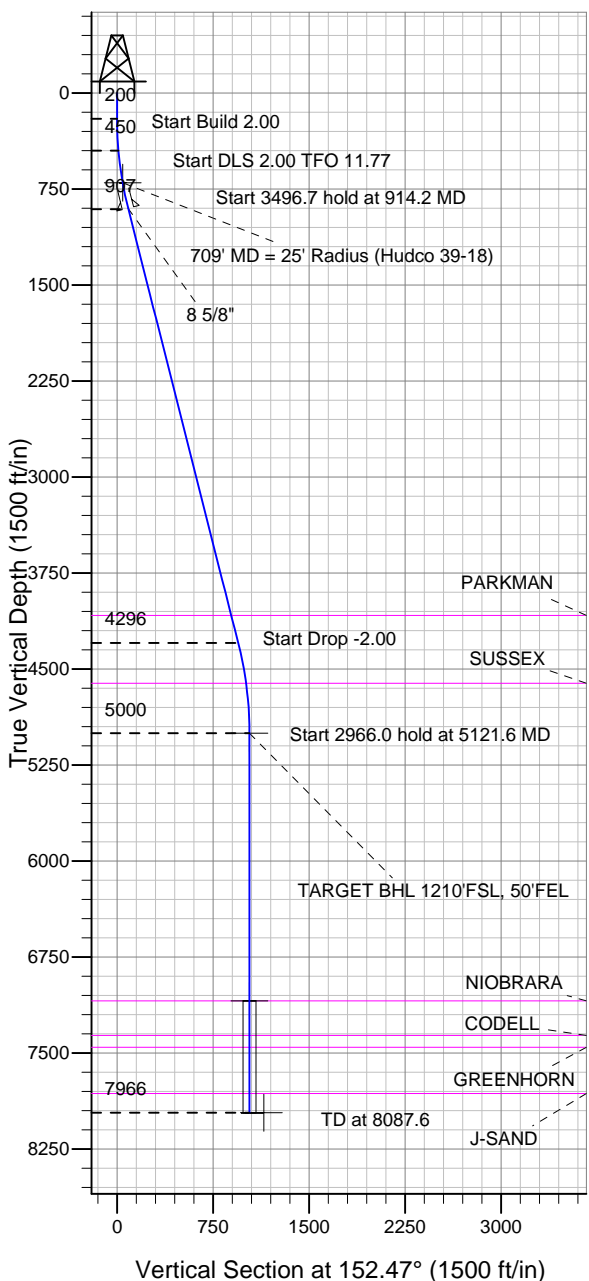


ENSIGN

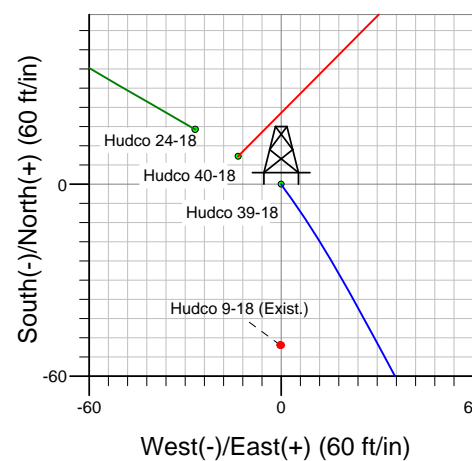
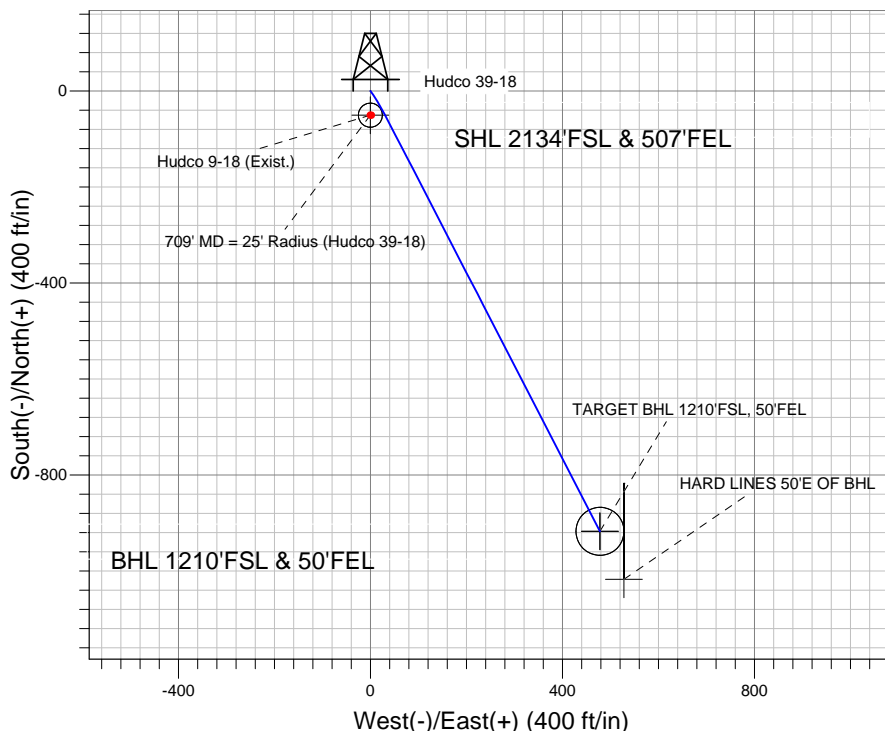
Directional

Well Name: Hudco 39-18

Surface Location: Hudco 9-18 Pad Sec.18-T2N-R65W
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
 Ground Elevation: 4981.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1293832.37 3223915.29 40.137188 -104.699119
 Original Well Elev WELL @ 4995.0ft (Original Well Elev)



Anadarko, Weld County CO



FORMATION TOP DETAILS

TVDPATH	MDPATH	Formation
4081.0	4188.6	PARKMAN
4611.0	4731.4	SUSSEX
7091.0	7212.6	NIOBRARA
7361.0	7482.6	CODELL
7454.0	7575.6	GREENHORN
7816.0	7937.6	J-SAND



Azimuths to True North
 Magnetic North: 8.84°

Magnetic Field
 Strength: 53025.6snT
 Dip Angle: 66.86°
 Date: 3/15/2011
 Model: IGRF2010

Well Name: Hudco 39-18 Lat/Long: 40.137188 -104.699119

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
709' MD = 25' Radius (Hudco 39-18)	700.0	-50.3	-0.3	40.137050	-104.699120	Circle (Radius: 25.0)
TARGET BHL 1210'FSL, 50'FEL	5000.0	-917.3	478.1	40.134670	-104.697409	Point
TARGET CIRCLE 1210'FSL & 50'FEL	7091.0	-917.3	478.1	40.134670	-104.697409	Circle (Radius: 50.0)
HARD LINES 50'E OF BHL	7966.0	-1017.3	528.1	40.134395	-104.697230	Polygon

SECTION DETAILS

CASING 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	450.0	5.00	145.00	449.7	-8.9	6.3	2.00	145.00	10.8	
4	914.2	14.22	152.70	906.9	-76.3	44.1	2.00	11.77	88.0	
5	4410.9	14.22	152.70	4296.5	-839.3	437.9	0.00	0.00	946.7	
6	5121.6	0.00	0.00	5000.0	-917.3	478.1	2.00	180.00	1034.4	TARGET BHL 1210'FSL, 50'FEL
7	8087.6	0.00	0.00	7966.0	-917.3	478.1	0.00	0.00	1034.4	

TVD	MD	Name	Size
900.0	907.1	8 5/8"	8-5/8

Hudco 9-18 Pad Sec.18-T2N-R65W
 Hudco 39-18
 Plan #1 (3-15-11)
 8:23, March 16 2011



Directional

Anadarko, Weld County CO

SEC.18-T2N-R65W

Hudco 9-18 Pad Sec.18-T2N-R65W

Hudco 39-18

Wellbore #1

Plan: Plan #1 (3-15-11)

