

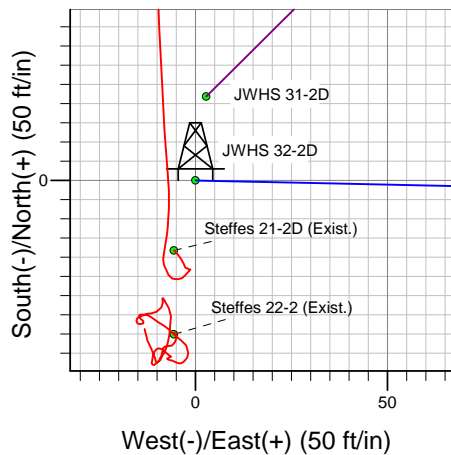
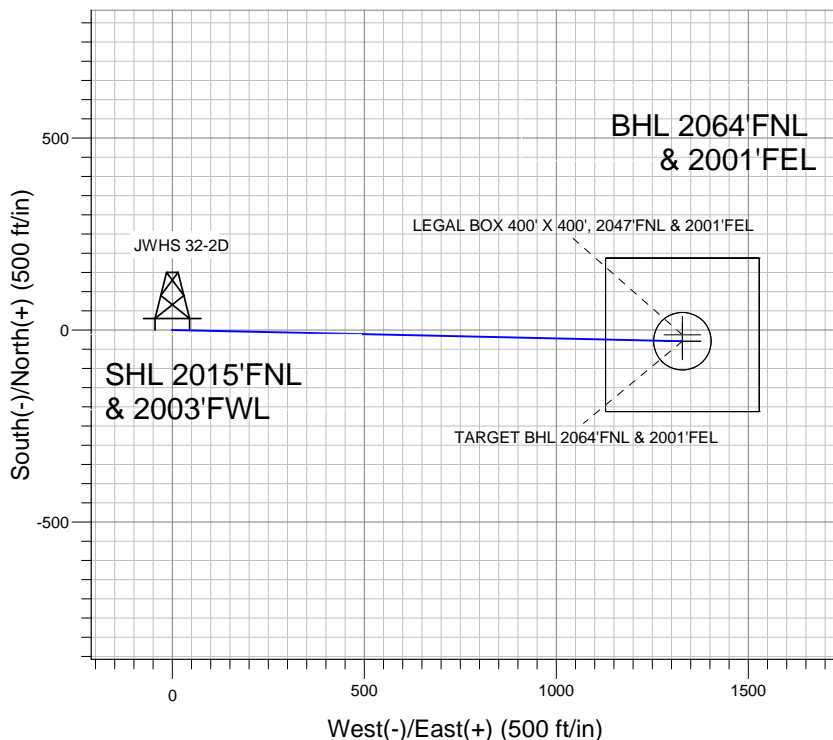
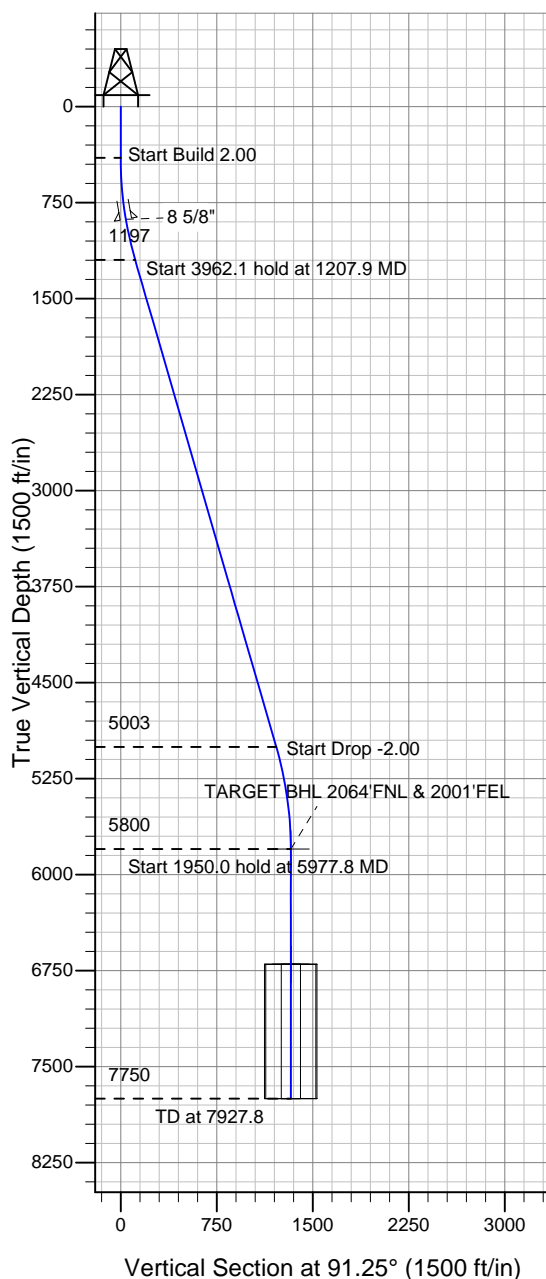
Well Name: JWHS 32-2D

Surface Location: JWHS 31-2D Pad Sec.2-T3N-R68W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4998.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1336973.49	3147172.59	40.257190	-104.972680	
Original Well Elev WELL @ 5011.0ft (Original Well Elev)						

Apollo Operating, LLC.



JWHS 31-2D Pad Sec.2-T3N-R68W
JWHS 32-2D
Plan #1 (6-6-12)
15:41, June 06 2012



Azimuths to True North
Magnetic North: 8.83°

Magnetic Field
Strength: 52929.5nT
Dip Angle: 66.87°
Date: 6/6/2012
Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 2064'FNL & 2001'FEL	5800.0	-29.1	1328.6	40.257110	-104.967920	Point
LEGAL BOX 400' X 400', 2047'FNL & 2001'FEL	6700.0	-12.7	1328.6	40.257155	-104.967920	Rectangle (Sides: L400.0 W400.0)
TARGET CIRCLE 2064'FNL & 2001'FEL	6700.0	-29.1	1328.6	40.257110	-104.967920	Circle (Radius: 75.0)

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	400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0	
3	1207.9	16.16	91.25	1197.2	-2.5	113.1	2.00	91.25	113.2	
4	5170.0	16.16	91.25	5002.8	-26.6	1215.4	0.00	0.00	1215.7	
5	5977.8	0.00	0.00	5800.0	-29.1	1328.6	2.00	180.00	1328.9	TARGET BHL 2064'FNL & 2001'FEL
6	7927.8	0.00	0.00	7750.0	-29.1	1328.6	0.00	0.00	1328.9	



Apollo Operating, LLC.

SEC.2-T3N-R68W

JWHS 31-2D Pad Sec.2-T3N-R68W

JWHS 32-2D

Wellbore #1

Plan: Plan #1 (6-6-12)

Standard Planning Report

06 June, 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	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,207.9	16.16	91.25	1,197.2	-2.5	113.1	2.00	2.00	0.00	91.25	
5,170.0	16.16	91.25	5,002.8	-26.6	1,215.4	0.00	0.00	0.00	0.00	
5,977.8	0.00	0.00	5,800.0	-29.1	1,328.6	2.00	-2.00	0.00	180.00	TARGET BHL 2064
7,927.8	0.00	0.00	7,750.0	-29.1	1,328.6	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well JWHS 32-2D
Company:	Apollo Operating, LLC.	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Project:	SEC.2-T3N-R68W	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site:	JWHS 31-2D Pad Sec.2-T3N-R68W	North Reference:	True
Well:	JWHS 32-2D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (6-6-12)		

