

# Synergy Resources

Well Name: **Roberts 11-12CHZ**

Surface Location: Roberts 10 Pad Sec.12-T7N-R67W

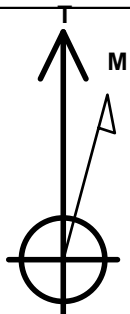
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 5141.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1458387.28	3185297.44	40.589758	-104.832810	
Original Well Elev WELL @ 5154.0ft (Original Well Elev)						

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 2297'FNL & 277'FEL	1.0	0.0	0.0	Point
BHL 598'FNL & 460'FWL	7550.0	1658.1	-4514.1	Point



Azimuths to True North  
Magnetic North: 8.47°

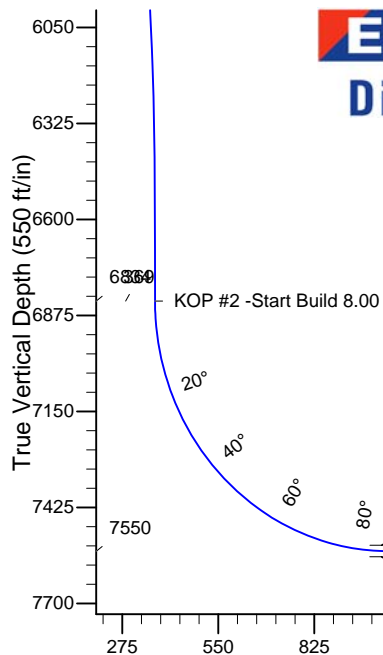
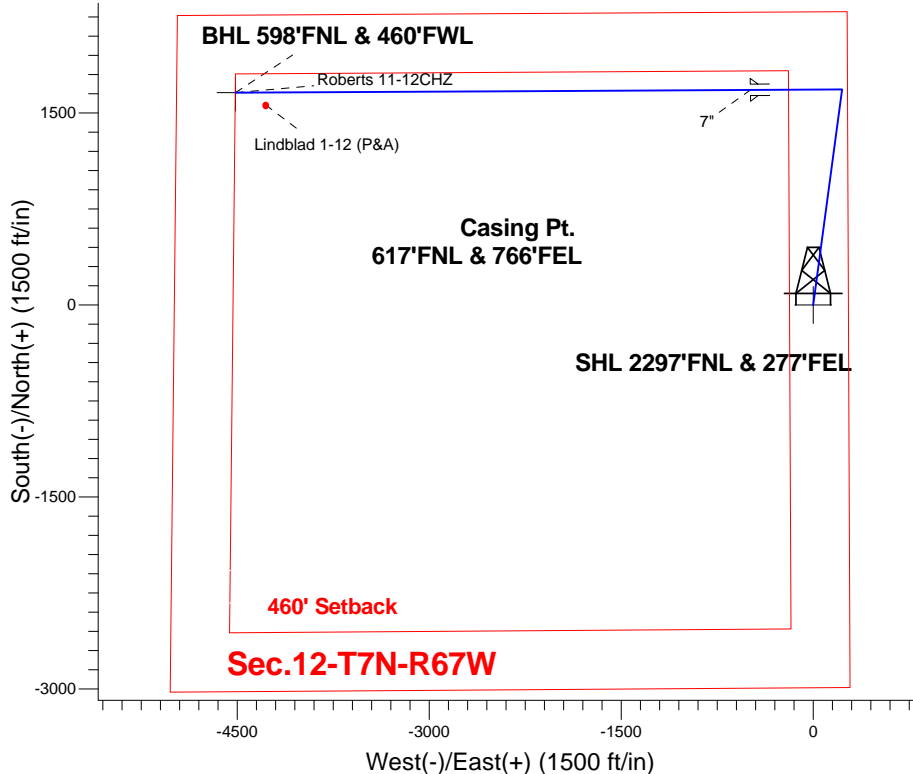
Magnetic Field  
Strength: 52871.6nT  
Dip Angle: 67.08°  
Date: 10/7/2014  
Model: IGRF2010

Roberts 10 Pad Sec.12-T7N-R67W  
Roberts 11-12CHZ  
Plan #1 (10-7-14)  
13:36, October 09 2014

## ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	KOP - Start Build 2.00
5760.3	5989.7	Start Drop -2.00
6833.8	7075.7	KOP #2 -Start Build 8.00
7550.0	12224.2	TD at 12224.2

South(-)/North(+) (1500 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	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	1052.3	17.05	7.63	1039.7	124.7	16.7	2.00	7.63	27.3	
4	5989.7	17.05	7.63	5760.3	1559.2	208.9	0.00	0.00	341.5	
5	6841.9	0.00	0.00	6600.0	1683.9	225.6	2.00	180.00	368.8	
6	7075.7	0.00	0.00	6833.8	1683.9	225.6	0.00	0.00	368.8	
7	8200.7	90.00	269.69	7550.0	1680.0	-490.6	8.00	269.69	1039.8	
8	12224.2	90.00	269.69	7550.0	1658.1	-4514.1	0.00	0.00	4809.0	BHL 598'FNL & 460'FWL

**BHL 598'FNL & 460'FWL**

TD at 12224.2



## **Synergy Resources**

**SEC.12-T7N-R67W**

**Roberts 10 Pad Sec.12-T7N-R67W**

**Roberts 11-12CHZ**

**Wellbore #1**

**Plan: Plan #1 (10-7-14)**

## **Standard Planning Report**

**09 October, 2014**

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Roberts 11-12CHZ
<b>Company:</b>	Synergy Resources	<b>TVD Reference:</b>	WELL @ 5154.0ft (Original Well Elev)
<b>Project:</b>	SEC.12-T7N-R67W	<b>MD Reference:</b>	WELL @ 5154.0ft (Original Well Elev)
<b>Site:</b>	Roberts 10 Pad Sec.12-T7N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Roberts 11-12CHZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (10-7-14)		

<b>Project</b>	SEC.12-T7N-R67W, Weld, Colorado		
<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

Site						Roberts 10 Pad Sec.12-T7N-R67W											
Site Position:						Northing:			1,458,387.29 ft			Latitude:			40.589758		
From:			Lat/Long			Easting:			3,185,297.44 ft			Longitude:			-104.832810		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.43 °		

Well	Roberts 11-12CHZ					
Well Position	+N/-S	0.0 ft	Northing:	1,458,387.28 ft	Latitude:	40.589758
	+E/-W	0.0 ft	Easting:	3,185,297.44 ft	Longitude:	-104.832810
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,141.0 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	10/7/2014	8.47	67.08	52,872

<b>Design</b>	Plan #1 (10-7-14)			
<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	290.17

<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	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,052.3	17.05	7.63	1,039.7	124.7	16.7	2.00	2.00	0.00	7.63	
5,989.7	17.05	7.63	5,760.3	1,559.2	208.9	0.00	0.00	0.00	0.00	
6,841.9	0.00	0.00	6,600.0	1,683.9	225.6	2.00	-2.00	0.00	180.00	
7,075.7	0.00	0.00	6,833.8	1,683.9	225.6	0.00	0.00	0.00	0.00	
8,200.7	90.00	269.69	7,550.0	1,680.0	-490.6	8.00	8.00	0.00	269.69	
12,224.2	90.00	269.69	7,550.0	1,658.1	-4,514.1	0.00	0.00	0.00	0.00	BHL 598'FNL & 46C

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<b>Company:</b>	Synergy Resources	<b>TVD Reference:</b>	WELL @ 5154.0ft (Original Well Elev)
<b>Project:</b>	SEC.12-T7N-R67W	<b>MD Reference:</b>	WELL @ 5154.0ft (Original Well Elev)
<b>Site:</b>	Roberts 10 Pad Sec.12-T7N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Roberts 11-12CHZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (10-7-14)		