Standard Planning Report

17 March, 2011

Database:	Landmark	Local Co-ordinate Reference:	Well Hudco 39-18
Company:	Anadarko, Weld County CO	TVD Reference:	WELL @ 4995.0ft (Original Well Elev)
Project:	SEC.18-T2N-R65W	MD Reference:	WELL @ 4995.0ft (Original Well Elev)
Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	North Reference:	True
Well:	Hudco 39-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-15-11)		

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

Hudco 9-18 Pad Sec.18-T2N-R65W					
Site Position:		Northing:	1,293,849.26 ft	Latitude:	40.137235
From:	Lat/Long	Easting:	3,223,888.30 ft	Longitude:	-104.699215
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.52 °

Well	Hudco 39-18					
Well Position	+N/-S	-17.1 ft	Northing:	1,293,832.37 ft	Latitude:	40.137188
	+E/-W	26.8 ft	Easting:	3,223,915.29 ft	Longitude:	-104.699119
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,981.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/15/2011	8.84	66.86	53,026

Design	Plan #1 (3-15-11)			
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	152.47

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	
450.0	5.00	145.00	449.7	-8.9	6.3	2.00	2.00	0.00	145.00	
914.2	14.22	152.70	906.9	-76.3	44.1	2.00	1.99	1.66	11.77	
4,410.9	14.22	152.70	4,296.5	-839.3	437.9	0.00	0.00	0.00	0.00	
5,121.6	0.00	0.00	5,000.0	-917.3	478.1	2.00	-2.00	0.00	180.00	TARGET BHL 1210
8,087.6	0.00	0.00	7,966.0	-917.3	478.1	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Hudco 39-18
Company:	Anadarko, Weld County CO	TVD Reference:	WELL @ 4995.0ft (Original Well Elev)
Project:	SEC.18-T2N-R65W	MD Reference:	WELL @ 4995.0ft (Original Well Elev)
Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	North Reference:	True
Well:	Hudco 39-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-15-11)		

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	145.00	240.0	-0.2	0.2	0.3	2.00	2.00	0.00
280.0	1.60	145.00	280.0	-0.9	0.6	1.1	2.00	2.00	0.00
320.0	2.40	145.00	320.0	-2.1	1.4	2.5	2.00	2.00	0.00
360.0	3.20	145.00	359.9	-3.7	2.6	4.4	2.00	2.00	0.00
400.0	4.00	145.00	399.8	-5.7	4.0	6.9	2.00	2.00	0.00
440.0	4.80	145.00	439.7	-8.2	5.8	10.0	2.00	2.00	0.00
450.0	5.00	145.00	449.7	-8.9	6.3	10.8	2.00	2.00	0.00
480.0	5.59	146.26	479.6	-11.2	7.8	13.6	2.00	1.96	4.19
520.0	6.38	147.57	519.3	-14.7	10.1	17.7	2.00	1.97	3.29
560.0	7.17	148.60	559.1	-18.7	12.6	22.4	2.00	1.98	2.57
600.0	7.96	149.42	598.7	-23.2	15.3	27.7	2.00	1.98	2.06
640.0	8.75	150.10	638.3	-28.3	18.2	33.5	2.00	1.98	1.69
680.0	9.55	150.66	677.8	-33.8	21.4	39.8	2.00	1.99	1.41
702.6	10.00	150.94	700.0	-37.1	23.2	43.7	2.00	1.99	1.23
709' MD = 25' Radius (Hudco 39-18)									
720.0	10.35	151.14	717.2	-39.8	24.7	46.7	2.00	1.99	1.14
760.0	11.14	151.55	756.5	-46.4	28.3	54.2	2.00	1.99	1.02
800.0	11.94	151.90	795.7	-53.4	32.1	62.2	2.00	1.99	0.89
840.0	12.74	152.21	834.7	-61.0	36.1	70.7	2.00	1.99	0.78
880.0	13.53	152.49	873.7	-69.0	40.3	79.8	2.00	1.99	0.69
907.1	14.07	152.66	900.0	-74.8	43.3	86.3	2.00	1.99	0.62
8 5/8"									
914.2	14.22	152.70	906.9	-76.3	44.1	88.0	2.00	1.99	0.60
920.0	14.22	152.70	912.5	-77.6	44.7	89.5	0.00	0.00	0.00
960.0	14.22	152.70	951.3	-86.3	49.2	99.3	0.00	0.00	0.00
1,000.0	14.22	152.70	990.1	-95.0	53.7	109.1	0.00	0.00	0.00
1,040.0	14.22	152.70	1,028.8	-103.7	58.2	118.9	0.00	0.00	0.00
1,080.0	14.22	152.70	1,067.6	-112.5	62.8	128.7	0.00	0.00	0.00
1,120.0	14.22	152.70	1,106.4	-121.2	67.3	138.6	0.00	0.00	0.00
1,160.0	14.22	152.70	1,145.2	-129.9	71.8	148.4	0.00	0.00	0.00
1,200.0	14.22	152.70	1,183.9	-138.7	76.3	158.2	0.00	0.00	0.00
1,240.0	14.22	152.70	1,222.7	-147.4	80.8	168.0	0.00	0.00	0.00
1,280.0	14.22	152.70	1,261.5	-156.1	85.3	177.9	0.00	0.00	0.00
1,320.0	14.22	152.70	1,300.3	-164.8	89.8	187.7	0.00	0.00	0.00
1,360.0	14.22	152.70	1,339.0	-173.6	94.3	197.5	0.00	0.00	0.00
1,400.0	14.22	152.70	1,377.8	-182.3	98.8	207.3	0.00	0.00	0.00
1,440.0	14.22	152.70	1,416.6	-191.0	103.3	217.1	0.00	0.00	0.00
1,480.0	14.22	152.70	1,455.4	-199.8	107.8	227.0	0.00	0.00	0.00
1,520.0	14.22	152.70	1,494.1	-208.5	112.3	236.8	0.00	0.00	0.00
1,560.0	14.22	152.70	1,532.9	-217.2	116.8	246.6	0.00	0.00	0.00
1,600.0	14.22	152.70	1,571.7	-225.9	121.3	256.4	0.00	0.00	0.00
1,640.0	14.22	152.70	1,610.5	-234.7	125.8	266.3	0.00	0.00	0.00
1,680.0	14.22	152.70	1,649.2	-243.4	130.3	276.1	0.00	0.00	0.00
1,720.0	14.22	152.70	1,688.0	-252.1	134.8	285.9	0.00	0.00	0.00
1,760.0	14.22	152.70	1,726.8	-260.9	139.3	295.7	0.00	0.00	0.00
1,800.0	14.22	152.70	1,765.6	-269.6	143.8	305.6	0.00	0.00	0.00
1,840.0	14.22	152.70	1,804.3	-278.3	148.4	315.4	0.00	0.00	0.00
1,880.0	14.22	152.70	1,843.1	-287.0	152.9	325.2	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Hudco 39-18
Company:	Anadarko, Weld County CO	TVD Reference:	WELL @ 4995.0ft (Original Well Elev)
Project:	SEC.18-T2N-R65W	MD Reference:	WELL @ 4995.0ft (Original Well Elev)
Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	North Reference:	True
Well:	Hudco 39-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-15-11)		

