

Synergy Resources

Well Name: **Roberts 12-12NHZ**

Surface Location: Roberts 10 Pad Sec.12-T7N-R67W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

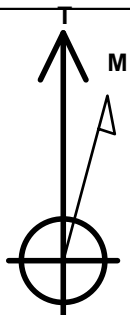
Ground Elevation: 5136.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1458247.39	3185298.50	40.589374	-104.832810	

Original Well Elev WELL @ 5149.0ft (Original Well Elev)

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 2437'FNL & 277'FEL	1.0	0.0	0.0	Point
BHL 2138'FNL & 460'FWL	7219.0	258.0	-4529.1	Point



Azimuths to True North
Magnetic North: 8.47°

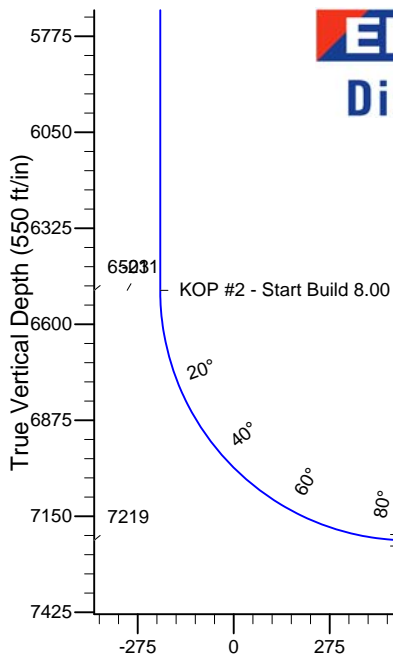
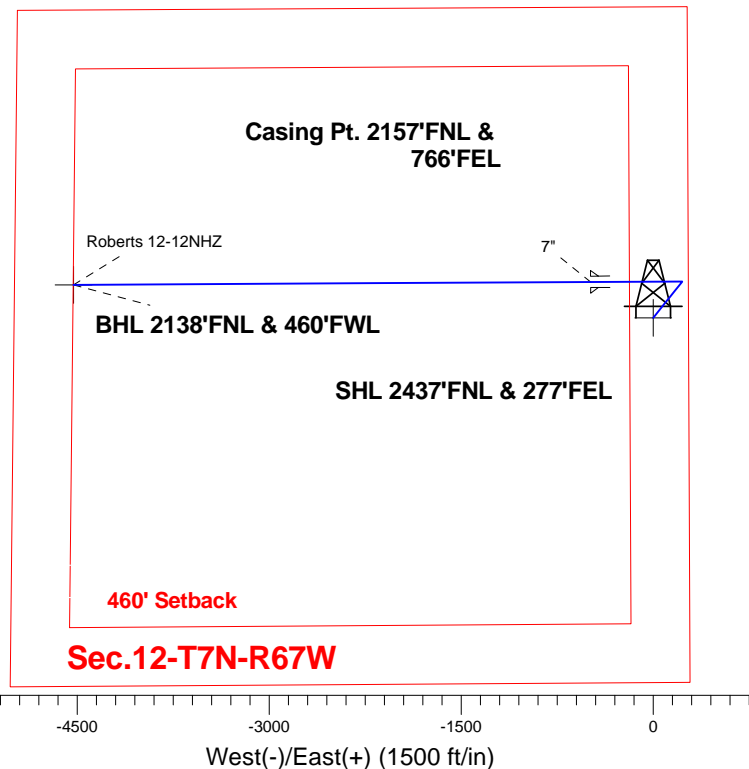
Magnetic Field
Strength: 52871.5nT
Dip Angle: 67.08°
Date: 10/7/2014
Model: IGRF2010

Roberts 10 Pad Sec.12-T7N-R67W
Roberts 12-12NHZ
Plan #1 (10-7-14)
13:57, October 09 2014

ANNOTATIONS

TVD	MD	Annotation
1600.0	1600.0	KOP - Start Build 2.00
4662.4	4682.3	Start Drop -2.00
6502.8	6523.5	KOP #2 - Start Build 8.00
7219.0	11688.6	TD at 11688.6

