

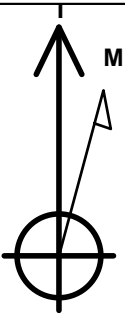
PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: Alm 33W-404

Surface Location: Alm 33V-HZ Pad South Sec.33-T7N-R65W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4790.0
+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1438664.90 3233475.49 40.534500 -104.660020
Original Well Elev WELL @ 4805.0ft (Original Well Elev)

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape Point
BHL 2527'FNL & 500'FWL	7177.0	-1158.1	-4431.0	Point

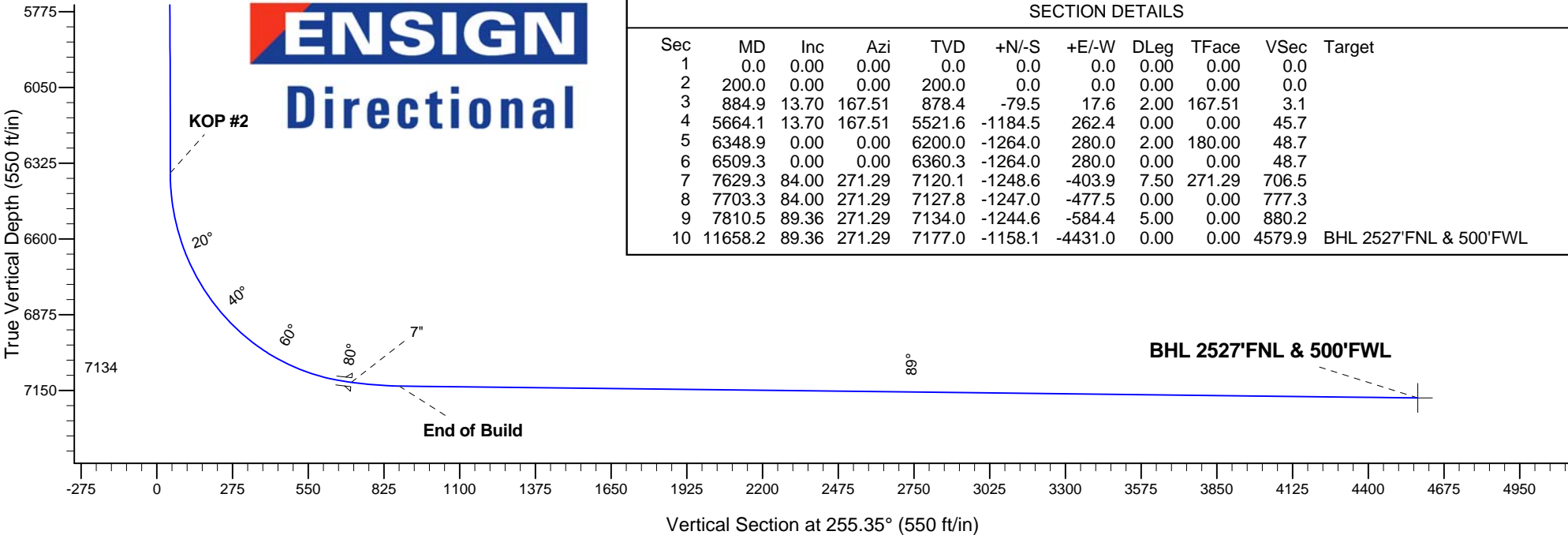
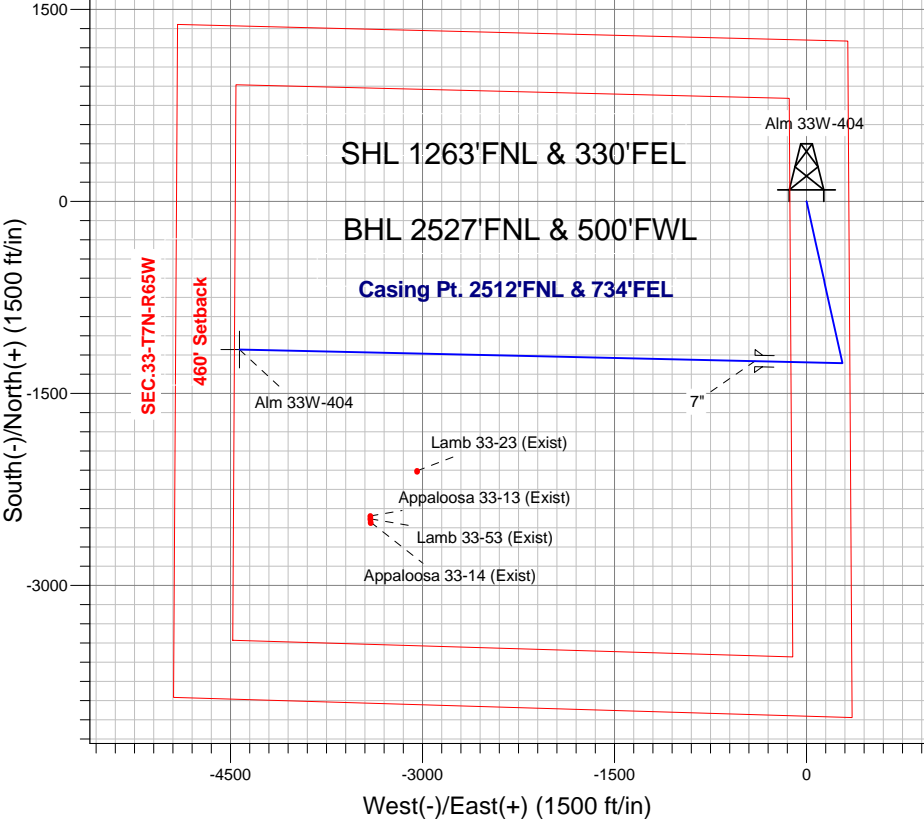


Azimuths to True North
Magnetic North: 8.59°
Magnetic Field
Strength: 53031.1nT
Dip Angle: 67.12°
Date: 3/7/2013
Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	KOP #1
6360.4	6509.3	KOP #2
7134.0	7810.5	End of Build

Alm 33V-HZ Pad South Sec.33-T7N-R65W
Alm 33W-404
Plan #1 (03-07-13)
7:35, March 08 2013



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	884.9	13.70	167.51	878.4	-79.5	17.6	2.00	167.51	3.1	
4	5664.1	13.70	167.51	5521.6	-1184.5	262.4	0.00	0.00	45.7	
5	6348.9	0.00	0.00	6200.0	-1264.0	280.0	2.00	180.00	48.7	
6	6509.3	0.00	0.00	6360.3	-1264.0	280.0	0.00	0.00	48.7	
7	7629.3	84.00	271.29	7120.1	-1248.6	-403.9	7.50	271.29	706.5	
8	7703.3	84.00	271.29	7127.8	-1247.0	-477.5	0.00	0.00	777.3	
9	7810.5	89.36	271.29	7134.0	-1244.6	-584.4	5.00	0.00	880.2	
10	11658.2	89.36	271.29	7177.0	-1158.1	-4431.0	0.00	0.00	4579.9	BHL 2527'FNL & 500'FWL



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.33-T7N-R65W

Alm 33V-HZ Pad South Sec.33-T7N-R65W

Alm 33W-404

Wellbore #1

Plan: Plan #1 (03-07-13)

Standard Planning Report

08 March, 2013

Database:	Landmark	Local Co-ordinate Reference:	Well Alm 33W-404
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4805.0ft (Original Well Elev)
Project:	SEC.33-T7N-R65W	MD Reference:	WELL @ 4805.0ft (Original Well Elev)
Site:	Alm 33V-HZ Pad South Sec.33-T7N-R65W	North Reference:	True
Well:	Alm 33W-404	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (03-07-13)		

Project	SEC.33-T7N-R65W, Weld County, CO		
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						Alm 33V-HZ Pad South Sec.33-T7N-R65W											
Site Position:						Northing:			1,438,694.05 ft			Latitude:			40.534580		
From:			Lat/Long			Easting:			3,233,475.22 ft			Longitude:			-104.660020		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.54 °		

Well	Alm 33W-404					
Well Position	+N/-S	-29.2 ft	Northing:	1,438,664.90 ft	Latitude:	40.534500
	+E/-W	0.0 ft	Easting:	3,233,475.49 ft	Longitude:	-104.660020
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,790.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/7/2013	8.59	67.12	53,031

Design	Plan #1 (03-07-13)			
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	255.35

