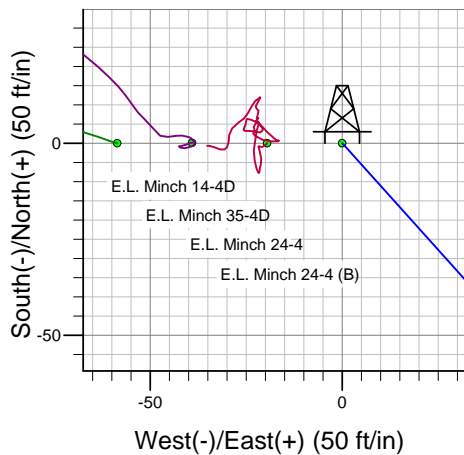
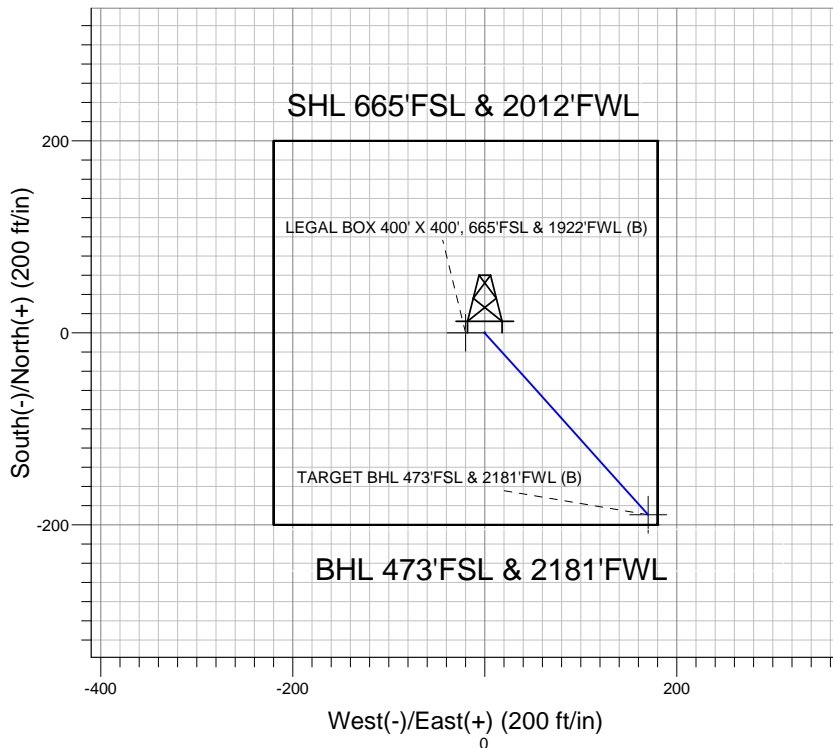
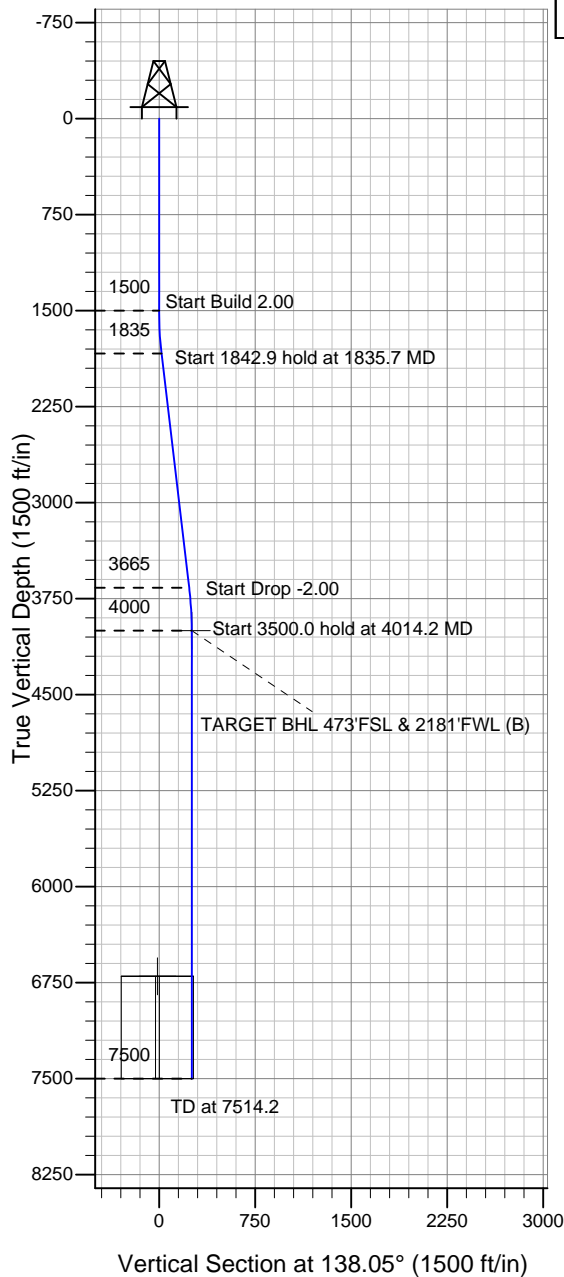


### Well Name: E.L. Minch 24-4 (B)

Surface Location: E.L. Minch 35-4D PAD Sec.4-T3N-R68W  
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
 Ground Elevation: 5053.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1334108.03	3136635.59	40.249490	-105.010490	
Original Well Elev WELL @ 5066.0ft (Original Well Elev)						

## Apollo Operating, LLC.



E.L. Minch 35-4D PAD Sec.4-T3N-R68W  
 E.L. Minch 24-4 (B)  
 Plan #2 (4-17-12)  
 9:08, April 17 2012



Azimuths to True North  
 Magnetic North: 8.87°  
 Magnetic Field  
 Strength: 52935.3snT  
 Dip Angle: 66.86°  
 Date: 4/17/2012  
 Model: IGRF2010

### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 473'FSL & 2181'FWL (B)	4000.0	-189.4	170.3	40.248970	-105.009880	Point
LEGAL BOX 400' X 400', 665'FSL & 1922'FWL (B)	6700.0	0.0	-20.0	40.249490	-105.010562	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	1500.0	0.00	0.00	1500.0	0.0	0.0	0.00	0.00	0.0	
3	1835.7	6.71	138.05	1834.9	-14.6	13.1	2.00	138.05	19.6	
4	3678.5	6.71	138.05	3665.1	-174.8	157.1	0.00	0.00	235.1	
5	4014.2	0.00	0.00	4000.0	-189.4	170.3	2.00	180.00	254.7	TARGET BHL 473'FSL & 2181'FWL (B)
6	7514.2	0.00	0.00	7500.0	-189.4	170.3	0.00	0.00	254.7	



## **Apollo Operating, LLC.**

**SEC.4-T3N-R68W**

**E.L. Minch 35-4D PAD Sec.4-T3N-R68W**

**E.L. Minch 24-4 (B)**

**Wellbore #1**

**Plan: Plan #2 (4-17-12)**

## **Standard Planning Report**

**17 April, 2012**

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	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,835.7	6.71	138.05	1,834.9	-14.6	13.1	2.00	2.00	0.00	138.05	
3,678.5	6.71	138.05	3,665.1	-174.8	157.1	0.00	0.00	0.00	0.00	
4,014.2	0.00	0.00	4,000.0	-189.4	170.3	2.00	-2.00	0.00	180.00	TARGET BHL 473°
7,514.2	0.00	0.00	7,500.0	-189.4	170.3	0.00	0.00	0.00	0.00	

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well E.L. Minch 24-4 (B)
<b>Company:</b>	Apollo Operating, LLC.	<b>TVD Reference:</b>	WELL @ 5066.0ft (Original Well Elev)
<b>Project:</b>	SEC.4-T3N-R68W	<b>MD Reference:</b>	WELL @ 5066.0ft (Original Well Elev)
<b>Site:</b>	E.L. Minch 35-4D PAD Sec.4-T3N-R68W	<b>North Reference:</b>	True
<b>Well:</b>	E.L. Minch 24-4 (B)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (4-17-12)		