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	0.80	91.25	440.0	0.0	0.3	0.3	2.00	2.00	0.00
480.0	1.60	91.25	480.0	0.0	1.1	1.1	2.00	2.00	0.00
520.0	2.40	91.25	520.0	-0.1	2.5	2.5	2.00	2.00	0.00
560.0	3.20	91.25	559.9	-0.1	4.5	4.5	2.00	2.00	0.00
600.0	4.00	91.25	599.8	-0.2	7.0	7.0	2.00	2.00	0.00
640.0	4.80	91.25	639.7	-0.2	10.0	10.0	2.00	2.00	0.00
680.0	5.60	91.25	679.6	-0.3	13.7	13.7	2.00	2.00	0.00
720.0	6.40	91.25	719.3	-0.4	17.8	17.9	2.00	2.00	0.00
760.0	7.20	91.25	759.1	-0.5	22.6	22.6	2.00	2.00	0.00
800.0	8.00	91.25	798.7	-0.6	27.9	27.9	2.00	2.00	0.00
840.0	8.80	91.25	838.3	-0.7	33.7	33.7	2.00	2.00	0.00
880.0	9.60	91.25	877.8	-0.9	40.1	40.1	2.00	2.00	0.00
882.3	9.65	91.25	880.0	-0.9	40.5	40.5	2.00	2.00	0.00
8 5/8"									
920.0	10.40	91.25	917.1	-1.0	47.1	47.1	2.00	2.00	0.00
960.0	11.20	91.25	956.4	-1.2	54.5	54.6	2.00	2.00	0.00
1,000.0	12.00	91.25	995.6	-1.4	62.6	62.6	2.00	2.00	0.00
1,040.0	12.80	91.25	1,034.7	-1.6	71.2	71.2	2.00	2.00	0.00
1,080.0	13.60	91.25	1,073.6	-1.8	80.3	80.3	2.00	2.00	0.00
1,120.0	14.40	91.25	1,112.4	-2.0	90.0	90.0	2.00	2.00	0.00
1,160.0	15.20	91.25	1,151.1	-2.2	100.2	100.2	2.00	2.00	0.00
1,200.0	16.00	91.25	1,189.6	-2.4	111.0	111.0	2.00	2.00	0.00
1,207.9	16.16	91.25	1,197.2	-2.5	113.1	113.2	2.00	2.00	0.00
1,240.0	16.16	91.25	1,228.1	-2.7	122.1	122.1	0.00	0.00	0.00
1,280.0	16.16	91.25	1,266.5	-2.9	133.2	133.2	0.00	0.00	0.00
1,320.0	16.16	91.25	1,304.9	-3.2	144.3	144.4	0.00	0.00	0.00
1,360.0	16.16	91.25	1,343.3	-3.4	155.5	155.5	0.00	0.00	0.00
1,400.0	16.16	91.25	1,381.7	-3.6	166.6	166.6	0.00	0.00	0.00
1,440.0	16.16	91.25	1,420.2	-3.9	177.7	177.8	0.00	0.00	0.00
1,480.0	16.16	91.25	1,458.6	-4.1	188.8	188.9	0.00	0.00	0.00
1,520.0	16.16	91.25	1,497.0	-4.4	200.0	200.0	0.00	0.00	0.00
1,560.0	16.16	91.25	1,535.4	-4.6	211.1	211.1	0.00	0.00	0.00
1,600.0	16.16	91.25	1,573.8	-4.9	222.2	222.3	0.00	0.00	0.00
1,640.0	16.16	91.25	1,612.3	-5.1	233.4	233.4	0.00	0.00	0.00
1,680.0	16.16	91.25	1,650.7	-5.4	244.5	244.5	0.00	0.00	0.00
1,720.0	16.16	91.25	1,689.1	-5.6	255.6	255.7	0.00	0.00	0.00
1,760.0	16.16	91.25	1,727.5	-5.8	266.7	266.8	0.00	0.00	0.00
1,800.0	16.16	91.25	1,765.9	-6.1	277.9	277.9	0.00	0.00	0.00
1,840.0	16.16	91.25	1,804.4	-6.3	289.0	289.1	0.00	0.00	0.00
1,880.0	16.16	91.25	1,842.8	-6.6	300.1	300.2	0.00	0.00	0.00
1,920.0	16.16	91.25	1,881.2	-6.8	311.3	311.3	0.00	0.00	0.00
1,960.0	16.16	91.25	1,919.6	-7.1	322.4	322.5	0.00	0.00	0.00
2,000.0	16.16	91.25	1,958.0	-7.3	333.5	333.6	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well JWHS 32-2D
Company:	Apollo Operating, LLC.	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Project:	SEC.2-T3N-R68W	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site:	JWHS 31-2D Pad Sec.2-T3N-R68W	North Reference:	True
Well:	JWHS 32-2D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (6-6-12)		

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)
2,040.0	16.16	91.25	1,996.5	-7.5	344.6	344.7	0.00	0.00	0.00
2,080.0	16.16	91.25	2,034.9	-7.8	355.8	355.9	0.00	0.00	0.00
2,120.0	16.16	91.25	2,073.3	-8.0	366.9	367.0	0.00	0.00	0.00
2,160.0	16.16	91.25	2,111.7	-8.3	378.0	378.1	0.00	0.00	0.00
2,200.0	16.16	91.25	2,150.1	-8.5	389.2	389.2	0.00	0.00	0.00
2,240.0	16.16	91.25	2,188.6	-8.8	400.3	400.4	0.00	0.00	0.00
2,280.0	16.16	91.25	2,227.0	-9.0	411.4	411.5	0.00	0.00	0.00
2,320.0	16.16	91.25	2,265.4	-9.3	422.5	422.6	0.00	0.00	0.00
2,360.0	16.16	91.25	2,303.8	-9.5	433.7	433.8	0.00	0.00	0.00
2,400.0	16.16	91.25	2,342.2	-9.7	444.8	444.9	0.00	0.00	0.00
2,440.0	16.16	91.25	2,380.7	-10.0	455.9	456.0	0.00	0.00	0.00
2,480.0	16.16	91.25	2,419.1	-10.2	467.1	467.2	0.00	0.00	0.00
2,520.0	16.16	91.25	2,457.5	-10.5	478.2	478.3	0.00	0.00	0.00
2,560.0	16.16	91.25	2,495.9	-10.7	489.3	489.4	0.00	0.00	0.00
2,600.0	16.16	91.25	2,534.3	-11.0	500.4	500.6	0.00	0.00	0.00
2,640.0	16.16	91.25	2,572.8	-11.2	511.6	511.7	0.00	0.00	0.00
2,680.0	16.16	91.25	2,611.2	-11.4	522.7	522.8	0.00	0.00	0.00
2,720.0	16.16	91.25	2,649.6	-11.7	533.8	534.0	0.00	0.00	0.00
2,760.0	16.16	91.25	2,688.0	-11.9	545.0	545.1	0.00	0.00	0.00
2,800.0	16.16	91.25	2,726.4	-12.2	556.1	556.2	0.00	0.00	0.00
2,840.0	16.16	91.25	2,764.9	-12.4	567.2	567.3	0.00	0.00	0.00
2,880.0	16.16	91.25	2,803.3	-12.7	578.3	578.5	0.00	0.00	0.00
2,920.0	16.16	91.25	2,841.7	-12.9	589.5	589.6	0.00	0.00	0.00
2,960.0	16.16	91.25	2,880.1	-13.2	600.6	600.7	0.00	0.00	0.00
3,000.0	16.16	91.25	2,918.5	-13.4	611.7	611.9	0.00	0.00	0.00
3,040.0	16.16	91.25	2,957.0	-13.6	622.9	623.0	0.00	0.00	0.00
3,080.0	16.16	91.25	2,995.4	-13.9	634.0	634.1	0.00	0.00	0.00
3,120.0	16.16	91.25	3,033.8	-14.1	645.1	645.3	0.00	0.00	0.00
3,160.0	16.16	91.25	3,072.2	-14.4	656.2	656.4	0.00	0.00	0.00
3,200.0	16.16	91.25	3,110.6	-14.6	667.4	667.5	0.00	0.00	0.00
3,240.0	16.16	91.25	3,149.1	-14.9	678.5	678.7	0.00	0.00	0.00
3,280.0	16.16	91.25	3,187.5	-15.1	689.6	689.8	0.00	0.00	0.00
3,320.0	16.16	91.25	3,225.9	-15.3	700.8	700.9	0.00	0.00	0.00
3,360.0	16.16	91.25	3,264.3	-15.6	711.9	712.1	0.00	0.00	0.00
3,400.0	16.16	91.25	3,302.7	-15.8	723.0	723.2	0.00	0.00	0.00
3,440.0	16.16	91.25	3,341.2	-16.1	734.1	734.3	0.00	0.00	0.00
3,480.0	16.16	91.25	3,379.6	-16.3	745.3	745.4	0.00	0.00	0.00
3,520.0	16.16	91.25	3,418.0	-16.6	756.4	756.6	0.00	0.00	0.00
3,560.0	16.16	91.25	3,456.4	-16.8	767.5	767.7	0.00	0.00	0.00
3,600.0	16.16	91.25	3,494.8	-17.1	778.7	778.8	0.00	0.00	0.00
3,640.0	16.16	91.25	3,533.3	-17.3	789.8	790.0	0.00	0.00	0.00
3,680.0	16.16	91.25	3,571.7	-17.5	800.9	801.1	0.00	0.00	0.00
3,720.0	16.16	91.25	3,610.1	-17.8	812.0	812.2	0.00	0.00	0.00
3,760.0	16.16	91.25	3,648.5	-18.0	823.2	823.4	0.00	0.00	0.00
3,800.0	16.16	91.25	3,686.9	-18.3	834.3	834.5	0.00	0.00	0.00
3,840.0	16.16	91.25	3,725.4	-18.5	845.4	845.6	0.00	0.00	0.00
3,880.0	16.16	91.25	3,763.8	-18.8	856.6	856.8	0.00	0.00	0.00
3,920.0	16.16	91.25	3,802.2	-19.0	867.7	867.9	0.00	0.00	0.00
3,960.0	16.16	91.25	3,840.6	-19.2	878.8	879.0	0.00	0.00	0.00
4,000.0	16.16	91.25	3,879.0	-19.5	889.9	890.1	0.00	0.00	0.00
4,040.0	16.16	91.25	3,917.5	-19.7	901.1	901.3	0.00	0.00	0.00
4,080.0	16.16	91.25	3,955.9	-20.0	912.2	912.4	0.00	0.00	0.00
4,120.0	16.16	91.25	3,994.3	-20.2	923.3	923.5	0.00	0.00	0.00
4,160.0	16.16	91.25	4,032.7	-20.5	934.4	934.7	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well JWHS 32-2D
Company:	Apollo Operating, LLC.	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Project:	SEC.2-T3N-R68W	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site:	JWHS 31-2D Pad Sec.2-T3N-R68W	North Reference:	True
Well:	JWHS 32-2D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (6-6-12)		

