

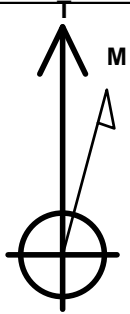
# PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Waste Management 2T-221**

Surface Location: Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W  
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
 Ground Elevation: 4893.0  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1302950.93 3275890.33 40.160780 -104.512870  
 RKB -15' WELL @ 4908.0ft (RKB -15')

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
BHL 500' FNL & 820' FEL	6728.0	4550.1	159.3	Point



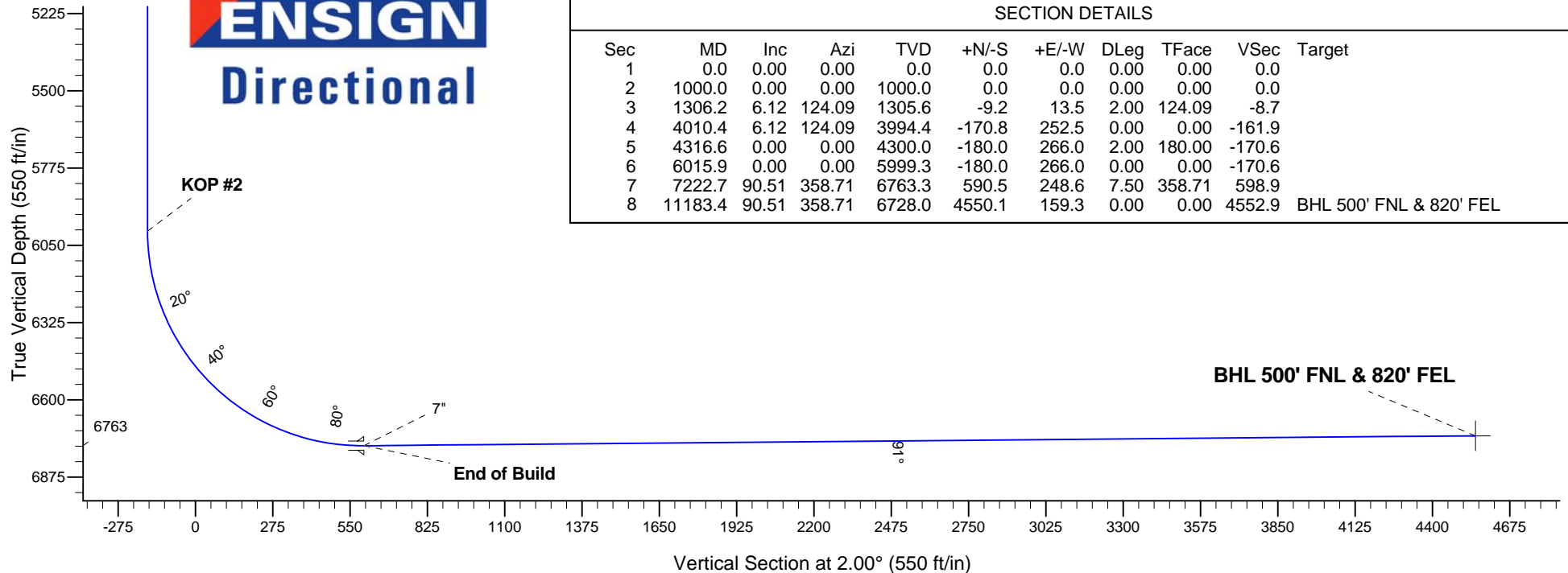
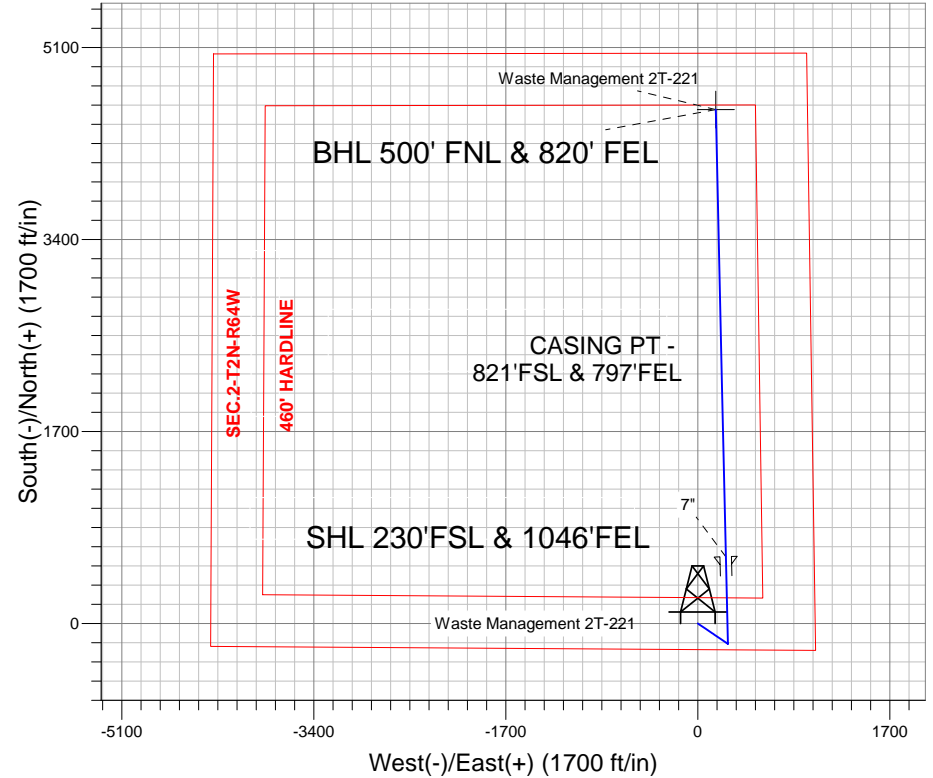
Azimuths to True North  
 Magnetic North: 8.49°

Magnetic Field  
 Strength: 52860.9nT  
 Dip Angle: 66.84°  
 Date: 1/28/2013  
 Model: IGRF2010

Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W  
 Waste Management 2T-221  
 Plan #1 (01-28-13)  
 13:15, January 29 2013

## ANNOTATIONS

TVD	MD	Annotation
1000.0	1000.0	KOP #1
5999.3	6015.9	KOP #2
6763.3	7222.7	End of Build



## 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	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1306.2	6.12	124.09	1305.6	-9.2	13.5	2.00	124.09	-8.7	
4	4010.4	6.12	124.09	3994.4	-170.8	252.5	0.00	0.00	-161.9	
5	4316.6	0.00	0.00	4300.0	-180.0	266.0	2.00	180.00	-170.6	
6	6015.9	0.00	0.00	5999.3	-180.0	266.0	0.00	0.00	-170.6	
7	7222.7	90.51	358.71	6763.3	590.5	248.6	7.50	358.71	598.9	
8	11183.4	90.51	358.71	6728.0	4550.1	159.3	0.00	0.00	4552.9	BHL 500' FNL & 820' FEL



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.2-T2N-R64W**

**Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W**

**Waste Management 2T-221**

**Wellbore #1**

**Plan: Plan #1 (01-28-13)**

## **Standard Planning Report**

**29 January, 2013**

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	
1,306.2	6.12	124.09	1,305.6	-9.2	13.5	2.00	2.00	0.00	124.09	
4,010.4	6.12	124.09	3,994.4	-170.8	252.5	0.00	0.00	0.00	0.00	
4,316.6	0.00	0.00	4,300.0	-180.0	266.0	2.00	-2.00	0.00	180.00	
6,015.9	0.00	0.00	5,999.3	-180.0	266.0	0.00	0.00	0.00	0.00	
7,222.7	90.51	358.71	6,763.3	590.5	248.6	7.50	7.50	0.00	358.71	
11,183.4	90.51	358.71	6,728.0	4,550.1	159.3	0.00	0.00	0.00	0.00	BHL 500' FNL & 82

Planned Survey		Actual 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
1,040.0	0.80	124.09	1,040.0	-0.2	0.2	-0.1	2.00	2.00	0.00
1,080.0	1.60	124.09	1,080.0	-0.6	0.9	-0.6	2.00	2.00	0.00
1,120.0	2.40	124.09	1,120.0	-1.4	2.1	-1.3	2.00	2.00	0.00
1,160.0	3.20	124.09	1,159.9	-2.5	3.7	-2.4	2.00	2.00	0.00
1,200.0	4.00	124.09	1,199.8	-3.9	5.8	-3.7	2.00	2.00	0.00
1,240.0	4.80	124.09	1,239.7	-5.6	8.3	-5.3	2.00	2.00	0.00
1,280.0	5.60	124.09	1,279.6	-7.7	11.3	-7.3	2.00	2.00	0.00
1,306.2	6.12	124.09	1,305.6	-9.2	13.5	-8.7	2.00	2.00	0.00
1,320.0	6.12	124.09	1,319.3	-10.0	14.8	-9.5	0.00	0.00	0.00
1,360.0	6.12	124.09	1,359.1	-12.4	18.3	-11.7	0.00	0.00	0.00
1,400.0	6.12	124.09	1,398.9	-14.8	21.8	-14.0	0.00	0.00	0.00
1,440.0	6.12	124.09	1,438.7	-17.2	25.4	-16.3	0.00	0.00	0.00
1,480.0	6.12	124.09	1,478.4	-19.6	28.9	-18.5	0.00	0.00	0.00
1,520.0	6.12	124.09	1,518.2	-21.9	32.4	-20.8	0.00	0.00	0.00
1,560.0	6.12	124.09	1,558.0	-24.3	36.0	-23.1	0.00	0.00	0.00
1,600.0	6.12	124.09	1,597.7	-26.7	39.5	-25.3	0.00	0.00	0.00
1,640.0	6.12	124.09	1,637.5	-29.1	43.0	-27.6	0.00	0.00	0.00
1,680.0	6.12	124.09	1,677.3	-31.5	46.6	-29.9	0.00	0.00	0.00
1,720.0	6.12	124.09	1,717.1	-33.9	50.1	-32.1	0.00	0.00	0.00
1,760.0	6.12	124.09	1,756.8	-36.3	53.6	-34.4	0.00	0.00	0.00
1,800.0	6.12	124.09	1,796.6	-38.7	57.2	-36.7	0.00	0.00	0.00
1,840.0	6.12	124.09	1,836.4	-41.1	60.7	-38.9	0.00	0.00	0.00
1,880.0	6.12	124.09	1,876.1	-43.5	64.2	-41.2	0.00	0.00	0.00
1,920.0	6.12	124.09	1,915.9	-45.9	67.8	-43.5	0.00	0.00	0.00
1,960.0	6.12	124.09	1,955.7	-48.3	71.3	-45.7	0.00	0.00	0.00
2,000.0	6.12	124.09	1,995.5	-50.6	74.8	-48.0	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Waste Management 2T-221
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4908.0ft (RKB -15')
<b>Project:</b>	SEC.2-T2N-R64W	<b>MD Reference:</b>	WELL @ 4908.0ft (RKB -15')
<b>Site:</b>	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Waste Management 2T-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (01-28-13)		