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
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
880.0	0.00	0.00	880.0	0.0	0.0	0.0	0.00	0.00	0.00
920.0	0.00	0.00	920.0	0.0	0.0	0.0	0.00	0.00	0.00
960.0	0.00	0.00	960.0	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
1,040.0	0.00	0.00	1,040.0	0.0	0.0	0.0	0.00	0.00	0.00
1,080.0	0.00	0.00	1,080.0	0.0	0.0	0.0	0.00	0.00	0.00
1,120.0	0.00	0.00	1,120.0	0.0	0.0	0.0	0.00	0.00	0.00
1,160.0	0.00	0.00	1,160.0	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
1,240.0	0.00	0.00	1,240.0	0.0	0.0	0.0	0.00	0.00	0.00
1,280.0	0.00	0.00	1,280.0	0.0	0.0	0.0	0.00	0.00	0.00
1,320.0	0.00	0.00	1,320.0	0.0	0.0	0.0	0.00	0.00	0.00
1,360.0	0.00	0.00	1,360.0	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
1,440.0	0.00	0.00	1,440.0	0.0	0.0	0.0	0.00	0.00	0.00
1,480.0	0.00	0.00	1,480.0	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
1,520.0	0.40	138.05	1,520.0	-0.1	0.0	0.1	2.00	2.00	0.00
1,560.0	1.20	138.05	1,560.0	-0.5	0.4	0.6	2.00	2.00	0.00
1,600.0	2.00	138.05	1,600.0	-1.3	1.2	1.7	2.00	2.00	0.00
1,640.0	2.80	138.05	1,639.9	-2.5	2.3	3.4	2.00	2.00	0.00
1,680.0	3.60	138.05	1,679.9	-4.2	3.8	5.7	2.00	2.00	0.00
1,720.0	4.40	138.05	1,719.8	-6.3	5.6	8.4	2.00	2.00	0.00
1,760.0	5.20	138.05	1,759.6	-8.8	7.9	11.8	2.00	2.00	0.00
1,800.0	6.00	138.05	1,799.5	-11.7	10.5	15.7	2.00	2.00	0.00
1,835.7	6.71	138.05	1,834.9	-14.6	13.1	19.6	2.00	2.00	0.00
1,840.0	6.71	138.05	1,839.2	-15.0	13.5	20.1	0.00	0.00	0.00
1,880.0	6.71	138.05	1,878.9	-18.5	16.6	24.8	0.00	0.00	0.00
1,920.0	6.71	138.05	1,918.7	-21.9	19.7	29.5	0.00	0.00	0.00
1,960.0	6.71	138.05	1,958.4	-25.4	22.8	34.2	0.00	0.00	0.00
2,000.0	6.71	138.05	1,998.1	-28.9	26.0	38.9	0.00	0.00	0.00
2,040.0	6.71	138.05	2,037.8	-32.4	29.1	43.5	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well E.L. Minch 24-4 (B)
<b>Company:</b>	Apollo Operating, LLC.	<b>TVD Reference:</b>	WELL @ 5066.0ft (Original Well Elev)
<b>Project:</b>	SEC.4-T3N-R68W	<b>MD Reference:</b>	WELL @ 5066.0ft (Original Well Elev)
<b>Site:</b>	E.L. Minch 35-4D PAD Sec.4-T3N-R68W	<b>North Reference:</b>	True
<b>Well:</b>	E.L. Minch 24-4 (B)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (4-17-12)		

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)
2,080.0	6.71	138.05	2,077.6	-35.8	32.2	48.2	0.00	0.00	0.00
2,120.0	6.71	138.05	2,117.3	-39.3	35.4	52.9	0.00	0.00	0.00
2,160.0	6.71	138.05	2,157.0	-42.8	38.5	57.6	0.00	0.00	0.00
2,200.0	6.71	138.05	2,196.7	-46.3	41.6	62.2	0.00	0.00	0.00
2,240.0	6.71	138.05	2,236.5	-49.8	44.7	66.9	0.00	0.00	0.00
2,280.0	6.71	138.05	2,276.2	-53.2	47.9	71.6	0.00	0.00	0.00
2,320.0	6.71	138.05	2,315.9	-56.7	51.0	76.3	0.00	0.00	0.00
2,360.0	6.71	138.05	2,355.6	-60.2	54.1	80.9	0.00	0.00	0.00
2,400.0	6.71	138.05	2,395.4	-63.7	57.2	85.6	0.00	0.00	0.00
2,440.0	6.71	138.05	2,435.1	-67.1	60.4	90.3	0.00	0.00	0.00
2,480.0	6.71	138.05	2,474.8	-70.6	63.5	95.0	0.00	0.00	0.00
2,520.0	6.71	138.05	2,514.5	-74.1	66.6	99.6	0.00	0.00	0.00
2,560.0	6.71	138.05	2,554.3	-77.6	69.7	104.3	0.00	0.00	0.00
2,600.0	6.71	138.05	2,594.0	-81.1	72.9	109.0	0.00	0.00	0.00
2,640.0	6.71	138.05	2,633.7	-84.5	76.0	113.7	0.00	0.00	0.00
2,680.0	6.71	138.05	2,673.4	-88.0	79.1	118.3	0.00	0.00	0.00
2,720.0	6.71	138.05	2,713.2	-91.5	82.2	123.0	0.00	0.00	0.00
2,760.0	6.71	138.05	2,752.9	-95.0	85.4	127.7	0.00	0.00	0.00
2,800.0	6.71	138.05	2,792.6	-98.4	88.5	132.4	0.00	0.00	0.00
2,840.0	6.71	138.05	2,832.3	-101.9	91.6	137.0	0.00	0.00	0.00
2,880.0	6.71	138.05	2,872.1	-105.4	94.7	141.7	0.00	0.00	0.00
2,920.0	6.71	138.05	2,911.8	-108.9	97.9	146.4	0.00	0.00	0.00
2,960.0	6.71	138.05	2,951.5	-112.4	101.0	151.1	0.00	0.00	0.00
3,000.0	6.71	138.05	2,991.2	-115.8	104.1	155.8	0.00	0.00	0.00
3,040.0	6.71	138.05	3,031.0	-119.3	107.2	160.4	0.00	0.00	0.00
3,080.0	6.71	138.05	3,070.7	-122.8	110.4	165.1	0.00	0.00	0.00
3,120.0	6.71	138.05	3,110.4	-126.3	113.5	169.8	0.00	0.00	0.00
3,160.0	6.71	138.05	3,150.2	-129.7	116.6	174.5	0.00	0.00	0.00
3,200.0	6.71	138.05	3,189.9	-133.2	119.8	179.1	0.00	0.00	0.00
3,240.0	6.71	138.05	3,229.6	-136.7	122.9	183.8	0.00	0.00	0.00
3,280.0	6.71	138.05	3,269.3	-140.2	126.0	188.5	0.00	0.00	0.00
3,320.0	6.71	138.05	3,309.1	-143.7	129.1	193.2	0.00	0.00	0.00
3,360.0	6.71	138.05	3,348.8	-147.1	132.3	197.8	0.00	0.00	0.00
3,400.0	6.71	138.05	3,388.5	-150.6	135.4	202.5	0.00	0.00	0.00
3,440.0	6.71	138.05	3,428.2	-154.1	138.5	207.2	0.00	0.00	0.00
3,480.0	6.71	138.05	3,468.0	-157.6	141.6	211.9	0.00	0.00	0.00
3,520.0	6.71	138.05	3,507.7	-161.0	144.8	216.5	0.00	0.00	0.00
3,560.0	6.71	138.05	3,547.4	-164.5	147.9	221.2	0.00	0.00	0.00
3,600.0	6.71	138.05	3,587.1	-168.0	151.0	225.9	0.00	0.00	0.00
3,640.0	6.71	138.05	3,626.9	-171.5	154.1	230.6	0.00	0.00	0.00
3,678.5	6.71	138.05	3,665.1	-174.8	157.1	235.1	0.00	0.00	0.00
3,680.0	6.68	138.05	3,666.6	-175.0	157.3	235.2	2.00	-2.00	0.00
3,720.0	5.88	138.05	3,706.3	-178.2	160.2	239.6	2.00	-2.00	0.00
3,760.0	5.08	138.05	3,746.2	-181.0	162.7	243.4	2.00	-2.00	0.00
3,800.0	4.28	138.05	3,786.0	-183.5	164.9	246.7	2.00	-2.00	0.00
3,840.0	3.48	138.05	3,825.9	-185.5	166.7	249.4	2.00	-2.00	0.00
3,880.0	2.68	138.05	3,865.9	-187.1	168.2	251.6	2.00	-2.00	0.00
3,920.0	1.88	138.05	3,905.8	-188.3	169.2	253.2	2.00	-2.00	0.00
3,960.0	1.08	138.05	3,945.8	-189.0	169.9	254.2	2.00	-2.00	0.00
4,000.0	0.28	138.05	3,985.8	-189.4	170.3	254.7	2.00	-2.00	0.00
4,014.2	0.00	0.00	4,000.0	-189.4	170.3	254.7	2.00	-2.00	-974.23
TARGET BHL 473'FSL & 2181'FWL (B)									
4,040.0	0.00	0.00	4,025.8	-189.4	170.3	254.7	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well E.L. Minch 24-4 (B)
<b>Company:</b>	Apollo Operating, LLC.	<b>TVD Reference:</b>	WELL @ 5066.0ft (Original Well Elev)
<b>Project:</b>	SEC.4-T3N-R68W	<b>MD Reference:</b>	WELL @ 5066.0ft (Original Well Elev)
<b>Site:</b>	E.L. Minch 35-4D PAD Sec.4-T3N-R68W	<b>North Reference:</b>	True
<b>Well:</b>	E.L. Minch 24-4 (B)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (4-17-12)		

