ENSIGN Directional

Well Name: Warner 31-18

Surface Location: Warner 25-18 Pad Sec.18-T2N-R65W

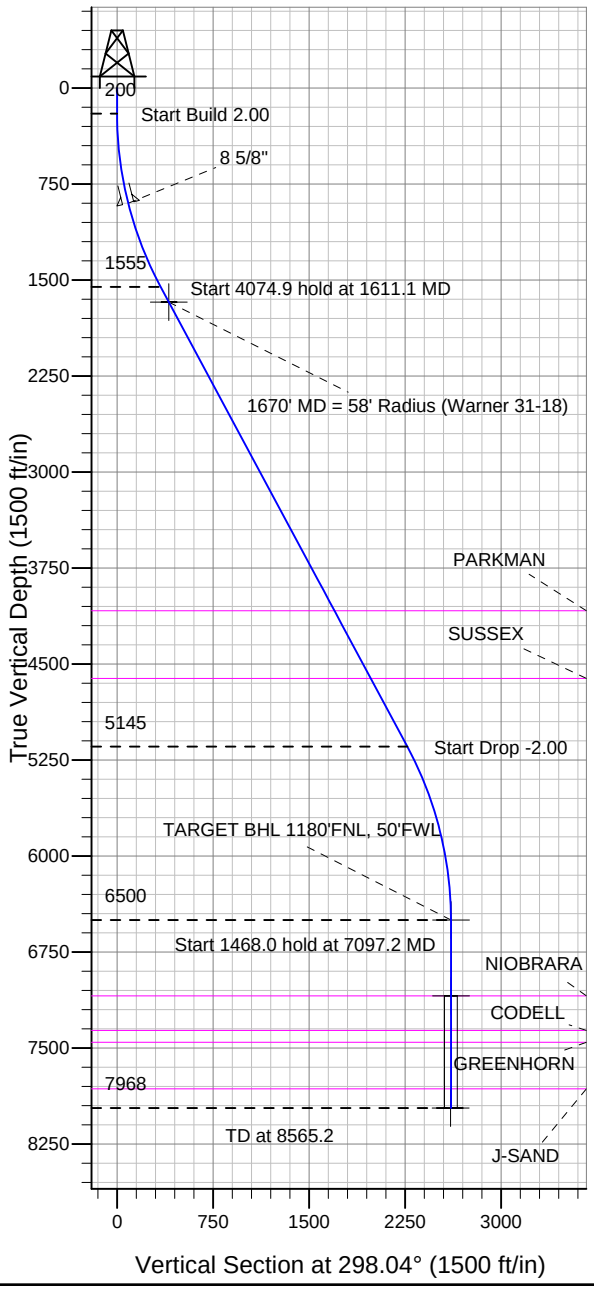
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

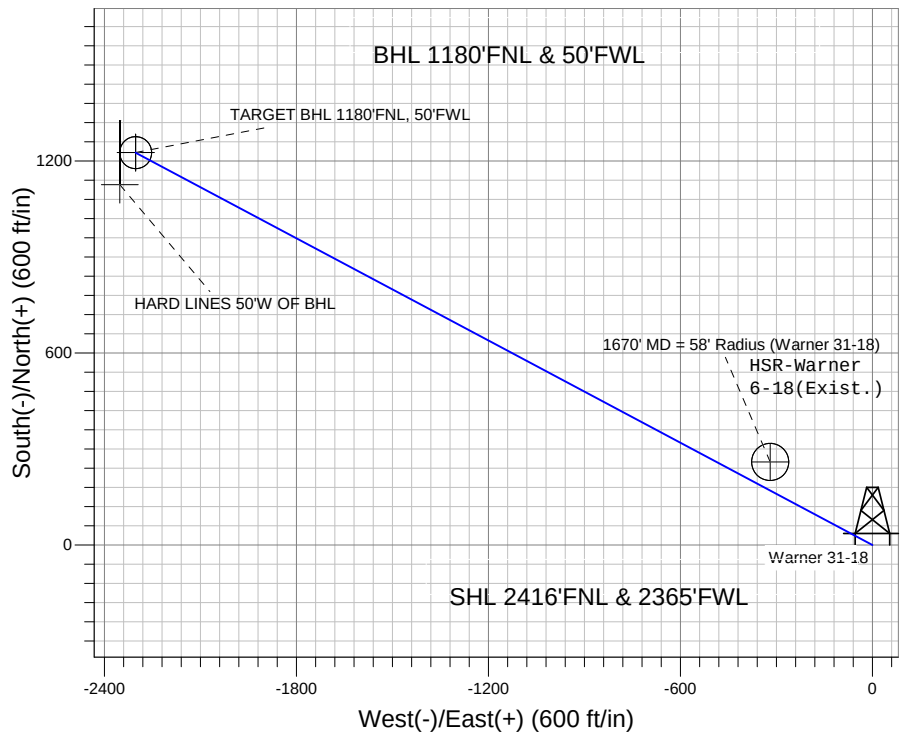
Ground Elevation: 4983.0

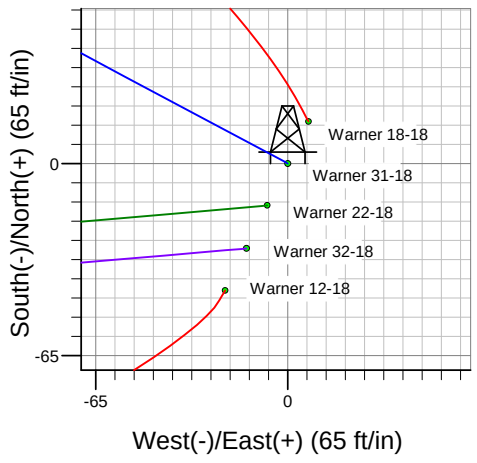
+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1294580.03	3221577.02	40.139298	-104.707458	

Original Well Elev WELL @ 4997.0ft (Original Well Elev)

Anadarko, Weld County CO

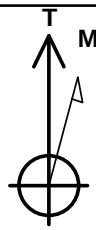






FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4083.0	4480.5	PARKMAN
4613.0	5082.0	SUSSEX
7093.0	7690.2	NIOBRARA
7363.0	7960.2	CODELL
7456.0	8053.2	GREENHORN
7818.0	8415.2	J-SAND



Azimuths to True North
Magnetic North: 8.85°

Magnetic Field
Strength: 53028.1snT
Dip Angle: 66.86°
Date: 3/7/2011
Model: IGRF2010

Well Name: Warner 31-18 Lat/Long: 40.139298 -104.707458

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
1670' MD = 58' Radius (Warner 31-18)	1673.0	259.4	-319.3	40.140010	-104.708600	Circle (Radius: 58.0)
TARGET BHL 1180'FNL, 50'FWL	6500.0	1226.0	-2302.1	40.142663	-104.715692	Point
TARGET CIRCLE 1180'FNL & 50'FWL	7093.0	1226.0	-2302.1	40.142663	-104.715692	Circle (Radius: 50.0)
HARD LINES 50'W OF BHL	7968.0	1126.0	-2352.1	40.142389	-104.715871	Polygon

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	1611.1	28.22	298.04	1554.7	160.1	-300.6	2.00	298.04	340.6	
4	5686.1	28.22	298.04	5145.3	1065.9	-2001.5	0.00	0.00	2267.6	
5	7097.2	0.00	0.00	6500.0	1226.0	-2302.1	2.00	180.00	2608.2	TARGET BHL 1180'FNL, 50'FWL
6	8565.2	0.00	0.00	7968.0	1226.0	-2302.1	0.00	0.00	2608.2	

CASING DETAILS

TVD	MD	Name	Size
900.0	907.2	8 5/8"	8-5/8

Warner 25-18 Pad Sec.18-T2N-R65W
Warner 31-18
Plan #1 (3-07-11)
13:55, March 17 2011

ENSIGN Directional

Anadarko, Weld County CO

SEC.18-T2N-R65W
Warner 25-18 Pad Sec.18-T2N-R65W
Warner 31-18

Wellbore #1

Plan: Plan #1 (3-07-11)

Standard Planning Report

17 March, 2011

Anadarko Petroleum Corporation

Database:	Landmark	**Local Co-ordinate Reference:**	Well Warner 31-18
Company:	Anadarko, Weld County CO	**TVD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Project:	SEC.18-T2N-R65W	**MD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Site:	Warner 25-18 Pad Sec.18-T2N-R65W	**North Reference:**	True
Well:	Warner 31-18	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-07-11)		

Project SEC.18-T2N-R65W, Weld County, Colorado

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site Warner 25-18 Pad Sec.18-T2N-R65W

Site Position:		**Northing:**	1,294,594.31 ft	**Latitude:**	40.139337
From:	Lat/Long	**Easting:**	3,221,583.88 ft	**Longitude:**	-104.707433
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.51 °

Well Warner 31-18

Well Position	**+N/-S**	-14.2 ft	**Northing:**	1,294,580.03 ft	**Latitude:**	40.139298
	+E/-W	-7.0 ft	**Easting:**	3,221,577.02 ft	**Longitude:**	-104.707458
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,983.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/7/2011	8.85	66.86	53,028

Design Plan #1 (3-07-11)

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	298.04

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	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,611.1	28.22	298.04	1,554.7	160.1	-300.6	2.00	2.00	0.00	298.04	
5,686.1	28.22	298.04	5,145.3	1,065.9	-2,001.5	0.00	0.00	0.00	0.00	
7,097.2	0.00	0.00	6,500.0	1,226.0	-2,302.1	2.00	-2.00	0.00	180.00	TARGET BHL 118C
8,565.2	0.00	0.00	7,968.0	1,226.0	-2,302.1	0.00	0.00	0.00	0.00	

Database:	Landmark	**Local Co-ordinate Reference:**	Well Warner 31-18
Company:	Anadarko, Weld County CO	**TVD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Project:	SEC.18-T2N-R65W	**MD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Site:	Warner 25-18 Pad Sec.18-T2N-R65W	**North Reference:**	True
Well:	Warner 31-18	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-07-11)		

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	0.80	298.04	240.0	0.1	-0.2	0.3	2.00	2.00	0.00
280.0	1.60	298.04	280.0	0.5	-1.0	1.1	2.00	2.00	0.00
320.0	2.40	298.04	320.0	1.2	-2.2	2.5	2.00	2.00	0.00
360.0	3.20	298.04	359.9	2.1	-3.9	4.5	2.00	2.00	0.00
400.0	4.00	298.04	399.8	3.3	-6.2	7.0	2.00	2.00	0.00
440.0	4.80	298.04	439.7	4.7	-8.9	10.0	2.00	2.00	0.00
480.0	5.60	298.04	479.6	6.4	-12.1	13.7	2.00	2.00	0.00
520.0	6.40	298.04	519.3	8.4	-15.8	17.9	2.00	2.00	0.00
560.0	7.20	298.04	559.1	10.6	-19.9	22.6	2.00	2.00	0.00
600.0	8.00	298.04	598.7	13.1	-24.6	27.9	2.00	2.00	0.00
640.0	8.80	298.04	638.3	15.9	-29.8	33.7	2.00	2.00	0.00
680.0	9.60	298.04	677.8	18.9	-35.4	40.1	2.00	2.00	0.00
720.0	10.40	298.04	717.1	22.1	-41.5	47.1	2.00	2.00	0.00
760.0	11.20	298.04	756.4	25.6	-48.2	54.6	2.00	2.00	0.00
800.0	12.00	298.04	795.6	29.4	-55.3	62.6	2.00	2.00	0.00
840.0	12.80	298.04	834.7	33.5	-62.8	71.2	2.00	2.00	0.00
880.0	13.60	298.04	873.6	37.8	-70.9	80.3	2.00	2.00	0.00
907.2	14.14	298.04	900.0	40.8	-76.6	86.8	2.00	2.00	0.00
8 5/8"									
920.0	14.40	298.04	912.4	42.3	-79.4	90.0	2.00	2.00	0.00
960.0	15.20	298.04	951.1	47.1	-88.5	100.2	2.00	2.00	0.00
1,000.0	16.00	298.04	989.6	52.2	-98.0	111.0	2.00	2.00	0.00
1,040.0	16.80	298.04	1,028.0	57.5	-107.9	122.3	2.00	2.00	0.00
1,080.0	17.60	298.04	1,066.2	63.0	-118.4	134.1	2.00	2.00	0.00
1,120.0	18.40	298.04	1,104.3	68.8	-129.3	146.5	2.00	2.00	0.00
1,160.0	19.20	298.04	1,142.1	74.9	-140.6	159.3	2.00	2.00	0.00
1,200.0	20.00	298.04	1,179.8	81.2	-152.5	172.8	2.00	2.00	0.00
1,240.0	20.80	298.04	1,217.3	87.8	-164.8	186.7	2.00	2.00	0.00
1,280.0	21.60	298.04	1,254.6	94.6	-177.6	201.2	2.00	2.00	0.00
1,320.0	22.40	298.04	1,291.7	101.6	-190.8	216.2	2.00	2.00	0.00
1,360.0	23.20	298.04	1,328.6	108.9	-204.5	231.7	2.00	2.00	0.00
1,400.0	24.00	298.04	1,365.2	116.4	-218.6	247.7	2.00	2.00	0.00
1,440.0	24.80	298.04	1,401.6	124.2	-233.2	264.2	2.00	2.00	0.00
1,480.0	25.60	298.04	1,437.8	132.2	-248.2	281.2	2.00	2.00	0.00
1,520.0	26.40	298.04	1,473.8	140.4	-263.7	298.8	2.00	2.00	0.00
1,560.0	27.20	298.04	1,509.5	148.9	-279.6	316.8	2.00	2.00	0.00
1,600.0	28.00	298.04	1,544.9	157.6	-296.0	335.3	2.00	2.00	0.00
1,611.1	28.22	298.04	1,554.7	160.1	-300.6	340.6	2.00	2.00	0.00
1,640.0	28.22	298.04	1,580.2	166.5	-312.7	354.2	0.00	0.00	0.00
1,680.0	28.22	298.04	1,615.4	175.4	-329.3	373.1	0.00	0.00	0.00
1,720.0	28.22	298.04	1,650.7	184.3	-346.0	392.1	0.00	0.00	0.00
1,745.2	28.22	298.04	1,672.9	189.9	-356.6	404.0	0.00	0.00	0.00
1670' MD = 58' Radius (Warner 31-18)									
1,760.0	28.22	298.04	1,685.9	193.2	-362.7	411.0	0.00	0.00	0.00
1,800.0	28.22	298.04	1,721.2	202.1	-379.4	429.9	0.00	0.00	0.00
1,840.0	28.22	298.04	1,756.4	211.0	-396.1	448.8	0.00	0.00	0.00
1,880.0	28.22	298.04	1,791.7	219.9	-412.8	467.7	0.00	0.00	0.00
1,920.0	28.22	298.04	1,826.9	228.7	-429.5	486.6	0.00	0.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Warner 31-18
Company:	Anadarko, Weld County CO	**TVD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Project:	SEC.18-T2N-R65W	**MD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Site:	Warner 25-18 Pad Sec.18-T2N-R65W	**North Reference:**	True
Well:	Warner 31-18	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-07-11)		

