

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: Alm 33U-234

Surface Location: Alm 33V-HZ Pad North Sec.33-T7N-R65W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4792.0
+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1439018.26 3233472.15 40.535470 -104.660020
Original Well Elev WELL @ 4807.0ft (Original Well Elev)

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape Point
BHL 253'FNL & 500'FWL	7007.0	761.8	-4416.7	



Azimuths to True North
Magnetic North: 8.59°

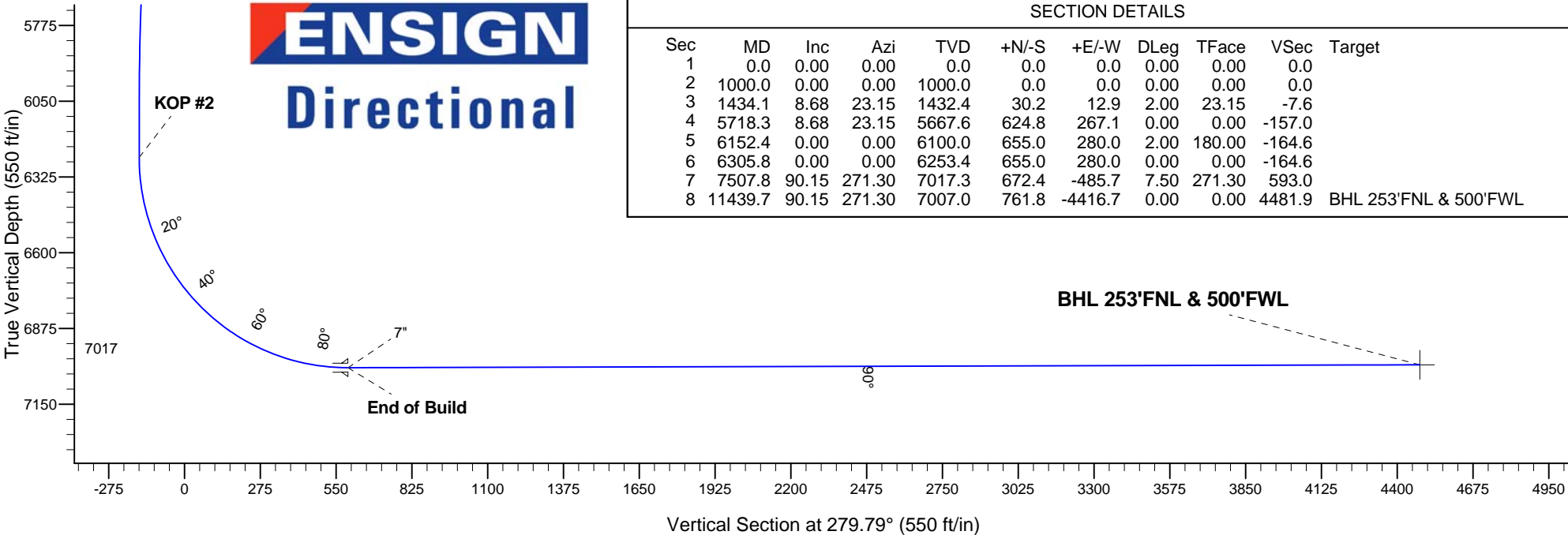
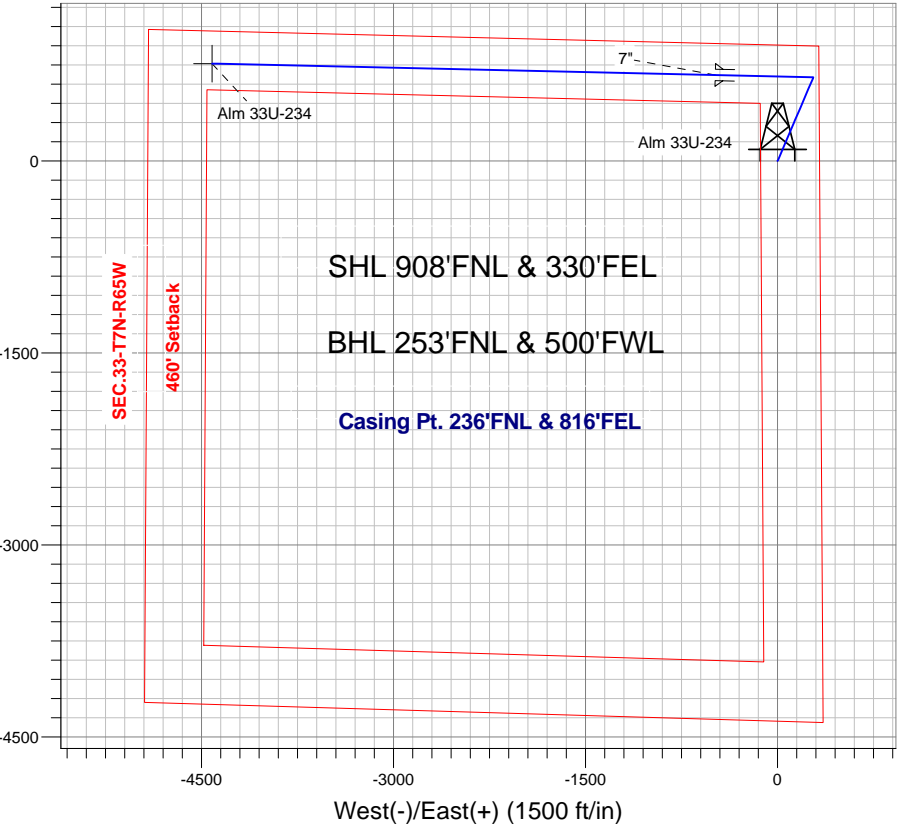
Magnetic Field
Strength: 53031.5snT
Dip Angle: 67.12°
Date: 3/7/2013
Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
1000.0	1000.0	KOP #1
6253.4	6305.8	KOP #2
7017.3	7507.8	End of Build

Alm 33V-HZ Pad North Sec.33-T7N-R65W
Alm 33U-234
Plan #1 (03-07-13)
13:45, March 07 2013

South(-)/North(+) (1500 ft/in)





PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.33-T7N-R65W

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

Alm 33U-234

Wellbore #1

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

Standard Planning Report

07 March, 2013

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,434.1	8.68	23.15	1,432.4	30.2	12.9	2.00	2.00	0.00	23.15	
5,718.3	8.68	23.15	5,667.6	624.8	267.1	0.00	0.00	0.00	0.00	
6,152.4	0.00	0.00	6,100.0	655.0	280.0	2.00	-2.00	0.00	180.00	
6,305.8	0.00	0.00	6,253.4	655.0	280.0	0.00	0.00	0.00	0.00	
7,507.8	90.15	271.30	7,017.3	672.4	-485.7	7.50	7.50	0.00	271.30	
11,439.7	90.15	271.30	7,007.0	761.8	-4,416.7	0.00	0.00	0.00	0.00	BHL 253°FNL & 500

Database:	Landmark	Local Co-ordinate Reference:	Well Alm 33U-234
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4807.0ft (Original Well Elev)
Project:	SEC.33-T7N-R65W	MD Reference:	WELL @ 4807.0ft (Original Well Elev)
Site:	Alm 33V-HZ Pad North Sec.33-T7N-R65W	North Reference:	True
Well:	Alm 33U-234	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
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
680.0	0.00	0.00	680.0	0.0	0.0	0.0	0.00	0.00	0.00
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	0.00
760.0	0.00	0.00	760.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
840.0	0.00	0.00	840.0	0.0	0.0	0.0	0.00	0.00	0.00
880.0	0.00	0.00	880.0	0.0	0.0	0.0	0.00	0.00	0.00
920.0	0.00	0.00	920.0	0.0	0.0	0.0	0.00	0.00	0.00
960.0	0.00	0.00	960.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
1,040.0	0.80	23.15	1,040.0	0.3	0.1	-0.1	2.00	2.00	0.00
1,080.0	1.60	23.15	1,080.0	1.0	0.4	-0.3	2.00	2.00	0.00
1,120.0	2.40	23.15	1,120.0	2.3	1.0	-0.6	2.00	2.00	0.00
1,160.0	3.20	23.15	1,159.9	4.1	1.8	-1.0	2.00	2.00	0.00
1,200.0	4.00	23.15	1,199.8	6.4	2.7	-1.6	2.00	2.00	0.00
1,240.0	4.80	23.15	1,239.7	9.2	3.9	-2.3	2.00	2.00	0.00
1,280.0	5.60	23.15	1,279.6	12.6	5.4	-3.2	2.00	2.00	0.00
1,320.0	6.40	23.15	1,319.3	16.4	7.0	-4.1	2.00	2.00	0.00
1,360.0	7.20	23.15	1,359.1	20.8	8.9	-5.2	2.00	2.00	0.00
1,400.0	8.00	23.15	1,398.7	25.6	11.0	-6.4	2.00	2.00	0.00
1,434.1	8.68	23.15	1,432.4	30.2	12.9	-7.6	2.00	2.00	0.00
1,440.0	8.68	23.15	1,438.3	31.0	13.3	-7.8	0.00	0.00	0.00
1,480.0	8.68	23.15	1,477.8	36.6	15.6	-9.2	0.00	0.00	0.00
1,520.0	8.68	23.15	1,517.4	42.1	18.0	-10.6	0.00	0.00	0.00
1,560.0	8.68	23.15	1,556.9	47.7	20.4	-12.0	0.00	0.00	0.00
1,600.0	8.68	23.15	1,596.4	53.2	22.7	-13.4	0.00	0.00	0.00
1,640.0	8.68	23.15	1,636.0	58.8	25.1	-14.8	0.00	0.00	0.00
1,680.0	8.68	23.15	1,675.5	64.3	27.5	-16.2	0.00	0.00	0.00
1,720.0	8.68	23.15	1,715.1	69.9	29.9	-17.6	0.00	0.00	0.00
1,760.0	8.68	23.15	1,754.6	75.4	32.2	-19.0	0.00	0.00	0.00
1,800.0	8.68	23.15	1,794.1	81.0	34.6	-20.3	0.00	0.00	0.00
1,840.0	8.68	23.15	1,833.7	86.5	37.0	-21.7	0.00	0.00	0.00
1,880.0	8.68	23.15	1,873.2	92.1	39.4	-23.1	0.00	0.00	0.00
1,920.0	8.68	23.15	1,912.8	97.6	41.7	-24.5	0.00	0.00	0.00
1,960.0	8.68	23.15	1,952.3	103.2	44.1	-25.9	0.00	0.00	0.00
2,000.0	8.68	23.15	1,991.9	108.7	46.5	-27.3	0.00	0.00	0.00

