

Edge Energy LLC

Weld County, Co (NAD 83)

Sec. 33 Twn 1N Rng 65W

Cherry Knolls 33-1* - Slot 1

Hz

UWI:

WL:

Plan: #1

Standard Planning Report

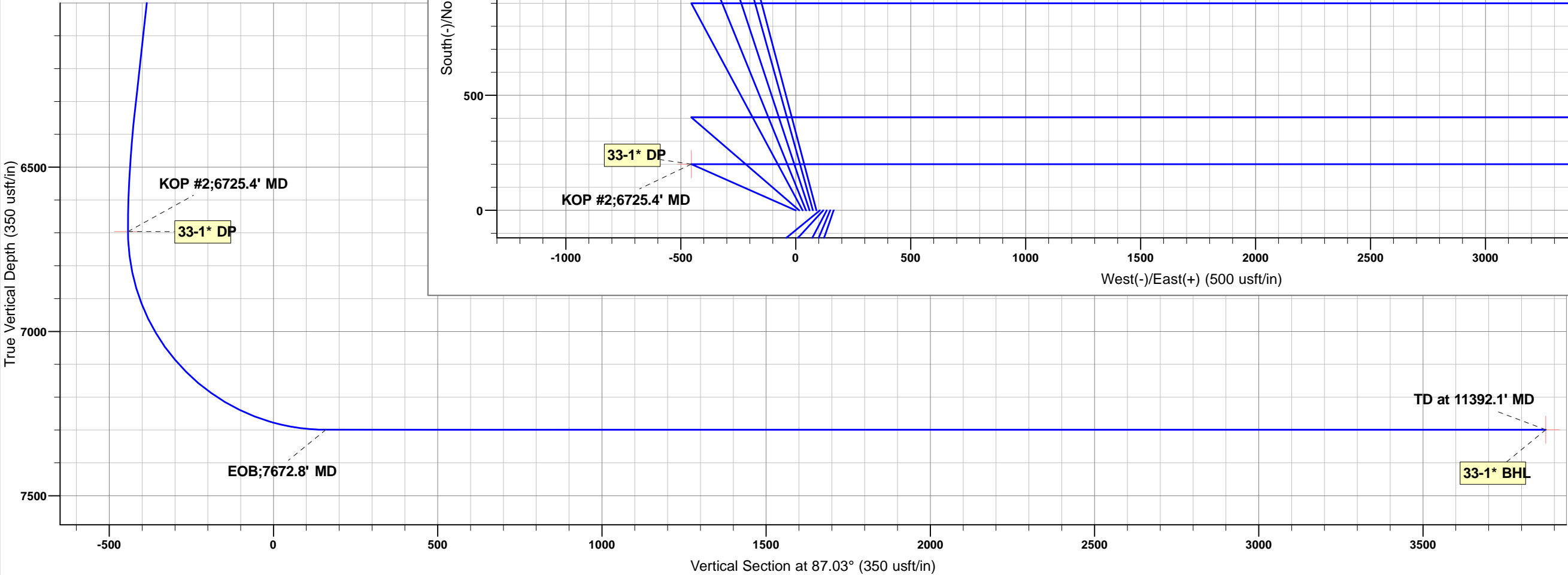
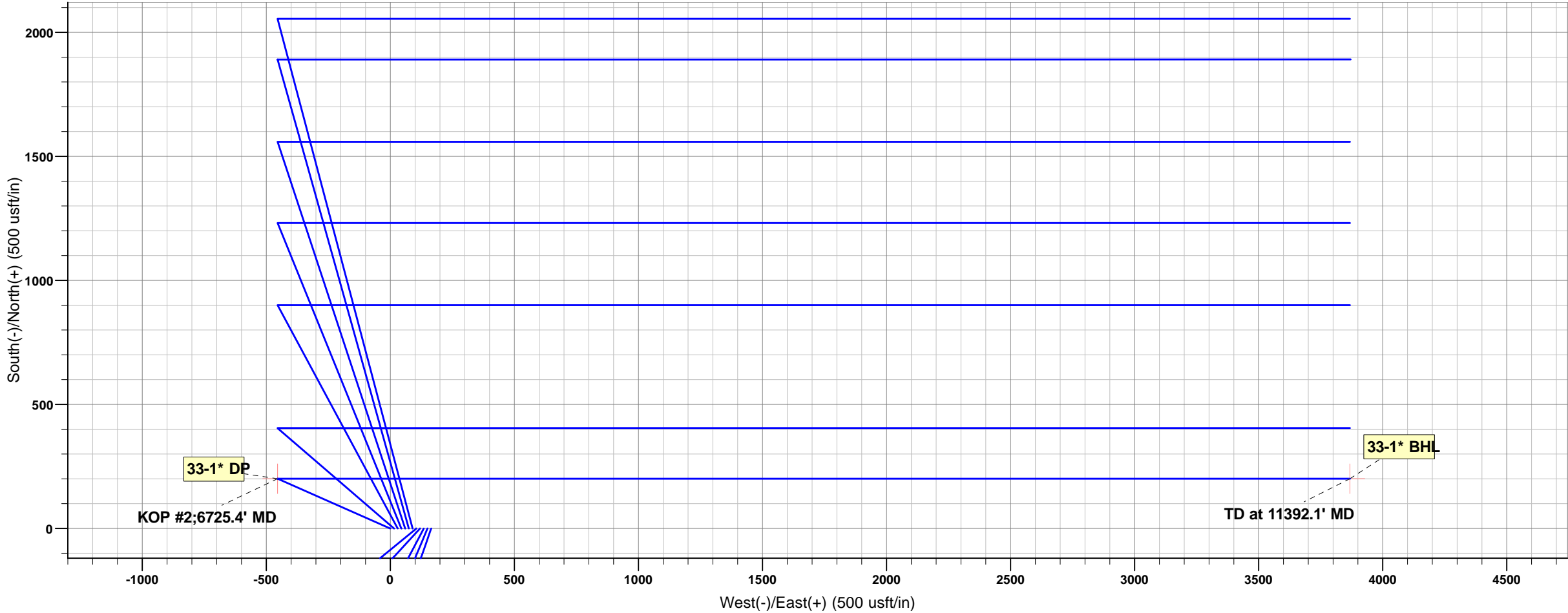
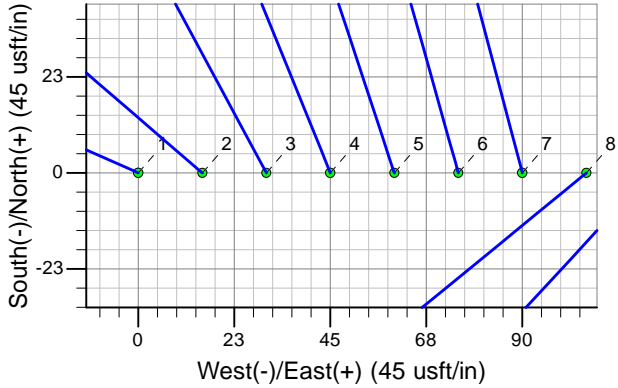
07 December, 2016