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)
1,920.0	14.22	152.70	1,881.9	-295.8	157.4	335.0	0.00	0.00	0.00
1,960.0	14.22	152.70	1,920.7	-304.5	161.9	344.8	0.00	0.00	0.00
2,000.0	14.22	152.70	1,959.4	-313.2	166.4	354.7	0.00	0.00	0.00
2,040.0	14.22	152.70	1,998.2	-322.0	170.9	364.5	0.00	0.00	0.00
2,080.0	14.22	152.70	2,037.0	-330.7	175.4	374.3	0.00	0.00	0.00
2,120.0	14.22	152.70	2,075.8	-339.4	179.9	384.1	0.00	0.00	0.00
2,160.0	14.22	152.70	2,114.5	-348.1	184.4	394.0	0.00	0.00	0.00
2,200.0	14.22	152.70	2,153.3	-356.9	188.9	403.8	0.00	0.00	0.00
2,240.0	14.22	152.70	2,192.1	-365.6	193.4	413.6	0.00	0.00	0.00
2,280.0	14.22	152.70	2,230.9	-374.3	197.9	423.4	0.00	0.00	0.00
2,320.0	14.22	152.70	2,269.6	-383.1	202.4	433.2	0.00	0.00	0.00
2,360.0	14.22	152.70	2,308.4	-391.8	206.9	443.1	0.00	0.00	0.00
2,400.0	14.22	152.70	2,347.2	-400.5	211.4	452.9	0.00	0.00	0.00
2,440.0	14.22	152.70	2,386.0	-409.2	215.9	462.7	0.00	0.00	0.00
2,480.0	14.22	152.70	2,424.7	-418.0	220.4	472.5	0.00	0.00	0.00
2,520.0	14.22	152.70	2,463.5	-426.7	224.9	482.4	0.00	0.00	0.00
2,560.0	14.22	152.70	2,502.3	-435.4	229.4	492.2	0.00	0.00	0.00
2,600.0	14.22	152.70	2,541.1	-444.2	233.9	502.0	0.00	0.00	0.00
2,640.0	14.22	152.70	2,579.8	-452.9	238.5	511.8	0.00	0.00	0.00
2,680.0	14.22	152.70	2,618.6	-461.6	243.0	521.7	0.00	0.00	0.00
2,720.0	14.22	152.70	2,657.4	-470.4	247.5	531.5	0.00	0.00	0.00
2,760.0	14.22	152.70	2,696.2	-479.1	252.0	541.3	0.00	0.00	0.00
2,800.0	14.22	152.70	2,734.9	-487.8	256.5	551.1	0.00	0.00	0.00
2,840.0	14.22	152.70	2,773.7	-496.5	261.0	560.9	0.00	0.00	0.00
2,880.0	14.22	152.70	2,812.5	-505.3	265.5	570.8	0.00	0.00	0.00
2,920.0	14.22	152.70	2,851.3	-514.0	270.0	580.6	0.00	0.00	0.00
2,960.0	14.22	152.70	2,890.0	-522.7	274.5	590.4	0.00	0.00	0.00
3,000.0	14.22	152.70	2,928.8	-531.5	279.0	600.2	0.00	0.00	0.00
3,040.0	14.22	152.70	2,967.6	-540.2	283.5	610.1	0.00	0.00	0.00
3,080.0	14.22	152.70	3,006.4	-548.9	288.0	619.9	0.00	0.00	0.00
3,120.0	14.22	152.70	3,045.2	-557.6	292.5	629.7	0.00	0.00	0.00
3,160.0	14.22	152.70	3,083.9	-566.4	297.0	639.5	0.00	0.00	0.00
3,200.0	14.22	152.70	3,122.7	-575.1	301.5	649.3	0.00	0.00	0.00
3,240.0	14.22	152.70	3,161.5	-583.8	306.0	659.2	0.00	0.00	0.00
3,280.0	14.22	152.70	3,200.3	-592.6	310.5	669.0	0.00	0.00	0.00
3,320.0	14.22	152.70	3,239.0	-601.3	315.0	678.8	0.00	0.00	0.00
3,360.0	14.22	152.70	3,277.8	-610.0	319.5	688.6	0.00	0.00	0.00
3,400.0	14.22	152.70	3,316.6	-618.7	324.1	698.5	0.00	0.00	0.00
3,440.0	14.22	152.70	3,355.4	-627.5	328.6	708.3	0.00	0.00	0.00
3,480.0	14.22	152.70	3,394.1	-636.2	333.1	718.1	0.00	0.00	0.00
3,520.0	14.22	152.70	3,432.9	-644.9	337.6	727.9	0.00	0.00	0.00
3,560.0	14.22	152.70	3,471.7	-653.7	342.1	737.7	0.00	0.00	0.00
3,600.0	14.22	152.70	3,510.5	-662.4	346.6	747.6	0.00	0.00	0.00
3,640.0	14.22	152.70	3,549.2	-671.1	351.1	757.4	0.00	0.00	0.00
3,680.0	14.22	152.70	3,588.0	-679.8	355.6	767.2	0.00	0.00	0.00
3,720.0	14.22	152.70	3,626.8	-688.6	360.1	777.0	0.00	0.00	0.00
3,760.0	14.22	152.70	3,665.6	-697.3	364.6	786.9	0.00	0.00	0.00
3,800.0	14.22	152.70	3,704.3	-706.0	369.1	796.7	0.00	0.00	0.00
3,840.0	14.22	152.70	3,743.1	-714.8	373.6	806.5	0.00	0.00	0.00
3,880.0	14.22	152.70	3,781.9	-723.5	378.1	816.3	0.00	0.00	0.00
3,920.0	14.22	152.70	3,820.7	-732.2	382.6	826.2	0.00	0.00	0.00
3,960.0	14.22	152.70	3,859.4	-740.9	387.1	836.0	0.00	0.00	0.00
4,000.0	14.22	152.70	3,898.2	-749.7	391.6	845.8	0.00	0.00	0.00
4,040.0	14.22	152.70	3,937.0	-758.4	396.1	855.6	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Hudco 39-18
Company:	Anadarko, Weld County CO	TVD Reference:	WELL @ 4995.0ft (Original Well Elev)
Project:	SEC.18-T2N-R65W	MD Reference:	WELL @ 4995.0ft (Original Well Elev)
Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	North Reference:	True
Well:	Hudco 39-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-15-11)		

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)
4,080.0	14.22	152.70	3,975.8	-767.1	400.6	865.4	0.00	0.00	0.00
4,120.0	14.22	152.70	4,014.5	-775.9	405.1	875.3	0.00	0.00	0.00
4,160.0	14.22	152.70	4,053.3	-784.6	409.6	885.1	0.00	0.00	0.00
4,188.6	14.22	152.70	4,081.0	-790.8	412.9	892.1	0.00	0.00	0.00
PARKMAN									
4,200.0	14.22	152.70	4,092.1	-793.3	414.2	894.9	0.00	0.00	0.00
4,240.0	14.22	152.70	4,130.9	-802.0	418.7	904.7	0.00	0.00	0.00
4,280.0	14.22	152.70	4,169.6	-810.8	423.2	914.6	0.00	0.00	0.00
4,320.0	14.22	152.70	4,208.4	-819.5	427.7	924.4	0.00	0.00	0.00
4,360.0	14.22	152.70	4,247.2	-828.2	432.2	934.2	0.00	0.00	0.00
4,400.0	14.22	152.70	4,286.0	-837.0	436.7	944.0	0.00	0.00	0.00
4,410.9	14.22	152.70	4,296.5	-839.3	437.9	946.7	0.00	0.00	0.00
4,440.0	13.63	152.70	4,324.8	-845.6	441.1	953.7	2.00	-2.00	0.00
4,480.0	12.83	152.70	4,363.7	-853.7	445.3	962.9	2.00	-2.00	0.00
4,520.0	12.03	152.70	4,402.8	-861.3	449.3	971.5	2.00	-2.00	0.00
4,560.0	11.23	152.70	4,441.9	-868.5	453.0	979.5	2.00	-2.00	0.00
4,600.0	10.43	152.70	4,481.2	-875.2	456.4	987.1	2.00	-2.00	0.00
4,640.0	9.63	152.70	4,520.6	-881.4	459.6	994.0	2.00	-2.00	0.00
4,680.0	8.83	152.70	4,560.1	-887.1	462.6	1,000.4	2.00	-2.00	0.00
4,720.0	8.03	152.70	4,599.7	-892.3	465.2	1,006.3	2.00	-2.00	0.00
4,731.4	7.80	152.70	4,611.0	-893.7	466.0	1,007.9	2.00	-2.00	0.00
SUSSEX									
4,760.0	7.23	152.70	4,639.3	-897.0	467.7	1,011.6	2.00	-2.00	0.00
4,800.0	6.43	152.70	4,679.0	-901.3	469.9	1,016.4	2.00	-2.00	0.00
4,840.0	5.63	152.70	4,718.8	-905.0	471.8	1,020.6	2.00	-2.00	0.00
4,880.0	4.83	152.70	4,758.6	-908.2	473.5	1,024.2	2.00	-2.00	0.00
4,920.0	4.03	152.70	4,798.5	-911.0	474.9	1,027.3	2.00	-2.00	0.00
4,960.0	3.23	152.70	4,838.4	-913.2	476.0	1,029.9	2.00	-2.00	0.00
5,000.0	2.43	152.70	4,878.4	-915.0	477.0	1,031.8	2.00	-2.00	0.00
5,040.0	1.63	152.70	4,918.4	-916.2	477.6	1,033.3	2.00	-2.00	0.00
5,080.0	0.83	152.70	4,958.4	-917.0	478.0	1,034.1	2.00	-2.00	0.00
5,120.0	0.03	152.70	4,998.4	-917.3	478.1	1,034.4	2.00	-2.00	0.00
5,121.6	0.00	0.00	5,000.0	-917.3	478.1	1,034.4	2.00	-2.00	0.00
TARGET BHL 1210'FSL, 50'FEL									
5,160.0	0.00	0.00	5,038.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
5,200.0	0.00	0.00	5,078.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
5,240.0	0.00	0.00	5,118.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
5,280.0	0.00	0.00	5,158.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
5,320.0	0.00	0.00	5,198.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
5,360.0	0.00	0.00	5,238.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
5,400.0	0.00	0.00	5,278.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
5,440.0	0.00	0.00	5,318.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
5,480.0	0.00	0.00	5,358.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
5,520.0	0.00	0.00	5,398.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
5,560.0	0.00	0.00	5,438.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
5,600.0	0.00	0.00	5,478.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
5,640.0	0.00	0.00	5,518.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
5,680.0	0.00	0.00	5,558.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
5,720.0	0.00	0.00	5,598.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
5,760.0	0.00	0.00	5,638.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
5,800.0	0.00	0.00	5,678.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
5,840.0	0.00	0.00	5,718.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
5,880.0	0.00	0.00	5,758.4	-917.3	478.1	1,034.4	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Hudco 39-18
Company:	Anadarko, Weld County CO	TVD Reference:	WELL @ 4995.0ft (Original Well Elev)
Project:	SEC.18-T2N-R65W	MD Reference:	WELL @ 4995.0ft (Original Well Elev)
Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	North Reference:	True
Well:	Hudco 39-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-15-11)		