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)
4,200.0	16.16	91.25	4,071.1	-20.7	945.6	945.8	0.00	0.00	0.00
4,240.0	16.16	91.25	4,109.6	-21.0	956.7	956.9	0.00	0.00	0.00
4,280.0	16.16	91.25	4,148.0	-21.2	967.8	968.1	0.00	0.00	0.00
4,320.0	16.16	91.25	4,186.4	-21.4	979.0	979.2	0.00	0.00	0.00
4,360.0	16.16	91.25	4,224.8	-21.7	990.1	990.3	0.00	0.00	0.00
4,400.0	16.16	91.25	4,263.2	-21.9	1,001.2	1,001.5	0.00	0.00	0.00
4,440.0	16.16	91.25	4,301.7	-22.2	1,012.3	1,012.6	0.00	0.00	0.00
4,480.0	16.16	91.25	4,340.1	-22.4	1,023.5	1,023.7	0.00	0.00	0.00
4,520.0	16.16	91.25	4,378.5	-22.7	1,034.6	1,034.9	0.00	0.00	0.00
4,560.0	16.16	91.25	4,416.9	-22.9	1,045.7	1,046.0	0.00	0.00	0.00
4,600.0	16.16	91.25	4,455.3	-23.1	1,056.9	1,057.1	0.00	0.00	0.00
4,640.0	16.16	91.25	4,493.8	-23.4	1,068.0	1,068.2	0.00	0.00	0.00
4,680.0	16.16	91.25	4,532.2	-23.6	1,079.1	1,079.4	0.00	0.00	0.00
4,720.0	16.16	91.25	4,570.6	-23.9	1,090.2	1,090.5	0.00	0.00	0.00
4,760.0	16.16	91.25	4,609.0	-24.1	1,101.4	1,101.6	0.00	0.00	0.00
4,800.0	16.16	91.25	4,647.4	-24.4	1,112.5	1,112.8	0.00	0.00	0.00
4,840.0	16.16	91.25	4,685.9	-24.6	1,123.6	1,123.9	0.00	0.00	0.00
4,880.0	16.16	91.25	4,724.3	-24.9	1,134.8	1,135.0	0.00	0.00	0.00
4,920.0	16.16	91.25	4,762.7	-25.1	1,145.9	1,146.2	0.00	0.00	0.00
4,960.0	16.16	91.25	4,801.1	-25.3	1,157.0	1,157.3	0.00	0.00	0.00
5,000.0	16.16	91.25	4,839.5	-25.6	1,168.1	1,168.4	0.00	0.00	0.00
5,040.0	16.16	91.25	4,878.0	-25.8	1,179.3	1,179.6	0.00	0.00	0.00
5,080.0	16.16	91.25	4,916.4	-26.1	1,190.4	1,190.7	0.00	0.00	0.00
5,120.0	16.16	91.25	4,954.8	-26.3	1,201.5	1,201.8	0.00	0.00	0.00
5,160.0	16.16	91.25	4,993.2	-26.6	1,212.7	1,213.0	0.00	0.00	0.00
5,170.0	16.16	91.25	5,002.8	-26.6	1,215.4	1,215.7	0.00	0.00	0.00
5,200.0	15.56	91.25	5,031.7	-26.8	1,223.6	1,223.9	2.00	-2.00	0.00
5,240.0	14.76	91.25	5,070.3	-27.0	1,234.1	1,234.4	2.00	-2.00	0.00
5,280.0	13.96	91.25	5,109.0	-27.2	1,244.0	1,244.3	2.00	-2.00	0.00
5,320.0	13.16	91.25	5,147.9	-27.4	1,253.4	1,253.7	2.00	-2.00	0.00
5,360.0	12.36	91.25	5,186.9	-27.6	1,262.2	1,262.5	2.00	-2.00	0.00
5,400.0	11.56	91.25	5,226.1	-27.8	1,270.5	1,270.8	2.00	-2.00	0.00
5,440.0	10.76	91.25	5,265.3	-28.0	1,278.2	1,278.5	2.00	-2.00	0.00
5,480.0	9.96	91.25	5,304.7	-28.2	1,285.4	1,285.7	2.00	-2.00	0.00
5,520.0	9.16	91.25	5,344.1	-28.3	1,292.1	1,292.4	2.00	-2.00	0.00
5,560.0	8.36	91.25	5,383.6	-28.4	1,298.2	1,298.5	2.00	-2.00	0.00
5,600.0	7.56	91.25	5,423.3	-28.6	1,303.7	1,304.0	2.00	-2.00	0.00
5,640.0	6.76	91.25	5,463.0	-28.7	1,308.7	1,309.0	2.00	-2.00	0.00
5,680.0	5.96	91.25	5,502.7	-28.8	1,313.1	1,313.4	2.00	-2.00	0.00
5,720.0	5.16	91.25	5,542.5	-28.8	1,317.0	1,317.3	2.00	-2.00	0.00
5,760.0	4.36	91.25	5,582.4	-28.9	1,320.3	1,320.6	2.00	-2.00	0.00
5,800.0	3.56	91.25	5,622.3	-29.0	1,323.0	1,323.4	2.00	-2.00	0.00
5,840.0	2.76	91.25	5,662.2	-29.0	1,325.2	1,325.6	2.00	-2.00	0.00
5,880.0	1.96	91.25	5,702.2	-29.1	1,326.9	1,327.2	2.00	-2.00	0.00
5,920.0	1.16	91.25	5,742.2	-29.1	1,328.0	1,328.3	2.00	-2.00	0.00
5,960.0	0.36	91.25	5,782.2	-29.1	1,328.5	1,328.8	2.00	-2.00	0.00
5,977.8	0.00	0.00	5,800.0	-29.1	1,328.6	1,328.9	2.00	-2.00	-511.75
TARGET BHL 2064'FNL & 2001'FEL									
6,000.0	0.00	0.00	5,822.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
6,040.0	0.00	0.00	5,862.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
6,080.0	0.00	0.00	5,902.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
6,120.0	0.00	0.00	5,942.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
6,160.0	0.00	0.00	5,982.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
6,200.0	0.00	0.00	6,022.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well JWHS 32-2D
Company:	Apollo Operating, LLC.	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Project:	SEC.2-T3N-R68W	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site:	JWHS 31-2D Pad Sec.2-T3N-R68W	North Reference:	True
Well:	JWHS 32-2D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (6-6-12)		