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	1600.0	0.00	0.00	1600.0	0.0	0.0	0.00	0.00	0.0	
3	1938.4	6.77	38.71	1937.6	15.6	12.5	2.00	38.71	-11.6	
4	4682.3	6.77	38.71	4662.4	267.9	214.7	0.00	0.00	-199.1	
5	5020.7	0.00	0.00	5000.0	283.5	227.2	2.00	180.00	-210.7	
6	6523.5	0.00	0.00	6502.8	283.5	227.2	0.00	0.00	-210.7	
7	7648.5	90.00	269.69	7219.0	279.7	-489.0	8.00	269.69	504.1	
8	11688.6	90.00	269.69	7219.0	258.0	-4529.1	0.00	0.00	4536.4	BHL 2138'FNL & 460'FWL

BHL 2138'FNL & 460'FWL

TD at 11688.6

Vertical Section at 273.26° (550 ft/in)



Synergy Resources

SEC.12-T7N-R67W

Roberts 10 Pad Sec.12-T7N-R67W

Roberts 12-12NHZ

Wellbore #1

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

Standard Planning Report

09 October, 2014

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,938.4	6.77	38.71	1,937.6	15.6	12.5	2.00	2.00	0.00	38.71	
4,682.3	6.77	38.71	4,662.4	267.9	214.7	0.00	0.00	0.00	0.00	
5,020.7	0.00	0.00	5,000.0	283.5	227.2	2.00	-2.00	0.00	180.00	
6,523.5	0.00	0.00	6,502.8	283.5	227.2	0.00	0.00	0.00	0.00	
7,648.5	90.00	269.69	7,219.0	279.7	-489.0	8.00	8.00	0.00	269.69	
11,688.6	90.00	269.69	7,219.0	258.0	-4,529.1	0.00	0.00	0.00	0.00	BHL 2138'FNL & 46

