

# Condor Energy

Well Name: **Wickstrom 4-4H**

Surface Location: Wickstrom 4-2H Pad Sec.4-T6N-R60W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4789.9

+N/-S +E/-W Northing Easting Latitude Longitude Slot  
0.0 0.0 1431989.12 3390779.56 40.510710 -104.094540

RKB-12.5' WELL @ 4802.4ft (RKB-12.5')

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 270'FSL & 1307'FEL	1.0	0.0	0.0	Point
HARDLINE 600' BHL	2.3	4377.2	710.2	Polygon
HARDLINE 600' SHL	2.3	330.0	705.8	Polygon
SECTION LINE	2.3	-270.0	1305.8	Polygon
BHL 660'FNL & 660'FEL	6040.0	4313.6	650.6	Point
LANDING POINT 660'FSL & 660'FEL	6040.0	389.8	647.9	Point



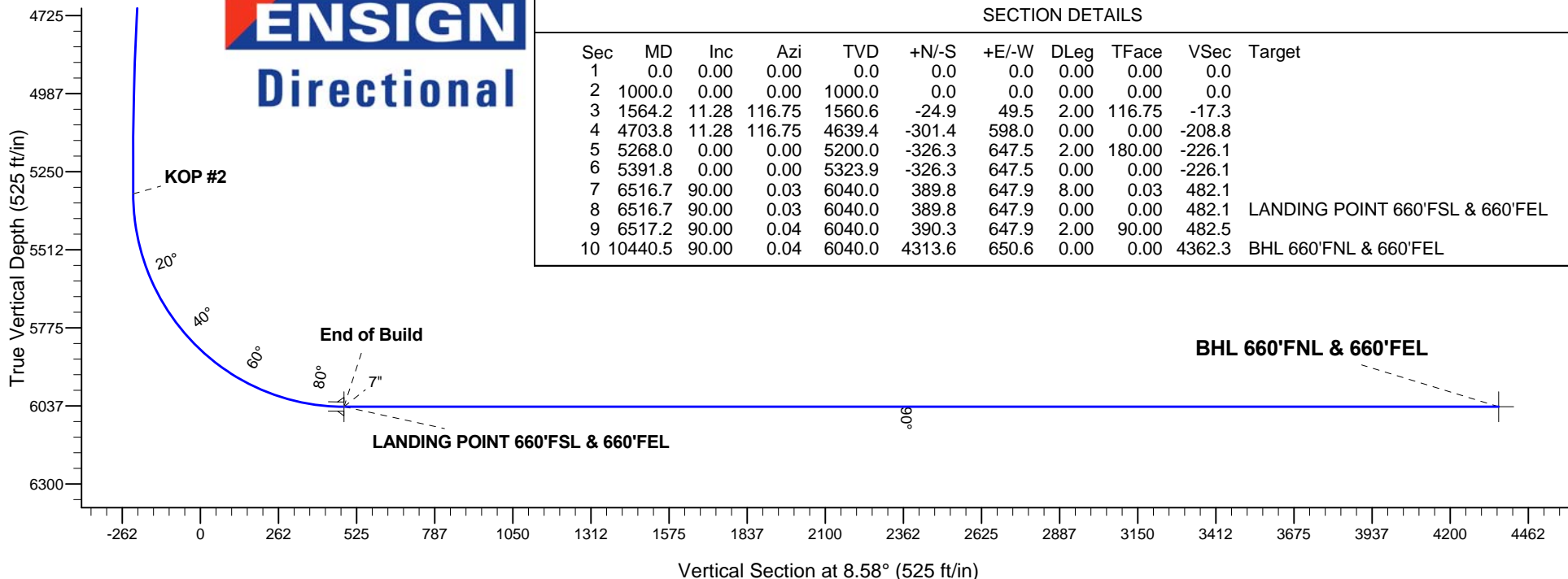
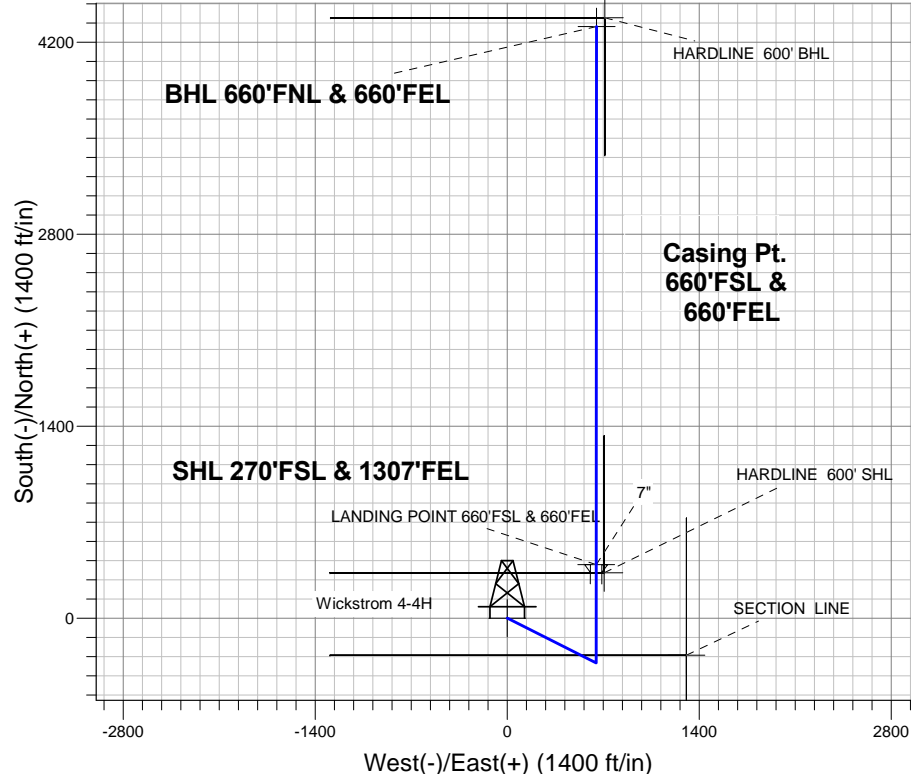
Azimuths to True North  
Magnetic North: 8.22°