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	6,062.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
6,280.0	0.00	0.00	6,102.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
6,320.0	0.00	0.00	6,142.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
6,360.0	0.00	0.00	6,182.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
6,400.0	0.00	0.00	6,222.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
6,440.0	0.00	0.00	6,262.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
6,480.0	0.00	0.00	6,302.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
6,520.0	0.00	0.00	6,342.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
6,560.0	0.00	0.00	6,382.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
6,600.0	0.00	0.00	6,422.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
6,640.0	0.00	0.00	6,462.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
6,680.0	0.00	0.00	6,502.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
6,720.0	0.00	0.00	6,542.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
6,760.0	0.00	0.00	6,582.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
6,800.0	0.00	0.00	6,622.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
6,840.0	0.00	0.00	6,662.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
6,877.8	0.00	0.00	6,700.0	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
LEGAL BOX 400' X 400', 2047'FNL & 2001'FEL - TARGET CIRCLE 2064'FNL & 2001'FEL									
6,880.0	0.00	0.00	6,702.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
6,920.0	0.00	0.00	6,742.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
6,960.0	0.00	0.00	6,782.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
7,000.0	0.00	0.00	6,822.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
7,040.0	0.00	0.00	6,862.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
7,080.0	0.00	0.00	6,902.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
7,120.0	0.00	0.00	6,942.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
7,160.0	0.00	0.00	6,982.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
7,200.0	0.00	0.00	7,022.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
7,240.0	0.00	0.00	7,062.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
7,280.0	0.00	0.00	7,102.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
7,320.0	0.00	0.00	7,142.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
7,360.0	0.00	0.00	7,182.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
7,400.0	0.00	0.00	7,222.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
7,440.0	0.00	0.00	7,262.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
7,480.0	0.00	0.00	7,302.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
7,520.0	0.00	0.00	7,342.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
7,560.0	0.00	0.00	7,382.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
7,600.0	0.00	0.00	7,422.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
7,640.0	0.00	0.00	7,462.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
7,680.0	0.00	0.00	7,502.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
7,720.0	0.00	0.00	7,542.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
7,760.0	0.00	0.00	7,582.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
7,800.0	0.00	0.00	7,622.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
7,840.0	0.00	0.00	7,662.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
7,880.0	0.00	0.00	7,702.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
7,920.0	0.00	0.00	7,742.2	-29.1	1,328.6	1,328.9	0.00	0.00	0.00
7,927.8	0.00	0.00	7,750.0	-29.1	1,328.6	1,328.9	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well JWHS 32-2D
Company:	Apollo Operating, LLC.	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Project:	SEC.2-T3N-R68W	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site:	JWHS 31-2D Pad Sec.2-T3N-R68W	North Reference:	True
Well:	JWHS 32-2D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (6-6-12)		

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
TARGET BHL 2064'F	0.00	0.00	5,800.0	-29.1	1,328.6	1,336,952.30	3,148,501.24	40.257110	-104.967920
- plan hits target center									
- Point									
LEGAL BOX 400' X 400'	0.00	0.00	6,700.0	-12.7	1,328.6	1,336,968.70	3,148,501.18	40.257155	-104.967920
- plan misses target center by 16.4ft at 6877.8ft MD (6700.0 TVD, -29.1 N, 1328.6 E)									
- Rectangle (sides W400.0 H400.0 D1,050.0)									
TARGET CIRCLE 206'	0.00	0.00	6,700.0	-29.1	1,328.6	1,336,952.30	3,148,501.24	40.257110	-104.967920
- plan hits target center									
- Circle (radius 75.0)									

Casing Points					
	Measured Depth	Vertical Depth		Casing Diameter	Hole Diameter
	(ft)	(ft)	Name	(")	(")
	882.3	880.0	8 5/8"	8-5/8	12-1/4



Apollo Operating, LLC.

SEC.2-T3N-R68W

JWHS 31-2D Pad Sec.2-T3N-R68W

JWHS 32-2D

Wellbore #1

Plan #1 (6-6-12)

Anticollision Report

06 June, 2012

Company:	Apollo Operating, LLC.	Local Co-ordinate Reference:	Well JWHS 32-2D
Project:	SEC.2-T3N-R68W	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	JWHS 31-2D Pad Sec.2-T3N-R68W	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	JWHS 32-2D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (6-6-12)	Offset TVD Reference:	Offset Datum

Offset Design JWHS 31-2D Pad Sec.2-T3N-R68W - JWHS 31-2D - Wellbore #1 - Plan #1 (6-6-12)												Offset Site Error:	0.0ft
Survey Program: 0-MWD												Offset Well Error:	0.0ft
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	
1,900.0	1,862.0	1,843.2	1,778.0	7.2	8.7	-89.11	309.9	293.1	328.0	313.8	14.23	23.051	
2,000.0	1,958.0	1,939.6	1,867.6	7.8	9.5	-89.38	334.9	318.4	354.6	339.2	15.36	23.080	
2,100.0	2,054.1	2,036.0	1,957.2	8.4	10.2	-89.61	360.0	343.6	381.1	364.6	16.50	23.099	
2,200.0	2,150.1	2,132.4	2,046.8	9.0	10.9	-89.82	385.0	368.9	407.6	390.0	17.64	23.111	
2,300.0	2,246.2	2,228.8	2,136.4	9.6	11.6	-89.99	410.1	394.1	434.2	415.4	18.78	23.119	
2,400.0	2,342.2	2,325.2	2,226.0	10.2	12.3	-90.15	435.1	419.4	460.7	440.8	19.93	23.123	
2,500.0	2,438.3	2,421.6	2,315.6	10.8	13.0	-90.29	460.2	444.6	487.3	466.2	21.07	23.125	
2,600.0	2,534.3	2,518.0	2,405.2	11.3	13.7	-90.42	485.2	469.9	513.9	491.6	22.22	23.125	
2,700.0	2,630.4	2,614.4	2,494.8	11.9	14.5	-90.53	510.3	495.1	540.4	517.1	23.37	23.124	
2,800.0	2,726.4	2,710.8	2,584.5	12.5	15.2	-90.63	535.3	520.4	567.0	542.5	24.52	23.122	
2,900.0	2,822.5	2,807.2	2,674.1	13.1	15.9	-90.72	560.4	545.6	593.6	567.9	25.67	23.119	
3,000.0	2,918.5	2,903.6	2,763.7	13.7	16.6	-90.81	585.4	570.9	620.1	593.3	26.83	23.115	
3,100.0	3,014.6	3,000.0	2,853.3	14.3	17.3	-90.89	610.5	596.1	646.7	618.7	27.98	23.112	
3,200.0	3,110.6	3,096.4	2,942.9	14.9	18.0	-90.96	635.5	621.4	673.3	644.1	29.14	23.108	
3,300.0	3,206.7	3,192.8	3,032.5	15.5	18.8	-91.03	660.6	646.6	699.8	669.5	30.29	23.104	
3,400.0	3,302.7	3,289.2	3,122.1	16.1	19.5	-91.09	685.6	671.9	726.4	695.0	31.45	23.099	
3,500.0	3,398.8	3,385.6	3,211.7	16.7	20.2	-91.15	710.7	697.1	753.0	720.4	32.60	23.095	
3,600.0	3,494.8	3,482.0	3,301.3	17.3	20.9	-91.20	735.7	722.4	779.5	745.8	33.76	23.091	
3,700.0	3,590.9	3,578.4	3,390.9	17.9	21.6	-91.25	760.8	747.6	806.1	771.2	34.92	23.087	
3,800.0	3,686.9	3,674.8	3,480.5	18.4	22.3	-91.30	785.8	772.9	832.7	796.6	36.07	23.083	
3,900.0	3,783.0	3,771.2	3,570.1	19.0	23.1	-91.34	810.9	798.1	859.3	822.0	37.23	23.079	
4,000.0	3,879.0	3,867.6	3,659.7	19.6	23.8	-91.38	835.9	823.4	885.8	847.4	38.39	23.074	
4,100.0	3,975.1	3,964.0	3,749.3	20.2	24.5	-91.42	861.0	848.6	912.4	872.9	39.55	23.071	
4,200.0	4,071.1	4,060.4	3,838.9	20.8	25.2	-91.46	886.0	873.9	939.0	898.3	40.71	23.067	
4,300.0	4,167.2	4,156.8	3,928.5	21.4	25.9	-91.49	911.1	899.1	965.6	923.7	41.87	23.063	
4,400.0	4,263.2	4,253.2	4,018.1	22.0	26.7	-91.53	936.1	924.4	992.1	949.1	43.03	23.059	
4,500.0	4,359.3	4,349.6	4,107.7	22.6	27.4	-91.56	961.2	949.6	1,018.7	974.5	44.19	23.056	
4,600.0	4,455.3	4,446.0	4,197.3	23.2	28.1	-91.59	986.2	974.9	1,045.3	999.9	45.34	23.052	
4,700.0	4,551.4	4,542.4	4,286.9	23.8	28.8	-91.61	1,011.3	1,000.1	1,071.9	1,025.4	46.50	23.049	
4,800.0	4,647.4	4,638.8	4,376.5	24.4	29.5	-91.64	1,036.3	1,025.4	1,098.4	1,050.8	47.66	23.045	
4,900.0	4,743.5	4,735.2	4,466.1	25.0	30.3	-91.67	1,061.4	1,050.6	1,125.0	1,076.2	48.82	23.042	
5,000.0	4,839.5	4,831.6	4,555.7	25.6	31.0	-91.69	1,086.4	1,075.9	1,151.6	1,101.6	49.99	23.039	
5,100.0	4,935.6	4,928.0	4,645.3	26.2	31.7	-91.71	1,111.5	1,101.1	1,178.2	1,127.0	51.15	23.036	
5,170.0	5,002.8	4,995.5	4,708.0	26.6	32.2	-91.73	1,129.0	1,118.8	1,196.8	1,144.8	51.96	23.034	
5,200.0	5,031.7	5,024.5	4,734.9	26.7	32.4	-91.89	1,136.5	1,126.4	1,204.8	1,152.4	52.32	23.025	
5,300.0	5,128.5	5,120.8	4,824.5	27.2	33.1	-92.33	1,161.6	1,151.6	1,231.2	1,177.8	53.42	23.046	
5,400.0	5,226.1	5,217.1	4,914.0	27.5	33.9	-92.60	1,186.6	1,176.8	1,257.6	1,203.2	54.44	23.101	
5,500.0	5,324.4	5,316.1	5,030.2	27.8	34.7	-92.63	1,217.9	1,208.4	1,283.1	1,227.7	55.41	23.159	
5,600.0	5,423.3	5,411.9	5,163.3	28.1	35.4	-92.55	1,249.1	1,239.8	1,305.6	1,249.3	56.24	23.215	
5,700.0	5,522.6	5,514.8	5,301.0	28.4	36.0	-92.40	1,276.1	1,267.0	1,324.6	1,267.6	56.94	23.261	
5,800.0	5,622.3	5,614.9	5,442.5	28.5	36.5	-92.21	1,298.5	1,289.6	1,340.1	1,282.6	57.52	23.299	
5,900.0	5,722.2	5,714.9	5,587.4	28.7	37.0	-91.96	1,316.0	1,307.3	1,352.1	1,294.1	57.96	23.329	
5,977.8	5,800.0	6,032.4	5,702.0	28.7	37.3	-0.47	1,326.1	1,317.5	1,358.8	1,300.6	58.20	23.348	
6,000.0	5,822.2	6,065.5	5,734.9	28.8	37.3	-0.37	1,328.4	1,319.8	1,360.4	1,302.1	58.25	23.355	
6,100.0	5,922.2	6,215.3	5,884.4	28.9	37.6	-0.07	1,335.4	1,326.8	1,365.0	1,306.6	58.47	23.346	
6,200.0	6,022.2	6,354.1	6,023.2	29.0	37.7	0.00	1,337.0	1,328.5	1,366.1	1,307.5	58.68	23.280	
6,300.0	6,122.2	6,454.1	6,123.2	29.0	37.8	0.00	1,337.0	1,328.5	1,366.1	1,307.3	58.87	23.205	
6,400.0	6,222.2	6,554.1	6,223.2	29.1	37.8	0.00	1,337.0	1,328.5	1,366.1	1,307.1	59.07	23.128	
6,500.0	6,322.2	6,654.1	6,323.2	29.3	37.9	0.00	1,337.0	1,328.5	1,366.1	1,306.9	59.27	23.051	
6,600.0	6,422.2	6,754.1	6,423.2	29.4	38.0	0.00	1,337.0	1,328.5	1,366.1	1,306.7	59.47	22.973	
6,700.0	6,522.2	6,854.1	6,523.2	29.5	38.1	0.00	1,337.0	1,328.5	1,366.1	1,306.5	59.67	22.894	
6,800.0	6,622.2	6,954.1	6,623.2	29.6	38.2	0.00	1,337.0	1,328.5	1,366.1	1,306.3	59.88	22.815	