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	
884.9	13.70	167.51	878.4	-79.5	17.6	2.00	2.00	0.00	167.51	
5,664.1	13.70	167.51	5,521.6	-1,184.5	262.4	0.00	0.00	0.00	0.00	
6,348.9	0.00	0.00	6,200.0	-1,264.0	280.0	2.00	-2.00	0.00	180.00	
6,509.3	0.00	0.00	6,360.3	-1,264.0	280.0	0.00	0.00	0.00	0.00	
7,629.3	84.00	271.29	7,120.1	-1,248.6	-403.9	7.50	7.50	0.00	271.29	
7,703.3	84.00	271.29	7,127.8	-1,247.0	-477.5	0.00	0.00	0.00	0.00	
7,810.5	89.36	271.29	7,134.0	-1,244.6	-584.4	5.00	5.00	0.00	0.00	
11,658.2	89.36	271.29	7,177.0	-1,158.1	-4,431.0	0.00	0.00	0.00	0.00	BHL 2527'FNL & 5C

Database:	Landmark	Local Co-ordinate Reference:	Well Alm 33W-404
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4805.0ft (Original Well Elev)
Project:	SEC.33-T7N-R65W	MD Reference:	WELL @ 4805.0ft (Original Well Elev)
Site:	Alm 33V-HZ Pad South Sec.33-T7N-R65W	North Reference:	True
Well:	Alm 33W-404	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (03-07-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
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
KOP #1									
240.0	0.80	167.51	240.0	-0.3	0.1	0.0	2.00	2.00	0.00
280.0	1.60	167.51	280.0	-1.1	0.2	0.0	2.00	2.00	0.00
320.0	2.40	167.51	320.0	-2.5	0.5	0.1	2.00	2.00	0.00
360.0	3.20	167.51	359.9	-4.4	1.0	0.2	2.00	2.00	0.00
400.0	4.00	167.51	399.8	-6.8	1.5	0.3	2.00	2.00	0.00
440.0	4.80	167.51	439.7	-9.8	2.2	0.4	2.00	2.00	0.00
480.0	5.60	167.51	479.6	-13.3	3.0	0.5	2.00	2.00	0.00
520.0	6.40	167.51	519.3	-17.4	3.9	0.7	2.00	2.00	0.00
560.0	7.20	167.51	559.1	-22.1	4.9	0.9	2.00	2.00	0.00
600.0	8.00	167.51	598.7	-27.2	6.0	1.0	2.00	2.00	0.00
640.0	8.80	167.51	638.3	-32.9	7.3	1.3	2.00	2.00	0.00
680.0	9.60	167.51	677.8	-39.2	8.7	1.5	2.00	2.00	0.00
720.0	10.40	167.51	717.1	-46.0	10.2	1.8	2.00	2.00	0.00
760.0	11.20	167.51	756.4	-53.3	11.8	2.1	2.00	2.00	0.00
800.0	12.00	167.51	795.6	-61.1	13.5	2.4	2.00	2.00	0.00
840.0	12.80	167.51	834.7	-69.5	15.4	2.7	2.00	2.00	0.00
880.0	13.60	167.51	873.6	-78.4	17.4	3.0	2.00	2.00	0.00
884.9	13.70	167.51	878.4	-79.5	17.6	3.1	2.00	2.00	0.00
920.0	13.70	167.51	912.5	-87.7	19.4	3.4	0.00	0.00	0.00
960.0	13.70	167.51	951.4	-96.9	21.5	3.7	0.00	0.00	0.00
1,000.0	13.70	167.51	990.2	-106.2	23.5	4.1	0.00	0.00	0.00
1,040.0	13.70	167.51	1,029.1	-115.4	25.6	4.4	0.00	0.00	0.00
1,080.0	13.70	167.51	1,067.9	-124.7	27.6	4.8	0.00	0.00	0.00
1,120.0	13.70	167.51	1,106.8	-133.9	29.7	5.2	0.00	0.00	0.00
1,160.0	13.70	167.51	1,145.7	-143.2	31.7	5.5	0.00	0.00	0.00
1,200.0	13.70	167.51	1,184.5	-152.4	33.8	5.9	0.00	0.00	0.00
1,240.0	13.70	167.51	1,223.4	-161.6	35.8	6.2	0.00	0.00	0.00
1,280.0	13.70	167.51	1,262.3	-170.9	37.9	6.6	0.00	0.00	0.00
1,320.0	13.70	167.51	1,301.1	-180.1	39.9	6.9	0.00	0.00	0.00
1,360.0	13.70	167.51	1,340.0	-189.4	42.0	7.3	0.00	0.00	0.00
1,400.0	13.70	167.51	1,378.8	-198.6	44.0	7.7	0.00	0.00	0.00
1,440.0	13.70	167.51	1,417.7	-207.9	46.1	8.0	0.00	0.00	0.00
1,480.0	13.70	167.51	1,456.6	-217.1	48.1	8.4	0.00	0.00	0.00
1,520.0	13.70	167.51	1,495.4	-226.4	50.1	8.7	0.00	0.00	0.00
1,560.0	13.70	167.51	1,534.3	-235.6	52.2	9.1	0.00	0.00	0.00
1,600.0	13.70	167.51	1,573.2	-244.9	54.2	9.4	0.00	0.00	0.00
1,640.0	13.70	167.51	1,612.0	-254.1	56.3	9.8	0.00	0.00	0.00
1,680.0	13.70	167.51	1,650.9	-263.4	58.3	10.2	0.00	0.00	0.00
1,720.0	13.70	167.51	1,689.7	-272.6	60.4	10.5	0.00	0.00	0.00
1,760.0	13.70	167.51	1,728.6	-281.9	62.4	10.9	0.00	0.00	0.00
1,800.0	13.70	167.51	1,767.5	-291.1	64.5	11.2	0.00	0.00	0.00
1,840.0	13.70	167.51	1,806.3	-300.4	66.5	11.6	0.00	0.00	0.00
1,880.0	13.70	167.51	1,845.2	-309.6	68.6	11.9	0.00	0.00	0.00
1,920.0	13.70	167.51	1,884.1	-318.9	70.6	12.3	0.00	0.00	0.00
1,960.0	13.70	167.51	1,922.9	-328.1	72.7	12.7	0.00	0.00	0.00
2,000.0	13.70	167.51	1,961.8	-337.4	74.7	13.0	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Alm 33W-404
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4805.0ft (Original Well Elev)
Project:	SEC.33-T7N-R65W	MD Reference:	WELL @ 4805.0ft (Original Well Elev)
Site:	Alm 33V-HZ Pad South Sec.33-T7N-R65W	North Reference:	True
Well:	Alm 33W-404	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (03-07-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
2,040.0	13.70	167.51	2,000.6	-346.6	76.8	13.4	0.00	0.00	0.00
2,080.0	13.70	167.51	2,039.5	-355.8	78.8	13.7	0.00	0.00	0.00
2,120.0	13.70	167.51	2,078.4	-365.1	80.9	14.1	0.00	0.00	0.00
2,160.0	13.70	167.51	2,117.2	-374.3	82.9	14.4	0.00	0.00	0.00
2,200.0	13.70	167.51	2,156.1	-383.6	85.0	14.8	0.00	0.00	0.00
2,240.0	13.70	167.51	2,195.0	-392.8	87.0	15.1	0.00	0.00	0.00
2,280.0	13.70	167.51	2,233.8	-402.1	89.1	15.5	0.00	0.00	0.00
2,320.0	13.70	167.51	2,272.7	-411.3	91.1	15.9	0.00	0.00	0.00
2,360.0	13.70	167.51	2,311.5	-420.6	93.2	16.2	0.00	0.00	0.00
2,400.0	13.70	167.51	2,350.4	-429.8	95.2	16.6	0.00	0.00	0.00
2,440.0	13.70	167.51	2,389.3	-439.1	97.3	16.9	0.00	0.00	0.00
2,480.0	13.70	167.51	2,428.1	-448.3	99.3	17.3	0.00	0.00	0.00
2,520.0	13.70	167.51	2,467.0	-457.6	101.4	17.6	0.00	0.00	0.00
2,560.0	13.70	167.51	2,505.9	-466.8	103.4	18.0	0.00	0.00	0.00
2,600.0	13.70	167.51	2,544.7	-476.1	105.5	18.4	0.00	0.00	0.00
2,640.0	13.70	167.51	2,583.6	-485.3	107.5	18.7	0.00	0.00	0.00
2,680.0	13.70	167.51	2,622.4	-494.6	109.6	19.1	0.00	0.00	0.00
2,720.0	13.70	167.51	2,661.3	-503.8	111.6	19.4	0.00	0.00	0.00
2,760.0	13.70	167.51	2,700.2	-513.1	113.7	19.8	0.00	0.00	0.00
2,800.0	13.70	167.51	2,739.0	-522.3	115.7	20.1	0.00	0.00	0.00
2,840.0	13.70	167.51	2,777.9	-531.6	117.7	20.5	0.00	0.00	0.00
2,880.0	13.70	167.51	2,816.8	-540.8	119.8	20.9	0.00	0.00	0.00
2,920.0	13.70	167.51	2,855.6	-550.1	121.8	21.2	0.00	0.00	0.00
