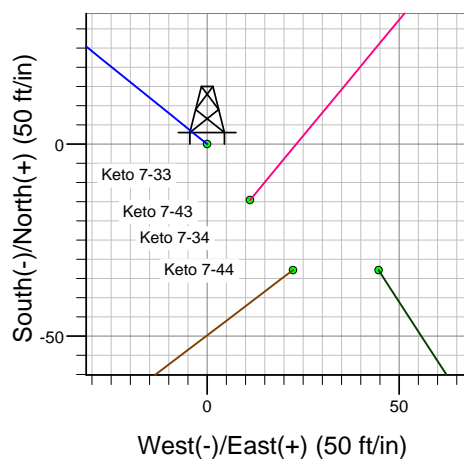
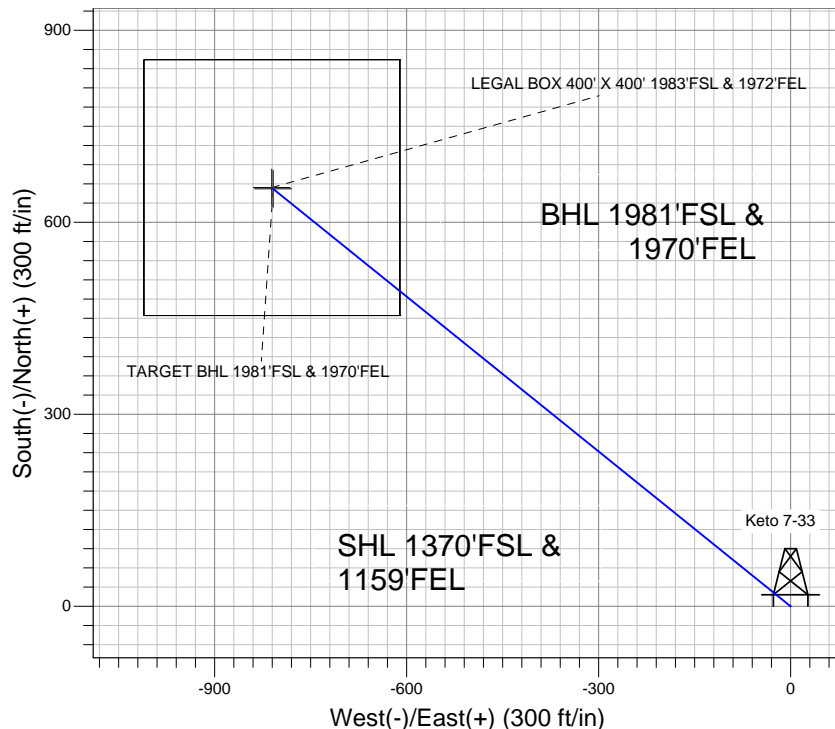
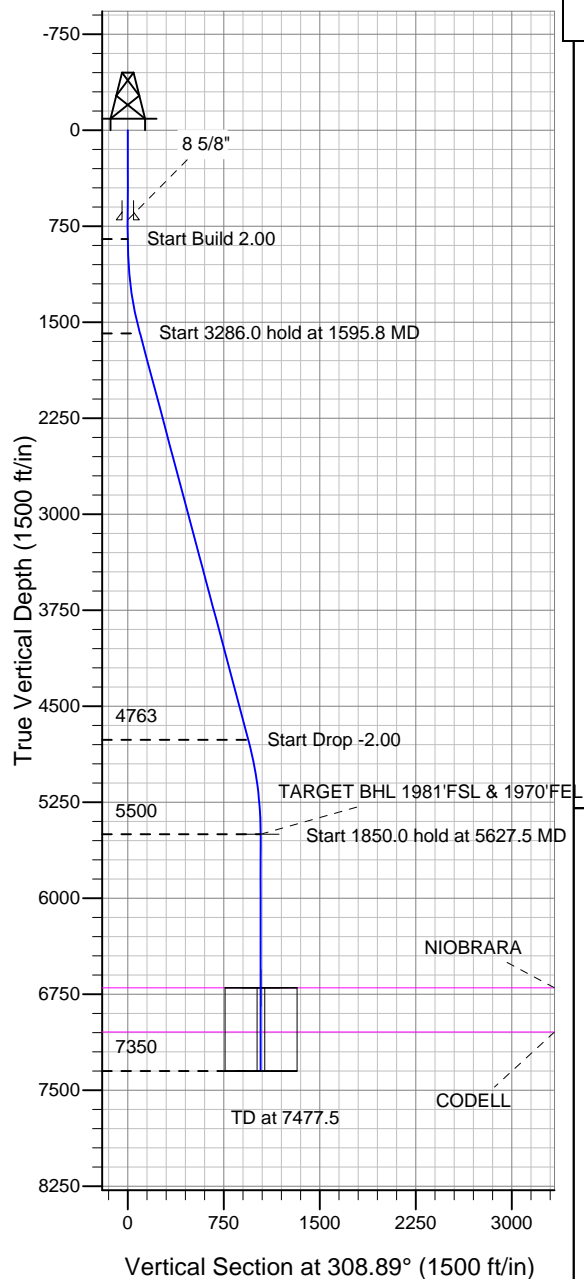


### Well Name: Keto 7-33

Surface Location: Keto 7-33 Pad Sec.7-T4N-R67W  
 North American Datum 1983, US State Plane 1983 Colorado Northern Zone  
 Ground Elevation: 4838.0  
 +N/-S +E/-W Northing Easting Longitude Slot  
 0.0 0.0 1361516.01 3159498.53 40.324350 -104.927950  
 Original Well EleWELL @ 4851.0ft (Original Well Elev)

## TRILLOGY RESOURCES, LLC. Weld County, CO



Keto 7-33 Pad Sec.7-T4N-R67W  
 Keto 7-33  
 Plan #2 (11-5-11)  
 12:50, November 07 2011



Azimuths to True North  
 Magnetic North: 8.89°  
 Magnetic Field  
 Strength: 53032.0snT  
 Dip Angle: 66.95°  
 Date: 11/7/2011  
 Model: IGRF2010

### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 1981'FSL & 1970'FEL	5500.0	652.1	-808.6	40.326140	-104.930850	Point
LEGAL BOX 400' X 400' 1983'FSL & 1972'FEL	6700.0	654.2	-810.6	40.326146	-104.930857	Rectangle (Sides: L400.0 W400.0)

### 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	850.0	0.00	0.00	850.0	0.0	0.0	0.00	0.00	0.0	
3	1595.8	14.91	308.89	1587.4	60.6	-75.1	2.00	308.89	96.5	
4	4881.7	14.91	308.89	4762.6	591.5	-733.5	0.00	0.00	942.3	
5	5627.5	0.00	0.00	5500.0	652.1	-808.6	2.00	180.00	1038.8	TARGET BHL 1981'FSL & 1970'FEL
6	7477.5	0.00	0.00	7350.0	652.1	-808.6	0.00	0.00	1038.8	



# **TRILLOGY RESOURCES, LLC. Weld County, CO**

**SEC.7-T4N-R67W**

**Keto 7-33 Pad Sec.7-T4N-R67W**

**Keto 7-33**

**Wellbore #1**

**Plan: Plan #2 (11-5-11)**

## **Standard Planning Report**

**07 November, 2011**

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Keto 7-33
<b>Company:</b>	TRILLOGY RESOURCES, LLC. Weld County, CO	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Project:</b>	SEC.7-T4N-R67W	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site:</b>	Keto 7-33 Pad Sec.7-T4N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Keto 7-33	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (11-5-11)		