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

Company:	Apollo Operating, LLC.	Local Co-ordinate Reference:	Well JWHS 32-2D
Project:	SEC.2-T3N-R68W	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	JWHS 31-2D Pad Sec.2-T3N-R68W	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	JWHS 32-2D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (6-6-12)	Offset TVD Reference:	Offset Datum

Offset Design JWHS 31-2D Pad Sec.2-T3N-R68W - JWHS 31-2D - Wellbore #1 - Plan #1 (6-6-12)												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
6,900.0	6,722.2	7,054.1	6,723.2	29.7	38.2	0.00	1,337.0	1,328.5	1,366.1	1,306.0	60.09	22.735	
7,000.0	6,822.2	7,154.1	6,823.2	29.8	38.3	0.00	1,337.0	1,328.5	1,366.1	1,305.8	60.30	22.655	
7,100.0	6,922.2	7,254.1	6,923.2	29.9	38.4	0.00	1,337.0	1,328.5	1,366.1	1,305.6	60.52	22.575	
7,200.0	7,022.2	7,354.1	7,023.2	30.0	38.5	0.00	1,337.0	1,328.5	1,366.1	1,305.4	60.73	22.494	
7,300.0	7,122.2	7,454.1	7,123.2	30.1	38.6	0.00	1,337.0	1,328.5	1,366.1	1,305.2	60.95	22.413	
7,400.0	7,222.2	7,554.1	7,223.2	30.2	38.7	0.00	1,337.0	1,328.5	1,366.1	1,305.0	61.18	22.331	
7,500.0	7,322.2	7,654.1	7,323.2	30.3	38.7	0.00	1,337.0	1,328.5	1,366.1	1,304.7	61.40	22.249	
7,600.0	7,422.2	7,754.1	7,423.2	30.4	38.8	0.00	1,337.0	1,328.5	1,366.1	1,304.5	61.63	22.167	
7,700.0	7,522.2	7,854.1	7,523.2	30.6	38.9	0.00	1,337.0	1,328.5	1,366.1	1,304.3	61.86	22.085	
7,800.0	7,622.2	7,954.1	7,623.2	30.7	39.0	0.00	1,337.0	1,328.5	1,366.1	1,304.0	62.09	22.002	
7,900.0	7,722.2	8,054.1	7,723.2	30.8	39.1	0.00	1,337.0	1,328.5	1,366.1	1,303.8	62.33	21.919	
7,918.2	7,740.4	8,072.3	7,741.4	30.8	39.1	0.00	1,337.0	1,328.5	1,366.1	1,303.8	62.37	21.904	
7,927.8	7,750.0	8,080.9	7,750.0	30.8	39.1	0.00	1,337.0	1,328.5	1,366.1	1,303.7	62.39	21.897	

Company:	Apollo Operating, LLC.	Local Co-ordinate Reference:	Well JWHS 32-2D
Project:	SEC.2-T3N-R68W	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	JWHS 31-2D Pad Sec.2-T3N-R68W	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	JWHS 32-2D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (6-6-12)	Offset TVD Reference:	Offset Datum