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	6.12	124.09	2,035.2	-53.0	78.4	-50.3	0.00	0.00	0.00
2,080.0	6.12	124.09	2,075.0	-55.4	81.9	-52.5	0.00	0.00	0.00
2,120.0	6.12	124.09	2,114.8	-57.8	85.4	-54.8	0.00	0.00	0.00
2,160.0	6.12	124.09	2,154.5	-60.2	89.0	-57.1	0.00	0.00	0.00
2,200.0	6.12	124.09	2,194.3	-62.6	92.5	-59.3	0.00	0.00	0.00
2,240.0	6.12	124.09	2,234.1	-65.0	96.0	-61.6	0.00	0.00	0.00
2,280.0	6.12	124.09	2,273.9	-67.4	99.6	-63.9	0.00	0.00	0.00
2,320.0	6.12	124.09	2,313.6	-69.8	103.1	-66.1	0.00	0.00	0.00
2,360.0	6.12	124.09	2,353.4	-72.2	106.6	-68.4	0.00	0.00	0.00
2,400.0	6.12	124.09	2,393.2	-74.6	110.2	-70.7	0.00	0.00	0.00
2,440.0	6.12	124.09	2,432.9	-76.9	113.7	-72.9	0.00	0.00	0.00
2,480.0	6.12	124.09	2,472.7	-79.3	117.2	-75.2	0.00	0.00	0.00
2,520.0	6.12	124.09	2,512.5	-81.7	120.8	-77.5	0.00	0.00	0.00
2,560.0	6.12	124.09	2,552.3	-84.1	124.3	-79.7	0.00	0.00	0.00
2,600.0	6.12	124.09	2,592.0	-86.5	127.8	-82.0	0.00	0.00	0.00
2,640.0	6.12	124.09	2,631.8	-88.9	131.4	-84.3	0.00	0.00	0.00
2,680.0	6.12	124.09	2,671.6	-91.3	134.9	-86.5	0.00	0.00	0.00
2,720.0	6.12	124.09	2,711.3	-93.7	138.5	-88.8	0.00	0.00	0.00
2,760.0	6.12	124.09	2,751.1	-96.1	142.0	-91.1	0.00	0.00	0.00
2,800.0	6.12	124.09	2,790.9	-98.5	145.5	-93.3	0.00	0.00	0.00
2,840.0	6.12	124.09	2,830.7	-100.9	149.1	-95.6	0.00	0.00	0.00
2,880.0	6.12	124.09	2,870.4	-103.3	152.6	-97.9	0.00	0.00	0.00
2,920.0	6.12	124.09	2,910.2	-105.6	156.1	-100.1	0.00	0.00	0.00
2,960.0	6.12	124.09	2,950.0	-108.0	159.7	-102.4	0.00	0.00	0.00
3,000.0	6.12	124.09	2,989.8	-110.4	163.2	-104.7	0.00	0.00	0.00
3,040.0	6.12	124.09	3,029.5	-112.8	166.7	-106.9	0.00	0.00	0.00
3,080.0	6.12	124.09	3,069.3	-115.2	170.3	-109.2	0.00	0.00	0.00
3,120.0	6.12	124.09	3,109.1	-117.6	173.8	-111.5	0.00	0.00	0.00
3,160.0	6.12	124.09	3,148.8	-120.0	177.3	-113.7	0.00	0.00	0.00
3,200.0	6.12	124.09	3,188.6	-122.4	180.9	-116.0	0.00	0.00	0.00
3,240.0	6.12	124.09	3,228.4	-124.8	184.4	-118.3	0.00	0.00	0.00
3,280.0	6.12	124.09	3,268.2	-127.2	187.9	-120.5	0.00	0.00	0.00
3,320.0	6.12	124.09	3,307.9	-129.6	191.5	-122.8	0.00	0.00	0.00
3,360.0	6.12	124.09	3,347.7	-132.0	195.0	-125.0	0.00	0.00	0.00
3,400.0	6.12	124.09	3,387.5	-134.3	198.5	-127.3	0.00	0.00	0.00
3,440.0	6.12	124.09	3,427.2	-136.7	202.1	-129.6	0.00	0.00	0.00
3,480.0	6.12	124.09	3,467.0	-139.1	205.6	-131.8	0.00	0.00	0.00
3,520.0	6.12	124.09	3,506.8	-141.5	209.1	-134.1	0.00	0.00	0.00
3,560.0	6.12	124.09	3,546.6	-143.9	212.7	-136.4	0.00	0.00	0.00
3,600.0	6.12	124.09	3,586.3	-146.3	216.2	-138.6	0.00	0.00	0.00
3,640.0	6.12	124.09	3,626.1	-148.7	219.7	-140.9	0.00	0.00	0.00
3,680.0	6.12	124.09	3,665.9	-151.1	223.3	-143.2	0.00	0.00	0.00
3,720.0	6.12	124.09	3,705.6	-153.5	226.8	-145.4	0.00	0.00	0.00
3,760.0	6.12	124.09	3,745.4	-155.9	230.3	-147.7	0.00	0.00	0.00
3,800.0	6.12	124.09	3,785.2	-158.3	233.9	-150.0	0.00	0.00	0.00
3,840.0	6.12	124.09	3,825.0	-160.7	237.4	-152.2	0.00	0.00	0.00
3,880.0	6.12	124.09	3,864.7	-163.0	240.9	-154.5	0.00	0.00	0.00
3,920.0	6.12	124.09	3,904.5	-165.4	244.5	-156.8	0.00	0.00	0.00
3,960.0	6.12	124.09	3,944.3	-167.8	248.0	-159.0	0.00	0.00	0.00
4,000.0	6.12	124.09	3,984.0	-170.2	251.5	-161.3	0.00	0.00	0.00
4,010.4	6.12	124.09	3,994.4	-170.8	252.5	-161.9	0.00	0.00	0.00
4,040.0	5.53	124.09	4,023.8	-172.5	254.9	-163.5	2.00	-2.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Waste Management 2T-221
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4908.0ft (RKB -15')
<b>Project:</b>	SEC.2-T2N-R64W	<b>MD Reference:</b>	WELL @ 4908.0ft (RKB -15')
<b>Site:</b>	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Waste Management 2T-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (01-28-13)		

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)
4,080.0	4.73	124.09	4,063.7	-174.5	257.9	-165.4	2.00	-2.00	0.00
4,120.0	3.93	124.09	4,103.6	-176.2	260.4	-167.0	2.00	-2.00	0.00
4,160.0	3.13	124.09	4,143.5	-177.6	262.5	-168.3	2.00	-2.00	0.00
4,200.0	2.33	124.09	4,183.4	-178.7	264.0	-169.3	2.00	-2.00	0.00
4,240.0	1.53	124.09	4,223.4	-179.4	265.2	-170.0	2.00	-2.00	0.00
4,280.0	0.73	124.09	4,263.4	-179.9	265.8	-170.5	2.00	-2.00	0.00
4,316.6	0.00	0.00	4,300.0	-180.0	266.0	-170.6	2.00	-2.00	0.00
4,320.0	0.00	0.00	4,303.4	-180.0	266.0	-170.6	0.00	0.00	0.00
4,360.0	0.00	0.00	4,343.4	-180.0	266.0	-170.6	0.00	0.00	0.00
4,400.0	0.00	0.00	4,383.4	-180.0	266.0	-170.6	0.00	0.00	0.00
4,440.0	0.00	0.00	4,423.4	-180.0	266.0	-170.6	0.00	0.00	0.00
4,480.0	0.00	0.00	4,463.4	-180.0	266.0	-170.6	0.00	0.00	0.00
4,520.0	0.00	0.00	4,503.4	-180.0	266.0	-170.6	0.00	0.00	0.00
4,560.0	0.00	0.00	4,543.4	-180.0	266.0	-170.6	0.00	0.00	0.00
4,600.0	0.00	0.00	4,583.4	-180.0	266.0	-170.6	0.00	0.00	0.00
4,640.0	0.00	0.00	4,623.4	-180.0	266.0	-170.6	0.00	0.00	0.00
4,680.0	0.00	0.00	4,663.4	-180.0	266.0	-170.6	0.00	0.00	0.00
4,720.0	0.00	0.00	4,703.4	-180.0	266.0	-170.6	0.00	0.00	0.00
4,760.0	0.00	0.00	4,743.4	-180.0	266.0	-170.6	0.00	0.00	0.00
4,800.0	0.00	0.00	4,783.4	-180.0	266.0	-170.6	0.00	0.00	0.00
4,840.0	0.00	0.00	4,823.4	-180.0	266.0	-170.6	0.00	0.00	0.00
4,880.0	0.00	0.00	4,863.4	-180.0	266.0	-170.6	0.00	0.00	0.00
4,920.0	0.00	0.00	4,903.4	-180.0	266.0	-170.6	0.00	0.00	0.00
4,960.0	0.00	0.00	4,943.4	-180.0	266.0	-170.6	0.00	0.00	0.00
5,000.0	0.00	0.00	4,983.4	-180.0	266.0	-170.6	0.00	0.00	0.00
5,040.0	0.00	0.00	5,023.4	-180.0	266.0	-170.6	0.00	0.00	0.00
5,080.0	0.00	0.00	5,063.4	-180.0	266.0	-170.6	0.00	0.00	0.00
5,120.0	0.00	0.00	5,103.4	-180.0	266.0	-170.6	0.00	0.00	0.00
5,160.0	0.00	0.00	5,143.4	-180.0	266.0	-170.6	0.00	0.00	0.00
5,200.0	0.00	0.00	5,183.4	-180.0	266.0	-170.6	0.00	0.00	0.00
5,240.0	0.00	0.00	5,223.4	-180.0	266.0	-170.6	0.00	0.00	0.00
5,280.0	0.00	0.00	5,263.4	-180.0	266.0	-170.6	0.00	0.00	0.00
5,320.0	0.00	0.00	5,303.4	-180.0	266.0	-170.6	0.00	0.00	0.00
5,360.0	0.00	0.00	5,343.4	-180.0	266.0	-170.6	0.00	0.00	0.00
5,400.0	0.00	0.00	5,383.4	-180.0	266.0	-170.6	0.00	0.00	0.00
5,440.0	0.00	0.00	5,423.4	-180.0	266.0	-170.6	0.00	0.00	0.00
5,480.0	0.00	0.00	5,463.4	-180.0	266.0	-170.6	0.00	0.00	0.00
5,520.0	0.00	0.00	5,503.4	-180.0	266.0	-170.6	0.00	0.00	0.00
5,560.0	0.00	0.00	5,543.4	-180.0	266.0	-170.6	0.00	0.00	0.00
5,600.0	0.00	0.00	5,583.4	-180.0	266.0	-170.6	0.00	0.00	0.00
5,640.0	0.00	0.00	5,623.4	-180.0	266.0	-170.6	0.00	0.00	0.00
5,680.0	0.00	0.00	5,663.4	-180.0	266.0	-170.6	0.00	0.00	0.00
5,720.0	0.00	0.00	5,703.4	-180.0	266.0	-170.6	0.00	0.00	0.00
5,760.0	0.00	0.00	5,743.4	-180.0	266.0	-170.6	0.00	0.00	0.00
5,800.0	0.00	0.00	5,783.4	-180.0	266.0	-170.6	0.00	0.00	0.00
5,840.0	0.00	0.00	5,823.4	-180.0	266.0	-170.6	0.00	0.00	0.00
5,880.0	0.00	0.00	5,863.4	-180.0	266.0	-170.6	0.00	0.00	0.00
5,920.0	0.00	0.00	5,903.4	-180.0	266.0	-170.6	0.00	0.00	0.00
5,960.0	0.00	0.00	5,943.4	-180.0	266.0	-170.6	0.00	0.00	0.00
6,000.0	0.00	0.00	5,983.4	-180.0	266.0	-170.6	0.00	0.00	0.00
6,015.9	0.00	0.00	5,999.3	-180.0	266.0	-170.6	0.00	0.00	0.00
6,040.0	1.80	358.71	6,023.4	-179.6	266.0	-170.2	7.50	7.50	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Waste Management 2T-221
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4908.0ft (RKB -15')
<b>Project:</b>	SEC.2-T2N-R64W	<b>MD Reference:</b>	WELL @ 4908.0ft (RKB -15')
<b>Site:</b>	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Waste Management 2T-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (01-28-13)		