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Project:	SEC.33-T7N-R65W	MD Reference:	WELL @ 4807.0ft (Original Well Elev)
Site:	Alm 33V-HZ Pad North Sec.33-T7N-R65W	North Reference:	True
Well:	Alm 33U-234	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	8.68	23.15	2,031.4	114.3	48.9	-28.7	0.00	0.00	0.00
2,080.0	8.68	23.15	2,070.9	119.8	51.2	-30.1	0.00	0.00	0.00
2,120.0	8.68	23.15	2,110.5	125.4	53.6	-31.5	0.00	0.00	0.00
2,160.0	8.68	23.15	2,150.0	130.9	56.0	-32.9	0.00	0.00	0.00
2,200.0	8.68	23.15	2,189.6	136.5	58.3	-34.3	0.00	0.00	0.00
2,240.0	8.68	23.15	2,229.1	142.0	60.7	-35.7	0.00	0.00	0.00
2,280.0	8.68	23.15	2,268.6	147.6	63.1	-37.1	0.00	0.00	0.00
2,320.0	8.68	23.15	2,308.2	153.1	65.5	-38.5	0.00	0.00	0.00
2,360.0	8.68	23.15	2,347.7	158.7	67.8	-39.9	0.00	0.00	0.00
2,400.0	8.68	23.15	2,387.3	164.2	70.2	-41.3	0.00	0.00	0.00
2,440.0	8.68	23.15	2,426.8	169.8	72.6	-42.7	0.00	0.00	0.00
2,480.0	8.68	23.15	2,466.4	175.4	75.0	-44.1	0.00	0.00	0.00
2,520.0	8.68	23.15	2,505.9	180.9	77.3	-45.5	0.00	0.00	0.00
2,560.0	8.68	23.15	2,545.4	186.5	79.7	-46.9	0.00	0.00	0.00
2,600.0	8.68	23.15	2,585.0	192.0	82.1	-48.2	0.00	0.00	0.00
2,640.0	8.68	23.15	2,624.5	197.6	84.5	-49.6	0.00	0.00	0.00
2,680.0	8.68	23.15	2,664.1	203.1	86.8	-51.0	0.00	0.00	0.00
2,720.0	8.68	23.15	2,703.6	208.7	89.2	-52.4	0.00	0.00	0.00
2,760.0	8.68	23.15	2,743.1	214.2	91.6	-53.8	0.00	0.00	0.00
2,800.0	8.68	23.15	2,782.7	219.8	93.9	-55.2	0.00	0.00	0.00
2,840.0	8.68	23.15	2,822.2	225.3	96.3	-56.6	0.00	0.00	0.00
2,880.0	8.68	23.15	2,861.8	230.9	98.7	-58.0	0.00	0.00	0.00
2,920.0	8.68	23.15	2,901.3	236.4	101.1	-59.4	0.00	0.00	0.00
2,960.0	8.68	23.15	2,940.9	242.0	103.4	-60.8	0.00	0.00	0.00
3,000.0	8.68	23.15	2,980.4	247.5	105.8	-62.2	0.00	0.00	0.00
3,040.0	8.68	23.15	3,019.9	253.1	108.2	-63.6	0.00	0.00	0.00
3,080.0	8.68	23.15	3,059.5	258.6	110.6	-65.0	0.00	0.00	0.00
3,120.0	8.68	23.15	3,099.0	264.2	112.9	-66.4	0.00	0.00	0.00
3,160.0	8.68	23.15	3,138.6	269.7	115.3	-67.8	0.00	0.00	0.00
3,200.0	8.68	23.15	3,178.1	275.3	117.7	-69.2	0.00	0.00	0.00
3,240.0	8.68	23.15	3,217.6	280.8	120.1	-70.6	0.00	0.00	0.00
3,280.0	8.68	23.15	3,257.2	286.4	122.4	-72.0	0.00	0.00	0.00
3,320.0	8.68	23.15	3,296.7	291.9	124.8	-73.4	0.00	0.00	0.00
3,360.0	8.68	23.15	3,336.3	297.5	127.2	-74.8	0.00	0.00	0.00
3,400.0	8.68	23.15	3,375.8	303.0	129.5	-76.1	0.00	0.00	0.00
3,440.0	8.68	23.15	3,415.4	308.6	131.9	-77.5	0.00	0.00	0.00
3,480.0	8.68	23.15	3,454.9	314.1	134.3	-78.9	0.00	0.00	0.00
3,520.0	8.68	23.15	3,494.4	319.7	136.7	-80.3	0.00	0.00	0.00
3,560.0	8.68	23.15	3,534.0	325.3	139.0	-81.7	0.00	0.00	0.00
3,600.0	8.68	23.15	3,573.5	330.8	141.4	-83.1	0.00	0.00	0.00
3,640.0	8.68	23.15	3,613.1	336.4	143.8	-84.5	0.00	0.00	0.00
3,680.0	8.68	23.15	3,652.6	341.9	146.2	-85.9	0.00	0.00	0.00
3,720.0	8.68	23.15	3,692.1	347.5	148.5	-87.3	0.00	0.00	0.00
3,760.0	8.68	23.15	3,731.7	353.0	150.9	-88.7	0.00	0.00	0.00
3,800.0	8.68	23.15	3,771.2	358.6	153.3	-90.1	0.00	0.00	0.00
3,840.0	8.68	23.15	3,810.8	364.1	155.7	-91.5	0.00	0.00	0.00
3,880.0	8.68	23.15	3,850.3	369.7	158.0	-92.9	0.00	0.00	0.00
3,920.0	8.68	23.15	3,889.9	375.2	160.4	-94.3	0.00	0.00	0.00
3,960.0	8.68	23.15	3,929.4	380.8	162.8	-95.7	0.00	0.00	0.00
4,000.0	8.68	23.15	3,968.9	386.3	165.1	-97.1	0.00	0.00	0.00
4,040.0	8.68	23.15	4,008.5	391.9	167.5	-98.5	0.00	0.00	0.00
4,080.0	8.68	23.15	4,048.0	397.4	169.9	-99.9	0.00	0.00	0.00
4,120.0	8.68	23.15	4,087.6	403.0	172.3	-101.3	0.00	0.00	0.00