2,960.0	13.70	167.51	2,894.5	-559.3	123.9	21.6	0.00	0.00	0.00
3,000.0	13.70	167.51	2,933.3	-568.5	125.9	21.9	0.00	0.00	0.00
3,040.0	13.70	167.51	2,972.2	-577.8	128.0	22.3	0.00	0.00	0.00
3,080.0	13.70	167.51	3,011.1	-587.0	130.0	22.6	0.00	0.00	0.00
3,120.0	13.70	167.51	3,049.9	-596.3	132.1	23.0	0.00	0.00	0.00
3,160.0	13.70	167.51	3,088.8	-605.5	134.1	23.3	0.00	0.00	0.00
3,200.0	13.70	167.51	3,127.7	-614.8	136.2	23.7	0.00	0.00	0.00
3,240.0	13.70	167.51	3,166.5	-624.0	138.2	24.1	0.00	0.00	0.00
3,280.0	13.70	167.51	3,205.4	-633.3	140.3	24.4	0.00	0.00	0.00
3,320.0	13.70	167.51	3,244.2	-642.5	142.3	24.8	0.00	0.00	0.00
3,360.0	13.70	167.51	3,283.1	-651.8	144.4	25.1	0.00	0.00	0.00
3,400.0	13.70	167.51	3,322.0	-661.0	146.4	25.5	0.00	0.00	0.00
3,440.0	13.70	167.51	3,360.8	-670.3	148.5	25.8	0.00	0.00	0.00
3,480.0	13.70	167.51	3,399.7	-679.5	150.5	26.2	0.00	0.00	0.00
3,520.0	13.70	167.51	3,438.6	-688.8	152.6	26.6	0.00	0.00	0.00
3,560.0	13.70	167.51	3,477.4	-698.0	154.6	26.9	0.00	0.00	0.00
3,600.0	13.70	167.51	3,516.3	-707.3	156.7	27.3	0.00	0.00	0.00
3,640.0	13.70	167.51	3,555.1	-716.5	158.7	27.6	0.00	0.00	0.00
3,680.0	13.70	167.51	3,594.0	-725.8	160.8	28.0	0.00	0.00	0.00
3,720.0	13.70	167.51	3,632.9	-735.0	162.8	28.3	0.00	0.00	0.00
3,760.0	13.70	167.51	3,671.7	-744.3	164.9	28.7	0.00	0.00	0.00
3,800.0	13.70	167.51	3,710.6	-753.5	166.9	29.1	0.00	0.00	0.00
3,840.0	13.70	167.51	3,749.4	-762.7	169.0	29.4	0.00	0.00	0.00
3,880.0	13.70	167.51	3,788.3	-772.0	171.0	29.8	0.00	0.00	0.00
3,920.0	13.70	167.51	3,827.2	-781.2	173.1	30.1	0.00	0.00	0.00
3,960.0	13.70	167.51	3,866.0	-790.5	175.1	30.5	0.00	0.00	0.00
4,000.0	13.70	167.51	3,904.9	-799.7	177.2	30.8	0.00	0.00	0.00
4,040.0	13.70	167.51	3,943.8	-809.0	179.2	31.2	0.00	0.00	0.00
4,080.0	13.70	167.51	3,982.6	-818.2	181.3	31.5	0.00	0.00	0.00
4,120.0	13.70	167.51	4,021.5	-827.5	183.3	31.9	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Alm 33W-404
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Project:	SEC.33-T7N-R65W	MD Reference:	WELL @ 4805.0ft (Original Well Elev)
Site:	Alm 33V-HZ Pad South Sec.33-T7N-R65W	North Reference:	True
Well:	Alm 33W-404	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (03-07-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,160.0	13.70	167.51	4,060.3	-836.7	185.4	32.3	0.00	0.00	0.00
4,200.0	13.70	167.51	4,099.2	-846.0	187.4	32.6	0.00	0.00	0.00
4,240.0	13.70	167.51	4,138.1	-855.2	189.4	33.0	0.00	0.00	0.00
4,280.0	13.70	167.51	4,176.9	-864.5	191.5	33.3	0.00	0.00	0.00
4,320.0	13.70	167.51	4,215.8	-873.7	193.5	33.7	0.00	0.00	0.00
4,360.0	13.70	167.51	4,254.7	-883.0	195.6	34.0	0.00	0.00	0.00
4,400.0	13.70	167.51	4,293.5	-892.2	197.6	34.4	0.00	0.00	0.00
4,440.0	13.70	167.51	4,332.4	-901.5	199.7	34.8	0.00	0.00	0.00
4,480.0	13.70	167.51	4,371.2	-910.7	201.7	35.1	0.00	0.00	0.00
4,520.0	13.70	167.51	4,410.1	-920.0	203.8	35.5	0.00	0.00	0.00
4,560.0	13.70	167.51	4,449.0	-929.2	205.8	35.8	0.00	0.00	0.00
4,600.0	13.70	167.51	4,487.8	-938.5	207.9	36.2	0.00	0.00	0.00
4,640.0	13.70	167.51	4,526.7	-947.7	209.9	36.5	0.00	0.00	0.00
4,680.0	13.70	167.51	4,565.6	-956.9	212.0	36.9	0.00	0.00	0.00
4,720.0	13.70	167.51	4,604.4	-966.2	214.0	37.3	0.00	0.00	0.00
4,760.0	13.70	167.51	4,643.3	-975.4	216.1	37.6	0.00	0.00	0.00
4,800.0	13.70	167.51	4,682.1	-984.7	218.1	38.0	0.00	0.00	0.00
4,840.0	13.70	167.51	4,721.0	-993.9	220.2	38.3	0.00	0.00	0.00
4,880.0	13.70	167.51	4,759.9	-1,003.2	222.2	38.7	0.00	0.00	0.00
4,920.0	13.70	167.51	4,798.7	-1,012.4	224.3	39.0	0.00	0.00	0.00
4,960.0	13.70	167.51	4,837.6	-1,021.7	226.3	39.4	0.00	0.00	0.00
5,000.0	13.70	167.51	4,876.5	-1,030.9	228.4	39.7	0.00	0.00	0.00
5,040.0	13.70	167.51	4,915.3	-1,040.2	230.4	40.1	0.00	0.00	0.00
5,080.0	13.70	167.51	4,954.2	-1,049.4	232.5	40.5	0.00	0.00	0.00
5,120.0	13.70	167.51	4,993.0	-1,058.7	234.5	40.8	0.00	0.00	0.00
5,160.0	13.70	167.51	5,031.9	-1,067.9	236.6	41.2	0.00	0.00	0.00
5,200.0	13.70	167.51	5,070.8	-1,077.2	238.6	41.5	0.00	0.00	0.00
5,240.0	13.70	167.51	5,109.6	-1,086.4	240.7	41.9	0.00	0.00	0.00
5,280.0	13.70	167.51	5,148.5	-1,095.7	242.7	42.2	0.00	0.00	0.00
5,320.0	13.70	167.51	5,187.4	-1,104.9	244.8	42.6	0.00	0.00	0.00
5,360.0	13.70	167.51	5,226.2	-1,114.2	246.8	43.0	0.00	0.00	0.00
5,400.0	13.70	167.51	5,265.1	-1,123.4	248.9	43.3	0.00	0.00	0.00
5,440.0	13.70	167.51	5,303.9	-1,132.7	250.9	43.7	0.00	0.00	0.00
5,480.0	13.70	167.51	5,342.8	-1,141.9	253.0	44.0	0.00	0.00	0.00
5,520.0	13.70	167.51	5,381.7	-1,151.1	255.0	44.4	0.00	0.00	0.00
5,560.0	13.70	167.51	5,420.5	-1,160.4	257.0	44.7	0.00	0.00	0.00
5,600.0	13.70	167.51	5,459.4	-1,169.6	259.1	45.1	0.00	0.00	0.00
5,640.0	13.70	167.51	5,498.3	-1,178.9	261.1	45.5	0.00	0.00	0.00
5,664.1	13.70	167.51	5,521.6	-1,184.5	262.4	45.7	0.00	0.00	0.00
5,680.0	13.38	167.51	5,537.1	-1,188.1	263.2	45.8	2.00	-2.00	0.00
5,720.0	12.58	167.51	5,576.1	-1,196.9	265.1	46.1	2.00	-2.00	0.00
5,760.0	11.78	167.51	5,615.2	-1,205.1	267.0	46.5	2.00	-2.00	0.00
5,800.0	10.98	167.51	5,654.4	-1,212.8	268.7	46.8	2.00	-2.00	0.00
5,840.0	10.18	167.51	5,693.7	-1,220.0	270.2	47.0	2.00	-2.00	0.00
5,880.0	9.38	167.51	5,733.2	-1,226.6	271.7	47.3	2.00	-2.00	0.00
5,920.0	8.58	167.51	5,772.7	-1,232.7	273.1	47.5	2.00	-2.00	0.00
5,960.0	7.78	167.51	5,812.3	-1,238.3	274.3	47.7	2.00	-2.00	0.00
6,000.0	6.98	167.51	5,851.9	-1,243.3	275.4	47.9	2.00	-2.00	0.00
6,040.0	6.18	167.51	5,891.7	-1,247.8	276.4	48.1	2.00	-2.00	0.00
6,080.0	5.38	167.51	5,931.5	-1,251.7	277.3	48.3	2.00	-2.00	0.00
6,120.0	4.58	167.51	5,971.3	-1,255.1	278.0	48.4	2.00	-2.00	0.00
6,160.0	3.78	167.51	6,011.2	-1,257.9	278.7	48.5	2.00	-2.00	0.00