Offset Design JWHS 31-2D Pad Sec.2-T3N-R68W - Steffes 21-2D (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 101-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	-162.98	-18.2	-5.6	19.1	19.1	0.00	N/A CC, ES		
100.0	100.0	99.8	99.8	0.1	0.1	-165.47	-18.9	-4.9	19.5	19.3	0.23	85.976		
200.0	200.0	199.7	199.7	0.3	0.3	-169.80	-20.5	-3.7	20.8	20.1	0.67	31.143		
300.0	300.0	299.8	299.8	0.6	0.5	-172.37	-21.9	-2.9	22.1	21.0	1.10	20.172		
400.0	400.0	400.0	399.9	0.8	0.7	-173.46	-22.7	-2.6	22.8	21.3	1.53	14.964		
500.0	500.0	500.0	500.0	1.0	1.0	98.99	-22.8	-2.4	23.1	21.2	1.95	11.878		
600.0	599.8	599.9	599.8	1.2	1.2	109.52	-23.1	-1.7	24.5	22.2	2.37	10.345		
700.0	699.5	699.6	699.5	1.5	1.4	125.40	-23.3	-1.5	28.6	25.8	2.81	10.180 SF		
800.0	798.7	798.7	798.6	1.7	1.6	140.76	-23.1	-1.2	36.8	33.5	3.26	11.286		
900.0	897.5	896.6	896.5	2.0	1.8	151.56	-23.9	-2.0	51.0	47.3	3.71	13.736		
1,000.0	995.6	993.9	993.8	2.4	2.0	158.17	-25.5	-3.7	70.5	66.4	4.16	16.963		
1,100.0	1,093.1	1,091.5	1,091.3	2.8	2.2	163.76	-25.4	-6.2	94.3	89.7	4.60	20.516		
1,207.9	1,197.2	1,196.6	1,196.5	3.3	2.4	168.77	-22.8	-8.0	122.8	117.7	5.05	24.301		
1,300.0	1,285.7	1,287.4	1,287.1	3.8	2.6	172.01	-19.7	-8.3	148.0	142.6	5.46	27.117		
1,400.0	1,381.7	1,383.8	1,383.5	4.4	2.8	174.82	-15.0	-7.5	174.5	168.6	5.91	29.522		
1,500.0	1,477.8	1,479.6	1,479.1	4.9	3.0	177.27	-9.1	-7.0	201.5	195.1	6.38	31.601		
1,600.0	1,573.8	1,572.5	1,571.6	5.5	3.2	179.82	-0.5	-7.0	229.3	222.4	6.85	33.462		
1,700.0	1,669.9	1,667.9	1,666.3	6.1	3.4	-177.68	10.2	-7.9	258.5	251.1	7.35	35.154		
1,800.0	1,765.9	1,762.1	1,759.8	6.7	3.7	-175.42	22.1	-8.5	287.8	279.9	7.87	36.562		
1,900.0	1,862.0	1,856.8	1,853.5	7.2	3.9	-173.29	35.6	-9.3	317.9	309.5	8.42	37.757		
2,000.0	1,958.0	1,951.1	1,946.7	7.8	4.2	-171.33	50.2	-9.8	348.3	339.3	8.99	38.728		
2,100.0	2,054.1	2,041.1	2,035.4	8.4	4.5	-169.56	65.4	-10.6	379.5	369.9	9.58	39.603		
2,200.0	2,150.1	2,133.1	2,125.7	9.0	4.8	-167.70	83.2	-12.0	412.2	402.0	10.22	40.345		
2,300.0	2,246.2	2,230.0	2,220.2	9.6	5.1	-165.70	104.2	-12.6	445.1	434.2	10.91	40.799		
2,400.0	2,342.2	2,321.9	2,309.5	10.2	5.5	-163.78	126.1	-12.2	477.9	466.3	11.63	41.107		
2,500.0	2,438.3	2,405.8	2,390.5	10.8	5.9	-162.03	148.1	-12.1	512.2	499.8	12.36	41.453		
2,600.0	2,534.3	2,486.0	2,467.0	11.3	6.2	-160.24	172.0	-12.7	548.9	535.8	13.12	41.842		
2,700.0	2,630.4	2,571.2	2,547.5	11.9	6.7	-158.34	199.8	-14.1	588.0	574.0	13.94	42.173		
2,800.0	2,726.4	2,672.3	2,643.2	12.5	7.2	-156.35	232.7	-15.1	627.0	612.1	14.84	42.263		
2,900.0	2,822.5	2,768.5	2,735.2	13.1	7.6	-154.96	260.7	-15.6	664.7	649.0	15.67	42.422		
3,000.0	2,918.5	2,854.7	2,817.0	13.7	8.0	-153.66	287.8	-15.7	703.3	686.8	16.49	42.647		
3,100.0	3,014.6	2,951.9	2,909.4	14.3	8.5	-152.39	318.0	-15.9	742.2	724.8	17.38	42.699		
3,200.0	3,110.6	3,049.8	3,002.2	14.9	9.1	-151.12	349.0	-14.2	780.1	761.8	18.29	42.655		
3,300.0	3,206.7	3,142.9	3,090.8	15.5	9.5	-150.11	377.6	-13.3	818.4	799.2	19.16	42.719		
3,400.0	3,302.7	3,244.3	3,187.9	16.1	10.0	-149.24	406.7	-12.0	855.6	835.5	20.04	42.686		
3,500.0	3,398.8	3,340.5	3,279.8	16.7	10.5	-148.40	435.3	-10.0	892.8	871.9	20.93	42.653		
3,600.0	3,494.8	3,434.1	3,369.2	17.3	11.0	-147.66	462.4	-7.4	929.2	907.4	21.81	42.603		
3,700.0	3,590.9	3,512.5	3,444.0	17.9	11.5	-147.04	486.1	-5.5	966.8	944.2	22.63	42.728		
3,800.0	3,686.9	3,592.4	3,519.7	18.4	11.9	-146.39	511.7	-3.9	1,005.7	982.2	23.48	42.838		
3,900.0	3,783.0	3,678.0	3,600.4	19.0	12.4	-145.69	540.1	-2.5	1,045.6	1,021.2	24.37	42.902		
4,000.0	3,879.0	3,738.6	3,657.3	19.6	12.8	-145.20	561.0	-2.0	1,087.1	1,062.0	25.14	43.247		
4,100.0	3,975.1	3,814.1	3,727.4	20.2	13.3	-144.58	588.8	-2.4	1,130.8	1,104.8	25.99	43.510		
4,200.0	4,071.1	3,908.3	3,815.2	20.8	13.9	-143.87	623.1	-3.0	1,174.7	1,147.8	26.93	43.618		
4,300.0	4,167.2	4,041.6	3,940.7	21.4	14.6	-143.15	667.8	-4.5	1,217.6	1,189.6	28.01	43.471		
4,400.0	4,263.2	4,178.4	4,072.6	22.0	15.3	-142.85	704.0	-5.5	1,255.7	1,226.8	28.99	43.316		
4,500.0	4,359.3	4,244.0	4,136.1	22.6	15.6	-142.74	720.8	-5.7	1,293.5	1,263.8	29.68	43.581		
4,600.0	4,455.3	4,320.9	4,210.1	23.2	16.0	-142.59	741.5	-6.7	1,332.6	1,302.2	30.44	43.783		
4,700.0	4,551.4	4,394.6	4,280.7	23.8	16.4	-142.43	762.7	-8.4	1,373.6	1,342.4	31.19	44.037		
4,800.0	4,647.4	4,484.7	4,366.6	24.4	16.9	-142.20	789.6	-10.6	1,415.2	1,383.2	32.03	44.188		
4,900.0	4,743.5	4,592.4	4,469.3	25.0	17.5	-141.91	822.1	-12.1	1,456.3	1,423.3	32.95	44.201		
5,000.0	4,839.5	4,666.2	4,539.7	25.6	17.9	-141.72	844.1	-12.8	1,496.9	1,463.2	33.71	44.403		
5,100.0	4,935.6	4,725.4	4,595.9	26.2	18.3	-141.56	862.8	-14.1	1,539.5	1,505.0	34.42	44.728		

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

JWHS 31-2D Pad Sec.2-T3N-R68W - Steffes 21-2D (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 101-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
5,170.0	5,002.8	4,791.9	4,658.7	26.6	18.7	-141.36	884.5	-15.7	1,569.8	1,534.7	35.05	44.790		
5,200.0	5,031.7	4,821.0	4,686.2	26.7	18.9	-141.44	894.2	-16.2	1,582.6	1,547.3	35.33	44.790		
5,300.0	5,128.5	4,940.2	4,798.8	27.2	19.6	-141.54	933.1	-17.7	1,623.3	1,587.0	36.34	44.675		
5,400.0	5,226.1	5,118.2	4,969.3	27.5	20.5	-141.38	984.3	-17.0	1,657.7	1,620.2	37.54	44.163		
5,500.0	5,324.4	5,240.7	5,087.7	27.8	21.1	-141.32	1,015.7	-14.4	1,686.5	1,648.0	38.43	43.888		
5,600.0	5,423.3	5,379.7	5,222.6	28.1	21.7	-141.10	1,048.9	-10.5	1,711.2	1,671.9	39.33	43.507		
5,700.0	5,522.6	5,517.5	5,357.2	28.4	22.3	-140.82	1,077.8	-5.4	1,730.7	1,690.6	40.16	43.101		
5,800.0	5,622.3	5,663.4	5,500.6	28.5	22.8	-140.45	1,103.8	1.1	1,745.2	1,704.2	40.91	42.655		
5,900.0	5,722.2	5,823.2	5,659.3	28.7	23.3	-140.15	1,121.5	6.5	1,753.0	1,711.5	41.53	42.212		
5,977.8	5,800.0	5,929.4	5,765.0	28.7	23.5	-48.65	1,130.9	10.5	1,756.2	1,714.3	41.90	41.908		
6,000.0	5,822.2	5,960.9	5,796.4	28.8	23.6	-48.56	1,133.4	12.0	1,756.5	1,714.5	42.02	41.806		
6,100.0	5,922.2	6,082.2	5,917.2	28.9	23.9	-48.20	1,142.2	18.6	1,757.2	1,714.8	42.46	41.390		
6,200.0	6,022.2	6,181.3	6,016.1	29.0	24.0	-47.99	1,147.2	22.8	1,757.5	1,714.7	42.80	41.059		
6,300.0	6,122.2	6,285.3	6,119.9	29.0	24.2	-47.83	1,151.0	25.7	1,757.8	1,714.7	43.13	40.758		
6,400.0	6,222.2	6,388.8	6,223.4	29.1	24.4	-47.73	1,153.1	27.7	1,757.8	1,714.3	43.43	40.476		
6,500.0	6,322.2	6,488.4	6,323.0	29.3	24.5	-47.69	1,154.2	28.8	1,757.7	1,714.0	43.70	40.221		
6,529.8	6,352.0	6,517.7	6,352.3	29.3	24.5	-47.68	1,154.3	28.9	1,757.7	1,713.9	43.78	40.148		
6,600.0	6,422.2	6,581.0	6,415.6	29.4	24.6	-47.67	1,154.6	29.0	1,757.8	1,713.9	43.96	39.990		
6,700.0	6,522.2	6,676.2	6,510.8	29.5	24.7	-47.66	1,155.2	28.9	1,758.4	1,714.2	44.22	39.769		
6,800.0	6,622.2	6,773.1	6,607.6	29.6	24.8	-47.66	1,155.8	28.4	1,759.1	1,714.7	44.48	39.553		
6,900.0	6,722.2	6,872.3	6,706.9	29.7	25.0	-47.66	1,156.3	27.8	1,760.0	1,715.3	44.74	39.338		
7,000.0	6,822.2	6,986.0	6,820.6	29.8	25.1	-47.66	1,156.7	27.3	1,760.5	1,715.5	45.02	39.101		
7,100.0	6,922.2	7,082.6	6,917.1	29.9	25.2	-47.67	1,156.5	26.9	1,760.7	1,715.4	45.28	38.881		
7,200.0	7,022.2	7,181.0	7,015.5	30.0	25.3	-47.69	1,156.2	26.2	1,761.0	1,715.4	45.54	38.666		
7,300.0	7,122.2	7,276.7	7,111.3	30.1	25.4	-47.71	1,156.2	25.6	1,761.5	1,715.7	45.81	38.455		
7,400.0	7,222.2	7,379.2	7,213.8	30.2	25.6	-47.69	1,157.0	25.6	1,762.0	1,715.9	46.10	38.224		
7,500.0	7,322.2	7,469.5	7,304.0	30.3	25.7	-47.65	1,158.2	25.8	1,762.8	1,716.4	46.38	38.009		
7,600.0	7,422.2	7,578.2	7,412.7	30.4	25.9	-47.65	1,159.1	25.2	1,763.7	1,717.0	46.68	37.785		
7,681.8	7,503.9	7,671.4	7,505.9	30.5	26.0	-47.62	1,159.6	25.7	1,763.7	1,716.8	46.94	37.577		
7,700.0	7,522.2	7,677.0	7,511.5	30.6	26.0	-47.62	1,159.7	25.7	1,763.7	1,716.8	46.97	37.550		
7,800.0	7,622.2	7,677.0	7,511.5	30.7	26.0	-47.62	1,159.7	25.7	1,767.2	1,720.0	47.11	37.510		
7,900.0	7,722.2	7,677.0	7,511.5	30.8	26.0	-47.62	1,159.7	25.7	1,776.2	1,729.0	47.26	37.588		
7,927.8	7,750.0	7,677.0	7,511.5	30.8	26.0	-47.62	1,159.7	25.7	1,779.7	1,732.4	47.30	37.630		