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Project:	SEC.33-T7N-R65W	MD Reference:	WELL @ 4807.0ft (Original Well Elev)
Site:	Alm 33V-HZ Pad North Sec.33-T7N-R65W	North Reference:	True
Well:	Alm 33U-234	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	8.68	23.15	4,127.1	408.5	174.6	-102.7	0.00	0.00	0.00	
4,200.0	8.68	23.15	4,166.6	414.1	177.0	-104.1	0.00	0.00	0.00	
4,240.0	8.68	23.15	4,206.2	419.6	179.4	-105.4	0.00	0.00	0.00	
4,280.0	8.68	23.15	4,245.7	425.2	181.8	-106.8	0.00	0.00	0.00	
4,320.0	8.68	23.15	4,285.3	430.7	184.1	-108.2	0.00	0.00	0.00	
4,360.0	8.68	23.15	4,324.8	436.3	186.5	-109.6	0.00	0.00	0.00	
4,400.0	8.68	23.15	4,364.4	441.8	188.9	-111.0	0.00	0.00	0.00	
4,440.0	8.68	23.15	4,403.9	447.4	191.3	-112.4	0.00	0.00	0.00	
4,480.0	8.68	23.15	4,443.4	452.9	193.6	-113.8	0.00	0.00	0.00	
4,520.0	8.68	23.15	4,483.0	458.5	196.0	-115.2	0.00	0.00	0.00	
4,560.0	8.68	23.15	4,522.5	464.0	198.4	-116.6	0.00	0.00	0.00	
4,600.0	8.68	23.15	4,562.1	469.6	200.7	-118.0	0.00	0.00	0.00	
4,640.0	8.68	23.15	4,601.6	475.2	203.1	-119.4	0.00	0.00	0.00	
4,680.0	8.68	23.15	4,641.1	480.7	205.5	-120.8	0.00	0.00	0.00	
4,720.0	8.68	23.15	4,680.7	486.3	207.9	-122.2	0.00	0.00	0.00	
4,760.0	8.68	23.15	4,720.2	491.8	210.2	-123.6	0.00	0.00	0.00	
4,800.0	8.68	23.15	4,759.8	497.4	212.6	-125.0	0.00	0.00	0.00	
4,840.0	8.68	23.15	4,799.3	502.9	215.0	-126.4	0.00	0.00	0.00	
4,880.0	8.68	23.15	4,838.9	508.5	217.4	-127.8	0.00	0.00	0.00	
4,920.0	8.68	23.15	4,878.4	514.0	219.7	-129.2	0.00	0.00	0.00	
4,960.0	8.68	23.15	4,917.9	519.6	222.1	-130.6	0.00	0.00	0.00	
5,000.0	8.68	23.15	4,957.5	525.1	224.5	-132.0	0.00	0.00	0.00	
5,040.0	8.68	23.15	4,997.0	530.7	226.9	-133.3	0.00	0.00	0.00	
5,080.0	8.68	23.15	5,036.6	536.2	229.2	-134.7	0.00	0.00	0.00	
5,120.0	8.68	23.15	5,076.1	541.8	231.6	-136.1	0.00	0.00	0.00	
5,160.0	8.68	23.15	5,115.6	547.3	234.0	-137.5	0.00	0.00	0.00	
5,200.0	8.68	23.15	5,155.2	552.9	236.3	-138.9	0.00	0.00	0.00	
5,240.0	8.68	23.15	5,194.7	558.4	238.7	-140.3	0.00	0.00	0.00	
5,280.0	8.68	23.15	5,234.3	564.0	241.1	-141.7	0.00	0.00	0.00	
5,320.0	8.68	23.15	5,273.8	569.5	243.5	-143.1	0.00	0.00	0.00	
5,360.0	8.68	23.15	5,313.4	575.1	245.8	-144.5	0.00	0.00	0.00	
5,400.0	8.68	23.15	5,352.9	580.6	248.2	-145.9	0.00	0.00	0.00	
5,440.0	8.68	23.15	5,392.4	586.2	250.6	-147.3	0.00	0.00	0.00	
5,480.0	8.68	23.15	5,432.0	591.7	253.0	-148.7	0.00	0.00	0.00	
5,520.0	8.68	23.15	5,471.5	597.3	255.3	-150.1	0.00	0.00	0.00	
5,560.0	8.68	23.15	5,511.1	602.8	257.7	-151.5	0.00	0.00	0.00	
5,600.0	8.68	23.15	5,550.6	608.4	260.1	-152.9	0.00	0.00	0.00	
5,640.0	8.68	23.15	5,590.1	613.9	262.5	-154.3	0.00	0.00	0.00	
5,680.0	8.68	23.15	5,629.7	619.5	264.8	-155.7	0.00	0.00	0.00	
5,718.3	8.68	23.15	5,667.6	624.8	267.1	-157.0	0.00	0.00	0.00	
5,720.0	8.65	23.15	5,669.2	625.1	267.2	-157.1	2.00	-2.00	0.00	
5,760.0	7.85	23.15	5,708.8	630.3	269.5	-158.4	2.00	-2.00	0.00	
5,800.0	7.05	23.15	5,748.5	635.1	271.5	-159.6	2.00	-2.00	0.00	
5,840.0	6.25	23.15	5,788.2	639.4	273.3	-160.7	2.00	-2.00	0.00	
5,880.0	5.45	23.15	5,828.0	643.1	274.9	-161.6	2.00	-2.00	0.00	
5,920.0	4.65	23.15	5,867.8	646.3	276.3	-162.4	2.00	-2.00	0.00	
5,960.0	3.85	23.15	5,907.7	649.1	277.5	-163.1	2.00	-2.00	0.00	
6,000.0	3.05	23.15	5,947.7	651.3	278.4	-163.7	2.00	-2.00	0.00	
6,040.0	2.25	23.15	5,987.6	653.0	279.1	-164.1	2.00	-2.00	0.00	
6,080.0	1.45	23.15	6,027.6	654.2	279.6	-164.4	2.00	-2.00	0.00	
6,120.0	0.65	23.15	6,067.6	654.8	279.9	-164.5	2.00	-2.00	0.00	
6,152.4	0.00	0.00	6,100.0	655.0	280.0	-164.6	2.00	-2.00	0.00	
6,160.0	0.00	0.00	6,107.6	655.0	280.0	-164.6	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Alm 33U-234
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4807.0ft (Original Well Elev)
Project:	SEC.33-T7N-R65W	MD Reference:	WELL @ 4807.0ft (Original Well Elev)
Site:	Alm 33V-HZ Pad North Sec.33-T7N-R65W	North Reference:	True
Well:	Alm 33U-234	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)
6,200.0	0.00	0.00	6,147.6	655.0	280.0	-164.6	0.00	0.00	0.00
6,240.0	0.00	0.00	6,187.6	655.0	280.0	-164.6	0.00	0.00	0.00
6,280.0	0.00	0.00	6,227.6	655.0	280.0	-164.6	0.00	0.00	0.00
6,305.8	0.00	0.00	6,253.4	655.0	280.0	-164.6	0.00	0.00	0.00
KOP #2									
6,320.0	1.07	271.30	6,267.6	655.0	279.9	-164.5	7.52	7.52	0.00
6,360.0	4.07	271.30	6,307.5	655.0	278.1	-162.7	7.50	7.50	0.00
6,400.0	7.07	271.30	6,347.4	655.1	274.2	-158.8	7.50	7.50	0.00
6,440.0	10.07	271.30	6,386.9	655.3	268.2	-153.0	7.50	7.50	0.00
6,480.0	13.07	271.30	6,426.1	655.4	260.2	-145.0	7.50	7.50	0.00
6,520.0	16.07	271.30	6,464.8	655.7	250.2	-135.1	7.50	7.50	0.00
6,560.0	19.07	271.30	6,502.9	656.0	238.1	-123.1	7.50	7.50	0.00
6,600.0	22.07	271.30	6,540.4	656.3	224.0	-109.2	7.50	7.50	0.00
6,640.0	25.07	271.30	6,577.0	656.6	208.1	-93.4	7.50	7.50	0.00
6,680.0	28.07	271.30	6,612.8	657.0	190.2	-75.7	7.50	7.50	0.00
6,720.0	31.07	271.30	6,647.6	657.5	170.4	-56.2	7.50	7.50	0.00
6,760.0	34.07	271.30	6,681.3	658.0	148.9	-34.9	7.50	7.50	0.00
6,800.0	37.07	271.30	6,713.8	658.5	125.7	-11.9	7.50	7.50	0.00
6,840.0	40.07	271.30	6,745.1	659.1	100.7	12.8	7.50	7.50	0.00
6,880.0	43.07	271.30	6,775.0	659.7	74.2	39.0	7.50	7.50	0.00
6,920.0	46.07	271.30	6,803.5	660.3	46.1	66.8	7.50	7.50	0.00
6,960.0	49.07	271.30	6,830.5	661.0	16.6	96.0	7.50	7.50	0.00
7,000.0	52.07	271.30	6,855.9	661.7	-14.3	126.5	7.50	7.50	0.00
7,040.0	55.07	271.30	6,879.7	662.4	-46.4	158.3	7.50	7.50	0.00
7,080.0	58.07	271.30	6,901.7	663.2	-79.8	191.4	7.50	7.50	0.00
7,120.0	61.07	271.30	6,922.0	664.0	-114.3	225.5	7.50	7.50	0.00
7,160.0	64.07	271.30	6,940.4	664.8	-149.8	260.6	7.50	7.50	0.00
7,200.0	67.07	271.30	6,956.9	665.6	-186.2	296.6	7.50	7.50	0.00
7,240.0	70.07	271.30	6,971.5	666.5	-223.4	333.4	7.50	7.50	0.00
7,280.0	73.07	271.30	6,984.2	667.3	-261.3	370.9	7.50	7.50	0.00
7,320.0	76.07	271.30	6,994.8	668.2	-299.9	409.1	7.50	7.50	0.00
7,360.0	79.07	271.30	7,003.4	669.1	-338.9	447.7	7.50	7.50	0.00
7,400.0	82.07	271.30	7,010.0	670.0	-378.4	486.7	7.50	7.50	0.00
7,440.0	85.07	271.30	7,014.5	670.9	-418.1	526.0	7.50	7.50	0.00
7,480.0	88.07	271.30	7,016.9	671.8	-458.0	565.5	7.50	7.50	0.00
7,507.8	90.15	271.30	7,017.3	672.4	-485.8	593.0	7.49	7.49	0.00
End of Build - 7"									
7,520.0	90.15	271.30	7,017.3	672.7	-498.0	605.1	0.00	0.00	0.00
7,560.0	90.15	271.30	7,017.2	673.6	-538.0	644.6	0.00	0.00	0.00
7,600.0	90.15	271.30	7,017.1	674.5	-578.0	684.2	0.00	0.00	0.00
7,640.0	90.15	271.30	7,016.9	675.4	-618.0	723.8	0.00	0.00	0.00
7,680.0	90.15	271.30	7,016.8	676.3	-657.9	763.3	0.00	0.00	0.00
7,720.0	90.15	271.30	7,016.7	677.2	-697.9	802.9	0.00	0.00	0.00
7,760.0	90.15	271.30	7,016.6	678.2	-737.9	842.5	0.00	0.00	0.00
7,800.0	90.15	271.30	7,016.5	679.1	-777.9	882.0	0.00	0.00	0.00
7,840.0	90.15	271.30	7,016.4	680.0	-817.9	921.6	0.00	0.00	0.00
7,880.0	90.15	271.30	7,016.3	680.9	-857.9	961.1	0.00	0.00	0.00
7,920.0	90.15	271.30	7,016.2	681.8	-897.9	1,000.7	0.00	0.00	0.00
7,960.0	90.15	271.30	7,016.1	682.7	-937.9	1,040.3	0.00	0.00	0.00
8,000.0	90.15	271.30	7,016.0	683.6	-977.9	1,079.8	0.00	0.00	0.00
8,040.0	90.15	271.30	7,015.9	684.5	-1,017.8	1,119.4	0.00	0.00	0.00
8,080.0	90.15	271.30	7,015.8	685.4	-1,057.8	1,159.0	0.00	0.00	0.00
8,120.0	90.15	271.30	7,015.7	686.3	-1,097.8	1,198.5	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Alm 33U-234
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4807.0ft (Original Well Elev)
Project:	SEC.33-T7N-R65W	MD Reference:	WELL @ 4807.0ft (Original Well Elev)
Site:	Alm 33V-HZ Pad North Sec.33-T7N-R65W	North Reference:	True
Well:	Alm 33U-234	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)
8,160.0	90.15	271.30	7,015.6	687.3	-1,137.8	1,238.1	0.00	0.00	0.00
8,200.0	90.15	271.30	7,015.5	688.2	-1,177.8	1,277.6	0.00	0.00	0.00
8,240.0	90.15	271.30	7,015.4	689.1	-1,217.8	1,317.2	0.00	0.00	0.00
8,280.0	90.15	271.30	7,015.3	690.0	-1,257.8	1,356.8	0.00	0.00	0.00
8,320.0	90.15	271.30	7,015.2	690.9	-1,297.8	1,396.3	0.00	0.00	0.00
8,360.0	90.15	271.30	7,015.1	691.8	-1,337.8	1,435.9	0.00	0.00	0.00
8,400.0	90.15	271.30	7,015.0	692.7	-1,377.8	1,475.4	0.00	0.00	0.00
8,440.0	90.15	271.30	7,014.9	693.6	-1,417.7	1,515.0	0.00	0.00	0.00
8,480.0	90.15	271.30	7,014.7	694.5	-1,457.7	1,554.6	0.00	0.00	0.00
8,520.0	90.15	271.30	7,014.6	695.4	-1,497.7	1,594.1	0.00	0.00	0.00
8,560.0	90.15	271.30	7,014.5	696.3	-1,537.7	1,633.7	0.00	0.00	0.00
8,600.0	90.15	271.30	7,014.4	697.3	-1,577.7	1,673.3	0.00	0.00	0.00
8,640.0	90.15	271.30	7,014.3	698.2	-1,617.7	1,712.8	0.00	0.00	0.00
8,680.0	90.15	271.30	7,014.2	699.1	-1,657.7	1,752.4	0.00	0.00	0.00
8,720.0	90.15	271.30	7,014.1	700.0	-1,697.7	1,791.9	0.00	0.00	0.00
8,760.0	90.15	271.30	7,014.0	700.9	-1,737.7	1,831.5	0.00	0.00	0.00
8,800.0	90.15	271.30	7,013.9	701.8	-1,777.6	1,871.1	0.00	0.00	0.00
8,840.0	90.15	271.30	7,013.8	702.7	-1,817.6	1,910.6	0.00	0.00	0.00
8,880.0	90.15	271.30	7,013.7	703.6	-1,857.6	1,950.2	0.00	0.00	0.00
8,920.0	90.15	271.30	7,013.6	704.5	-1,897.6	1,989.8	0.00	0.00	0.00
8,960.0	90.15	271.30	7,013.5	705.4	-1,937.6	2,029.3	0.00	0.00	0.00
9,000.0	90.15	271.30	7,013.4	706.4	-1,977.6	2,068.9	0.00	0.00	0.00
9,040.0	90.15	271.30	7,013.3	707.3	-2,017.6	2,108.4	0.00	0.00	0.00
9,080.0	90.15	271.30	7,013.2	708.2	-2,057.6	2,148.0	0.00	0.00	0.00
9,120.0	90.15	271.30	7,013.1	709.1	-2,097.6	2,187.6	0.00	0.00	0.00
9,160.0	90.15	271.30	7,013.0	710.0	-2,137.6	2,227.1	0.00	0.00	0.00
9,200.0	90.15	271.30	7,012.9	710.9	-2,177.5	2,266.7	0.00	0.00	0.00
9,240.0	90.15	271.30	7,012.8	711.8	-2,217.5	2,306.3	0.00	0.00	0.00
9,280.0	90.15	271.30	7,012.7	712.7	-2,257.5	2,345.8	0.00	0.00	0.00
9,320.0	90.15	271.30	7,012.5	713.6	-2,297.5	2,385.4	0.00	0.00	0.00
9,360.0	90.15	271.30	7,012.4	714.5	-2,337.5	2,424.9	0.00	0.00	0.00
9,400.0	90.15	271.30	7,012.3	715.4	-2,377.5	2,464.5	0.00	0.00	0.00
9,440.0	90.15	271.30	7,012.2	716.4	-2,417.5	2,504.1	0.00	0.00	0.00
9,480.0	90.15	271.30	7,012.1	717.3	-2,457.5	2,543.6	0.00	0.00	0.00
9,520.0	90.15	271.30	7,012.0	718.2	-2,497.5	2,583.2	0.00	0.00	0.00
9,560.0	90.15	271.30	7,011.9	719.1	-2,537.4	2,622.8	0.00	0.00	0.00
9,600.0	90.15	271.30	7,011.8	720.0	-2,577.4	2,662.3	0.00	0.00	0.00
9,640.0	90.15	271.30	7,011.7	720.9	-2,617.4	2,701.9	0.00	0.00	0.00
9,680.0	90.15	271.30	7,011.6	721.8	-2,657.4	2,741.4	0.00	0.00	0.00
9,720.0	90.15	271.30	7,011.5	722.7	-2,697.4	2,781.0	0.00	0.00	0.00
9,760.0	90.15	271.30	7,011.4	723.6	-2,737.4	2,820.6	0.00	0.00	0.00
9,800.0	90.15	271.30	7,011.3	724.5	-2,777.4	2,860.1	0.00	0.00	0.00
9,840.0	90.15	271.30	7,011.2	725.5	-2,817.4	2,899.7	0.00	0.00	0.00
9,880.0	90.15	271.30	7,011.1	726.4	-2,857.4	2,939.3	0.00	0.00	0.00
9,920.0	90.15	271.30	7,011.0	727.3	-2,897.4	2,978.8	0.00	0.00	0.00
9,960.0	90.15	271.30	7,010.9	728.2	-2,937.3	3,018.4	0.00	0.00	0.00
10,000.0	90.15	271.30	7,010.8	729.1	-2,977.3	3,057.9	0.00	0.00	0.00
10,040.0	90.15	271.30	7,010.7	730.0	-3,017.3	3,097.5	0.00	0.00	0.00
10,080.0	90.15	271.30	7,010.6	730.9	-3,057.3	3,137.1	0.00	0.00	0.00
10,120.0	90.15	271.30	7,010.5	731.8	-3,097.3	3,176.6	0.00	0.00	0.00
10,160.0	90.15	271.30	7,010.4	732.7	-3,137.3	3,216.2	0.00	0.00	0.00
10,200.0	90.15	271.30	7,010.2	733.6	-3,177.3	3,255.7	0.00	0.00	0.00
10,240.0	90.15	271.30	7,010.1	734.6	-3,217.3	3,295.3	0.00	0.00	0.00

