

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Waste Management 2T-401**

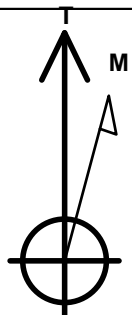
Surface Location: Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4892.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1302950.62	3275862.38	40.160780	-104.512970	

RKB - 15' WELL @ 4907.0ft (RKB - 15')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
BHL 500'FNL & 1155'FEL	6977.0	4550.1	-148.1	Point



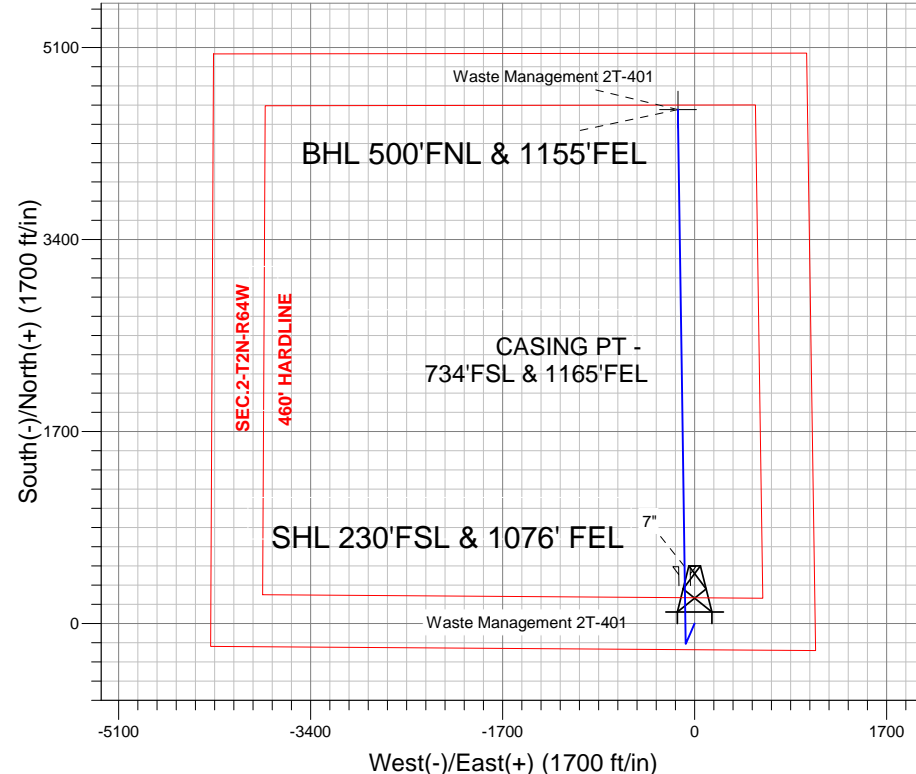
Azimuths to True North
Magnetic North: 8.49°

Magnetic Field
Strength: 52860.6snT
Dip Angle: 66.84°
Date: 1/29/2013
Model: IGRF2010

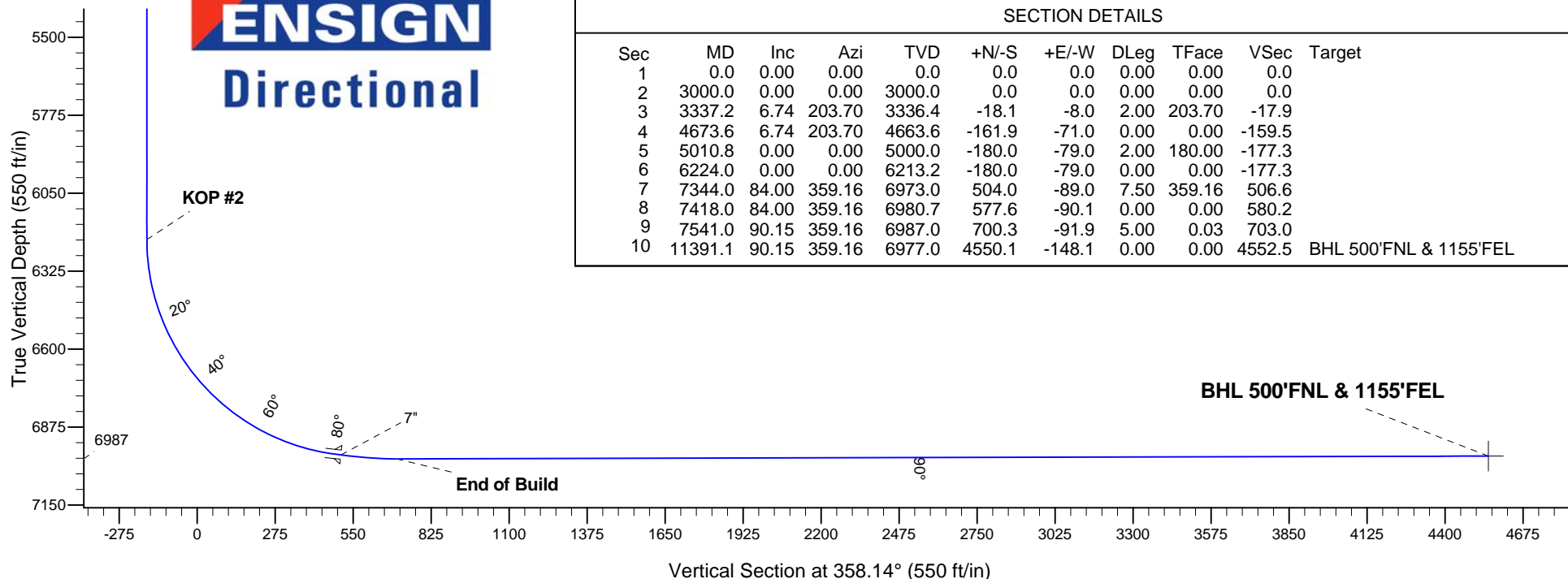
Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W
Waste Management 2T-401
Plan #1 (01-29-13)
13:40, January 29 2013