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)
6,080.0	4.80	358.71	6,063.3	-177.3	265.9	-167.9	7.50	7.50	0.00
6,120.0	7.80	358.71	6,103.1	-172.9	265.8	-163.5	7.50	7.50	0.00
6,160.0	10.80	358.71	6,142.6	-166.5	265.7	-157.1	7.50	7.50	0.00
6,200.0	13.80	358.71	6,181.6	-157.9	265.5	-148.6	7.50	7.50	0.00
6,240.0	16.80	358.71	6,220.2	-147.4	265.3	-138.0	7.50	7.50	0.00
6,280.0	19.80	358.71	6,258.2	-134.8	265.0	-125.5	7.50	7.50	0.00
6,320.0	22.80	358.71	6,295.4	-120.3	264.7	-111.0	7.50	7.50	0.00
6,360.0	25.80	358.71	6,331.9	-103.8	264.3	-94.5	7.50	7.50	0.00
6,400.0	28.80	358.71	6,367.4	-85.5	263.9	-76.2	7.50	7.50	0.00
6,440.0	31.80	358.71	6,402.0	-65.3	263.4	-56.1	7.50	7.50	0.00
6,480.0	34.80	358.71	6,435.4	-43.4	262.9	-34.1	7.50	7.50	0.00
6,520.0	37.80	358.71	6,467.6	-19.7	262.4	-10.5	7.50	7.50	0.00
6,560.0	40.80	358.71	6,498.6	5.6	261.8	14.8	7.50	7.50	0.00
6,600.0	43.80	358.71	6,528.1	32.5	261.2	41.7	7.50	7.50	0.00
6,640.0	46.80	358.71	6,556.3	61.0	260.6	70.1	7.50	7.50	0.00
6,680.0	49.80	358.71	6,582.9	90.8	259.9	99.9	7.50	7.50	0.00
6,720.0	52.80	358.71	6,607.9	122.0	259.2	131.0	7.50	7.50	0.00
6,760.0	55.80	358.71	6,631.2	154.5	258.5	163.5	7.50	7.50	0.00
6,800.0	58.80	358.71	6,652.8	188.2	257.7	197.1	7.50	7.50	0.00
6,840.0	61.80	358.71	6,672.6	222.9	256.9	231.7	7.50	7.50	0.00
6,880.0	64.80	358.71	6,690.6	258.6	256.1	267.4	7.50	7.50	0.00
6,920.0	67.80	358.71	6,706.7	295.2	255.3	304.0	7.50	7.50	0.00
6,960.0	70.80	358.71	6,720.8	332.6	254.4	341.3	7.50	7.50	0.00
7,000.0	73.80	358.71	6,733.0	370.7	253.6	379.4	7.50	7.50	0.00
7,040.0	76.80	358.71	6,743.1	409.4	252.7	418.0	7.50	7.50	0.00
7,080.0	79.80	358.71	6,751.2	448.6	251.8	457.1	7.50	7.50	0.00
7,120.0	82.80	358.71	6,757.3	488.1	250.9	496.6	7.50	7.50	0.00
7,160.0	85.80	358.71	6,761.2	527.9	250.0	536.3	7.50	7.50	0.00
7,200.0	88.80	358.71	6,763.1	567.8	249.1	576.2	7.50	7.50	0.00
7,222.7	90.51	358.71	6,763.3	590.5	248.6	598.9	7.50	7.50	0.00
7,240.0	90.51	358.71	6,763.1	607.8	248.2	616.1	0.00	0.00	0.00
7,280.0	90.51	358.71	6,762.7	647.8	247.3	656.0	0.00	0.00	0.00
7,320.0	90.51	358.71	6,762.4	687.8	246.4	696.0	0.00	0.00	0.00
7,360.0	90.51	358.71	6,762.0	727.8	245.5	735.9	0.00	0.00	0.00
7,400.0	90.51	358.71	6,761.7	767.8	244.6	775.8	0.00	0.00	0.00
7,440.0	90.51	358.71	6,761.3	807.7	243.7	815.8	0.00	0.00	0.00
7,480.0	90.51	358.71	6,761.0	847.7	242.8	855.7	0.00	0.00	0.00
7,520.0	90.51	358.71	6,760.6	887.7	241.9	895.6	0.00	0.00	0.00
7,560.0	90.51	358.71	6,760.3	927.7	241.0	935.6	0.00	0.00	0.00
7,600.0	90.51	358.71	6,759.9	967.7	240.1	975.5	0.00	0.00	0.00
7,640.0	90.51	358.71	6,759.5	1,007.7	239.2	1,015.4	0.00	0.00	0.00
7,680.0	90.51	358.71	6,759.2	1,047.7	238.3	1,055.4	0.00	0.00	0.00
7,720.0	90.51	358.71	6,758.8	1,087.7	237.4	1,095.3	0.00	0.00	0.00
7,760.0	90.51	358.71	6,758.5	1,127.7	236.5	1,135.2	0.00	0.00	0.00
7,800.0	90.51	358.71	6,758.1	1,167.6	235.6	1,175.2	0.00	0.00	0.00
7,840.0	90.51	358.71	6,757.8	1,207.6	234.7	1,215.1	0.00	0.00	0.00
7,880.0	90.51	358.71	6,757.4	1,247.6	233.8	1,255.0	0.00	0.00	0.00
7,920.0	90.51	358.71	6,757.0	1,287.6	232.9	1,295.0	0.00	0.00	0.00
7,960.0	90.51	358.71	6,756.7	1,327.6	232.0	1,334.9	0.00	0.00	0.00
8,000.0	90.51	358.71	6,756.3	1,367.6	231.1	1,374.8	0.00	0.00	0.00
8,040.0	90.51	358.71	6,756.0	1,407.6	230.2	1,414.8	0.00	0.00	0.00
8,080.0	90.51	358.71	6,755.6	1,447.6	229.3	1,454.7	0.00	0.00	0.00



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Waste Management 2T-221
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4908.0ft (RKB -15')
<b>Project:</b>	SEC.2-T2N-R64W	<b>MD Reference:</b>	WELL @ 4908.0ft (RKB -15')
<b>Site:</b>	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Waste Management 2T-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (01-28-13)		

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)
8,120.0	90.51	358.71	6,755.3	1,487.5	228.4	1,494.6	0.00	0.00	0.00
8,160.0	90.51	358.71	6,754.9	1,527.5	227.5	1,534.6	0.00	0.00	0.00
8,200.0	90.51	358.71	6,754.6	1,567.5	226.6	1,574.5	0.00	0.00	0.00
8,240.0	90.51	358.71	6,754.2	1,607.5	225.7	1,614.4	0.00	0.00	0.00
8,280.0	90.51	358.71	6,753.8	1,647.5	224.8	1,654.4	0.00	0.00	0.00
8,320.0	90.51	358.71	6,753.5	1,687.5	223.9	1,694.3	0.00	0.00	0.00
8,360.0	90.51	358.71	6,753.1	1,727.5	223.0	1,734.2	0.00	0.00	0.00
8,400.0	90.51	358.71	6,752.8	1,767.5	222.1	1,774.2	0.00	0.00	0.00
8,440.0	90.51	358.71	6,752.4	1,807.5	221.2	1,814.1	0.00	0.00	0.00
8,480.0	90.51	358.71	6,752.1	1,847.4	220.3	1,854.0	0.00	0.00	0.00
8,520.0	90.51	358.71	6,751.7	1,887.4	219.4	1,893.9	0.00	0.00	0.00
8,560.0	90.51	358.71	6,751.4	1,927.4	218.5	1,933.9	0.00	0.00	0.00
8,600.0	90.51	358.71	6,751.0	1,967.4	217.6	1,973.8	0.00	0.00	0.00
8,640.0	90.51	358.71	6,750.6	2,007.4	216.7	2,013.7	0.00	0.00	0.00
8,680.0	90.51	358.71	6,750.3	2,047.4	215.8	2,053.7	0.00	0.00	0.00
8,720.0	90.51	358.71	6,749.9	2,087.4	214.8	2,093.6	0.00	0.00	0.00
8,760.0	90.51	358.71	6,749.6	2,127.4	213.9	2,133.5	0.00	0.00	0.00
8,800.0	90.51	358.71	6,749.2	2,167.3	213.0	2,173.5	0.00	0.00	0.00
8,840.0	90.51	358.71	6,748.9	2,207.3	212.1	2,213.4	0.00	0.00	0.00
8,880.0	90.51	358.71	6,748.5	2,247.3	211.2	2,253.3	0.00	0.00	0.00
8,920.0	90.51	358.71	6,748.1	2,287.3	210.3	2,293.3	0.00	0.00	0.00
8,960.0	90.51	358.71	6,747.8	2,327.3	209.4	2,333.2	0.00	0.00	0.00
9,000.0	90.51	358.71	6,747.4	2,367.3	208.5	2,373.1	0.00	0.00	0.00
9,040.0	90.51	358.71	6,747.1	2,407.3	207.6	2,413.1	0.00	0.00	0.00
9,080.0	90.51	358.71	6,746.7	2,447.3	206.7	2,453.0	0.00	0.00	0.00
9,120.0	90.51	358.71	6,746.4	2,487.3	205.8	2,492.9	0.00	0.00	0.00
9,160.0	90.51	358.71	6,746.0	2,527.2	204.9	2,532.9	0.00	0.00	0.00
9,200.0	90.51	358.71	6,745.7	2,567.2	204.0	2,572.8	0.00	0.00	0.00
9,240.0	90.51	358.71	6,745.3	2,607.2	203.1	2,612.7	0.00	0.00	0.00
9,280.0	90.51	358.71	6,744.9	2,647.2	202.2	2,652.7	0.00	0.00	0.00
9,320.0	90.51	358.71	6,744.6	2,687.2	201.3	2,692.6	0.00	0.00	0.00
9,360.0	90.51	358.71	6,744.2	2,727.2	200.4	2,732.5	0.00	0.00	0.00
9,400.0	90.51	358.71	6,743.9	2,767.2	199.5	2,772.5	0.00	0.00	0.00
9,440.0	90.51	358.71	6,743.5	2,807.2	198.6	2,812.4	0.00	0.00	0.00
9,480.0	90.51	358.71	6,743.2	2,847.1	197.7	2,852.3	0.00	0.00	0.00
9,520.0	90.51	358.71	6,742.8	2,887.1	196.8	2,892.3	0.00	0.00	0.00
9,560.0	90.51	358.71	6,742.5	2,927.1	195.9	2,932.2	0.00	0.00	0.00
9,600.0	90.51	358.71	6,742.1	2,967.1	195.0	2,972.1	0.00	0.00	0.00
9,640.0	90.51	358.71	6,741.7	3,007.1	194.1	3,012.0	0.00	0.00	0.00
9,680.0	90.51	358.71	6,741.4	3,047.1	193.2	3,052.0	0.00	0.00	0.00
9,720.0	90.51	358.71	6,741.0	3,087.1	192.3	3,091.9	0.00	0.00	0.00
9,760.0	90.51	358.71	6,740.7	3,127.1	191.4	3,131.8	0.00	0.00	0.00
9,800.0	90.51	358.71	6,740.3	3,167.1	190.5	3,171.8	0.00	0.00	0.00
9,840.0	90.51	358.71	6,740.0	3,207.0	189.6	3,211.7	0.00	0.00	0.00
9,880.0	90.51	358.71	6,739.6	3,247.0	188.7	3,251.6	0.00	0.00	0.00
9,920.0	90.51	358.71	6,739.2	3,287.0	187.8	3,291.6	0.00	0.00	0.00
9,960.0	90.51	358.71	6,738.9	3,327.0	186.9	3,331.5	0.00	0.00	0.00
10,000.0	90.51	358.71	6,738.5	3,367.0	186.0	3,371.4	0.00	0.00	0.00
10,040.0	90.51	358.71	6,738.2	3,407.0	185.1	3,411.4	0.00	0.00	0.00
10,080.0	90.51	358.71	6,737.8	3,447.0	184.2	3,451.3	0.00	0.00	0.00
10,120.0	90.51	358.71	6,737.5	3,487.0	183.3	3,491.2	0.00	0.00	0.00
10,160.0	90.51	358.71	6,737.1	3,526.9	182.4	3,531.2	0.00	0.00	0.00



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Waste Management 2T-221
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4908.0ft (RKB -15')
<b>Project:</b>	SEC.2-T2N-R64W	<b>MD Reference:</b>	WELL @ 4908.0ft (RKB -15')
<b>Site:</b>	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Waste Management 2T-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (01-28-13)		