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)
1,960.0	28.22	298.04	1,862.2	237.6	-446.2	505.6	0.00	0.00	0.00
2,000.0	28.22	298.04	1,897.4	246.5	-462.9	524.5	0.00	0.00	0.00
2,040.0	28.22	298.04	1,932.6	255.4	-479.6	543.4	0.00	0.00	0.00
2,080.0	28.22	298.04	1,967.9	264.3	-496.3	562.3	0.00	0.00	0.00
2,120.0	28.22	298.04	2,003.1	273.2	-513.0	581.2	0.00	0.00	0.00
2,160.0	28.22	298.04	2,038.4	282.1	-529.7	600.1	0.00	0.00	0.00
2,200.0	28.22	298.04	2,073.6	291.0	-546.4	619.0	0.00	0.00	0.00
2,240.0	28.22	298.04	2,108.9	299.9	-563.1	638.0	0.00	0.00	0.00
2,280.0	28.22	298.04	2,144.1	308.8	-579.8	656.9	0.00	0.00	0.00
2,320.0	28.22	298.04	2,179.4	317.7	-596.5	675.8	0.00	0.00	0.00
2,360.0	28.22	298.04	2,214.6	326.6	-613.2	694.7	0.00	0.00	0.00
2,400.0	28.22	298.04	2,249.8	335.4	-629.9	713.6	0.00	0.00	0.00
2,440.0	28.22	298.04	2,285.1	344.3	-646.6	732.5	0.00	0.00	0.00
2,480.0	28.22	298.04	2,320.3	353.2	-663.3	751.5	0.00	0.00	0.00
2,520.0	28.22	298.04	2,355.6	362.1	-680.0	770.4	0.00	0.00	0.00
2,560.0	28.22	298.04	2,390.8	371.0	-696.7	789.3	0.00	0.00	0.00
2,600.0	28.22	298.04	2,426.1	379.9	-713.4	808.2	0.00	0.00	0.00
2,640.0	28.22	298.04	2,461.3	388.8	-730.0	827.1	0.00	0.00	0.00
2,680.0	28.22	298.04	2,496.6	397.7	-746.7	846.0	0.00	0.00	0.00
2,720.0	28.22	298.04	2,531.8	406.6	-763.4	865.0	0.00	0.00	0.00
2,760.0	28.22	298.04	2,567.0	415.5	-780.1	883.9	0.00	0.00	0.00
2,800.0	28.22	298.04	2,602.3	424.4	-796.8	902.8	0.00	0.00	0.00
2,840.0	28.22	298.04	2,637.5	433.2	-813.5	921.7	0.00	0.00	0.00
2,880.0	28.22	298.04	2,672.8	442.1	-830.2	940.6	0.00	0.00	0.00
2,920.0	28.22	298.04	2,708.0	451.0	-846.9	959.5	0.00	0.00	0.00
2,960.0	28.22	298.04	2,743.3	459.9	-863.6	978.4	0.00	0.00	0.00
3,000.0	28.22	298.04	2,778.5	468.8	-880.3	997.4	0.00	0.00	0.00
3,040.0	28.22	298.04	2,813.8	477.7	-897.0	1,016.3	0.00	0.00	0.00
3,080.0	28.22	298.04	2,849.0	486.6	-913.7	1,035.2	0.00	0.00	0.00
3,120.0	28.22	298.04	2,884.2	495.5	-930.4	1,054.1	0.00	0.00	0.00
3,160.0	28.22	298.04	2,919.5	504.4	-947.1	1,073.0	0.00	0.00	0.00
3,200.0	28.22	298.04	2,954.7	513.3	-963.8	1,091.9	0.00	0.00	0.00
3,240.0	28.22	298.04	2,990.0	522.2	-980.5	1,110.9	0.00	0.00	0.00
3,280.0	28.22	298.04	3,025.2	531.1	-997.2	1,129.8	0.00	0.00	0.00
3,320.0	28.22	298.04	3,060.5	539.9	-1,013.9	1,148.7	0.00	0.00	0.00
3,360.0	28.22	298.04	3,095.7	548.8	-1,030.6	1,167.6	0.00	0.00	0.00
3,400.0	28.22	298.04	3,131.0	557.7	-1,047.3	1,186.5	0.00	0.00	0.00
3,440.0	28.22	298.04	3,166.2	566.6	-1,064.0	1,205.4	0.00	0.00	0.00
3,480.0	28.22	298.04	3,201.5	575.5	-1,080.7	1,224.4	0.00	0.00	0.00
3,520.0	28.22	298.04	3,236.7	584.4	-1,097.4	1,243.3	0.00	0.00	0.00
3,560.0	28.22	298.04	3,271.9	593.3	-1,114.1	1,262.2	0.00	0.00	0.00
3,600.0	28.22	298.04	3,307.2	602.2	-1,130.7	1,281.1	0.00	0.00	0.00
3,640.0	28.22	298.04	3,342.4	611.1	-1,147.4	1,300.0	0.00	0.00	0.00
3,680.0	28.22	298.04	3,377.7	620.0	-1,164.1	1,318.9	0.00	0.00	0.00
3,720.0	28.22	298.04	3,412.9	628.9	-1,180.8	1,337.8	0.00	0.00	0.00
3,760.0	28.22	298.04	3,448.2	637.8	-1,197.5	1,356.8	0.00	0.00	0.00
3,800.0	28.22	298.04	3,483.4	646.6	-1,214.2	1,375.7	0.00	0.00	0.00
3,840.0	28.22	298.04	3,518.7	655.5	-1,230.9	1,394.6	0.00	0.00	0.00
3,880.0	28.22	298.04	3,553.9	664.4	-1,247.6	1,413.5	0.00	0.00	0.00
3,920.0	28.22	298.04	3,589.1	673.3	-1,264.3	1,432.4	0.00	0.00	0.00
3,960.0	28.22	298.04	3,624.4	682.2	-1,281.0	1,451.3	0.00	0.00	0.00
4,000.0	28.22	298.04	3,659.6	691.1	-1,297.7	1,470.3	0.00	0.00	0.00
4,040.0	28.22	298.04	3,694.9	700.0	-1,314.4	1,489.2	0.00	0.00	0.00
4,080.0	28.22	298.04	3,730.1	708.9	-1,331.1	1,508.1	0.00	0.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Warner 31-18
Company:	Anadarko, Weld County CO	**TVD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Project:	SEC.18-T2N-R65W	**MD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Site:	Warner 25-18 Pad Sec.18-T2N-R65W	**North Reference:**	True
Well:	Warner 31-18	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-07-11)		

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)
4,120.0	28.22	298.04	3,765.4	717.8	-1,347.8	1,527.0	0.00	0.00	0.00
4,160.0	28.22	298.04	3,800.6	726.7	-1,364.5	1,545.9	0.00	0.00	0.00
4,200.0	28.22	298.04	3,835.9	735.6	-1,381.2	1,564.8	0.00	0.00	0.00
4,240.0	28.22	298.04	3,871.1	744.4	-1,397.9	1,583.8	0.00	0.00	0.00
4,280.0	28.22	298.04	3,906.3	753.3	-1,414.6	1,602.7	0.00	0.00	0.00
4,320.0	28.22	298.04	3,941.6	762.2	-1,431.3	1,621.6	0.00	0.00	0.00
4,360.0	28.22	298.04	3,976.8	771.1	-1,448.0	1,640.5	0.00	0.00	0.00
4,400.0	28.22	298.04	4,012.1	780.0	-1,464.7	1,659.4	0.00	0.00	0.00
4,440.0	28.22	298.04	4,047.3	788.9	-1,481.4	1,678.3	0.00	0.00	0.00
4,480.0	28.22	298.04	4,082.6	797.8	-1,498.1	1,697.2	0.00	0.00	0.00
4,480.5	28.22	298.04	4,083.0	797.9	-1,498.3	1,697.5	0.00	0.00	0.00
PARKMAN									
4,520.0	28.22	298.04	4,117.8	806.7	-1,514.8	1,716.2	0.00	0.00	0.00
4,560.0	28.22	298.04	4,153.1	815.6	-1,531.4	1,735.1	0.00	0.00	0.00
4,600.0	28.22	298.04	4,188.3	824.5	-1,548.1	1,754.0	0.00	0.00	0.00
4,640.0	28.22	298.04	4,223.5	833.4	-1,564.8	1,772.9	0.00	0.00	0.00
4,680.0	28.22	298.04	4,258.8	842.3	-1,581.5	1,791.8	0.00	0.00	0.00
4,720.0	28.22	298.04	4,294.0	851.1	-1,598.2	1,810.7	0.00	0.00	0.00
4,760.0	28.22	298.04	4,329.3	860.0	-1,614.9	1,829.7	0.00	0.00	0.00
4,800.0	28.22	298.04	4,364.5	868.9	-1,631.6	1,848.6	0.00	0.00	0.00
4,840.0	28.22	298.04	4,399.8	877.8	-1,648.3	1,867.5	0.00	0.00	0.00
4,880.0	28.22	298.04	4,435.0	886.7	-1,665.0	1,886.4	0.00	0.00	0.00
4,920.0	28.22	298.04	4,470.3	895.6	-1,681.7	1,905.3	0.00	0.00	0.00
4,960.0	28.22	298.04	4,505.5	904.5	-1,698.4	1,924.2	0.00	0.00	0.00
5,000.0	28.22	298.04	4,540.8	913.4	-1,715.1	1,943.2	0.00	0.00	0.00
5,040.0	28.22	298.04	4,576.0	922.3	-1,731.8	1,962.1	0.00	0.00	0.00
5,080.0	28.22	298.04	4,611.2	931.2	-1,748.5	1,981.0	0.00	0.00	0.00
5,082.0	28.22	298.04	4,613.0	931.6	-1,749.3	1,981.9	0.00	0.00	0.00
SUSSEX									
5,120.0	28.22	298.04	4,646.5	940.1	-1,765.2	1,999.9	0.00	0.00	0.00
5,160.0	28.22	298.04	4,681.7	949.0	-1,781.9	2,018.8	0.00	0.00	0.00
5,200.0	28.22	298.04	4,717.0	957.8	-1,798.6	2,037.7	0.00	0.00	0.00
5,240.0	28.22	298.04	4,752.2	966.7	-1,815.3	2,056.6	0.00	0.00	0.00
5,280.0	28.22	298.04	4,787.5	975.6	-1,832.0	2,075.6	0.00	0.00	0.00
5,320.0	28.22	298.04	4,822.7	984.5	-1,848.7	2,094.5	0.00	0.00	0.00
5,360.0	28.22	298.04	4,858.0	993.4	-1,865.4	2,113.4	0.00	0.00	0.00
5,400.0	28.22	298.04	4,893.2	1,002.3	-1,882.1	2,132.3	0.00	0.00	0.00
5,440.0	28.22	298.04	4,928.4	1,011.2	-1,898.8	2,151.2	0.00	0.00	0.00
5,480.0	28.22	298.04	4,963.7	1,020.1	-1,915.4	2,170.1	0.00	0.00	0.00
5,520.0	28.22	298.04	4,998.9	1,029.0	-1,932.1	2,189.1	0.00	0.00	0.00
5,560.0	28.22	298.04	5,034.2	1,037.9	-1,948.8	2,208.0	0.00	0.00	0.00
5,600.0	28.22	298.04	5,069.4	1,046.8	-1,965.5	2,226.9	0.00	0.00	0.00
5,640.0	28.22	298.04	5,104.7	1,055.6	-1,982.2	2,245.8	0.00	0.00	0.00
5,680.0	28.22	298.04	5,139.9	1,064.5	-1,998.9	2,264.7	0.00	0.00	0.00
5,686.1	28.22	298.04	5,145.3	1,065.9	-2,001.5	2,267.6	0.00	0.00	0.00
5,720.0	27.54	298.04	5,175.3	1,073.3	-2,015.5	2,283.5	2.00	-2.00	0.00
5,760.0	26.74	298.04	5,210.8	1,081.9	-2,031.6	2,301.7	2.00	-2.00	0.00
5,800.0	25.94	298.04	5,246.7	1,090.3	-2,047.2	2,319.5	2.00	-2.00	0.00
5,840.0	25.14	298.04	5,282.8	1,098.4	-2,062.5	2,336.7	2.00	-2.00	0.00
5,880.0	24.34	298.04	5,319.1	1,106.2	-2,077.2	2,353.4	2.00	-2.00	0.00
5,920.0	23.54	298.04	5,355.7	1,113.9	-2,091.6	2,369.7	2.00	-2.00	0.00
5,960.0	22.74	298.04	5,392.4	1,121.3	-2,105.4	2,385.4	2.00	-2.00	0.00
6,000.0	21.94	298.04	5,429.4	1,128.4	-2,118.9	2,400.6	2.00	-2.00	0.00
6,040.0	21.14	298.04	5,466.6	1,135.3	-2,131.8	2,415.3	2.00	-2.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Warner 31-18
Company:	Anadarko, Weld County CO	**TVD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Project:	SEC.18-T2N-R65W	**MD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Site:	Warner 25-18 Pad Sec.18-T2N-R65W	**North Reference:**	True
Well:	Warner 31-18	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-07-11)		