ANNOTATIONS

TVD	MD	Annotation
3000.0	3000.0	KOP #1
6213.2	6224.0	KOP #2
6987.0	7541.0	End of Build



ENSIGN
Directional



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	3000.0	0.00	0.00	3000.0	0.0	0.0	0.00	0.00	0.0	
3	3337.2	6.74	203.70	3336.4	-18.1	-8.0	2.00	203.70	-17.9	
4	4673.6	6.74	203.70	4663.6	-161.9	-71.0	0.00	0.00	-159.5	
5	5010.8	0.00	0.00	5000.0	-180.0	-79.0	2.00	180.00	-177.3	
6	6224.0	0.00	0.00	6213.2	-180.0	-79.0	0.00	0.00	-177.3	
7	7344.0	84.00	359.16	6973.0	504.0	-89.0	7.50	359.16	506.6	
8	7418.0	84.00	359.16	6980.7	577.6	-90.1	0.00	0.00	580.2	
9	7541.0	90.15	359.16	6987.0	700.3	-91.9	5.00	0.03	703.0	
10	11391.1	90.15	359.16	6977.0	4550.1	-148.1	0.00	0.00	4552.5	BHL 500'FNL & 1155'FEL



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.2-T2N-R64W

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

Waste Management 2T-401

Wellbore #1

Plan: Plan #1 (01-29-13)

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	
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,337.2	6.74	203.70	3,336.4	-18.1	-8.0	2.00	2.00	0.00	203.70	
4,673.6	6.74	203.70	4,663.6	-161.9	-71.0	0.00	0.00	0.00	0.00	
5,010.8	0.00	0.00	5,000.0	-180.0	-79.0	2.00	-2.00	0.00	180.00	
6,224.0	0.00	0.00	6,213.2	-180.0	-79.0	0.00	0.00	0.00	0.00	
7,344.0	84.00	359.16	6,973.0	504.0	-89.0	7.50	7.50	0.00	359.16	
7,418.0	84.00	359.16	6,980.7	577.6	-90.1	0.00	0.00	0.00	0.00	
7,541.0	90.15	359.16	6,987.0	700.3	-91.9	5.00	5.00	0.00	0.03	
11,391.1	90.15	359.16	6,977.0	4,550.1	-148.1	0.00	0.00	0.00	0.00	BHL 500'FNL & 115

Database:	Landmark	Local Co-ordinate Reference:	Well Waste Management 2T-401
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4907.0ft (RKB - 15')
Project:	SEC.2-T2N-R64W	MD Reference:	WELL @ 4907.0ft (RKB - 15')
Site:	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	North Reference:	True
Well:	Waste Management 2T-401	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (01-29-13)		

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
1,040.0	0.00	0.00	1,040.0	0.0	0.0	0.0	0.00	0.00	0.00
1,080.0	0.00	0.00	1,080.0	0.0	0.0	0.0	0.00	0.00	0.00
1,120.0	0.00	0.00	1,120.0	0.0	0.0	0.0	0.00	0.00	0.00
1,160.0	0.00	0.00	1,160.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,240.0	0.00	0.00	1,240.0	0.0	0.0	0.0	0.00	0.00	0.00
1,280.0	0.00	0.00	1,280.0	0.0	0.0	0.0	0.00	0.00	0.00
1,320.0	0.00	0.00	1,320.0	0.0	0.0	0.0	0.00	0.00	0.00
1,360.0	0.00	0.00	1,360.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,440.0	0.00	0.00	1,440.0	0.0	0.0	0.0	0.00	0.00	0.00
1,480.0	0.00	0.00	1,480.0	0.0	0.0	0.0	0.00	0.00	0.00
1,520.0	0.00	0.00	1,520.0	0.0	0.0	0.0	0.00	0.00	0.00
1,560.0	0.00	0.00	1,560.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,640.0	0.00	0.00	1,640.0	0.0	0.0	0.0	0.00	0.00	0.00
1,680.0	0.00	0.00	1,680.0	0.0	0.0	0.0	0.00	0.00	0.00
1,720.0	0.00	0.00	1,720.0	0.0	0.0	0.0	0.00	0.00	0.00
1,760.0	0.00	0.00	1,760.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,840.0	0.00	0.00	1,840.0	0.0	0.0	0.0	0.00	0.00	0.00
1,880.0	0.00	0.00	1,880.0	0.0	0.0	0.0	0.00	0.00	0.00
1,920.0	0.00	0.00	1,920.0	0.0	0.0	0.0	0.00	0.00	0.00
1,960.0	0.00	0.00	1,960.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,040.0	0.00	0.00	2,040.0	0.0	0.0	0.0	0.00	0.00	0.00

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Wellbore:	Wellbore #1		
Design:	Plan #1 (01-29-13)		