Plan Annotations					
	Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
			+N/-S	+E/-W	
			(ft)	(ft)	
	1,000.0	1,000.0	0.0	0.0	KOP #1
	6,305.8	6,253.4	655.0	280.0	KOP #2
	7,507.8	7,017.3	672.4	-485.8	End of Build



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.33-T7N-R65W

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

Alm 33U-234

Wellbore #1

Plan #1 (03-07-13)

Anticollision Report

07 March, 2013

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Alm 33U-234
Project:	SEC.33-T7N-R65W	TVD Reference:	WELL @ 4807.0ft (Original Well Elev)
Reference Site:	Alm 33V-HZ Pad North Sec.33-T7N-R65W	MD Reference:	WELL @ 4807.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Alm 33U-234	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 North Sec.33-T7N-R65W - Alm 33U-404 - Wellbore #1 - Plan #1 (03-07-13)													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	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
1,700.0	1,695.3	1,685.1	1,669.9	3.9	5.2	-10.10		220.2	63.8	159.1	151.5	7.66	20.764	
1,800.0	1,794.1	1,785.1	1,768.6	4.2	5.6	-10.51		235.4	68.9	160.3	152.1	8.16	19.645	
1,900.0	1,893.0	1,885.1	1,867.2	4.5	5.9	-10.91		250.7	73.9	161.4	152.8	8.66	18.649	
2,000.0	1,991.9	1,985.1	1,965.9	4.8	6.3	-11.30		265.9	79.0	162.6	153.4	9.16	17.757	
2,100.0	2,090.7	2,085.1	2,064.6	5.2	6.7	-11.69		281.1	84.1	163.7	154.1	9.66	16.954	
2,200.0	2,189.6	2,185.1	2,163.3	5.5	7.0	-12.07		296.3	89.2	164.9	154.7	10.16	16.227	
2,300.0	2,288.4	2,285.1	2,262.0	5.8	7.4	-12.44		311.6	94.3	166.1	155.4	10.67	15.566	
2,400.0	2,387.3	2,385.0	2,360.7	6.1	7.8	-12.82		326.8	99.4	167.3	156.1	11.18	14.963	
2,500.0	2,486.1	2,485.0	2,459.4	6.5	8.1	-13.18		342.0	104.4	168.5	156.8	11.69	14.410	
2,600.0	2,585.0	2,585.0	2,558.1	6.8	8.5	-13.54		357.3	109.5	169.7	157.5	12.20	13.902	
2,700.0	2,683.8	2,685.0	2,656.8	7.2	8.9	-13.90		372.5	114.6	170.9	158.1	12.72	13.434	
2,800.0	2,782.7	2,785.0	2,755.5	7.5	9.2	-14.25		387.7	119.7	172.1	158.8	13.24	13.001	
2,900.0	2,881.5	2,885.0	2,854.1	7.8	9.6	-14.59		402.9	124.8	173.3	159.5	13.75	12.599	
3,000.0	2,980.4	2,985.0	2,952.8	8.2	10.0	-14.94		418.2	129.8	174.5	160.2	14.27	12.225	
3,100.0	3,079.3	3,085.0	3,051.5	8.5	10.3	-15.27		433.4	134.9	175.7	160.9	14.80	11.876	
3,200.0	3,178.1	3,184.9	3,150.2	8.9	10.7	-15.60		448.6	140.0	177.0	161.6	15.32	11.550	
3,300.0	3,277.0	3,284.9	3,248.9	9.2	11.1	-15.93		463.8	145.1	178.2	162.4	15.85	11.245	
3,400.0	3,375.8	3,384.9	3,347.6	9.6	11.5	-16.25		479.1	150.2	179.5	163.1	16.38	10.959	
3,500.0	3,474.7	3,484.9	3,446.3	9.9	11.8	-16.57		494.3	155.3	180.7	163.8	16.91	10.689	
3,600.0	3,573.5	3,584.9	3,545.0	10.3	12.2	-16.88		509.5	160.3	182.0	164.5	17.44	10.436	
3,700.0	3,672.4	3,684.9	3,643.7	10.6	12.6	-17.19		524.7	165.4	183.2	165.3	17.97	10.197	
3,800.0	3,771.2	3,784.9	3,742.4	11.0	12.9	-17.50		540.0	170.5	184.5	166.0	18.50	9.971	
3,900.0	3,870.1	3,884.9	3,841.0	11.3	13.3	-17.80		555.2	175.6	185.8	166.7	19.04	9.757	
4,000.0	3,968.9	3,984.8	3,939.7	11.7	13.7	-18.09		570.4	180.7	187.0	167.5	19.58	9.554	
4,100.0	4,067.8	4,084.8	4,038.4	12.0	14.0	-18.39		585.6	185.8	188.3	168.2	20.12	9.361	
4,200.0	4,166.6	4,184.8	4,137.1	12.4	14.4	-18.68		600.9	190.8	189.6	169.0	20.66	9.178	
4,300.0	4,265.5	4,284.8	4,235.8	12.7	14.8	-18.96		616.1	195.9	190.9	169.7	21.20	9.004	
4,400.0	4,364.4	4,384.8	4,334.5	13.1	15.2	-19.24		631.3	201.0	192.2	170.5	21.75	8.839	
4,500.0	4,463.2	4,484.8	4,433.2	13.4	15.5	-19.52		646.6	206.1	193.5	171.2	22.29	8.681	
4,600.0	4,562.1	4,584.8	4,531.9	13.8	15.9	-19.79		661.8	211.2	194.8	172.0	22.84	8.530	
4,700.0	4,660.9	4,684.7	4,630.6	14.1	16.3	-20.06		677.0	216.2	196.1	172.7	23.39	8.386	
4,800.0	4,759.8	4,784.7	4,729.3	14.5	16.6	-20.33		692.2	221.3	197.4	173.5	23.94	8.248	
4,900.0	4,858.6	4,884.7	4,827.9	14.8	17.0	-20.59		707.5	226.4	198.8	174.3	24.49	8.116	
5,000.0	4,957.5	4,984.7	4,926.6	15.2	17.4	-20.85		722.7	231.5	200.1	175.0	25.04	7.990	
5,100.0	5,056.3	5,084.7	5,025.3	15.5	17.7	-21.11		737.9	236.6	201.4	175.8	25.60	7.868	
5,200.0	5,155.2	5,184.7	5,124.0	15.9	18.1	-21.36		753.1	241.7	202.7	176.6	26.15	7.752	
5,300.0	5,254.0	5,284.7	5,222.7	16.3	18.5	-21.61		768.4	246.7	204.1	177.4	26.71	7.640	
5,400.0	5,352.9	5,384.7	5,321.4	16.6	18.9	-21.85		783.6	251.8	205.4	178.1	27.27	7.533	
5,500.0	5,451.8	5,484.6	5,420.1	17.0	19.2	-22.10		798.8	256.9	206.8	178.9	27.83	7.429	
5,600.0	5,550.6	5,584.6	5,518.8	17.3	19.6	-22.34		814.0	262.0	208.1	179.7	28.39	7.330	
5,700.0	5,649.5	5,684.6	5,617.5	17.7	20.0	-22.57		829.3	267.1	209.5	180.5	28.96	7.234	
5,800.0	5,748.5	5,790.4	5,722.1	18.0	20.3	-22.80		844.3	272.1	210.8	181.4	29.47	7.153	
5,900.0	5,847.9	5,897.9	5,828.9	18.2	20.6	-22.97		859.5	277.9	211.9	182.0	29.97	7.093	
6,000.0	5,947.7	6,005.5	5,936.1	18.4	20.8	-23.08		874.6	283.5	212.6	182.4	30.47	7.038	
6,100.0	6,047.6	6,113.1	6,043.6	18.6	21.0	-23.14		889.7	289.0	213.0	182.5	30.97	6.985	
6,200.0	6,147.6	6,217.0	6,147.6	18.7	21.1	0.00		904.8	294.5	213.0	182.5	31.47	6.937	
6,300.0	6,247.6	6,317.0	6,247.6	18.9	21.2	0.00		920.0	300.0	213.0	182.5	31.97	6.889	
6,388.6	6,336.0	6,405.5	6,336.0	19.0	21.4	90.00		935.1	305.5	213.0	181.7	31.30	6.804	
6,400.0	6,347.4	6,416.8	6,347.4	19.0	21.4	90.26		950.2	311.0	213.0	181.7	31.30	6.803	
6,500.0	6,445.5	6,516.7	6,447.0	19.1	21.5	93.95		965.3	316.5	213.5	182.4	31.10	6.865	
6,600.0	6,540.4	6,618.4	6,547.1	19.1	21.6	97.61		980.4	322.0	215.0	184.1	30.91	6.958	