<b>Project</b>	SEC.7-T4N-R67W, Weld 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		Using geodetic scale factor

<b>Site</b>	Keto 7-33 Pad Sec.7-T4N-R67W		
<b>Site Position:</b>		<b>Northing:</b>	1,361,516.02 ft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,159,498.53 ft
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	"
		<b>Latitude:</b>	40.324350
		<b>Longitude:</b>	-104.927950
		<b>Grid Convergence:</b>	0.37 °

<b>Well</b>	Keto 7-33		
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b> 1,361,516.01 ft
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b> 3,159,498.53 ft
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b> ft
			<b>Latitude:</b> 40.324350
			<b>Longitude:</b> -104.927950
			<b>Ground Level:</b> 4,838.0 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	11/7/2011	8.89	66.95	53,032

<b>Design</b>	Plan #2 (11-5-11)			
<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	308.89

<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	
850.0	0.00	0.00	850.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,595.8	14.91	308.89	1,587.4	60.6	-75.1	2.00	2.00	0.00	308.89	
4,881.7	14.91	308.89	4,762.6	591.5	-733.5	0.00	0.00	0.00	0.00	
5,627.5	0.00	0.00	5,500.0	652.1	-808.6	2.00	-2.00	0.00	180.00	TARGET BHL 1981
7,477.5	0.00	0.00	7,350.0	652.1	-808.6	0.00	0.00	0.00	0.00	

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Keto 7-33
<b>Company:</b>	TRILLOGY RESOURCES, LLC. Weld County, CO	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Project:</b>	SEC.7-T4N-R67W	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site:</b>	Keto 7-33 Pad Sec.7-T4N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Keto 7-33	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (11-5-11)		

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
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	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
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	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
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	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
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
680.0	0.00	0.00	680.0	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
8 5/8"									
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	0.00
760.0	0.00	0.00	760.0	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
840.0	0.00	0.00	840.0	0.0	0.0	0.0	0.00	0.00	0.00
850.0	0.00	0.00	850.0	0.0	0.0	0.0	0.00	0.00	0.00
880.0	0.60	308.89	880.0	0.1	-0.1	0.2	2.00	2.00	0.00
920.0	1.40	308.89	920.0	0.5	-0.7	0.9	2.00	2.00	0.00
960.0	2.20	308.89	960.0	1.3	-1.6	2.1	2.00	2.00	0.00
1,000.0	3.00	308.89	999.9	2.5	-3.1	3.9	2.00	2.00	0.00
1,040.0	3.80	308.89	1,039.9	4.0	-4.9	6.3	2.00	2.00	0.00
1,080.0	4.60	308.89	1,079.8	5.8	-7.2	9.2	2.00	2.00	0.00
1,120.0	5.40	308.89	1,119.6	8.0	-9.9	12.7	2.00	2.00	0.00
1,160.0	6.20	308.89	1,159.4	10.5	-13.0	16.8	2.00	2.00	0.00
1,200.0	7.00	308.89	1,199.1	13.4	-16.6	21.4	2.00	2.00	0.00
1,240.0	7.80	308.89	1,238.8	16.6	-20.6	26.5	2.00	2.00	0.00
1,280.0	8.60	308.89	1,278.4	20.2	-25.1	32.2	2.00	2.00	0.00
1,320.0	9.40	308.89	1,317.9	24.1	-29.9	38.5	2.00	2.00	0.00
1,360.0	10.20	308.89	1,357.3	28.4	-35.2	45.3	2.00	2.00	0.00
1,400.0	11.00	308.89	1,396.6	33.0	-41.0	52.6	2.00	2.00	0.00
1,440.0	11.80	308.89	1,435.8	38.0	-47.1	60.5	2.00	2.00	0.00
1,480.0	12.60	308.89	1,474.9	43.3	-53.7	69.0	2.00	2.00	0.00
1,520.0	13.40	308.89	1,513.9	49.0	-60.7	78.0	2.00	2.00	0.00
1,560.0	14.20	308.89	1,552.8	55.0	-68.1	87.5	2.00	2.00	0.00
1,595.8	14.91	308.89	1,587.4	60.6	-75.1	96.5	2.00	2.00	0.00
1,600.0	14.91	308.89	1,591.5	61.3	-76.0	97.6	0.00	0.00	0.00
1,640.0	14.91	308.89	1,630.1	67.7	-84.0	107.9	0.00	0.00	0.00
1,680.0	14.91	308.89	1,668.8	74.2	-92.0	118.2	0.00	0.00	0.00
1,720.0	14.91	308.89	1,707.4	80.7	-100.0	128.5	0.00	0.00	0.00
1,760.0	14.91	308.89	1,746.1	87.1	-108.0	138.8	0.00	0.00	0.00
1,800.0	14.91	308.89	1,784.7	93.6	-116.0	149.1	0.00	0.00	0.00
1,840.0	14.91	308.89	1,823.4	100.1	-124.1	159.4	0.00	0.00	0.00
1,880.0	14.91	308.89	1,862.0	106.5	-132.1	169.7	0.00	0.00	0.00
1,920.0	14.91	308.89	1,900.7	113.0	-140.1	180.0	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Keto 7-33
<b>Company:</b>	TRILLOGY RESOURCES, LLC. Weld County, CO	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Project:</b>	SEC.7-T4N-R67W	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site:</b>	Keto 7-33 Pad Sec.7-T4N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Keto 7-33	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (11-5-11)		