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	0.00	0.00	4,065.8	-189.4	170.3	254.7	0.00	0.00	0.00
4,120.0	0.00	0.00	4,105.8	-189.4	170.3	254.7	0.00	0.00	0.00
4,160.0	0.00	0.00	4,145.8	-189.4	170.3	254.7	0.00	0.00	0.00
4,200.0	0.00	0.00	4,185.8	-189.4	170.3	254.7	0.00	0.00	0.00
4,240.0	0.00	0.00	4,225.8	-189.4	170.3	254.7	0.00	0.00	0.00
4,280.0	0.00	0.00	4,265.8	-189.4	170.3	254.7	0.00	0.00	0.00
4,320.0	0.00	0.00	4,305.8	-189.4	170.3	254.7	0.00	0.00	0.00
4,360.0	0.00	0.00	4,345.8	-189.4	170.3	254.7	0.00	0.00	0.00
4,400.0	0.00	0.00	4,385.8	-189.4	170.3	254.7	0.00	0.00	0.00
4,440.0	0.00	0.00	4,425.8	-189.4	170.3	254.7	0.00	0.00	0.00
4,480.0	0.00	0.00	4,465.8	-189.4	170.3	254.7	0.00	0.00	0.00
4,520.0	0.00	0.00	4,505.8	-189.4	170.3	254.7	0.00	0.00	0.00
4,560.0	0.00	0.00	4,545.8	-189.4	170.3	254.7	0.00	0.00	0.00
4,600.0	0.00	0.00	4,585.8	-189.4	170.3	254.7	0.00	0.00	0.00
4,640.0	0.00	0.00	4,625.8	-189.4	170.3	254.7	0.00	0.00	0.00
4,680.0	0.00	0.00	4,665.8	-189.4	170.3	254.7	0.00	0.00	0.00
4,720.0	0.00	0.00	4,705.8	-189.4	170.3	254.7	0.00	0.00	0.00
4,760.0	0.00	0.00	4,745.8	-189.4	170.3	254.7	0.00	0.00	0.00
4,800.0	0.00	0.00	4,785.8	-189.4	170.3	254.7	0.00	0.00	0.00
4,840.0	0.00	0.00	4,825.8	-189.4	170.3	254.7	0.00	0.00	0.00
4,880.0	0.00	0.00	4,865.8	-189.4	170.3	254.7	0.00	0.00	0.00
4,920.0	0.00	0.00	4,905.8	-189.4	170.3	254.7	0.00	0.00	0.00
4,960.0	0.00	0.00	4,945.8	-189.4	170.3	254.7	0.00	0.00	0.00
5,000.0	0.00	0.00	4,985.8	-189.4	170.3	254.7	0.00	0.00	0.00
5,040.0	0.00	0.00	5,025.8	-189.4	170.3	254.7	0.00	0.00	0.00
5,080.0	0.00	0.00	5,065.8	-189.4	170.3	254.7	0.00	0.00	0.00
5,120.0	0.00	0.00	5,105.8	-189.4	170.3	254.7	0.00	0.00	0.00
5,160.0	0.00	0.00	5,145.8	-189.4	170.3	254.7	0.00	0.00	0.00
5,200.0	0.00	0.00	5,185.8	-189.4	170.3	254.7	0.00	0.00	0.00
5,240.0	0.00	0.00	5,225.8	-189.4	170.3	254.7	0.00	0.00	0.00
5,280.0	0.00	0.00	5,265.8	-189.4	170.3	254.7	0.00	0.00	0.00
5,320.0	0.00	0.00	5,305.8	-189.4	170.3	254.7	0.00	0.00	0.00
5,360.0	0.00	0.00	5,345.8	-189.4	170.3	254.7	0.00	0.00	0.00
5,400.0	0.00	0.00	5,385.8	-189.4	170.3	254.7	0.00	0.00	0.00
5,440.0	0.00	0.00	5,425.8	-189.4	170.3	254.7	0.00	0.00	0.00
5,480.0	0.00	0.00	5,465.8	-189.4	170.3	254.7	0.00	0.00	0.00
5,520.0	0.00	0.00	5,505.8	-189.4	170.3	254.7	0.00	0.00	0.00
5,560.0	0.00	0.00	5,545.8	-189.4	170.3	254.7	0.00	0.00	0.00
5,600.0	0.00	0.00	5,585.8	-189.4	170.3	254.7	0.00	0.00	0.00
5,640.0	0.00	0.00	5,625.8	-189.4	170.3	254.7	0.00	0.00	0.00
5,680.0	0.00	0.00	5,665.8	-189.4	170.3	254.7	0.00	0.00	0.00
5,720.0	0.00	0.00	5,705.8	-189.4	170.3	254.7	0.00	0.00	0.00
5,760.0	0.00	0.00	5,745.8	-189.4	170.3	254.7	0.00	0.00	0.00
5,800.0	0.00	0.00	5,785.8	-189.4	170.3	254.7	0.00	0.00	0.00
5,840.0	0.00	0.00	5,825.8	-189.4	170.3	254.7	0.00	0.00	0.00
5,880.0	0.00	0.00	5,865.8	-189.4	170.3	254.7	0.00	0.00	0.00
5,920.0	0.00	0.00	5,905.8	-189.4	170.3	254.7	0.00	0.00	0.00
5,960.0	0.00	0.00	5,945.8	-189.4	170.3	254.7	0.00	0.00	0.00
6,000.0	0.00	0.00	5,985.8	-189.4	170.3	254.7	0.00	0.00	0.00
6,040.0	0.00	0.00	6,025.8	-189.4	170.3	254.7	0.00	0.00	0.00
6,080.0	0.00	0.00	6,065.8	-189.4	170.3	254.7	0.00	0.00	0.00
6,120.0	0.00	0.00	6,105.8	-189.4	170.3	254.7	0.00	0.00	0.00
6,160.0	0.00	0.00	6,145.8	-189.4	170.3	254.7	0.00	0.00	0.00
6,200.0	0.00	0.00	6,185.8	-189.4	170.3	254.7	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well E.L. Minch 24-4 (B)
<b>Company:</b>	Apollo Operating, LLC.	<b>TVD Reference:</b>	WELL @ 5066.0ft (Original Well Elev)
<b>Project:</b>	SEC.4-T3N-R68W	<b>MD Reference:</b>	WELL @ 5066.0ft (Original Well Elev)
<b>Site:</b>	E.L. Minch 35-4D PAD Sec.4-T3N-R68W	<b>North Reference:</b>	True
<b>Well:</b>	E.L. Minch 24-4 (B)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (4-17-12)		

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)
6,240.0	0.00	0.00	6,225.8	-189.4	170.3	254.7	0.00	0.00	0.00
6,280.0	0.00	0.00	6,265.8	-189.4	170.3	254.7	0.00	0.00	0.00
6,320.0	0.00	0.00	6,305.8	-189.4	170.3	254.7	0.00	0.00	0.00
6,360.0	0.00	0.00	6,345.8	-189.4	170.3	254.7	0.00	0.00	0.00
6,400.0	0.00	0.00	6,385.8	-189.4	170.3	254.7	0.00	0.00	0.00
6,440.0	0.00	0.00	6,425.8	-189.4	170.3	254.7	0.00	0.00	0.00
6,480.0	0.00	0.00	6,465.8	-189.4	170.3	254.7	0.00	0.00	0.00
6,520.0	0.00	0.00	6,505.8	-189.4	170.3	254.7	0.00	0.00	0.00
6,560.0	0.00	0.00	6,545.8	-189.4	170.3	254.7	0.00	0.00	0.00
6,600.0	0.00	0.00	6,585.8	-189.4	170.3	254.7	0.00	0.00	0.00
6,640.0	0.00	0.00	6,625.8	-189.4	170.3	254.7	0.00	0.00	0.00
6,680.0	0.00	0.00	6,665.8	-189.4	170.3	254.7	0.00	0.00	0.00
6,714.2	0.00	0.00	6,700.0	-189.4	170.3	254.7	0.00	0.00	0.00
<b>LEGAL BOX 400' X 400', 665'FSL &amp; 1922'FWL (B)</b>									
6,720.0	0.00	0.00	6,705.8	-189.4	170.3	254.7	0.00	0.00	0.00
6,760.0	0.00	0.00	6,745.8	-189.4	170.3	254.7	0.00	0.00	0.00
6,800.0	0.00	0.00	6,785.8	-189.4	170.3	254.7	0.00	0.00	0.00
6,840.0	0.00	0.00	6,825.8	-189.4	170.3	254.7	0.00	0.00	0.00
6,880.0	0.00	0.00	6,865.8	-189.4	170.3	254.7	0.00	0.00	0.00
6,920.0	0.00	0.00	6,905.8	-189.4	170.3	254.7	0.00	0.00	0.00
6,960.0	0.00	0.00	6,945.8	-189.4	170.3	254.7	0.00	0.00	0.00
7,000.0	0.00	0.00	6,985.8	-189.4	170.3	254.7	0.00	0.00	0.00
7,040.0	0.00	0.00	7,025.8	-189.4	170.3	254.7	0.00	0.00	0.00
7,080.0	0.00	0.00	7,065.8	-189.4	170.3	254.7	0.00	0.00	0.00
7,120.0	0.00	0.00	7,105.8	-189.4	170.3	254.7	0.00	0.00	0.00
7,160.0	0.00	0.00	7,145.8	-189.4	170.3	254.7	0.00	0.00	0.00
7,200.0	0.00	0.00	7,185.8	-189.4	170.3	254.7	0.00	0.00	0.00
7,240.0	0.00	0.00	7,225.8	-189.4	170.3	254.7	0.00	0.00	0.00
7,280.0	0.00	0.00	7,265.8	-189.4	170.3	254.7	0.00	0.00	0.00
7,320.0	0.00	0.00	7,305.8	-189.4	170.3	254.7	0.00	0.00	0.00
7,360.0	0.00	0.00	7,345.8	-189.4	170.3	254.7	0.00	0.00	0.00
7,400.0	0.00	0.00	7,385.8	-189.4	170.3	254.7	0.00	0.00	0.00
7,440.0	0.00	0.00	7,425.8	-189.4	170.3	254.7	0.00	0.00	0.00
7,480.0	0.00	0.00	7,465.8	-189.4	170.3	254.7	0.00	0.00	0.00
7,514.2	0.00	0.00	7,500.0	-189.4	170.3	254.7	0.00	0.00	0.00