6,200.0	2.98	167.51	6,051.1	-1,260.2	279.2	48.6	2.00	-2.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Alm 33W-404
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4805.0ft (Original Well Elev)
Project:	SEC.33-T7N-R65W	MD Reference:	WELL @ 4805.0ft (Original Well Elev)
Site:	Alm 33V-HZ Pad South Sec.33-T7N-R65W	North Reference:	True
Well:	Alm 33W-404	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (03-07-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,240.0	2.18	167.51	6,091.1	-1,262.0	279.6	48.7	2.00	-2.00	0.00
6,280.0	1.38	167.51	6,131.1	-1,263.2	279.8	48.7	2.00	-2.00	0.00
6,320.0	0.58	167.51	6,171.1	-1,263.9	280.0	48.7	2.00	-2.00	0.00
6,348.9	0.00	0.00	6,200.0	-1,264.0	280.0	48.7	2.00	-2.00	0.00
6,360.0	0.00	0.00	6,211.1	-1,264.0	280.0	48.7	0.00	0.00	0.00
6,400.0	0.00	0.00	6,251.1	-1,264.0	280.0	48.7	0.00	0.00	0.00
6,440.0	0.00	0.00	6,291.1	-1,264.0	280.0	48.7	0.00	0.00	0.00
6,480.0	0.00	0.00	6,331.1	-1,264.0	280.0	48.7	0.00	0.00	0.00
6,509.3	0.00	0.00	6,360.4	-1,264.0	280.0	48.7	0.00	0.00	0.00
KOP #2									
6,520.0	0.81	271.29	6,371.1	-1,264.0	279.9	48.8	7.53	7.53	0.00
6,560.0	3.81	271.29	6,411.0	-1,264.0	278.3	50.4	7.50	7.50	0.00
6,600.0	6.81	271.29	6,450.9	-1,263.9	274.6	53.9	7.50	7.50	0.00
6,640.0	9.81	271.29	6,490.4	-1,263.7	268.8	59.5	7.50	7.50	0.00
6,680.0	12.81	271.29	6,529.6	-1,263.6	261.0	67.0	7.50	7.50	0.00
6,720.0	15.81	271.29	6,568.4	-1,263.4	251.1	76.5	7.50	7.50	0.00
6,760.0	18.81	271.29	6,606.6	-1,263.1	239.2	88.0	7.50	7.50	0.00
6,800.0	21.81	271.29	6,644.1	-1,262.8	225.4	101.3	7.50	7.50	0.00
6,840.0	24.81	271.29	6,680.8	-1,262.4	209.5	116.5	7.50	7.50	0.00
6,880.0	27.81	271.29	6,716.7	-1,262.0	191.8	133.6	7.50	7.50	0.00
6,920.0	30.81	271.29	6,751.6	-1,261.6	172.2	152.4	7.50	7.50	0.00
6,960.0	33.81	271.29	6,785.4	-1,261.1	150.9	172.9	7.50	7.50	0.00
7,000.0	36.81	271.29	6,818.0	-1,260.6	127.8	195.2	7.50	7.50	0.00
7,040.0	39.81	271.29	6,849.4	-1,260.0	103.0	219.0	7.50	7.50	0.00
7,080.0	42.81	271.29	6,879.4	-1,259.4	76.6	244.4	7.50	7.50	0.00
7,120.0	45.81	271.29	6,908.1	-1,258.8	48.7	271.2	7.50	7.50	0.00
7,160.0	48.81	271.29	6,935.2	-1,258.1	19.3	299.5	7.50	7.50	0.00
7,200.0	51.81	271.29	6,960.7	-1,257.4	-11.5	329.1	7.50	7.50	0.00
7,240.0	54.81	271.29	6,984.6	-1,256.7	-43.6	359.9	7.50	7.50	0.00
7,280.0	57.81	271.29	7,006.8	-1,256.0	-76.8	391.9	7.50	7.50	0.00
7,320.0	60.81	271.29	7,027.2	-1,255.2	-111.2	425.0	7.50	7.50	0.00
7,360.0	63.81	271.29	7,045.8	-1,254.4	-146.6	459.1	7.50	7.50	0.00
7,400.0	66.81	271.29	7,062.5	-1,253.6	-183.0	494.0	7.50	7.50	0.00
7,440.0	69.81	271.29	7,077.3	-1,252.8	-220.1	529.7	7.50	7.50	0.00
7,480.0	72.81	271.29	7,090.1	-1,251.9	-258.0	566.2	7.50	7.50	0.00
7,520.0	75.81	271.29	7,100.9	-1,251.0	-296.5	603.2	7.50	7.50	0.00
7,560.0	78.81	271.29	7,109.7	-1,250.2	-335.5	640.7	7.50	7.50	0.00
7,600.0	81.81	271.29	7,116.5	-1,249.3	-374.9	678.6	7.50	7.50	0.00
7,629.3	84.00	271.29	7,120.1	-1,248.6	-404.0	706.6	7.49	7.49	0.00
7"									
7,640.0	84.00	271.29	7,121.2	-1,248.4	-414.6	716.8	0.00	0.00	0.00
7,680.0	84.00	271.29	7,125.4	-1,247.5	-454.4	755.1	0.00	0.00	0.00
7,703.3	84.00	271.29	7,127.8	-1,247.0	-477.5	777.3	0.00	0.00	0.00
7,720.0	84.84	271.29	7,129.4	-1,246.6	-494.2	793.3	5.00	5.00	0.00
7,760.0	86.84	271.29	7,132.3	-1,245.7	-534.0	831.7	5.00	5.00	0.00
7,800.0	88.84	271.29	7,133.9	-1,244.8	-574.0	870.1	5.00	5.00	0.00
7,810.5	89.36	271.29	7,134.0	-1,244.6	-584.5	880.2	4.98	4.98	0.00
End of Build									
7,840.0	89.36	271.29	7,134.4	-1,243.9	-614.0	908.6	0.00	0.00	0.00
7,880.0	89.36	271.29	7,134.8	-1,243.0	-654.0	947.0	0.00	0.00	0.00
7,920.0	89.36	271.29	7,135.2	-1,242.1	-694.0	985.5	0.00	0.00	0.00
7,960.0	89.36	271.29	7,135.7	-1,241.2	-733.9	1,024.0	0.00	0.00	0.00
8,000.0	89.36	271.29	7,136.1	-1,240.3	-773.9	1,062.4	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Alm 33W-404
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4805.0ft (Original Well Elev)
Project:	SEC.33-T7N-R65W	MD Reference:	WELL @ 4805.0ft (Original Well Elev)
Site:	Alm 33V-HZ Pad South Sec.33-T7N-R65W	North Reference:	True
Well:	Alm 33W-404	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (03-07-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,040.0	89.36	271.29	7,136.6	-1,239.4	-813.9	1,100.9	0.00	0.00	0.00
8,080.0	89.36	271.29	7,137.0	-1,238.5	-853.9	1,139.3	0.00	0.00	0.00
8,120.0	89.36	271.29	7,137.5	-1,237.6	-893.9	1,177.8	0.00	0.00	0.00
8,160.0	89.36	271.29	7,137.9	-1,236.7	-933.9	1,216.3	0.00	0.00	0.00
8,200.0	89.36	271.29	7,138.4	-1,235.8	-973.9	1,254.7	0.00	0.00	0.00
8,240.0	89.36	271.29	7,138.8	-1,234.9	-1,013.9	1,293.2	0.00	0.00	0.00
8,280.0	89.36	271.29	7,139.3	-1,234.0	-1,053.8	1,331.7	0.00	0.00	0.00
8,320.0	89.36	271.29	7,139.7	-1,233.1	-1,093.8	1,370.1	0.00	0.00	0.00
8,360.0	89.36	271.29	7,140.2	-1,232.2	-1,133.8	1,408.6	0.00	0.00	0.00
8,400.0	89.36	271.29	7,140.6	-1,231.3	-1,173.8	1,447.0	0.00	0.00	0.00
8,440.0	89.36	271.29	7,141.1	-1,230.4	-1,213.8	1,485.5	0.00	0.00	0.00
8,480.0	89.36	271.29	7,141.5	-1,229.5	-1,253.8	1,524.0	0.00	0.00	0.00
8,520.0	89.36	271.29	7,141.9	-1,228.6	-1,293.8	1,562.4	0.00	0.00	0.00
8,560.0	89.36	271.29	7,142.4	-1,227.7	-1,333.8	1,600.9	0.00	0.00	0.00
8,600.0	89.36	271.29	7,142.8	-1,226.8	-1,373.7	1,639.3	0.00	0.00	0.00
8,640.0	89.36	271.29	7,143.3	-1,225.9	-1,413.7	1,677.8	0.00	0.00	0.00
8,680.0	89.36	271.29	7,143.7	-1,225.0	-1,453.7	1,716.3	0.00	0.00	0.00
8,720.0	89.36	271.29	7,144.2	-1,224.1	-1,493.7	1,754.7	0.00	0.00	0.00
8,760.0	89.36	271.29	7,144.6	-1,223.2	-1,533.7	1,793.2	0.00	0.00	0.00
8,800.0	89.36	271.29	7,145.1	-1,222.3	-1,573.7	1,831.6	0.00	0.00	0.00
8,840.0	89.36	271.29	7,145.5	-1,221.4	-1,613.7	1,870.1	0.00	0.00	0.00