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)
1,960.0	14.91	308.89	1,939.3	119.4	-148.1	190.3	0.00	0.00	0.00
2,000.0	14.91	308.89	1,978.0	125.9	-156.1	200.6	0.00	0.00	0.00
2,040.0	14.91	308.89	2,016.6	132.4	-164.1	210.9	0.00	0.00	0.00
2,080.0	14.91	308.89	2,055.3	138.8	-172.1	221.2	0.00	0.00	0.00
2,120.0	14.91	308.89	2,093.9	145.3	-180.2	231.5	0.00	0.00	0.00
2,160.0	14.91	308.89	2,132.6	151.8	-188.2	241.7	0.00	0.00	0.00
2,200.0	14.91	308.89	2,171.2	158.2	-196.2	252.0	0.00	0.00	0.00
2,240.0	14.91	308.89	2,209.9	164.7	-204.2	262.3	0.00	0.00	0.00
2,280.0	14.91	308.89	2,248.6	171.2	-212.2	272.6	0.00	0.00	0.00
2,320.0	14.91	308.89	2,287.2	177.6	-220.2	282.9	0.00	0.00	0.00
2,360.0	14.91	308.89	2,325.9	184.1	-228.2	293.2	0.00	0.00	0.00
2,400.0	14.91	308.89	2,364.5	190.5	-236.3	303.5	0.00	0.00	0.00
2,440.0	14.91	308.89	2,403.2	197.0	-244.3	313.8	0.00	0.00	0.00
2,480.0	14.91	308.89	2,441.8	203.5	-252.3	324.1	0.00	0.00	0.00
2,520.0	14.91	308.89	2,480.5	209.9	-260.3	334.4	0.00	0.00	0.00
2,560.0	14.91	308.89	2,519.1	216.4	-268.3	344.7	0.00	0.00	0.00
2,600.0	14.91	308.89	2,557.8	222.9	-276.3	355.0	0.00	0.00	0.00
2,640.0	14.91	308.89	2,596.4	229.3	-284.3	365.3	0.00	0.00	0.00
2,680.0	14.91	308.89	2,635.1	235.8	-292.4	375.6	0.00	0.00	0.00
2,720.0	14.91	308.89	2,673.7	242.2	-300.4	385.9	0.00	0.00	0.00
2,760.0	14.91	308.89	2,712.4	248.7	-308.4	396.2	0.00	0.00	0.00
2,800.0	14.91	308.89	2,751.0	255.2	-316.4	406.5	0.00	0.00	0.00
2,840.0	14.91	308.89	2,789.7	261.6	-324.4	416.8	0.00	0.00	0.00
2,880.0	14.91	308.89	2,828.3	268.1	-332.4	427.1	0.00	0.00	0.00
2,920.0	14.91	308.89	2,867.0	274.6	-340.4	437.4	0.00	0.00	0.00
2,960.0	14.91	308.89	2,905.6	281.0	-348.5	447.7	0.00	0.00	0.00
3,000.0	14.91	308.89	2,944.3	287.5	-356.5	458.0	0.00	0.00	0.00
3,040.0	14.91	308.89	2,982.9	294.0	-364.5	468.2	0.00	0.00	0.00
3,080.0	14.91	308.89	3,021.6	300.4	-372.5	478.5	0.00	0.00	0.00
3,120.0	14.91	308.89	3,060.3	306.9	-380.5	488.8	0.00	0.00	0.00
3,160.0	14.91	308.89	3,098.9	313.3	-388.5	499.1	0.00	0.00	0.00
3,200.0	14.91	308.89	3,137.6	319.8	-396.5	509.4	0.00	0.00	0.00
3,240.0	14.91	308.89	3,176.2	326.3	-404.5	519.7	0.00	0.00	0.00
3,280.0	14.91	308.89	3,214.9	332.7	-412.6	530.0	0.00	0.00	0.00
3,320.0	14.91	308.89	3,253.5	339.2	-420.6	540.3	0.00	0.00	0.00
3,360.0	14.91	308.89	3,292.2	345.7	-428.6	550.6	0.00	0.00	0.00
3,400.0	14.91	308.89	3,330.8	352.1	-436.6	560.9	0.00	0.00	0.00
3,440.0	14.91	308.89	3,369.5	358.6	-444.6	571.2	0.00	0.00	0.00
3,480.0	14.91	308.89	3,408.1	365.1	-452.6	581.5	0.00	0.00	0.00
3,520.0	14.91	308.89	3,446.8	371.5	-460.6	591.8	0.00	0.00	0.00
3,560.0	14.91	308.89	3,485.4	378.0	-468.7	602.1	0.00	0.00	0.00
3,600.0	14.91	308.89	3,524.1	384.4	-476.7	612.4	0.00	0.00	0.00
3,640.0	14.91	308.89	3,562.7	390.9	-484.7	622.7	0.00	0.00	0.00
3,680.0	14.91	308.89	3,601.4	397.4	-492.7	633.0	0.00	0.00	0.00
3,720.0	14.91	308.89	3,640.0	403.8	-500.7	643.3	0.00	0.00	0.00
3,760.0	14.91	308.89	3,678.7	410.3	-508.7	653.6	0.00	0.00	0.00
3,800.0	14.91	308.89	3,717.3	416.8	-516.7	663.9	0.00	0.00	0.00
3,840.0	14.91	308.89	3,756.0	423.2	-524.8	674.2	0.00	0.00	0.00
3,880.0	14.91	308.89	3,794.6	429.7	-532.8	684.5	0.00	0.00	0.00
3,920.0	14.91	308.89	3,833.3	436.1	-540.8	694.7	0.00	0.00	0.00
3,960.0	14.91	308.89	3,872.0	442.6	-548.8	705.0	0.00	0.00	0.00
4,000.0	14.91	308.89	3,910.6	449.1	-556.8	715.3	0.00	0.00	0.00
4,040.0	14.91	308.89	3,949.3	455.5	-564.8	725.6	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Keto 7-33
<b>Company:</b>	TRILLOGY RESOURCES, LLC. Weld County, CO	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Project:</b>	SEC.7-T4N-R67W	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site:</b>	Keto 7-33 Pad Sec.7-T4N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Keto 7-33	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (11-5-11)		