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									
LEGAL BOX 400' X 400', 665'FSL & 1922'FWL (B)	0.00	0.00	6,700.0	0.0	-20.0	1,334,107.93	3,136,615.59	40.249490	-105.010562
- plan misses target center by 268.5ft at 6714.2ft MD (6700.0 TVD, -189.4 N, 170.3 E)									
- Rectangle (sides W400.0 H400.0 D800.0)									
TARGET BHL 473'FS	0.00	0.00	4,000.0	-189.4	170.3	1,333,919.56	3,136,806.90	40.248970	-105.009880
- plan hits target center									
- Point									



# **Apollo Operating, LLC.**

**SEC.4-T3N-R68W**

**E.L. Minch 35-4D PAD Sec.4-T3N-R68W**

**E.L. Minch 24-4 (B)**

**Wellbore #1**

**Plan #2 (4-17-12)**

## **Anticollision Report**

**17 April, 2012**





<b>Company:</b>	Apollo Operating, LLC.	<b>Local Co-ordinate Reference:</b>	Well E.L. Minch 24-4 (B)
<b>Project:</b>	SEC.4-T3N-R68W	<b>TVD Reference:</b>	WELL @ 5066.0ft (Original Well Elev)
<b>Reference Site:</b>	E.L. Minch 35-4D PAD Sec.4-T3N-R68W	<b>MD Reference:</b>	WELL @ 5066.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	E.L. Minch 24-4 (B)	<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 (4-17-12)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 98-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	1,997.5	1,931.4	1,913.3	4.3	5.4	135.28	-3.9	-255.8	298.3	289.9	8.45	35.322		
2,100.0	2,096.1	2,025.0	2,003.1	4.5	5.9	136.86	-4.0	-282.1	337.7	328.8	8.90	37.951		
2,200.0	2,194.8	2,119.8	2,094.3	4.8	6.4	138.01	-5.0	-308.1	376.5	367.2	9.36	40.242		
2,300.0	2,293.4	2,208.0	2,179.0	5.1	6.8	138.84	-6.1	-332.3	415.4	405.6	9.82	42.282		
2,400.0	2,392.0	2,296.4	2,263.8	5.4	7.3	139.60	-6.6	-357.5	455.4	445.1	10.31	44.188		
2,500.0	2,490.7	2,389.5	2,353.1	5.7	7.8	140.31	-6.9	-383.9	495.5	484.6	10.81	45.839		
2,600.0	2,589.3	2,480.0	2,439.9	6.1	8.2	140.92	-6.9	-409.5	535.5	524.2	11.31	47.353		
2,700.0	2,687.9	2,570.2	2,526.4	6.4	8.7	141.49	-6.5	-435.2	575.8	564.0	11.82	48.718		
2,800.0	2,786.6	2,659.9	2,612.3	6.7	9.2	142.02	-5.7	-460.7	616.3	604.0	12.34	49.965		
2,900.0	2,885.2	2,748.6	2,697.2	7.1	9.7	142.46	-5.1	-486.4	657.2	644.3	12.85	51.131		
3,000.0	2,983.8	2,838.8	2,783.5	7.4	10.2	142.81	-4.9	-512.8	698.4	685.0	13.38	52.192		
3,044.8	3,028.0	2,879.3	2,822.2	7.6	10.5	142.95	-4.8	-524.7	716.8	703.2	13.62	52.637		
3,100.0	3,082.5	2,934.1	2,874.6	7.8	10.8	143.38	-4.9	-540.7	739.1	725.1	13.95	52.987		
3,200.0	3,181.7	3,032.2	2,968.6	8.0	11.3	143.89	-5.9	-568.7	776.6	762.1	14.52	53.488		
3,300.0	3,281.3	3,119.5	3,052.2	8.3	11.8	144.19	-7.2	-593.8	811.7	796.6	15.05	53.935		
3,400.0	3,381.1	3,225.3	3,153.5	8.5	12.4	144.28	-8.3	-624.1	844.0	828.4	15.61	54.075		
3,500.0	3,481.0	3,319.6	3,244.3	8.7	12.9	144.32	-8.6	-650.0	872.7	856.5	16.11	54.165		
3,519.0	3,500.0	3,336.1	3,260.0	8.7	13.0	-77.63	-8.6	-654.6	877.9	861.7	16.20	54.193		
3,600.0	3,581.0	3,407.7	3,328.7	8.9	13.4	-77.94	-8.8	-674.9	900.3	883.8	16.55	54.386		
3,700.0	3,681.0	3,499.8	3,416.9	9.0	14.0	-78.31	-9.0	-701.5	928.6	911.6	17.02	54.564		
3,800.0	3,781.0	3,600.0	3,512.9	9.2	14.5	-78.68	-9.2	-730.4	956.9	939.4	17.50	54.693		
3,900.0	3,881.0	3,694.3	3,603.2	9.4	15.1	-79.01	-9.3	-757.3	984.9	966.9	17.95	54.860		
4,000.0	3,981.0	3,784.6	3,689.7	9.6	15.6	-79.26	-8.6	-783.3	1,013.3	994.9	18.40	55.070		
4,100.0	4,081.0	3,874.0	3,775.2	9.8	16.1	-79.46	-7.2	-809.4	1,042.4	1,023.5	18.85	55.289		
4,200.0	4,181.0	3,982.7	3,879.2	10.0	16.7	-79.67	-5.2	-840.9	1,071.2	1,051.9	19.35	55.358		
4,300.0	4,281.0	4,075.2	3,967.9	10.2	17.2	-79.87	-4.0	-867.1	1,099.4	1,079.6	19.81	55.507		
4,400.0	4,381.0	4,168.1	4,056.8	10.4	17.8	-80.10	-3.7	-894.2	1,128.2	1,107.9	20.26	55.675		
4,500.0	4,481.0	4,271.0	4,155.4	10.6	18.3	-80.36	-3.6	-923.8	1,156.5	1,135.8	20.75	55.731		
4,600.0	4,581.0	4,357.8	4,238.5	10.7	18.8	-80.56	-3.4	-948.8	1,185.0	1,163.8	21.20	55.905		
4,700.0	4,681.0	4,460.7	4,336.9	10.9	19.4	-80.78	-3.0	-978.7	1,213.8	1,192.2	21.69	55.967		
4,800.0	4,781.0	4,564.8	4,436.8	11.1	20.0	-81.01	-3.0	-1,008.2	1,241.8	1,219.6	22.18	55.990		
4,900.0	4,881.0	4,660.5	4,528.6	11.3	20.5	-81.23	-3.5	-1,035.0	1,269.4	1,246.8	22.65	56.055		
5,000.0	4,981.0	4,746.8	4,611.3	11.5	21.0	-81.44	-4.3	-1,059.6	1,297.5	1,274.5	23.09	56.186		
5,100.0	5,081.0	4,854.1	4,714.1	11.7	21.6	-81.71	-5.6	-1,090.3	1,325.7	1,302.1	23.60	56.173		
5,200.0	5,181.0	4,943.5	4,799.9	11.9	22.1	-81.91	-6.7	-1,115.5	1,353.5	1,329.4	24.06	56.257		
5,300.0	5,281.0	5,033.7	4,886.2	12.1	22.7	-82.10	-7.4	-1,141.6	1,382.0	1,357.5	24.52	56.365		
5,400.0	5,381.0	5,150.9	4,998.7	12.3	23.3	-82.32	-8.0	-1,174.6	1,409.9	1,384.9	25.05	56.277		
5,500.0	5,481.0	5,285.1	5,128.2	12.5	24.0	-82.53	-8.5	-1,209.9	1,436.0	1,410.4	25.62	56.056		
5,600.0	5,581.0	5,457.1	5,295.8	12.7	24.8	-82.76	-9.1	-1,248.2	1,458.0	1,431.8	26.26	55.528		
5,700.0	5,681.0	5,635.9	5,472.0	13.0	25.4	-82.95	-10.3	-1,278.7	1,474.9	1,448.1	26.88	54.861		
5,800.0	5,781.0	5,782.6	5,617.4	13.2	25.8	-83.10	-11.9	-1,297.2	1,487.2	1,459.8	27.41	54.254		
5,900.0	5,881.0	5,906.7	5,740.8	13.4	26.2	-83.23	-13.7	-1,310.5	1,497.8	1,469.9	27.88	53.718		
6,000.0	5,981.0	6,072.5	5,906.3	13.6	26.5	-83.32	-14.6	-1,322.1	1,504.4	1,476.0	28.42	52.941		
6,100.0	6,081.0	6,189.8	6,023.4	13.8	26.7	-83.34	-14.6	-1,327.0	1,508.6	1,479.7	28.85	52.297		
6,200.0	6,181.0	6,306.1	6,139.7	14.0	26.9	-83.36	-14.7	-1,331.1	1,512.1	1,482.8	29.27	51.661		
6,300.0	6,281.0	6,424.7	6,258.3	14.2	27.0	-83.42	-15.9	-1,333.5	1,513.9	1,484.2	29.69	50.986		
6,400.0	6,381.0	6,502.0	6,335.5	14.4	27.1	-83.46	-16.8	-1,334.8	1,515.6	1,485.6	30.04	50.448		
6,500.0	6,481.0	6,502.0	6,335.5	14.6	27.1	-83.46	-16.8	-1,334.8	1,521.9	1,491.6	30.26	50.299		
6,600.0	6,581.0	6,502.0	6,335.5	14.8	27.1	-83.46	-16.8	-1,334.8	1,534.7	1,504.2	30.47	50.364		
6,700.0	6,681.0	6,502.0	6,335.5	15.0	27.1	-83.46	-16.8	-1,334.8	1,553.8	1,523.1	30.69	50.635		
6,800.0	6,781.0	6,502.0	6,335.5	15.2	27.1	-83.46	-16.8	-1,334.8	1,579.1	1,548.2	30.90	51.099		
6,900.0	6,881.0	6,502.0	6,335.5	15.5	27.1	-83.46	-16.8	-1,334.8	1,610.1	1,579.0	31.12	51.744		