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)
6,080.0	20.34	298.04	5,504.1	1,142.0	-2,144.3	2,429.5	2.00	-2.00	0.00
6,120.0	19.54	298.04	5,541.7	1,148.4	-2,156.4	2,443.1	2.00	-2.00	0.00
6,160.0	18.74	298.04	5,579.4	1,154.6	-2,168.0	2,456.2	2.00	-2.00	0.00
6,200.0	17.94	298.04	5,617.4	1,160.5	-2,179.1	2,468.8	2.00	-2.00	0.00
6,240.0	17.14	298.04	5,655.6	1,166.1	-2,189.7	2,480.9	2.00	-2.00	0.00
6,280.0	16.34	298.04	5,693.9	1,171.6	-2,199.9	2,492.4	2.00	-2.00	0.00
6,320.0	15.54	298.04	5,732.3	1,176.7	-2,209.6	2,503.4	2.00	-2.00	0.00
6,360.0	14.74	298.04	5,770.9	1,181.6	-2,218.8	2,513.8	2.00	-2.00	0.00
6,400.0	13.94	298.04	5,809.7	1,186.3	-2,227.5	2,523.7	2.00	-2.00	0.00
6,440.0	13.14	298.04	5,848.6	1,190.7	-2,235.8	2,533.1	2.00	-2.00	0.00
6,480.0	12.34	298.04	5,887.6	1,194.8	-2,243.6	2,541.9	2.00	-2.00	0.00
6,520.0	11.54	298.04	5,926.7	1,198.7	-2,250.9	2,550.2	2.00	-2.00	0.00
6,560.0	10.74	298.04	5,966.0	1,202.4	-2,257.7	2,557.9	2.00	-2.00	0.00
6,600.0	9.94	298.04	6,005.3	1,205.7	-2,264.1	2,565.1	2.00	-2.00	0.00
6,640.0	9.14	298.04	6,044.8	1,208.9	-2,269.9	2,571.8	2.00	-2.00	0.00
6,680.0	8.34	298.04	6,084.3	1,211.7	-2,275.3	2,577.8	2.00	-2.00	0.00
6,720.0	7.54	298.04	6,123.9	1,214.3	-2,280.2	2,583.4	2.00	-2.00	0.00
6,760.0	6.74	298.04	6,163.6	1,216.7	-2,284.6	2,588.3	2.00	-2.00	0.00
6,800.0	5.94	298.04	6,203.3	1,218.7	-2,288.5	2,592.8	2.00	-2.00	0.00
6,840.0	5.14	298.04	6,243.2	1,220.6	-2,291.9	2,596.6	2.00	-2.00	0.00
6,880.0	4.34	298.04	6,283.0	1,222.1	-2,294.8	2,599.9	2.00	-2.00	0.00
6,920.0	3.54	298.04	6,322.9	1,223.4	-2,297.2	2,602.7	2.00	-2.00	0.00
6,960.0	2.74	298.04	6,362.9	1,224.4	-2,299.2	2,604.9	2.00	-2.00	0.00
7,000.0	1.94	298.04	6,402.8	1,225.2	-2,300.6	2,606.5	2.00	-2.00	0.00
7,040.0	1.14	298.04	6,442.8	1,225.7	-2,301.6	2,607.6	2.00	-2.00	0.00
7,080.0	0.34	298.04	6,482.8	1,226.0	-2,302.0	2,608.1	2.00	-2.00	0.00
7,097.2	0.00	0.00	6,500.0	1,226.0	-2,302.1	2,608.2	2.00	-2.00	360.61
TARGET BHL 1180'FNL, 50'FWL									
7,120.0	0.00	0.00	6,522.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
7,160.0	0.00	0.00	6,562.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
7,200.0	0.00	0.00	6,602.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
7,240.0	0.00	0.00	6,642.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
7,280.0	0.00	0.00	6,682.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
7,320.0	0.00	0.00	6,722.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
7,360.0	0.00	0.00	6,762.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
7,400.0	0.00	0.00	6,802.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
7,440.0	0.00	0.00	6,842.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
7,480.0	0.00	0.00	6,882.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
7,520.0	0.00	0.00	6,922.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
7,560.0	0.00	0.00	6,962.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
7,600.0	0.00	0.00	7,002.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
7,640.0	0.00	0.00	7,042.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
7,680.0	0.00	0.00	7,082.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
7,690.2	0.00	0.00	7,093.0	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
NIOBRARA - TARGET CIRCLE 1180'FNL & 50'FWL									
7,720.0	0.00	0.00	7,122.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
7,760.0	0.00	0.00	7,162.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
7,800.0	0.00	0.00	7,202.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
7,840.0	0.00	0.00	7,242.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
7,880.0	0.00	0.00	7,282.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
7,920.0	0.00	0.00	7,322.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
7,960.0	0.00	0.00	7,362.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
7,960.2	0.00	0.00	7,363.0	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Warner 31-18
Company:	Anadarko, Weld County CO	**TVD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Project:	SEC.18-T2N-R65W	**MD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Site:	Warner 25-18 Pad Sec.18-T2N-R65W	**North Reference:**	True
Well:	Warner 31-18	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-07-11)		

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)
CODELL									
8,000.0	0.00	0.00	7,402.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
8,040.0	0.00	0.00	7,442.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
8,053.2	0.00	0.00	7,456.0	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
GREENHORN									
8,080.0	0.00	0.00	7,482.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
8,120.0	0.00	0.00	7,522.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
8,160.0	0.00	0.00	7,562.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
8,200.0	0.00	0.00	7,602.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
8,240.0	0.00	0.00	7,642.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
8,280.0	0.00	0.00	7,682.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
8,320.0	0.00	0.00	7,722.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
8,360.0	0.00	0.00	7,762.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
8,400.0	0.00	0.00	7,802.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
8,415.2	0.00	0.00	7,818.0	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
J-SAND									
8,440.0	0.00	0.00	7,842.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
8,480.0	0.00	0.00	7,882.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
8,520.0	0.00	0.00	7,922.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
8,560.0	0.00	0.00	7,962.8	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
8,565.2	0.00	0.00	7,968.0	1,226.0	-2,302.1	2,608.2	0.00	0.00	0.00
HARD LINES 50'W OF BHL									

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
1670' MD = 58' Radiu	0.00	0.00	1,673.0	259.4	-319.3	1,294,836.54	3,221,255.43	40.140010	-104.708600
- plan misses target center by 78.9ft at 1745.2ft MD (1672.9 TVD, 189.9 N, -356.6 E)									
- Circle (radius 58.0)									
TARGET BHL 1180'F	0.00	0.00	6,500.0	1,226.0	-2,302.1	1,295,785.32	3,219,264.19	40.142663	-104.715692
- plan hits target center									
- Point									
HARD LINES 50'W O	0.00	0.00	7,968.0	1,126.0	-2,352.1	1,295,684.92	3,219,215.05	40.142389	-104.715871
- plan misses target center by 111.8ft at 8565.2ft MD (7968.0 TVD, 1226.0 N, -2302.1 E)									
- Polygon									
Point 1			7,968.0	0.0	0.0	1,295,684.92	3,219,215.05		
Point 2			7,968.0	200.0	0.0	1,295,884.90	3,219,213.26		
TARGET CIRCLE 11	0.00	0.00	7,093.0	1,226.0	-2,302.1	1,295,785.32	3,219,264.19	40.142663	-104.715692
- plan hits target center									
- Circle (radius 50.0)									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
907.2	900.0	8 5/8"	8-5/8	12-1/4

Database:	Landmark	**Local Co-ordinate Reference:**	Well Warner 31-18
Company:	Anadarko, Weld County CO	**TVD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Project:	SEC.18-T2N-R65W	**MD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Site:	Warner 25-18 Pad Sec.18-T2N-R65W	**North Reference:**	True
Well:	Warner 31-18	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-07-11)		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,480.5	4,083.0	PARKMAN		0.00	
5,082.0	4,613.0	SUSSEX		0.00	
7,690.2	7,093.0	NIOBRARA		0.00	
7,960.2	7,363.0	CODELL		0.00	
8,053.2	7,456.0	GREENHORN		0.00	
8,415.2	7,818.0	J-SAND		0.00	

ENSIGN Directional

Anadarko, Weld County CO

SEC.18-T2N-R65W
Warner 25-18 Pad Sec.18-T2N-R65W
Warner 31-18

Wellbore #1
Plan #1 (3-07-11)

Anticollision Report

21 March, 2011

Anadarko Petroleum Corporation

Company:	Anadarko, Weld County CO	**Local Co-ordinate Reference:**	Well Warner 31-18
Project:	SEC.18-T2N-R65W	**TVD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Reference Site:	Warner 25-18 Pad Sec.18-T2N-R65W	**MD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Warner 31-18	**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 (3-07-11)	**Offset TVD Reference:**	Offset Datum

Reference Plan #1 (3-07-11)

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0ft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**		

Survey Tool Program **Date** 3/21/2011

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	8,565.2	Plan #1 (3-07-11) (Wellbore #1)	MWD	MWD - Standard

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Warner 25-18 Pad Sec.18-T2N-R65W						
HSR-Warner 6-18 (Exist.) - Wellbore #1 - Design #1	1,744.7	1,669.5	78.9	66.3	6.269	CC, ES, SF
Warner 18-18 - Wellbore #1 - Plan #1 (3-03-11)	200.0	200.0	15.8	15.2	23.482	CC, ES
Warner 18-18 - Wellbore #1 - Plan #1 (3-03-11)	1,400.0	1,394.7	100.2	89.5	9.361	SF
Warner 22-18 - Wellbore #1 - Plan #1 (3-07-11)	200.0	201.0	15.8	15.2	23.404	CC
Warner 22-18 - Wellbore #1 - Plan #1 (3-07-11)	300.0	301.0	16.0	14.9	14.254	ES
Warner 22-18 - Wellbore #1 - Plan #1 (3-07-11)	500.0	500.5	22.6	20.6	11.049	SF
Warner 5-18 (Exist.) - Wellbore #1 - Design #1	4,612.8	4,226.6	503.0	455.3	10.535	CC, ES
Warner 5-18 (Exist.) - Wellbore #1 - Design #1	4,800.0	4,391.5	510.8	461.1	10.276	SF