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)
4,080.0	14.91	308.89	3,987.9	462.0	-572.8	735.9	0.00	0.00	0.00
4,120.0	14.91	308.89	4,026.6	468.5	-580.9	746.2	0.00	0.00	0.00
4,160.0	14.91	308.89	4,065.2	474.9	-588.9	756.5	0.00	0.00	0.00
4,200.0	14.91	308.89	4,103.9	481.4	-596.9	766.8	0.00	0.00	0.00
4,240.0	14.91	308.89	4,142.5	487.9	-604.9	777.1	0.00	0.00	0.00
4,280.0	14.91	308.89	4,181.2	494.3	-612.9	787.4	0.00	0.00	0.00
4,320.0	14.91	308.89	4,219.8	500.8	-620.9	797.7	0.00	0.00	0.00
4,360.0	14.91	308.89	4,258.5	507.2	-628.9	808.0	0.00	0.00	0.00
4,400.0	14.91	308.89	4,297.1	513.7	-637.0	818.3	0.00	0.00	0.00
4,440.0	14.91	308.89	4,335.8	520.2	-645.0	828.6	0.00	0.00	0.00
4,480.0	14.91	308.89	4,374.4	526.6	-653.0	838.9	0.00	0.00	0.00
4,520.0	14.91	308.89	4,413.1	533.1	-661.0	849.2	0.00	0.00	0.00
4,560.0	14.91	308.89	4,451.7	539.6	-669.0	859.5	0.00	0.00	0.00
4,600.0	14.91	308.89	4,490.4	546.0	-677.0	869.8	0.00	0.00	0.00
4,640.0	14.91	308.89	4,529.0	552.5	-685.0	880.1	0.00	0.00	0.00
4,680.0	14.91	308.89	4,567.7	558.9	-693.0	890.4	0.00	0.00	0.00
4,720.0	14.91	308.89	4,606.3	565.4	-701.1	900.7	0.00	0.00	0.00
4,760.0	14.91	308.89	4,645.0	571.9	-709.1	910.9	0.00	0.00	0.00
4,800.0	14.91	308.89	4,683.7	578.3	-717.1	921.2	0.00	0.00	0.00
4,840.0	14.91	308.89	4,722.3	584.8	-725.1	931.5	0.00	0.00	0.00
4,880.0	14.91	308.89	4,761.0	591.3	-733.1	941.8	0.00	0.00	0.00
4,881.7	14.91	308.89	4,762.6	591.5	-733.5	942.3	0.00	0.00	0.00
4,920.0	14.15	308.89	4,799.7	597.6	-740.9	951.9	2.00	-2.00	0.00
4,960.0	13.35	308.89	4,838.5	603.5	-748.3	961.4	2.00	-2.00	0.00
5,000.0	12.55	308.89	4,877.5	609.2	-755.3	970.4	2.00	-2.00	0.00
5,040.0	11.75	308.89	4,916.6	614.5	-761.9	978.8	2.00	-2.00	0.00
5,080.0	10.95	308.89	4,955.8	619.4	-768.0	986.6	2.00	-2.00	0.00
5,120.0	10.15	308.89	4,995.2	624.0	-773.7	994.0	2.00	-2.00	0.00
5,160.0	9.35	308.89	5,034.6	628.2	-779.0	1,000.7	2.00	-2.00	0.00
5,200.0	8.55	308.89	5,074.1	632.2	-783.8	1,007.0	2.00	-2.00	0.00
5,240.0	7.75	308.89	5,113.7	635.7	-788.2	1,012.6	2.00	-2.00	0.00
5,280.0	6.95	308.89	5,153.4	638.9	-792.2	1,017.8	2.00	-2.00	0.00
5,320.0	6.15	308.89	5,193.1	641.8	-795.8	1,022.3	2.00	-2.00	0.00
5,360.0	5.35	308.89	5,232.9	644.3	-798.9	1,026.3	2.00	-2.00	0.00
5,400.0	4.55	308.89	5,272.7	646.5	-801.6	1,029.8	2.00	-2.00	0.00
5,440.0	3.75	308.89	5,312.6	648.3	-803.8	1,032.7	2.00	-2.00	0.00
5,480.0	2.95	308.89	5,352.6	649.8	-805.6	1,035.0	2.00	-2.00	0.00
5,520.0	2.15	308.89	5,392.5	650.9	-807.0	1,036.8	2.00	-2.00	0.00
5,560.0	1.35	308.89	5,432.5	651.6	-808.0	1,038.0	2.00	-2.00	0.00
5,600.0	0.55	308.89	5,472.5	652.1	-808.5	1,038.7	2.00	-2.00	0.00
5,627.5	0.00	0.00	5,500.0	652.1	-808.6	1,038.8	2.00	-2.00	0.00
TARGET BHL 1981'FSL & 1970'FEL									
5,640.0	0.00	0.00	5,512.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
5,680.0	0.00	0.00	5,552.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
5,720.0	0.00	0.00	5,592.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
5,760.0	0.00	0.00	5,632.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
5,800.0	0.00	0.00	5,672.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
5,840.0	0.00	0.00	5,712.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
5,880.0	0.00	0.00	5,752.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
5,920.0	0.00	0.00	5,792.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
5,960.0	0.00	0.00	5,832.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
6,000.0	0.00	0.00	5,872.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
6,040.0	0.00	0.00	5,912.5	652.1	-808.6	1,038.8	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Keto 7-33
<b>Company:</b>	TRILLOGY RESOURCES, LLC. Weld County, CO	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Project:</b>	SEC.7-T4N-R67W	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site:</b>	Keto 7-33 Pad Sec.7-T4N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Keto 7-33	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (11-5-11)		

### 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)
6,080.0	0.00	0.00	5,952.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
6,120.0	0.00	0.00	5,992.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
6,160.0	0.00	0.00	6,032.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
6,200.0	0.00	0.00	6,072.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
6,240.0	0.00	0.00	6,112.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
6,280.0	0.00	0.00	6,152.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
6,320.0	0.00	0.00	6,192.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
6,360.0	0.00	0.00	6,232.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
6,400.0	0.00	0.00	6,272.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
6,440.0	0.00	0.00	6,312.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
6,480.0	0.00	0.00	6,352.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
6,520.0	0.00	0.00	6,392.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
6,560.0	0.00	0.00	6,432.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
6,600.0	0.00	0.00	6,472.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
6,640.0	0.00	0.00	6,512.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
6,680.0	0.00	0.00	6,552.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
6,720.0	0.00	0.00	6,592.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
6,760.0	0.00	0.00	6,632.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
6,800.0	0.00	0.00	6,672.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
6,827.5	0.00	0.00	6,700.0	652.1	-808.6	1,038.8	0.00	0.00	0.00
<b>NIORARA - LEGAL BOX 400' X 400' 1983'FSL &amp; 1972'FEL</b>									
6,840.0	0.00	0.00	6,712.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
6,880.0	0.00	0.00	6,752.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
6,920.0	0.00	0.00	6,792.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
6,960.0	0.00	0.00	6,832.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
7,000.0	0.00	0.00	6,872.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
7,040.0	0.00	0.00	6,912.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
7,080.0	0.00	0.00	6,952.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
7,120.0	0.00	0.00	6,992.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
7,160.0	0.00	0.00	7,032.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
7,172.5	0.00	0.00	7,045.0	652.1	-808.6	1,038.8	0.00	0.00	0.00
<b>CODELL</b>									
7,200.0	0.00	0.00	7,072.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
7,240.0	0.00	0.00	7,112.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
7,280.0	0.00	0.00	7,152.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
7,320.0	0.00	0.00	7,192.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
7,360.0	0.00	0.00	7,232.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
7,400.0	0.00	0.00	7,272.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
7,440.0	0.00	0.00	7,312.5	652.1	-808.6	1,038.8	0.00	0.00	0.00
7,477.5	0.00	0.00	7,350.0	652.1	-808.6	1,038.8	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Keto 7-33
<b>Company:</b>	TRILLOGY RESOURCES, LLC. Weld County, CO	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Project:</b>	SEC.7-T4N-R67W	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site:</b>	Keto 7-33 Pad Sec.7-T4N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Keto 7-33	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (11-5-11)		

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
TARGET BHL 1981'F:	0.00	0.00	5,500.0	652.1	-808.6	1,362,162.89	3,158,685.78	40.326140	-104.930850
- plan hits target center									
- Point									
LEGAL BOX 400' X 400'	0.00	0.00	6,700.0	654.2	-810.6	1,362,164.92	3,158,683.78	40.326146	-104.930857
- plan misses target center by 2.8ft at 6827.5ft MD (6700.0 TVD, 652.1 N, -808.6 E)									
- Rectangle (sides W400.0 H400.0 D650.0)									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(ft)	(ft)			(")	(")
700.0	700.0	8 5/8"		8-5/8	12-1/4

Formations						
Measured Depth	Vertical Depth	Name		Lithology	Dip	Dip Direction
(ft)	(ft)				(°)	(°)
6,827.5	6,700.0	NIOBRARA			0.00	
7,172.5	7,045.0	CODELL			0.00	





## **Directional**

# **TRILLOGY RESOURCES, LLC. Weld County, CO**

**SEC.7-T4N-R67W**

**Keto 7-33 Pad Sec.7-T4N-R67W**

**Keto 7-33**

**Wellbore #1**

**Plan #2 (11-5-11)**

## **Anticollision Report**

**07 November, 2011**

<b>Company:</b>	TRILLOGY RESOURCES, LLC. Weld County, CO	<b>Local Co-ordinate Reference:</b>	Well Keto 7-33
<b>Project:</b>	SEC.7-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Reference Site:</b>	Keto 7-33 Pad Sec.7-T4N-R67W	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Keto 7-33	<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 #2 (11-5-11)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #2 (11-5-11)		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations	<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 10,000.0ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b> 11/7/2011			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	7,477.5	Plan #2 (11-5-11) (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>Between Ellipses (ft)</b>	<b>Separation Factor</b>	<b>Warning</b>
<b>Offset Well - Wellbore - Design</b>						
Keto 7-33 Pad Sec.7-T4N-R67W						
Keto 7-34 - Wellbore #1 - Plan #2 (11-5-11)	850.0	850.0	39.6	36.1	11.025	CC, ES
Keto 7-34 - Wellbore #1 - Plan #2 (11-5-11)	1,000.0	999.9	43.4	39.2	10.196	SF
Keto 7-43 - Wellbore #1 - Plan #1 (11-5-11)	850.0	850.0	18.3	14.7	5.101	CC, ES
Keto 7-43 - Wellbore #1 - Plan #1 (11-5-11)	900.0	900.0	18.8	14.9	4.915	SF