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)
2,080.0	0.00	0.00	2,080.0	0.0	0.0	0.0	0.00	0.00	0.00
2,120.0	0.00	0.00	2,120.0	0.0	0.0	0.0	0.00	0.00	0.00
2,160.0	0.00	0.00	2,160.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,240.0	0.00	0.00	2,240.0	0.0	0.0	0.0	0.00	0.00	0.00
2,280.0	0.00	0.00	2,280.0	0.0	0.0	0.0	0.00	0.00	0.00
2,320.0	0.00	0.00	2,320.0	0.0	0.0	0.0	0.00	0.00	0.00
2,360.0	0.00	0.00	2,360.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,440.0	0.00	0.00	2,440.0	0.0	0.0	0.0	0.00	0.00	0.00
2,480.0	0.00	0.00	2,480.0	0.0	0.0	0.0	0.00	0.00	0.00
2,520.0	0.00	0.00	2,520.0	0.0	0.0	0.0	0.00	0.00	0.00
2,560.0	0.00	0.00	2,560.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,640.0	0.00	0.00	2,640.0	0.0	0.0	0.0	0.00	0.00	0.00
2,680.0	0.00	0.00	2,680.0	0.0	0.0	0.0	0.00	0.00	0.00
2,720.0	0.00	0.00	2,720.0	0.0	0.0	0.0	0.00	0.00	0.00
2,760.0	0.00	0.00	2,760.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,840.0	0.00	0.00	2,840.0	0.0	0.0	0.0	0.00	0.00	0.00
2,880.0	0.00	0.00	2,880.0	0.0	0.0	0.0	0.00	0.00	0.00
2,920.0	0.00	0.00	2,920.0	0.0	0.0	0.0	0.00	0.00	0.00
2,960.0	0.00	0.00	2,960.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,040.0	0.80	203.70	3,040.0	-0.3	-0.1	-0.3	2.00	2.00	0.00
3,080.0	1.60	203.70	3,080.0	-1.0	-0.4	-1.0	2.00	2.00	0.00
3,120.0	2.40	203.70	3,120.0	-2.3	-1.0	-2.3	2.00	2.00	0.00
3,160.0	3.20	203.70	3,159.9	-4.1	-1.8	-4.0	2.00	2.00	0.00
3,200.0	4.00	203.70	3,199.8	-6.4	-2.8	-6.3	2.00	2.00	0.00
3,240.0	4.80	203.70	3,239.7	-9.2	-4.0	-9.1	2.00	2.00	0.00
3,280.0	5.60	203.70	3,279.6	-12.5	-5.5	-12.3	2.00	2.00	0.00
3,320.0	6.40	203.70	3,319.3	-16.3	-7.2	-16.1	2.00	2.00	0.00
3,337.2	6.74	203.70	3,336.4	-18.1	-8.0	-17.9	2.00	2.00	0.00
3,360.0	6.74	203.70	3,359.1	-20.6	-9.0	-20.3	0.00	0.00	0.00
3,400.0	6.74	203.70	3,398.8	-24.9	-10.9	-24.5	0.00	0.00	0.00
3,440.0	6.74	203.70	3,438.5	-29.2	-12.8	-28.8	0.00	0.00	0.00
3,480.0	6.74	203.70	3,478.2	-33.5	-14.7	-33.0	0.00	0.00	0.00
3,520.0	6.74	203.70	3,518.0	-37.8	-16.6	-37.2	0.00	0.00	0.00
3,560.0	6.74	203.70	3,557.7	-42.1	-18.5	-41.5	0.00	0.00	0.00
3,600.0	6.74	203.70	3,597.4	-46.4	-20.4	-45.7	0.00	0.00	0.00
3,640.0	6.74	203.70	3,637.1	-50.7	-22.3	-50.0	0.00	0.00	0.00
3,680.0	6.74	203.70	3,676.9	-55.0	-24.1	-54.2	0.00	0.00	0.00
3,720.0	6.74	203.70	3,716.6	-59.3	-26.0	-58.4	0.00	0.00	0.00
3,760.0	6.74	203.70	3,756.3	-63.6	-27.9	-62.7	0.00	0.00	0.00
3,800.0	6.74	203.70	3,796.0	-67.9	-29.8	-66.9	0.00	0.00	0.00
3,840.0	6.74	203.70	3,835.7	-72.2	-31.7	-71.1	0.00	0.00	0.00
3,880.0	6.74	203.70	3,875.5	-76.5	-33.6	-75.4	0.00	0.00	0.00
3,920.0	6.74	203.70	3,915.2	-80.8	-35.5	-79.6	0.00	0.00	0.00
3,960.0	6.74	203.70	3,954.9	-85.1	-37.4	-83.9	0.00	0.00	0.00
4,000.0	6.74	203.70	3,994.6	-89.4	-39.2	-88.1	0.00	0.00	0.00
4,040.0	6.74	203.70	4,034.4	-93.7	-41.1	-92.3	0.00	0.00	0.00
4,080.0	6.74	203.70	4,074.1	-98.0	-43.0	-96.6	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Waste Management 2T-401
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4907.0ft (RKB - 15')
Project:	SEC.2-T2N-R64W	MD Reference:	WELL @ 4907.0ft (RKB - 15')
Site:	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	North Reference:	True
Well:	Waste Management 2T-401	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (01-29-13)		