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

<b>Company:</b>	Apollo Operating, LLC.	<b>Local Co-ordinate Reference:</b>	Well E.L. Minch 24-4 (B)
<b>Project:</b>	SEC.4-T3N-R68W	<b>TVD Reference:</b>	WELL @ 5066.0ft (Original Well Elev)
<b>Reference Site:</b>	E.L. Minch 35-4D PAD Sec.4-T3N-R68W	<b>MD Reference:</b>	WELL @ 5066.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	E.L. Minch 24-4 (B)	<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 (4-17-12)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> E.L. Minch 35-4D PAD Sec.4-T3N-R68W - E.L. Minch 14-4D - Wellbore #1 - Wellbore #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 98-MWD												<b>Offset Well Error:</b>	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	
7,000.0	6,981.0	6,502.0	6,335.5	15.7	27.1	-83.46	-16.8	-1,334.8	1,646.7	1,615.4	31.33	52.554	
7,100.0	7,081.0	6,502.0	6,335.5	15.9	27.1	-83.46	-16.8	-1,334.8	1,688.4	1,656.9	31.55	53.516	
7,200.0	7,181.0	6,502.0	6,335.5	16.1	27.1	-83.46	-16.8	-1,334.8	1,734.9	1,703.1	31.77	54.615	
7,300.0	7,281.0	6,502.0	6,335.5	16.3	27.1	-83.46	-16.8	-1,334.8	1,785.8	1,753.8	31.98	55.836	
7,400.0	7,381.0	6,502.0	6,335.5	16.5	27.1	-83.46	-16.8	-1,334.8	1,840.7	1,808.5	32.20	57.165	
7,500.0	7,481.0	6,502.0	6,335.5	16.7	27.1	-83.46	-16.8	-1,334.8	1,899.3	1,866.8	32.42	58.590	
7,519.0	7,500.0	6,502.0	6,335.5	16.8	27.1	-83.46	-16.8	-1,334.8	1,910.8	1,878.3	32.46	58.869	

E.L. Minch 35-4D PAD Sec.4-T3N-R68W - E.L. Minch 24-4 - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 96-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	-90.02	0.0	-19.5	19.5	19.5	0.00	N/A CC		
100.0	100.0	99.7	99.7	0.1	0.1	-91.90	-0.7	-20.3	20.3	20.1	0.23	88.250		
200.0	200.0	199.9	199.8	0.3	0.3	-92.59	-1.0	-21.3	21.3	20.6	0.66	32.236		
300.0	300.0	300.0	300.0	0.6	0.5	-92.02	-0.8	-21.8	21.8	20.7	1.09	19.948		
400.0	400.0	400.1	400.0	0.8	0.7	-93.32	-1.3	-21.7	21.7	20.2	1.53	14.198		
500.0	500.0	500.1	500.0	1.0	1.0	-97.33	-2.7	-21.3	21.5	19.5	1.97	10.932		
542.5	542.5	542.6	542.5	1.1	1.0	-99.20	-3.4	-21.2	21.5	19.3	2.15	9.982		
600.0	600.0	600.0	600.0	1.2	1.2	-101.61	-4.3	-21.1	21.5	19.1	2.40	8.971		
700.0	700.0	699.9	699.9	1.5	1.4	-104.68	-5.6	-21.2	21.9	19.1	2.83	7.747		
800.0	800.0	800.0	799.9	1.7	1.6	-106.84	-6.5	-21.4	22.4	19.1	3.27	6.853		
900.0	900.0	899.9	899.9	1.9	1.8	-109.00	-7.4	-21.6	22.8	19.1	3.70	6.161		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.0	-108.75	-7.5	-22.0	23.2	19.1	4.13	5.611		
1,100.0	1,100.0	1,100.1	1,100.0	2.4	2.2	-101.73	-4.7	-22.8	23.3	18.7	4.57	5.092		
1,200.0	1,200.0	1,200.3	1,200.1	2.6	2.4	-91.38	-0.6	-23.0	23.0	18.0	5.00	4.603		
1,300.0	1,300.0	1,300.4	1,300.1	2.8	2.6	-81.35	3.4	-22.2	22.5	17.1	5.44	4.136		
1,347.5	1,347.5	1,347.8	1,347.5	2.9	2.7	-77.79	4.7	-21.8	22.3	16.7	5.64	3.960		
1,400.0	1,400.0	1,400.2	1,399.9	3.0	2.8	-75.75	5.5	-21.8	22.5	16.6	5.87	3.831		
1,500.0	1,500.0	1,500.3	1,500.0	3.3	3.0	-75.50	5.7	-22.1	22.8	16.5	6.30	3.619		
1,506.9	1,506.9	1,507.3	1,507.0	3.3	3.1	146.43	5.7	-22.1	22.8	16.5	6.33	3.602 ES		
1,600.0	1,600.0	1,600.5	1,600.2	3.5	3.3	147.71	5.1	-21.6	23.7	17.0	6.71	3.529 SF		
1,700.0	1,699.8	1,700.6	1,700.2	3.6	3.5	151.96	4.0	-20.6	26.9	19.8	7.09	3.787		
1,800.0	1,799.5	1,800.2	1,799.9	3.8	3.7	157.66	2.8	-19.5	33.3	25.8	7.47	4.456		
1,900.0	1,898.7	1,899.4	1,899.1	4.0	3.9	163.23	2.0	-18.6	43.7	35.8	7.84	5.571		
1,974.2	1,972.0	1,972.8	1,972.4	4.2	4.0	166.62	1.7	-18.2	54.1	45.9	8.12	6.661		
2,000.0	1,997.5	1,998.3	1,997.9	4.3	4.1	167.55	1.6	-18.1	58.0	49.8	8.22	7.059		
2,100.0	2,096.1	2,097.0	2,096.6	4.5	4.3	170.14	1.0	-17.6	73.4	64.8	8.62	8.515		
2,200.0	2,194.8	2,195.6	2,195.2	4.8	4.5	172.11	0.8	-17.0	89.1	80.1	9.03	9.865		
2,300.0	2,293.4	2,294.2	2,293.9	5.1	4.7	173.46	0.6	-16.4	105.0	95.5	9.45	11.107		
2,400.0	2,392.0	2,391.7	2,391.4	5.4	4.9	174.23	0.5	-16.6	121.4	111.5	9.87	12.299		
2,500.0	2,490.7	2,489.6	2,489.3	5.7	5.1	174.60	0.5	-17.7	138.6	128.3	10.29	13.464		
2,600.0	2,589.3	2,587.4	2,587.1	6.1	5.3	174.79	0.5	-19.2	156.1	145.4	10.72	14.566		
2,700.0	2,687.9	2,685.1	2,684.7	6.4	5.5	174.97	1.0	-21.1	174.2	163.1	11.15	15.627		
2,800.0	2,786.6	2,783.6	2,783.2	6.7	5.7	175.28	1.9	-22.6	192.4	180.8	11.58	16.618		
2,900.0	2,885.2	2,885.6	2,885.2	7.1	5.9	175.72	2.7	-23.2	209.8	197.7	12.01	17.460		
3,000.0	2,983.8	2,983.9	2,983.5	7.4	6.2	176.16	2.9	-22.7	226.0	213.5	12.45	18.157		
3,044.8	3,028.0	3,027.1	3,026.7	7.6	6.2	176.29	3.0	-22.8	233.5	220.9	12.64	18.475		
3,100.0	3,082.5	3,080.8	3,080.3	7.8	6.4	176.39	3.2	-23.2	242.5	229.6	12.90	18.795		
3,200.0	3,181.7	3,178.9	3,178.5	8.0	6.6	176.33	3.2	-24.8	256.4	243.1	13.36	19.193		
3,300.0	3,281.3	3,280.5	3,280.1	8.3	6.8	176.38	3.5	-25.7	266.6	252.8	13.81	19.308		
3,400.0	3,381.1	3,380.0	3,379.6	8.5	7.0	176.66	4.4	-25.4	273.0	258.7	14.23	19.178		
3,500.0	3,481.0	3,479.9	3,479.5	8.7	7.2	176.96	5.8	-24.9	276.0	261.3	14.64	18.850		
3,519.0	3,500.0	3,498.9	3,498.5	8.7	7.2	-44.96	5.9	-24.8	276.1	261.4	14.71	18.766		
3,600.0	3,581.0	3,582.4	3,581.9	8.9	7.4	-44.92	6.3	-24.9	276.4	261.3	15.05	18.362		
3,700.0	3,681.0	3,686.5	3,686.1	9.0	7.6	-44.73	6.0	-23.3	275.1	259.6	15.48	17.775		
3,800.0	3,781.0	3,785.4	3,784.9	9.2	7.8	-44.62	5.2	-21.8	273.5	257.6	15.89	17.208		
3,900.0	3,881.0	3,884.8	3,884.3	9.4	8.0	-44.64	4.2	-20.9	272.2	255.9	16.31	16.685		
4,000.0	3,981.0	3,982.2	3,981.7	9.6	8.2	-44.76	3.2	-20.8	271.3	254.6	16.73	16.220		
4,018.7	3,999.7	4,000.2	3,999.7	9.6	8.3	-44.81	3.1	-20.9	271.3	254.5	16.81	16.143		
4,100.0	4,081.0	4,079.5	4,079.0	9.8	8.5	-45.02	2.6	-21.9	271.7	254.5	17.15	15.844		
4,200.0	4,181.0	4,178.4	4,177.9	10.0	8.7	-45.09	3.1	-22.8	272.7	255.1	17.57	15.523		
4,300.0	4,281.0	4,279.7	4,279.2	10.2	8.9	-44.96	4.1	-23.1	273.6	255.6	17.99	15.209		
4,400.0	4,381.0	4,381.4	4,380.9	10.4	9.1	-44.76	5.1	-22.6	274.0	255.5	18.41	14.879		