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)
10,200.0	90.51	358.71	6,736.8	3,566.9	181.5	3,571.1	0.00	0.00	0.00
10,240.0	90.51	358.71	6,736.4	3,606.9	180.6	3,611.0	0.00	0.00	0.00
10,280.0	90.51	358.71	6,736.0	3,646.9	179.7	3,651.0	0.00	0.00	0.00
10,320.0	90.51	358.71	6,735.7	3,686.9	178.8	3,690.9	0.00	0.00	0.00
10,360.0	90.51	358.71	6,735.3	3,726.9	177.9	3,730.8	0.00	0.00	0.00
10,400.0	90.51	358.71	6,735.0	3,766.9	177.0	3,770.8	0.00	0.00	0.00
10,440.0	90.51	358.71	6,734.6	3,806.9	176.1	3,810.7	0.00	0.00	0.00
10,480.0	90.51	358.71	6,734.3	3,846.9	175.2	3,850.6	0.00	0.00	0.00
10,520.0	90.51	358.71	6,733.9	3,886.8	174.3	3,890.6	0.00	0.00	0.00
10,560.0	90.51	358.71	6,733.5	3,926.8	173.3	3,930.5	0.00	0.00	0.00
10,600.0	90.51	358.71	6,733.2	3,966.8	172.4	3,970.4	0.00	0.00	0.00
10,640.0	90.51	358.71	6,732.8	4,006.8	171.5	4,010.4	0.00	0.00	0.00
10,680.0	90.51	358.71	6,732.5	4,046.8	170.6	4,050.3	0.00	0.00	0.00
10,720.0	90.51	358.71	6,732.1	4,086.8	169.7	4,090.2	0.00	0.00	0.00
10,760.0	90.51	358.71	6,731.8	4,126.8	168.8	4,130.2	0.00	0.00	0.00
10,800.0	90.51	358.71	6,731.4	4,166.8	167.9	4,170.1	0.00	0.00	0.00
10,840.0	90.51	358.71	6,731.1	4,206.7	167.0	4,210.0	0.00	0.00	0.00
10,880.0	90.51	358.71	6,730.7	4,246.7	166.1	4,249.9	0.00	0.00	0.00
10,920.0	90.51	358.71	6,730.3	4,286.7	165.2	4,289.9	0.00	0.00	0.00
10,960.0	90.51	358.71	6,730.0	4,326.7	164.3	4,329.8	0.00	0.00	0.00
11,000.0	90.51	358.71	6,729.6	4,366.7	163.4	4,369.7	0.00	0.00	0.00
11,040.0	90.51	358.71	6,729.3	4,406.7	162.5	4,409.7	0.00	0.00	0.00
11,080.0	90.51	358.71	6,728.9	4,446.7	161.6	4,449.6	0.00	0.00	0.00
11,120.0	90.51	358.71	6,728.6	4,486.7	160.7	4,489.5	0.00	0.00	0.00
11,160.0	90.51	358.71	6,728.2	4,526.7	159.8	4,529.5	0.00	0.00	0.00
11,183.4	90.51	358.71	6,728.0	4,550.1	159.3	4,552.9	0.00	0.00	0.00

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,222.7	6,763.3	7"	7	8-3/4

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,000.0	1,000.0	0.0	0.0	KOP #1
6,015.9	5,999.3	-180.0	266.0	KOP #2
7,222.7	6,763.3	590.5	248.6	End of Build



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.2-T2N-R64W**

**Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W**

**Waste Management 2T-221**

**Wellbore #1**

**Plan #1 (01-28-13)**

## **Anticollision Report**

**29 January, 2013**



Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W - Waste Management 2T-401 - Wellbore #1 - Plan														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)				
1,800.0	1,796.6	1,795.6	1,795.6	4.0	3.9	170.30	0.0	-28.0	93.5	85.8	7.66	12.198			
1,900.0	1,896.0	1,895.0	1,895.0	4.2	4.1	171.29	0.0	-28.0	104.0	95.9	8.11	12.835			
2,000.0	1,995.5	1,994.5	1,994.5	4.5	4.4	172.10	0.0	-28.0	114.6	106.0	8.55	13.406			
2,100.0	2,094.9	2,093.9	2,093.9	4.8	4.6	172.77	0.0	-28.0	125.2	116.2	8.99	13.920			
2,200.0	2,194.3	2,193.3	2,193.3	5.1	4.8	173.34	0.0	-28.0	135.8	126.3	9.44	14.385			
2,300.0	2,293.7	2,292.7	2,292.7	5.4	5.0	173.82	0.0	-28.0	146.4	136.5	9.88	14.807			
2,400.0	2,393.2	2,392.2	2,392.2	5.6	5.3	174.24	0.0	-28.0	157.0	146.6	10.33	15.192			
2,500.0	2,492.6	2,491.6	2,491.6	5.9	5.5	174.61	0.0	-28.0	167.6	156.8	10.78	15.544			
2,600.0	2,592.0	2,591.0	2,591.0	6.2	5.7	174.93	0.0	-28.0	178.2	167.0	11.23	15.867			
2,700.0	2,691.5	2,690.5	2,690.5	6.5	5.9	175.21	0.0	-28.0	188.8	177.2	11.68	16.165			
2,800.0	2,790.9	2,789.9	2,789.9	6.8	6.2	175.47	0.0	-28.0	199.5	187.3	12.13	16.440			
2,900.0	2,890.3	2,889.3	2,889.3	7.1	6.4	175.70	0.0	-28.0	210.1	197.5	12.59	16.694			
3,000.0	2,989.8	2,988.8	2,988.8	7.4	6.6	175.91	0.0	-28.0	220.7	207.7	13.04	16.931			
3,100.0	3,089.2	3,089.0	3,089.0	7.7	6.8	175.76	-1.3	-28.5	231.2	217.8	13.47	17.168			
3,200.0	3,188.6	3,189.2	3,189.1	8.0	7.0	174.79	-5.7	-30.5	241.4	227.5	13.88	17.395			
3,300.0	3,288.0	3,289.1	3,288.6	8.3	7.2	173.11	-13.3	-33.8	251.4	237.1	14.29	17.587			
3,400.0	3,387.5	3,388.3	3,387.2	8.6	7.3	170.91	-23.6	-38.3	261.5	246.7	14.72	17.759			
3,500.0	3,486.9	3,487.3	3,485.5	8.9	7.5	168.80	-34.3	-43.0	271.9	256.7	15.17	17.928			
3,600.0	3,586.3	3,586.3	3,583.8	9.2	7.7	166.85	-44.9	-47.7	282.7	267.1	15.62	18.095			
3,700.0	3,685.8	3,685.2	3,682.0	9.5	7.9	165.04	-55.6	-52.3	293.8	277.7	16.09	18.260			
3,800.0	3,785.2	3,784.2	3,780.3	9.8	8.1	163.36	-66.2	-57.0	305.1	288.6	16.56	18.420			
3,900.0	3,884.6	3,883.2	3,878.6	10.1	8.4	161.80	-76.9	-61.7	316.7	299.7	17.05	18.577			
4,000.0	3,984.0	3,982.1	3,976.9	10.4	8.6	160.36	-87.5	-66.4	328.5	311.0	17.54	18.728			
4,100.0	4,083.6	4,081.2	4,075.3	10.6	8.8	158.99	-98.2	-71.0	339.2	321.2	18.04	18.806			
4,200.0	4,183.4	4,180.5	4,173.9	10.8	9.1	157.49	-108.8	-75.7	347.0	328.5	18.50	18.753			
4,300.0	4,283.4	4,279.8	4,272.5	11.0	9.3	155.81	-119.5	-80.4	351.7	332.8	18.95	18.562			
4,400.0	4,383.4	4,379.1	4,371.1	11.2	9.5	-81.92	-130.2	-85.1	354.8	335.4	19.39	18.295			
4,500.0	4,483.4	4,478.4	4,469.7	11.3	9.8	-83.72	-140.9	-89.8	358.1	338.3	19.86	18.030			
4,600.0	4,583.4	4,577.7	4,568.4	11.5	10.0	-85.49	-151.5	-94.5	361.9	341.5	20.34	17.793			
4,700.0	4,683.4	4,677.2	4,667.1	11.7	10.3	-87.21	-162.2	-99.2	365.9	345.1	20.81	17.581			
4,800.0	4,783.4	4,781.7	4,771.1	11.9	10.6	-88.70	-171.6	-103.3	369.5	348.3	21.28	17.362			
4,900.0	4,883.4	4,886.8	4,876.0	12.0	10.8	-89.62	-177.5	-105.9	371.9	350.2	21.73	17.113			
5,000.0	4,983.4	4,992.2	4,981.4	12.2	11.0	-89.99	-179.9	-106.9	372.9	350.8	22.16	16.830			
5,100.0	5,083.4	5,093.2	5,082.4	12.4	11.2	-90.00	-180.0	-107.0	373.0	350.4	22.55	16.537			
5,200.0	5,183.4	5,193.2	5,182.4	12.6	11.4	-90.00	-180.0	-107.0	373.0	350.0	22.95	16.249			
5,300.0	5,283.4	5,293.2	5,282.4	12.8	11.6	-90.00	-180.0	-107.0	373.0	349.6	23.35	15.969			
5,400.0	5,383.4	5,393.2	5,382.4	12.9	11.9	-90.00	-180.0	-107.0	373.0	349.2	23.76	15.697			
5,500.0	5,483.4	5,493.2	5,482.4	13.1	12.1	-90.00	-180.0	-107.0	373.0	348.8	24.16	15.434			
5,600.0	5,583.4	5,593.2	5,582.4	13.3	12.3	-90.00	-180.0	-107.0	373.0	348.4	24.57	15.178			
5,700.0	5,683.4	5,693.2	5,682.4	13.5	12.5	-90.00	-180.0	-107.0	373.0	348.0	24.98	14.930			
5,800.0	5,783.4	5,793.2	5,782.4	13.7	12.7	-90.00	-180.0	-107.0	373.0	347.6	25.39	14.689			
5,900.0	5,883.4	5,893.2	5,882.4	13.9	12.9	-90.00	-180.0	-107.0	373.0	347.1	25.80	14.454			
6,000.0	5,983.4	5,993.2	5,982.4	14.1	13.1	-90.00	-180.0	-107.0	373.0	346.7	26.21	14.227			
6,100.0	6,083.2	6,093.0	6,082.2	14.3	13.3	-89.42	-180.0	-107.0	372.9	346.2	26.64	13.997			
6,129.4	6,112.4	6,122.2	6,111.4	14.3	13.4	-90.00	-180.0	-107.0	372.9	346.1	26.75	13.938			
6,200.0	6,181.6	6,191.4	6,180.6	14.4	13.5	-92.04	-180.0	-107.0	373.1	346.1	27.02	13.807			
6,300.0	6,276.9	6,290.6	6,279.7	14.5	13.7	-96.05	-177.1	-107.0	375.1	347.7	27.36	13.708			
6,400.0	6,367.4	6,394.6	6,382.3	14.6	13.9	-100.12	-161.0	-107.2	379.0	351.4	27.60	13.734			
6,500.0	6,451.7	6,503.0	6,486.0	14.6	14.0	-104.03	-129.6	-107.7	384.7	357.0	27.74	13.870			
6,600.0	6,528.1	6,616.2	6,588.4	14.7	14.2	-107.69	-81.5	-108.4	391.6	363.8	27.82	14.079			
6,700.0	6,595.6	6,734.5	6,686.6	14.8	14.3	-111.03	-15.7	-109.4	399.3	371.4	27.92	14.299			

Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W - Waste Management 2T-401 - Wellbore #1 - Plan													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)			
6,800.0	6,652.8	6,858.1	6,776.9	15.1	14.6	-113.95	68.3	-110.6	407.0	378.8	28.18	14.441		
6,900.0	6,698.9	6,986.5	6,855.3	15.7	15.1	-116.40	169.9	-112.1	414.1	385.3	28.75	14.403		
7,000.0	6,733.0	7,119.4	6,917.2	16.6	16.0	-118.31	287.3	-113.8	419.8	390.1	29.76	14.105		
7,100.0	6,754.5	7,255.7	6,958.7	17.6	17.1	-119.62	417.0	-115.7	423.7	392.3	31.32	13.525		
7,200.0	6,763.1	7,380.1	6,976.7	18.7	18.5	-120.35	539.9	-117.5	425.7	392.4	33.31	12.781		
7,300.0	6,762.6	7,494.5	6,986.1	20.0	19.9	-121.51	653.9	-119.2	429.7	394.3	35.33	12.162		
7,400.0	6,761.7	7,603.6	6,986.8	21.3	21.3	-121.75	763.0	-120.8	429.7	392.0	37.69	11.402		
7,500.0	6,760.8	7,703.6	6,986.5	22.8	22.7	-121.88	863.0	-122.2	429.4	389.3	40.12	10.701		
7,600.0	6,759.9	7,803.6	6,986.3	24.3	24.2	-122.01	963.0	-123.7	429.0	386.4	42.67	10.054		
7,700.0	6,759.0	7,903.6	6,986.0	25.8	25.7	-122.14	1,063.0	-125.1	428.7	383.4	45.32	9.460		
7,800.0	6,758.1	8,003.6	6,985.8	27.4	27.3	-122.26	1,162.9	-126.6	428.4	380.3	48.04	8.917		
7,900.0	6,757.2	8,103.6	6,985.5	29.1	29.0	-122.39	1,262.9	-128.1	428.0	377.2	50.82	8.422		
8,000.0	6,756.3	8,203.6	6,985.3	30.7	30.6	-122.52	1,362.9	-129.5	427.7	374.0	53.66	7.971		
8,100.0	6,755.4	8,303.6	6,985.0	32.4	32.3	-122.65	1,462.9	-131.0	427.4	370.8	56.54	7.559		
8,200.0	6,754.6	8,403.6	6,984.7	34.1	34.0	-122.78	1,562.9	-132.4	427.0	367.6	59.45	7.183		
8,300.0	6,753.7	8,503.6	6,984.5	35.9	35.8	-122.91	1,662.9	-133.9	426.7	364.3	62.39	6.839		
8,400.0	6,752.8	8,603.6	6,984.2	37.7	37.5	-123.04	1,762.8	-135.4	426.4	361.0	65.36	6.524		
8,500.0	6,751.9	8,703.6	6,984.0	39.4	39.3	-123.17	1,862.8	-136.8	426.1	357.7	68.34	6.234		
8,600.0	6,751.0	8,803.6	6,983.7	41.2	41.1	-123.30	1,962.8	-138.3	425.7	354.4	71.34	5.967		
8,700.0	6,750.1	8,903.6	6,983.4	43.0	42.9	-123.43	2,062.8	-139.7	425.4	351.1	74.36	5.721		
8,800.0	6,749.2	9,003.6	6,983.2	44.8	44.7	-123.56	2,162.8	-141.2	425.1	347.7	77.38	5.494		
8,900.0	6,748.3	9,103.6	6,982.9	46.7	46.5	-123.69	2,262.8	-142.7	424.8	344.4	80.41	5.283		
9,000.0	6,747.4	9,203.6	6,982.7	48.5	48.3	-123.82	2,362.8	-144.1	424.5	341.0	83.45	5.087		
9,100.0	6,746.5	9,303.6	6,982.4	50.3	50.2	-123.95	2,462.7	-145.6	424.2	337.7	86.49	4.904		
9,200.0	6,745.7	9,403.6	6,982.1	52.2	52.0	-124.08	2,562.7	-147.0	423.9	334.3	89.54	4.734		
9,300.0	6,744.8	9,503.5	6,981.9	54.0	53.9	-124.21	2,662.7	-148.5	423.6	331.0	92.58	4.575		
9,400.0	6,743.9	9,603.5	6,981.6	55.9	55.7	-124.34	2,762.7	-150.0	423.3	327.6	95.63	4.426		
9,500.0	6,743.0	9,703.5	6,981.4	57.7	57.6	-124.47	2,862.7	-151.4	423.0	324.3	98.68	4.286		
9,600.0	6,742.1	9,803.5	6,981.1	59.6	59.4	-124.60	2,962.7	-152.9	422.7	320.9	101.73	4.155		
9,700.0	6,741.2	9,903.5	6,980.9	61.5	61.3	-124.74	3,062.6	-154.3	422.4	317.6	104.77	4.031		
9,800.0	6,740.3	10,003.5	6,980.6	63.3	63.2	-124.87	3,162.6	-155.8	422.1	314.3	107.81	3.915		
9,900.0	6,739.4	10,103.5	6,980.3	65.2	65.0	-125.00	3,262.6	-157.3	421.8	310.9	110.85	3.805		
10,000.0	6,738.5	10,203.5	6,980.1	67.1	66.9	-125.13	3,362.6	-158.7	421.5	307.6	113.88	3.701		
10,100.0	6,737.6	10,303.5	6,979.8	69.0	68.8	-125.26	3,462.6	-160.2	421.2	304.3	116.91	3.603		
10,200.0	6,736.8	10,403.5	6,979.6	70.8	70.7	-125.40	3,562.6	-161.6	420.9	301.0	119.94	3.510		
10,300.0	6,735.9	10,503.5	6,979.3	72.7	72.5	-125.53	3,662.5	-163.1	420.7	297.7	122.96	3.421		
10,400.0	6,735.0	10,603.5	6,979.0	74.6	74.4	-125.66	3,762.5	-164.6	420.4	294.4	125.98	3.337		
10,500.0	6,734.1	10,703.5	6,978.8	76.5	76.3	-125.80	3,862.5	-166.0	420.1	291.1	128.99	3.257		
10,600.0	6,733.2	10,803.5	6,978.5	78.4	78.2	-125.93	3,962.5	-167.5	419.8	287.8	131.99	3.181		
10,700.0	6,732.3	10,903.5	6,978.3	80.3	80.1	-126.06	4,062.5	-168.9	419.5	284.6	134.99	3.108		
10,800.0	6,731.4	11,003.5	6,978.0	82.2	82.0	-126.20	4,162.5	-170.4	419.3	281.3	137.98	3.039		
10,900.0	6,730.5	11,103.5	6,977.7	84.1	83.9	-126.33	4,262.4	-171.9	419.0	278.0	140.96	2.972		
11,000.0	6,729.6	11,203.5	6,977.5	86.0	85.8	-126.47	4,362.4	-173.3	418.7	274.8	143.94	2.909		
11,100.0	6,728.7	11,303.5	6,977.2	87.9	87.6	-126.60	4,462.4	-174.8	418.5	271.6	146.91	2.849		
11,183.4	6,728.0	11,386.9	6,977.0	89.1	89.2	-126.71	4,545.8	-176.0	418.3	269.2	149.09	2.805 SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Waste Management 2T-221
<b>Project:</b>	SEC.2-T2N-R64W	<b>TVD Reference:</b>	WELL @ 4908.0ft (RKB -15')
<b>Reference Site:</b>	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	<b>MD Reference:</b>	WELL @ 4908.0ft (RKB -15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Waste Management 2T-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (01-28-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W - Waste Management 2Y-201 - Wellbore #1 - Plan											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	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre		Between	Between	Minimum	Separation			
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	Toolface (°)	+N/-S (ft)	+E/-W (ft)	Centres (ft)	Ellipses (ft)	Separation (ft)	Factor			
0.0	0.0	1.0	1.0	0.0	0.0	90.00	0.0	61.5	61.5	61.5	0.00	N/A			
100.0	100.0	101.0	101.0	0.1	0.1	90.00	0.0	61.5	61.5	61.3	0.23	270.870			
166.3	166.3	167.3	167.3	0.3	0.3	90.00	0.0	61.5	61.5	61.0	0.53	117.084 CC			
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	61.5	61.5	60.8	0.67	91.205 ES			
300.0	300.0	298.9	298.9	0.6	0.5	90.33	-0.4	63.2	63.2	62.1	1.11	56.965			
400.0	400.0	396.6	396.4	0.8	0.8	91.20	-1.4	68.1	68.3	66.7	1.55	44.071			
500.0	500.0	493.8	493.3	1.0	1.0	92.38	-3.2	76.2	76.7	74.7	2.01	38.220			
600.0	600.0	590.3	589.1	1.2	1.3	93.66	-5.6	87.4	88.4	85.9	2.48	35.600			
700.0	700.0	686.4	684.1	1.5	1.6	94.87	-8.7	101.7	103.5	100.5	2.99	34.624			
800.0	800.0	785.1	781.4	1.7	1.9	95.87	-12.1	117.6	119.8	116.3	3.52	34.077			
900.0	900.0	883.7	878.7	1.9	2.3	96.63	-15.5	133.5	136.2	132.2	4.05	33.604			
1,000.0	1,000.0	982.3	976.0	2.1	2.7	97.22	-18.9	149.3	152.6	148.0	4.60	33.190			
1,100.0	1,100.0	1,081.2	1,073.5	2.3	3.0	-26.52	-22.3	165.3	167.5	162.7	4.74	35.345			
1,200.0	1,199.8	1,180.5	1,171.5	2.5	3.4	-26.74	-25.8	181.2	179.2	174.1	5.17	34.696			
1,300.0	1,299.5	1,280.1	1,269.7	2.7	3.8	-27.43	-29.2	197.3	187.9	182.3	5.61	33.521			
1,400.0	1,398.9	1,379.8	1,368.0	3.0	4.2	-28.39	-32.7	213.3	194.9	188.9	6.07	32.124			
1,500.0	1,498.3	1,479.5	1,466.4	3.2	4.6	-29.30	-36.1	229.3	202.0	195.4	6.54	30.881			
1,600.0	1,597.7	1,579.2	1,564.7	3.5	4.9	-30.14	-39.6	245.4	209.1	202.0	7.02	29.772			
1,700.0	1,697.2	1,678.9	1,663.0	3.7	5.3	-30.93	-43.1	261.4	216.2	208.7	7.51	28.779			
1,800.0	1,796.6	1,778.6	1,761.4	4.0	5.7	-31.67	-46.5	277.5	223.4	215.4	8.01	27.887			
1,900.0	1,896.0	1,878.3	1,859.7	4.2	6.1	-32.36	-50.0	293.5	230.6	222.1	8.51	27.084			
2,000.0	1,995.5	1,978.0	1,958.1	4.5	6.5	-33.01	-53.4	309.5	237.8	228.8	9.02	26.356			
2,100.0	2,094.9	2,077.7	2,056.4	4.8	6.9	-33.63	-56.9	325.6	245.1	235.6	9.54	25.696			
2,200.0	2,194.3	2,177.4	2,154.8	5.1	7.3	-34.20	-60.3	341.6	252.4	242.3	10.06	25.094			
2,300.0	2,293.7	2,277.1	2,253.1	5.4	7.6	-34.75	-63.8	357.7	259.7	249.1	10.58	24.544			
2,400.0	2,393.2	2,376.8	2,351.4	5.6	8.0	-35.26	-67.2	373.7	267.1	256.0	11.11	24.039			
2,500.0	2,492.6	2,476.5	2,449.8	5.9	8.4	-35.75	-70.7	389.7	274.4	262.8	11.64	23.575			
2,600.0	2,592.0	2,576.2	2,548.1	6.2	8.8	-36.21	-74.1	405.8	281.8	269.6	12.17	23.147			
2,700.0	2,691.5	2,675.9	2,646.5	6.5	9.2	-36.65	-77.6	421.8	289.2	276.5	12.71	22.752			
2,800.0	2,790.9	2,775.6	2,744.8	6.8	9.6	-37.06	-81.0	437.9	296.6	283.4	13.25	22.385			
2,900.0	2,890.3	2,875.3	2,843.2	7.1	10.0	-37.46	-84.5	453.9	304.1	290.3	13.79	22.044			
3,000.0	2,989.8	2,975.0	2,941.5	7.4	10.3	-37.83	-87.9	469.9	311.5	297.2	14.34	21.726			
3,100.0	3,089.2	3,074.7	3,039.8	7.7	10.7	-38.19	-91.4	486.0	319.0	304.1	14.88	21.430			
3,200.0	3,188.6	3,174.4	3,138.2	8.0	11.1	-38.54	-94.9	502.0	326.4	311.0	15.43	21.152			
3,300.0	3,288.0	3,274.1	3,236.5	8.3	11.5	-38.86	-98.3	518.1	333.9	317.9	15.98	20.892			
3,400.0	3,387.5	3,373.8	3,334.9	8.6	11.9	-39.18	-101.8	534.1	341.4	324.9	16.53	20.648			
3,500.0	3,486.9	3,473.6	3,433.2	8.9	12.3	-39.48	-105.2	550.2	348.9	331.8	17.09	20.419			
3,600.0	3,586.3	3,573.3	3,531.6	9.2	12.7	-39.76	-108.7	566.2	356.4	338.8	17.64	20.202			
3,700.0	3,685.8	3,673.0	3,629.9	9.5	13.0	-40.04	-112.1	582.2	363.9	345.7	18.20	19.998			
3,800.0	3,785.2	3,772.7	3,728.2	9.8	13.4	-40.30	-115.6	598.3	371.4	352.7	18.75	19.806			
3,900.0	3,884.6	3,872.4	3,826.6	10.1	13.8	-40.56	-119.0	614.3	379.0	359.7	19.31	19.623			
4,000.0	3,984.0	3,972.1	3,924.9	10.4	14.2	-40.80	-122.5	630.4	386.5	366.6	19.87	19.450			
4,100.0	4,083.6	4,071.7	4,023.2	10.6	14.6	-41.00	-125.9	646.4	395.1	374.7	20.38	19.387			
4,200.0	4,183.4	4,171.0	4,121.2	10.8	15.0	-40.92	-129.4	662.4	406.3	385.5	20.81	19.530			
4,300.0	4,283.4	4,270.0	4,218.8	11.0	15.4	-40.58	-132.8	678.3	420.2	399.0	21.18	19.840			
4,400.0	4,383.4	4,368.6	4,316.1	11.2	15.7	84.16	-136.2	694.2	435.8	414.3	21.44	20.329			
4,500.0	4,483.4	4,467.3	4,413.4	11.3	16.1	84.81	-139.6	710.0	451.5	429.7	21.82	20.690			
4,600.0	4,583.4	4,565.9	4,510.7	11.5	16.5	85.41	-143.1	725.9	467.2	445.0	22.21	21.036			
4,700.0	4,683.4	4,664.5	4,608.0	11.7	16.9	85.97	-146.5	741.8	483.0	460.4	22.61	21.367			
4,800.0	4,783.4	4,763.2	4,705.3	11.9	17.3	86.50	-149.9	757.6	498.9	475.9	23.01	21.684			
4,900.0	4,883.4	4,861.8	4,802.6	12.0	17.7	86.99	-153.3	773.5	514.8	491.4	23.41	21.988			