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)
4,120.0	6.74	203.70	4,113.8	-102.3	-44.9	-100.8	0.00	0.00	0.00
4,160.0	6.74	203.70	4,153.5	-106.6	-46.8	-105.0	0.00	0.00	0.00
4,200.0	6.74	203.70	4,193.3	-110.9	-48.7	-109.3	0.00	0.00	0.00
4,240.0	6.74	203.70	4,233.0	-115.2	-50.6	-113.5	0.00	0.00	0.00
4,280.0	6.74	203.70	4,272.7	-119.5	-52.5	-117.8	0.00	0.00	0.00
4,320.0	6.74	203.70	4,312.4	-123.8	-54.3	-122.0	0.00	0.00	0.00
4,360.0	6.74	203.70	4,352.1	-128.1	-56.2	-126.2	0.00	0.00	0.00
4,400.0	6.74	203.70	4,391.9	-132.4	-58.1	-130.5	0.00	0.00	0.00
4,440.0	6.74	203.70	4,431.6	-136.7	-60.0	-134.7	0.00	0.00	0.00
4,480.0	6.74	203.70	4,471.3	-141.0	-61.9	-138.9	0.00	0.00	0.00
4,520.0	6.74	203.70	4,511.0	-145.3	-63.8	-143.2	0.00	0.00	0.00
4,560.0	6.74	203.70	4,550.8	-149.6	-65.7	-147.4	0.00	0.00	0.00
4,600.0	6.74	203.70	4,590.5	-153.9	-67.6	-151.7	0.00	0.00	0.00
4,640.0	6.74	203.70	4,630.2	-158.2	-69.4	-155.9	0.00	0.00	0.00
4,673.6	6.74	203.70	4,663.6	-161.9	-71.0	-159.5	0.00	0.00	0.00
4,680.0	6.62	203.70	4,669.9	-162.5	-71.3	-160.1	2.00	-2.00	0.00
4,720.0	5.82	203.70	4,709.7	-166.5	-73.1	-164.0	2.00	-2.00	0.00
4,760.0	5.02	203.70	4,749.5	-170.0	-74.6	-167.4	2.00	-2.00	0.00
4,800.0	4.22	203.70	4,789.4	-172.9	-75.9	-170.3	2.00	-2.00	0.00
4,840.0	3.42	203.70	4,829.3	-175.3	-77.0	-172.7	2.00	-2.00	0.00
4,880.0	2.62	203.70	4,869.2	-177.3	-77.8	-174.6	2.00	-2.00	0.00
4,920.0	1.82	203.70	4,909.2	-178.7	-78.4	-176.0	2.00	-2.00	0.00
4,960.0	1.02	203.70	4,949.2	-179.6	-78.8	-176.9	2.00	-2.00	0.00
5,000.0	0.22	203.70	4,989.2	-180.0	-79.0	-177.3	2.00	-2.00	0.00
5,010.8	0.00	0.00	5,000.0	-180.0	-79.0	-177.3	2.00	-2.00	0.00
5,040.0	0.00	0.00	5,029.2	-180.0	-79.0	-177.3	0.00	0.00	0.00
5,080.0	0.00	0.00	5,069.2	-180.0	-79.0	-177.3	0.00	0.00	0.00
5,120.0	0.00	0.00	5,109.2	-180.0	-79.0	-177.3	0.00	0.00	0.00
5,160.0	0.00	0.00	5,149.2	-180.0	-79.0	-177.3	0.00	0.00	0.00
5,200.0	0.00	0.00	5,189.2	-180.0	-79.0	-177.3	0.00	0.00	0.00
5,240.0	0.00	0.00	5,229.2	-180.0	-79.0	-177.3	0.00	0.00	0.00
5,280.0	0.00	0.00	5,269.2	-180.0	-79.0	-177.3	0.00	0.00	0.00
5,320.0	0.00	0.00	5,309.2	-180.0	-79.0	-177.3	0.00	0.00	0.00
5,360.0	0.00	0.00	5,349.2	-180.0	-79.0	-177.3	0.00	0.00	0.00
5,400.0	0.00	0.00	5,389.2	-180.0	-79.0	-177.3	0.00	0.00	0.00
5,440.0	0.00	0.00	5,429.2	-180.0	-79.0	-177.3	0.00	0.00	0.00
5,480.0	0.00	0.00	5,469.2	-180.0	-79.0	-177.3	0.00	0.00	0.00
5,520.0	0.00	0.00	5,509.2	-180.0	-79.0	-177.3	0.00	0.00	0.00
5,560.0	0.00	0.00	5,549.2	-180.0	-79.0	-177.3	0.00	0.00	0.00
5,600.0	0.00	0.00	5,589.2	-180.0	-79.0	-177.3	0.00	0.00	0.00
5,640.0	0.00	0.00	5,629.2	-180.0	-79.0	-177.3	0.00	0.00	0.00
5,680.0	0.00	0.00	5,669.2	-180.0	-79.0	-177.3	0.00	0.00	0.00
5,720.0	0.00	0.00	5,709.2	-180.0	-79.0	-177.3	0.00	0.00	0.00
5,760.0	0.00	0.00	5,749.2	-180.0	-79.0	-177.3	0.00	0.00	0.00
5,800.0	0.00	0.00	5,789.2	-180.0	-79.0	-177.3	0.00	0.00	0.00
5,840.0	0.00	0.00	5,829.2	-180.0	-79.0	-177.3	0.00	0.00	0.00
5,880.0	0.00	0.00	5,869.2	-180.0	-79.0	-177.3	0.00	0.00	0.00
5,920.0	0.00	0.00	5,909.2	-180.0	-79.0	-177.3	0.00	0.00	0.00
5,960.0	0.00	0.00	5,949.2	-180.0	-79.0	-177.3	0.00	0.00	0.00
6,000.0	0.00	0.00	5,989.2	-180.0	-79.0	-177.3	0.00	0.00	0.00
6,040.0	0.00	0.00	6,029.2	-180.0	-79.0	-177.3	0.00	0.00	0.00
6,080.0	0.00	0.00	6,069.2	-180.0	-79.0	-177.3	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Waste Management 2T-401
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4907.0ft (RKB - 15')
Project:	SEC.2-T2N-R64W	MD Reference:	WELL @ 4907.0ft (RKB - 15')
Site:	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	North Reference:	True
Well:	Waste Management 2T-401	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (01-29-13)		