Database:	Landmark	Local Co-ordinate Reference:	Well Roberts 12-12NHZ
Company:	Synergy Resources	TVD Reference:	WELL @ 5149.0ft (Original Well Elev)
Project:	SEC.12-T7N-R67W	MD Reference:	WELL @ 5149.0ft (Original Well Elev)
Site:	Roberts 10 Pad Sec.12-T7N-R67W	North Reference:	True
Well:	Roberts 12-12NHZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 2.00									
1,700.0	2.00	38.71	1,700.0	1.4	1.1	-1.0	2.00	2.00	0.00
1,800.0	4.00	38.71	1,799.8	5.4	4.4	-4.0	2.00	2.00	0.00
1,900.0	6.00	38.71	1,899.5	12.2	9.8	-9.1	2.00	2.00	0.00
1,938.4	6.77	38.71	1,937.6	15.6	12.5	-11.6	2.00	2.00	0.00
2,000.0	6.77	38.71	1,998.8	21.2	17.0	-15.8	0.00	0.00	0.00
2,100.0	6.77	38.71	2,098.1	30.4	24.4	-22.6	0.00	0.00	0.00
2,200.0	6.77	38.71	2,197.4	39.6	31.8	-29.5	0.00	0.00	0.00
2,300.0	6.77	38.71	2,296.7	48.8	39.1	-36.3	0.00	0.00	0.00
2,400.0	6.77	38.71	2,396.0	58.0	46.5	-43.1	0.00	0.00	0.00
2,500.0	6.77	38.71	2,495.3	67.2	53.9	-50.0	0.00	0.00	0.00
2,600.0	6.77	38.71	2,594.6	76.4	61.2	-56.8	0.00	0.00	0.00
2,700.0	6.77	38.71	2,693.9	85.6	68.6	-63.6	0.00	0.00	0.00
2,800.0	6.77	38.71	2,793.2	94.8	76.0	-70.5	0.00	0.00	0.00
2,900.0	6.77	38.71	2,892.5	104.0	83.4	-77.3	0.00	0.00	0.00
3,000.0	6.77	38.71	2,991.8	113.2	90.7	-84.1	0.00	0.00	0.00
3,100.0	6.77	38.71	3,091.1	122.4	98.1	-91.0	0.00	0.00	0.00
3,200.0	6.77	38.71	3,190.4	131.6	105.5	-97.8	0.00	0.00	0.00
3,300.0	6.77	38.71	3,289.7	140.8	112.8	-104.6	0.00	0.00	0.00
3,400.0	6.77	38.71	3,389.0	150.0	120.2	-111.5	0.00	0.00	0.00
3,500.0	6.77	38.71	3,488.3	159.2	127.6	-118.3	0.00	0.00	0.00
3,600.0	6.77	38.71	3,587.6	168.4	134.9	-125.2	0.00	0.00	0.00
3,700.0	6.77	38.71	3,686.9	177.6	142.3	-132.0	0.00	0.00	0.00
3,800.0	6.77	38.71	3,786.2	186.8	149.7	-138.8	0.00	0.00	0.00
3,900.0	6.77	38.71	3,885.5	196.0	157.1	-145.7	0.00	0.00	0.00
4,000.0	6.77	38.71	3,984.8	205.2	164.4	-152.5	0.00	0.00	0.00
4,100.0	6.77	38.71	4,084.1	214.4	171.8	-159.3	0.00	0.00	0.00
4,200.0	6.77	38.71	4,183.5	223.6	179.2	-166.2	0.00	0.00	0.00
4,300.0	6.77	38.71	4,282.8	232.8	186.5	-173.0	0.00	0.00	0.00
4,400.0	6.77	38.71	4,382.1	242.0	193.9	-179.8	0.00	0.00	0.00
4,500.0	6.77	38.71	4,481.4	251.2	201.3	-186.7	0.00	0.00	0.00
4,600.0	6.77	38.71	4,580.7	260.4	208.7	-193.5	0.00	0.00	0.00
4,682.3	6.77	38.71	4,662.4	267.9	214.7	-199.1	0.00	0.00	0.00
Start Drop -2.00									
4,700.0	6.41	38.71	4,680.0	269.5	216.0	-200.3	2.00	-2.00	0.00
4,800.0	4.41	38.71	4,779.5	276.9	221.9	-205.8	2.00	-2.00	0.00
4,900.0	2.41	38.71	4,879.3	281.5	225.6	-209.2	2.00	-2.00	0.00