8,880.0	89.36	271.29	7,146.0	-1,220.5	-1,653.7	1,908.6	0.00	0.00	0.00
8,920.0	89.36	271.29	7,146.4	-1,219.6	-1,693.6	1,947.0	0.00	0.00	0.00
8,960.0	89.36	271.29	7,146.9	-1,218.7	-1,733.6	1,985.5	0.00	0.00	0.00
9,000.0	89.36	271.29	7,147.3	-1,217.9	-1,773.6	2,023.9	0.00	0.00	0.00
9,040.0	89.36	271.29	7,147.8	-1,217.0	-1,813.6	2,062.4	0.00	0.00	0.00
9,080.0	89.36	271.29	7,148.2	-1,216.1	-1,853.6	2,100.9	0.00	0.00	0.00
9,120.0	89.36	271.29	7,148.6	-1,215.2	-1,893.6	2,139.3	0.00	0.00	0.00
9,160.0	89.36	271.29	7,149.1	-1,214.3	-1,933.6	2,177.8	0.00	0.00	0.00
9,200.0	89.36	271.29	7,149.5	-1,213.4	-1,973.6	2,216.2	0.00	0.00	0.00
9,240.0	89.36	271.29	7,150.0	-1,212.5	-2,013.5	2,254.7	0.00	0.00	0.00
9,280.0	89.36	271.29	7,150.4	-1,211.6	-2,053.5	2,293.2	0.00	0.00	0.00
9,320.0	89.36	271.29	7,150.9	-1,210.7	-2,093.5	2,331.6	0.00	0.00	0.00
9,360.0	89.36	271.29	7,151.3	-1,209.8	-2,133.5	2,370.1	0.00	0.00	0.00
9,400.0	89.36	271.29	7,151.8	-1,208.9	-2,173.5	2,408.5	0.00	0.00	0.00
9,440.0	89.36	271.29	7,152.2	-1,208.0	-2,213.5	2,447.0	0.00	0.00	0.00
9,480.0	89.36	271.29	7,152.7	-1,207.1	-2,253.5	2,485.5	0.00	0.00	0.00
9,520.0	89.36	271.29	7,153.1	-1,206.2	-2,293.5	2,523.9	0.00	0.00	0.00
9,560.0	89.36	271.29	7,153.6	-1,205.3	-2,333.4	2,562.4	0.00	0.00	0.00
9,600.0	89.36	271.29	7,154.0	-1,204.4	-2,373.4	2,600.8	0.00	0.00	0.00
9,640.0	89.36	271.29	7,154.5	-1,203.5	-2,413.4	2,639.3	0.00	0.00	0.00
9,680.0	89.36	271.29	7,154.9	-1,202.6	-2,453.4	2,677.8	0.00	0.00	0.00
9,720.0	89.36	271.29	7,155.4	-1,201.7	-2,493.4	2,716.2	0.00	0.00	0.00
9,760.0	89.36	271.29	7,155.8	-1,200.8	-2,533.4	2,754.7	0.00	0.00	0.00
9,800.0	89.36	271.29	7,156.2	-1,199.9	-2,573.4	2,793.2	0.00	0.00	0.00
9,840.0	89.36	271.29	7,156.7	-1,199.0	-2,613.4	2,831.6	0.00	0.00	0.00
9,880.0	89.36	271.29	7,157.1	-1,198.1	-2,653.3	2,870.1	0.00	0.00	0.00
9,920.0	89.36	271.29	7,157.6	-1,197.2	-2,693.3	2,908.5	0.00	0.00	0.00
9,960.0	89.36	271.29	7,158.0	-1,196.3	-2,733.3	2,947.0	0.00	0.00	0.00
10,000.0	89.36	271.29	7,158.5	-1,195.4	-2,773.3	2,985.5	0.00	0.00	0.00
10,040.0	89.36	271.29	7,158.9	-1,194.5	-2,813.3	3,023.9	0.00	0.00	0.00
10,080.0	89.36	271.29	7,159.4	-1,193.6	-2,853.3	3,062.4	0.00	0.00	0.00
10,120.0	89.36	271.29	7,159.8	-1,192.7	-2,893.3	3,100.8	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Alm 33W-404
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4805.0ft (Original Well Elev)
Project:	SEC.33-T7N-R65W	MD Reference:	WELL @ 4805.0ft (Original Well Elev)
Site:	Alm 33V-HZ Pad South Sec.33-T7N-R65W	North Reference:	True
Well:	Alm 33W-404	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (03-07-13)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,160.0	89.36	271.29	7,160.3	-1,191.8	-2,933.3	3,139.3	0.00	0.00	0.00
10,200.0	89.36	271.29	7,160.7	-1,190.9	-2,973.2	3,177.8	0.00	0.00	0.00
10,240.0	89.36	271.29	7,161.2	-1,190.0	-3,013.2	3,216.2	0.00	0.00	0.00
10,280.0	89.36	271.29	7,161.6	-1,189.1	-3,053.2	3,254.7	0.00	0.00	0.00
10,320.0	89.36	271.29	7,162.1	-1,188.2	-3,093.2	3,293.1	0.00	0.00	0.00
10,360.0	89.36	271.29	7,162.5	-1,187.3	-3,133.2	3,331.6	0.00	0.00	0.00
10,400.0	89.36	271.29	7,162.9	-1,186.4	-3,173.2	3,370.1	0.00	0.00	0.00
10,440.0	89.36	271.29	7,163.4	-1,185.5	-3,213.2	3,408.5	0.00	0.00	0.00
10,480.0	89.36	271.29	7,163.8	-1,184.6	-3,253.2	3,447.0	0.00	0.00	0.00
10,520.0	89.36	271.29	7,164.3	-1,183.7	-3,293.1	3,485.4	0.00	0.00	0.00
10,560.0	89.36	271.29	7,164.7	-1,182.8	-3,333.1	3,523.9	0.00	0.00	0.00
10,600.0	89.36	271.29	7,165.2	-1,181.9	-3,373.1	3,562.4	0.00	0.00	0.00
10,640.0	89.36	271.29	7,165.6	-1,181.0	-3,413.1	3,600.8	0.00	0.00	0.00
10,680.0	89.36	271.29	7,166.1	-1,180.1	-3,453.1	3,639.3	0.00	0.00	0.00
10,720.0	89.36	271.29	7,166.5	-1,179.2	-3,493.1	3,677.7	0.00	0.00	0.00
10,760.0	89.36	271.29	7,167.0	-1,178.3	-3,533.1	3,716.2	0.00	0.00	0.00
10,800.0	89.36	271.29	7,167.4	-1,177.4	-3,573.1	3,754.7	0.00	0.00	0.00
10,840.0	89.36	271.29	7,167.9	-1,176.5	-3,613.0	3,793.1	0.00	0.00	0.00
10,880.0	89.36	271.29	7,168.3	-1,175.6	-3,653.0	3,831.6	0.00	0.00	0.00
10,920.0	89.36	271.29	7,168.8	-1,174.7	-3,693.0	3,870.0	0.00	0.00	0.00
10,960.0	89.36	271.29	7,169.2	-1,173.8	-3,733.0	3,908.5	0.00	0.00	0.00
11,000.0	89.36	271.29	7,169.6	-1,172.9	-3,773.0	3,947.0	0.00	0.00	0.00
11,040.0	89.36	271.29	7,170.1	-1,172.0	-3,813.0	3,985.4	0.00	0.00	0.00
11,080.0	89.36	271.29	7,170.5	-1,171.1	-3,853.0	4,023.9	0.00	0.00	0.00
11,120.0	89.36	271.29	7,171.0	-1,170.2	-3,893.0	4,062.3	0.00	0.00	0.00
11,160.0	89.36	271.29	7,171.4	-1,169.3	-3,932.9	4,100.8	0.00	0.00	0.00
11,200.0	89.36	271.29	7,171.9	-1,168.4	-3,972.9	4,139.3	0.00	0.00	0.00
11,240.0	89.36	271.29	7,172.3	-1,167.5	-4,012.9	4,177.7	0.00	0.00	0.00
11,280.0	89.36	271.29	7,172.8	-1,166.6	-4,052.9	4,216.2	0.00	0.00	0.00
11,320.0	89.36	271.29	7,173.2	-1,165.7	-4,092.9	4,254.7	0.00	0.00	0.00
11,360.0	89.36	271.29	7,173.7	-1,164.8	-4,132.9	4,293.1	0.00	0.00	0.00
11,400.0	89.36	271.29	7,174.1	-1,163.9	-4,172.9	4,331.6	0.00	0.00	0.00
11,440.0	89.36	271.29	7,174.6	-1,163.0	-4,212.9	4,370.0	0.00	0.00	0.00
11,480.0	89.36	271.29	7,175.0	-1,162.1	-4,252.8	4,408.5	0.00	0.00	0.00
11,520.0	89.36	271.29	7,175.5	-1,161.2	-4,292.8	4,447.0	0.00	0.00	0.00
11,560.0	89.36	271.29	7,175.9	-1,160.3	-4,332.8	4,485.4	0.00	0.00	0.00
11,600.0	89.36	271.29	7,176.3	-1,159.4	-4,372.8	4,523.9	0.00	0.00	0.00
11,640.0	89.36	271.29	7,176.8	-1,158.5	-4,412.8	4,562.3	0.00	0.00	0.00
11,658.2	89.36	271.29	7,177.0	-1,158.1	-4,431.0	4,579.9	0.00	0.00	0.00
BHL 2527'FNL & 500'FWL									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,629.3	7,120.1	7"	7	8-3/4