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)
6,120.0	0.00	0.00	6,109.2	-180.0	-79.0	-177.3	0.00	0.00	0.00
6,160.0	0.00	0.00	6,149.2	-180.0	-79.0	-177.3	0.00	0.00	0.00
6,200.0	0.00	0.00	6,189.2	-180.0	-79.0	-177.3	0.00	0.00	0.00
6,224.0	0.00	0.00	6,213.2	-180.0	-79.0	-177.3	0.00	0.00	0.00
6,240.0	1.20	359.16	6,229.2	-179.8	-79.0	-177.2	7.50	7.50	0.00
6,280.0	4.20	359.16	6,269.1	-177.9	-79.0	-175.3	7.50	7.50	0.00
6,320.0	7.20	359.16	6,308.9	-174.0	-79.1	-171.3	7.50	7.50	0.00
6,360.0	10.20	359.16	6,348.5	-167.9	-79.2	-165.3	7.50	7.50	0.00
6,400.0	13.20	359.16	6,387.6	-159.8	-79.3	-157.2	7.50	7.50	0.00
6,440.0	16.20	359.16	6,426.3	-149.7	-79.4	-147.0	7.50	7.50	0.00
6,480.0	19.20	359.16	6,464.4	-137.5	-79.6	-134.8	7.50	7.50	0.00
6,520.0	22.20	359.16	6,501.8	-123.4	-79.8	-120.7	7.50	7.50	0.00
6,560.0	25.20	359.16	6,538.5	-107.3	-80.1	-104.6	7.50	7.50	0.00
6,600.0	28.20	359.16	6,574.2	-89.3	-80.3	-86.7	7.50	7.50	0.00
6,640.0	31.20	359.16	6,608.9	-69.5	-80.6	-66.9	7.50	7.50	0.00
6,680.0	34.20	359.16	6,642.6	-47.9	-80.9	-45.3	7.50	7.50	0.00
6,720.0	37.20	359.16	6,675.1	-24.6	-81.3	-21.9	7.50	7.50	0.00
6,760.0	40.20	359.16	6,706.3	0.4	-81.6	3.1	7.50	7.50	0.00
6,800.0	43.20	359.16	6,736.2	27.0	-82.0	29.7	7.50	7.50	0.00
6,840.0	46.20	359.16	6,764.6	55.2	-82.4	57.8	7.50	7.50	0.00
6,880.0	49.20	359.16	6,791.5	84.7	-82.9	87.4	7.50	7.50	0.00
6,920.0	52.20	359.16	6,816.8	115.7	-83.3	118.3	7.50	7.50	0.00
6,960.0	55.20	359.16	6,840.5	147.9	-83.8	150.6	7.50	7.50	0.00
7,000.0	58.20	359.16	6,862.5	181.3	-84.3	184.0	7.50	7.50	0.00
7,040.0	61.20	359.16	6,882.6	215.9	-84.8	218.5	7.50	7.50	0.00
7,080.0	64.20	359.16	6,901.0	251.4	-85.3	254.0	7.50	7.50	0.00
7,120.0	67.20	359.16	6,917.5	287.9	-85.9	290.5	7.50	7.50	0.00
7,160.0	70.20	359.16	6,932.0	325.1	-86.4	327.8	7.50	7.50	0.00
7,200.0	73.20	359.16	6,944.5	363.1	-87.0	365.7	7.50	7.50	0.00
7,240.0	76.20	359.16	6,955.1	401.7	-87.5	404.3	7.50	7.50	0.00
7,280.0	79.20	359.16	6,963.6	440.7	-88.1	443.4	7.50	7.50	0.00
7,320.0	82.20	359.16	6,970.1	480.2	-88.7	482.8	7.50	7.50	0.00
7,344.0	84.00	359.16	6,973.0	504.0	-89.0	506.6	7.50	7.50	0.00
7,360.0	84.00	359.16	6,974.6	519.9	-89.3	522.6	0.00	0.00	0.00
7,400.0	84.00	359.16	6,978.8	559.7	-89.8	562.3	0.00	0.00	0.00
7,418.0	84.00	359.16	6,980.7	577.6	-90.1	580.2	0.00	0.00	0.00
7,440.0	85.10	359.16	6,982.8	599.5	-90.4	602.1	5.00	5.00	0.00
7,480.0	87.10	359.16	6,985.5	639.4	-91.0	642.0	5.00	5.00	0.00
7,520.0	89.10	359.16	6,986.8	679.4	-91.6	682.0	5.00	5.00	0.00
7,541.0	90.15	359.16	6,987.0	700.3	-91.9	703.0	5.00	5.00	0.00
7,560.0	90.15	359.16	6,986.9	719.4	-92.2	722.0	0.00	0.00	0.00
7,600.0	90.15	359.16	6,986.8	759.4	-92.8	762.0	0.00	0.00	0.00
7,640.0	90.15	359.16	6,986.7	799.4	-93.3	802.0	0.00	0.00	0.00
7,680.0	90.15	359.16	6,986.6	839.4	-93.9	842.0	0.00	0.00	0.00
7,720.0	90.15	359.16	6,986.5	879.4	-94.5	882.0	0.00	0.00	0.00
7,760.0	90.15	359.16	6,986.4	919.3	-95.1	922.0	0.00	0.00	0.00
7,800.0	90.15	359.16	6,986.3	959.3	-95.7	961.9	0.00	0.00	0.00
7,840.0	90.15	359.16	6,986.2	999.3	-96.3	1,001.9	0.00	0.00	0.00
7,880.0	90.15	359.16	6,986.1	1,039.3	-96.9	1,041.9	0.00	0.00	0.00
7,920.0	90.15	359.16	6,986.0	1,079.3	-97.4	1,081.9	0.00	0.00	0.00
7,960.0	90.15	359.16	6,985.9	1,119.3	-98.0	1,121.9	0.00	0.00	0.00
8,000.0	90.15	359.16	6,985.8	1,159.3	-98.6	1,161.9	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Waste Management 2T-401
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4907.0ft (RKB - 15')
Project:	SEC.2-T2N-R64W	MD Reference:	WELL @ 4907.0ft (RKB - 15')
Site:	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	North Reference:	True
Well:	Waste Management 2T-401	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (01-29-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,040.0	90.15	359.16	6,985.7	1,199.3	-99.2	1,201.9	0.00	0.00	0.00