Offset Design Warner 25-18 Pad Sec.18-T2N-R65W - HSR-Warner 6-18 (Exist.) - Wellbore #1 - Design #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD **Offset Well Error:** 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-50.91	259.4	-319.3	411.4				
100.0	100.0	97.0	97.0	0.1	0.1	-50.91	259.4	-319.3	411.4	411.2	0.22	1,858.051	
200.0	200.0	197.0	197.0	0.3	0.3	-50.91	259.4	-319.3	411.4	410.7	0.67	616.239	
300.0	300.0	297.0	297.0	0.6	0.6	11.11	259.4	-319.3	409.7	408.5	1.12	366.154	
400.0	399.8	396.8	396.8	0.8	0.8	11.27	259.4	-319.3	404.5	403.0	1.57	256.992	
500.0	499.5	496.5	496.5	1.0	1.0	11.55	259.4	-319.3	396.0	393.9	2.03	194.721	
600.0	598.7	595.7	595.7	1.3	1.2	11.96	259.4	-319.3	384.0	381.6	2.50	153.807	
700.0	697.5	694.5	694.5	1.7	1.4	12.53	259.4	-319.3	368.8	365.8	2.97	124.358	
800.0	795.6	792.6	792.6	2.0	1.7	13.30	259.4	-319.3	350.1	346.7	3.44	101.768	
900.0	893.1	890.1	890.1	2.5	1.9	14.31	259.4	-319.3	328.3	324.3	3.93	83.608	
1,000.0	989.6	986.6	986.6	3.0	2.1	15.65	259.4	-319.3	303.2	298.8	4.43	68.479	
1,100.0	1,085.3	1,082.3	1,082.3	3.6	2.3	17.47	259.4	-319.3	275.1	270.1	4.95	55.519	
1,200.0	1,179.8	1,176.8	1,176.8	4.2	2.5	19.97	259.4	-319.3	244.1	238.5	5.53	44.173	
1,300.0	1,273.2	1,270.2	1,270.2	4.9	2.7	23.55	259.4	-319.3	210.5	204.3	6.18	34.081	
1,400.0	1,365.2	1,362.2	1,362.2	5.7	2.9	28.95	259.4	-319.3	174.9	167.9	6.98	25.048	
1,500.0	1,455.8	1,452.8	1,452.8	6.6	3.2	37.63	259.4	-319.3	138.5	130.4	8.10	17.097	
1,600.0	1,544.9	1,541.9	1,541.9	7.5	3.4	52.55	259.4	-319.3	104.4	94.6	9.79	10.666	
1,611.1	1,554.7	1,551.7	1,551.7	7.6	3.4	54.78	259.4	-319.3	101.0	91.0	10.02	10.085	
1,700.0	1,633.1	1,630.1	1,630.1	8.5	3.6	76.71	259.4	-319.3	81.6	69.7	11.89	6.864	
1,744.7	1,672.5	1,669.5	1,669.5	8.9	3.6	90.00	259.4	-319.3	78.9	66.3	12.58	6.269	CC, ES, SF

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

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Reference Site:	Warner 25-18 Pad Sec.18-T2N-R65W	**MD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Warner 31-18	**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 (3-07-11)	**Offset TVD Reference:**	Offset Datum

Offset Design Warner 25-18 Pad Sec.18-T2N-R65W - HSR-Warner 6-18 (Exist.) - Wellbore #1 - Design #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
1,800.0	1,721.2	1,718.2	1,718.2	9.5	3.7	106.28	259.4	-319.3	83.1	70.2	12.90	6.439	
1,900.0	1,809.3	1,806.3	1,806.3	10.5	3.9	129.37	259.4	-319.3	107.8	95.3	12.50	8.618	
2,000.0	1,897.4	1,894.4	1,894.4	11.5	4.1	143.45	259.4	-319.3	144.2	132.2	12.02	11.996	
2,100.0	1,985.5	1,982.5	1,982.5	12.5	4.3	151.96	259.4	-319.3	185.6	173.7	11.85	15.657	
2,200.0	2,073.6	2,070.6	2,070.6	13.5	4.5	157.43	259.4	-319.3	229.3	217.3	11.94	19.201	
2,300.0	2,161.7	2,158.7	2,158.7	14.6	4.7	161.18	259.4	-319.3	274.2	262.0	12.19	22.495	
2,400.0	2,249.8	2,246.8	2,246.8	15.6	4.9	163.89	259.4	-319.3	319.8	307.2	12.53	25.513	
2,500.0	2,338.0	2,335.0	2,335.0	16.6	5.1	165.93	259.4	-319.3	365.8	352.8	12.94	28.264	
2,600.0	2,426.1	2,423.1	2,423.1	17.6	5.3	167.52	259.4	-319.3	412.1	398.7	13.39	30.773	
2,700.0	2,514.2	2,511.2	2,511.2	18.7	5.5	168.79	259.4	-319.3	458.6	444.7	13.87	33.064	
2,800.0	2,602.3	2,599.3	2,599.3	19.7	5.7	169.83	259.4	-319.3	505.2	490.9	14.37	35.163	
2,900.0	2,690.4	2,687.4	2,687.4	20.7	5.9	170.70	259.4	-319.3	552.0	537.1	14.88	37.091	
3,000.0	2,778.5	2,775.5	2,775.5	21.7	6.1	171.43	259.4	-319.3	598.8	583.4	15.41	38.866	
3,100.0	2,866.6	2,863.6	2,863.6	22.8	6.3	172.05	259.4	-319.3	645.7	629.8	15.94	40.507	
3,200.0	2,954.7	2,951.7	2,951.7	23.8	6.5	172.59	259.4	-319.3	692.7	676.2	16.48	42.027	
3,300.0	3,042.8	3,039.8	3,039.8	24.8	6.7	173.06	259.4	-319.3	739.7	722.7	17.03	43.439	
3,400.0	3,131.0	3,128.0	3,128.0	25.9	6.9	173.48	259.4	-319.3	786.7	769.2	17.58	44.753	
3,500.0	3,219.1	3,216.1	3,216.1	26.9	7.1	173.85	259.4	-319.3	833.8	815.7	18.13	45.980	
3,600.0	3,307.2	3,304.2	3,304.2	27.9	7.3	174.18	259.4	-319.3	880.9	862.2	18.69	47.127	
3,700.0	3,395.3	3,392.3	3,392.3	29.0	7.5	174.47	259.4	-319.3	928.0	908.7	19.25	48.202	
3,800.0	3,483.4	3,480.4	3,480.4	30.0	7.7	174.74	259.4	-319.3	975.1	955.3	19.82	49.211	
3,900.0	3,571.5	3,568.5	3,568.5	31.0	7.9	174.98	259.4	-319.3	1,022.3	1,001.9	20.38	50.161	
4,000.0	3,659.6	3,656.6	3,656.6	32.0	8.1	175.20	259.4	-319.3	1,069.4	1,048.5	20.95	51.055	
4,100.0	3,747.7	3,744.7	3,744.7	33.1	8.3	175.41	259.4	-319.3	1,116.6	1,095.1	21.51	51.900	
4,200.0	3,835.9	3,832.9	3,832.9	34.1	8.5	175.59	259.4	-319.3	1,163.8	1,141.7	22.08	52.698	
4,300.0	3,924.0	3,921.0	3,921.0	35.1	8.7	175.76	259.4	-319.3	1,211.0	1,188.3	22.65	53.453	
4,400.0	4,012.1	4,009.1	4,009.1	36.2	8.9	175.92	259.4	-319.3	1,258.1	1,234.9	23.23	54.169	
4,500.0	4,100.2	4,097.2	4,097.2	37.2	9.1	176.07	259.4	-319.3	1,305.3	1,281.5	23.80	54.849	
4,600.0	4,188.3	4,185.3	4,185.3	38.2	9.3	176.21	259.4	-319.3	1,352.6	1,328.2	24.37	55.495	
4,700.0	4,276.4	4,273.4	4,273.4	39.3	9.5	176.34	259.4	-319.3	1,399.8	1,374.8	24.95	56.109	
4,800.0	4,364.5	4,361.5	4,361.5	40.3	9.7	176.46	259.4	-319.3	1,447.0	1,421.5	25.52	56.694	
4,900.0	4,452.6	4,449.6	4,449.6	41.3	9.9	176.57	259.4	-319.3	1,494.2	1,468.1	26.10	57.252	
5,000.0	4,540.8	4,537.8	4,537.8	42.4	10.1	176.67	259.4	-319.3	1,541.4	1,514.8	26.68	57.784	
5,100.0	4,628.9	4,625.9	4,625.9	43.4	10.3	176.77	259.4	-319.3	1,588.7	1,561.4	27.25	58.293	
5,200.0	4,717.0	4,714.0	4,714.0	44.4	10.5	176.86	259.4	-319.3	1,635.9	1,608.1	27.83	58.779	
5,300.0	4,805.1	4,802.1	4,802.1	45.5	10.7	176.95	259.4	-319.3	1,683.1	1,654.7	28.41	59.244	
5,400.0	4,893.2	4,890.2	4,890.2	46.5	10.9	177.04	259.4	-319.3	1,730.4	1,701.4	28.99	59.690	
5,500.0	4,981.3	4,978.3	4,978.3	47.5	11.1	177.11	259.4	-319.3	1,777.6	1,748.0	29.57	60.117	
5,600.0	5,069.4	5,066.4	5,066.4	48.6	11.3	177.19	259.4	-319.3	1,824.9	1,794.7	30.15	60.527	
5,686.1	5,145.3	5,142.3	5,142.3	49.4	11.4	177.25	259.4	-319.3	1,865.5	1,834.9	30.65	60.866	
5,700.0	5,157.6	5,154.6	5,154.6	49.6	11.5	177.27	259.4	-319.3	1,872.1	1,841.3	30.75	60.876	
5,800.0	5,246.7	5,243.7	5,243.7	50.4	11.7	177.38	259.4	-319.3	1,917.3	1,885.9	31.46	60.954	
5,900.0	5,337.4	5,334.4	5,334.4	51.2	11.9	177.48	259.4	-319.3	1,959.5	1,927.4	32.12	61.011	
6,000.0	5,429.4	5,426.4	5,426.4	51.8	12.1	177.56	259.4	-319.3	1,998.4	1,965.7	32.73	61.050	
6,100.0	5,522.8	5,519.8	5,519.8	52.5	12.3	177.64	259.4	-319.3	2,034.1	2,000.8	33.31	61.075	
6,200.0	5,617.4	5,614.4	5,614.4	53.0	12.5	177.70	259.4	-319.3	2,066.6	2,032.7	33.83	61.087	
6,300.0	5,713.1	5,710.1	5,710.1	53.5	12.7	177.76	259.4	-319.3	2,095.7	2,061.4	34.31	61.089	
6,400.0	5,809.7	5,806.7	5,806.7	54.0	12.9	177.81	259.4	-319.3	2,121.5	2,086.7	34.73	61.083	
6,500.0	5,907.1	5,904.1	5,904.1	54.4	13.2	177.85	259.4	-319.3	2,143.8	2,108.7	35.10	61.070	
6,600.0	6,005.3	6,002.3	6,002.3	54.7	13.4	177.88	259.4	-319.3	2,162.8	2,127.4	35.43	61.051	
6,700.0	6,104.1	6,101.1	6,101.1	55.0	13.6	177.91	259.4	-319.3	2,178.4	2,142.7	35.69	61.027	
6,800.0	6,203.3	6,200.3	6,200.3	55.2	13.8	177.93	259.4	-319.3	2,190.4	2,154.5	35.91	60.999	

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Reference Site:	Warner 25-18 Pad Sec.18-T2N-R65W	**MD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Warner 31-18	**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 (3-07-11)	**Offset TVD Reference:**	Offset Datum

Offset Design Warner 25-18 Pad Sec.18-T2N-R65W - HSR-Warner 6-18 (Exist.) - Wellbore #1 - Design #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,900.0	6,303.0	6,300.0	6,300.0	55.4	14.0	177.94	259.4	-319.3	2,199.0	2,163.0	36.07	60.967	
7,000.0	6,402.8	6,399.8	6,399.8	55.5	14.3	177.95	259.4	-319.3	2,204.2	2,168.0	36.17	60.931	
7,097.2	6,500.0	6,497.0	6,497.0	55.5	14.5	115.99	259.4	-319.3	2,205.8	2,169.6	36.23	60.889	
7,100.0	6,502.8	6,499.8	6,499.8	55.5	14.5	115.99	259.4	-319.3	2,205.8	2,169.6	36.24	60.872	
7,200.0	6,602.8	6,599.8	6,599.8	55.6	14.7	115.99	259.4	-319.3	2,205.8	2,169.2	36.59	60.291	
7,300.0	6,702.8	6,699.8	6,699.8	55.7	14.9	115.99	259.4	-319.3	2,205.8	2,168.9	36.94	59.717	
7,400.0	6,802.8	6,799.8	6,799.8	55.7	15.2	115.99	259.4	-319.3	2,205.8	2,168.5	37.29	59.152	
7,500.0	6,902.8	6,899.8	6,899.8	55.8	15.4	115.99	259.4	-319.3	2,205.8	2,168.2	37.65	58.595	
7,600.0	7,002.8	6,999.8	6,999.8	55.8	15.6	115.99	259.4	-319.3	2,205.8	2,167.8	38.00	58.046	
7,700.0	7,102.8	7,099.8	7,099.8	55.9	15.8	115.99	259.4	-319.3	2,205.8	2,167.5	38.36	57.505	
7,800.0	7,202.8	7,199.8	7,199.8	56.0	16.1	115.99	259.4	-319.3	2,205.8	2,167.1	38.72	56.972	
7,900.0	7,302.8	7,299.8	7,299.8	56.0	16.3	115.99	259.4	-319.3	2,205.8	2,166.7	39.08	56.447	
8,000.0	7,402.8	7,399.8	7,399.8	56.1	16.5	115.99	259.4	-319.3	2,205.8	2,166.4	39.44	55.929	
8,100.0	7,502.8	7,499.8	7,499.8	56.1	16.7	115.99	259.4	-319.3	2,205.8	2,166.0	39.80	55.419	
8,200.0	7,602.8	7,599.8	7,599.8	56.2	17.0	115.99	259.4	-319.3	2,205.8	2,165.7	40.17	54.916	
8,300.0	7,702.8	7,699.8	7,699.8	56.3	17.2	115.99	259.4	-319.3	2,205.8	2,165.3	40.53	54.420	
8,400.0	7,802.8	7,799.8	7,799.8	56.3	17.4	115.99	259.4	-319.3	2,205.8	2,164.9	40.90	53.932	
8,500.0	7,902.8	7,899.8	7,899.8	56.4	17.6	115.99	259.4	-319.3	2,205.8	2,164.6	41.27	53.450	
8,565.2	7,968.0	7,965.0	7,965.0	56.5	17.8	115.99	259.4	-319.3	2,205.8	2,164.3	41.51	53.140	