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)
5,920.0	0.00	0.00	5,798.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
5,960.0	0.00	0.00	5,838.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
6,000.0	0.00	0.00	5,878.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
6,040.0	0.00	0.00	5,918.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
6,080.0	0.00	0.00	5,958.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
6,120.0	0.00	0.00	5,998.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
6,160.0	0.00	0.00	6,038.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
6,200.0	0.00	0.00	6,078.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
6,240.0	0.00	0.00	6,118.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
6,280.0	0.00	0.00	6,158.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
6,320.0	0.00	0.00	6,198.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
6,360.0	0.00	0.00	6,238.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
6,400.0	0.00	0.00	6,278.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
6,440.0	0.00	0.00	6,318.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
6,480.0	0.00	0.00	6,358.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
6,520.0	0.00	0.00	6,398.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
6,560.0	0.00	0.00	6,438.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
6,600.0	0.00	0.00	6,478.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
6,640.0	0.00	0.00	6,518.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
6,680.0	0.00	0.00	6,558.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
6,720.0	0.00	0.00	6,598.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
6,760.0	0.00	0.00	6,638.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
6,800.0	0.00	0.00	6,678.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
6,840.0	0.00	0.00	6,718.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
6,880.0	0.00	0.00	6,758.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
6,920.0	0.00	0.00	6,798.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
6,960.0	0.00	0.00	6,838.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
7,000.0	0.00	0.00	6,878.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
7,040.0	0.00	0.00	6,918.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
7,080.0	0.00	0.00	6,958.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
7,120.0	0.00	0.00	6,998.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
7,160.0	0.00	0.00	7,038.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
7,200.0	0.00	0.00	7,078.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
7,212.6	0.00	0.00	7,091.0	-917.3	478.1	1,034.4	0.00	0.00	0.00
NOBRARA - TARGET CIRCLE 1210'FLS & 50'FEL									
7,240.0	0.00	0.00	7,118.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
7,280.0	0.00	0.00	7,158.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
7,320.0	0.00	0.00	7,198.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
7,360.0	0.00	0.00	7,238.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
7,400.0	0.00	0.00	7,278.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
7,440.0	0.00	0.00	7,318.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
7,480.0	0.00	0.00	7,358.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
7,482.6	0.00	0.00	7,361.0	-917.3	478.1	1,034.4	0.00	0.00	0.00
CODELL									
7,520.0	0.00	0.00	7,398.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
7,560.0	0.00	0.00	7,438.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
7,575.6	0.00	0.00	7,454.0	-917.3	478.1	1,034.4	0.00	0.00	0.00
GREENHORN									
7,600.0	0.00	0.00	7,478.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
7,640.0	0.00	0.00	7,518.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
7,680.0	0.00	0.00	7,558.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
7,720.0	0.00	0.00	7,598.4	-917.3	478.1	1,034.4	0.00	0.00	0.00
7,760.0	0.00	0.00	7,638.4	-917.3	478.1	1,034.4	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Hudco 39-18
Company:	Anadarko, Weld County CO	TVD Reference:	WELL @ 4995.0ft (Original Well Elev)
Project:	SEC.18-T2N-R65W	MD Reference:	WELL @ 4995.0ft (Original Well Elev)
Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	North Reference:	True
Well:	Hudco 39-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-15-11)		

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)	
7,800.0	0.00	0.00	7,678.4	-917.3	478.1	1,034.4	0.00	0.00	0.00	
7,840.0	0.00	0.00	7,718.4	-917.3	478.1	1,034.4	0.00	0.00	0.00	
7,880.0	0.00	0.00	7,758.4	-917.3	478.1	1,034.4	0.00	0.00	0.00	
7,920.0	0.00	0.00	7,798.4	-917.3	478.1	1,034.4	0.00	0.00	0.00	
7,937.6	0.00	0.00	7,816.0	-917.3	478.1	1,034.4	0.00	0.00	0.00	
J-SAND										
7,960.0	0.00	0.00	7,838.4	-917.3	478.1	1,034.4	0.00	0.00	0.00	
8,000.0	0.00	0.00	7,878.4	-917.3	478.1	1,034.4	0.00	0.00	0.00	
8,040.0	0.00	0.00	7,918.4	-917.3	478.1	1,034.4	0.00	0.00	0.00	
8,080.0	0.00	0.00	7,958.4	-917.3	478.1	1,034.4	0.00	0.00	0.00	
8,087.6	0.00	0.00	7,966.0	-917.3	478.1	1,034.4	0.00	0.00	0.00	
HARD LINES 50'E OF BHL										

Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude	
709' MD = 25' Radius	0.00	0.00	700.0	-50.3	-0.3	1,293,782.10	3,223,915.47	40.137050	-104.699120	
- hit/miss target										
- Shape										
- plan misses target center by 26.9ft at 702.6ft MD (700.0 TVD, -37.1 N, 23.2 E)										
- Circle (radius 25.0)										
TARGET CIRCLE 121	0.00	0.00	7,091.0	-917.3	478.1	1,292,919.49	3,224,401.67	40.134670	-104.697409	
- plan hits target center										
- Circle (radius 50.0)										
TARGET BHL 1210'F:	0.00	0.00	5,000.0	-917.3	478.1	1,292,919.49	3,224,401.67	40.134670	-104.697409	
- plan hits target center										
- Point										
HARD LINES 50'E OF	0.00	0.00	7,966.0	-1,017.3	528.1	1,292,819.93	3,224,452.54	40.134395	-104.697230	
- plan misses target center by 111.8ft at 8087.6ft MD (7966.0 TVD, -917.3 N, 478.1 E)										
- Polygon										
Point 1			7,966.0	0.0	0.0	1,292,819.93	3,224,452.54			
Point 2			7,966.0	200.0	0.0	1,293,019.92	3,224,450.73			