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

Alm 33V-HZ Pad North Sec.33-T7N-R65W - Alm 33U-404 - Wellbore #1 - Plan #1 (03-07-13)													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	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre		Between	Between	Minimum	Separation	Warning	
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	Tooface (")	+N/-S (ft)	+E/-W (ft)	Centres (ft)	Ellipses (ft)	Separation (ft)	Factor		
6,700.0	6,630.3	6,722.1	6,645.6	19.1	21.6	101.10	869.6	224.8	217.5	186.7	30.79	7.064		
6,800.0	6,713.8	6,827.9	6,740.7	19.1	21.6	104.35	871.0	178.7	220.6	189.9	30.79	7.166		
6,900.0	6,789.5	6,935.6	6,830.0	19.1	21.6	107.29	872.7	118.7	224.3	193.4	30.96	7.244		
7,000.0	6,855.9	7,045.3	6,911.4	19.1	21.6	109.86	874.9	45.4	228.3	196.9	31.39	7.271		
7,100.0	6,912.0	7,156.8	6,982.5	19.2	21.7	112.02	877.4	-40.3	232.2	200.0	32.18	7.214		
7,200.0	6,956.9	7,269.9	7,041.2	19.6	21.8	113.74	880.3	-136.9	235.8	202.3	33.45	7.050		
7,300.0	6,989.8	7,384.4	7,085.3	20.5	22.3	115.01	883.4	-242.3	238.9	203.6	35.26	6.775		
7,400.0	7,010.0	7,499.8	7,113.4	22.0	23.3	115.82	886.6	-354.2	241.3	203.6	37.66	6.407		
7,500.0	7,017.3	7,606.6	7,126.2	23.8	24.8	116.58	889.8	-460.1	243.9	203.6	40.30	6.052		
7,600.0	7,017.1	7,715.5	7,133.9	25.8	26.7	118.13	892.9	-568.6	247.9	204.5	43.37	5.717		
7,700.0	7,016.8	7,817.1	7,135.2	27.9	28.8	118.36	895.9	-670.2	249.2	202.1	47.09	5.292		
7,800.0	7,016.5	7,917.1	7,136.3	30.1	30.9	118.57	898.9	-770.1	250.4	199.4	50.98	4.912		
7,900.0	7,016.3	8,017.0	7,137.4	32.4	33.1	118.77	901.8	-870.1	251.7	196.6	55.02	4.574		
8,000.0	7,016.0	8,117.0	7,138.5	34.8	35.5	118.97	904.7	-970.0	252.9	193.7	59.18	4.274		
8,100.0	7,015.7	8,217.0	7,139.6	37.3	37.9	119.17	907.7	-1,069.9	254.2	190.7	63.42	4.008		
8,200.0	7,015.5	8,317.0	7,140.7	39.8	40.3	119.37	910.6	-1,169.9	255.4	187.7	67.73	3.771		
8,300.0	7,015.2	8,417.0	7,141.9	42.3	42.8	119.57	913.5	-1,269.8	256.7	184.6	72.09	3.560		
8,400.0	7,015.0	8,517.0	7,143.0	44.9	45.4	119.76	916.5	-1,369.7	257.9	181.4	76.50	3.372		
8,500.0	7,014.7	8,617.0	7,144.1	47.5	47.9	119.95	919.4	-1,469.7	259.2	178.3	80.93	3.203		
8,600.0	7,014.4	8,717.0	7,145.2	50.1	50.5	120.14	922.4	-1,569.6	260.5	175.1	85.39	3.050		
8,700.0	7,014.2	8,817.0	7,146.3	52.7	53.1	120.33	925.3	-1,669.6	261.7	171.9	89.86	2.912		
8,800.0	7,013.9	8,916.9	7,147.4	55.4	55.8	120.52	928.2	-1,769.5	263.0	168.6	94.35	2.787		
8,900.0	7,013.6	9,016.9	7,148.6	58.1	58.4	120.70	931.2	-1,869.4	264.3	165.4	98.85	2.674		
9,000.0	7,013.4	9,116.9	7,149.7	60.8	61.1	120.88	934.1	-1,969.4	265.5	162.2	103.35	2.569		
9,100.0	7,013.1	9,216.9	7,150.8	63.5	63.8	121.06	937.0	-2,069.3	266.8	159.0	107.85	2.474		
9,200.0	7,012.9	9,316.9	7,151.9	66.2	66.4	121.24	940.0	-2,169.3	268.1	155.7	112.36	2.386		
9,300.0	7,012.6	9,416.9	7,153.0	68.9	69.1	121.42	942.9	-2,269.2	269.4	152.5	116.86	2.305		
9,400.0	7,012.3	9,516.9	7,154.1	71.6	71.9	121.60	945.8	-2,369.1	270.7	149.3	121.36	2.230		
9,500.0	7,012.1	9,616.9	7,155.3	74.3	74.6	121.77	948.8	-2,469.1	272.0	146.1	125.85	2.161		
9,600.0	7,011.8	9,716.8	7,156.4	77.1	77.3	121.94	951.7	-2,569.0	273.3	142.9	130.34	2.096		
9,700.0	7,011.6	9,816.8	7,157.5	79.8	80.0	122.11	954.7	-2,669.0	274.5	139.7	134.83	2.036		
9,800.0	7,011.3	9,916.8	7,158.6	82.5	82.8	122.28	957.6	-2,768.9	275.8	136.5	139.30	1.980		
9,900.0	7,011.0	10,016.8	7,159.7	85.3	85.5	122.45	960.5	-2,868.8	277.1	133.4	143.77	1.928		
10,000.0	7,010.8	10,116.8	7,160.9	88.0	88.2	122.62	963.5	-2,968.8	278.4	130.2	148.23	1.878		
10,100.0	7,010.5	10,216.8	7,162.0	90.8	91.0	122.78	966.4	-3,068.7	279.7	127.1	152.68	1.832		
10,200.0	7,010.2	10,316.8	7,163.1	93.6	93.7	122.94	969.3	-3,168.6	281.0	123.9	157.12	1.789		
10,300.0	7,010.0	10,416.8	7,164.2	96.3	96.5	123.11	972.3	-3,268.6	282.4	120.8	161.56	1.748		
10,400.0	7,009.7	10,516.8	7,165.3	99.1	99.3	123.27	975.2	-3,368.5	283.7	117.7	165.98	1.709		
10,500.0	7,009.5	10,616.7	7,166.4	101.9	102.0	123.43	978.1	-3,468.5	285.0	114.6	170.39	1.672		
10,600.0	7,009.2	10,716.7	7,167.6	104.6	104.8	123.58	981.1	-3,568.4	286.3	111.5	174.79	1.638		
10,700.0	7,008.9	10,816.7	7,168.7	107.4	107.6	123.74	984.0	-3,668.3	287.6	108.4	179.18	1.605		
10,800.0	7,008.7	10,916.7	7,169.8	110.2	110.3	123.89	987.0	-3,768.3	288.9	105.4	183.57	1.574		
10,900.0	7,008.4	11,016.7	7,170.9	113.0	113.1	124.05	989.9	-3,868.2	290.2	102.3	187.94	1.544		
11,000.0	7,008.2	11,116.7	7,172.0	115.7	115.9	124.20	992.8	-3,968.2	291.6	99.3	192.29	1.516		
11,100.0	7,007.9	11,216.7	7,173.1	118.5	118.6	124.35	995.8	-4,068.1	292.9	96.3	196.64	1.489 Level 3		
11,200.0	7,007.6	11,316.7	7,174.3	121.3	121.4	124.50	998.7	-4,168.0	294.2	93.2	200.98	1.464 Level 3		
11,300.0	7,007.4	11,416.7	7,175.4	124.1	124.2	124.64	1,001.6	-4,268.0	295.5	90.2	205.31	1.440 Level 3		
11,400.0	7,007.1	11,516.6	7,176.5	126.9	126.8	124.79	1,004.6	-4,367.9	296.9	87.4	209.48	1.417 Level 3		
11,439.7	7,007.0	11,556.4	7,176.9	128.0	127.5	124.85	1,005.7	-4,407.6	297.4	86.6	210.85	1.410 Level 3, SF		