Magnetic Field  
Strength: 53034.8snT  
Dip Angle: 67.17°  
Date: 7/30/2013  
Model: IGRF2010

Wickstrom 4-2H Pad Sec.4-T6N-R60W  
Wickstrom 4-4H  
Plan #1 (7-30-13)  
11:11, July 31 2013

## ANNOTATIONS

TVD	MD	Annotation
1000.0	1000.0	KOP #1
5323.8	5391.8	KOP #2
6040.0	6516.7	End of Build



**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	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1564.2	11.28	116.75	1560.6	-24.9	49.5	2.00	116.75	-17.3	
4	4703.8	11.28	116.75	4639.4	-301.4	598.0	0.00	0.00	-208.8	
5	5268.0	0.00	0.00	5200.0	-326.3	647.5	2.00	180.00	-226.1	
6	5391.8	0.00	0.00	5323.9	-326.3	647.5	0.00	0.00	-226.1	
7	6516.7	90.00	0.03	6040.0	389.8	647.9	8.00	0.03	482.1	
8	6516.7	90.00	0.03	6040.0	389.8	647.9	0.00	0.00	482.1	LANDING POINT 660'FSL & 660'FEL
9	6517.2	90.00	0.04	6040.0	390.3	647.9	2.00	90.00	482.5	
10	10440.5	90.00	0.04	6040.0	4313.6	650.6	0.00	0.00	4362.3	BHL 660'FNL & 660'FEL



## **Condor Energy**

**SEC.4-T6N-R60W**

**Wickstrom 4-2H Pad Sec.4-T6N-R60W**

**Wickstrom 4-4H**

**Wellbore #1**

**Plan: Plan #1 (7-30-13)**

## **Standard Planning Report**

**31 July, 2013**

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Wickstrom 4-4H
<b>Company:</b>	Condor Energy	<b>TVD Reference:</b>	WELL @ 4802.4ft (RKB-12.5')
<b>Project:</b>	SEC.4-T6N-R60W	<b>MD Reference:</b>	WELL @ 4802.4ft (RKB-12.5')
<b>Site:</b>	Wickstrom 4-2H Pad Sec.4-T6N-R60W	<b>North Reference:</b>	True
<b>Well:</b>	Wickstrom 4-4H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (7-30-13)		