Database:	Landmark	Local Co-ordinate Reference:	Well Alm 33W-404
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4805.0ft (Original Well Elev)
Project:	SEC.33-T7N-R65W	MD Reference:	WELL @ 4805.0ft (Original Well Elev)
Site:	Alm 33V-HZ Pad South Sec.33-T7N-R65W	North Reference:	True
Well:	Alm 33W-404	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (03-07-13)		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP #1
6,509.3	6,360.4	-1,264.0	280.0	KOP #2
7,810.5	7,134.0	-1,244.6	-584.5	End of Build



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.33-T7N-R65W

Alm 33V-HZ Pad South Sec.33-T7N-R65W

Alm 33W-404

Wellbore #1

Plan #1 (03-07-13)

Anticollision Report

08 March, 2013

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Alm 33W-404
Project:	SEC.33-T7N-R65W	TVD Reference:	WELL @ 4805.0ft (Original Well Elev)
Reference Site:	Alm 33V-HZ Pad South Sec.33-T7N-R65W	MD Reference:	WELL @ 4805.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Alm 33W-404	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 (03-07-13)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (03-07-13)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	3/7/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,658.2	Plan #1 (03-07-13) (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						
Alm 33V-HZ Pad South Sec.33-T7N-R65W						
Alm 33W-214 - Wellbore #1 - Plan #1 (03-17-13)	200.0	200.0	29.1	28.5	43.224	CC, ES
Alm 33W-214 - Wellbore #1 - Plan #1 (03-17-13)	11,658.2	11,500.2	369.3	141.8	1.623	SF
Lamb 33-23 (Exist) - Wellbore #1 - Wellbore #1	10,250.2	7,142.3	916.1	819.1	9.446	CC
Lamb 33-23 (Exist) - Wellbore #1 - Wellbore #1	10,300.0	7,142.8	917.4	819.1	9.329	ES
Lamb 33-23 (Exist) - Wellbore #1 - Wellbore #1	10,500.0	7,145.1	949.5	845.6	9.142	SF

Offset Design	Alm 33V-HZ Pad South Sec.33-T7N-R65W - Alm 33W-214 - Wellbore #1 - Plan #1 (03-17-13)												Offset Site Error:	0.0 ft
Survey Program:	0-MWD												Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Separation Factor		Warning				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	0.00	29.1	0.0	29.1					
100.0	100.0	100.0	100.0	0.1	0.1	0.00	29.1	0.0	29.1	28.9	0.22	129.671		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	29.1	0.0	29.1	28.5	0.67	43.224	CC, ES	
300.0	300.0	300.0	300.0	0.5	0.6	-168.20	29.1	0.0	30.9	29.7	1.11	27.849		
400.0	399.8	399.8	399.8	0.8	0.8	-169.89	29.1	0.0	36.0	34.4	1.54	23.336		
500.0	499.5	499.5	499.5	1.0	1.0	-171.83	29.1	0.0	44.6	42.6	1.99	22.416		
600.0	598.7	598.7	598.7	1.3	1.2	-173.55	29.1	0.0	56.7	54.2	2.44	23.203		
700.0	697.5	697.5	697.5	1.6	1.5	-174.92	29.1	0.0	72.3	69.4	2.90	24.909		
800.0	795.6	795.6	795.6	2.0	1.7	-175.95	29.1	0.0	91.3	87.9	3.36	27.152		
900.0	893.1	893.1	893.1	2.5	1.9	-176.73	29.1	0.0	113.7	109.9	3.83	29.719		
1,000.0	990.2	990.2	990.2	2.9	2.1	-177.29	29.1	0.0	137.3	133.0	4.29	31.991		
1,100.0	1,087.4	1,092.5	1,092.5	3.4	2.3	-177.65	27.7	0.4	159.6	154.8	4.75	33.626		
1,200.0	1,184.5	1,196.9	1,196.7	3.9	2.5	-177.80	22.7	1.9	178.3	173.2	5.18	34.429		
1,300.0	1,281.7	1,302.5	1,302.0	4.4	2.7	-177.81	13.8	4.5	193.5	187.9	5.63	34.361		
1,400.0	1,378.8	1,409.3	1,407.9	4.9	2.9	-177.70	1.1	8.1	205.0	198.9	6.10	33.599		
1,500.0	1,476.0	1,516.8	1,514.0	5.4	3.2	-177.49	-15.5	13.0	212.8	206.2	6.59	32.297		
1,600.0	1,573.2	1,624.7	1,619.8	5.9	3.5	-177.17	-36.0	18.9	216.9	209.8	7.09	30.578		
1,700.0	1,670.3	1,725.4	1,718.0	6.4	3.9	-176.83	-57.2	25.1	218.8	211.2	7.60	28.799		
1,800.0	1,767.5	1,825.3	1,815.5	6.9	4.3	-176.48	-78.3	31.2	220.7	212.6	8.11	27.216		
1,900.0	1,864.6	1,925.3	1,913.1	7.4	4.7	-176.15	-99.3	37.3	222.6	214.0	8.63	25.810		
2,000.0	1,961.8	2,025.3	2,010.6	7.9	5.1	-175.82	-120.4	43.4	224.6	215.4	9.15	24.538		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Alm 33W-404
Project:	SEC.33-T7N-R65W	TVD Reference:	WELL @ 4805.0ft (Original Well Elev)
Reference Site:	Alm 33V-HZ Pad South Sec.33-T7N-R65W	MD Reference:	WELL @ 4805.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Alm 33W-404	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 (03-07-13)	Offset TVD Reference:	Offset Datum