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<b>Company:</b>	Apollo Operating, LLC.	<b>Local Co-ordinate Reference:</b>	Well E.L. Minch 24-4 (B)
<b>Project:</b>	SEC.4-T3N-R68W	<b>TVD Reference:</b>	WELL @ 5066.0ft (Original Well Elev)
<b>Reference Site:</b>	E.L. Minch 35-4D PAD Sec.4-T3N-R68W	<b>MD Reference:</b>	WELL @ 5066.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	E.L. Minch 24-4 (B)	<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 (4-17-12)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design E.L. Minch 35-4D PAD Sec.4-T3N-R68W - E.L. Minch 24-4 - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 96-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		
4,465.4	4,446.5	4,446.9	4,446.4	10.5	9.2	-44.65	5.5	-22.2	273.9	255.2	18.69	14.658		
4,500.0	4,481.0	4,481.2	4,480.6	10.6	9.3	-44.63	5.5	-22.2	274.0	255.1	18.83	14.547		
4,600.0	4,581.0	4,580.9	4,580.4	10.7	9.5	-44.69	5.5	-22.6	274.2	255.0	19.26	14.241		
4,700.0	4,681.0	4,681.5	4,681.0	10.9	9.7	-44.54	6.1	-22.1	274.3	254.7	19.68	13.939		
4,800.0	4,781.0	4,781.2	4,780.6	11.1	9.9	-44.44	6.5	-21.9	274.4	254.3	20.11	13.650		
4,900.0	4,881.0	4,881.2	4,880.7	11.3	10.1	-44.47	6.5	-22.1	274.6	254.0	20.53	13.372		
5,000.0	4,981.0	4,980.8	4,980.2	11.5	10.3	-44.50	6.5	-22.3	274.7	253.8	20.96	13.110		
5,100.0	5,081.0	5,080.0	5,079.4	11.7	10.5	-44.29	7.6	-21.9	275.2	253.8	21.38	12.870		
5,200.0	5,181.0	5,179.5	5,178.9	11.9	10.8	-44.12	8.6	-21.8	275.9	254.1	21.81	12.653		
5,300.0	5,281.0	5,280.7	5,280.1	12.1	11.0	-44.14	9.0	-22.3	276.5	254.2	22.24	12.432		
5,400.0	5,381.0	5,379.9	5,379.4	12.3	11.2	-44.14	9.3	-22.6	276.9	254.3	22.66	12.219		
5,500.0	5,481.0	5,480.7	5,480.2	12.5	11.4	-43.94	10.4	-22.3	277.5	254.4	23.09	12.017		
5,600.0	5,581.0	5,581.0	5,580.4	12.7	11.6	-43.70	11.3	-21.5	277.6	254.1	23.52	11.805		
5,700.0	5,681.0	5,680.6	5,680.0	13.0	11.8	-43.57	12.0	-21.3	278.0	254.1	23.94	11.611		
5,800.0	5,781.0	5,782.5	5,782.0	13.2	12.0	-43.58	12.0	-21.4	278.0	253.6	24.38	11.405		
5,865.6	5,846.6	5,847.2	5,846.6	13.3	12.2	-43.64	11.7	-21.5	277.9	253.3	24.66	11.271		
5,900.0	5,881.0	5,881.1	5,880.5	13.4	12.2	-43.68	11.6	-21.7	277.9	253.1	24.80	11.205		
6,000.0	5,981.0	5,981.4	5,980.8	13.6	12.4	-43.81	11.3	-22.3	278.2	252.9	25.23	11.023		
6,100.0	6,081.0	6,082.2	6,081.7	13.8	12.7	-44.00	10.6	-22.9	278.1	252.4	25.67	10.835		
6,200.0	6,181.0	6,182.9	6,182.3	14.0	12.9	-44.32	9.3	-23.8	277.7	251.6	26.10	10.643		
6,300.0	6,281.0	6,283.1	6,282.5	14.2	13.1	-44.64	7.8	-24.5	277.3	250.7	26.52	10.453		
6,400.0	6,381.0	6,381.7	6,381.1	14.4	13.3	-44.92	6.7	-25.3	277.0	250.0	26.95	10.278		
6,403.0	6,384.0	6,384.6	6,384.0	14.4	13.3	-44.93	6.7	-25.3	277.0	250.0	26.96	10.274		
6,500.0	6,481.0	6,481.2	6,480.5	14.6	13.5	-45.20	5.9	-26.3	277.1	249.7	27.38	10.122		
6,600.0	6,581.0	6,581.3	6,580.7	14.8	13.7	-45.54	4.8	-27.6	277.3	249.5	27.81	9.972		
6,700.0	6,681.0	6,682.2	6,681.6	15.0	13.9	-45.90	3.6	-28.9	277.3	249.1	28.24	9.821		
6,800.0	6,781.0	6,784.6	6,784.0	15.2	14.1	-46.20	2.1	-29.4	276.7	248.0	28.67	9.651		
6,900.0	6,881.0	6,884.0	6,883.3	15.5	14.3	-46.44	0.6	-29.6	275.8	246.7	29.10	9.477		
7,000.0	6,981.0	6,983.0	6,982.3	15.7	14.5	-46.67	-0.6	-29.8	275.1	245.6	29.53	9.318		
7,100.0	7,081.0	7,081.8	7,081.1	15.9	14.7	-46.84	-1.4	-30.2	274.9	244.9	29.95	9.177		
7,102.3	7,083.3	7,084.0	7,083.3	15.9	14.7	-46.84	-1.4	-30.2	274.9	244.9	29.96	9.174		
7,200.0	7,181.0	7,180.4	7,179.7	16.1	15.0	-46.98	-1.7	-30.8	275.1	244.7	30.38	9.055		
7,300.0	7,281.0	7,278.9	7,278.2	16.3	15.2	-47.10	-1.7	-31.8	275.9	245.1	30.81	8.954		
7,400.0	7,381.0	7,378.2	7,377.5	16.5	15.4	-47.21	-1.3	-33.0	277.0	245.8	31.24	8.868		
7,500.0	7,481.0	7,478.7	7,478.0	16.7	15.6	-47.31	-0.8	-34.3	278.3	246.6	31.67	8.786		
7,519.0	7,500.0	7,497.8	7,497.1	16.8	15.6	-47.34	-0.7	-34.5	278.5	246.7	31.75	8.770		