<b>Project</b>	SEC.4-T6N-R60W, Morgan 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

Site		Wickstrom 4-2H Pad Sec.4-T6N-R60W			
Site Position:		Northing:	1,431,988.16ft	Latitude:	40.510710
From:	Lat/Long	Easting:	3,390,718.40ft	Longitude:	-104.094760
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.91 °

Well	Wickstrom 4-4H					
Well Position	+N/-S	0.0 ft	Northing:	1,431,989.12 ft	Latitude:	40.510710
	+E/-W	61.2 ft	Easting:	3,390,779.56 ft	Longitude:	-104.094540
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,789.9 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	7/30/2013	8.22	67.17	53,035

<b>Design</b>	Plan #1 (7-30-13)			
<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	8.58

<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	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,564.2	11.28	116.75	1,560.6	-24.9	49.5	2.00	2.00	0.00	116.75	
4,703.8	11.28	116.75	4,639.4	-301.4	598.0	0.00	0.00	0.00	0.00	
5,268.0	0.00	0.00	5,200.0	-326.3	647.5	2.00	-2.00	0.00	180.00	
5,391.8	0.00	0.00	5,323.9	-326.3	647.5	0.00	0.00	0.00	0.00	
6,516.7	90.00	0.03	6,040.0	389.8	647.9	8.00	8.00	0.00	0.03	
6,516.7	90.00	0.03	6,040.0	389.8	647.9	0.00	0.00	0.00	0.00	LANDING POINT 6
6,517.2	90.00	0.04	6,040.0	390.3	647.9	2.00	0.00	2.00	90.00	
10,440.5	90.00	0.04	6,040.0	4,313.6	650.6	0.00	0.00	0.00	0.00	BHL 660'FNL & 660'

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Wickstrom 4-4H
<b>Company:</b>	Condor Energy	<b>TVD Reference:</b>	WELL @ 4802.4ft (RKB-12.5')
<b>Project:</b>	SEC.4-T6N-R60W	<b>MD Reference:</b>	WELL @ 4802.4ft (RKB-12.5')
<b>Site:</b>	Wickstrom 4-2H Pad Sec.4-T6N-R60W	<b>North Reference:</b>	True
<b>Well:</b>	Wickstrom 4-4H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (7-30-13)		