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")		
907.1	900.0	8 5/8"	8-5/8	12-1/4		

Database:	Landmark	Local Co-ordinate Reference:	Well Hudco 39-18
Company:	Anadarko, Weld County CO	TVD Reference:	WELL @ 4995.0ft (Original Well Elev)
Project:	SEC.18-T2N-R65W	MD Reference:	WELL @ 4995.0ft (Original Well Elev)
Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	North Reference:	True
Well:	Hudco 39-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-15-11)		

Formations						
	Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	4,188.6	4,081.0	PARKMAN		0.00	
	4,731.4	4,611.0	SUSSEX		0.00	
	7,212.6	7,091.0	NIOBRARA		0.00	
	7,482.6	7,361.0	CODELL		0.00	
	7,575.6	7,454.0	GREENHORN		0.00	
	7,937.6	7,816.0	J-SAND		0.00	



Directional

Anadarko, Weld County CO

SEC.18-T2N-R65W

Hudco 9-18 Pad Sec.18-T2N-R65W

Hudco 39-18

Wellbore #1

Plan #1 (3-15-11)

Anticollision Report

17 March, 2011



Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Hudco 39-18
Project:	SEC.18-T2N-R65W	TVD Reference:	WELL @ 4995.0ft (Original Well Elev)
Reference Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	MD Reference:	WELL @ 4995.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hudco 39-18	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 (3-15-11)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (3-15-11)		
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 3/17/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	8,087.6	Plan #1 (3-15-11) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Hudco 9-18 Pad Sec.18-T2N-R65W						
Hudco 40-18 - Wellbore #1 - Plan #1 (3-15-11)	200.3	201.3	16.0	15.3	23.634	CC, ES
Hudco 40-18 - Wellbore #1 - Plan #1 (3-15-11)	400.0	400.7	23.0	21.5	14.808	SF
Hudco 9-18 (Exist.) - Wellbore #1 - Design #1	703.0	709.4	26.9	23.8	8.657	CC, ES, SF

Offset Design Hudco 9-18 Pad Sec.18-T2N-R65W - Hudco 40-18 - Wellbore #1 - Plan #1 (3-15-11)											Offset Site Error:		0.0 ft
Survey Program: 0-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)		
0.0	0.0	1.0	1.0	0.0	0.0	-56.92	8.7	-13.4	16.0	16.0	0.00	N/A	
100.0	100.0	101.0	101.0	0.1	0.1	-56.92	8.7	-13.4	16.0	15.8	0.23	70.558	
200.0	200.0	201.0	201.0	0.3	0.3	-56.92	8.7	-13.4	16.0	15.3	0.68	23.676	
200.3	200.3	201.3	201.3	0.3	0.3	-56.92	8.7	-13.4	16.0	15.3	0.68	23.634	CC, ES
300.0	300.0	301.0	301.0	0.5	0.6	165.97	10.0	-12.2	17.4	16.3	1.11	15.735	
400.0	399.8	400.7	400.6	0.8	0.8	-178.76	13.4	-8.8	23.0	21.5	1.55	14.808	SF
450.0	449.7	450.5	450.3	0.9	0.9	-173.60	15.3	-7.0	27.6	25.8	1.78	15.454	
500.0	499.5	500.1	499.9	1.0	1.0	-171.98	17.1	-5.1	33.1	31.1	2.01	16.452	
600.0	598.7	599.1	598.7	1.3	1.3	-170.15	20.8	-1.5	47.1	44.6	2.48	18.991	
700.0	697.5	697.5	697.0	1.6	1.5	-169.54	24.4	2.1	64.7	61.7	2.95	21.890	
800.0	795.7	795.3	794.6	2.0	1.7	-169.54	28.1	5.7	85.7	82.2	3.43	24.963	
900.0	893.1	892.3	891.4	2.5	2.0	-169.81	31.7	9.3	110.1	106.2	3.91	28.123	
914.2	906.9	906.0	905.1	2.5	2.0	-169.86	32.2	9.8	113.8	109.8	3.98	28.577	
1,000.0	990.1	988.7	987.7	2.9	2.2	-169.75	35.3	12.9	136.6	132.2	4.40	31.037	
1,100.0	1,087.0	1,082.9	1,081.7	3.4	2.4	-169.28	39.6	17.2	163.7	158.8	4.90	33.394	
1,200.0	1,183.9	1,175.8	1,174.2	4.0	2.7	-168.13	46.0	23.5	192.4	186.9	5.43	35.416	
1,300.0	1,280.9	1,267.6	1,265.3	4.5	3.0	-166.58	54.4	31.9	222.6	216.6	5.99	37.179	
1,400.0	1,377.8	1,359.5	1,355.9	5.0	3.3	-164.84	64.8	42.1	254.5	248.0	6.57	38.719	
1,500.0	1,474.8	1,453.8	1,449.0	5.5	3.6	-163.32	75.9	53.2	287.0	279.9	7.18	39.999	
1,600.0	1,571.7	1,548.1	1,542.0	6.0	3.9	-162.10	87.1	64.2	319.7	311.9	7.79	41.059	
1,700.0	1,668.6	1,642.5	1,635.0	6.6	4.2	-161.12	98.2	75.3	352.4	344.0	8.40	41.955	
1,800.0	1,765.6	1,736.8	1,728.0	7.1	4.6	-160.30	109.4	86.3	385.2	376.2	9.02	42.718	
1,900.0	1,862.5	1,831.1	1,821.0	7.6	4.9	-159.60	120.5	97.4	418.1	408.5	9.64	43.372	
2,000.0	1,959.4	1,925.5	1,914.0	8.1	5.3	-159.01	131.6	108.4	451.0	440.8	10.26	43.940	

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

Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Hudco 39-18
Project:	SEC.18-T2N-R65W	TVD Reference:	WELL @ 4995.0ft (Original Well Elev)
Reference Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	MD Reference:	WELL @ 4995.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hudco 39-18	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 (3-15-11)	Offset TVD Reference:	Offset Datum