Offset Design		Keto 7-33 Pad Sec.7-T4N-R67W - Keto 7-34 - Wellbore #1 - Plan #2 (11-5-11)											Offset Site Error:		0.0 ft
Survey Program:		0-MWD											Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	145.76	-32.8	22.3	39.6						
100.0	100.0	100.0	100.0	0.1	0.1	145.76	-32.8	22.3	39.6	39.4	0.22	176.403			
200.0	200.0	200.0	200.0	0.3	0.3	145.76	-32.8	22.3	39.6	39.0	0.67	58.801			
300.0	300.0	300.0	300.0	0.6	0.6	145.76	-32.8	22.3	39.6	38.5	1.12	35.281			
400.0	400.0	400.0	400.0	0.8	0.8	145.76	-32.8	22.3	39.6	38.1	1.57	25.200			
500.0	500.0	500.0	500.0	1.0	1.0	145.76	-32.8	22.3	39.6	37.6	2.02	19.600			
600.0	600.0	600.0	600.0	1.2	1.2	145.76	-32.8	22.3	39.6	37.2	2.47	16.037			
700.0	700.0	700.0	700.0	1.5	1.5	145.76	-32.8	22.3	39.6	36.7	2.92	13.569			
800.0	800.0	800.0	800.0	1.7	1.7	145.76	-32.8	22.3	39.6	36.3	3.37	11.760			
850.0	850.0	850.0	850.0	1.8	1.8	145.76	-32.8	22.3	39.6	36.1	3.60	11.025	CC, ES		
900.0	900.0	900.0	900.0	1.9	1.9	-163.30	-32.8	22.3	40.1	36.2	3.82	10.493			
1,000.0	999.9	999.9	999.9	2.1	2.1	-164.61	-32.8	22.3	43.4	39.2	4.26	10.196	SF		
1,100.0	1,099.7	1,099.7	1,099.7	2.4	2.3	-166.20	-33.0	22.0	50.2	45.5	4.69	10.706			
1,200.0	1,199.1	1,199.1	1,199.1	2.6	2.5	-165.22	-35.1	19.2	60.3	55.2	5.09	11.862			
1,300.0	1,298.2	1,298.1	1,297.8	2.9	2.7	-162.54	-39.3	13.8	74.0	68.5	5.50	13.447			
1,400.0	1,396.6	1,396.2	1,395.4	3.2	2.9	-159.21	-45.4	5.7	91.3	85.4	5.94	15.363			
1,500.0	1,494.4	1,493.3	1,491.5	3.5	3.2	-155.87	-53.5	-4.9	112.5	106.1	6.43	17.511			
1,595.8	1,587.4	1,585.0	1,581.9	3.9	3.4	-152.90	-63.0	-17.3	136.5	129.6	6.94	19.682			
1,600.0	1,591.5	1,589.0	1,585.9	3.9	3.4	-152.79	-63.4	-17.9	137.7	130.7	6.96	19.777			
1,700.0	1,688.1	1,683.7	1,678.5	4.3	3.7	-149.99	-75.1	-33.2	165.2	157.6	7.58	21.790			
1,800.0	1,784.7	1,777.4	1,769.6	4.8	4.1	-147.10	-88.4	-50.7	194.0	185.7	8.27	23.456			
1,900.0	1,881.4	1,871.6	1,860.6	5.3	4.5	-144.34	-103.3	-70.2	224.0	214.9	9.01	24.844			