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Waste Management 2T-221
<b>Project:</b>	SEC.2-T2N-R64W	<b>TVD Reference:</b>	WELL @ 4908.0ft (RKB -15')
<b>Reference Site:</b>	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	<b>MD Reference:</b>	WELL @ 4908.0ft (RKB -15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Waste Management 2T-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (01-28-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W - Waste Management 2Y-201 - Wellbore #1 - Plan											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 (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			
5,000.0	4,983.4	4,960.5	4,899.9	12.2	18.0	87.45	-156.7	789.4	530.7	506.9	23.82	22.280			
5,100.0	5,083.4	5,059.1	4,997.1	12.4	18.4	87.89	-160.1	805.3	546.6	522.4	24.23	22.560			
5,200.0	5,183.4	5,157.7	5,094.4	12.6	18.8	88.30	-163.6	821.1	562.6	538.0	24.64	22.829			
5,300.0	5,283.4	5,256.4	5,191.7	12.8	19.2	88.69	-167.0	837.0	578.6	553.5	25.06	23.088			
5,400.0	5,383.4	5,355.0	5,289.0	12.9	19.6	89.06	-170.4	852.9	594.6	569.2	25.48	23.336			
5,500.0	5,483.4	5,469.0	5,401.6	13.1	19.9	89.44	-174.1	870.3	610.0	584.1	25.89	23.555			
5,600.0	5,583.4	5,594.7	5,526.4	13.3	20.2	89.75	-177.2	884.7	621.4	595.1	26.30	23.626			
5,700.0	5,683.4	5,721.5	5,652.8	13.5	20.5	89.93	-179.2	893.8	628.6	601.9	26.70	23.539			
5,800.0	5,783.4	5,848.8	5,780.1	13.7	20.6	90.00	-180.0	897.4	631.4	604.3	27.11	23.293			
5,900.0	5,883.4	5,953.1	5,884.4	13.9	20.8	90.00	-180.0	897.5	631.5	604.0	27.49	22.974			
6,000.0	5,983.4	6,053.1	5,984.4	14.1	20.9	90.00	-180.0	897.5	631.5	603.6	27.86	22.666			
6,100.0	6,083.2	6,154.2	6,085.3	14.3	21.0	91.23	-174.7	897.4	631.5	603.2	28.30	22.313			
6,200.0	6,181.6	6,255.3	6,184.6	14.4	21.1	91.14	-156.2	897.1	631.6	603.1	28.56	22.118			
6,300.0	6,276.9	6,356.2	6,280.5	14.5	21.1	91.04	-124.8	896.7	631.9	603.1	28.76	21.971			
6,400.0	6,367.4	6,457.1	6,371.3	14.6	21.2	90.91	-81.1	896.0	632.2	603.2	28.96	21.830			
6,500.0	6,451.7	6,557.7	6,455.4	14.6	21.2	90.77	-26.0	895.2	632.6	603.4	29.23	21.644			
6,600.0	6,528.1	6,658.2	6,531.4	14.7	21.3	90.61	39.6	894.2	633.1	603.4	29.64	21.359			
6,700.0	6,595.6	6,758.6	6,598.1	14.8	21.3	90.45	114.5	893.1	633.6	603.4	30.28	20.927			
6,800.0	6,652.8	6,858.7	6,654.3	15.1	21.4	90.28	197.3	891.9	634.3	603.1	31.21	20.325			
6,900.0	6,698.9	6,958.7	6,699.1	15.7	21.6	90.10	286.6	890.6	634.9	602.5	32.47	19.558			
7,000.0	6,733.0	7,058.5	6,731.8	16.6	22.0	89.92	380.8	889.2	635.7	601.6	34.07	18.658			
7,100.0	6,754.5	7,158.1	6,752.0	17.6	22.5	89.75	478.2	887.7	636.4	600.4	36.00	17.679			
7,200.0	6,763.1	7,257.5	6,759.3	18.7	23.2	89.57	577.3	886.2	637.2	599.0	38.20	16.680			
7,300.0	6,762.6	7,357.4	6,758.5	20.0	24.1	89.54	677.2	884.8	638.0	597.3	40.65	15.696			
7,400.0	6,761.7	7,457.4	6,757.6	21.3	25.1	89.54	777.2	883.3	638.7	595.5	43.28	14.759			
7,500.0	6,760.8	7,557.4	6,756.7	22.8	26.3	89.54	877.2	881.8	639.5	593.4	46.08	13.878			
7,600.0	6,759.9	7,657.4	6,755.8	24.3	27.6	89.54	977.2	880.3	640.3	591.3	49.03	13.060			
7,700.0	6,759.0	7,757.4	6,755.0	25.8	28.9	89.54	1,077.1	878.8	641.1	589.0	52.09	12.306			
7,800.0	6,758.1	7,857.4	6,754.1	27.4	30.3	89.54	1,177.1	877.3	641.8	586.6	55.26	11.616			
7,900.0	6,757.2	7,957.4	6,753.2	29.1	31.8	89.55	1,277.1	875.9	642.6	584.1	58.50	10.985			
8,000.0	6,756.3	8,057.4	6,752.3	30.7	33.4	89.55	1,377.1	874.4	643.4	581.6	61.81	10.408			
8,100.0	6,755.4	8,157.4	6,751.4	32.4	34.9	89.55	1,477.1	872.9	644.1	579.0	65.19	9.881			
8,200.0	6,754.6	8,257.4	6,750.5	34.1	36.5	89.55	1,577.1	871.4	644.9	576.3	68.61	9.399			
8,300.0	6,753.7	8,357.4	6,749.6	35.9	38.2	89.55	1,677.0	869.9	645.7	573.6	72.08	8.958			
8,400.0	6,752.8	8,457.4	6,748.7	37.7	39.9	89.55	1,777.0	868.4	646.5	570.9	75.58	8.553			
8,500.0	6,751.9	8,557.4	6,747.8	39.4	41.5	89.55	1,877.0	866.9	647.2	568.1	79.12	8.181			
8,600.0	6,751.0	8,657.4	6,746.9	41.2	43.2	89.55	1,977.0	865.5	648.0	565.3	82.68	7.837			
8,700.0	6,750.1	8,757.4	6,746.0	43.0	45.0	89.55	2,077.0	864.0	648.8	562.5	86.27	7.520			
8,800.0	6,749.2	8,857.4	6,745.2	44.8	46.7	89.55	2,176.9	862.5	649.5	559.7	89.88	7.227			
8,900.0	6,748.3	8,957.4	6,744.3	46.7	48.5	89.55	2,276.9	861.0	650.3	556.8	93.51	6.954			
9,000.0	6,747.4	9,057.4	6,743.4	48.5	50.2	89.55	2,376.9	859.5	651.1	553.9	97.16	6.701			
9,100.0	6,746.5	9,157.4	6,742.5	50.3	52.0	89.55	2,476.9	858.0	651.8	551.0	100.82	6.466			
9,200.0	6,745.7	9,257.4	6,741.6	52.2	53.8	89.55	2,576.9	856.6	652.6	548.1	104.49	6.246			
9,300.0	6,744.8	9,357.4	6,740.7	54.0	55.6	89.55	2,676.9	855.1	653.4	545.2	108.18	6.040			
9,400.0	6,743.9	9,457.4	6,739.8	55.9	57.4	89.55	2,776.8	853.6	654.2	542.3	111.88	5.847			
9,500.0	6,743.0	9,557.4	6,738.9	57.7	59.2	89.55	2,876.8	852.1	654.9	539.3	115.58	5.666			
9,600.0	6,742.1	9,657.4	6,738.0	59.6	61.0	89.55	2,976.8	850.6	655.7	536.4	119.30	5.496			
9,700.0	6,741.2	9,757.4	6,737.1	61.5	62.8	89.55	3,076.8	849.1	656.5	533.4	123.03	5.336			
9,800.0	6,740.3	9,857.4	6,736.3	63.3	64.7	89.56	3,176.8	847.6	657.2	530.5	126.76	5.185			
9,900.0	6,739.4	9,957.4	6,735.4	65.2	66.5	89.56	3,276.7	846.2	658.0	527.5	130.50	5.042			