Company:	Apollo Operating, LLC.	Local Co-ordinate Reference:	Well JWHS 32-2D
Project:	SEC.2-T3N-R68W	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	JWHS 31-2D Pad Sec.2-T3N-R68W	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	JWHS 32-2D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (6-6-12)	Offset TVD Reference:	Offset Datum

Offset Design JWHS 31-2D Pad Sec.2-T3N-R68W - Steffes 22-2 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 101-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	-172.07	-40.1	-5.6	40.5					
100.0	100.0	99.2	99.2	0.1	0.1	-171.83	-39.9	-5.7	40.3	40.0	0.22	179.910		
188.5	188.5	187.5	187.5	0.3	0.3	-172.03	-39.7	-5.6	40.1	39.5	0.60	66.521 CC		
200.0	200.0	199.0	199.0	0.3	0.3	-172.14	-39.7	-5.5	40.1	39.4	0.65	61.499		
300.0	300.0	298.8	298.8	0.6	0.5	-173.04	-40.0	-4.9	40.3	39.2	1.08	37.226 ES		
400.0	400.0	398.4	398.4	0.8	0.7	-173.20	-41.1	-4.9	41.3	39.8	1.52	27.153		
500.0	500.0	498.4	498.4	1.0	1.0	98.55	-42.7	-5.6	43.3	41.3	1.95	22.182		
600.0	599.8	598.7	598.7	1.2	1.2	105.98	-43.1	-6.4	45.0	42.6	2.37	18.955		
700.0	699.5	698.2	698.2	1.5	1.4	116.83	-43.2	-7.3	48.7	45.9	2.82	17.286		
800.0	798.7	797.4	797.3	1.7	1.6	128.64	-43.4	-8.3	56.0	52.8	3.27	17.114 SF		
900.0	897.5	895.7	895.7	2.0	1.8	138.49	-44.2	-8.5	67.6	63.9	3.74	18.090		
1,000.0	995.6	994.4	994.4	2.4	2.0	146.31	-45.7	-8.9	84.1	79.9	4.20	20.009		
1,100.0	1,093.1	1,092.8	1,092.7	2.8	2.2	153.12	-45.4	-8.5	103.2	98.6	4.65	22.193		
1,207.9	1,197.2	1,196.7	1,196.6	3.3	2.4	158.70	-44.9	-8.1	128.4	123.3	5.13	25.044		
1,300.0	1,285.7	1,286.0	1,285.9	3.8	2.6	162.44	-44.2	-7.9	152.3	146.8	5.55	27.463		
1,400.0	1,381.7	1,382.7	1,382.6	4.4	2.8	165.63	-42.6	-7.3	178.2	172.2	6.00	29.705		
1,500.0	1,477.8	1,478.4	1,478.3	4.9	3.0	168.16	-40.3	-6.8	204.4	198.0	6.45	31.679		
1,600.0	1,573.8	1,574.3	1,574.2	5.5	3.2	170.13	-38.1	-6.6	231.2	224.3	6.92	33.437		
1,700.0	1,669.9	1,670.1	1,669.9	6.1	3.4	171.64	-36.0	-6.4	258.3	250.9	7.38	34.988		
1,800.0	1,765.9	1,763.3	1,763.1	6.7	3.6	172.87	-33.9	-6.6	285.9	278.0	7.85	36.420		
1,900.0	1,862.0	1,858.0	1,857.8	7.2	3.8	173.91	-31.8	-7.7	314.4	306.1	8.32	37.779		
2,000.0	1,958.0	1,956.1	1,955.9	7.8	4.0	174.63	-30.6	-8.6	342.9	334.1	8.80	38.956		
2,100.0	2,054.1	2,053.8	2,053.6	8.4	4.2	174.89	-31.6	-8.6	370.6	361.4	9.29	39.917		
2,200.0	2,150.1	2,146.3	2,146.1	9.0	4.4	175.05	-32.8	-8.7	398.6	388.8	9.76	40.818		
2,300.0	2,246.2	2,238.7	2,238.5	9.6	4.6	175.21	-33.9	-9.7	427.5	417.2	10.25	41.711		
2,400.0	2,342.2	2,335.1	2,334.8	10.2	4.8	175.42	-34.6	-11.2	456.7	446.0	10.74	42.541		
2,500.0	2,438.3	2,431.6	2,431.3	10.8	5.0	175.70	-34.6	-12.5	485.7	474.5	11.22	43.293		
2,600.0	2,534.3	2,522.7	2,522.4	11.3	5.2	175.85	-35.3	-13.9	515.0	503.3	11.70	44.020		
2,700.0	2,630.4	2,629.0	2,628.7	11.9	5.4	175.97	-36.4	-15.3	544.2	532.0	12.21	44.581		
2,800.0	2,726.4	2,732.0	2,731.7	12.5	5.6	176.06	-37.5	-14.5	571.2	558.5	12.70	44.980		
2,900.0	2,822.5	2,826.0	2,825.7	13.1	5.8	176.26	-37.2	-13.5	597.9	584.8	13.18	45.367		
3,000.0	2,918.5	2,914.8	2,914.4	13.7	6.0	176.47	-36.7	-13.5	625.7	612.0	13.66	45.810		
3,100.0	3,014.6	3,007.7	3,007.4	14.3	6.2	176.68	-36.0	-14.2	654.2	640.0	14.15	46.246		
3,200.0	3,110.6	3,111.7	3,111.4	14.9	6.4	176.89	-35.2	-14.7	682.4	667.7	14.65	46.587		
3,300.0	3,206.7	3,218.1	3,217.8	15.5	6.7	177.05	-35.0	-13.4	709.0	693.9	15.15	46.803		
3,400.0	3,302.7	3,306.7	3,306.3	16.1	6.8	177.14	-35.1	-12.5	735.8	720.1	15.62	47.091		
3,500.0	3,398.8	3,411.8	3,411.5	16.7	7.1	177.18	-35.9	-11.1	762.3	746.2	16.14	47.245		
3,600.0	3,494.8	3,507.6	3,507.2	17.3	7.3	177.19	-37.1	-9.4	788.4	771.8	16.63	47.420		
3,700.0	3,590.9	3,602.2	3,601.8	17.9	7.5	177.21	-38.0	-7.9	814.7	797.6	17.12	47.594		
3,800.0	3,686.9	3,700.1	3,699.6	18.4	7.7	177.21	-39.3	-6.3	841.0	823.4	17.62	47.737		
3,900.0	3,783.0	3,794.4	3,794.0	19.0	7.9	177.20	-40.8	-4.9	867.4	849.3	18.11	47.896		
4,000.0	3,879.0	3,892.1	3,891.6	19.6	8.1	177.21	-41.9	-3.4	893.7	875.1	18.61	48.029		
4,100.0	3,975.1	3,982.6	3,982.2	20.2	8.3	177.20	-43.3	-2.2	920.3	901.2	19.09	48.201		
4,200.0	4,071.1	4,068.0	4,067.5	20.8	8.4	177.15	-45.2	-1.9	947.8	928.2	19.57	48.423		
4,300.0	4,167.2	4,154.0	4,153.5	21.4	8.6	177.11	-47.1	-2.9	976.7	956.7	20.05	48.703		
4,400.0	4,263.2	4,250.5	4,249.9	22.0	8.8	177.16	-47.5	-4.6	1,006.2	985.7	20.55	48.967		
4,500.0	4,359.3	4,347.1	4,346.5	22.6	9.0	177.27	-47.0	-5.7	1,035.1	1,014.1	21.04	49.206		
4,600.0	4,455.3	4,442.9	4,442.3	23.2	9.2	177.36	-46.8	-6.9	1,064.1	1,042.5	21.53	49.427		
4,700.0	4,551.4	4,553.3	4,552.7	23.8	9.5	177.46	-46.3	-7.4	1,092.3	1,070.2	22.04	49.550		
4,800.0	4,647.4	4,655.9	4,655.3	24.4	9.7	177.54	-46.0	-6.6	1,119.4	1,096.9	22.54	49.652		
4,900.0	4,743.5	4,744.5	4,743.9	25.0	9.9	177.61	-45.8	-6.3	1,146.8	1,123.8	23.02	49.809		
5,000.0	4,839.5	4,835.9	4,835.4	25.6	10.0	177.66	-45.9	-6.4	1,174.7	1,151.2	23.51	49.962		