Alm 33V-HZ Pad North Sec.33-T7N-R65W - Alm 33V-414 - Wellbore #1 - Plan #1 (03-07-13)													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)				
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-29.1	0.0	29.1						
100.0	100.0	100.0	100.0	0.1	0.1	-180.00	-29.1	0.0	29.1	28.9	0.22	129.671			
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-29.1	0.0	29.1	28.5	0.67	43.224			
300.0	300.0	300.0	300.0	0.6	0.6	-180.00	-29.1	0.0	29.1	28.0	1.12	25.934			
400.0	400.0	400.0	400.0	0.8	0.8	-180.00	-29.1	0.0	29.1	27.6	1.57	18.524			
500.0	500.0	500.0	500.0	1.0	1.0	-180.00	-29.1	0.0	29.1	27.1	2.02	14.408			
600.0	600.0	600.0	600.0	1.2	1.2	-180.00	-29.1	0.0	29.1	26.7	2.47	11.788			
700.0	700.0	700.0	700.0	1.5	1.5	-180.00	-29.1	0.0	29.1	26.2	2.92	9.975			
800.0	800.0	800.0	800.0	1.7	1.7	-180.00	-29.1	0.0	29.1	25.8	3.37	8.645			
900.0	900.0	900.0	900.0	1.9	1.9	-180.00	-29.1	0.0	29.1	25.3	3.82	7.628			
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-180.00	-29.1	0.0	29.1	24.9	4.27	6.825 CC, ES			
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	158.12	-29.1	0.0	30.8	26.0	4.72	6.519			
1,200.0	1,199.8	1,199.8	1,199.8	2.6	2.6	161.22	-29.1	0.0	35.7	30.5	5.16	6.908			
1,300.0	1,299.5	1,299.5	1,299.5	2.8	2.8	164.83	-29.1	0.0	44.0	38.4	5.60	7.854			
1,400.0	1,398.7	1,398.7	1,398.7	3.1	3.0	168.05	-29.1	0.0	55.9	49.8	6.04	9.252			
1,500.0	1,497.6	1,497.6	1,497.6	3.3	3.3	170.54	-29.1	0.0	70.5	64.0	6.48	10.879			
1,600.0	1,596.4	1,596.4	1,596.4	3.6	3.5	172.21	-29.1	0.0	85.4	78.5	6.93	12.325			
1,700.0	1,695.3	1,695.3	1,695.3	3.9	3.7	173.37	-29.1	0.0	100.4	93.0	7.39	13.597			
1,800.0	1,794.1	1,794.1	1,794.1	4.2	3.9	174.24	-29.1	0.0	115.4	107.6	7.84	14.722			
1,900.0	1,893.0	1,896.4	1,896.4	4.5	4.1	174.47	-28.3	1.4	129.2	120.9	8.30	15.574			
2,000.0	1,991.9	1,999.5	1,999.4	4.8	4.4	173.72	-25.3	5.8	140.3	131.5	8.76	16.020			
2,100.0	2,090.7	2,103.1	2,102.5	5.2	4.6	172.14	-20.3	13.4	148.6	139.4	9.23	16.107			
2,200.0	2,189.6	2,204.0	2,202.7	5.5	4.8	170.09	-13.9	23.0	155.1	145.4	9.71	15.975			
2,300.0	2,288.4	2,303.6	2,301.7	5.8	5.1	168.18	-7.5	32.7	161.6	151.4	10.20	15.848			
2,400.0	2,387.3	2,403.3	2,400.7	6.1	5.3	166.43	-1.2	42.4	168.3	157.6	10.70	15.733			
2,500.0	2,486.1	2,502.9	2,499.6	6.5	5.6	164.81	5.2	52.0	175.1	163.9	11.20	15.628			
2,600.0	2,585.0	2,602.6	2,598.6	6.8	5.8	163.31	11.6	61.7	182.0	170.3	11.72	15.531			
2,700.0	2,683.8	2,702.2	2,697.6	7.2	6.1	161.92	18.0	71.4	189.1	176.9	12.25	15.442			
2,800.0	2,782.7	2,801.9	2,796.6	7.5	6.4	160.63	24.4	81.0	196.3	183.5	12.78	15.359			
2,900.0	2,881.5	2,901.5	2,895.5	7.8	6.6	159.44	30.8	90.7	203.5	190.2	13.32	15.282			
3,000.0	2,980.4	3,001.2	2,994.5	8.2	6.9	158.32	37.2	100.4	210.9	197.0	13.87	15.209			
3,100.0	3,079.3	3,100.8	3,093.5	8.5	7.2	157.28	43.6	110.1	218.3	203.9	14.42	15.141			
3,200.0	3,178.1	3,200.4	3,192.5	8.9	7.5	156.31	50.0	119.7	225.8	210.8	14.98	15.076			
3,300.0	3,277.0	3,300.1	3,291.4	9.2	7.8	155.41	56.3	129.4	233.3	217.8	15.54	15.016			
3,400.0	3,375.8	3,399.7	3,390.4	9.6	8.0	154.56	62.7	139.1	240.9	224.8	16.11	14.959			
3,500.0	3,474.7	3,499.4	3,489.4	9.9	8.3	153.76	69.1	148.7	248.6	231.9	16.68	14.905			
3,600.0	3,573.5	3,599.0	3,588.3	10.3	8.6	153.01	75.5	158.4	256.3	239.0	17.25	14.854			
3,700.0	3,672.4	3,698.7	3,687.3	10.6	8.9	152.30	81.9	168.1	264.0	246.2	17.83	14.806			
3,800.0	3,771.2	3,798.3	3,786.3	11.0	9.2	151.64	88.3	177.7	271.8	253.4	18.41	14.760			
3,900.0	3,870.1	3,898.0	3,885.3	11.3	9.5	151.01	94.7	187.4	279.6	260.6	19.00	14.717			
4,000.0	3,968.9	3,997.6	3,984.2	11.7	9.8	150.41	101.1	197.1	287.4	267.9	19.59	14.676			
4,100.0	4,067.8	4,097.3	4,083.2	12.0	10.1	149.85	107.5	206.8	295.3	275.1	20.18	14.637			
4,200.0	4,166.6	4,196.9	4,182.2	12.4	10.4	149.31	113.9	216.4	303.2	282.4	20.77	14.600			
4,300.0	4,265.5	4,296.6	4,281.2	12.7	10.7	148.81	120.2	226.1	311.1	289.8	21.36	14.565			
4,400.0	4,364.4	4,396.2	4,380.1	13.1	11.0	148.32	126.6	235.8	319.1	297.1	21.96	14.531			
4,500.0	4,463.2	4,495.9	4,479.1	13.4	11.3	147.87	133.0	245.4	327.0	304.5	22.56	14.499			
4,600.0	4,562.1	4,595.5	4,578.1	13.8	11.6	147.43	139.4	255.1	335.0	311.9	23.15	14.469			
4,700.0	4,660.9	4,694.7	4,676.6	14.1	11.9	147.02	145.8	264.7	343.0	319.3	23.75	14.443			
4,800.0	4,759.8	4,789.7	4,771.1	14.5	12.1	146.92	150.8	272.4	351.8	327.6	24.24	14.513			
4,900.0	4,858.6	4,884.3	4,865.6	14.8	12.3	147.29	154.1	277.4	362.0	337.3	24.69	14.664			
5,000.0	4,957.5	4,978.5	4,959.7	15.2	12.4	148.07	155.7	279.8	373.5	348.5	25.08	14.895			

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Offset Design													Offset Site Error:	
Survey Program: 0-MWD													Offset Well Error:	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,100.0	5,056.3	5,075.2	5,056.3	15.5	12.6	149.19	155.9	280.0	386.3	360.9	25.44	15.185		
5,200.0	5,155.2	5,174.0	5,155.2	15.9	12.8	150.30	155.9	280.0	399.4	373.6	25.83	15.465		
5,300.0	5,254.0	5,272.9	5,254.0	16.3	13.0	151.33	155.9	280.0	412.6	386.4	26.22	15.737		
5,400.0	5,352.9	5,371.7	5,352.9	16.6	13.2	152.30	155.9	280.0	426.0	399.4	26.62	16.004		
5,500.0	5,451.8	5,470.6	5,451.8	17.0	13.4	153.22	155.9	280.0	439.4	412.4	27.02	16.266		
5,600.0	5,550.6	5,569.4	5,550.6	17.3	13.6	154.07	155.9	280.0	453.0	425.6	27.42	16.521		
5,700.0	5,649.5	5,668.3	5,649.5	17.7	13.7	154.88	155.9	280.0	466.6	438.8	27.82	16.771		
5,800.0	5,748.5	5,767.3	5,748.5	18.0	13.9	155.67	155.9	280.0	479.3	451.1	28.23	16.978		
5,900.0	5,847.9	5,866.7	5,847.9	18.2	14.1	156.26	155.9	280.0	488.9	460.4	28.60	17.099		
6,000.0	5,947.7	5,966.5	5,947.7	18.4	14.3	156.64	155.9	280.0	495.4	466.5	28.94	17.117		
6,100.0	6,047.6	6,066.4	6,047.6	18.6	14.5	156.83	155.9	280.0	498.7	469.4	29.27	17.038		
6,200.0	6,147.6	6,166.4	6,147.6	18.7	14.7	-180.00	155.9	280.0	499.1	467.3	31.83	15.681		
6,300.0	6,247.6	6,266.4	6,247.6	18.9	14.9	-180.00	155.9	280.0	499.1	466.9	32.20	15.499		
6,400.0	6,347.4	6,366.2	6,347.4	19.0	15.1	-91.95	155.9	280.0	499.3	468.9	30.43	16.407		
6,500.0	6,445.5	6,468.1	6,449.1	19.1	15.3	-93.52	156.0	274.8	500.0	469.2	30.81	16.228		
6,600.0	6,540.4	6,572.4	6,551.5	19.1	15.4	-95.05	156.4	255.7	501.0	469.9	31.07	16.127		
6,700.0	6,630.3	6,678.6	6,652.2	19.1	15.5	-96.50	157.2	222.1	502.3	471.1	31.24	16.079		
6,800.0	6,713.8	6,786.9	6,749.0	19.1	15.5	-97.84	158.3	173.8	503.8	472.4	31.42	16.033		
6,900.0	6,789.5	6,897.1	6,839.5	19.1	15.6	-99.04	159.7	111.2	505.4	473.6	31.75	15.915		
7,000.0	6,855.9	7,009.0	6,921.3	19.1	15.9	-100.08	161.4	34.9	506.9	474.5	32.44	15.627		
7,100.0	6,912.0	7,122.6	6,991.9	19.2	16.5	-100.93	163.4	-53.9	508.3	474.6	33.69	15.089		
7,200.0	6,956.9	7,237.4	7,049.2	19.6	17.6	-101.57	165.7	-153.2	509.4	473.7	35.65	14.288		
7,300.0	6,989.8	7,353.1	7,091.2	20.5	19.1	-101.99	168.2	-260.9	510.2	471.8	38.40	13.284		
7,400.0	7,010.0	7,469.4	7,116.5	22.0	21.0	-102.17	170.7	-374.3	510.5	468.6	41.89	12.186		
7,500.0	7,017.3	7,573.5	7,128.0	23.8	23.0	-102.52	173.1	-477.7	511.3	465.6	45.66	11.197		
7,600.0	7,017.1	7,684.0	7,134.2	25.8	25.2	-103.21	175.6	-588.0	512.6	462.8	49.76	10.301		
7,700.0	7,016.8	7,784.0	7,135.3	27.9	27.4	-103.36	177.9	-688.0	512.9	458.9	53.97	9.503		
7,800.0	7,016.5	7,884.0	7,136.4	30.1	29.7	-103.51	180.1	-787.9	513.2	454.9	58.38	8.792		
7,900.0	7,016.3	7,984.0	7,137.5	32.4	32.1	-103.66	182.4	-887.9	513.6	450.6	62.94	8.159		
8,000.0	7,016.0	8,084.0	7,138.7	34.8	34.5	-103.81	184.7	-987.8	513.9	446.2	67.63	7.598		
8,100.0	7,015.7	8,184.0	7,139.8	37.3	37.0	-103.96	187.0	-1,087.8	514.2	441.8	72.43	7.100		
8,200.0	7,015.5	8,284.0	7,140.9	39.8	39.6	-104.11	189.2	-1,187.7	514.5	437.2	77.30	6.657		
8,300.0	7,015.2	8,384.0	7,142.0	42.3	42.1	-104.25	191.5	-1,287.7	514.9	432.6	82.24	6.261		
8,400.0	7,015.0	8,484.0	7,143.1	44.9	44.7	-104.40	193.8	-1,387.7	515.2	428.0	87.23	5.907		
8,500.0	7,014.7	8,583.9	7,144.2	47.5	47.3	-104.55	196.0	-1,487.6	515.6	423.3	92.26	5.588		
8,600.0	7,014.4	8,683.9	7,145.4	50.1	50.0	-104.70	198.3	-1,587.6	515.9	418.6	97.33	5.301		
8,700.0	7,014.2	8,783.9	7,146.5	52.7	52.7	-104.85	200.6	-1,687.5	516.3	413.9	102.42	5.041		
8,800.0	7,013.9	8,883.9	7,147.6	55.4	55.3	-105.00	202.9	-1,787.5	516.6	409.1	107.54	4.804		
8,900.0	7,013.6	8,983.9	7,148.7	58.1	58.0	-105.14	205.1	-1,887.5	517.0	404.3	112.68	4.588		
9,000.0	7,013.4	9,083.9	7,149.8	60.8	60.7	-105.29	207.4	-1,987.4	517.4	399.5	117.83	4.391		
9,100.0	7,013.1	9,183.9	7,150.9	63.5	63.4	-105.44	209.7	-2,087.4	517.7	394.7	122.99	4.209		
9,200.0	7,012.9	9,283.9	7,152.1	66.2	66.2	-105.58	212.0	-2,187.3	518.1	389.9	128.16	4.042		
9,300.0	7,012.6	9,383.9	7,153.2	68.9	68.9	-105.73	214.2	-2,287.3	518.5	385.1	133.35	3.888		
9,400.0	7,012.3	9,483.9	7,154.3	71.6	71.6	-105.88	216.5	-2,387.2	518.8	380.3	138.53	3.745		
9,500.0	7,012.1	9,583.9	7,155.4	74.3	74.4	-106.02	218.8	-2,487.2	519.2	375.5	143.72	3.613		
9,600.0	7,011.8	9,683.8	7,156.5	77.1	77.1	-106.17	221.0	-2,587.2	519.6	370.7	148.92	3.489		
9,700.0	7,011.6	9,783.8	7,157.6	79.8	79.8	-106.32	223.3	-2,687.1	520.0	365.9	154.11	3.374		
9,800.0	7,011.3	9,883.8	7,158.8	82.5	82.6	-106.46	225.6	-2,787.1	520.4	361.1	159.31	3.266		
9,900.0	7,011.0	9,983.8	7,159.9	85.3	85.4	-106.61	227.9	-2,887.0	520.8	356.3	164.51	3.166		
10,000.0	7,010.8	10,083.8	7,161.0	88.0	88.1	-106.75	230.1	-2,987.0	521.2	351.5	169.70	3.071		
10,100.0	7,010.5	10,183.8	7,162.1	90.8	90.9	-106.90	232.4	-3,087.0	521.6	346.7	174.89	2.982		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Alm 33U-234
Project:	SEC.33-T7N-R65W	TVD Reference:	WELL @ 4807.0ft (Original Well Elev)
Reference Site:	Alm 33V-HZ Pad North Sec.33-T7N-R65W	MD Reference:	WELL @ 4807.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Alm 33U-234	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 North Sec.33-T7N-R65W - Alm 33V-414 - Wellbore #1 - Plan #1 (03-07-13)		Offset Site Error:		0.0 ft
Survey Program:												0-MWD		Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance						Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
10,200.0	7,010.2	10,283.8	7,163.2	93.6	93.6	-107.04	234.7	-3,186.9	522.0	341.9	180.08	2.899				
10,300.0	7,010.0	10,383.8	7,164.3	96.3	96.4	-107.19	237.0	-3,286.9	522.4	337.1	185.27	2.820				
10,400.0	7,009.7	10,483.8	7,165.5	99.1	99.2	-107.33	239.2	-3,386.8	522.8	332.3	190.45	2.745				
10,500.0	7,009.5	10,583.8	7,166.6	101.9	102.0	-107.48	241.5	-3,486.8	523.2	327.6	195.63	2.674				
10,600.0	7,009.2	10,683.7	7,167.7	104.6	104.7	-107.62	243.8	-3,586.8	523.6	322.8	200.81	2.608				
10,700.0	7,008.9	10,783.7	7,168.8	107.4	107.5	-107.76	246.1	-3,686.7	524.0	318.1	205.98	2.544				
10,800.0	7,008.7	10,883.7	7,169.9	110.2	110.3	-107.91	248.3	-3,786.7	524.5	313.3	211.14	2.484				
10,900.0	7,008.4	10,983.7	7,171.0	113.0	113.1	-108.05	250.6	-3,886.6	524.9	308.6	216.30	2.427				
11,000.0	7,008.2	11,083.7	7,172.2	115.7	115.9	-108.19	252.9	-3,986.6	525.3	303.9	221.45	2.372				
11,100.0	7,007.9	11,183.7	7,173.3	118.5	118.7	-108.34	255.1	-4,086.5	525.7	299.1	226.60	2.320				
11,200.0	7,007.6	11,283.7	7,174.4	121.3	121.4	-108.48	257.4	-4,186.5	526.2	294.4	231.74	2.271				
11,300.0	7,007.4	11,383.7	7,175.5	124.1	124.2	-108.62	259.7	-4,286.5	526.6	289.8	236.87	2.223				
11,400.0	7,007.1	11,483.7	7,176.6	126.9	127.0	-108.76	262.0	-4,386.4	527.1	285.1	242.00	2.178				
11,439.7	7,007.0	11,516.8	7,177.0	128.0	127.9	-108.81	262.7	-4,419.6	527.3	283.4	243.87	2.162 SF				