8,080.0	90.15	359.16	6,985.6	1,239.3	-99.8	1,241.9	0.00	0.00	0.00
8,120.0	90.15	359.16	6,985.5	1,279.3	-100.4	1,281.9	0.00	0.00	0.00
8,160.0	90.15	359.16	6,985.4	1,319.3	-100.9	1,321.9	0.00	0.00	0.00
8,200.0	90.15	359.16	6,985.3	1,359.3	-101.5	1,361.9	0.00	0.00	0.00
8,240.0	90.15	359.16	6,985.2	1,399.3	-102.1	1,401.9	0.00	0.00	0.00
8,280.0	90.15	359.16	6,985.1	1,439.3	-102.7	1,441.9	0.00	0.00	0.00
8,320.0	90.15	359.16	6,985.0	1,479.3	-103.3	1,481.9	0.00	0.00	0.00
8,360.0	90.15	359.16	6,984.8	1,519.3	-103.9	1,521.9	0.00	0.00	0.00
8,400.0	90.15	359.16	6,984.7	1,559.3	-104.4	1,561.8	0.00	0.00	0.00
8,440.0	90.15	359.16	6,984.6	1,599.3	-105.0	1,601.8	0.00	0.00	0.00
8,480.0	90.15	359.16	6,984.5	1,639.3	-105.6	1,641.8	0.00	0.00	0.00
8,520.0	90.15	359.16	6,984.4	1,679.3	-106.2	1,681.8	0.00	0.00	0.00
8,560.0	90.15	359.16	6,984.3	1,719.3	-106.8	1,721.8	0.00	0.00	0.00
8,600.0	90.15	359.16	6,984.2	1,759.3	-107.4	1,761.8	0.00	0.00	0.00
8,640.0	90.15	359.16	6,984.1	1,799.2	-107.9	1,801.8	0.00	0.00	0.00
8,680.0	90.15	359.16	6,984.0	1,839.2	-108.5	1,841.8	0.00	0.00	0.00
8,720.0	90.15	359.16	6,983.9	1,879.2	-109.1	1,881.8	0.00	0.00	0.00
8,760.0	90.15	359.16	6,983.8	1,919.2	-109.7	1,921.8	0.00	0.00	0.00
8,800.0	90.15	359.16	6,983.7	1,959.2	-110.3	1,961.8	0.00	0.00	0.00
8,840.0	90.15	359.16	6,983.6	1,999.2	-110.9	2,001.8	0.00	0.00	0.00
8,880.0	90.15	359.16	6,983.5	2,039.2	-111.5	2,041.8	0.00	0.00	0.00
8,920.0	90.15	359.16	6,983.4	2,079.2	-112.0	2,081.8	0.00	0.00	0.00
8,960.0	90.15	359.16	6,983.3	2,119.2	-112.6	2,121.8	0.00	0.00	0.00
9,000.0	90.15	359.16	6,983.2	2,159.2	-113.2	2,161.7	0.00	0.00	0.00
9,040.0	90.15	359.16	6,983.1	2,199.2	-113.8	2,201.7	0.00	0.00	0.00
9,080.0	90.15	359.16	6,983.0	2,239.2	-114.4	2,241.7	0.00	0.00	0.00
9,120.0	90.15	359.16	6,982.9	2,279.2	-115.0	2,281.7	0.00	0.00	0.00
9,160.0	90.15	359.16	6,982.8	2,319.2	-115.5	2,321.7	0.00	0.00	0.00
9,200.0	90.15	359.16	6,982.7	2,359.2	-116.1	2,361.7	0.00	0.00	0.00
9,240.0	90.15	359.16	6,982.6	2,399.2	-116.7	2,401.7	0.00	0.00	0.00
9,280.0	90.15	359.16	6,982.5	2,439.2	-117.3	2,441.7	0.00	0.00	0.00
9,320.0	90.15	359.16	6,982.4	2,479.2	-117.9	2,481.7	0.00	0.00	0.00
9,360.0	90.15	359.16	6,982.3	2,519.2	-118.5	2,521.7	0.00	0.00	0.00
9,400.0	90.15	359.16	6,982.2	2,559.2	-119.0	2,561.7	0.00	0.00	0.00
9,440.0	90.15	359.16	6,982.1	2,599.2	-119.6	2,601.7	0.00	0.00	0.00
9,480.0	90.15	359.16	6,981.9	2,639.2	-120.2	2,641.7	0.00	0.00	0.00
9,520.0	90.15	359.16	6,981.8	2,679.2	-120.8	2,681.7	0.00	0.00	0.00
9,560.0	90.15	359.16	6,981.7	2,719.1	-121.4	2,721.7	0.00	0.00	0.00
9,600.0	90.15	359.16	6,981.6	2,759.1	-122.0	2,761.7	0.00	0.00	0.00
9,640.0	90.15	359.16	6,981.5	2,799.1	-122.5	2,801.6	0.00	0.00	0.00
9,680.0	90.15	359.16	6,981.4	2,839.1	-123.1	2,841.6	0.00	0.00	0.00
9,720.0	90.15	359.16	6,981.3	2,879.1	-123.7	2,881.6	0.00	0.00	0.00
9,760.0	90.15	359.16	6,981.2	2,919.1	-124.3	2,921.6	0.00	0.00	0.00
9,800.0	90.15	359.16	6,981.1	2,959.1	-124.9	2,961.6	0.00	0.00	0.00
9,840.0	90.15	359.16	6,981.0	2,999.1	-125.5	3,001.6	0.00	0.00	0.00
9,880.0	90.15	359.16	6,980.9	3,039.1	-126.1	3,041.6	0.00	0.00	0.00
9,920.0	90.15	359.16	6,980.8	3,079.1	-126.6	3,081.6	0.00	0.00	0.00
9,960.0	90.15	359.16	6,980.7	3,119.1	-127.2	3,121.6	0.00	0.00	0.00
10,000.0	90.15	359.16	6,980.6	3,159.1	-127.8	3,161.6	0.00	0.00	0.00
10,040.0	90.15	359.16	6,980.5	3,199.1	-128.4	3,201.6	0.00	0.00	0.00
10,080.0	90.15	359.16	6,980.4	3,239.1	-129.0	3,241.6	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Waste Management 2T-401
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4907.0ft (RKB - 15')
Project:	SEC.2-T2N-R64W	MD Reference:	WELL @ 4907.0ft (RKB - 15')
Site:	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	North Reference:	True
Well:	Waste Management 2T-401	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (01-29-13)		

