8	-133.53	31.5	78.7	115.2	94.1	21.12	5.455		
5,000.0	4,986.8	4,931.3	4,924.5	11.0	11.0	-142.58	51.4	84.3	174.9	154.2	20.68	8.461		
5,100.0	5,071.9	4,975.3	4,964.8	11.3	11.1	-145.09	68.6	89.2	252.5	232.4	20.06	12.582		
5,200.0	5,148.8	5,000.0	4,986.8	11.7	11.2	-140.79	79.2	92.2	341.2	321.4	19.82	17.213		
5,300.0	5,216.2	5,019.6	5,004.0	12.3	11.2	-128.75	88.2	94.7	436.3	415.4	20.89	20.887		
5,400.0	5,272.6	5,025.0	5,008.7	13.1	11.2	-92.66	90.8	95.5	534.4	510.2	24.28	22.011		
5,500.0	5,317.0	5,022.2	5,006.3	14.0	11.2	-45.58	89.4	95.1	633.2	613.0	20.19	31.356		
5,600.0	5,348.5	5,013.0	4,998.2	15.2	11.2	-23.95	85.1	93.9	730.6	715.5	15.13	48.276		
5,700.0	5,366.6	5,000.0	4,986.8	16.5	11.2	-15.06	79.2	92.2	825.2	812.5	12.78	64.582		
5,800.0	5,371.0	4,980.3	4,969.2	17.9	11.1	-11.07	70.7	89.8	915.9	903.9	12.07	75.860		

<b>Company:</b>	EE3	<b>Local Co-ordinate Reference:</b>	Well Grizzly 3-36H
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<b>Reference Site:</b>	Grizzly 3-36H Pad Sec.36-T8N-R81W	<b>MD Reference:</b>	WELL @ 8201.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Grizzly 3-36H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (12-22-14)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 8201.0ft (RKB - 13')  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000 °

Coordinates are relative to: Grizzly 3-36H  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: -0.61°



<b>Company:</b>	EE3	<b>Local Co-ordinate Reference:</b>	Well Grizzly 3-36H
<b>Project:</b>	SEC.36-T8N-R81W	<b>TVD Reference:</b>	WELL @ 8201.0ft (RKB - 13')
<b>Reference Site:</b>	Grizzly 3-36H Pad Sec.36-T8N-R81W	<b>MD Reference:</b>	WELL @ 8201.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Grizzly 3-36H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (12-22-14)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 8201.0ft (RKB - 13')  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000 °

Coordinates are relative to: Grizzly 3-36H  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: -0.61°