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 270'FSL &amp; 1307'FEL</b>									
2.3	0.00	0.00	2.3	0.0	0.0	0.0	0.00	0.00	0.00
<b>HARDLINE 600' SHL - SECTION LINE - HARDLINE 600' BHL</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
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
<b>KOP #1</b>									
1,100.0	2.00	116.75	1,100.0	-0.8	1.6	-0.5	2.00	2.00	0.00
1,200.0	4.00	116.75	1,199.8	-3.1	6.2	-2.2	2.00	2.00	0.00
1,300.0	6.00	116.75	1,299.5	-7.1	14.0	-4.9	2.00	2.00	0.00
1,400.0	8.00	116.75	1,398.7	-12.5	24.9	-8.7	2.00	2.00	0.00
1,500.0	10.00	116.75	1,497.5	-19.6	38.9	-13.6	2.00	2.00	0.00
1,564.2	11.28	116.75	1,560.6	-24.9	49.5	-17.3	2.00	2.00	0.00
1,600.0	11.28	116.75	1,595.7	-28.1	55.7	-19.5	0.00	0.00	0.00
1,700.0	11.28	116.75	1,693.7	-36.9	73.2	-25.6	0.00	0.00	0.00
1,800.0	11.28	116.75	1,791.8	-45.7	90.7	-31.7	0.00	0.00	0.00
1,900.0	11.28	116.75	1,889.9	-54.5	108.1	-37.8	0.00	0.00	0.00
2,000.0	11.28	116.75	1,987.9	-63.3	125.6	-43.9	0.00	0.00	0.00
2,100.0	11.28	116.75	2,086.0	-72.1	143.1	-50.0	0.00	0.00	0.00
2,200.0	11.28	116.75	2,184.1	-80.9	160.6	-56.1	0.00	0.00	0.00
2,300.0	11.28	116.75	2,282.1	-89.7	178.0	-62.2	0.00	0.00	0.00
2,400.0	11.28	116.75	2,380.2	-98.5	195.5	-68.3	0.00	0.00	0.00
2,500.0	11.28	116.75	2,478.3	-107.3	213.0	-74.4	0.00	0.00	0.00
2,600.0	11.28	116.75	2,576.3	-116.1	230.4	-80.5	0.00	0.00	0.00
2,700.0	11.28	116.75	2,674.4	-124.9	247.9	-86.6	0.00	0.00	0.00
2,800.0	11.28	116.75	2,772.5	-133.7	265.4	-92.7	0.00	0.00	0.00
2,900.0	11.28	116.75	2,870.5	-142.5	282.9	-98.8	0.00	0.00	0.00
3,000.0	11.28	116.75	2,968.6	-151.4	300.3	-104.9	0.00	0.00	0.00
3,100.0	11.28	116.75	3,066.7	-160.2	317.8	-111.0	0.00	0.00	0.00
3,200.0	11.28	116.75	3,164.7	-169.0	335.3	-117.1	0.00	0.00	0.00
3,300.0	11.28	116.75	3,262.8	-177.8	352.8	-123.2	0.00	0.00	0.00
3,400.0	11.28	116.75	3,360.9	-186.6	370.2	-129.3	0.00	0.00	0.00
3,500.0	11.28	116.75	3,458.9	-195.4	387.7	-135.4	0.00	0.00	0.00
3,600.0	11.28	116.75	3,557.0	-204.2	405.2	-141.5	0.00	0.00	0.00
3,700.0	11.28	116.75	3,655.1	-213.0	422.7	-147.6	0.00	0.00	0.00
3,800.0	11.28	116.75	3,753.1	-221.8	440.1	-153.7	0.00	0.00	0.00
3,900.0	11.28	116.75	3,851.2	-230.6	457.6	-159.8	0.00	0.00	0.00
4,000.0	11.28	116.75	3,949.3	-239.4	475.1	-165.9	0.00	0.00	0.00
4,100.0	11.28	116.75	4,047.3	-248.2	492.5	-172.0	0.00	0.00	0.00
4,200.0	11.28	116.75	4,145.4	-257.0	510.0	-178.1	0.00	0.00	0.00
4,300.0	11.28	116.75	4,243.5	-265.8	527.5	-184.2	0.00	0.00	0.00
4,400.0	11.28	116.75	4,341.5	-274.6	545.0	-190.3	0.00	0.00	0.00
4,500.0	11.28	116.75	4,439.6	-283.4	562.4	-196.4	0.00	0.00	0.00
4,600.0	11.28	116.75	4,537.7	-292.2	579.9	-202.5	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Wickstrom 4-4H
<b>Company:</b>	Condor Energy	<b>TVD Reference:</b>	WELL @ 4802.4ft (RKB-12.5')
<b>Project:</b>	SEC.4-T6N-R60W	<b>MD Reference:</b>	WELL @ 4802.4ft (RKB-12.5')
<b>Site:</b>	Wickstrom 4-2H Pad Sec.4-T6N-R60W	<b>North Reference:</b>	True
<b>Well:</b>	Wickstrom 4-4H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (7-30-13)		