Offset Design Alm 33V-HZ Pad South Sec.33-T7N-R65W - Alm 33W-214 - Wellbore #1 - Plan #1 (03-17-13)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
2,100.0	2,058.9	2,125.3	2,108.1	8.4	5.5	-175.50	-141.5	49.6	226.5	216.8	9.68	23.392	
2,200.0	2,156.1	2,225.2	2,205.7	8.9	5.9	-175.18	-162.5	55.7	228.4	218.2	10.22	22.354	
2,300.0	2,253.2	2,325.2	2,303.2	9.5	6.4	-174.86	-183.6	61.8	230.4	219.6	10.76	21.411	
2,400.0	2,350.4	2,425.2	2,400.7	10.0	6.8	-174.56	-204.7	67.9	232.3	221.0	11.31	20.552	
2,500.0	2,447.6	2,525.2	2,498.3	10.5	7.3	-174.25	-225.7	74.0	234.3	222.4	11.85	19.765	
2,600.0	2,544.7	2,625.1	2,595.8	11.0	7.7	-173.96	-246.8	80.1	236.3	223.9	12.41	19.043	
2,700.0	2,641.9	2,725.1	2,693.4	11.5	8.2	-173.66	-267.8	86.3	238.2	225.3	12.96	18.377	
2,800.0	2,739.0	2,825.1	2,790.9	12.0	8.6	-173.37	-288.9	92.4	240.2	226.7	13.52	17.763	
2,900.0	2,836.2	2,925.1	2,888.4	12.5	9.1	-173.09	-310.0	98.5	242.2	228.1	14.09	17.194	
3,000.0	2,933.3	3,025.0	2,986.0	13.0	9.6	-172.81	-331.0	104.6	244.2	229.5	14.65	16.666	
3,100.0	3,030.5	3,125.0	3,083.5	13.5	10.0	-172.54	-352.1	110.7	246.2	231.0	15.22	16.174	
3,200.0	3,127.7	3,225.0	3,181.0	14.0	10.5	-172.27	-373.2	116.9	248.2	232.4	15.79	15.716	
3,300.0	3,224.8	3,324.9	3,278.6	14.5	11.0	-172.00	-394.2	123.0	250.2	233.8	16.37	15.287	
3,400.0	3,322.0	3,424.9	3,376.1	15.0	11.4	-171.74	-415.3	129.1	252.2	235.3	16.94	14.885	
3,500.0	3,419.1	3,524.9	3,473.7	15.6	11.9	-171.49	-436.4	135.2	254.2	236.7	17.52	14.508	
3,600.0	3,516.3	3,624.9	3,571.2	16.1	12.4	-171.23	-457.4	141.3	256.3	238.1	18.11	14.153	
3,700.0	3,613.4	3,724.8	3,668.7	16.6	12.8	-170.98	-478.5	147.4	258.3	239.6	18.69	13.819	
3,800.0	3,710.6	3,824.8	3,766.3	17.1	13.3	-170.74	-499.6	153.6	260.3	241.0	19.28	13.503	
3,900.0	3,807.7	3,924.8	3,863.8	17.6	13.8	-170.50	-520.6	159.7	262.4	242.5	19.87	13.205	
4,000.0	3,904.9	4,024.8	3,961.3	18.1	14.3	-170.26	-541.7	165.8	264.4	243.9	20.46	12.923	
4,100.0	4,002.1	4,124.7	4,058.9	18.6	14.7	-170.03	-562.8	171.9	266.4	245.4	21.05	12.656	
4,200.0	4,099.2	4,224.7	4,156.4	19.1	15.2	-169.79	-583.8	178.0	268.5	246.8	21.65	12.402	
4,300.0	4,196.4	4,324.7	4,254.0	19.6	15.7	-169.57	-604.9	184.2	270.5	248.3	22.25	12.160	
4,400.0	4,293.5	4,424.7	4,351.5	20.1	16.2	-169.34	-625.9	190.3	272.6	249.8	22.85	11.931	
4,500.0	4,390.7	4,524.6	4,449.0	20.7	16.6	-169.12	-647.0	196.4	274.7	251.2	23.45	11.712	
4,600.0	4,487.8	4,624.6	4,546.6	21.2	17.1	-168.91	-668.1	202.5	276.7	252.7	24.06	11.503	
4,700.0	4,585.0	4,724.6	4,644.1	21.7	17.6	-168.69	-689.1	208.6	278.8	254.1	24.66	11.304	
4,800.0	4,682.1	4,824.5	4,741.6	22.2	18.1	-168.48	-710.2	214.7	280.9	255.6	25.27	11.114	
4,900.0	4,779.3	4,924.5	4,839.2	22.7	18.5	-168.28	-731.3	220.9	283.0	257.1	25.88	10.932	
5,000.0	4,876.5	5,024.5	4,936.7	23.2	19.0	-168.07	-752.3	227.0	285.0	258.5	26.50	10.758	
5,100.0	4,973.6	5,124.5	5,034.2	23.7	19.5	-167.87	-773.4	233.1	287.1	260.0	27.11	10.590	
5,200.0	5,070.8	5,224.4	5,131.8	24.2	20.0	-167.67	-794.5	239.2	289.2	261.5	27.73	10.430	
5,300.0	5,167.9	5,324.4	5,229.3	24.7	20.5	-167.48	-815.5	245.3	291.3	263.0	28.35	10.276	
5,400.0	5,265.1	5,424.4	5,326.9	25.2	20.9	-167.28	-836.6	251.5	293.4	264.4	28.97	10.129	
5,500.0	5,362.2	5,524.4	5,424.4	25.8	21.4	-167.09	-857.7	257.6	295.5	265.9	29.59	9.986	
5,600.0	5,459.4	5,619.6	5,517.4	26.3	21.8	-166.94	-877.4	263.3	298.0	267.8	30.18	9.875	
5,700.0	5,556.6	5,710.4	5,606.6	26.7	22.1	-166.93	-893.7	268.1	303.0	272.3	30.69	9.872	
5,800.0	5,654.4	5,800.0	5,695.1	27.1	22.3	-166.98	-907.2	272.0	308.3	277.2	31.12	9.906	
5,900.0	5,752.9	5,891.5	5,785.8	27.3	22.6	-167.06	-918.3	275.2	313.2	281.7	31.49	9.945	
6,000.0	5,851.9	5,981.8	5,875.8	27.6	22.7	-167.15	-926.4	277.5	317.8	286.0	31.81	9.991	
6,100.0	5,951.4	6,072.1	5,965.8	27.8	22.9	-167.25	-931.8	279.1	321.9	289.9	32.06	10.043	
6,200.0	6,051.1	6,162.2	6,055.9	27.9	23.0	-167.37	-934.5	279.9	325.7	293.5	32.25	10.099	
6,300.0	6,151.1	6,257.4	6,151.1	28.1	23.1	-167.49	-934.9	280.0	328.7	296.3	32.41	10.142	
6,400.0	6,251.1	6,357.4	6,251.1	28.2	23.3	0.00	-934.9	280.0	329.1	278.5	50.66	6.498	
6,500.0	6,351.1	6,455.9	6,349.4	28.3	23.3	-1.05	-934.7	273.9	329.3	278.4	50.96	6.463	
6,600.0	6,450.9	6,552.4	6,444.1	28.3	23.4	85.34	-934.3	255.8	330.2	297.7	32.49	10.164	
6,700.0	6,549.1	6,647.4	6,534.4	28.4	23.4	83.11	-933.7	226.5	331.5	299.2	32.26	10.277	
6,800.0	6,644.1	6,741.0	6,619.1	28.4	23.4	81.03	-932.8	186.8	333.2	301.1	32.09	10.384	
6,900.0	6,734.3	6,833.4	6,697.3	28.4	23.4	79.11	-931.7	137.8	335.1	303.1	32.02	10.465	
7,000.0	6,818.0	6,924.6	6,768.2	28.3	23.3	77.39	-930.4	80.5	337.2	305.1	32.12	10.498	
7,100.0	6,893.9	7,014.9	6,831.2	28.3	23.3	75.89	-929.0	15.9	339.3	306.9	32.44	10.459	