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Project:	SEC.18-T2N-R65W	**TVD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Reference Site:	Warner 25-18 Pad Sec.18-T2N-R65W	**MD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Warner 31-18	**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 (3-07-11)	**Offset TVD Reference:**	Offset Datum

Offset Design Warner 25-18 Pad Sec.18-T2N-R65W - Warner 18-18 - Wellbore #1 - Plan #1 (3-03-11)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	26.20	14.2	7.0	15.8	15.8	0.00	N/A	
100.0	100.0	100.0	100.0	0.1	0.1	26.20	14.2	7.0	15.8	15.6	0.22	70.446	
200.0	200.0	200.0	200.0	0.3	0.3	26.20	14.2	7.0	15.8	15.2	0.67	23.482	CC, ES
300.0	300.0	299.7	299.7	0.6	0.6	89.22	15.7	6.1	16.8	15.7	1.12	14.998	
400.0	399.8	399.3	399.1	0.8	0.8	91.77	20.3	3.6	19.6	18.0	1.58	12.426	
500.0	499.5	498.9	498.4	1.0	1.0	94.57	27.7	-0.7	24.3	22.2	2.08	11.667	
600.0	598.7	598.7	597.4	1.3	1.3	96.52	37.5	-7.5	29.8	27.2	2.64	11.297	
700.0	697.5	698.4	696.0	1.7	1.6	97.78	49.5	-17.0	36.1	32.8	3.29	10.994	
800.0	795.6	798.1	793.9	2.0	2.0	98.60	63.7	-29.1	43.1	39.1	4.03	10.699	
900.0	893.1	897.7	891.0	2.5	2.4	99.11	80.0	-43.9	50.8	45.9	4.89	10.397	
1,000.0	989.6	997.3	987.4	3.0	2.9	99.41	98.5	-61.2	59.2	53.3	5.86	10.091	
1,100.0	1,085.3	1,096.8	1,082.7	3.6	3.5	99.57	119.0	-81.1	68.2	61.2	6.97	9.788	
1,200.0	1,179.8	1,196.3	1,177.5	4.2	4.1	100.92	140.6	-102.2	77.8	69.7	8.17	9.527	
1,300.0	1,273.2	1,295.7	1,272.1	4.9	4.7	104.14	162.1	-123.3	88.3	78.9	9.43	9.369	
1,400.0	1,365.2	1,394.7	1,366.5	5.7	5.3	108.51	183.6	-144.3	100.2	89.5	10.70	9.361	SF
1,500.0	1,455.8	1,493.3	1,460.4	6.6	5.9	113.49	205.0	-165.3	113.8	101.9	11.94	9.535	
1,600.0	1,544.9	1,591.3	1,553.8	7.5	6.5	118.65	226.3	-186.1	129.9	116.8	13.10	9.911	
1,611.1	1,554.7	1,602.2	1,564.2	7.6	6.5	119.22	228.6	-188.4	131.8	118.6	13.23	9.966	
1,700.0	1,633.1	1,688.9	1,646.8	8.5	7.1	123.53	247.4	-206.8	147.9	133.7	14.19	10.426	
1,800.0	1,721.2	1,786.6	1,739.9	9.5	7.7	127.38	268.6	-227.6	166.9	151.6	15.23	10.953	
1,900.0	1,809.3	1,884.2	1,832.9	10.5	8.3	130.43	289.8	-248.3	186.4	170.1	16.26	11.464	
2,000.0	1,897.4	1,981.9	1,925.9	11.5	8.9	132.91	311.0	-269.0	206.3	189.0	17.26	11.949	
2,100.0	1,985.5	2,079.5	2,019.0	12.5	9.5	134.95	332.1	-289.8	226.5	208.2	18.27	12.401	
2,200.0	2,073.6	2,177.1	2,112.0	13.5	10.1	136.66	353.3	-310.5	247.0	227.7	19.26	12.821	
2,300.0	2,161.7	2,274.8	2,205.0	14.6	10.7	138.10	374.5	-331.3	267.6	247.4	20.26	13.209	
2,400.0	2,249.8	2,372.4	2,298.1	15.6	11.3	139.34	395.7	-352.0	288.4	267.1	21.25	13.568	
2,500.0	2,338.0	2,470.1	2,391.1	16.6	12.0	140.41	416.9	-372.7	309.3	287.0	22.25	13.900	
2,600.0	2,426.1	2,567.7	2,484.1	17.6	12.6	141.35	438.0	-393.5	330.3	307.0	23.25	14.206	
2,700.0	2,514.2	2,665.3	2,577.2	18.7	13.2	142.17	459.2	-414.2	351.3	327.1	24.24	14.490	
2,800.0	2,602.3	2,763.0	2,670.2	19.7	13.8	142.90	480.4	-434.9	372.4	347.2	25.24	14.754	
2,900.0	2,690.4	2,860.6	2,763.2	20.7	14.4	143.56	501.6	-455.7	393.6	367.4	26.24	14.999	
3,000.0	2,778.5	2,958.3	2,856.3	21.7	15.0	144.14	522.7	-476.4	414.8	387.6	27.24	15.227	
3,100.0	2,866.6	3,055.9	2,949.3	22.8	15.6	144.67	543.9	-497.2	436.1	407.8	28.24	15.440	
3,200.0	2,954.7	3,153.5	3,042.3	23.8	16.3	145.15	565.1	-517.9	457.4	428.1	29.25	15.639	
3,300.0	3,042.8	3,251.2	3,135.4	24.8	16.9	145.59	586.3	-538.6	478.7	448.4	30.25	15.825	
3,400.0	3,131.0	3,348.8	3,228.4	25.9	17.5	145.99	607.5	-559.4	500.0	468.8	31.25	15.999	
3,500.0	3,219.1	3,446.5	3,321.4	26.9	18.1	146.36	628.6	-580.1	521.4	489.1	32.26	16.163	
3,600.0	3,307.2	3,544.1	3,414.5	27.9	18.7	146.70	649.8	-600.8	542.7	509.5	33.26	16.318	
3,700.0	3,395.3	3,641.7	3,507.5	29.0	19.3	147.01	671.0	-621.6	564.1	529.9	34.27	16.463	
3,800.0	3,483.4	3,739.4	3,600.5	30.0	20.0	147.30	692.2	-642.3	585.5	550.3	35.27	16.600	
3,900.0	3,571.5	3,837.0	3,693.6	31.0	20.6	147.57	713.3	-663.1	607.0	570.7	36.28	16.730	
4,000.0	3,659.6	3,934.7	3,786.6	32.0	21.2	147.82	734.5	-683.8	628.4	591.1	37.29	16.853	
4,100.0	3,747.7	4,032.3	3,879.6	33.1	21.8	148.05	755.7	-704.5	649.8	611.5	38.29	16.970	
4,200.0	3,835.9	4,129.9	3,972.7	34.1	22.4	148.27	776.9	-725.3	671.3	632.0	39.30	17.080	
4,300.0	3,924.0	4,227.6	4,065.7	35.1	23.0	148.48	798.0	-746.0	692.8	652.4	40.31	17.185	
4,400.0	4,012.1	4,325.2	4,158.7	36.2	23.7	148.67	819.2	-766.7	714.2	672.9	41.32	17.286	
4,500.0	4,100.2	4,422.9	4,251.8	37.2	24.3	148.86	840.4	-787.5	735.7	693.4	42.33	17.381	
4,600.0	4,188.3	4,520.5	4,344.8	38.2	24.9	149.03	861.6	-808.2	757.2	713.9	43.34	17.472	
4,700.0	4,276.4	4,618.1	4,437.8	39.3	25.5	149.19	882.8	-829.0	778.7	734.3	44.35	17.558	
4,800.0	4,364.5	4,715.8	4,530.9	40.3	26.1	149.35	903.9	-849.7	800.2	754.8	45.36	17.641	
4,900.0	4,452.6	4,813.4	4,623.9	41.3	26.7	149.49	925.1	-870.4	821.7	775.3	46.37	17.721	
5,000.0	4,540.8	4,911.1	4,716.9	42.4	27.4	149.63	946.3	-891.2	843.2	795.8	47.38	17.796	

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

Company:	Anadarko, Weld County CO	**Local Co-ordinate Reference:**	Well Warner 31-18
Project:	SEC.18-T2N-R65W	**TVD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Reference Site:	Warner 25-18 Pad Sec.18-T2N-R65W	**MD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Warner 31-18	**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 (3-07-11)	**Offset TVD Reference:**	Offset Datum

Offset Design Warner 25-18 Pad Sec.18-T2N-R65W - Warner 18-18 - Wellbore #1 - Plan #1 (3-03-11)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	4,628.9	5,008.7	4,810.0	43.4	28.0	149.76	967.5	-911.9	864.7	816.3	48.39	17.869	
5,200.0	4,717.0	5,106.3	4,903.0	44.4	28.6	149.89	988.6	-932.6	886.2	836.8	49.40	17.939	
5,300.0	4,805.1	5,191.6	4,984.4	45.5	29.1	150.02	1,006.8	-950.4	908.2	857.9	50.31	18.051	
5,400.0	4,893.2	5,270.9	5,060.7	46.5	29.4	150.23	1,022.1	-965.4	932.0	880.9	51.07	18.249	
5,500.0	4,981.3	5,349.3	5,136.7	47.5	29.8	150.53	1,035.8	-978.9	957.7	906.0	51.73	18.512	
5,600.0	5,069.4	5,426.7	5,212.2	48.6	30.0	150.90	1,047.9	-990.7	985.3	932.9	52.31	18.834	
5,686.1	5,145.3	5,500.0	5,284.2	49.4	30.3	151.32	1,058.0	-1,000.6	1,010.5	957.8	52.73	19.163	
5,700.0	5,157.6	5,500.0	5,284.2	49.6	30.3	151.36	1,058.0	-1,000.6	1,014.7	961.9	52.80	19.217	
5,800.0	5,246.7	5,578.6	5,361.6	50.4	30.5	152.11	1,067.4	-1,009.7	1,044.1	991.0	53.10	19.665	
5,900.0	5,337.4	5,653.9	5,436.2	51.2	30.7	152.81	1,074.9	-1,017.1	1,072.5	1,019.2	53.34	20.108	
6,000.0	5,429.4	5,728.9	5,510.7	51.8	30.9	153.48	1,081.0	-1,023.1	1,099.8	1,046.3	53.52	20.550	
6,100.0	5,522.8	5,800.0	5,581.6	52.5	31.0	154.09	1,085.5	-1,027.5	1,126.0	1,072.4	53.65	20.990	
6,200.0	5,617.4	5,878.0	5,659.4	53.0	31.2	154.72	1,089.0	-1,030.9	1,151.1	1,097.5	53.69	21.441	
6,300.0	5,713.1	5,952.1	5,733.5	53.5	31.2	155.30	1,090.9	-1,032.8	1,175.1	1,121.5	53.67	21.894	
6,400.0	5,809.7	6,028.3	5,809.7	54.0	31.3	155.87	1,091.5	-1,033.3	1,198.0	1,144.4	53.59	22.353	
6,500.0	5,907.1	6,125.8	5,907.1	54.4	31.4	156.47	1,091.5	-1,033.3	1,218.6	1,165.1	53.44	22.800	
6,600.0	6,005.3	6,224.0	6,005.3	54.7	31.5	156.96	1,091.5	-1,033.3	1,236.0	1,182.7	53.32	23.182	
6,700.0	6,104.1	6,322.7	6,104.1	55.0	31.6	157.35	1,091.5	-1,033.3	1,250.4	1,197.2	53.21	23.498	
6,800.0	6,203.3	6,422.0	6,203.3	55.2	31.7	157.64	1,091.5	-1,033.3	1,261.6	1,208.5	53.12	23.751	
6,900.0	6,303.0	6,521.6	6,303.0	55.4	31.8	157.85	1,091.5	-1,033.3	1,269.6	1,216.5	53.03	23.938	
7,000.0	6,402.8	6,621.5	6,402.8	55.5	31.9	157.97	1,091.5	-1,033.3	1,274.3	1,221.3	52.96	24.061	
7,097.2	6,500.0	6,718.7	6,500.0	55.5	32.0	96.05	1,091.5	-1,033.3	1,275.8	1,222.9	52.90	24.117	
7,100.0	6,502.8	6,721.5	6,502.8	55.5	32.0	96.05	1,091.5	-1,033.3	1,275.8	1,222.9	52.91	24.115	
7,200.0	6,602.8	6,821.5	6,602.8	55.6	32.1	96.05	1,091.5	-1,033.3	1,275.8	1,222.7	53.12	24.016	
7,300.0	6,702.8	6,921.5	6,702.8	55.7	32.2	96.05	1,091.5	-1,033.3	1,275.8	1,222.5	53.34	23.917	
7,400.0	6,802.8	7,021.5	6,802.8	55.7	32.3	96.05	1,091.5	-1,033.3	1,275.8	1,222.3	53.57	23.818	
7,500.0	6,902.8	7,121.5	6,902.8	55.8	32.4	96.05	1,091.5	-1,033.3	1,275.8	1,222.0	53.79	23.718	
7,600.0	7,002.8	7,221.5	7,002.8	55.8	32.5	96.05	1,091.5	-1,033.3	1,275.8	1,221.8	54.02	23.618	
7,700.0	7,102.8	7,321.5	7,102.8	55.9	32.6	96.05	1,091.5	-1,033.3	1,275.8	1,221.6	54.25	23.518	
7,800.0	7,202.8	7,421.5	7,202.8	56.0	32.7	96.05	1,091.5	-1,033.3	1,275.8	1,221.4	54.48	23.417	
7,900.0	7,302.8	7,521.5	7,302.8	56.0	32.8	96.05	1,091.5	-1,033.3	1,275.8	1,221.1	54.72	23.316	
8,000.0	7,402.8	7,621.5	7,402.8	56.1	32.9	96.05	1,091.5	-1,033.3	1,275.8	1,220.9	54.96	23.215	
8,100.0	7,502.8	7,721.5	7,502.8	56.1	33.0	96.05	1,091.5	-1,033.3	1,275.8	1,220.6	55.20	23.113	
8,200.0	7,602.8	7,821.5	7,602.8	56.2	33.1	96.05	1,091.5	-1,033.3	1,275.8	1,220.4	55.44	23.011	
8,300.0	7,702.8	7,921.5	7,702.8	56.3	33.2	96.05	1,091.5	-1,033.3	1,275.8	1,220.1	55.69	22.910	
8,400.0	7,802.8	8,021.5	7,802.8	56.3	33.3	96.05	1,091.5	-1,033.3	1,275.8	1,219.9	55.94	22.808	
8,500.0	7,902.8	8,121.5	7,902.8	56.4	33.4	96.05	1,091.5	-1,033.3	1,275.8	1,219.7	56.18	22.712	
8,565.2	7,968.0	8,186.7	7,968.0	56.5	33.5	96.05	1,091.5	-1,033.3	1,275.8	1,219.5	56.30	22.663	