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

<b>Company:</b>	TRILLOGY RESOURCES, LLC. Weld County, CO	<b>Local Co-ordinate Reference:</b>	Well Keto 7-33
<b>Project:</b>	SEC.7-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Reference Site:</b>	Keto 7-33 Pad Sec.7-T4N-R67W	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Keto 7-33	<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 #2 (11-5-11)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Keto 7-33 Pad Sec.7-T4N-R67W - Keto 7-34 - Wellbore #1 - Plan #2 (11-5-11)													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 (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,000.0	1,978.0	1,966.5	1,952.2	5.8	4.9	-142.18	-118.3	-89.9	254.3	244.5	9.79	25.978		
2,100.0	2,074.6	2,061.4	2,043.8	6.3	5.4	-140.48	-133.3	-109.6	285.0	274.4	10.59	26.907		
2,200.0	2,171.2	2,156.3	2,135.4	6.8	5.8	-139.11	-148.3	-129.3	315.8	304.4	11.40	27.694		
2,300.0	2,267.9	2,251.2	2,227.0	7.3	6.3	-137.98	-163.3	-149.0	346.8	334.5	12.23	28.354		
2,400.0	2,364.5	2,346.0	2,318.6	7.8	6.8	-137.03	-178.4	-168.7	377.8	364.8	13.07	28.914		
2,500.0	2,461.1	2,440.9	2,410.2	8.3	7.3	-136.23	-193.4	-188.4	409.0	395.1	13.91	29.395		
2,600.0	2,557.8	2,535.8	2,501.7	8.9	7.8	-135.55	-208.4	-208.1	440.2	425.4	14.77	29.810		
2,700.0	2,654.4	2,630.7	2,593.3	9.4	8.3	-134.95	-223.4	-227.8	471.4	455.8	15.63	30.172		
2,800.0	2,751.0	2,725.6	2,684.9	9.9	8.8	-134.43	-238.4	-247.5	502.7	486.2	16.49	30.489		
2,900.0	2,847.7	2,820.5	2,776.5	10.4	9.3	-133.97	-253.4	-267.2	534.1	516.7	17.36	30.769		
3,000.0	2,944.3	2,915.3	2,868.1	11.0	9.8	-133.56	-268.4	-286.9	565.4	547.2	18.23	31.018		
3,100.0	3,040.9	3,010.2	2,959.7	11.5	10.3	-133.19	-283.5	-306.6	596.8	577.7	19.10	31.241		
3,200.0	3,137.6	3,105.1	3,051.3	12.0	10.8	-132.86	-298.5	-326.3	628.2	608.2	19.98	31.441		
3,300.0	3,234.2	3,200.0	3,142.9	12.6	11.3	-132.56	-313.5	-346.0	659.6	638.8	20.86	31.621		
3,400.0	3,330.8	3,294.9	3,234.5	13.1	11.8	-132.29	-328.5	-365.7	691.1	669.3	21.74	31.784		
3,500.0	3,427.4	3,389.7	3,326.1	13.7	12.4	-132.04	-343.5	-385.4	722.5	699.9	22.63	31.932		
3,600.0	3,524.1	3,484.6	3,417.7	14.2	12.9	-131.81	-358.5	-405.1	754.0	730.4	23.51	32.068		
3,700.0	3,620.7	3,579.5	3,509.3	14.7	13.4	-131.60	-373.5	-424.8	785.4	761.0	24.40	32.192		
3,800.0	3,717.3	3,674.4	3,600.9	15.3	13.9	-131.41	-388.6	-444.5	816.9	791.6	25.29	32.306		
3,900.0	3,814.0	3,769.3	3,692.4	15.8	14.4	-131.23	-403.6	-464.2	848.4	822.2	26.18	32.411		
4,000.0	3,910.6	3,864.2	3,784.0	16.4	15.0	-131.06	-418.6	-483.9	879.9	852.8	27.07	32.508		
4,100.0	4,007.2	3,959.0	3,875.6	16.9	15.5	-130.91	-433.6	-503.6	911.4	883.4	27.96	32.599		
4,200.0	4,103.9	4,053.9	3,967.2	17.4	16.0	-130.77	-448.6	-523.3	942.9	914.0	28.85	32.682		
4,300.0	4,200.5	4,148.8	4,058.8	18.0	16.5	-130.63	-463.6	-543.0	974.4	944.6	29.74	32.760		
4,400.0	4,297.1	4,243.7	4,150.4	18.5	17.1	-130.50	-478.7	-562.8	1,005.9	975.3	30.64	32.833		
4,500.0	4,393.8	4,338.6	4,242.0	19.1	17.6	-130.39	-493.7	-582.5	1,037.4	1,005.9	31.53	32.901		
4,600.0	4,490.4	4,433.5	4,333.6	19.6	18.1	-130.27	-508.7	-602.2	1,068.9	1,036.5	32.43	32.965		
4,700.0	4,587.0	4,528.3	4,425.2	20.1	18.6	-130.17	-523.7	-621.9	1,100.4	1,067.1	33.32	33.025		
4,800.0	4,683.7	4,623.2	4,516.8	20.7	19.2	-130.07	-538.7	-641.6	1,132.0	1,097.8	34.22	33.082		
4,881.7	4,762.6	4,700.8	4,591.7	21.1	19.6	-129.99	-551.0	-657.7	1,157.7	1,122.8	34.95	33.125		
4,900.0	4,780.3	4,718.1	4,608.4	21.2	19.7	-130.06	-553.7	-661.3	1,163.5	1,128.3	35.12	33.126		
5,000.0	4,877.5	4,813.4	4,700.4	21.6	20.2	-130.37	-568.8	-681.1	1,193.5	1,157.5	35.99	33.165		
5,100.0	4,975.5	4,909.2	4,792.9	22.0	20.7	-130.51	-584.0	-700.9	1,221.5	1,184.6	36.82	33.176		
5,200.0	5,074.1	5,005.5	4,885.8	22.3	21.3	-130.50	-599.2	-720.9	1,247.3	1,209.7	37.61	33.166		
5,300.0	5,173.2	5,111.7	4,988.4	22.5	21.8	-130.30	-615.9	-742.8	1,270.8	1,232.5	38.37	33.125		
5,400.0	5,272.7	5,244.0	5,117.3	22.7	22.3	-129.94	-634.0	-766.6	1,290.3	1,251.3	39.04	33.055		
5,500.0	5,372.5	5,378.8	5,249.8	22.9	22.7	-129.58	-648.7	-785.9	1,305.0	1,265.4	39.61	32.946		
5,600.0	5,472.5	5,515.6	5,385.3	23.0	23.1	-129.21	-659.8	-800.4	1,314.8	1,274.7	40.08	32.806		
5,627.5	5,500.0	5,553.4	5,423.0	23.1	23.2	-179.78	-662.2	-803.5	1,316.6	1,276.4	40.18	32.764		
5,700.0	5,572.5	5,653.7	5,522.9	23.1	23.4	-179.95	-667.0	-809.9	1,320.0	1,279.6	40.46	32.630		
5,800.0	5,672.5	5,792.6	5,661.7	23.3	23.6	-179.77	-670.1	-814.0	1,322.3	1,281.5	40.79	32.415		
5,900.0	5,772.5	5,903.4	5,772.5	23.4	23.7	-179.76	-670.3	-814.2	1,322.4	1,281.4	41.06	32.205		
6,000.0	5,872.5	6,003.4	5,872.5	23.5	23.8	-179.76	-670.3	-814.2	1,322.4	1,281.1	41.32	32.004		
6,100.0	5,972.5	6,103.4	5,972.5	23.6	23.9	-179.76	-670.3	-814.2	1,322.4	1,280.9	41.58	31.802		
6,200.0	6,072.5	6,203.4	6,072.5	23.7	24.0	-179.76	-670.3	-814.2	1,322.4	1,280.6	41.85	31.601		
6,300.0	6,172.5	6,303.4	6,172.5	23.9	24.1	-179.76	-670.3	-814.2	1,322.4	1,280.3	42.12	31.399		
6,400.0	6,272.5	6,403.4	6,272.5	24.0	24.2	-179.76	-670.3	-814.2	1,322.4	1,280.1	42.39	31.198		
6,500.0	6,372.5	6,503.4	6,372.5	24.1	24.3	-179.76	-670.3	-814.2	1,322.4	1,279.8	42.66	30.998		
6,600.0	6,472.5	6,603.4	6,472.5	24.2	24.4	-179.76	-670.3	-814.2	1,322.4	1,279.5	42.94	30.798		
6,700.0	6,572.5	6,703.4	6,572.5	24.4	24.6	-179.76	-670.3	-814.2	1,322.4	1,279.2	43.22	30.598		
6,800.0	6,672.5	6,803.4	6,672.5	24.5	24.7	-179.76	-670.3	-814.2	1,322.4	1,278.9	43.50	30.399		

<b>Company:</b>	TRILLOGY RESOURCES, LLC. Weld County, CO	<b>Local Co-ordinate Reference:</b>	Well Keto 7-33
<b>Project:</b>	SEC.7-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Reference Site:</b>	Keto 7-33 Pad Sec.7-T4N-R67W	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Keto 7-33	<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 #2 (11-5-11)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Keto 7-33 Pad Sec.7-T4N-R67W - Keto 7-34 - Wellbore #1 - Plan #2 (11-5-11)												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,900.0	6,772.5	6,903.4	6,772.5	24.6	24.8	-179.76	-670.3	-814.2	1,322.4	1,278.7	43.79	30.201	
7,000.0	6,872.5	7,003.4	6,872.5	24.8	24.9	-179.76	-670.3	-814.2	1,322.4	1,278.4	44.08	30.003	
7,100.0	6,972.5	7,103.4	6,972.5	24.9	25.0	-179.76	-670.3	-814.2	1,322.4	1,278.1	44.37	29.806	
7,200.0	7,072.5	7,203.4	7,072.5	25.0	25.2	-179.76	-670.3	-814.2	1,322.4	1,277.8	44.66	29.610	
7,300.0	7,172.5	7,303.4	7,172.5	25.2	25.3	-179.76	-670.3	-814.2	1,322.4	1,277.5	44.96	29.415	
7,400.0	7,272.5	7,403.4	7,272.5	25.3	25.4	-179.76	-670.3	-814.2	1,322.4	1,277.2	45.26	29.221	
7,477.5	7,350.0	7,480.9	7,350.0	25.4	25.5	-179.76	-670.3	-814.2	1,322.4	1,277.0	45.49	29.071	