Offset Design												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	
2,100.0	2,056.4	2,019.8	2,007.1	8.7	5.6	-158.50	142.8	119.4	484.0	473.1	10.89	44.437	
2,200.0	2,153.3	2,114.1	2,100.1	9.2	5.9	-158.06	153.9	130.5	517.0	505.5	11.52	44.875	
2,300.0	2,250.3	2,208.4	2,193.1	9.7	6.3	-157.67	165.1	141.5	550.0	537.8	12.15	45.263	
2,400.0	2,347.2	2,302.8	2,286.1	10.2	6.6	-157.32	176.2	152.6	583.0	570.3	12.78	45.610	
2,500.0	2,444.1	2,397.1	2,379.1	10.8	7.0	-157.01	187.3	163.6	616.1	602.7	13.42	45.921	
2,600.0	2,541.1	2,491.4	2,472.1	11.3	7.3	-156.73	198.5	174.6	649.2	635.1	14.05	46.202	
2,700.0	2,638.0	2,585.8	2,565.2	11.8	7.7	-156.48	209.6	185.7	682.2	667.5	14.69	46.457	
2,800.0	2,734.9	2,680.1	2,658.2	12.3	8.1	-156.25	220.8	196.7	715.3	700.0	15.32	46.689	
2,900.0	2,831.9	2,774.4	2,751.2	12.9	8.4	-156.04	231.9	207.8	748.4	732.5	15.96	46.901	
3,000.0	2,928.8	2,868.8	2,844.2	13.4	8.8	-155.85	243.0	218.8	781.5	764.9	16.59	47.095	
3,100.0	3,025.8	2,963.1	2,937.2	13.9	9.1	-155.67	254.2	229.8	814.6	797.4	17.23	47.274	
3,200.0	3,122.7	3,057.4	3,030.2	14.5	9.5	-155.51	265.3	240.9	847.8	829.9	17.87	47.439	
3,300.0	3,219.6	3,151.7	3,123.3	15.0	9.8	-155.36	276.5	251.9	880.9	862.4	18.51	47.592	
3,400.0	3,316.6	3,246.1	3,216.3	15.5	10.2	-155.22	287.6	263.0	914.0	894.9	19.15	47.734	
3,500.0	3,413.5	3,340.4	3,309.3	16.0	10.5	-155.09	298.7	274.0	947.2	927.4	19.79	47.867	
3,600.0	3,510.5	3,434.7	3,402.3	16.6	10.9	-154.97	309.9	285.1	980.3	959.9	20.43	47.990	
3,700.0	3,607.4	3,529.1	3,495.3	17.1	11.2	-154.86	321.0	296.1	1,013.4	992.4	21.07	48.105	
3,800.0	3,704.3	3,623.4	3,588.3	17.6	11.6	-154.76	332.2	307.1	1,046.6	1,024.9	21.71	48.213	
3,900.0	3,801.3	3,717.7	3,681.4	18.2	12.0	-154.66	343.3	318.2	1,079.7	1,057.4	22.35	48.314	
4,000.0	3,898.2	3,812.1	3,774.4	18.7	12.3	-154.57	354.4	329.2	1,112.9	1,089.9	22.99	48.409	
4,100.0	3,995.1	3,906.4	3,867.4	19.2	12.7	-154.48	365.6	340.3	1,146.1	1,122.4	23.63	48.499	
4,200.0	4,092.1	4,000.7	3,960.4	19.7	13.0	-154.40	376.7	351.3	1,179.2	1,154.9	24.27	48.583	
4,300.0	4,189.0	4,095.0	4,053.4	20.3	13.4	-154.32	387.9	362.3	1,212.4	1,187.5	24.91	48.663	
4,400.0	4,286.0	4,189.4	4,146.4	20.8	13.8	-154.24	399.0	373.4	1,245.5	1,220.0	25.56	48.738	
4,410.9	4,296.5	4,199.6	4,156.6	20.9	13.8	-154.24	400.2	374.6	1,249.1	1,223.5	25.63	48.746	
4,500.0	4,383.2	4,284.1	4,239.8	21.2	14.1	-154.40	410.2	384.5	1,277.5	1,251.3	26.24	48.687	
4,600.0	4,481.2	4,379.7	4,334.1	21.6	14.5	-154.50	421.5	395.7	1,306.5	1,279.6	26.87	48.620	
4,700.0	4,579.9	4,476.2	4,429.2	21.8	14.8	-154.51	432.9	407.0	1,332.5	1,305.0	27.48	48.496	
4,800.0	4,679.0	4,573.9	4,525.6	22.1	15.2	-154.43	444.4	418.4	1,355.5	1,327.4	28.05	48.320	
4,900.0	4,778.6	4,720.1	4,670.3	22.3	15.6	-154.21	459.0	432.8	1,373.6	1,345.0	28.62	47.988	
5,000.0	4,878.4	4,869.0	4,818.6	22.4	15.9	-154.07	468.4	442.2	1,385.2	1,356.1	29.09	47.612	
5,100.0	4,978.4	5,019.3	4,968.9	22.5	16.2	-154.02	472.4	446.1	1,390.0	1,360.5	29.46	47.179	
5,121.6	5,000.0	5,051.5	5,001.0	22.6	16.2	-1.31	472.5	446.2	1,390.2	1,360.6	29.53	47.074	
5,200.0	5,078.4	5,129.8	5,079.4	22.6	16.3	-1.31	472.5	446.2	1,390.2	1,360.4	29.76	46.704	
5,300.0	5,178.4	5,229.8	5,179.4	22.7	16.5	-1.31	472.5	446.2	1,390.2	1,360.1	30.07	46.237	
5,400.0	5,278.4	5,329.8	5,279.4	22.8	16.6	-1.31	472.5	446.2	1,390.2	1,359.8	30.37	45.773	
5,500.0	5,378.4	5,429.8	5,379.4	22.9	16.8	-1.31	472.5	446.2	1,390.2	1,359.5	30.68	45.313	
5,600.0	5,478.4	5,529.8	5,479.4	23.0	16.9	-1.31	472.5	446.2	1,390.2	1,359.2	30.99	44.857	
5,700.0	5,578.4	5,629.8	5,579.4	23.1	17.1	-1.31	472.5	446.2	1,390.2	1,358.8	31.31	44.405	
5,800.0	5,678.4	5,729.8	5,679.4	23.2	17.2	-1.31	472.5	446.2	1,390.2	1,358.5	31.62	43.959	
5,900.0	5,778.4	5,829.8	5,779.4	23.3	17.4	-1.31	472.5	446.2	1,390.2	1,358.2	31.95	43.517	
6,000.0	5,878.4	5,929.8	5,879.4	23.4	17.6	-1.31	472.5	446.2	1,390.2	1,357.9	32.27	43.079	
6,100.0	5,978.4	6,029.8	5,979.4	23.5	17.7	-1.31	472.5	446.2	1,390.2	1,357.6	32.60	42.647	
6,200.0	6,078.4	6,129.8	6,079.4	23.6	17.9	-1.31	472.5	446.2	1,390.2	1,357.2	32.93	42.219	
6,300.0	6,178.4	6,229.8	6,179.4	23.7	18.0	-1.31	472.5	446.2	1,390.2	1,356.9	33.26	41.797	
6,400.0	6,278.4	6,329.8	6,279.4	23.8	18.2	-1.31	472.5	446.2	1,390.2	1,356.6	33.60	41.379	
6,500.0	6,378.4	6,429.8	6,379.4	23.9	18.4	-1.31	472.5	446.2	1,390.2	1,356.2	33.93	40.967	
6,600.0	6,478.4	6,529.8	6,479.4	24.0	18.5	-1.31	472.5	446.2	1,390.2	1,355.9	34.27	40.559	
6,700.0	6,578.4	6,629.8	6,579.4	24.1	18.7	-1.31	472.5	446.2	1,390.2	1,355.5	34.62	40.157	
6,800.0	6,678.4	6,729.8	6,679.4	24.2	18.9	-1.31	472.5	446.2	1,390.2	1,355.2	34.96	39.760	
6,900.0	6,778.4	6,829.8	6,779.4	24.4	19.0	-1.31	472.5	446.2	1,390.2	1,354.8	35.31	39.369	
7,000.0	6,878.4	6,929.8	6,879.4	24.5	19.2	-1.31	472.5	446.2	1,390.2	1,354.5	35.66	38.982	

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

Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Hudco 39-18
Project:	SEC.18-T2N-R65W	TVD Reference:	WELL @ 4995.0ft (Original Well Elev)
Reference Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	MD Reference:	WELL @ 4995.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hudco 39-18	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 (3-15-11)	Offset TVD Reference:	Offset Datum

Offset Design													Hudco 9-18 Pad Sec.18-T2N-R65W - Hudco 40-18 - Wellbore #1 - Plan #1 (3-15-11)		Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft		
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)						
7,100.0	6,978.4	7,029.8	6,979.4	24.6	19.4	-1.31	472.5	446.2	1,390.2	1,354.1	36.01	38.601					
7,200.0	7,078.4	7,129.8	7,079.4	24.7	19.6	-1.31	472.5	446.2	1,390.2	1,353.8	36.37	38.225					
7,300.0	7,178.4	7,229.8	7,179.4	24.8	19.7	-1.31	472.5	446.2	1,390.2	1,353.4	36.72	37.854					
7,400.0	7,278.4	7,329.8	7,279.4	25.0	19.9	-1.31	472.5	446.2	1,390.2	1,353.1	37.08	37.488					
7,500.0	7,378.4	7,429.8	7,379.4	25.1	20.1	-1.31	472.5	446.2	1,390.2	1,352.7	37.44	37.127					
7,600.0	7,478.4	7,529.8	7,479.4	25.2	20.3	-1.31	472.5	446.2	1,390.2	1,352.3	37.81	36.771					
7,621.8	7,500.2	7,551.7	7,501.2	25.2	20.3	-1.31	472.5	446.2	1,390.2	1,352.3	37.88	36.694					
7,700.0	7,578.4	7,572.5	7,522.0	25.3	20.3	-1.31	472.5	446.2	1,391.3	1,353.3	38.06	36.558					
7,800.0	7,678.4	7,572.5	7,522.0	25.5	20.3	-1.31	472.5	446.2	1,399.0	1,360.8	38.23	36.595					
7,900.0	7,778.4	7,572.5	7,522.0	25.6	20.3	-1.31	472.5	446.2	1,413.8	1,375.4	38.40	36.814					
8,000.0	7,878.4	7,572.5	7,522.0	25.7	20.3	-1.31	472.5	446.2	1,435.3	1,396.8	38.58	37.207					
8,087.6	7,966.0	7,572.5	7,522.0	25.8	20.3	-1.31	472.5	446.2	1,459.6	1,420.9	38.73	37.687					

Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Hudco 39-18
Project:	SEC.18-T2N-R65W	TVD Reference:	WELL @ 4995.0ft (Original Well Elev)
Reference Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	MD Reference:	WELL @ 4995.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hudco 39-18	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 (3-15-11)	Offset TVD Reference:	Offset Datum

Offset Design Hudco 9-18 Pad Sec.18-T2N-R65W - Hudco 9-18 (Exist.) - Wellbore #1 - Design #1													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		
0.0	0.0	9.0	9.0	0.0	0.0	-179.68	-50.3	-0.3	50.3	50.3	0.01	4,882.601		
100.0	100.0	109.0	109.0	0.1	0.1	-179.68	-50.3	-0.3	50.3	50.0	0.24	205.202		
200.0	200.0	209.0	209.0	0.3	0.4	-179.68	-50.3	-0.3	50.3	49.6	0.69	72.385		
300.0	300.0	309.0	309.0	0.5	0.6	36.52	-50.3	-0.3	48.9	47.7	1.13	43.319		
400.0	399.8	408.8	408.8	0.8	0.8	40.56	-50.3	-0.3	44.8	43.2	1.56	28.628		
450.0	449.7	458.7	458.7	0.9	0.9	44.09	-50.3	-0.3	41.9	40.1	1.79	23.391		
500.0	499.5	508.5	508.5	1.0	1.0	47.03	-50.3	-0.3	38.5	36.5	2.02	19.033		
600.0	598.7	607.7	607.7	1.3	1.3	60.74	-50.3	-0.3	31.2	28.7	2.52	12.365		
700.0	697.5	706.5	706.5	1.6	1.5	88.95	-50.3	-0.3	26.9	23.8	3.09	8.708		
703.0	700.4	709.4	709.4	1.6	1.5	90.00	-50.3	-0.3	26.9	23.8	3.11	8.657 CC, ES, SF		
800.0	795.7	804.7	804.7	2.0	1.7	123.06	-50.3	-0.3	32.5	28.9	3.60	9.025		
900.0	893.1	902.1	902.1	2.5	1.9	144.80	-50.3	-0.3	48.5	44.5	4.02	12.083		
914.2	906.9	915.9	915.9	2.5	1.9	146.89	-50.3	-0.3	51.4	47.4	4.08	12.617		
1,000.0	990.1	999.1	999.1	2.9	2.1	156.28	-50.3	-0.3	70.1	65.7	4.44	15.800		
1,100.0	1,087.0	1,096.0	1,096.0	3.4	2.4	162.35	-50.3	-0.3	93.2	88.4	4.89	19.084		
1,200.0	1,183.9	1,192.9	1,192.9	4.0	2.6	165.99	-50.3	-0.3	116.9	111.6	5.35	21.871		
1,300.0	1,280.9	1,289.9	1,289.9	4.5	2.8	168.41	-50.3	-0.3	140.9	135.1	5.82	24.229		
1,400.0	1,377.8	1,386.8	1,386.8	5.0	3.0	170.12	-50.3	-0.3	165.1	158.8	6.29	26.238		
1,500.0	1,474.8	1,483.8	1,483.8	5.5	3.2	171.39	-50.3	-0.3	189.3	182.6	6.77	27.963		
1,600.0	1,571.7	1,580.7	1,580.7	6.0	3.4	172.38	-50.3	-0.3	213.7	206.4	7.25	29.457		
1,700.0	1,668.6	1,677.6	1,677.6	6.6	3.7	173.16	-50.3	-0.3	238.0	230.3	7.74	30.763		
1,800.0	1,765.6	1,774.6	1,774.6	7.1	3.9	173.80	-50.3	-0.3	262.4	254.2	8.22	31.912		
1,900.0	1,862.5	1,871.5	1,871.5	7.6	4.1	174.33	-50.3	-0.3	286.9	278.2	8.71	32.930		
2,000.0	1,959.4	1,968.4	1,968.4	8.1	4.3	174.78	-50.3	-0.3	311.3	302.1	9.20	33.839		
2,100.0	2,056.4	2,065.4	2,065.4	8.7	4.5	175.16	-50.3	-0.3	335.8	326.1	9.69	34.654		
2,200.0	2,153.3	2,162.3	2,162.3	9.2	4.7	175.49	-50.3	-0.3	360.3	350.1	10.18	35.389		
2,300.0	2,250.3	2,259.3	2,259.3	9.7	5.0	175.78	-50.3	-0.3	384.8	374.1	10.67	36.055		
2,400.0	2,347.2	2,356.2	2,356.2	10.2	5.2	176.03	-50.3	-0.3	409.3	398.1	11.16	36.662		
2,500.0	2,444.1	2,453.1	2,453.1	10.8	5.4	176.25	-50.3	-0.3	433.8	422.1	11.66	37.216		
2,600.0	2,541.1	2,550.1	2,550.1	11.3	5.6	176.45	-50.3	-0.3	458.3	446.1	12.15	37.725		
2,700.0	2,638.0	2,647.0	2,647.0	11.8	5.8	176.63	-50.3	-0.3	482.8	470.1	12.64	38.193		
2,800.0	2,734.9	2,743.9	2,743.9	12.3	6.1	176.80	-50.3	-0.3	507.3	494.2	13.13	38.625		
2,900.0	2,831.9	2,840.9	2,840.9	12.9	6.3	176.94	-50.3	-0.3	531.8	518.2	13.63	39.026		
3,000.0	2,928.8	2,937.8	2,937.8	13.4	6.5	177.08	-50.3	-0.3	556.4	542.2	14.12	39.397		
3,100.0	3,025.8	3,034.8	3,034.8	13.9	6.7	177.20	-50.3	-0.3	580.9	566.3	14.62	39.744		
3,200.0	3,122.7	3,131.7	3,131.7	14.5	6.9	177.32	-50.3	-0.3	605.4	590.3	15.11	40.067		
3,300.0	3,219.6	3,228.6	3,228.6	15.0	7.1	177.42	-50.3	-0.3	629.9	614.3	15.60	40.369		
3,400.0	3,316.6	3,325.6	3,325.6	15.5	7.4	177.52	-50.3	-0.3	654.5	638.4	16.10	40.652		
3,500.0	3,413.5	3,422.5	3,422.5	16.0	7.6	177.61	-50.3	-0.3	679.0	662.4	16.59	40.918		
3,600.0	3,510.5	3,519.5	3,519.5	16.6	7.8	177.69	-50.3	-0.3	703.6	686.5	17.09	41.169		
3,700.0	3,607.4	3,616.4	3,616.4	17.1	8.0	177.77	-50.3	-0.3	728.1	710.5	17.58	41.404		
3,800.0	3,704.3	3,713.3	3,713.3	17.6	8.2	177.84	-50.3	-0.3	752.6	734.6	18.08	41.627		
3,900.0	3,801.3	3,810.3	3,810.3	18.2	8.5	177.91	-50.3	-0.3	777.2	758.6	18.58	41.838		
4,000.0	3,898.2	3,907.2	3,907.2	18.7	8.7	177.97	-50.3	-0.3	801.7	782.6	19.07	42.037		
4,100.0	3,995.1	4,004.1	4,004.1	19.2	8.9	178.03	-50.3	-0.3	826.3	806.7	19.57	42.226		
4,200.0	4,092.1	4,101.1	4,101.1	19.7	9.1	178.09	-50.3	-0.3	850.8	830.7	20.06	42.405		
4,300.0	4,189.0	4,198.0	4,198.0	20.3	9.3	178.14	-50.3	-0.3	875.3	854.8	20.56	42.576		
4,400.0	4,286.0	4,295.0	4,295.0	20.8	9.5	178.19	-50.3	-0.3	899.9	878.8	21.06	42.738		
4,410.9	4,296.5	4,305.5	4,305.5	20.9	9.6	178.20	-50.3	-0.3	902.6	881.4	21.11	42.755		
4,500.0	4,383.2	4,392.2	4,392.2	21.2	9.8	178.25	-50.3	-0.3	923.1	901.5	21.59	42.760		
4,600.0	4,481.2	4,490.2	4,490.2	21.6	10.0	178.30	-50.3	-0.3	942.9	920.8	22.07	42.719		
4,700.0	4,579.9	4,588.9	4,588.9	21.8	10.2	178.34	-50.3	-0.3	959.3	936.8	22.52	42.588		