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
<b>KOP - Start Build 2.00</b>									
300.0	2.00	7.63	300.0	1.7	0.2	0.4	2.00	2.00	0.00
400.0	4.00	7.63	399.8	6.9	0.9	1.5	2.00	2.00	0.00
500.0	6.00	7.63	499.5	15.6	2.1	3.4	2.00	2.00	0.00
600.0	8.00	7.63	598.7	27.6	3.7	6.1	2.00	2.00	0.00
700.0	10.00	7.63	697.5	43.1	5.8	9.4	2.00	2.00	0.00
800.0	12.00	7.63	795.6	62.0	8.3	13.6	2.00	2.00	0.00
900.0	14.00	7.63	893.1	84.3	11.3	18.5	2.00	2.00	0.00
1,000.0	16.00	7.63	989.6	110.0	14.7	24.1	2.00	2.00	0.00
1,052.3	17.05	7.63	1,039.7	124.7	16.7	27.3	2.00	2.00	0.00
1,100.0	17.05	7.63	1,085.4	138.6	18.6	30.4	0.00	0.00	0.00
1,200.0	17.05	7.63	1,181.0	167.6	22.5	36.7	0.00	0.00	0.00
1,300.0	17.05	7.63	1,276.6	196.7	26.4	43.1	0.00	0.00	0.00
1,400.0	17.05	7.63	1,372.2	225.8	30.2	49.4	0.00	0.00	0.00
1,500.0	17.05	7.63	1,467.8	254.8	34.1	55.8	0.00	0.00	0.00
1,600.0	17.05	7.63	1,563.4	283.9	38.0	62.2	0.00	0.00	0.00
1,700.0	17.05	7.63	1,659.0	312.9	41.9	68.5	0.00	0.00	0.00
1,800.0	17.05	7.63	1,754.6	342.0	45.8	74.9	0.00	0.00	0.00
1,900.0	17.05	7.63	1,850.2	371.0	49.7	81.3	0.00	0.00	0.00
2,000.0	17.05	7.63	1,945.9	400.1	53.6	87.6	0.00	0.00	0.00
2,100.0	17.05	7.63	2,041.5	429.1	57.5	94.0	0.00	0.00	0.00
2,200.0	17.05	7.63	2,137.1	458.2	61.4	100.4	0.00	0.00	0.00
2,300.0	17.05	7.63	2,232.7	487.2	65.3	106.7	0.00	0.00	0.00
2,400.0	17.05	7.63	2,328.3	516.3	69.2	113.1	0.00	0.00	0.00
2,500.0	17.05	7.63	2,423.9	545.3	73.1	119.4	0.00	0.00	0.00
2,600.0	17.05	7.63	2,519.5	574.4	77.0	125.8	0.00	0.00	0.00
2,700.0	17.05	7.63	2,615.1	603.4	80.8	132.2	0.00	0.00	0.00
2,800.0	17.05	7.63	2,710.7	632.5	84.7	138.5	0.00	0.00	0.00
2,900.0	17.05	7.63	2,806.3	661.5	88.6	144.9	0.00	0.00	0.00
3,000.0	17.05	7.63	2,901.9	690.6	92.5	151.3	0.00	0.00	0.00
3,100.0	17.05	7.63	2,997.5	719.7	96.4	157.6	0.00	0.00	0.00
3,200.0	17.05	7.63	3,093.1	748.7	100.3	164.0	0.00	0.00	0.00
3,300.0	17.05	7.63	3,188.8	777.8	104.2	170.4	0.00	0.00	0.00
3,400.0	17.05	7.63	3,284.4	806.8	108.1	176.7	0.00	0.00	0.00
3,500.0	17.05	7.63	3,380.0	835.9	112.0	183.1	0.00	0.00	0.00
3,600.0	17.05	7.63	3,475.6	864.9	115.9	189.4	0.00	0.00	0.00
3,700.0	17.05	7.63	3,571.2	894.0	119.8	195.8	0.00	0.00	0.00
3,800.0	17.05	7.63	3,666.8	923.0	123.7	202.2	0.00	0.00	0.00
3,900.0	17.05	7.63	3,762.4	952.1	127.6	208.5	0.00	0.00	0.00
4,000.0	17.05	7.63	3,858.0	981.1	131.4	214.9	0.00	0.00	0.00
4,100.0	17.05	7.63	3,953.6	1,010.2	135.3	221.3	0.00	0.00	0.00
4,200.0	17.05	7.63	4,049.2	1,039.2	139.2	227.6	0.00	0.00	0.00
4,300.0	17.05	7.63	4,144.8	1,068.3	143.1	234.0	0.00	0.00	0.00
4,400.0	17.05	7.63	4,240.4	1,097.3	147.0	240.4	0.00	0.00	0.00
4,500.0	17.05	7.63	4,336.0	1,126.4	150.9	246.7	0.00	0.00	0.00
4,600.0	17.05	7.63	4,431.6	1,155.4	154.8	253.1	0.00	0.00	0.00
4,700.0	17.05	7.63	4,527.3	1,184.5	158.7	259.4	0.00	0.00	0.00
4,800.0	17.05	7.63	4,622.9	1,213.5	162.6	265.8	0.00	0.00	0.00
4,900.0	17.05	7.63	4,718.5	1,242.6	166.5	272.2	0.00	0.00	0.00
5,000.0	17.05	7.63	4,814.1	1,271.7	170.4	278.5	0.00	0.00	0.00
5,100.0	17.05	7.63	4,909.7	1,300.7	174.3	284.9	0.00	0.00	0.00