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)
10,120.0	90.15	359.16	6,980.3	3,279.1	-129.6	3,281.6	0.00	0.00	0.00
10,160.0	90.15	359.16	6,980.2	3,319.1	-130.1	3,321.6	0.00	0.00	0.00
10,200.0	90.15	359.16	6,980.1	3,359.1	-130.7	3,361.6	0.00	0.00	0.00
10,240.0	90.15	359.16	6,980.0	3,399.1	-131.3	3,401.5	0.00	0.00	0.00
10,280.0	90.15	359.16	6,979.9	3,439.1	-131.9	3,441.5	0.00	0.00	0.00
10,320.0	90.15	359.16	6,979.8	3,479.1	-132.5	3,481.5	0.00	0.00	0.00
10,360.0	90.15	359.16	6,979.7	3,519.1	-133.1	3,521.5	0.00	0.00	0.00
10,400.0	90.15	359.16	6,979.6	3,559.1	-133.6	3,561.5	0.00	0.00	0.00
10,440.0	90.15	359.16	6,979.5	3,599.1	-134.2	3,601.5	0.00	0.00	0.00
10,480.0	90.15	359.16	6,979.4	3,639.0	-134.8	3,641.5	0.00	0.00	0.00
10,520.0	90.15	359.16	6,979.3	3,679.0	-135.4	3,681.5	0.00	0.00	0.00
10,560.0	90.15	359.16	6,979.2	3,719.0	-136.0	3,721.5	0.00	0.00	0.00
10,600.0	90.15	359.16	6,979.0	3,759.0	-136.6	3,761.5	0.00	0.00	0.00
10,640.0	90.15	359.16	6,978.9	3,799.0	-137.1	3,801.5	0.00	0.00	0.00
10,680.0	90.15	359.16	6,978.8	3,839.0	-137.7	3,841.5	0.00	0.00	0.00
10,720.0	90.15	359.16	6,978.7	3,879.0	-138.3	3,881.5	0.00	0.00	0.00
10,760.0	90.15	359.16	6,978.6	3,919.0	-138.9	3,921.5	0.00	0.00	0.00
10,800.0	90.15	359.16	6,978.5	3,959.0	-139.5	3,961.5	0.00	0.00	0.00
10,840.0	90.15	359.16	6,978.4	3,999.0	-140.1	4,001.4	0.00	0.00	0.00
10,880.0	90.15	359.16	6,978.3	4,039.0	-140.6	4,041.4	0.00	0.00	0.00
10,920.0	90.15	359.16	6,978.2	4,079.0	-141.2	4,081.4	0.00	0.00	0.00
10,960.0	90.15	359.16	6,978.1	4,119.0	-141.8	4,121.4	0.00	0.00	0.00
11,000.0	90.15	359.16	6,978.0	4,159.0	-142.4	4,161.4	0.00	0.00	0.00
11,040.0	90.15	359.16	6,977.9	4,199.0	-143.0	4,201.4	0.00	0.00	0.00
11,080.0	90.15	359.16	6,977.8	4,239.0	-143.6	4,241.4	0.00	0.00	0.00
11,120.0	90.15	359.16	6,977.7	4,279.0	-144.2	4,281.4	0.00	0.00	0.00
11,160.0	90.15	359.16	6,977.6	4,319.0	-144.7	4,321.4	0.00	0.00	0.00
11,200.0	90.15	359.16	6,977.5	4,359.0	-145.3	4,361.4	0.00	0.00	0.00
11,240.0	90.15	359.16	6,977.4	4,399.0	-145.9	4,401.4	0.00	0.00	0.00
11,280.0	90.15	359.16	6,977.3	4,439.0	-146.5	4,441.4	0.00	0.00	0.00
11,320.0	90.15	359.16	6,977.2	4,479.0	-147.1	4,481.4	0.00	0.00	0.00
11,360.0	90.15	359.16	6,977.1	4,519.0	-147.7	4,521.4	0.00	0.00	0.00
11,391.1	90.15	359.16	6,977.0	4,550.1	-148.1	4,552.5	0.00	0.00	0.00