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)
4,700.0	11.28	116.75	4,635.7	-301.0	597.4	-208.6	0.00	0.00	0.00
4,703.8	11.28	116.75	4,639.4	-301.4	598.0	-208.8	0.00	0.00	0.00
4,800.0	9.36	116.75	4,734.1	-309.1	613.4	-214.2	2.00	-2.00	0.00
4,900.0	7.36	116.75	4,833.0	-315.7	626.4	-218.7	2.00	-2.00	0.00
5,000.0	5.36	116.75	4,932.4	-320.7	636.3	-222.2	2.00	-2.00	0.00
5,100.0	3.36	116.75	5,032.1	-324.1	643.1	-224.6	2.00	-2.00	0.00
5,200.0	1.36	116.75	5,132.0	-325.9	646.8	-225.8	2.00	-2.00	0.00
5,268.0	0.00	0.00	5,200.0	-326.3	647.5	-226.1	2.00	-2.00	0.00
5,300.0	0.00	0.00	5,232.0	-326.3	647.5	-226.1	0.00	0.00	0.00
5,391.8	0.00	0.00	5,323.8	-326.3	647.5	-226.1	0.00	0.00	0.00
<b>KOP #2</b>									
5,400.0	0.65	0.03	5,332.0	-326.3	647.5	-226.0	7.96	7.96	0.00
5,500.0	8.65	0.03	5,431.6	-318.1	647.5	-218.0	8.00	8.00	0.00
5,600.0	16.65	0.03	5,529.1	-296.3	647.5	-196.4	8.00	8.00	0.00
5,700.0	24.66	0.03	5,622.6	-261.0	647.5	-161.5	8.00	8.00	0.00
5,800.0	32.66	0.03	5,710.3	-213.1	647.6	-114.1	8.00	8.00	0.00
5,900.0	40.66	0.03	5,790.4	-153.4	647.6	-55.2	8.00	8.00	0.00
6,000.0	48.66	0.03	5,861.5	-83.2	647.6	14.3	8.00	8.00	0.00
6,100.0	56.66	0.03	5,922.1	-3.8	647.7	92.9	8.00	8.00	0.00
6,200.0	64.66	0.03	5,971.1	83.3	647.7	179.0	8.00	8.00	0.00
6,300.0	72.66	0.03	6,007.5	176.4	647.8	271.0	8.00	8.00	0.00
6,400.0	80.66	0.03	6,030.5	273.6	647.8	367.2	8.00	8.00	0.00
6,500.0	88.66	0.03	6,039.8	373.1	647.9	465.5	8.00	8.00	0.00
6,516.7	90.00	0.03	6,040.0	389.8	647.9	482.1	7.98	7.98	0.00
<b>End of Build - 7" - LANDING POINT 660'FSL &amp; 660'FEL</b>									
6,517.2	90.00	0.04	6,040.0	390.3	647.9	482.5	2.08	0.58	2.00
6,600.0	90.00	0.04	6,040.0	473.1	647.9	564.4	0.00	0.00	0.00
6,700.0	90.00	0.04	6,040.0	573.1	648.0	663.3	0.00	0.00	0.00
6,800.0	90.00	0.04	6,040.0	673.1	648.1	762.2	0.00	0.00	0.00
6,900.0	90.00	0.04	6,040.0	773.1	648.1	861.1	0.00	0.00	0.00
7,000.0	90.00	0.04	6,040.0	873.1	648.2	960.0	0.00	0.00	0.00
7,100.0	90.00	0.04	6,040.0	973.1	648.3	1,058.9	0.00	0.00	0.00
7,200.0	90.00	0.04	6,040.0	1,073.1	648.3	1,157.8	0.00	0.00	0.00
7,300.0	90.00	0.04	6,040.0	1,173.1	648.4	1,256.7	0.00	0.00	0.00
7,400.0	90.00	0.04	6,040.0	1,273.1	648.5	1,355.6	0.00	0.00	0.00
7,500.0	90.00	0.04	6,040.0	1,373.1	648.6	1,454.5	0.00	0.00	0.00
7,600.0	90.00	0.04	6,040.0	1,473.1	648.6	1,553.4	0.00	0.00	0.00
7,700.0	90.00	0.04	6,040.0	1,573.1	648.7	1,652.2	0.00	0.00	0.00
7,800.0	90.00	0.04	6,040.0	1,673.1	648.8	1,751.1	0.00	0.00	0.00
7,900.0	90.00	0.04	6,040.0	1,773.1	648.8	1,850.0	0.00	0.00	0.00
8,000.0	90.00	0.04	6,040.0	1,873.1	648.9	1,948.9	0.00	0.00	0.00
8,100.0	90.00	0.04	6,040.0	1,973.1	649.0	2,047.8	0.00	0.00	0.00
8,200.0	90.00	0.04	6,040.0	2,073.1	649.0	2,146.7	0.00	0.00	0.00
8,300.0	90.00	0.04	6,040.0	2,173.1	649.1	2,245.6	0.00	0.00	0.00
8,400.0	90.00	0.04	6,040.0	2,273.1	649.2	2,344.5	0.00	0.00	0.00
8,500.0	90.00	0.04	6,040.0	2,373.1	649.2	2,443.4	0.00	0.00	0.00
8,600.0	90.00	0.04	6,040.0	2,473.1	649.3	2,542.3	0.00	0.00	0.00
8,700.0	90.00	0.04	6,040.0	2,573.1	649.4	2,641.2	0.00	0.00	0.00
8,800.0	90.00	0.04	6,040.0	2,673.1	649.4	2,740.1	0.00	0.00	0.00
8,900.0	90.00	0.04	6,040.0	2,773.1	649.5	2,838.9	0.00	0.00	0.00
9,000.0	90.00	0.04	6,040.0	2,873.1	649.6	2,937.8	0.00	0.00	0.00
9,100.0	90.00	0.04	6,040.0	2,973.1	649.6	3,036.7	0.00	0.00	0.00
9,200.0	90.00	0.04	6,040.0	3,073.1	649.7	3,135.6	0.00	0.00	0.00
9,300.0	90.00	0.04	6,040.0	3,173.1	649.8	3,234.5	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Wickstrom 4-4H
<b>Company:</b>	Condor Energy	<b>TVD Reference:</b>	WELL @ 4802.4ft (RKB-12.5')
<b>Project:</b>	SEC.4-T6N-R60W	<b>MD Reference:</b>	WELL @ 4802.4ft (RKB-12.5')
<b>Site:</b>	Wickstrom 4-2H Pad Sec.4-T6N-R60W	<b>North Reference:</b>	True
<b>Well:</b>	Wickstrom 4-4H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (7-30-13)		