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Site:	Roberts 10 Pad Sec.12-T7N-R67W	North Reference:	True
Well:	Roberts 12-12NHZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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)
5,000.0	0.41	38.71	4,979.3	283.4	227.2	-210.7	2.00	-2.00	0.00
5,020.7	0.00	0.00	5,000.0	283.5	227.2	-210.7	2.00	-2.00	0.00
5,100.0	0.00	0.00	5,079.3	283.5	227.2	-210.7	0.00	0.00	0.00
5,200.0	0.00	0.00	5,179.3	283.5	227.2	-210.7	0.00	0.00	0.00
5,300.0	0.00	0.00	5,279.3	283.5	227.2	-210.7	0.00	0.00	0.00
5,400.0	0.00	0.00	5,379.3	283.5	227.2	-210.7	0.00	0.00	0.00
5,500.0	0.00	0.00	5,479.3	283.5	227.2	-210.7	0.00	0.00	0.00
5,600.0	0.00	0.00	5,579.3	283.5	227.2	-210.7	0.00	0.00	0.00
5,700.0	0.00	0.00	5,679.3	283.5	227.2	-210.7	0.00	0.00	0.00
5,800.0	0.00	0.00	5,779.3	283.5	227.2	-210.7	0.00	0.00	0.00
5,900.0	0.00	0.00	5,879.3	283.5	227.2	-210.7	0.00	0.00	0.00
6,000.0	0.00	0.00	5,979.3	283.5	227.2	-210.7	0.00	0.00	0.00
6,100.0	0.00	0.00	6,079.3	283.5	227.2	-210.7	0.00	0.00	0.00
6,200.0	0.00	0.00	6,179.3	283.5	227.2	-210.7	0.00	0.00	0.00
6,300.0	0.00	0.00	6,279.3	283.5	227.2	-210.7	0.00	0.00	0.00
6,400.0	0.00	0.00	6,379.3	283.5	227.2	-210.7	0.00	0.00	0.00
6,500.0	0.00	0.00	6,479.3	283.5	227.2	-210.7	0.00	0.00	0.00
6,523.5	0.00	0.00	6,502.8	283.5	227.2	-210.7	0.00	0.00	0.00
KOP #2 - Start Build 8.00									
6,600.0	6.12	269.69	6,579.2	283.5	223.1	-206.6	8.00	8.00	0.00
6,700.0	14.12	269.69	6,677.5	283.4	205.6	-189.1	8.00	8.00	0.00
6,800.0	22.12	269.69	6,772.5	283.2	174.5	-158.1	8.00	8.00	0.00
6,900.0	30.12	269.69	6,862.2	283.0	130.5	-114.2	8.00	8.00	0.00
7,000.0	38.12	269.69	6,944.9	282.7	74.4	-58.3	8.00	8.00	0.00
7,100.0	46.12	269.69	7,019.0	282.3	7.4	8.6	8.00	8.00	0.00
7,200.0	54.12	269.69	7,083.1	281.9	-69.2	85.2	8.00	8.00	0.00
7,300.0	62.12	269.69	7,135.9	281.5	-154.1	169.8	8.00	8.00	0.00
7,400.0	70.12	269.69	7,176.3	281.0	-245.4	261.0	8.00	8.00	0.00
7,500.0	78.12	269.69	7,203.7	280.5	-341.6	356.9	8.00	8.00	0.00
7,600.0	86.12	269.69	7,217.4	279.9	-440.5	455.7	8.00	8.00	0.00
7,648.5	90.00	269.69	7,219.0	279.7	-489.0	504.1	8.00	8.00	0.00
7"									
7,700.0	90.00	269.69	7,219.0	279.4	-540.5	555.5	0.00	0.00	0.00
7,800.0	90.00	269.69	7,219.0	278.8	-640.5	655.3	0.00	0.00	0.00
7,900.0	90.00	269.69	7,219.0	278.3	-740.5	755.1	0.00	0.00	0.00
8,000.0	90.00	269.69	7,219.0	277.8	-840.5	854.9	0.00	0.00	0.00
8,100.0	90.00	269.69	7,219.0	277.2	-940.5	954.7	0.00	0.00	0.00
8,200.0	90.00	269.69	7,219.0	276.7	-1,040.5	1,054.5	0.00	0.00	0.00
8,300.0	90.00	269.69	7,219.0	276.2	-1,140.5	1,154.3	0.00	0.00	0.00
8,400.0	90.00	269.69	7,219.0	275.6	-1,240.5	1,254.1	0.00	0.00	0.00
8,500.0	90.00	269.69	7,219.0	275.1	-1,340.5	1,354.0	0.00	0.00	0.00
8,600.0	90.00	269.69	7,219.0	274.6	-1,440.5	1,453.8	0.00	0.00	0.00
8,700.0	90.00	269.69	7,219.0	274.0	-1,540.5	1,553.6	0.00	0.00	0.00
8,800.0	90.00	269.69	7,219.0	273.5	-1,640.5	1,653.4	0.00	0.00	0.00
8,900.0	90.00	269.69	7,219.0	273.0	-1,740.5	1,753.2	0.00	0.00	0.00