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

Company:	Apollo Operating, LLC.	Local Co-ordinate Reference:	Well JWHS 32-2D
Project:	SEC.2-T3N-R68W	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	JWHS 31-2D Pad Sec.2-T3N-R68W	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	JWHS 32-2D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (6-6-12)	Offset TVD Reference:	Offset Datum

Offset Design JWHS 31-2D Pad Sec.2-T3N-R68W - Steffes 22-2 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 101-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		
5,100.0	4,935.6	4,930.0	4,929.4	26.2	10.2	177.73	-45.6	-6.7	1,202.8	1,178.8	24.00	50.114		
5,170.0	5,002.8	4,995.2	4,994.6	26.6	10.4	177.78	-45.3	-7.0	1,222.6	1,198.3	24.34	50.224		
5,200.0	5,031.7	5,023.9	5,023.4	26.7	10.4	177.80	-45.2	-7.2	1,231.0	1,206.5	24.51	50.223		
5,300.0	5,128.5	5,121.4	5,120.8	27.2	10.6	177.89	-44.7	-7.8	1,256.7	1,231.6	25.03	50.214		
5,400.0	5,226.1	5,218.2	5,217.6	27.5	10.8	177.97	-44.2	-8.3	1,278.9	1,253.4	25.50	50.147		
5,500.0	5,324.4	5,313.8	5,313.2	27.8	11.1	178.03	-43.9	-9.0	1,297.9	1,272.0	25.94	50.030		
5,600.0	5,423.3	5,414.3	5,413.7	28.1	11.3	178.06	-43.7	-9.7	1,313.5	1,287.2	26.35	49.843		
5,700.0	5,522.6	5,514.0	5,513.4	28.4	11.5	178.07	-44.1	-10.3	1,325.5	1,298.8	26.72	49.605		
5,800.0	5,622.3	5,616.1	5,615.5	28.5	11.7	178.05	-45.1	-10.9	1,334.1	1,307.0	27.06	49.305		
5,900.0	5,722.2	5,718.9	5,718.3	28.7	11.9	178.01	-46.3	-11.2	1,338.8	1,311.4	27.35	48.946		
5,977.8	5,800.0	5,797.3	5,796.7	28.7	12.1	-90.77	-47.2	-11.3	1,340.0	1,312.4	27.55	48.630		
6,000.0	5,822.2	5,820.0	5,819.4	28.8	12.1	-90.78	-47.4	-11.3	1,340.0	1,312.4	27.64	48.486		
6,100.0	5,922.2	5,929.0	5,928.4	28.9	12.3	-90.81	-48.0	-11.2	1,339.9	1,311.9	28.02	47.816		
6,200.0	6,022.2	6,023.6	6,023.0	29.0	12.5	-90.81	-48.1	-10.8	1,339.5	1,311.1	28.38	47.197		
6,300.0	6,122.2	6,132.3	6,131.7	29.0	12.8	-90.80	-47.8	-10.4	1,339.1	1,310.4	28.77	46.546		
6,400.0	6,222.2	6,231.0	6,230.4	29.1	13.0	-90.77	-47.2	-9.6	1,338.3	1,309.2	29.14	45.930		
6,500.0	6,322.2	6,325.0	6,324.4	29.3	13.2	-90.76	-46.7	-9.1	1,337.8	1,308.3	29.50	45.345		
6,600.0	6,422.2	6,422.9	6,422.3	29.4	13.4	-90.74	-46.3	-9.0	1,337.6	1,307.8	29.88	44.773		
6,700.0	6,522.2	6,524.5	6,523.9	29.5	13.6	-90.72	-46.0	-8.8	1,337.5	1,307.2	30.26	44.204		
6,800.0	6,622.2	6,621.8	6,621.2	29.6	13.8	-90.72	-45.8	-8.7	1,337.4	1,306.8	30.63	43.659		
6,858.9	6,681.1	6,680.7	6,680.1	29.6	13.9	-90.72	-45.8	-8.7	1,337.4	1,306.5	30.86	43.339		
6,900.0	6,722.2	6,721.0	6,720.3	29.7	14.0	-90.72	-45.8	-8.7	1,337.4	1,306.4	31.02	43.121		
7,000.0	6,822.2	6,817.3	6,816.7	29.8	14.2	-90.72	-45.9	-8.9	1,337.6	1,306.2	31.39	42.608		
7,100.0	6,922.2	6,917.9	6,917.2	29.9	14.4	-90.74	-46.4	-9.3	1,337.9	1,306.2	31.78	42.098		
7,200.0	7,022.2	7,016.6	7,015.9	30.0	14.6	-90.77	-47.1	-9.5	1,338.2	1,306.0	32.17	41.603		
7,300.0	7,122.2	7,111.9	7,111.3	30.1	14.8	-90.78	-47.3	-10.2	1,338.9	1,306.3	32.54	41.144		
7,400.0	7,222.2	7,211.1	7,210.4	30.2	15.0	-90.69	-45.3	-10.8	1,339.5	1,306.6	32.92	40.686		
7,500.0	7,322.2	7,307.3	7,306.6	30.3	15.2	-90.60	-43.1	-11.9	1,340.6	1,307.3	33.30	40.259		
7,600.0	7,422.2	7,414.8	7,414.1	30.4	15.5	-90.50	-40.8	-12.7	1,341.3	1,307.6	33.70	39.801		
7,700.0	7,522.2	7,514.8	7,514.0	30.6	15.7	-90.42	-38.8	-13.2	1,341.8	1,307.8	34.09	39.366		
7,800.0	7,622.2	7,522.0	7,521.3	30.7	15.7	-90.41	-38.7	-13.3	1,345.6	1,311.3	34.28	39.250		
7,900.0	7,722.2	7,522.0	7,521.3	30.8	15.7	-90.41	-38.7	-13.3	1,356.7	1,322.2	34.46	39.364		
7,927.8	7,750.0	7,522.0	7,521.3	30.8	15.7	-90.41	-38.7	-13.3	1,361.1	1,326.5	34.52	39.433		

Company:	Apollo Operating, LLC.	Local Co-ordinate Reference:	Well JWHS 32-2D
Project:	SEC.2-T3N-R68W	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	JWHS 31-2D Pad Sec.2-T3N-R68W	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	JWHS 32-2D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (6-6-12)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5011.0ft (Original Well Elev) Coordinates are relative to: JWHS 32-2D
 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: 0.34°



Company:	Apollo Operating, LLC.	Local Co-ordinate Reference:	Well JWHS 32-2D
Project:	SEC.2-T3N-R68W	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	JWHS 31-2D Pad Sec.2-T3N-R68W	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	JWHS 32-2D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (6-6-12)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5011.0ft (Original Well Elev) Coordinates are relative to: JWHS 32-2D
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: 0.34°