Project: Weld County, Co (NAD 83)
Site: Sec. 33 TwN 1N Rng 65W
Well: Cherry Knolls 33-1*
Wellbore: Hz
Plan: #1

Reference Details - WELL CENTRE
Geodetic System: US State Plane 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
Northing: 1246558.82
Easting: 3231056.83
Latitude: 40° 0' 26.06396 N
Longitude: 104° 40' 30.54000 W
Grid Convergence: 0.53° West
Ground Elevation: 5104.0
KB Elevation: Est RKB @ 5124.0usft (kb;20')

PLAN DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	2303.0	0.00	0.00	2303.0	0.0	0.0	0.00	0.00	0.0	
3	2653.0	7.00	293.84	2652.1	8.6	-19.5	2.00	293.84	-19.1	
4	6375.4	7.00	293.84	6346.8	192.0	-434.5	0.00	0.00	-423.9	
5	6725.4	0.00	0.00	6695.9	200.6	-454.0	2.00	180.00	-443.0	33-1* DP
6	7672.8	90.00	90.00	7299.0	200.6	149.1	9.50	90.00	159.3	
7	11392.1	90.00	90.00	7299.0	200.7	3868.5	0.00	0.00	3873.7	33-1* BHL



Azimuths to True North
Magnetic North: 8.05°
Magnetic Field
Strength: 52360.1snT
Dip Angle: 66.56°
Date: 20/11/2016
Model: IGRF201015