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

Alm 33V-HZ Pad South Sec.33-T7N-R65W - Alm 33W-214 - Wellbore #1 - Plan #1 (03-17-13)													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)			
7,200.0	6,960.7	7,104.4	6,885.7	28.3	23.3	74.61	-927.4	-55.1	341.3	308.2	33.06	10.323		
7,300.0	7,017.2	7,193.3	6,931.1	28.3	23.3	73.58	-925.7	-131.4	343.0	308.9	34.06	10.071		
7,400.0	7,062.5	7,281.7	6,967.3	28.3	23.4	72.80	-923.9	-211.9	344.4	308.8	35.53	9.693		
7,500.0	7,095.8	7,369.7	6,993.8	28.4	23.6	72.26	-922.1	-295.7	345.3	307.9	37.47	9.217		
7,600.0	7,116.5	7,457.4	7,010.5	28.7	24.0	71.99	-920.1	-381.9	345.8	306.0	39.88	8.673		
7,700.0	7,127.5	7,545.0	7,017.2	29.1	24.8	71.52	-918.2	-469.1	346.9	304.0	42.85	8.095		
7,800.0	7,133.9	7,642.3	7,017.1	29.9	26.3	70.46	-916.0	-566.4	349.0	303.0	45.91	7.600		
7,900.0	7,135.0	7,742.3	7,016.9	31.1	28.2	70.23	-913.8	-666.4	349.4	299.6	49.78	7.019		
8,000.0	7,136.1	7,842.3	7,016.6	32.7	30.2	70.02	-911.6	-766.3	349.9	296.0	53.90	6.491		
8,100.0	7,137.3	7,942.3	7,016.3	34.6	32.5	69.81	-909.4	-866.3	350.3	292.1	58.19	6.020		
8,200.0	7,138.4	8,042.3	7,016.1	36.6	34.8	69.59	-907.2	-966.2	350.8	288.1	62.62	5.601		
8,300.0	7,139.5	8,142.3	7,015.8	38.9	37.2	69.38	-904.9	-1,066.2	351.2	284.1	67.15	5.230		
8,400.0	7,140.6	8,242.3	7,015.5	41.2	39.7	69.17	-902.7	-1,166.2	351.7	279.9	71.76	4.901		
8,500.0	7,141.7	8,342.3	7,015.3	43.6	42.2	68.96	-900.5	-1,266.1	352.2	275.7	76.44	4.607		
8,600.0	7,142.8	8,442.2	7,015.0	46.0	44.7	68.75	-898.3	-1,366.1	352.6	271.5	81.16	4.345		
8,700.0	7,144.0	8,542.2	7,014.8	48.5	47.3	68.54	-896.1	-1,466.1	353.1	267.2	85.92	4.110		
8,800.0	7,145.1	8,642.2	7,014.5	51.0	49.9	68.33	-893.8	-1,566.0	353.6	262.9	90.71	3.898		
8,900.0	7,146.2	8,742.2	7,014.2	53.6	52.5	68.12	-891.6	-1,666.0	354.1	258.5	95.53	3.706		
9,000.0	7,147.3	8,842.2	7,014.0	56.2	55.1	67.91	-889.4	-1,766.0	354.6	254.2	100.36	3.533		
9,100.0	7,148.4	8,942.2	7,013.7	58.8	57.8	67.70	-887.2	-1,865.9	355.1	249.9	105.21	3.375		
9,200.0	7,149.5	9,042.2	7,013.4	61.4	60.4	67.50	-885.0	-1,965.9	355.6	245.5	110.06	3.231		
9,300.0	7,150.7	9,142.2	7,013.2	64.1	63.1	67.29	-882.7	-2,065.9	356.1	241.2	114.92	3.099		
9,400.0	7,151.8	9,242.2	7,012.9	66.7	65.8	67.09	-880.5	-2,165.8	356.6	236.8	119.78	2.977		
9,500.0	7,152.9	9,342.2	7,012.7	69.4	68.5	66.88	-878.3	-2,265.8	357.1	232.5	124.64	2.865		
9,600.0	7,154.0	9,442.2	7,012.4	72.1	71.2	66.68	-876.1	-2,365.8	357.6	228.1	129.50	2.762		
9,700.0	7,155.1	9,542.1	7,012.1	74.8	74.0	66.47	-873.8	-2,465.7	358.1	223.8	134.36	2.666		
9,800.0	7,156.2	9,642.1	7,011.9	77.5	76.7	66.27	-871.6	-2,565.7	358.7	219.5	139.21	2.576		
9,900.0	7,157.4	9,742.1	7,011.6	80.2	79.4	66.06	-869.4	-2,665.7	359.2	215.2	144.06	2.494		
10,000.0	7,158.5	9,842.1	7,011.4	82.9	82.1	65.86	-867.2	-2,765.6	359.8	210.9	148.90	2.416		
10,100.0	7,159.6	9,942.1	7,011.1	85.6	84.9	65.66	-865.0	-2,865.6	360.3	206.6	153.73	2.344		
10,200.0	7,160.7	10,042.1	7,010.8	88.3	87.6	65.46	-862.7	-2,965.6	360.8	202.3	158.56	2.276		
10,300.0	7,161.8	10,142.1	7,010.6	91.1	90.4	65.26	-860.5	-3,065.5	361.4	198.0	163.37	2.212		
10,400.0	7,162.9	10,242.1	7,010.3	93.8	93.1	65.06	-858.3	-3,165.5	361.9	193.8	168.17	2.152		
10,500.0	7,164.1	10,342.1	7,010.0	96.5	95.9	64.86	-856.1	-3,265.5	362.5	189.5	172.97	2.096		
10,600.0	7,165.2	10,442.1	7,009.8	99.3	98.7	64.66	-853.9	-3,365.4	363.1	185.3	177.75	2.043		
10,700.0	7,166.3	10,542.0	7,009.5	102.0	101.4	64.46	-851.6	-3,465.4	363.6	181.1	182.52	1.992		
10,800.0	7,167.4	10,642.0	7,009.3	104.8	104.2	64.27	-849.4	-3,565.4	364.2	176.9	187.28	1.945		
10,900.0	7,168.5	10,742.0	7,009.0	107.5	107.0	64.07	-847.2	-3,665.3	364.8	172.8	192.02	1.900		
11,000.0	7,169.6	10,842.0	7,008.7	110.3	109.7	63.87	-845.0	-3,765.3	365.4	168.6	196.76	1.857		
11,100.0	7,170.8	10,942.0	7,008.5	113.1	112.5	63.68	-842.8	-3,865.2	366.0	164.5	201.48	1.816		
11,200.0	7,171.9	11,042.0	7,008.2	115.8	115.3	63.48	-840.5	-3,965.2	366.6	160.4	206.18	1.778		
11,300.0	7,173.0	11,142.0	7,008.0	118.6	118.0	63.29	-838.3	-4,065.2	367.2	156.3	210.87	1.741		
11,400.0	7,174.1	11,242.0	7,007.7	121.4	120.8	63.09	-836.1	-4,165.1	367.7	152.2	215.55	1.706		
11,500.0	7,175.2	11,342.0	7,007.4	124.1	123.6	62.90	-833.9	-4,265.1	368.4	148.1	220.22	1.673		
11,600.0	7,176.3	11,442.0	7,007.2	126.9	126.4	62.71	-831.6	-4,365.1	369.0	144.1	224.86	1.641		
11,658.2	7,177.0	11,500.2	7,007.0	128.5	128.0	62.60	-830.4	-4,423.3	369.3	141.8	227.56	1.623 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Alm 33W-404
Project:	SEC.33-T7N-R65W	TVD Reference:	WELL @ 4805.0ft (Original Well Elev)
Reference Site:	Alm 33V-HZ Pad South Sec.33-T7N-R65W	MD Reference:	WELL @ 4805.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Alm 33W-404	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 (03-07-13)	Offset TVD Reference:	Offset Datum

Offset Design												Alm 33V-HZ Pad South Sec.33-T7N-R65W - Lamb 33-23 (Exist) - Wellbore #1 - Wellbore #1		Offset Site Error:		0.0 ft	
Survey Program: 7300-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)						
9,900.0	7,157.4	7,138.4	7,138.4	80.2	8.0	-89.76	-2,105.6	-3,044.0	980.7	893.3	87.36	11.226					
10,000.0	7,158.5	7,139.5	7,139.5	82.9	8.0	-89.83	-2,105.6	-3,044.0	949.6	859.5	90.10	10.540					
10,100.0	7,159.6	7,140.6	7,140.6	85.6	8.0	-89.90	-2,105.6	-3,044.0	928.3	835.4	92.84	9.998					
10,200.0	7,160.7	7,141.7	7,141.7	88.3	8.0	-89.96	-2,105.6	-3,044.0	917.4	821.8	95.59	9.597					
10,250.2	7,161.3	7,142.3	7,142.3	89.7	8.0	-90.00	-2,105.6	-3,044.0	916.1	819.1	96.97	9.446 CC					
10,300.0	7,161.8	7,142.8	7,142.8	91.1	8.0	-90.03	-2,105.6	-3,044.0	917.4	819.1	98.34	9.329 ES					
10,400.0	7,162.9	7,143.9	7,143.9	93.8	8.0	-90.10	-2,105.6	-3,044.0	928.2	827.1	101.10	9.181					
10,500.0	7,164.1	7,145.1	7,145.1	96.5	8.0	-90.17	-2,105.6	-3,044.0	949.5	845.6	103.86	9.142 SF					
10,600.0	7,165.2	7,146.2	7,146.2	99.3	8.0	-90.24	-2,105.6	-3,044.0	980.6	873.9	106.62	9.197					

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Alm 33W-404
Project:	SEC.33-T7N-R65W	TVD Reference:	WELL @ 4805.0ft (Original Well Elev)
Reference Site:	Alm 33V-HZ Pad South Sec.33-T7N-R65W	MD Reference:	WELL @ 4805.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Alm 33W-404	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 (03-07-13)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4805.0ft (Original Well Elev) Coordinates are relative to: Alm 33W-404
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: 0.54°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Alm 33W-404
Project:	SEC.33-T7N-R65W	TVD Reference:	WELL @ 4805.0ft (Original Well Elev)
Reference Site:	Alm 33V-HZ Pad South Sec.33-T7N-R65W	MD Reference:	WELL @ 4805.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Alm 33W-404	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 (03-07-13)	Offset TVD Reference:	Offset Datum

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