<b>Company:</b>	Apollo Operating, LLC.	<b>Local Co-ordinate Reference:</b>	Well E.L. Minch 24-4 (B)
<b>Project:</b>	SEC.4-T3N-R68W	<b>TVD Reference:</b>	WELL @ 5066.0ft (Original Well Elev)
<b>Reference Site:</b>	E.L. Minch 35-4D PAD Sec.4-T3N-R68W	<b>MD Reference:</b>	WELL @ 5066.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	E.L. Minch 24-4 (B)	<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 (4-17-12)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 98-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	-89.99	0.0	-39.1	39.1					
100.0	100.0	99.7	99.7	0.1	0.1	-89.85	0.1	-39.4	39.4	39.2	0.23	173.933		
200.0	200.0	199.6	199.6	0.3	0.3	-90.25	-0.2	-40.3	40.3	39.6	0.67	60.301		
300.0	300.0	299.4	299.4	0.6	0.5	-91.05	-0.8	-41.5	41.5	40.4	1.10	37.552		
400.0	400.0	400.0	400.0	0.8	0.7	-91.11	-0.8	-42.6	42.6	41.0	1.54	27.706		
500.0	500.0	500.8	500.8	1.0	1.0	-91.86	-1.3	-41.5	41.5	39.6	1.96	21.133		
600.0	600.0	600.9	600.9	1.2	1.2	-91.12	-0.8	-39.0	39.1	36.7	2.39	16.308		
653.3	653.3	653.4	653.3	1.4	1.3	-90.11	-0.1	-38.5	38.5	35.8	2.63	14.650	CC, ES	
700.0	700.0	699.6	699.5	1.5	1.4	-89.05	0.6	-38.9	38.9	36.0	2.83	13.744		
800.0	800.0	799.0	798.9	1.7	1.6	-87.41	1.9	-41.0	41.0	37.8	3.26	12.572		
900.0	900.0	899.3	899.2	1.9	1.8	-87.47	1.9	-43.2	43.3	39.6	3.70	11.704		
1,000.0	1,000.0	999.3	999.1	2.1	2.0	-87.90	1.7	-45.1	45.2	41.0	4.13	10.935		
1,100.0	1,100.0	1,099.5	1,099.3	2.4	2.2	-87.87	1.7	-46.9	46.9	42.3	4.57	10.267		
1,200.0	1,200.0	1,199.5	1,199.3	2.6	2.4	-86.97	2.5	-48.2	48.3	43.2	5.00	9.641		
1,300.0	1,300.0	1,299.2	1,299.0	2.8	2.6	-84.88	4.5	-49.7	49.9	44.4	5.44	9.164		
1,400.0	1,400.0	1,398.8	1,398.5	3.0	2.9	-82.78	6.6	-51.9	52.3	46.4	5.88	8.898		
1,500.0	1,500.0	1,498.4	1,498.0	3.3	3.1	-79.75	9.9	-54.6	55.5	49.2	6.32	8.785	SF	
1,600.0	1,600.0	1,596.6	1,596.0	3.5	3.3	146.99	14.8	-58.4	61.8	55.1	6.73	9.181		
1,700.0	1,699.8	1,693.6	1,692.7	3.6	3.5	152.25	20.8	-64.6	74.4	67.2	7.12	10.441		
1,800.0	1,799.5	1,789.2	1,787.6	3.8	3.8	156.65	27.6	-73.4	93.4	85.9	7.51	12.434		
1,900.0	1,898.7	1,882.8	1,880.2	4.0	4.0	160.62	36.6	-83.6	118.7	110.8	7.89	15.039		
1,974.2	1,972.0	1,951.2	1,947.7	4.2	4.2	163.10	44.4	-92.1	141.4	133.2	8.17	17.295		
2,000.0	1,997.5	1,974.8	1,970.8	4.3	4.3	163.85	47.1	-95.2	149.8	141.6	8.28	18.103		
2,100.0	2,096.1	2,065.3	2,059.7	4.5	4.6	166.06	58.3	-108.2	184.1	175.4	8.68	21.197		
2,200.0	2,194.8	2,155.9	2,148.4	4.8	4.9	167.60	70.5	-122.5	220.2	211.1	9.09	24.210		
2,300.0	2,293.4	2,251.3	2,241.7	5.1	5.2	168.74	83.1	-137.6	256.3	246.8	9.51	26.958		
2,400.0	2,392.0	2,341.0	2,329.5	5.4	5.5	169.61	95.3	-151.6	292.6	282.6	9.92	29.504		
2,500.0	2,490.7	2,430.0	2,416.3	5.7	5.9	170.43	108.7	-166.0	330.1	319.8	10.33	31.947		
2,600.0	2,589.3	2,520.5	2,504.3	6.1	6.3	171.11	122.9	-181.2	368.6	357.9	10.76	34.247		
2,700.0	2,687.9	2,623.0	2,604.4	6.4	6.7	171.61	137.7	-198.0	406.1	394.8	11.21	36.221		
2,800.0	2,786.6	2,714.1	2,693.5	6.7	7.0	171.89	149.6	-212.5	442.4	430.7	11.64	38.012		
2,900.0	2,885.2	2,802.6	2,780.0	7.1	7.4	172.15	161.9	-227.1	479.5	467.4	12.07	39.729		
3,000.0	2,983.8	2,891.1	2,866.2	7.4	7.7	172.35	174.4	-242.4	517.5	505.0	12.51	41.369		
3,044.8	3,028.0	2,935.6	2,909.5	7.6	7.9	172.41	180.6	-250.3	534.6	521.9	12.72	42.042		
3,100.0	3,082.5	2,991.0	2,963.6	7.8	8.2	172.50	187.8	-260.0	554.8	541.8	13.00	42.680		
3,200.0	3,181.7	3,085.0	3,055.4	8.0	8.5	172.59	199.7	-276.2	588.4	574.9	13.48	43.640		
3,300.0	3,281.3	3,181.1	3,149.2	8.3	8.9	172.68	212.4	-292.6	618.9	604.9	13.96	44.334		
3,400.0	3,381.1	3,279.6	3,245.5	8.5	9.3	172.66	224.7	-309.4	645.6	631.2	14.43	44.741		
3,500.0	3,481.0	3,373.1	3,336.8	8.7	9.7	172.61	236.5	-325.4	669.2	654.4	14.88	44.989		
3,519.0	3,500.0	3,391.1	3,354.5	8.7	9.8	-49.35	238.9	-328.5	673.4	658.4	14.96	45.017		
3,600.0	3,581.0	3,470.1	3,431.6	8.9	10.1	-49.40	249.6	-341.9	690.9	675.6	15.32	45.107		
3,700.0	3,681.0	3,566.0	3,525.2	9.0	10.5	-49.40	263.1	-357.7	712.6	696.9	15.76	45.213		
3,800.0	3,781.0	3,658.9	3,615.8	9.2	10.9	-49.34	277.0	-372.8	734.7	718.5	16.20	45.348		
3,900.0	3,881.0	3,747.2	3,701.7	9.4	11.3	-49.25	291.1	-387.5	757.8	741.2	16.64	45.552		
4,000.0	3,981.0	3,837.9	3,789.8	9.6	11.8	-49.15	306.5	-403.2	781.9	764.8	17.08	45.773		
4,100.0	4,081.0	3,937.5	3,886.3	9.8	12.2	-49.04	323.6	-420.7	806.4	788.9	17.55	45.964		
4,200.0	4,181.0	4,041.7	3,987.6	10.0	12.7	-48.93	340.9	-438.2	830.0	812.0	18.01	46.077		
4,300.0	4,281.0	4,132.0	4,075.3	10.2	13.1	-48.87	355.4	-453.5	853.4	834.9	18.44	46.267		
4,400.0	4,381.0	4,225.0	4,165.6	10.4	13.5	-48.80	370.8	-469.6	877.3	858.4	18.90	46.431		
4,500.0	4,481.0	4,313.5	4,251.3	10.6	14.0	-48.69	386.7	-485.2	902.4	883.0	19.34	46.659		
4,600.0	4,581.0	4,411.2	4,345.7	10.7	14.5	-48.50	405.5	-502.1	928.1	908.3	19.81	46.855		
4,700.0	4,681.0	4,526.1	4,457.0	10.9	15.0	-48.19	427.6	-519.5	952.2	931.9	20.31	46.875		