Planning Report

Database:	WellPlan Services	Local Co-ordinate Reference:	Well Cherry Knolls 33-1* - Slot 1
Company:	Edge Energy LLC	TVD Reference:	Est RKB @ 5124.0usft (kb;20')
Project:	Weld County, Co (NAD 83)	MD Reference:	Est RKB @ 5124.0usft (kb;20')
Site:	Sec. 33 Twn 1N Rng 65W	North Reference:	True
Well:	Cherry Knolls 33-1*	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	#1		

Project	Weld County, Co (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Sec. 33 Twn 1N Rng 65W			
Site Position:		Northing:	1,246,558.82 usft	Latitude:	40° 0' 26.06400 N
From:	Lat/Long	Easting:	3,231,056.83 usft	Longitude:	104° 40' 30.54000 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.53 °

Well		Cherry Knolls 33-1* - Slot 1				
Well Position	+N/-S	0.0 usft	Northing:	1,246,558.82 usft	Latitude:	40° 0' 26.06396 N
	+E/-W	0.0 usft	Easting:	3,231,056.83 usft	Longitude:	104° 40' 30.54000 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	5,104.0 usft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF201015	20/11/2016	8.05	66.56	52,360

Design	#1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	87.03

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	
2,303.0	0.00	0.00	2,303.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,653.0	7.00	293.84	2,652.1	8.6	-19.5	2.00	2.00	0.00	293.84	
6,375.4	7.00	293.84	6,346.8	192.0	-434.5	0.00	0.00	0.00	0.00	
6,725.4	0.00	0.00	6,695.9	200.6	-454.0	2.00	-2.00	0.00	180.00	33-1* DP
7,672.8	90.00	90.00	7,299.0	200.6	149.1	9.50	9.50	0.00	90.00	
11,392.1	90.00	90.00	7,299.0	200.7	3,868.5	0.00	0.00	0.00	0.00	33-1* BHL