Company:	Anadarko, Weld County CO	**Local Co-ordinate Reference:**	Well Warner 31-18
Project:	SEC.18-T2N-R65W	**TVD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Reference Site:	Warner 25-18 Pad Sec.18-T2N-R65W	**MD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Warner 31-18	**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 (3-07-11)	**Offset TVD Reference:**	Offset Datum

Offset Design Warner 25-18 Pad Sec.18-T2N-R65W - Warner 22-18 - Wellbore #1 - Plan #1 (3-07-11)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	-153.80	-14.2	-7.0	15.8	15.8	0.00	N/A	
100.0	100.0	101.0	101.0	0.1	0.1	-153.80	-14.2	-7.0	15.8	15.6	0.23	69.749	
200.0	200.0	201.0	201.0	0.3	0.3	-153.80	-14.2	-7.0	15.8	15.2	0.68	23.404	CC
207.7	207.7	208.7	208.7	0.4	0.4	-91.88	-14.2	-7.0	15.8	15.1	0.71	22.278	
300.0	300.0	301.0	301.0	0.6	0.6	-98.10	-14.2	-7.0	16.0	14.9	1.12	14.254	ES
400.0	399.8	400.8	400.8	0.8	0.8	-115.27	-14.2	-7.0	17.5	15.9	1.58	11.102	
500.0	499.5	500.5	500.5	1.0	1.0	-135.52	-14.2	-7.0	22.6	20.6	2.05	11.049	SF
600.0	598.7	599.7	599.7	1.3	1.2	-150.62	-14.2	-7.0	32.5	30.0	2.52	12.888	
700.0	697.5	698.5	698.5	1.7	1.5	-159.95	-14.2	-7.0	46.8	43.8	2.99	15.658	
800.0	795.6	796.6	796.6	2.0	1.7	-165.62	-14.2	-7.0	65.1	61.6	3.45	18.846	
900.0	893.1	894.1	894.1	2.5	1.9	-169.21	-14.2	-7.0	87.1	83.1	3.92	22.223	
1,000.0	989.6	990.6	990.6	3.0	2.1	-171.60	-14.2	-7.0	112.6	108.2	4.38	25.685	
1,100.0	1,085.3	1,089.7	1,089.6	3.6	2.3	-172.93	-14.3	-8.4	140.6	135.7	4.84	29.020	
1,200.0	1,179.8	1,189.6	1,189.5	4.2	2.5	-173.18	-14.8	-13.2	169.3	164.0	5.30	31.949	
1,300.0	1,273.2	1,290.1	1,289.6	4.9	2.7	-172.79	-15.5	-21.6	198.8	193.1	5.78	34.403	
1,400.0	1,365.2	1,391.2	1,389.9	5.7	3.0	-172.00	-16.5	-33.6	229.1	222.8	6.29	36.404	
1,500.0	1,455.8	1,492.7	1,490.3	6.6	3.3	-170.94	-17.9	-49.1	260.1	253.3	6.85	37.973	
1,600.0	1,544.9	1,594.7	1,590.5	7.5	3.6	-169.71	-19.6	-68.3	292.0	284.5	7.46	39.116	
1,611.1	1,554.7	1,606.1	1,601.6	7.6	3.6	-169.56	-19.8	-70.6	295.5	288.0	7.54	39.216	
1,700.0	1,633.1	1,697.6	1,690.7	8.5	4.0	-168.41	-21.6	-91.2	323.4	315.2	8.20	39.436	
1,800.0	1,721.2	1,799.2	1,788.9	9.5	4.4	-166.97	-23.9	-117.2	352.5	343.5	9.02	39.079	
1,900.0	1,809.3	1,894.7	1,880.9	10.5	4.8	-165.73	-26.1	-142.5	381.2	371.3	9.89	38.561	
2,000.0	1,897.4	1,990.1	1,973.0	11.5	5.3	-164.65	-28.3	-167.8	410.1	399.3	10.78	38.028	
2,100.0	1,985.5	2,085.6	2,065.0	12.5	5.8	-163.72	-30.5	-193.2	439.0	427.3	11.72	37.476	
2,200.0	2,073.6	2,181.1	2,157.0	13.5	6.2	-162.91	-32.8	-218.5	468.1	455.4	12.67	36.951	
2,300.0	2,161.7	2,276.6	2,249.1	14.6	6.7	-162.19	-35.0	-243.8	497.2	483.6	13.64	36.453	
2,400.0	2,249.8	2,372.1	2,341.1	15.6	7.3	-161.55	-37.2	-269.1	526.4	511.8	14.63	35.986	
2,500.0	2,338.0	2,467.6	2,433.1	16.6	7.8	-160.97	-39.4	-294.5	555.7	540.1	15.63	35.552	
2,600.0	2,426.1	2,563.0	2,525.2	17.6	8.3	-160.46	-41.6	-319.8	585.0	568.3	16.64	35.148	
2,700.0	2,514.2	2,658.5	2,617.2	18.7	8.8	-159.99	-43.9	-345.1	614.3	596.7	17.67	34.774	
2,800.0	2,602.3	2,754.0	2,709.3	19.7	9.3	-159.57	-46.1	-370.4	643.7	625.0	18.70	34.428	
2,900.0	2,690.4	2,849.5	2,801.3	20.7	9.8	-159.18	-48.3	-395.8	673.1	653.4	19.73	34.108	
3,000.0	2,778.5	2,945.0	2,893.3	21.7	10.4	-158.82	-50.5	-421.1	702.5	681.8	20.78	33.811	
3,100.0	2,866.6	3,040.5	2,985.4	22.8	10.9	-158.50	-52.7	-446.4	732.0	710.2	21.83	33.535	
3,200.0	2,954.7	3,136.0	3,077.4	23.8	11.4	-158.20	-55.0	-471.7	761.5	738.6	22.88	33.279	
3,300.0	3,042.8	3,231.4	3,169.5	24.8	12.0	-157.92	-57.2	-497.1	790.9	767.0	23.94	33.040	
3,400.0	3,131.0	3,326.9	3,261.5	25.9	12.5	-157.66	-59.4	-522.4	820.4	795.4	25.00	32.818	
3,500.0	3,219.1	3,422.4	3,353.5	26.9	13.0	-157.42	-61.6	-547.7	850.0	823.9	26.06	32.610	
3,600.0	3,307.2	3,517.9	3,445.6	27.9	13.6	-157.19	-63.9	-573.0	879.5	852.4	27.13	32.416	
3,700.0	3,395.3	3,613.4	3,537.6	29.0	14.1	-156.98	-66.1	-598.4	909.0	880.8	28.20	32.233	
3,800.0	3,483.4	3,708.9	3,629.6	30.0	14.7	-156.78	-68.3	-623.7	938.6	909.3	29.27	32.062	
3,900.0	3,571.5	3,804.4	3,721.7	31.0	15.2	-156.60	-70.5	-649.0	968.2	937.8	30.35	31.902	
4,000.0	3,659.6	3,899.8	3,813.7	32.0	15.7	-156.43	-72.7	-674.3	997.7	966.3	31.42	31.750	
4,100.0	3,747.7	3,995.3	3,905.8	33.1	16.3	-156.26	-75.0	-699.7	1,027.3	994.8	32.50	31.608	
4,200.0	3,835.9	4,090.8	3,997.8	34.1	16.8	-156.11	-77.2	-725.0	1,056.9	1,023.3	33.58	31.473	
4,300.0	3,924.0	4,186.3	4,089.8	35.1	17.4	-155.96	-79.4	-750.3	1,086.5	1,051.8	34.66	31.345	
4,400.0	4,012.1	4,281.8	4,181.9	36.2	17.9	-155.82	-81.6	-775.6	1,116.1	1,080.3	35.74	31.225	
4,500.0	4,100.2	4,377.3	4,273.9	37.2	18.4	-155.69	-83.8	-801.0	1,145.7	1,108.9	36.83	31.110	
4,600.0	4,188.3	4,472.7	4,366.0	38.2	19.0	-155.57	-86.1	-826.3	1,175.3	1,137.4	37.91	31.002	
4,700.0	4,276.4	4,568.2	4,458.0	39.3	19.5	-155.45	-88.3	-851.6	1,204.9	1,165.9	39.00	30.898	
4,800.0	4,364.5	4,663.7	4,550.0	40.3	20.1	-155.33	-90.5	-876.9	1,234.5	1,194.5	40.08	30.800	
4,900.0	4,452.6	4,759.2	4,642.1	41.3	20.6	-155.23	-92.7	-902.3	1,264.2	1,223.0	41.17	30.706	

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

Company:	Anadarko, Weld County CO	**Local Co-ordinate Reference:**	Well Warner 31-18
Project:	SEC.18-T2N-R65W	**TVD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Reference Site:	Warner 25-18 Pad Sec.18-T2N-R65W	**MD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Warner 31-18	**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 (3-07-11)	**Offset TVD Reference:**	Offset Datum