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

Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Hudco 39-18
Project:	SEC.18-T2N-R65W	TVD Reference:	WELL @ 4995.0ft (Original Well Elev)
Reference Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	MD Reference:	WELL @ 4995.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hudco 39-18	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 (3-15-11)	Offset TVD Reference:	Offset Datum

Offset Design Hudco 9-18 Pad Sec.18-T2N-R65W - Hudco 9-18 (Exist.) - Wellbore #1 - Design #1												Offset Site Error:	0.0ft
Survey Program: 0-MWD												Offset Well Error:	0.0ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,800.0	4,679.0	4,688.0	4,688.0	22.1	10.4	178.37	-50.3	-0.3	972.2	949.3	22.94	42.374	
4,900.0	4,778.6	4,787.6	4,787.6	22.3	10.6	178.39	-50.3	-0.3	981.7	958.3	23.33	42.083	
5,000.0	4,878.4	4,887.4	4,887.4	22.4	10.9	178.40	-50.3	-0.3	987.7	964.0	23.67	41.718	
5,100.0	4,978.4	4,987.4	4,987.4	22.5	11.1	178.41	-50.3	-0.3	990.2	966.2	23.99	41.282	
5,121.6	5,000.0	5,009.0	5,009.0	22.6	11.1	-28.89	-50.3	-0.3	990.2	966.2	24.05	41.173	
5,200.0	5,078.4	5,087.4	5,087.4	22.6	11.3	-28.89	-50.3	-0.3	990.2	965.9	24.36	40.657	
5,300.0	5,178.4	5,187.4	5,187.4	22.7	11.5	-28.89	-50.3	-0.3	990.2	965.5	24.73	40.038	
5,400.0	5,278.4	5,287.4	5,287.4	22.8	11.8	-28.89	-50.3	-0.3	990.2	965.1	25.11	39.434	
5,500.0	5,378.4	5,387.4	5,387.4	22.9	12.0	-28.89	-50.3	-0.3	990.2	964.8	25.49	38.845	
5,600.0	5,478.4	5,487.4	5,487.4	23.0	12.2	-28.89	-50.3	-0.3	990.2	964.4	25.87	38.271	
5,700.0	5,578.4	5,587.4	5,587.4	23.1	12.4	-28.89	-50.3	-0.3	990.2	964.0	26.26	37.710	
5,800.0	5,678.4	5,687.4	5,687.4	23.2	12.7	-28.89	-50.3	-0.3	990.2	963.6	26.65	37.164	
5,900.0	5,778.4	5,787.4	5,787.4	23.3	12.9	-28.89	-50.3	-0.3	990.2	963.2	27.03	36.630	
6,000.0	5,878.4	5,887.4	5,887.4	23.4	13.1	-28.89	-50.3	-0.3	990.2	962.8	27.42	36.110	
6,100.0	5,978.4	5,987.4	5,987.4	23.5	13.3	-28.89	-50.3	-0.3	990.2	962.4	27.81	35.602	
6,200.0	6,078.4	6,087.4	6,087.4	23.6	13.6	-28.89	-50.3	-0.3	990.2	962.0	28.21	35.106	
6,300.0	6,178.4	6,187.4	6,187.4	23.7	13.8	-28.89	-50.3	-0.3	990.2	961.6	28.60	34.622	
6,400.0	6,278.4	6,287.4	6,287.4	23.8	14.0	-28.89	-50.3	-0.3	990.2	961.2	29.00	34.149	
6,500.0	6,378.4	6,387.4	6,387.4	23.9	14.2	-28.89	-50.3	-0.3	990.2	960.8	29.39	33.688	
6,600.0	6,478.4	6,487.4	6,487.4	24.0	14.5	-28.89	-50.3	-0.3	990.2	960.5	29.79	33.237	
6,700.0	6,578.4	6,587.4	6,587.4	24.1	14.7	-28.89	-50.3	-0.3	990.2	960.1	30.19	32.797	
6,800.0	6,678.4	6,687.4	6,687.4	24.2	14.9	-28.89	-50.3	-0.3	990.2	959.6	30.59	32.367	
6,900.0	6,778.4	6,787.4	6,787.4	24.4	15.1	-28.89	-50.3	-0.3	990.2	959.2	31.00	31.947	
7,000.0	6,878.4	6,887.4	6,887.4	24.5	15.4	-28.89	-50.3	-0.3	990.2	958.8	31.40	31.536	
7,100.0	6,978.4	6,987.4	6,987.4	24.6	15.6	-28.89	-50.3	-0.3	990.2	958.4	31.81	31.135	
7,200.0	7,078.4	7,087.4	7,087.4	24.7	15.8	-28.89	-50.3	-0.3	990.2	958.0	32.21	30.742	
7,300.0	7,178.4	7,187.4	7,187.4	24.8	16.0	-28.89	-50.3	-0.3	990.2	957.6	32.62	30.359	
7,400.0	7,278.4	7,287.4	7,287.4	25.0	16.3	-28.89	-50.3	-0.3	990.2	957.2	33.03	29.984	
7,500.0	7,378.4	7,387.4	7,387.4	25.1	16.5	-28.89	-50.3	-0.3	990.2	956.8	33.43	29.617	
7,600.0	7,478.4	7,487.4	7,487.4	25.2	16.7	-28.89	-50.3	-0.3	990.2	956.4	33.84	29.259	
7,700.0	7,578.4	7,587.4	7,587.4	25.3	16.9	-28.89	-50.3	-0.3	990.2	956.0	34.26	28.908	
7,800.0	7,678.4	7,687.4	7,687.4	25.5	17.2	-28.89	-50.3	-0.3	990.2	955.6	34.67	28.564	
7,900.0	7,778.4	7,787.4	7,787.4	25.6	17.4	-28.89	-50.3	-0.3	990.2	955.2	35.08	28.228	
8,000.0	7,878.4	7,887.4	7,887.4	25.7	17.6	-28.89	-50.3	-0.3	990.2	954.8	35.49	27.900	
8,054.7	7,933.0	7,942.0	7,942.0	25.8	17.7	-28.89	-50.3	-0.3	990.2	954.5	35.72	27.723	
8,087.6	7,966.0	7,965.0	7,965.0	25.8	17.8	-28.89	-50.3	-0.3	990.3	954.5	35.83	27.636	

Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Hudco 39-18
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Reference Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	MD Reference:	WELL @ 4995.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hudco 39-18	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 (3-15-11)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4995.0ft (Original Well Elev) Coordinates are relative to: Hudco 39-18
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 0.52°



Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Hudco 39-18
Project:	SEC.18-T2N-R65W	TVD Reference:	WELL @ 4995.0ft (Original Well Elev)
Reference Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	MD Reference:	WELL @ 4995.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hudco 39-18	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 (3-15-11)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4995.0ft (Original Well Elev) Coordinates are relative to: Hudco 39-18
 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: 0.52°