Planning Report

Database:	WellPlan Services	Local Co-ordinate Reference:	Well Cherry Knolls 33-1* - Slot 1
Company:	Edge Energy LLC	TVD Reference:	Est RKB @ 5124.0usft (kb;20')
Project:	Weld County, Co (NAD 83)	MD Reference:	Est RKB @ 5124.0usft (kb;20')
Site:	Sec. 33 Twn 1N Rng 65W	North Reference:	True
Well:	Cherry Knolls 33-1*	Survey Calculation Method:	Minimum Curvature
Wellbore:	H2		
Design:	#1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea (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	-5,124.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP;2303' MD										
2,303.0	0.00	0.00	2,303.0	-2,821.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	1.94	293.84	2,400.0	-2,724.0	0.7	-1.5	-1.5	2.00	2.00	0.00
2,500.0	3.94	293.84	2,499.8	-2,624.2	2.7	-6.2	-6.0	2.00	2.00	0.00
2,600.0	5.94	293.84	2,599.5	-2,524.5	6.2	-14.1	-13.7	2.00	2.00	0.00
2,653.0	7.00	293.84	2,652.1	-2,471.9	8.6	-19.5	-19.1	2.00	2.00	0.00
2,700.0	7.00	293.84	2,698.8	-2,425.2	10.9	-24.8	-24.2	0.00	0.00	0.00
2,800.0	7.00	293.84	2,798.0	-2,326.0	15.9	-35.9	-35.1	0.00	0.00	0.00
2,900.0	7.00	293.84	2,897.3	-2,226.7	20.8	-47.1	-45.9	0.00	0.00	0.00
3,000.0	7.00	293.84	2,996.5	-2,127.5	25.7	-58.2	-56.8	0.00	0.00	0.00
3,100.0	7.00	293.84	3,095.8	-2,028.2	30.7	-69.4	-67.7	0.00	0.00	0.00
3,200.0	7.00	293.84	3,195.1	-1,928.9	35.6	-80.5	-78.6	0.00	0.00	0.00
3,300.0	7.00	293.84	3,294.3	-1,829.7	40.5	-91.7	-89.4	0.00	0.00	0.00
3,400.0	7.00	293.84	3,393.6	-1,730.4	45.4	-102.8	-100.3	0.00	0.00	0.00
3,500.0	7.00	293.84	3,492.8	-1,631.2	50.4	-114.0	-111.2	0.00	0.00	0.00
3,600.0	7.00	293.84	3,592.1	-1,531.9	55.3	-125.1	-122.1	0.00	0.00	0.00
3,700.0	7.00	293.84	3,691.3	-1,432.7	60.2	-136.2	-132.9	0.00	0.00	0.00
3,800.0	7.00	293.84	3,790.6	-1,333.4	65.1	-147.4	-143.8	0.00	0.00	0.00
3,900.0	7.00	293.84	3,889.8	-1,234.2	70.1	-158.5	-154.7	0.00	0.00	0.00
4,000.0	7.00	293.84	3,989.1	-1,134.9	75.0	-169.7	-165.6	0.00	0.00	0.00
4,100.0	7.00	293.84	4,088.3	-1,035.7	79.9	-180.8	-176.5	0.00	0.00	0.00
4,200.0	7.00	293.84	4,187.6	-936.4	84.8	-192.0	-187.3	0.00	0.00	0.00
4,300.0	7.00	293.84	4,286.9	-837.1	89.8	-203.1	-198.2	0.00	0.00	0.00
4,400.0	7.00	293.84	4,386.1	-737.9	94.7	-214.3	-209.1	0.00	0.00	0.00
4,500.0	7.00	293.84	4,485.4	-638.6	99.6	-225.4	-220.0	0.00	0.00	0.00
4,600.0	7.00	293.84	4,584.6	-539.4	104.5	-236.6	-230.8	0.00	0.00	0.00
4,700.0	7.00	293.84	4,683.9	-440.1	109.5	-247.7	-241.7	0.00	0.00	0.00
4,800.0	7.00	293.84	4,783.1	-340.9	114.4	-258.9	-252.6	0.00	0.00	0.00
4,900.0	7.00	293.84	4,882.4	-241.6	119.3	-270.0	-263.5	0.00	0.00	0.00
5,000.0	7.00	293.84	4,981.6	-142.4	124.3	-281.2	-274.3	0.00	0.00	0.00
5,100.0	7.00	293.84	5,080.9	-43.1	129.2	-292.3	-285.2	0.00	0.00	0.00
5,200.0	7.00	293.84	5,180.1	56.1	134.1	-303.4	-296.1	0.00	0.00	0.00
5,300.0	7.00	293.84	5,279.4	155.4	139.0	-314.6	-307.0	0.00	0.00	0.00
5,400.0	7.00	293.84	5,378.7	254.7	144.0	-325.7	-317.8	0.00	0.00	0.00
5,500.0	7.00	293.84	5,477.9	353.9	148.9	-336.9	-328.7	0.00	0.00	0.00
5,600.0	7.00	293.84	5,577.2	453.2	153.8	-348.0	-339.6	0.00	0.00	0.00
5,700.0	7.00	293.84	5,676.4	552.4	158.7	-359.2	-350.5	0.00	0.00	0.00
5,800.0	7.00	293.84	5,775.7	651.7	163.7	-370.3	-361.4	0.00	0.00	0.00
5,900.0	7.00	293.84	5,874.9	750.9	168.6	-381.5	-372.2	0.00	0.00	0.00
6,000.0	7.00	293.84	5,974.2	850.2	173.5	-392.6	-383.1	0.00	0.00	0.00
6,100.0	7.00	293.84	6,073.4	949.4	178.4	-403.8	-394.0	0.00	0.00	0.00
6,200.0	7.00	293.84	6,172.7	1,048.7	183.4	-414.9	-404.9	0.00	0.00	0.00
6,300.0	7.00	293.84	6,271.9	1,147.9	188.3	-426.1	-415.7	0.00	0.00	0.00
6,375.4	7.00	293.84	6,346.8	1,222.8	192.0	-434.5	-423.9	0.00	0.00	0.00
6,400.0	6.51	293.84	6,371.2	1,247.2	193.2	-437.1	-426.5	2.00	-2.00	0.00