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Alm 33U-234
Project:	SEC.33-T7N-R65W	TVD Reference:	WELL @ 4807.0ft (Original Well Elev)
Reference Site:	Alm 33V-HZ Pad North Sec.33-T7N-R65W	MD Reference:	WELL @ 4807.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Alm 33U-234	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 North Sec.33-T7N-R65W - Alm 41-33 (Exist) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7300-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-54.17	-54.17	236.8	-328.0	404.7				
100.0	100.0	88.0	88.0	0.1	0.1	-54.17	-54.17	236.8	-328.0	404.5	404.3	0.21	1,912.957	
200.0	200.0	188.0	188.0	0.3	0.2	-54.17	-54.17	236.8	-328.0	404.5	404.0	0.55	737.386	
300.0	300.0	288.0	288.0	0.6	0.3	-54.17	-54.17	236.8	-328.0	404.5	403.7	0.89	456.718	
400.0	400.0	388.0	388.0	0.8	0.4	-54.17	-54.17	236.8	-328.0	404.5	403.3	1.22	330.806	
500.0	500.0	488.0	488.0	1.0	0.5	-54.17	-54.17	236.8	-328.0	404.5	403.0	1.56	259.315	
600.0	600.0	588.0	588.0	1.2	0.7	-54.17	-54.17	236.8	-328.0	404.5	402.7	1.90	213.233	
700.0	700.0	688.0	688.0	1.5	0.8	-54.17	-54.17	236.8	-328.0	404.5	402.3	2.23	181.058	
800.0	800.0	788.0	788.0	1.7	0.9	-54.17	-54.17	236.8	-328.0	404.5	402.0	2.57	157.320	
900.0	900.0	888.0	888.0	1.9	1.0	-54.17	-54.17	236.8	-328.0	404.5	401.6	2.91	139.084	
1,000.0	1,000.0	988.0	988.0	2.1	1.1	-54.17	-54.17	236.8	-328.0	404.5	401.3	3.25	124.637	
1,100.0	1,100.0	1,088.0	1,088.0	2.4	1.2	-77.57	-77.57	236.8	-328.0	404.2	400.6	3.58	112.860	
1,200.0	1,199.8	1,187.8	1,187.8	2.6	1.3	-78.31	-78.31	236.8	-328.0	403.1	399.2	3.92	102.923	
1,300.0	1,299.5	1,287.5	1,287.5	2.8	1.4	-79.56	-79.56	236.8	-328.0	401.4	397.1	4.26	94.270	
1,400.0	1,398.7	1,386.7	1,386.7	3.1	1.6	-81.31	-81.31	236.8	-328.0	399.4	394.7	4.61	86.549	
1,500.0	1,497.6	1,485.6	1,485.6	3.3	1.7	-83.42	-83.42	236.8	-328.0	397.4	392.4	4.99	79.598	
1,600.0	1,596.4	1,584.4	1,584.4	3.6	1.8	-85.57	-85.57	236.8	-328.0	395.9	390.5	5.39	73.505	
1,700.0	1,695.3	1,683.3	1,683.3	3.9	1.9	-87.72	-87.72	236.8	-328.0	395.0	389.2	5.79	68.200	
1,800.0	1,794.1	1,782.1	1,782.1	4.2	2.0	-89.89	-89.89	236.8	-328.0	394.7	388.5	6.21	63.590	
1,805.1	1,799.2	1,787.2	1,787.2	4.2	2.0	-90.00	-90.00	236.8	-328.0	394.7	388.4	6.23	63.371 CC	
1,900.0	1,893.0	1,881.0	1,881.0	4.5	2.1	-92.06	-92.06	236.8	-328.0	394.9	388.3	6.63	59.584 ES	
2,000.0	1,991.9	1,979.9	1,979.9	4.8	2.2	-94.21	-94.21	236.8	-328.0	395.8	388.7	7.05	56.103	
2,100.0	2,090.7	2,078.7	2,078.7	5.2	2.3	-96.36	-96.36	236.8	-328.0	397.2	389.7	7.48	53.074	
2,200.0	2,189.6	2,177.6	2,177.6	5.5	2.4	-98.49	-98.49	236.8	-328.0	399.2	391.2	7.91	50.436	
2,300.0	2,288.4	2,276.4	2,276.4	5.8	2.6	-100.60	-100.60	236.8	-328.0	401.7	393.3	8.34	48.137	
2,400.0	2,387.3	2,375.3	2,375.3	6.1	2.7	-102.68	-102.68	236.8	-328.0	404.8	396.0	8.77	46.131	
2,500.0	2,486.1	2,474.1	2,474.1	6.5	2.8	-104.72	-104.72	236.8	-328.0	408.4	399.2	9.20	44.379	
2,600.0	2,585.0	2,573.0	2,573.0	6.8	2.9	-106.73	-106.73	236.8	-328.0	412.5	402.9	9.63	42.848	
2,700.0	2,683.8	2,671.8	2,671.8	7.2	3.0	-108.69	-108.69	236.8	-328.0	417.2	407.1	10.05	41.510	
2,800.0	2,782.7	2,770.7	2,770.7	7.5	3.1	-110.61	-110.61	236.8	-328.0	422.3	411.8	10.47	40.340	
2,900.0	2,881.5	2,869.5	2,869.5	7.8	3.2	-112.49	-112.49	236.8	-328.0	427.9	417.0	10.88	39.317	
3,000.0	2,980.4	2,968.4	2,968.4	8.2	3.3	-114.31	-114.31	236.8	-328.0	433.9	422.6	11.29	38.424	
3,100.0	3,079.3	3,067.3	3,067.3	8.5	3.4	-116.09	-116.09	236.8	-328.0	440.4	428.7	11.70	37.644	
3,200.0	3,178.1	3,166.1	3,166.1	8.9	3.6	-117.81	-117.81	236.8	-328.0	447.3	435.2	12.10	36.964	
3,300.0	3,277.0	3,265.0	3,265.0	9.2	3.7	-119.47	-119.47	236.8	-328.0	454.6	442.1	12.50	36.371	
3,400.0	3,375.8	3,363.8	3,363.8	9.6	3.8	-121.09	-121.09	236.8	-328.0	462.3	449.4	12.89	35.856	
3,500.0	3,474.7	3,462.7	3,462.7	9.9	3.9	-122.65	-122.65	236.8	-328.0	470.3	457.1	13.28	35.409	
3,600.0	3,573.5	3,561.5	3,561.5	10.3	4.0	-124.16	-124.16	236.8	-328.0	478.7	465.1	13.67	35.023	
3,700.0	3,672.4	3,660.4	3,660.4	10.6	4.1	-125.62	-125.62	236.8	-328.0	487.4	473.4	14.05	34.690	
3,800.0	3,771.2	3,759.2	3,759.2	11.0	4.2	-127.02	-127.02	236.8	-328.0	496.4	482.0	14.43	34.404	
3,900.0	3,870.1	3,858.1	3,858.1	11.3	4.3	-128.38	-128.38	236.8	-328.0	505.7	490.9	14.81	34.159	
4,000.0	3,968.9	3,956.9	3,956.9	11.7	4.4	-129.69	-129.69	236.8	-328.0	515.3	500.1	15.18	33.952	
4,100.0	4,067.8	4,055.8	4,055.8	12.0	4.6	-130.95	-130.95	236.8	-328.0	525.1	509.6	15.55	33.778	
4,200.0	4,166.6	4,154.6	4,154.6	12.4	4.7	-132.16	-132.16	236.8	-328.0	535.2	519.3	15.91	33.632	
4,300.0	4,265.5	4,253.5	4,253.5	12.7	4.8	-133.33	-133.33	236.8	-328.0	545.5	529.2	16.28	33.512	
4,400.0	4,364.4	4,352.4	4,352.4	13.1	4.9	-134.45	-134.45	236.8	-328.0	556.1	539.4	16.64	33.415	
4,500.0	4,463.2	4,451.2	4,451.2	13.4	5.0	-135.54	-135.54	236.8	-328.0	566.8	549.8	17.00	33.338	
4,600.0	4,562.1	4,550.1	4,550.1	13.8	5.1	-136.58	-136.58	236.8	-328.0	577.7	560.4	17.36	33.279	
4,700.0	4,660.9	4,648.9	4,648.9	14.1	5.2	-137.58	-137.58	236.8	-328.0	588.8	571.1	17.72	33.235	
4,800.0	4,759.8	4,747.8	4,747.8	14.5	5.3	-138.55	-138.55	236.8	-328.0	600.1	582.0	18.07	33.206	
4,900.0	4,858.6	4,846.6	4,846.6	14.8	5.4	-139.48	-139.48	236.8	-328.0	611.6	593.1	18.43	33.189	