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<b>Site:</b>	Roberts 10 Pad Sec.12-T7N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Roberts 11-12CHZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (10-7-14)		

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)
5,200.0	17.05	7.63	5,005.3	1,329.8	178.2	291.3	0.00	0.00	0.00
5,300.0	17.05	7.63	5,100.9	1,358.8	182.0	297.6	0.00	0.00	0.00
5,400.0	17.05	7.63	5,196.5	1,387.9	185.9	304.0	0.00	0.00	0.00
5,500.0	17.05	7.63	5,292.1	1,416.9	189.8	310.4	0.00	0.00	0.00
5,600.0	17.05	7.63	5,387.7	1,446.0	193.7	316.7	0.00	0.00	0.00
5,700.0	17.05	7.63	5,483.3	1,475.0	197.6	323.1	0.00	0.00	0.00
5,800.0	17.05	7.63	5,578.9	1,504.1	201.5	329.4	0.00	0.00	0.00
5,900.0	17.05	7.63	5,674.5	1,533.1	205.4	335.8	0.00	0.00	0.00
5,989.7	17.05	7.63	5,760.3	1,559.2	208.9	341.5	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
6,000.0	16.84	7.63	5,770.2	1,562.2	209.3	342.2	2.01	-2.01	0.00
6,100.0	14.84	7.63	5,866.4	1,589.2	212.9	348.1	2.00	-2.00	0.00
6,200.0	12.84	7.63	5,963.4	1,612.9	216.1	353.3	2.00	-2.00	0.00
6,300.0	10.84	7.63	6,061.3	1,633.3	218.8	357.7	2.00	-2.00	0.00
6,400.0	8.84	7.63	6,159.8	1,650.2	221.1	361.4	2.00	-2.00	0.00
6,500.0	6.84	7.63	6,258.9	1,663.7	222.9	364.4	2.00	-2.00	0.00
6,600.0	4.84	7.63	6,358.4	1,673.8	224.2	366.6	2.00	-2.00	0.00
6,700.0	2.84	7.63	6,458.1	1,680.4	225.1	368.1	2.00	-2.00	0.00
6,800.0	0.84	7.63	6,558.1	1,683.6	225.6	368.8	2.00	-2.00	0.00
6,841.9	0.00	0.00	6,600.0	1,683.9	225.6	368.8	2.00	-2.00	0.00
6,900.0	0.00	0.00	6,658.1	1,683.9	225.6	368.8	0.00	0.00	0.00
7,000.0	0.00	0.00	6,758.1	1,683.9	225.6	368.8	0.00	0.00	0.00
7,075.7	0.00	0.00	6,833.8	1,683.9	225.6	368.8	0.00	0.00	0.00
<b>KOP #2 -Start Build 8.00</b>									
7,100.0	1.94	269.69	6,858.1	1,683.9	225.2	369.2	8.00	8.00	0.00
7,200.0	9.94	269.69	6,957.5	1,683.8	214.8	378.9	8.00	8.00	0.00
7,300.0	17.94	269.69	7,054.4	1,683.7	190.8	401.5	8.00	8.00	0.00
7,400.0	25.94	269.69	7,147.1	1,683.5	153.4	436.4	8.00	8.00	0.00
7,500.0	33.94	269.69	7,233.7	1,683.2	103.6	483.2	8.00	8.00	0.00
7,600.0	41.94	269.69	7,312.5	1,682.9	42.1	540.7	8.00	8.00	0.00
7,700.0	49.94	269.69	7,382.0	1,682.5	-29.7	608.0	8.00	8.00	0.00