Offset Design Warner 25-18 Pad Sec.18-T2N-R65W - Warner 22-18 - Wellbore #1 - Plan #1 (3-07-11)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,540.8	4,854.7	4,734.1	42.4	21.2	-155.12	-95.0	-927.6	1,293.8	1,251.5	42.26	30.617	
5,100.0	4,628.9	4,950.2	4,826.1	43.4	21.7	-155.02	-97.2	-952.9	1,323.4	1,280.1	43.35	30.532	
5,200.0	4,717.0	5,045.7	4,918.2	44.4	22.3	-154.93	-99.4	-978.2	1,353.1	1,308.6	44.44	30.450	
5,300.0	4,805.1	5,125.1	4,995.0	45.5	22.6	-154.88	-101.2	-998.7	1,383.1	1,337.8	45.37	30.489	
5,400.0	4,893.2	5,200.0	5,067.8	46.5	22.9	-154.90	-102.7	-1,016.1	1,414.6	1,368.4	46.18	30.633	
5,500.0	4,981.3	5,273.7	5,139.9	47.5	23.2	-154.99	-104.1	-1,031.4	1,447.4	1,400.4	46.92	30.846	
5,600.0	5,069.4	5,346.8	5,211.7	48.6	23.4	-155.13	-105.2	-1,044.7	1,481.5	1,433.9	47.61	31.120	
5,686.1	5,145.3	5,400.0	5,264.2	49.4	23.6	-155.28	-106.0	-1,053.3	1,512.0	1,463.9	48.15	31.403	
5,700.0	5,157.6	5,418.9	5,282.9	49.6	23.6	-155.38	-106.2	-1,056.1	1,517.0	1,468.8	48.23	31.453	
5,800.0	5,246.7	5,500.0	5,363.3	50.4	23.8	-155.94	-107.2	-1,066.7	1,552.0	1,503.2	48.72	31.854	
5,900.0	5,337.4	5,562.3	5,425.2	51.2	24.0	-156.42	-107.7	-1,073.3	1,585.2	1,536.1	49.13	32.264	
6,000.0	5,429.4	5,633.8	5,496.5	51.8	24.1	-156.92	-108.3	-1,079.3	1,616.9	1,567.4	49.48	32.679	
6,100.0	5,522.8	5,700.0	5,562.6	52.5	24.2	-157.39	-108.6	-1,083.2	1,647.0	1,597.2	49.76	33.098	
6,200.0	5,617.4	5,776.7	5,639.2	53.0	24.3	-157.88	-108.8	-1,085.9	1,675.3	1,625.4	49.95	33.538	
6,300.0	5,713.1	5,851.6	5,714.1	53.5	24.4	-158.35	-108.9	-1,086.5	1,702.0	1,651.9	50.08	33.986	
6,400.0	5,809.7	5,948.2	5,810.7	54.0	24.5	-158.85	-108.9	-1,086.5	1,726.1	1,676.0	50.15	34.418	
6,500.0	5,907.1	6,045.6	5,908.1	54.4	24.6	-159.26	-108.9	-1,086.5	1,747.1	1,696.9	50.22	34.791	
6,600.0	6,005.3	6,143.8	6,006.3	54.7	24.7	-159.61	-108.9	-1,086.5	1,764.9	1,714.6	50.27	35.110	
6,700.0	6,104.1	6,242.6	6,105.1	55.0	24.8	-159.88	-108.9	-1,086.5	1,779.5	1,729.2	50.30	35.375	
6,800.0	6,203.3	6,341.8	6,204.3	55.2	25.0	-160.10	-108.9	-1,086.5	1,790.9	1,740.6	50.32	35.588	
6,900.0	6,303.0	6,441.5	6,304.0	55.4	25.1	-160.24	-108.9	-1,086.5	1,799.0	1,748.7	50.32	35.749	
7,000.0	6,402.8	6,541.3	6,403.8	55.5	25.2	-160.33	-108.9	-1,086.5	1,803.8	1,753.5	50.31	35.857	
7,097.2	6,500.0	6,638.5	6,501.0	55.5	25.3	137.68	-108.9	-1,086.5	1,805.4	1,755.1	50.28	35.910	
7,100.0	6,502.8	6,641.3	6,503.8	55.5	25.3	137.68	-108.9	-1,086.5	1,805.4	1,755.1	50.28	35.905	
7,200.0	6,602.8	6,741.3	6,603.8	55.6	25.4	137.68	-108.9	-1,086.5	1,805.4	1,754.9	50.52	35.738	
7,300.0	6,702.8	6,841.3	6,703.8	55.7	25.6	137.68	-108.9	-1,086.5	1,805.4	1,754.6	50.75	35.571	
7,400.0	6,802.8	6,941.3	6,803.8	55.7	25.7	137.68	-108.9	-1,086.5	1,805.4	1,754.4	50.99	35.404	
7,500.0	6,902.8	7,041.3	6,903.8	55.8	25.8	137.68	-108.9	-1,086.5	1,805.4	1,754.2	51.24	35.236	
7,600.0	7,002.8	7,141.3	7,003.8	55.8	25.9	137.68	-108.9	-1,086.5	1,805.4	1,753.9	51.48	35.067	
7,700.0	7,102.8	7,241.3	7,103.8	55.9	26.1	137.68	-108.9	-1,086.5	1,805.4	1,753.7	51.73	34.899	
7,800.0	7,202.8	7,341.3	7,203.8	56.0	26.2	137.68	-108.9	-1,086.5	1,805.4	1,753.4	51.98	34.730	
7,900.0	7,302.8	7,441.3	7,303.8	56.0	26.3	137.68	-108.9	-1,086.5	1,805.4	1,753.2	52.24	34.562	
8,000.0	7,402.8	7,541.3	7,403.8	56.1	26.5	137.68	-108.9	-1,086.5	1,805.4	1,752.9	52.49	34.393	
8,100.0	7,502.8	7,641.3	7,503.8	56.1	26.6	137.68	-108.9	-1,086.5	1,805.4	1,752.6	52.75	34.224	
8,200.0	7,602.8	7,741.3	7,603.8	56.2	26.7	137.68	-108.9	-1,086.5	1,805.4	1,752.4	53.01	34.055	
8,300.0	7,702.8	7,841.3	7,703.8	56.3	26.9	137.68	-108.9	-1,086.5	1,805.4	1,752.1	53.28	33.886	
8,400.0	7,802.8	7,941.3	7,803.8	56.3	27.0	137.68	-108.9	-1,086.5	1,805.4	1,751.8	53.54	33.718	
8,500.0	7,902.8	8,041.3	7,903.8	56.4	27.1	137.68	-108.9	-1,086.5	1,805.4	1,751.6	53.81	33.549	
8,565.2	7,968.0	8,106.5	7,969.0	56.5	27.2	137.68	-108.9	-1,086.5	1,805.4	1,751.4	53.99	33.440	

Company:	Anadarko, Weld County CO	**Local Co-ordinate Reference:**	Well Warner 31-18
Project:	SEC.18-T2N-R65W	**TVD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Reference Site:	Warner 25-18 Pad Sec.18-T2N-R65W	**MD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Warner 31-18	**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 (3-07-11)	**Offset TVD Reference:**	Offset Datum

Offset Design Warner 25-18 Pad Sec.18-T2N-R65W - Warner 5-18 (Exist.) - Wellbore #1 - Design #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	27.0	27.0	0.0	0.0	-77.91	383.3	-1,789.9	1,830.5	1,830.5	0.03	N/A	
100.0	100.0	127.0	127.0	0.1	0.2	-77.91	383.3	-1,789.9	1,830.5	1,830.2	0.29	6,412.659	
200.0	200.0	227.0	227.0	0.3	0.4	-77.91	383.3	-1,789.9	1,830.5	1,829.8	0.73	2,490.543	
300.0	300.0	327.0	327.0	0.6	0.6	-15.97	383.3	-1,789.9	1,828.8	1,827.6	1.18	1,543.377	
400.0	399.8	426.8	426.8	0.8	0.8	-16.05	383.3	-1,789.9	1,823.8	1,822.2	1.64	1,113.439	
500.0	499.5	526.5	526.5	1.0	1.1	-16.17	383.3	-1,789.9	1,815.4	1,813.3	2.10	866.517	
600.0	598.7	625.7	625.7	1.3	1.3	-16.34	383.3	-1,789.9	1,803.7	1,801.2	2.56	705.654	
700.0	697.5	724.5	724.5	1.7	1.5	-16.57	383.3	-1,789.9	1,788.7	1,785.7	3.02	591.864	
800.0	795.6	822.6	822.6	2.0	1.7	-16.86	383.3	-1,789.9	1,770.4	1,766.9	3.49	506.567	
900.0	893.1	920.1	920.1	2.5	2.0	-17.20	383.3	-1,789.9	1,748.8	1,744.9	3.98	439.815	
1,000.0	989.6	1,016.6	1,016.6	3.0	2.2	-17.61	383.3	-1,789.9	1,724.1	1,719.6	4.47	385.808	
1,100.0	1,085.3	1,112.3	1,112.3	3.6	2.4	-18.08	383.3	-1,789.9	1,696.1	1,691.2	4.97	340.939	
1,200.0	1,179.8	1,206.8	1,206.8	4.2	2.6	-18.64	383.3	-1,789.9	1,665.1	1,659.6	5.50	302.850	
1,300.0	1,273.2	1,300.2	1,300.2	4.9	2.8	-19.28	383.3	-1,789.9	1,630.9	1,624.9	6.04	269.932	
1,400.0	1,365.2	1,392.2	1,392.2	5.7	3.0	-20.01	383.3	-1,789.9	1,593.8	1,587.2	6.61	241.054	
1,500.0	1,455.8	1,482.8	1,482.8	6.6	3.2	-20.84	383.3	-1,789.9	1,553.8	1,546.6	7.21	215.394	
1,600.0	1,544.9	1,571.9	1,571.9	7.5	3.4	-21.80	383.3	-1,789.9	1,510.9	1,503.1	7.85	192.350	
1,611.1	1,554.7	1,581.7	1,581.7	7.6	3.4	-21.91	383.3	-1,789.9	1,506.0	1,498.0	7.93	189.929	
1,700.0	1,633.1	1,660.1	1,660.1	8.5	3.6	-22.51	383.3	-1,789.9	1,466.4	1,457.9	8.56	171.365	
1,800.0	1,721.2	1,748.2	1,748.2	9.5	3.8	-23.23	383.3	-1,789.9	1,422.1	1,412.8	9.29	153.104	
1,900.0	1,809.3	1,836.3	1,836.3	10.5	4.0	-23.99	383.3	-1,789.9	1,378.0	1,367.9	10.05	137.171	
2,000.0	1,897.4	1,924.4	1,924.4	11.5	4.2	-24.80	383.3	-1,789.9	1,334.0	1,323.2	10.83	123.183	
2,100.0	1,985.5	2,012.5	2,012.5	12.5	4.4	-25.66	383.3	-1,789.9	1,290.4	1,278.7	11.64	110.832	
2,200.0	2,073.6	2,100.6	2,100.6	13.5	4.6	-26.58	383.3	-1,789.9	1,247.0	1,234.5	12.49	99.869	
2,300.0	2,161.7	2,188.7	2,188.7	14.6	4.8	-27.56	383.3	-1,789.9	1,203.8	1,190.5	13.36	90.090	
2,400.0	2,249.8	2,276.8	2,276.8	15.6	5.0	-28.62	383.3	-1,789.9	1,161.0	1,146.8	14.28	81.331	
2,500.0	2,338.0	2,365.0	2,365.0	16.6	5.2	-29.74	383.3	-1,789.9	1,118.6	1,103.4	15.23	73.458	
2,600.0	2,426.1	2,453.1	2,453.1	17.6	5.4	-30.96	383.3	-1,789.9	1,076.6	1,060.4	16.22	66.359	
2,700.0	2,514.2	2,541.2	2,541.2	18.7	5.6	-32.26	383.3	-1,789.9	1,035.0	1,017.7	17.27	59.941	
2,800.0	2,602.3	2,629.3	2,629.3	19.7	5.8	-33.66	383.3	-1,789.9	993.9	975.6	18.36	54.128	
2,900.0	2,690.4	2,717.4	2,717.4	20.7	6.0	-35.18	383.3	-1,789.9	953.5	933.9	19.52	48.855	
3,000.0	2,778.5	2,805.5	2,805.5	21.7	6.2	-36.82	383.3	-1,789.9	913.6	892.9	20.73	44.069	
3,100.0	2,866.6	2,893.6	2,893.6	22.8	6.4	-38.59	383.3	-1,789.9	874.5	852.5	22.02	39.724	
3,200.0	2,954.7	2,981.7	2,981.7	23.8	6.6	-40.52	383.3	-1,789.9	836.3	812.9	23.37	35.782	
3,300.0	3,042.8	3,069.8	3,069.8	24.8	6.8	-42.60	383.3	-1,789.9	799.0	774.2	24.81	32.209	
3,400.0	3,131.0	3,158.0	3,158.0	25.9	7.0	-44.87	383.3	-1,789.9	762.9	736.5	26.32	28.979	
3,500.0	3,219.1	3,246.1	3,246.1	26.9	7.2	-47.33	383.3	-1,789.9	728.0	700.1	27.93	26.068	
3,600.0	3,307.2	3,334.2	3,334.2	27.9	7.4	-50.01	383.3	-1,789.9	694.6	665.0	29.61	23.455	
3,700.0	3,395.3	3,422.3	3,422.3	29.0	7.6	-52.91	383.3	-1,789.9	662.8	631.5	31.38	21.122	
3,800.0	3,483.4	3,510.4	3,510.4	30.0	7.8	-56.05	383.3	-1,789.9	633.1	599.8	33.23	19.054	
3,900.0	3,571.5	3,598.5	3,598.5	31.0	8.0	-59.44	383.3	-1,789.9	605.5	570.4	35.13	17.237	
4,000.0	3,659.6	3,686.6	3,686.6	32.0	8.2	-63.09	383.3	-1,789.9	580.5	543.5	37.07	15.659	
4,100.0	3,747.7	3,774.7	3,774.7	33.1	8.4	-66.99	383.3	-1,789.9	558.4	519.4	39.03	14.308	
4,200.0	3,835.9	3,862.9	3,862.9	34.1	8.6	-71.12	383.3	-1,789.9	539.6	498.6	40.96	13.172	
4,300.0	3,924.0	3,951.0	3,951.0	35.1	8.8	-75.48	383.3	-1,789.9	524.3	481.5	42.83	12.242	
4,400.0	4,012.1	4,039.1	4,039.1	36.2	9.0	-80.00	383.3	-1,789.9	513.0	468.4	44.59	11.506	
4,500.0	4,100.2	4,127.2	4,127.2	37.2	9.2	-84.66	383.3	-1,789.9	505.9	459.7	46.19	10.953	
4,600.0	4,188.3	4,215.3	4,215.3	38.2	9.4	-89.39	383.3	-1,789.9	503.1	455.5	47.59	10.572	
4,612.8	4,199.6	4,226.6	4,226.6	38.4	9.4	-90.00	383.3	-1,789.9	503.0	455.3	47.75	10.535	CC, ES
4,700.0	4,276.4	4,303.4	4,303.4	39.3	9.6	-94.13	383.3	-1,789.9	504.7	456.0	48.77	10.350	
4,800.0	4,364.5	4,391.5	4,391.5	40.3	9.8	-98.82	383.3	-1,789.9	510.8	461.1	49.71	10.276	SF
4,900.0	4,452.6	4,479.6	4,479.6	41.3	10.0	-103.38	383.3	-1,789.9	521.1	470.6	50.41	10.336	