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



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Waste Management 2T-221
<b>Project:</b>	SEC.2-T2N-R64W	<b>TVD Reference:</b>	WELL @ 4908.0ft (RKB -15')
<b>Reference Site:</b>	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	<b>MD Reference:</b>	WELL @ 4908.0ft (RKB -15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Waste Management 2T-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (01-28-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W - Waste Management 2Y-201 - Wellbore #1 - Plan													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 (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	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	
10,000.0	6,738.5	10,057.3	6,734.5	67.1	68.4	89.56	3,376.7	844.7	658.8	524.5	134.24	4.907	
10,100.0	6,737.6	10,157.3	6,733.6	69.0	70.2	89.56	3,476.7	843.2	659.6	521.6	138.00	4.780	
10,200.0	6,736.8	10,257.3	6,732.7	70.8	72.0	89.56	3,576.7	841.7	660.3	518.6	141.75	4.658	
10,300.0	6,735.9	10,357.3	6,731.8	72.7	73.9	89.56	3,676.7	840.2	661.1	515.6	145.51	4.543	
10,400.0	6,735.0	10,457.3	6,730.9	74.6	75.8	89.56	3,776.7	838.7	661.9	512.6	149.28	4.434	
10,500.0	6,734.1	10,557.3	6,730.0	76.5	77.6	89.56	3,876.6	837.3	662.6	509.6	153.05	4.330	
10,600.0	6,733.2	10,657.3	6,729.1	78.4	79.5	89.56	3,976.6	835.8	663.4	506.6	156.82	4.230	
10,700.0	6,732.3	10,757.3	6,728.2	80.3	81.3	89.56	4,076.6	834.3	664.2	503.6	160.60	4.136	
10,800.0	6,731.4	10,857.3	6,727.4	82.2	83.2	89.56	4,176.6	832.8	665.0	500.6	164.38	4.045	
10,900.0	6,730.5	10,957.3	6,726.5	84.1	85.1	89.56	4,276.6	831.3	665.7	497.6	168.17	3.959	
11,000.0	6,729.6	11,057.3	6,725.6	86.0	87.0	89.56	4,376.6	829.8	666.5	494.5	171.95	3.876	
11,100.0	6,728.7	11,157.3	6,724.7	87.9	88.8	89.56	4,476.5	828.3	667.3	491.5	175.74	3.797	
11,183.4	6,728.0	11,234.5	6,724.0	89.1	90.3	89.56	4,553.7	827.2	667.9	489.5	178.48	3.742 SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Waste Management 2T-221
<b>Project:</b>	SEC.2-T2N-R64W	<b>TVD Reference:</b>	WELL @ 4908.0ft (RKB -15')
<b>Reference Site:</b>	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	<b>MD Reference:</b>	WELL @ 4908.0ft (RKB -15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Waste Management 2T-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (01-28-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W - Waste Management 2Y-441 - Wellbore #1 - Plan													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	30.7	30.7					
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	30.7	30.7	30.5	0.22	136.789		
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	30.7	30.7	30.1	0.67	45.596		
300.0	300.0	300.0	300.0	0.6	0.6	90.00	0.0	30.7	30.7	29.6	1.12	27.358		
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	30.7	30.7	29.2	1.57	19.541 CC, ES		
500.0	500.0	499.0	498.9	1.0	1.0	90.97	-0.5	32.4	32.4	30.4	2.00	16.153		
600.0	600.0	597.7	597.5	1.2	1.2	93.37	-2.2	37.2	37.3	34.9	2.43	15.342		
700.0	700.0	695.9	695.4	1.5	1.4	96.19	-4.9	45.2	45.7	42.8	2.88	15.870		
800.0	800.0	794.6	793.5	1.7	1.7	98.67	-8.5	55.9	56.9	53.6	3.34	17.010		
900.0	900.0	893.9	892.1	1.9	2.0	100.38	-12.2	66.9	68.4	64.6	3.82	17.917		
1,000.0	1,000.0	993.3	990.7	2.1	2.3	101.59	-16.0	77.9	80.0	75.7	4.30	18.593		
1,100.0	1,100.0	1,092.7	1,089.5	2.3	2.5	-21.92	-19.7	88.9	90.0	85.4	4.64	19.420		
1,200.0	1,199.8	1,192.5	1,188.6	2.5	2.8	-22.23	-23.4	99.9	96.8	91.8	5.05	19.178		
1,300.0	1,299.5	1,292.4	1,287.8	2.7	3.1	-23.29	-27.2	111.0	100.4	94.9	5.47	18.347		
1,400.0	1,398.9	1,392.4	1,387.1	3.0	3.5	-24.74	-30.9	122.0	102.2	96.3	5.91	17.280		
1,500.0	1,498.3	1,492.3	1,486.4	3.2	3.8	-26.15	-34.7	133.1	104.1	97.7	6.37	16.339		
1,600.0	1,597.7	1,592.3	1,585.6	3.5	4.1	-27.51	-38.4	144.2	106.0	99.2	6.84	15.508		
1,700.0	1,697.2	1,692.2	1,684.9	3.7	4.4	-28.81	-42.2	155.2	108.0	100.7	7.31	14.773		
1,800.0	1,796.6	1,792.2	1,784.2	4.0	4.7	-30.07	-46.0	166.3	110.1	102.3	7.80	14.118		
1,900.0	1,896.0	1,892.1	1,883.4	4.2	5.0	-31.28	-49.7	177.4	112.2	103.9	8.29	13.533		
2,000.0	1,995.5	1,992.1	1,982.7	4.5	5.3	-32.45	-53.5	188.4	114.3	105.5	8.79	13.007		
2,100.0	2,094.9	2,092.0	2,082.0	4.8	5.6	-33.57	-57.2	199.5	116.5	107.2	9.30	12.534		
2,200.0	2,194.3	2,192.0	2,181.2	5.1	5.9	-34.65	-61.0	210.6	118.8	109.0	9.81	12.105		
2,300.0	2,293.7	2,291.9	2,280.5	5.4	6.3	-35.69	-64.7	221.6	121.1	110.7	10.33	11.717		
2,400.0	2,393.2	2,391.9	2,379.8	5.6	6.6	-36.69	-68.5	232.7	123.4	112.5	10.86	11.363		
2,500.0	2,492.6	2,491.8	2,479.0	5.9	6.9	-37.66	-72.2	243.7	125.7	114.4	11.39	11.039		
2,600.0	2,592.0	2,591.8	2,578.3	6.2	7.2	-38.59	-76.0	254.8	128.1	116.2	11.93	10.743		
2,700.0	2,691.5	2,691.7	2,677.5	6.5	7.5	-39.48	-79.7	265.9	130.6	118.1	12.47	10.471		
2,800.0	2,790.9	2,791.7	2,776.8	6.8	7.8	-40.34	-83.5	276.9	133.0	120.0	13.02	10.221		
2,900.0	2,890.3	2,891.6	2,876.1	7.1	8.1	-41.17	-87.2	288.0	135.5	121.9	13.57	9.989		
3,000.0	2,989.8	2,991.6	2,975.3	7.4	8.5	-41.97	-91.0	299.1	138.0	123.9	14.12	9.776		
3,100.0	3,089.2	3,091.5	3,074.6	7.7	8.8	-42.75	-94.7	310.1	140.6	125.9	14.68	9.577		
3,200.0	3,188.6	3,191.5	3,173.9	8.0	9.1	-43.49	-98.5	321.2	143.1	127.9	15.24	9.393		
3,300.0	3,288.0	3,291.4	3,273.1	8.3	9.4	-44.21	-102.2	332.3	145.7	129.9	15.80	9.222		
3,400.0	3,387.5	3,391.4	3,372.4	8.6	9.7	-44.90	-106.0	343.3	148.3	132.0	16.37	9.062		
3,500.0	3,486.9	3,491.3	3,471.7	8.9	10.0	-45.57	-109.7	354.4	150.9	134.0	16.94	8.912		
3,600.0	3,586.3	3,591.3	3,570.9	9.2	10.4	-46.21	-113.5	365.5	153.6	136.1	17.51	8.773		
3,700.0	3,685.8	3,691.2	3,670.2	9.5	10.7	-46.84	-117.2	376.5	156.3	138.2	18.08	8.641		
3,800.0	3,785.2	3,791.2	3,769.5	9.8	11.0	-47.44	-121.0	387.6	159.0	140.3	18.66	8.518		
3,900.0	3,884.6	3,891.1	3,868.7	10.1	11.3	-48.02	-124.7	398.6	161.7	142.4	19.24	8.403		
4,000.0	3,984.0	3,991.1	3,968.0	10.4	11.6	-48.58	-128.5	409.7	164.4	144.6	19.82	8.294		
4,100.0	4,083.6	4,091.0	4,067.2	10.6	11.9	-48.82	-132.2	420.8	168.0	147.7	20.34	8.262		
4,200.0	4,183.4	4,190.8	4,166.3	10.8	12.3	-48.22	-136.0	431.8	174.0	153.2	20.74	8.389		
4,300.0	4,283.4	4,290.3	4,265.2	11.0	12.6	-46.89	-139.7	442.8	182.3	161.3	21.06	8.658		
4,400.0	4,383.4	4,389.7	4,363.8	11.2	12.9	78.98	-143.4	453.8	192.4	171.1	21.27	9.045		
4,500.0	4,483.4	4,489.0	4,462.5	11.3	13.2	80.62	-147.1	464.8	202.6	181.0	21.58	9.387		
4,600.0	4,583.4	4,588.3	4,561.1	11.5	13.5	82.10	-150.9	475.8	213.0	191.1	21.91	9.721		
4,700.0	4,683.4	4,687.6	4,659.8	11.7	13.8	83.44	-154.6	486.8	223.5	201.3	22.25	10.045		
4,800.0	4,783.4	4,786.9	4,758.4	11.9	14.1	84.66	-158.3	497.8	234.2	211.6	22.60	10.360		
4,900.0	4,883.4	4,886.2	4,857.0	12.0	14.5	85.77	-162.1	508.8	244.9	221.9	22.96	10.665		
5,000.0	4,983.4	4,985.5	4,955.7	12.2	14.8	86.79	-165.8	519.8	255.7	232.4	23.33	10.960		