<b>Company:</b>	TRILLOGY RESOURCES, LLC. Weld County, CO	<b>Local Co-ordinate Reference:</b>	Well Keto 7-33
<b>Project:</b>	SEC.7-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Reference Site:</b>	Keto 7-33 Pad Sec.7-T4N-R67W	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Keto 7-33	<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 #2 (11-5-11)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Keto 7-33 Pad Sec.7-T4N-R67W - Keto 7-43 - Wellbore #1 - Plan #1 (11-5-11)													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 (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	142.55	-14.6	11.2	18.3	18.3	0.00	N/A		
100.0	100.0	100.0	100.0	0.1	0.1	142.55	-14.6	11.2	18.3	18.1	0.22	81.615		
200.0	200.0	200.0	200.0	0.3	0.3	142.55	-14.6	11.2	18.3	17.7	0.67	27.205		
300.0	300.0	300.0	300.0	0.6	0.6	142.55	-14.6	11.2	18.3	17.2	1.12	16.323		
400.0	400.0	400.0	400.0	0.8	0.8	142.55	-14.6	11.2	18.3	16.8	1.57	11.659		
500.0	500.0	500.0	500.0	1.0	1.0	142.55	-14.6	11.2	18.3	16.3	2.02	9.068		
600.0	600.0	600.0	600.0	1.2	1.2	142.55	-14.6	11.2	18.3	15.9	2.47	7.420		
700.0	700.0	700.0	700.0	1.5	1.5	142.55	-14.6	11.2	18.3	15.4	2.92	6.278		
800.0	800.0	800.0	800.0	1.7	1.7	142.55	-14.6	11.2	18.3	15.0	3.37	5.441		
850.0	850.0	850.0	850.0	1.8	1.8	142.55	-14.6	11.2	18.3	14.7	3.60	5.101 CC, ES		
900.0	900.0	900.0	900.0	1.9	1.9	-166.64	-14.6	11.2	18.8	14.9	3.82	4.915 SF		
1,000.0	999.9	999.9	999.9	2.1	2.1	-168.71	-14.6	11.2	22.2	17.9	4.26	5.208		
1,100.0	1,099.7	1,099.7	1,099.7	2.4	2.4	-171.39	-14.6	11.2	29.1	24.4	4.70	6.185		
1,200.0	1,199.1	1,199.1	1,199.1	2.6	2.6	-173.64	-14.6	11.2	39.4	34.3	5.13	7.679		
1,300.0	1,298.2	1,298.2	1,298.2	2.9	2.8	-175.72	-14.3	11.4	53.2	47.7	5.56	9.571		
1,400.0	1,396.6	1,396.7	1,396.6	3.2	3.0	-179.52	-11.7	13.5	70.5	64.5	5.98	11.784		
1,500.0	1,494.4	1,494.1	1,493.8	3.5	3.2	176.10	-6.5	17.8	91.6	85.2	6.40	14.299		
1,595.8	1,587.4	1,586.2	1,585.4	3.9	3.5	172.06	0.6	23.7	115.6	108.8	6.82	16.962		
1,600.0	1,591.5	1,590.2	1,589.4	3.9	3.5	171.90	1.0	24.0	116.8	109.9	6.84	17.081		
1,700.0	1,688.1	1,685.1	1,683.5	4.3	3.7	168.07	10.9	32.2	144.5	137.2	7.33	19.718		
1,800.0	1,784.7	1,779.1	1,776.1	4.8	4.0	164.46	23.0	42.2	173.5	165.6	7.86	22.076		
1,900.0	1,881.4	1,871.9	1,867.0	5.3	4.2	161.06	37.3	54.0	203.9	195.5	8.43	24.185		
2,000.0	1,978.0	1,963.3	1,956.0	5.8	4.5	157.85	53.6	67.4	236.0	226.9	9.05	26.080		
2,100.0	2,074.6	2,056.7	2,046.5	6.3	4.9	155.01	71.4	82.2	269.3	259.6	9.71	27.721		
2,200.0	2,171.2	2,150.3	2,137.1	6.8	5.3	152.79	89.3	96.9	303.0	292.6	10.40	29.136		
2,300.0	2,267.9	2,243.8	2,227.7	7.3	5.7	151.01	107.2	111.7	337.1	326.0	11.10	30.367		
2,400.0	2,364.5	2,337.3	2,318.3	7.8	6.1	149.56	125.0	126.5	371.5	359.7	11.82	31.432		
2,500.0	2,461.1	2,430.9	2,408.9	8.3	6.5	148.35	142.9	141.2	406.0	393.4	12.55	32.362		
2,600.0	2,557.8	2,524.4	2,499.6	8.9	6.9	147.33	160.8	156.0	440.6	427.3	13.28	33.177		
2,700.0	2,654.4	2,618.0	2,590.2	9.4	7.3	146.45	178.7	170.8	475.4	461.3	14.02	33.896		
2,800.0	2,751.0	2,711.5	2,680.8	9.9	7.8	145.70	196.5	185.5	510.2	495.4	14.77	34.533		
2,900.0	2,847.7	2,805.0	2,771.4	10.4	8.2	145.04	214.4	200.3	545.1	529.6	15.53	35.102		
3,000.0	2,944.3	2,898.6	2,862.0	11.0	8.7	144.46	232.3	215.1	580.1	563.8	16.29	35.611		
3,100.0	3,040.9	2,992.1	2,952.7	11.5	9.1	143.95	250.2	229.8	615.1	598.0	17.05	36.069		
3,200.0	3,137.6	3,085.7	3,043.3	12.0	9.6	143.49	268.1	244.6	650.1	632.3	17.82	36.483		
3,300.0	3,234.2	3,179.2	3,133.9	12.6	10.0	143.08	285.9	259.4	685.2	666.6	18.59	36.859		
3,400.0	3,330.8	3,272.7	3,224.5	13.1	10.5	142.71	303.8	274.1	720.3	700.9	19.36	37.201		
3,500.0	3,427.4	3,366.3	3,315.2	13.7	11.0	142.37	321.7	288.9	755.4	735.3	20.14	37.514		
3,600.0	3,524.1	3,459.8	3,405.8	14.2	11.4	142.07	339.6	303.7	790.5	769.6	20.91	37.802		
3,700.0	3,620.7	3,553.4	3,496.4	14.7	11.9	141.79	357.4	318.4	825.7	804.0	21.69	38.066		
3,800.0	3,717.3	3,646.9	3,587.0	15.3	12.4	141.53	375.3	333.2	860.9	838.4	22.47	38.310		
3,900.0	3,814.0	3,740.4	3,677.6	15.8	12.8	141.29	393.2	348.0	896.1	872.8	23.25	38.535		
4,000.0	3,910.6	3,834.0	3,768.3	16.4	13.3	141.07	411.1	362.7	931.3	907.2	24.04	38.745		
4,100.0	4,007.2	3,927.5	3,858.9	16.9	13.8	140.87	429.0	377.5	966.5	941.7	24.82	38.940		
4,200.0	4,103.9	4,021.1	3,949.5	17.4	14.2	140.68	446.8	392.3	1,001.7	976.1	25.61	39.121		
4,300.0	4,200.5	4,114.6	4,040.1	18.0	14.7	140.50	464.7	407.0	1,037.0	1,010.6	26.39	39.291		
4,400.0	4,297.1	4,208.2	4,130.7	18.5	15.2	140.34	482.6	421.8	1,072.2	1,045.0	27.18	39.449		
4,500.0	4,393.8	4,301.7	4,221.4	19.1	15.6	140.18	500.5	436.6	1,107.5	1,079.5	27.97	39.598		
4,600.0	4,490.4	4,402.9	4,319.4	19.6	16.1	140.03	519.7	452.4	1,142.6	1,113.9	28.77	39.712		
4,700.0	4,587.0	4,529.4	4,443.0	20.1	16.6	140.02	540.8	469.9	1,176.0	1,146.4	29.56	39.781		
4,800.0	4,683.7	4,658.3	4,569.9	20.7	17.0	140.22	557.9	484.0	1,206.6	1,176.3	30.30	39.821		