Planning Report

Database:	WellPlan Services	Local Co-ordinate Reference:	Well Cherry Knolls 33-1* - Slot 1
Company:	Edge Energy LLC	TVD Reference:	Est RKB @ 5124.0usft (kb;20')
Project:	Weld County, Co (NAD 83)	MD Reference:	Est RKB @ 5124.0usft (kb;20')
Site:	Sec. 33 Twn 1N Rng 65W	North Reference:	True
Well:	Cherry Knolls 33-1*	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	#1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,500.0	4.51	293.84	6,470.7	1,346.7	197.1	-445.9	-435.1	2.00	-2.00	0.00
6,600.0	2.51	293.84	6,570.6	1,446.6	199.5	-451.5	-440.5	2.00	-2.00	0.00
6,700.0	0.51	293.84	6,670.5	1,546.5	200.6	-453.9	-442.9	2.00	-2.00	0.00
KOP #2;6725.4' MD										
6,725.4	0.00	0.00	6,695.9	1,571.9	200.6	-454.0	-443.0	2.00	-2.00	0.00
6,800.0	7.09	90.00	6,770.3	1,646.3	200.6	-449.4	-438.4	9.50	9.50	0.00
6,900.0	16.59	90.00	6,868.1	1,744.1	200.6	-428.9	-417.9	9.50	9.50	0.00
7,000.0	26.09	90.00	6,961.1	1,837.1	200.6	-392.6	-381.6	9.50	9.50	0.00
7,100.0	35.59	90.00	7,046.9	1,922.9	200.6	-341.4	-330.5	9.50	9.50	0.00
7,200.0	45.09	90.00	7,123.0	1,999.0	200.6	-276.7	-265.9	9.50	9.50	0.00
7,300.0	54.59	90.00	7,187.4	2,063.4	200.6	-200.4	-189.7	9.50	9.50	0.00
7,400.0	64.09	90.00	7,238.4	2,114.4	200.6	-114.4	-103.9	9.50	9.50	0.00
7,500.0	73.59	90.00	7,274.4	2,150.4	200.6	-21.3	-10.9	9.50	9.50	0.00
7,600.0	83.09	90.00	7,294.6	2,170.6	200.6	76.5	86.8	9.50	9.50	0.00
EOB;7672.8' MD										
7,672.8	90.00	90.00	7,299.0	2,175.0	200.6	149.2	159.4	9.49	9.49	0.00
7,700.0	90.00	90.00	7,299.0	2,175.0	200.6	176.4	186.5	0.00	0.00	0.00
7,800.0	90.00	90.00	7,299.0	2,175.0	200.6	276.4	286.4	0.00	0.00	0.00
7,900.0	90.00	90.00	7,299.0	2,175.0	200.6	376.4	386.2	0.00	0.00	0.00
8,000.0	90.00	90.00	7,299.0	2,175.0	200.6	476.4	486.1	0.00	0.00	0.00
8,100.0	90.00	90.00	7,299.0	2,175.0	200.6	576.4	586.0	0.00	0.00	0.00
8,200.0	90.00	90.00	7,299.0	2,175.0	200.6	676.4	685.8	0.00	0.00	0.00
8,300.0	90.00	90.00	7,299.0	2,175.0	200.6	776.4	785.7	0.00	0.00	0.00
8,400.0	90.00	90.00	7,299.0	2,175.0	200.6	876.4	885.6	0.00	0.00	0.00
8,500.0	90.00	90.00	7,299.0	2,175.0	200.6	976.4	985.4	0.00	0.00	0.00
8,600.0	90.00	90.00	7,299.0	2,175.0	200.6	1,076.4	1,085.3	0.00	0.00	0.00
8,700.0	90.00	90.00	7,299.0	2,175.0	200.6	1,176.4	1,185.2	0.00	0.00	0.00
8,800.0	90.00	90.00	7,299.0	2,175.0	200.6	1,276.4	1,285.0	0.00	0.00	0.00
8,900.0	90.00	90.00	7,299.0	2,175.0	200.6	1,376.4	1,384.9	0.00	0.00	0.00
9,000.0	90.00	90.00	7,299.0	2,175.0	200.6	1,476.4	1,484.8	0.00	0.00	0.00
9,100.0	90.00	90.00	7,299.0	2,175.0	200.6	1,576.4	1,584.6	0.00	0.00	0.00
9,200.0	90.00	90.00	7,299.0	2,175.0	200.6	1,676.4	1,684.5	0.00	0.00	0.00
9,300.0	90.00	90.00	7,299.0	2,175.0	200.6	1,776.4	1,784.4	0.00	0.00	0.00
9,400.0	90.00	90.00	7,299.0	2,175.0	200.6	1,876.4	1,884.2	0.00	0.00	0.00
9,500.0	90.00	90.00	7,299.0	2,175.0	200.6	1,976.4	1,984.1	0.00	0.00	0.00
9,600.0	90.00	90.00	7,299.0	2,175.0	200.6	2,076.4	2,084.0	0.00	0.00	0.00
9,700.0	90.00	90.00	7,299.0	2,175.0	200.6	2,176.4	2,183.8	0.00	0.00	0.00
9,800.0	90.00	90.00	7,299.0	2,175.0	200.6	2,276.4	2,283.7	0.00	0.00	0.00
9,900.0	90.00	90.00	7,299.0	2,175.0	200.6	2,376.4	2,383.6	0.00	0.00	0.00
10,000.0	90.00	90.00	7,299.0	2,175.0	200.6	2,476.4	2,483.4	0.00	0.00	0.00
10,100.0	90.00	90.00	7,299.0	2,175.0	200.6	2,576.4	2,583.3	0.00	0.00	0.00
10,200.0	90.00	90.00	7,299.0	2,175.0	200.6	2,676.4	2,683.2	0.00	0.00	0.00
10,300.0	90.00	90.00	7,299.0	2,175.0	200.6	2,776.4	2,783.0	0.00	0.00	0.00
10,400.0	90.00	90.00	7,299.0	2,175.0	200.6	2,876.4	2,882.9	0.00	0.00	0.00
10,500.0	90.00	90.00	7,299.0	2,175.0	200.6	2,976.4	2,982.8	0.00	0.00	0.00
10,600.0	90.00	90.00	7,299.0	2,175.0	200.6	3,076.4	3,082.6	0.00	0.00	0.00