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 33U-234
Project:	SEC.33-T7N-R65W	TVD Reference:	WELL @ 4807.0ft (Original Well Elev)
Reference Site:	Alm 33V-HZ Pad North Sec.33-T7N-R65W	MD Reference:	WELL @ 4807.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Alm 33U-234	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 North Sec.33-T7N-R65W - Alm 41-33 (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		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
5,000.0	4,957.5	4,945.5	4,945.5	15.2	5.6	-140.38	236.8	-328.0	623.2	604.4	18.78	33.183	
5,100.0	5,056.3	5,044.3	5,044.3	15.5	5.7	-141.24	236.8	-328.0	634.9	615.8	19.13	33.187	
5,200.0	5,155.2	5,143.2	5,143.2	15.9	5.8	-142.08	236.8	-328.0	646.8	627.3	19.48	33.199	
5,300.0	5,254.0	5,242.0	5,242.0	16.3	5.9	-142.88	236.8	-328.0	658.8	639.0	19.83	33.219	
5,400.0	5,352.9	5,340.9	5,340.9	16.6	6.0	-143.66	236.8	-328.0	671.0	650.8	20.18	33.245	
5,500.0	5,451.8	5,439.8	5,439.8	17.0	6.1	-144.40	236.8	-328.0	683.3	662.7	20.53	33.277	
5,600.0	5,550.6	5,538.6	5,538.6	17.3	6.2	-145.12	236.8	-328.0	695.6	674.7	20.88	33.314	
5,700.0	5,649.5	5,637.5	5,637.5	17.7	6.3	-145.82	236.8	-328.0	708.1	686.9	21.23	33.356	
5,800.0	5,748.5	5,736.5	5,736.5	18.0	6.4	-146.55	236.8	-328.0	719.7	698.2	21.55	33.402	
5,900.0	5,847.9	5,835.9	5,835.9	18.2	6.6	-147.10	236.8	-328.0	728.6	706.7	21.82	33.392	
6,000.0	5,947.7	5,935.7	5,935.7	18.4	6.7	-147.46	236.8	-328.0	734.5	712.4	22.08	33.271	
6,100.0	6,047.6	6,035.6	6,035.6	18.6	6.8	-147.64	236.8	-328.0	737.5	715.2	22.32	33.042	
6,200.0	6,147.6	6,135.6	6,135.6	18.7	6.9	-124.52	236.8	-328.0	737.9	713.3	24.61	29.983	
6,300.0	6,247.6	6,235.6	6,235.6	18.9	7.0	-124.52	236.8	-328.0	737.9	713.0	24.89	29.645	
6,400.0	6,347.4	6,335.4	6,335.4	19.0	7.1	-36.30	236.8	-328.0	733.2	710.3	22.95	31.945	
6,500.0	6,445.5	6,433.5	6,433.5	19.1	7.2	-37.87	236.8	-328.0	718.2	695.3	22.81	31.483	
6,600.0	6,540.4	6,528.4	6,528.4	19.1	7.3	-40.67	236.8	-328.0	693.3	670.8	22.52	30.783	
6,700.0	6,630.3	6,618.3	6,618.3	19.1	7.4	-44.87	236.8	-328.0	659.8	637.6	22.21	29.711	
6,800.0	6,713.8	6,701.8	6,701.8	19.1	7.5	-50.64	236.8	-328.0	619.4	597.3	22.06	28.072	
6,900.0	6,789.5	6,777.5	6,777.5	19.1	7.6	-58.01	236.8	-328.0	574.4	552.0	22.32	25.729	
7,000.0	6,855.9	6,843.9	6,843.9	19.1	7.7	-66.60	236.8	-328.0	528.2	505.0	23.13	22.839	
7,100.0	6,912.0	6,900.0	6,900.0	19.2	7.8	-75.45	236.8	-328.0	485.3	460.9	24.37	19.911	
7,200.0	6,956.9	6,944.9	6,944.9	19.6	7.8	-83.21	236.8	-328.0	451.6	425.8	25.85	17.472	
7,300.0	6,989.8	6,977.8	6,977.8	20.5	7.8	-88.67	236.8	-328.0	433.5	406.1	27.44	15.802	
7,338.8	6,999.1	6,987.1	6,987.1	21.1	7.9	-90.00	236.8	-328.0	431.9	403.8	28.12	15.362	
7,400.0	7,010.0	6,998.0	6,998.0	22.0	7.9	-91.10	236.8	-328.0	436.1	406.9	29.16	14.957	
7,500.0	7,017.3	7,005.3	7,005.3	23.8	7.9	-90.16	236.8	-328.0	460.5	429.5	30.99	14.860 SF	
7,600.0	7,017.1	7,005.1	7,005.1	25.8	7.9	-89.91	236.8	-328.0	504.1	471.1	32.99	15.277	
7,700.0	7,016.8	7,004.8	7,004.8	27.9	7.9	-89.88	236.8	-328.0	562.2	527.0	35.15	15.995	
7,800.0	7,016.5	7,004.5	7,004.5	30.1	7.9	-89.84	236.8	-328.0	630.9	593.5	37.41	16.864	
7,900.0	7,016.3	7,004.3	7,004.3	32.4	7.9	-89.81	236.8	-328.0	707.1	667.3	39.76	17.784	
8,000.0	7,016.0	7,004.0	7,004.0	34.8	7.9	-89.77	236.8	-328.0	788.6	746.5	42.18	18.697	
8,100.0	7,015.7	7,003.7	7,003.7	37.3	7.9	-89.74	236.8	-328.0	874.0	829.4	44.66	19.572	
8,200.0	7,015.5	7,003.5	7,003.5	39.8	7.9	-89.70	236.8	-328.0	962.2	915.1	47.18	20.396	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Alm 33U-234
Project:	SEC.33-T7N-R65W	TVD Reference:	WELL @ 4807.0ft (Original Well Elev)
Reference Site:	Alm 33V-HZ Pad North Sec.33-T7N-R65W	MD Reference:	WELL @ 4807.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Alm 33U-234	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 North Sec.33-T7N-R65W - Paxton 11-33 (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)			
10,200.0	7,010.2	7,008.2	7,008.2	93.6	7.9	-90.33	346.4	-4,074.9	977.6	876.3	101.22	9.658		
10,300.0	7,010.0	7,008.0	7,008.0	96.3	7.9	-90.29	346.4	-4,074.9	887.6	783.6	103.99	8.536		
10,400.0	7,009.7	7,007.7	7,007.7	99.1	7.9	-90.25	346.4	-4,074.9	800.1	693.4	106.76	7.494		
10,500.0	7,009.5	7,007.5	7,007.5	101.9	7.9	-90.22	346.4	-4,074.9	715.9	606.3	109.53	6.536		
10,600.0	7,009.2	7,007.2	7,007.2	104.6	7.9	-90.18	346.4	-4,074.9	636.2	523.9	112.31	5.665		
10,700.0	7,008.9	7,006.9	7,006.9	107.4	7.9	-90.14	346.4	-4,074.9	563.1	448.0	115.08	4.893		
10,800.0	7,008.7	7,006.7	7,006.7	110.2	7.9	-90.11	346.4	-4,074.9	499.3	381.5	117.86	4.237		
10,900.0	7,008.4	7,006.4	7,006.4	113.0	7.9	-90.07	346.4	-4,074.9	449.0	328.4	120.64	3.722		
11,000.0	7,008.2	7,006.2	7,006.2	115.7	7.9	-90.03	346.4	-4,074.9	417.0	293.6	123.43	3.379		
11,088.6	7,007.9	7,005.9	7,005.9	118.2	7.9	-90.00	346.4	-4,074.9	407.5	281.6	125.89	3.237 CC		
11,100.0	7,007.9	7,005.9	7,005.9	118.5	7.9	-90.00	346.4	-4,074.9	407.7	281.5	126.21	3.230 ES, SF		
11,200.0	7,007.6	7,005.6	7,005.6	121.3	7.9	-89.96	346.4	-4,074.9	422.5	293.5	128.99	3.275		
11,300.0	7,007.4	7,005.4	7,005.4	124.1	7.9	-89.92	346.4	-4,074.9	459.1	327.3	131.78	3.484		
11,400.0	7,007.1	7,005.1	7,005.1	126.9	7.9	-89.89	346.4	-4,074.9	512.9	378.3	134.57	3.811		
11,439.7	7,007.0	7,005.0	7,005.0	128.0	7.9	-89.87	346.4	-4,074.9	537.9	402.3	135.67	3.965		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Alm 33U-234
Project:	SEC.33-T7N-R65W	TVD Reference:	WELL @ 4807.0ft (Original Well Elev)
Reference Site:	Alm 33V-HZ Pad North Sec.33-T7N-R65W	MD Reference:	WELL @ 4807.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Alm 33U-234	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 @ 4807.0ft (Original Well Elev) Coordinates are relative to: Alm 33U-234
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 33U-234
Project:	SEC.33-T7N-R65W	TVD Reference:	WELL @ 4807.0ft (Original Well Elev)
Reference Site:	Alm 33V-HZ Pad North Sec.33-T7N-R65W	MD Reference:	WELL @ 4807.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Alm 33U-234	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 @ 4807.0ft (Original Well Elev) Coordinates are relative to: Alm 33U-234
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°