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)	
9,400.0	90.00	0.04	6,040.0	3,273.1	649.8	3,333.4	0.00	0.00	0.00	
9,500.0	90.00	0.04	6,040.0	3,373.1	649.9	3,432.3	0.00	0.00	0.00	
9,600.0	90.00	0.04	6,040.0	3,473.1	650.0	3,531.2	0.00	0.00	0.00	
9,700.0	90.00	0.04	6,040.0	3,573.1	650.1	3,630.1	0.00	0.00	0.00	
9,800.0	90.00	0.04	6,040.0	3,673.1	650.1	3,729.0	0.00	0.00	0.00	
9,900.0	90.00	0.04	6,040.0	3,773.1	650.2	3,827.9	0.00	0.00	0.00	
10,000.0	90.00	0.04	6,040.0	3,873.1	650.3	3,926.8	0.00	0.00	0.00	
10,100.0	90.00	0.04	6,040.0	3,973.1	650.3	4,025.7	0.00	0.00	0.00	
10,200.0	90.00	0.04	6,040.0	4,073.1	650.4	4,124.5	0.00	0.00	0.00	
10,300.0	90.00	0.04	6,040.0	4,173.1	650.5	4,223.4	0.00	0.00	0.00	
10,400.0	90.00	0.04	6,040.0	4,273.1	650.5	4,322.3	0.00	0.00	0.00	
10,440.5	90.00	0.04	6,040.0	4,313.6	650.6	4,362.3	0.00	0.00	0.00	
BHL 660'FNL & 660'FEL										

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
6,516.7	6,040.0	7"	7	7-1/2	

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
1,000.0	1,000.0	0.0	0.0	KOP #1
5,391.8	5,323.8	-326.3	647.5	KOP #2
6,516.7	6,040.0	389.8	647.9	End of Build