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

Company:	Anadarko, Weld County CO	**Local Co-ordinate Reference:**	Well Warner 31-18
Project:	SEC.18-T2N-R65W	**TVD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Reference Site:	Warner 25-18 Pad Sec.18-T2N-R65W	**MD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Warner 31-18	**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 (3-07-11)	**Offset TVD Reference:**	Offset Datum

Offset Design Warner 25-18 Pad Sec.18-T2N-R65W - Warner 5-18 (Exist.) - Wellbore #1 - Design #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,540.8	4,567.8	4,567.8	42.4	10.2	-107.78	383.3	-1,789.9	535.3	484.4	50.89	10.518	
5,100.0	4,628.9	4,655.9	4,655.9	43.4	10.4	-111.98	383.3	-1,789.9	553.3	502.1	51.18	10.810	
5,200.0	4,717.0	4,744.0	4,744.0	44.4	10.6	-115.94	383.3	-1,789.9	574.6	523.3	51.31	11.198	
5,300.0	4,805.1	4,832.1	4,832.1	45.5	10.7	-119.65	383.3	-1,789.9	598.9	547.6	51.31	11.671	
5,400.0	4,893.2	4,920.2	4,920.2	46.5	10.9	-123.11	383.3	-1,789.9	625.8	574.6	51.22	12.218	
5,500.0	4,981.3	5,008.3	5,008.3	47.5	11.1	-126.31	383.3	-1,789.9	655.0	604.0	51.07	12.827	
5,600.0	5,069.4	5,096.4	5,096.4	48.6	11.3	-129.27	383.3	-1,789.9	686.3	635.4	50.87	13.490	
5,686.1	5,145.3	5,172.3	5,172.3	49.4	11.5	-131.64	383.3	-1,789.9	714.6	663.9	50.70	14.096	
5,700.0	5,157.6	5,184.6	5,184.6	49.6	11.5	-132.08	383.3	-1,789.9	719.3	668.6	50.63	14.206	
5,800.0	5,246.7	5,273.7	5,273.7	50.4	11.7	-135.00	383.3	-1,789.9	752.3	702.2	50.13	15.007	
5,900.0	5,337.4	5,364.4	5,364.4	51.2	11.9	-137.54	383.3	-1,789.9	784.2	734.5	49.69	15.781	
6,000.0	5,429.4	5,456.4	5,456.4	51.8	12.2	-139.75	383.3	-1,789.9	814.5	765.2	49.32	16.513	
6,100.0	5,522.8	5,549.8	5,549.8	52.5	12.4	-141.65	383.3	-1,789.9	842.9	793.9	49.03	17.192	
6,200.0	5,617.4	5,644.4	5,644.4	53.0	12.6	-143.28	383.3	-1,789.9	869.1	820.4	48.80	17.812	
6,300.0	5,713.1	5,740.1	5,740.1	53.5	12.8	-144.66	383.3	-1,789.9	893.1	844.4	48.63	18.366	
6,400.0	5,809.7	5,836.7	5,836.7	54.0	13.0	-145.84	383.3	-1,789.9	914.5	866.0	48.51	18.852	
6,500.0	5,907.1	5,934.1	5,934.1	54.4	13.2	-146.81	383.3	-1,789.9	933.3	884.8	48.44	19.266	
6,600.0	6,005.3	6,032.3	6,032.3	54.7	13.4	-147.61	383.3	-1,789.9	949.3	900.9	48.41	19.609	
6,700.0	6,104.1	6,131.1	6,131.1	55.0	13.7	-148.25	383.3	-1,789.9	962.5	914.1	48.42	19.878	
6,800.0	6,203.3	6,230.3	6,230.3	55.2	13.9	-148.73	383.3	-1,789.9	972.9	924.4	48.46	20.075	
6,900.0	6,303.0	6,330.0	6,330.0	55.4	14.1	-149.06	383.3	-1,789.9	980.3	931.7	48.53	20.198	
7,000.0	6,402.8	6,429.8	6,429.8	55.5	14.3	-149.26	383.3	-1,789.9	984.7	936.0	48.63	20.247	
7,097.2	6,500.0	6,527.0	6,527.0	55.5	14.6	148.71	383.3	-1,789.9	986.1	937.3	48.76	20.224	
7,100.0	6,502.8	6,529.8	6,529.8	55.5	14.6	148.71	383.3	-1,789.9	986.1	937.3	48.77	20.221	
7,200.0	6,602.8	6,629.8	6,629.8	55.6	14.8	148.71	383.3	-1,789.9	986.1	937.0	49.08	20.093	
7,300.0	6,702.8	6,729.8	6,729.8	55.7	15.0	148.71	383.3	-1,789.9	986.1	936.7	49.39	19.966	
7,400.0	6,802.8	6,829.8	6,829.8	55.7	15.2	148.71	383.3	-1,789.9	986.1	936.4	49.70	19.841	
7,500.0	6,902.8	6,929.8	6,929.8	55.8	15.5	148.71	383.3	-1,789.9	986.1	936.1	50.01	19.716	
7,600.0	7,002.8	7,029.8	7,029.8	55.8	15.7	148.71	383.3	-1,789.9	986.1	935.8	50.33	19.593	
7,700.0	7,102.8	7,129.8	7,129.8	55.9	15.9	148.71	383.3	-1,789.9	986.1	935.4	50.64	19.471	
7,800.0	7,202.8	7,229.8	7,229.8	56.0	16.1	148.71	383.3	-1,789.9	986.1	935.1	50.96	19.349	
7,900.0	7,302.8	7,329.8	7,329.8	56.0	16.4	148.71	383.3	-1,789.9	986.1	934.8	51.28	19.229	
8,000.0	7,402.8	7,429.8	7,429.8	56.1	16.6	148.71	383.3	-1,789.9	986.1	934.5	51.60	19.110	
8,100.0	7,502.8	7,529.8	7,529.8	56.1	16.8	148.71	383.3	-1,789.9	986.1	934.2	51.92	18.992	
8,200.0	7,602.8	7,629.8	7,629.8	56.2	17.0	148.71	383.3	-1,789.9	986.1	933.8	52.24	18.875	
8,300.0	7,702.8	7,729.8	7,729.8	56.3	17.3	148.71	383.3	-1,789.9	986.1	933.5	52.57	18.759	
8,400.0	7,802.8	7,829.8	7,829.8	56.3	17.5	148.71	383.3	-1,789.9	986.1	933.2	52.89	18.643	
8,500.0	7,902.8	7,929.8	7,929.8	56.4	17.7	148.71	383.3	-1,789.9	986.1	932.9	53.22	18.529	
8,565.2	7,968.0	7,995.0	7,995.0	56.5	17.9	148.71	383.3	-1,789.9	986.1	932.7	53.43	18.456	

Company:	Anadarko, Weld County CO	**Local Co-ordinate Reference:**	Well Warner 31-18
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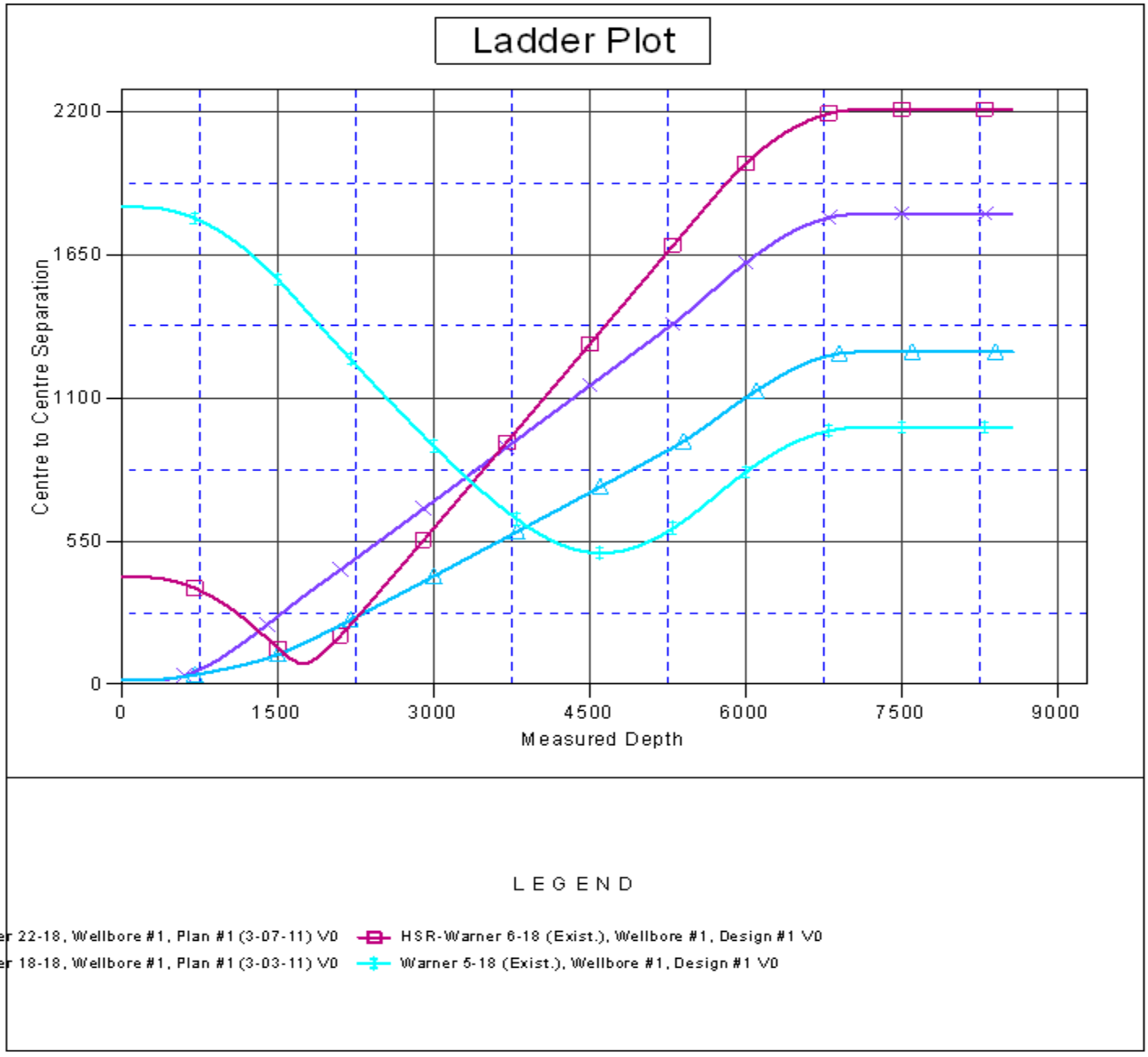
Reference Site:	Warner 25-18 Pad Sec.18-T2N-R65W	**MD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Warner 31-18	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (3-07-11)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4997.0ft (Original Well Elev) Coordinates are relative to: Warner 31-18
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: 0.51°



Company:	Anadarko, Weld County CO	**Local Co-ordinate Reference:**	Well Warner 31-18
Project:	SEC.18-T2N-R65W	**TVD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Reference Site:	Warner 25-18 Pad Sec.18-T2N-R65W	**MD Reference:**	WELL @ 4997.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Warner 31-18	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
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Reference Depths are relative to WELL @ 4997.0ft (Original Well Elev) Coordinates are relative to: Warner 31-18
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Central Meridian is -105.500000 ° Grid Convergence at Surface is: 0.51°