9,000.0	90.00	269.69	7,219.0	272.4	-1,840.5	1,853.0	0.00	0.00	0.00
9,100.0	90.00	269.69	7,219.0	271.9	-1,940.5	1,952.8	0.00	0.00	0.00
9,200.0	90.00	269.69	7,219.0	271.3	-2,040.5	2,052.6	0.00	0.00	0.00
9,300.0	90.00	269.69	7,219.0	270.8	-2,140.5	2,152.4	0.00	0.00	0.00
9,400.0	90.00	269.69	7,219.0	270.3	-2,240.5	2,252.2	0.00	0.00	0.00
9,500.0	90.00	269.69	7,219.0	269.7	-2,340.5	2,352.0	0.00	0.00	0.00
9,600.0	90.00	269.69	7,219.0	269.2	-2,440.5	2,451.8	0.00	0.00	0.00
9,700.0	90.00	269.69	7,219.0	268.7	-2,540.5	2,551.6	0.00	0.00	0.00
9,800.0	90.00	269.69	7,219.0	268.1	-2,640.5	2,651.4	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Roberts 12-12NHZ
Company:	Synergy Resources	TVD Reference:	WELL @ 5149.0ft (Original Well Elev)
Project:	SEC.12-T7N-R67W	MD Reference:	WELL @ 5149.0ft (Original Well Elev)
Site:	Roberts 10 Pad Sec.12-T7N-R67W	North Reference:	True
Well:	Roberts 12-12NHZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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)	
9,900.0	90.00	269.69	7,219.0	267.6	-2,740.5	2,751.2	0.00	0.00	0.00	
10,000.0	90.00	269.69	7,219.0	267.1	-2,840.5	2,851.0	0.00	0.00	0.00	
10,100.0	90.00	269.69	7,219.0	266.5	-2,940.5	2,950.9	0.00	0.00	0.00	
10,200.0	90.00	269.69	7,219.0	266.0	-3,040.5	3,050.7	0.00	0.00	0.00	
10,300.0	90.00	269.69	7,219.0	265.4	-3,140.5	3,150.5	0.00	0.00	0.00	
10,400.0	90.00	269.69	7,219.0	264.9	-3,240.4	3,250.3	0.00	0.00	0.00	
10,500.0	90.00	269.69	7,219.0	264.4	-3,340.4	3,350.1	0.00	0.00	0.00	
10,600.0	90.00	269.69	7,219.0	263.8	-3,440.4	3,449.9	0.00	0.00	0.00	
10,700.0	90.00	269.69	7,219.0	263.3	-3,540.4	3,549.7	0.00	0.00	0.00	
10,800.0	90.00	269.69	7,219.0	262.8	-3,640.4	3,649.5	0.00	0.00	0.00	
10,900.0	90.00	269.69	7,219.0	262.2	-3,740.4	3,749.3	0.00	0.00	0.00	
11,000.0	90.00	269.69	7,219.0	261.7	-3,840.4	3,849.1	0.00	0.00	0.00	
11,100.0	90.00	269.69	7,219.0	261.2	-3,940.4	3,948.9	0.00	0.00	0.00	
11,200.0	90.00	269.69	7,219.0	260.6	-4,040.4	4,048.7	0.00	0.00	0.00	
11,300.0	90.00	269.69	7,219.0	260.1	-4,140.4	4,148.5	0.00	0.00	0.00	
11,400.0	90.00	269.69	7,219.0	259.6	-4,240.4	4,248.3	0.00	0.00	0.00	
11,500.0	90.00	269.69	7,219.0	259.0	-4,340.4	4,348.1	0.00	0.00	0.00	
11,600.0	90.00	269.69	7,219.0	258.5	-4,440.4	4,447.9	0.00	0.00	0.00	
11,688.6	90.00	269.69	7,219.0	258.0	-4,529.0	4,536.4	0.00	0.00	0.00	
TD at 11688.6										

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 2138'FNL & 460'	0.00	0.00	7,219.0	258.0	-4,529.1	1,458,471.31	3,180,767.75	40.590081	-104.849117	
- plan hits target center										
- Point										
SHL 2437'FNL & 277'	0.00	0.00	1.0	0.0	0.0	1,458,247.40	3,185,298.50	40.589374	-104.832810	
- plan hits target center										
- Point										

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
7,648.5	7,219.0	7"	7	7-1/2	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment	
1,600.0	1,600.0	0.0	0.0	KOP - Start Build 2.00	
4,682.3	4,662.4	267.9	214.7	Start Drop -2.00	
6,523.5	6,502.8	283.5	227.2	KOP #2 - Start Build 8.00	
11,688.6	7,219.0	258.0	-4,529.0	TD at 11688.6	