7,800.0	57.94	269.69	7,440.8	1,682.1	-110.5	683.7	8.00	8.00	0.00
7,900.0	65.94	269.69	7,487.8	1,681.6	-198.6	766.3	8.00	8.00	0.00
8,000.0	73.94	269.69	7,522.1	1,681.1	-292.5	854.2	8.00	8.00	0.00
8,100.0	81.94	269.69	7,542.9	1,680.5	-390.2	945.7	8.00	8.00	0.00
8,200.0	89.94	269.69	7,550.0	1,680.0	-489.9	1,039.1	8.00	8.00	0.00
8,200.7	90.00	269.69	7,550.0	1,680.0	-490.6	1,039.7	8.00	8.00	0.00
<b>7"</b>									
8,300.0	90.00	269.69	7,550.0	1,679.5	-589.9	1,132.8	0.00	0.00	0.00
8,400.0	90.00	269.69	7,550.0	1,678.9	-689.9	1,226.5	0.00	0.00	0.00
8,500.0	90.00	269.69	7,550.0	1,678.4	-789.9	1,320.1	0.00	0.00	0.00
8,600.0	90.00	269.69	7,550.0	1,677.8	-889.9	1,413.8	0.00	0.00	0.00
8,700.0	90.00	269.69	7,550.0	1,677.3	-989.9	1,507.5	0.00	0.00	0.00
8,800.0	90.00	269.69	7,550.0	1,676.7	-1,089.9	1,601.2	0.00	0.00	0.00
8,900.0	90.00	269.69	7,550.0	1,676.2	-1,189.9	1,694.8	0.00	0.00	0.00
9,000.0	90.00	269.69	7,550.0	1,675.7	-1,289.9	1,788.5	0.00	0.00	0.00
9,100.0	90.00	269.69	7,550.0	1,675.1	-1,389.9	1,882.2	0.00	0.00	0.00
9,200.0	90.00	269.69	7,550.0	1,674.6	-1,489.9	1,975.9	0.00	0.00	0.00
9,300.0	90.00	269.69	7,550.0	1,674.0	-1,589.9	2,069.6	0.00	0.00	0.00
9,400.0	90.00	269.69	7,550.0	1,673.5	-1,689.9	2,163.2	0.00	0.00	0.00
9,500.0	90.00	269.69	7,550.0	1,672.9	-1,789.9	2,256.9	0.00	0.00	0.00
9,600.0	90.00	269.69	7,550.0	1,672.4	-1,889.9	2,350.6	0.00	0.00	0.00
9,700.0	90.00	269.69	7,550.0	1,671.8	-1,989.9	2,444.3	0.00	0.00	0.00

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)		Name	Casing Diameter (")	Hole Diameter (")
8,200.7	7,550.0	7"		7	7-1/2

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Roberts 11-12CHZ
<b>Company:</b>	Synergy Resources	<b>TVD Reference:</b>	WELL @ 5154.0ft (Original Well Elev)
<b>Project:</b>	SEC.12-T7N-R67W	<b>MD Reference:</b>	WELL @ 5154.0ft (Original Well Elev)
<b>Site:</b>	Roberts 10 Pad Sec.12-T7N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Roberts 11-12CHZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (10-7-14)		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP - Start Build 2.00
5,989.7	5,760.3	124.7	16.7	Start Drop -2.00
7,075.7	6,833.8	1,559.2	208.9	KOP #2 -Start Build 8.00
12,224.2	7,550.0	1,683.9	225.6	TD at 12224.2