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

<b>Company:</b>	TRILLOGY RESOURCES, LLC. Weld County, CO	<b>Local Co-ordinate Reference:</b>	Well Keto 7-33
<b>Project:</b>	SEC.7-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Reference Site:</b>	Keto 7-33 Pad Sec.7-T4N-R67W	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Keto 7-33	<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 #2 (11-5-11)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Keto 7-33 Pad Sec.7-T4N-R67W - Keto 7-43 - Wellbore #1 - Plan #1 (11-5-11)													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 (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,881.7	4,762.6	4,765.0	4,675.6	21.1	17.3	140.55	568.7	492.9	1,229.7	1,198.8	30.87	39.840		
4,900.0	4,780.3	4,789.0	4,699.5	21.2	17.3	140.70	570.7	494.6	1,234.6	1,203.6	31.00	39.822		
5,000.0	4,877.5	4,921.7	4,831.8	21.6	17.6	141.53	579.1	501.5	1,258.0	1,226.4	31.65	39.753		
5,100.0	4,975.5	5,056.3	4,966.3	22.0	17.8	142.35	582.8	504.6	1,276.1	1,243.9	32.19	39.638		
5,200.0	5,074.1	5,164.1	5,074.1	22.3	18.0	142.99	582.9	504.7	1,289.4	1,256.8	32.64	39.500		
5,300.0	5,173.2	5,263.2	5,173.2	22.5	18.1	143.47	582.9	504.7	1,300.0	1,266.9	33.05	39.338		
5,400.0	5,272.7	5,362.8	5,272.7	22.7	18.2	143.81	582.9	504.7	1,307.8	1,274.4	33.41	39.143		
5,500.0	5,372.5	5,462.6	5,372.5	22.9	18.4	144.03	582.9	504.7	1,312.8	1,279.1	33.73	38.916		
5,600.0	5,472.5	5,562.5	5,472.5	23.0	18.5	144.13	582.9	504.7	1,315.0	1,281.0	34.02	38.653		
5,627.5	5,500.0	5,590.0	5,500.0	23.1	18.6	93.02	582.9	504.7	1,315.1	1,281.0	34.09	38.575		
5,700.0	5,572.5	5,662.5	5,572.5	23.1	18.7	93.02	582.9	504.7	1,315.1	1,280.8	34.30	38.339		
5,800.0	5,672.5	5,762.5	5,672.5	23.3	18.8	93.02	582.9	504.7	1,315.1	1,280.5	34.60	38.007		
5,900.0	5,772.5	5,862.5	5,772.5	23.4	18.9	93.02	582.9	504.7	1,315.1	1,280.2	34.90	37.677		
6,000.0	5,872.5	5,962.5	5,872.5	23.5	19.1	93.02	582.9	504.7	1,315.1	1,279.9	35.21	37.349		
6,100.0	5,972.5	6,062.5	5,972.5	23.6	19.2	93.02	582.9	504.7	1,315.1	1,279.6	35.52	37.023		
6,200.0	6,072.5	6,162.5	6,072.5	23.7	19.4	93.02	582.9	504.7	1,315.1	1,279.3	35.83	36.701		
6,300.0	6,172.5	6,262.5	6,172.5	23.9	19.5	93.02	582.9	504.7	1,315.1	1,278.9	36.15	36.381		
6,400.0	6,272.5	6,362.5	6,272.5	24.0	19.7	93.02	582.9	504.7	1,315.1	1,278.6	36.47	36.063		
6,500.0	6,372.5	6,462.5	6,372.5	24.1	19.8	93.02	582.9	504.7	1,315.1	1,278.3	36.79	35.749		
6,600.0	6,472.5	6,562.5	6,472.5	24.2	20.0	93.02	582.9	504.7	1,315.1	1,278.0	37.11	35.437		
6,700.0	6,572.5	6,662.5	6,572.5	24.4	20.1	93.02	582.9	504.7	1,315.1	1,277.7	37.44	35.129		
6,800.0	6,672.5	6,762.5	6,672.5	24.5	20.3	93.02	582.9	504.7	1,315.1	1,277.3	37.77	34.823		
6,900.0	6,772.5	6,862.5	6,772.5	24.6	20.5	93.02	582.9	504.7	1,315.1	1,277.0	38.10	34.520		
7,000.0	6,872.5	6,962.5	6,872.5	24.8	20.6	93.02	582.9	504.7	1,315.1	1,276.7	38.43	34.221		
7,100.0	6,972.5	7,062.5	6,972.5	24.9	20.8	93.02	582.9	504.7	1,315.1	1,276.3	38.77	33.924		
7,200.0	7,072.5	7,162.5	7,072.5	25.0	20.9	93.02	582.9	504.7	1,315.1	1,276.0	39.10	33.631		
7,300.0	7,172.5	7,262.5	7,172.5	25.2	21.1	93.02	582.9	504.7	1,315.1	1,275.7	39.44	33.341		
7,400.0	7,272.5	7,362.5	7,272.5	25.3	21.3	93.02	582.9	504.7	1,315.1	1,275.3	39.79	33.054		
7,477.5	7,350.0	7,440.0	7,350.0	25.4	21.4	93.02	582.9	504.7	1,315.1	1,275.0	40.05	32.834		

<b>Company:</b>	TRILLOGY RESOURCES, LLC. Weld County, CO	<b>Local Co-ordinate Reference:</b>	Well Keto 7-33
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<b>Reference Site:</b>	Keto 7-33 Pad Sec.7-T4N-R67W	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Keto 7-33	<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 #2 (11-5-11)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4851.0ft (Original Well Elev) Coordinates are relative to: Keto 7-33  
 Offset Depths are relative to Offset Datum  
 Central Meridian is -105.500000 °  
 Coordinate System is US State Plane 1983, Colorado Northern Zone  
 Grid Convergence at Surface is: 0.37°



<b>Company:</b>	TRILLOGY RESOURCES, LLC. Weld County, CO	<b>Local Co-ordinate Reference:</b>	Well Keto 7-33
<b>Project:</b>	SEC.7-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Reference Site:</b>	Keto 7-33 Pad Sec.7-T4N-R67W	<b>MD Reference:</b>	WELL @ 4851.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Keto 7-33	<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
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Reference Depths are relative to WELL @ 4851.0ft (Original Well Elev) Coordinates are relative to: Keto 7-33  
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