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

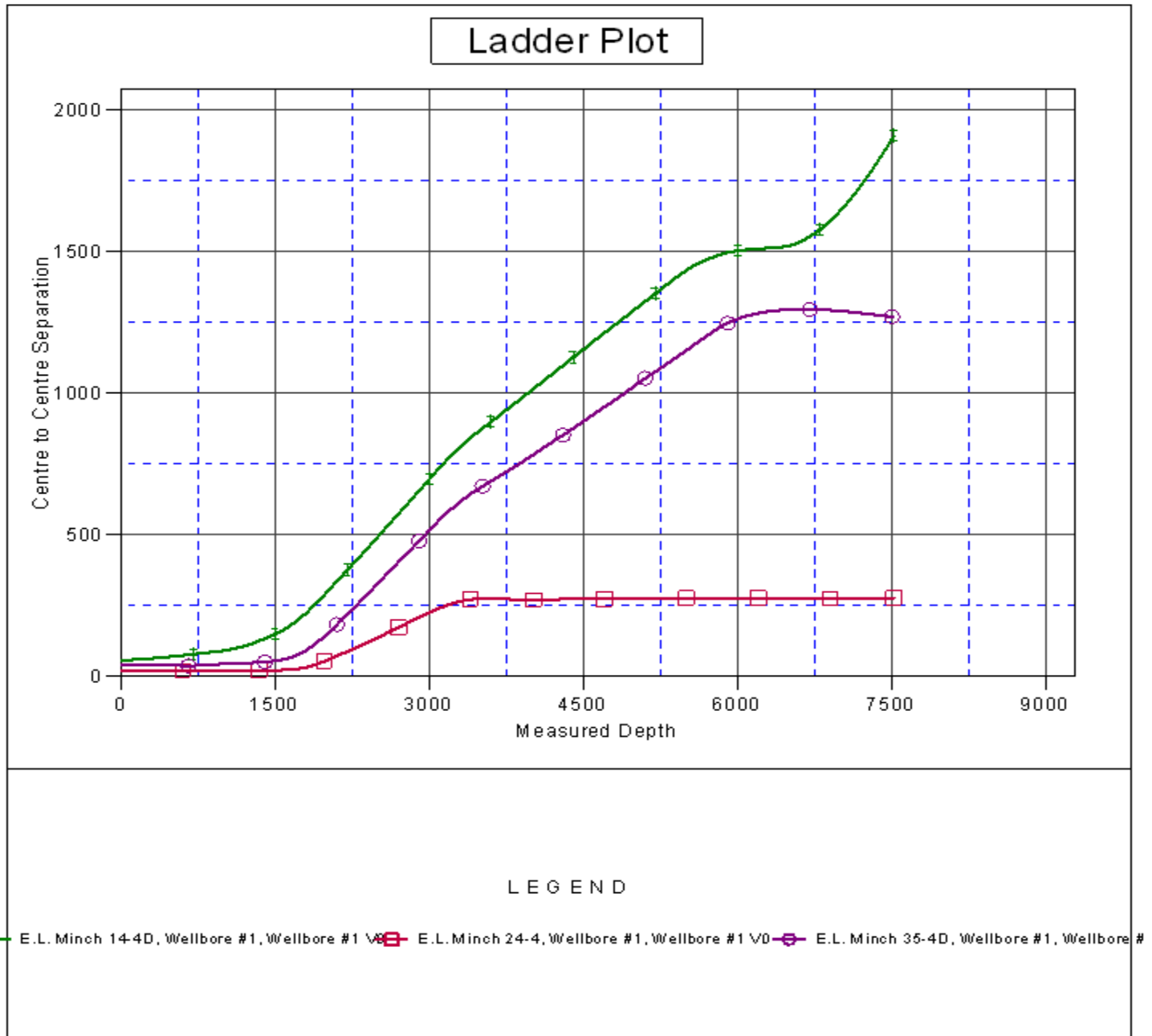
<b>Company:</b>	Apollo Operating, LLC.	<b>Local Co-ordinate Reference:</b>	Well E.L. Minch 24-4 (B)
<b>Project:</b>	SEC.4-T3N-R68W	<b>TVD Reference:</b>	WELL @ 5066.0ft (Original Well Elev)
<b>Reference Site:</b>	E.L. Minch 35-4D PAD Sec.4-T3N-R68W	<b>MD Reference:</b>	WELL @ 5066.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	E.L. Minch 24-4 (B)	<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 (4-17-12)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> E.L. Minch 35-4D PAD Sec.4-T3N-R68W - E.L. Minch 35-4D - Wellbore #1 - Wellbore #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 98-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
4,800.0	4,781.0	4,610.2	4,538.5	11.1	15.4	-47.92	444.3	-531.7	976.4	955.6	20.74	47.072	
4,900.0	4,881.0	4,694.0	4,619.4	11.3	15.8	-47.64	462.2	-544.4	1,001.9	980.7	21.18	47.303	
5,000.0	4,981.0	4,785.7	4,707.7	11.5	16.3	-47.31	482.9	-558.5	1,028.5	1,006.9	21.64	47.531	
5,100.0	5,081.0	4,901.0	4,818.9	11.7	16.8	-46.93	507.8	-575.7	1,054.2	1,032.1	22.15	47.594	
5,200.0	5,181.0	5,014.0	4,928.5	11.9	17.4	-46.68	529.7	-592.3	1,078.2	1,055.6	22.65	47.613	
5,300.0	5,281.0	5,097.7	5,009.7	12.1	17.7	-46.54	545.4	-605.2	1,102.2	1,079.2	23.08	47.763	
5,400.0	5,381.0	5,186.5	5,095.7	12.3	18.2	-46.40	562.6	-619.5	1,127.3	1,103.8	23.53	47.913	
5,500.0	5,481.0	5,279.3	5,185.3	12.5	18.7	-46.23	581.4	-634.3	1,152.8	1,128.8	23.99	48.048	
5,600.0	5,581.0	5,374.2	5,276.9	12.7	19.1	-46.05	600.8	-649.5	1,178.5	1,154.1	24.46	48.174	
5,700.0	5,681.0	5,470.8	5,370.2	13.0	19.6	-45.87	620.7	-664.9	1,204.3	1,179.4	24.94	48.293	
5,800.0	5,781.0	5,606.4	5,501.5	13.2	20.3	-45.66	647.1	-685.8	1,229.2	1,203.6	25.50	48.195	
5,900.0	5,881.0	5,779.7	5,671.4	13.4	20.9	-45.53	673.0	-708.2	1,248.8	1,222.7	26.13	47.789	
6,000.0	5,981.0	5,922.5	5,812.6	13.6	21.4	-45.43	689.5	-722.0	1,263.7	1,237.1	26.67	47.382	
6,100.0	6,081.0	6,059.1	5,948.2	13.8	21.8	-45.38	701.8	-732.8	1,275.7	1,248.6	27.18	46.931	
6,200.0	6,181.0	6,201.9	6,090.4	14.0	22.1	-45.37	710.6	-741.6	1,284.4	1,256.7	27.70	46.376	
6,300.0	6,281.0	6,331.6	6,219.9	14.2	22.4	-45.40	715.5	-747.3	1,290.2	1,262.0	28.17	45.800	
6,400.0	6,381.0	6,452.7	6,340.9	14.4	22.6	-45.45	717.9	-751.5	1,294.0	1,265.4	28.62	45.214	
6,500.0	6,481.0	6,573.4	6,461.6	14.6	22.8	-45.50	719.1	-754.3	1,296.4	1,267.3	29.06	44.602	
6,600.0	6,581.0	6,691.6	6,579.8	14.8	22.9	-45.55	718.9	-755.7	1,297.1	1,267.6	29.50	43.969	
6,700.0	6,681.0	6,803.0	6,691.2	15.0	23.1	-45.60	717.8	-756.1	1,296.7	1,266.8	29.92	43.338	
6,800.0	6,781.0	6,909.7	6,797.8	15.2	23.2	-45.64	716.3	-756.0	1,295.6	1,265.3	30.33	42.718	
6,900.0	6,881.0	7,017.0	6,905.1	15.5	23.3	-45.67	714.7	-755.3	1,294.1	1,263.4	30.74	42.096	
7,000.0	6,981.0	7,131.3	7,019.4	15.7	23.4	-45.67	712.9	-753.2	1,291.7	1,260.5	31.16	41.447	
7,100.0	7,081.0	7,241.6	7,129.6	15.9	23.5	-45.65	710.5	-750.3	1,288.3	1,256.7	31.58	40.799	
7,200.0	7,181.0	7,345.0	7,233.0	16.1	23.6	-45.64	707.9	-747.2	1,284.4	1,252.4	31.98	40.165	
7,300.0	7,281.0	7,447.2	7,335.0	16.3	23.7	-45.59	705.6	-743.5	1,280.2	1,247.9	32.38	39.541	
7,400.0	7,381.0	7,547.1	7,434.8	16.5	23.8	-45.54	703.5	-739.6	1,276.0	1,243.2	32.77	38.934	
7,500.0	7,481.0	7,634.0	7,521.7	16.7	23.8	-45.51	701.4	-736.6	1,271.9	1,238.7	33.15	38.373	
7,519.0	7,500.0	7,634.0	7,521.7	16.8	23.8	-45.51	701.4	-736.6	1,271.4	1,238.2	33.19	38.310	



<b>Company:</b>	Apollo Operating, LLC.	<b>Local Co-ordinate Reference:</b>	Well E.L. Minch 24-4 (B)
<b>Project:</b>	SEC.4-T3N-R68W	<b>TVD Reference:</b>	WELL @ 5066.0ft (Original Well Elev)
<b>Reference Site:</b>	E.L. Minch 35-4D PAD Sec.4-T3N-R68W	<b>MD Reference:</b>	WELL @ 5066.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	E.L. Minch 24-4 (B)	<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 (4-17-12)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 5066.0ft (Original Well Elev) Coordinates are relative to: E.L. Minch 24-4 (B)  
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone  
 Central Meridian is -105.500000 ° Grid Convergence at Surface is: 0.32°





**Company:** Apollo Operating, LLC.  
**Project:** SEC.4-T3N-R68W  
**Reference Site:** E.L. Minch 35-4D PAD Sec.4-T3N-R68W  
**Site Error:** 0.0ft  
**Reference Well:** E.L. Minch 24-4 (B)  
**Well Error:** 0.0ft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Plan #2 (4-17-12)

**Local Co-ordinate Reference:** Well E.L. Minch 24-4 (B)  
**TVD Reference:** WELL @ 5066.0ft (Original Well Elev)  
**MD Reference:** WELL @ 5066.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** Landmark  
**Offset TVD Reference:** Offset Datum

Reference Depths are relative to WELL @ 5066.0ft (Original Well Elev) Coordinates are relative to: E.L. Minch 24-4 (B)  
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone  
Central Meridian is -105.500000 ° Grid Convergence at Surface is: 0.32°