Planning Report

Database:	WellPlan Services	Local Co-ordinate Reference:	Well Cherry Knolls 33-1* - Slot 1
Company:	Edge Energy LLC	TVD Reference:	Est RKB @ 5124.0usft (kb;20')
Project:	Weld County, Co (NAD 83)	MD Reference:	Est RKB @ 5124.0usft (kb;20')
Site:	Sec. 33 Twn 1N Rng 65W	North Reference:	True
Well:	Cherry Knolls 33-1*	Survey Calculation Method:	Minimum Curvature
Wellbore:	H2		
Design:	#1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,700.0	90.00	90.00	7,299.0	2,175.0	200.6	3,176.4	3,182.5	0.00	0.00	0.00
10,800.0	90.00	90.00	7,299.0	2,175.0	200.6	3,276.4	3,282.4	0.00	0.00	0.00
10,900.0	90.00	90.00	7,299.0	2,175.0	200.6	3,376.4	3,382.2	0.00	0.00	0.00
11,000.0	90.00	90.00	7,299.0	2,175.0	200.6	3,476.4	3,482.1	0.00	0.00	0.00
11,100.0	90.00	90.00	7,299.0	2,175.0	200.6	3,576.4	3,582.0	0.00	0.00	0.00
11,200.0	90.00	90.00	7,299.0	2,175.0	200.6	3,676.4	3,681.8	0.00	0.00	0.00
11,300.0	90.00	90.00	7,299.0	2,175.0	200.6	3,776.4	3,781.7	0.00	0.00	0.00
TD at 11392.1' MD										
11,392.1	90.00	90.00	7,299.0	2,175.0	200.6	3,868.5	3,873.7	0.00	0.00	0.00

Design Targets										
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude Longitude		
33-1* DP - plan hits target center - Point	0.00	0.00	6,695.9	200.6	-454.0	1,246,755.23	3,230,600.98	40° 0' 28.04674 N 104° 40' 36.37461 W		
33-1* BHL - plan hits target center - Point	0.00	0.00	7,299.0	200.7	3,868.5	1,246,795.45	3,234,923.27	40° 0' 28.04396 N 104° 39' 40.82400 W		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
2,303.0	2,303.0	0.0	0.0	KOP;2303' MD	
6,725.4	6,695.9	200.6	-454.0	KOP #2;6725.4' MD	
7,672.8	7,299.0	200.6	149.2	EOB;7672.8' MD	
11,392.1	7,299.0	200.6	3,868.5	TD at 11392.1' MD	