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

Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W - Waste Management 2Y-441 - Wellbore #1 - Plan													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)			
5,100.0	5,083.4	5,084.9	5,054.3	12.4	15.1	87.73	-169.5	530.8	266.6	242.9	23.71	11.246		
5,200.0	5,183.4	5,184.2	5,152.9	12.6	15.4	88.59	-173.2	541.8	277.5	253.5	24.09	11.522		
5,300.0	5,283.4	5,292.6	5,260.8	12.8	15.6	89.36	-176.8	552.3	287.2	262.7	24.44	11.751		
5,400.0	5,383.4	5,403.0	5,370.9	12.9	15.9	89.82	-179.1	559.0	293.3	268.5	24.80	11.827		
5,500.0	5,483.4	5,513.7	5,481.6	13.1	16.0	90.00	-180.0	561.7	295.7	270.5	25.17	11.749		
5,600.0	5,583.4	5,615.5	5,583.4	13.3	16.2	90.00	-180.0	561.7	295.7	270.2	25.55	11.576		
5,700.0	5,683.4	5,715.5	5,683.4	13.5	16.3	90.00	-180.0	561.7	295.7	269.8	25.93	11.407		
5,800.0	5,783.4	5,815.5	5,783.4	13.7	16.5	90.00	-180.0	561.7	295.7	269.4	26.31	11.243		
5,900.0	5,883.4	5,915.5	5,883.4	13.9	16.6	90.00	-180.0	561.7	295.7	269.1	26.69	11.082		
6,000.0	5,983.4	6,015.5	5,983.4	14.1	16.8	90.00	-180.0	561.7	295.7	268.7	27.07	10.925		
6,100.0	6,083.2	6,115.3	6,083.2	14.3	16.9	92.17	-180.0	561.7	295.9	268.4	27.46	10.776		
6,200.0	6,181.6	6,213.7	6,181.6	14.4	17.1	95.39	-180.0	561.7	297.1	269.5	27.57	10.773		
6,300.0	6,276.9	6,313.9	6,281.7	14.5	17.3	100.30	-176.9	561.7	301.0	273.4	27.57	10.917		
6,400.0	6,367.4	6,419.4	6,385.8	14.6	17.4	105.17	-160.3	561.5	307.4	279.9	27.53	11.167		
6,500.0	6,451.7	6,529.5	6,490.8	14.6	17.5	109.70	-127.8	561.0	315.8	288.4	27.46	11.501		
6,600.0	6,528.1	6,644.4	6,594.4	14.7	17.5	113.77	-78.1	560.2	325.7	298.3	27.38	11.895		
6,700.0	6,595.6	6,764.5	6,693.3	14.8	17.6	117.31	-10.3	559.2	336.1	308.8	27.32	12.300		
6,800.0	6,652.8	6,889.7	6,783.8	15.1	17.7	120.26	76.0	557.9	346.3	318.9	27.38	12.648		
6,900.0	6,698.9	7,019.6	6,861.6	15.7	17.8	122.57	179.9	556.4	355.4	327.7	27.65	12.854		
7,000.0	6,733.0	7,153.6	6,922.1	16.6	18.2	124.20	299.2	554.6	362.7	334.4	28.27	12.829		
7,100.0	6,754.5	7,290.6	6,961.5	17.6	19.1	125.14	430.2	552.7	367.6	338.2	29.36	12.519		
7,200.0	6,763.1	7,411.3	6,977.8	18.7	20.2	125.53	549.7	550.9	370.8	340.0	30.76	12.054		
7,300.0	6,762.6	7,528.1	6,986.5	20.0	21.6	126.53	666.2	549.2	376.3	343.8	32.48	11.586		
7,400.0	6,761.7	7,634.8	6,986.8	21.3	22.9	126.60	772.8	547.6	377.5	342.8	34.69	10.882		
7,500.0	6,760.8	7,734.8	6,986.5	22.8	24.3	126.61	872.8	546.1	378.5	341.5	37.01	10.228		
7,600.0	6,759.9	7,834.8	6,986.3	24.3	25.7	126.61	972.8	544.7	379.5	340.1	39.45	9.621		
7,700.0	6,759.0	7,934.8	6,986.0	25.8	27.2	126.62	1,072.8	543.2	380.5	338.5	41.99	9.062		
7,800.0	6,758.1	8,034.7	6,985.7	27.4	28.7	126.63	1,172.7	541.7	381.5	336.9	44.62	8.551		
7,900.0	6,757.2	8,134.7	6,985.5	29.1	30.3	126.63	1,272.7	540.2	382.5	335.2	47.32	8.084		
8,000.0	6,756.3	8,234.7	6,985.2	30.7	31.9	126.64	1,372.7	538.8	383.5	333.4	50.08	7.659		
8,100.0	6,755.4	8,334.7	6,985.0	32.4	33.5	126.65	1,472.7	537.3	384.5	331.6	52.89	7.271		
8,200.0	6,754.6	8,434.7	6,984.7	34.1	35.2	126.65	1,572.7	535.8	385.5	329.8	55.74	6.917		
8,300.0	6,753.7	8,534.7	6,984.4	35.9	36.9	126.66	1,672.7	534.3	386.5	327.9	58.63	6.593		
8,400.0	6,752.8	8,634.7	6,984.2	37.7	38.6	126.66	1,772.7	532.9	387.5	326.0	61.54	6.297		
8,500.0	6,751.9	8,734.7	6,983.9	39.4	40.4	126.67	1,872.6	531.4	388.5	324.0	64.49	6.024		
8,600.0	6,751.0	8,834.7	6,983.7	41.2	42.1	126.68	1,972.6	529.9	389.5	322.1	67.46	5.774		
8,700.0	6,750.1	8,934.7	6,983.4	43.0	43.9	126.68	2,072.6	528.4	390.5	320.1	70.45	5.543		
8,800.0	6,749.2	9,034.7	6,983.2	44.8	45.7	126.69	2,172.6	527.0	391.5	318.1	73.46	5.330		
8,900.0	6,748.3	9,134.7	6,982.9	46.7	47.4	126.69	2,272.6	525.5	392.5	316.0	76.48	5.132		
9,000.0	6,747.4	9,234.7	6,982.6	48.5	49.2	126.70	2,372.6	524.0	393.5	314.0	79.52	4.949		
9,100.0	6,746.5	9,334.7	6,982.4	50.3	51.0	126.71	2,472.5	522.5	394.5	312.0	82.56	4.778		
9,200.0	6,745.7	9,434.7	6,982.1	52.2	52.9	126.71	2,572.5	521.0	395.5	309.9	85.62	4.619		
9,300.0	6,744.8	9,534.7	6,981.9	54.0	54.7	126.72	2,672.5	519.6	396.5	307.8	88.69	4.471		
9,400.0	6,743.9	9,634.7	6,981.6	55.9	56.5	126.72	2,772.5	518.1	397.5	305.8	91.77	4.332		
9,500.0	6,743.0	9,734.7	6,981.3	57.7	58.4	126.73	2,872.5	516.6	398.5	303.7	94.86	4.201		
9,600.0	6,742.1	9,834.7	6,981.1	59.6	60.2	126.74	2,972.5	515.1	399.5	301.6	97.95	4.079		
9,700.0	6,741.2	9,934.7	6,980.8	61.5	62.0	126.74	3,072.4	513.7	400.5	299.5	101.05	3.964		
9,800.0	6,740.3	10,034.6	6,980.6	63.3	63.9	126.75	3,172.4	512.2	401.5	297.4	104.15	3.855		
9,900.0	6,739.4	10,134.6	6,980.3	65.2	65.8	126.75	3,272.4	510.7	402.5	295.3	107.26	3.753		
10,000.0	6,738.5	10,234.6	6,980.0	67.1	67.6	126.76	3,372.4	509.2	403.5	293.2	110.38	3.656		

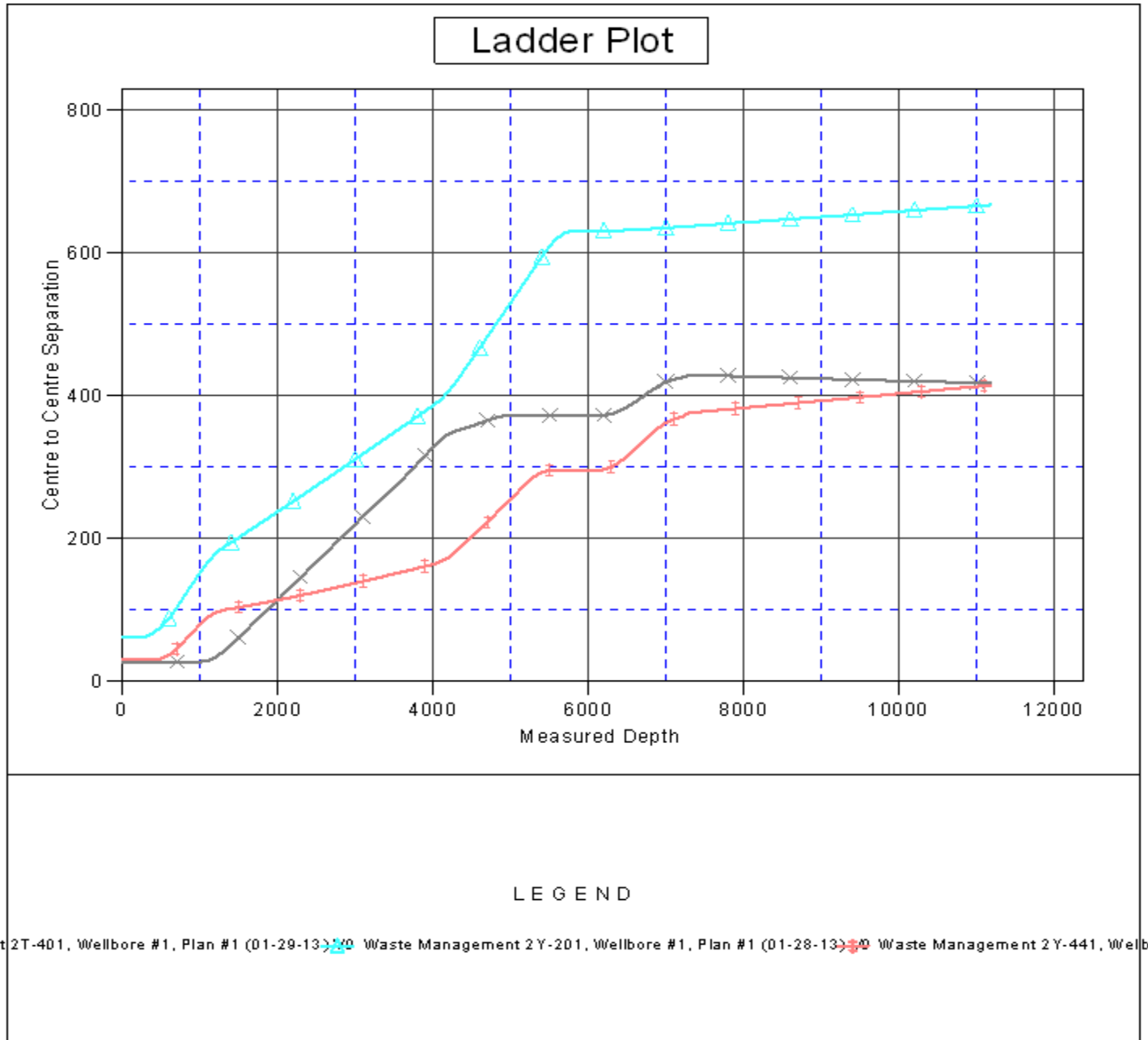
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Waste Management 2T-221
<b>Project:</b>	SEC.2-T2N-R64W	<b>TVD Reference:</b>	WELL @ 4908.0ft (RKB -15')
<b>Reference Site:</b>	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	<b>MD Reference:</b>	WELL @ 4908.0ft (RKB -15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Waste Management 2T-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (01-28-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design										Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W - Waste Management 2Y-441 - Wellbore #1 - Plan				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				
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
10,100.0	6,737.6	10,334.6	6,979.8	69.0	69.5	126.76	3,472.4	507.8	404.6	291.1	113.50	3.564			
10,200.0	6,736.8	10,434.6	6,979.5	70.8	71.3	126.77	3,572.4	506.3	405.6	288.9	116.62	3.477			
10,300.0	6,735.9	10,534.6	6,979.3	72.7	73.2	126.77	3,672.3	504.8	406.6	286.8	119.75	3.395			
10,400.0	6,735.0	10,634.6	6,979.0	74.6	75.1	126.78	3,772.3	503.3	407.6	284.7	122.88	3.317			
10,500.0	6,734.1	10,734.6	6,978.8	76.5	77.0	126.79	3,872.3	501.9	408.6	282.5	126.01	3.242			
10,600.0	6,733.2	10,834.6	6,978.5	78.4	78.8	126.79	3,972.3	500.4	409.6	280.4	129.15	3.171			
10,700.0	6,732.3	10,934.6	6,978.2	80.3	80.7	126.80	4,072.3	498.9	410.6	278.3	132.29	3.104			
10,800.0	6,731.4	11,034.6	6,978.0	82.2	82.6	126.80	4,172.3	497.4	411.6	276.1	135.43	3.039			
10,900.0	6,730.5	11,134.6	6,977.7	84.1	84.5	126.81	4,272.2	495.9	412.6	274.0	138.57	2.977			
11,000.0	6,729.6	11,234.6	6,977.5	86.0	86.4	126.81	4,372.2	494.5	413.6	271.9	141.72	2.918			
11,100.0	6,728.7	11,334.6	6,977.2	87.9	88.2	126.82	4,472.2	493.0	414.6	269.7	144.86	2.862			
11,183.4	6,728.0	11,412.5	6,977.0	89.1	89.7	126.82	4,550.1	491.8	415.4	268.3	147.12	2.824 SF			

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Waste Management 2T-221
<b>Project:</b>	SEC.2-T2N-R64W	<b>TVD Reference:</b>	WELL @ 4908.0ft (RKB -15')
<b>Reference Site:</b>	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	<b>MD Reference:</b>	WELL @ 4908.0ft (RKB -15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Waste Management 2T-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (01-28-13)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4908.0ft (RKB -15')  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000 °

Coordinates are relative to: Waste Management 2T-221  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.64°



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Waste Management 2T-221
<b>Project:</b>	SEC.2-T2N-R64W	<b>TVD Reference:</b>	WELL @ 4908.0ft (RKB -15')
<b>Reference Site:</b>	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	<b>MD Reference:</b>	WELL @ 4908.0ft (RKB -15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Waste Management 2T-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (01-28-13)	<b>Offset TVD Reference:</b>	Offset Datum

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