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,344.0	6,973.0	7"	7	8-3/4

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
3,000.0	3,000.0	0.0	0.0	KOP #1
6,224.0	6,213.2	-180.0	-79.0	KOP #2
7,541.0	6,987.0	700.4	-91.9	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-401

Wellbore #1

Plan #1 (01-29-13)

Anticollision Report

29 January, 2013

Offset Design													Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W - Waste Management 2T-221 - 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)					
1,500.0	1,500.0	1,496.3	1,494.6	3.3	3.2	109.40	-20.5	58.3	62.1	55.7	6.40	9.700				
1,600.0	1,600.0	1,595.7	1,593.4	3.5	3.4	111.54	-26.5	67.1	72.5	65.6	6.85	10.587				
1,700.0	1,700.0	1,695.1	1,692.3	3.7	3.7	113.14	-32.4	75.9	82.9	75.6	7.29	11.370				
1,800.0	1,800.0	1,794.5	1,791.2	3.9	4.0	114.38	-38.4	84.6	93.4	85.7	7.75	12.064				
1,900.0	1,900.0	1,894.0	1,890.0	4.2	4.2	115.37	-44.3	93.4	104.0	95.8	8.20	12.682				
2,000.0	2,000.0	1,993.4	1,988.9	4.4	4.5	116.18	-50.2	102.2	114.5	105.9	8.65	13.234				
2,100.0	2,100.0	2,092.8	2,087.8	4.6	4.8	116.85	-56.2	111.0	125.1	116.0	9.11	13.730				
2,200.0	2,200.0	2,192.3	2,186.6	4.8	5.1	117.42	-62.1	119.8	135.7	126.1	9.57	14.178				
2,300.0	2,300.0	2,291.7	2,285.5	5.1	5.3	117.90	-68.1	128.6	146.3	136.3	10.03	14.584				
2,400.0	2,400.0	2,391.1	2,384.3	5.3	5.6	118.32	-74.0	137.3	156.9	146.4	10.49	14.953				
2,500.0	2,500.0	2,490.5	2,483.2	5.5	5.9	118.69	-80.0	146.1	167.5	156.6	10.96	15.290				
2,600.0	2,600.0	2,590.0	2,582.1	5.7	6.2	119.01	-85.9	154.9	178.2	166.7	11.42	15.599				
2,700.0	2,700.0	2,689.4	2,680.9	6.0	6.5	119.30	-91.9	163.7	188.8	176.9	11.89	15.883				
2,800.0	2,800.0	2,788.8	2,779.8	6.2	6.8	119.55	-97.8	172.5	199.4	187.1	12.35	16.145				
2,900.0	2,900.0	2,888.3	2,878.7	6.4	7.1	119.78	-103.7	181.3	210.1	197.2	12.82	16.388				
3,000.0	3,000.0	2,987.7	2,977.5	6.6	7.4	119.99	-109.7	190.1	220.7	207.4	13.28	16.613				
3,100.0	3,100.0	3,087.1	3,076.4	6.8	7.7	-83.74	-115.6	198.8	231.1	217.7	13.49	17.140				
3,200.0	3,199.8	3,186.5	3,175.2	7.0	7.9	-84.59	-121.6	207.6	241.3	227.4	13.89	17.370				
3,300.0	3,299.5	3,285.7	3,273.9	7.2	8.2	-86.14	-127.5	216.4	251.2	236.9	14.30	17.564				
3,400.0	3,398.8	3,384.7	3,372.3	7.4	8.5	-88.30	-133.4	225.1	261.3	246.5	14.73	17.738				
3,500.0	3,498.1	3,483.7	3,470.7	7.5	8.8	-90.42	-139.3	233.9	271.7	256.5	15.17	17.911				
3,600.0	3,597.4	3,582.7	3,569.1	7.8	9.1	-92.37	-145.3	242.6	282.5	266.9	15.62	18.082				
3,700.0	3,696.7	3,681.6	3,667.5	8.0	9.4	-94.18	-151.2	251.4	293.6	277.5	16.09	18.250				
3,800.0	3,796.0	3,780.6	3,765.9	8.2	9.7	-95.86	-157.1	260.1	304.9	288.4	16.56	18.413				
3,900.0	3,895.3	3,879.6	3,864.3	8.4	10.0	-97.42	-163.0	268.9	316.5	299.5	17.04	18.573				
4,000.0	3,994.6	3,978.5	3,962.7	8.6	10.3	-98.87	-168.9	277.6	328.3	310.8	17.53	18.727				
4,100.0	4,093.9	4,085.8	4,069.5	8.9	10.6	-100.39	-174.8	286.3	339.5	321.5	18.03	18.828				
4,200.0	4,193.3	4,197.5	4,180.9	9.1	10.8	-102.12	-178.6	291.9	347.5	329.0	18.51	18.769				
4,300.0	4,292.6	4,309.3	4,292.8	9.3	11.0	-104.06	-180.0	293.9	352.2	333.2	19.00	18.542				
4,400.0	4,391.9	4,409.5	4,392.9	9.6	11.2	-105.90	-180.0	294.0	355.3	335.8	19.47	18.250				
4,500.0	4,491.2	4,508.8	4,492.2	9.8	11.4	-107.69	-180.0	294.0	358.7	338.8	19.94	17.992				
4,600.0	4,590.5	4,608.1	4,591.5	10.1	11.5	-109.45	-180.0	294.0	362.4	342.0	20.41	17.762				
4,700.0	4,689.8	4,707.4	4,690.8	10.4	11.7	-111.17	-180.0	294.0	366.5	345.6	20.88	17.552				
4,800.0	4,789.4	4,807.0	4,790.4	10.6	11.9	-112.54	-180.0	294.0	369.9	348.6	21.35	17.326				
4,900.0	4,889.2	4,906.8	4,890.2	10.8	12.1	-113.38	-180.0	294.0	372.1	350.3	21.79	17.074				
5,000.0	4,989.2	5,006.8	4,990.2	11.0	12.2	-113.69	-180.0	294.0	372.9	350.7	22.21	16.791				
5,100.0	5,089.2	5,106.8	5,090.2	11.2	12.4	90.00	-180.0	294.0	373.0	350.4	22.59	16.512				
5,200.0	5,189.2	5,206.8	5,190.2	11.5	12.6	90.00	-180.0	294.0	373.0	350.0	22.99	16.224				
5,300.0	5,289.2	5,306.8	5,290.2	11.7	12.8	90.00	-180.0	294.0	373.0	349.6	23.39	15.945				
5,400.0	5,389.2	5,406.8	5,390.2	11.9	13.0	90.00	-180.0	294.0	373.0	349.2	23.79	15.674				
5,500.0	5,489.2	5,506.8	5,490.2	12.1	13.1	90.00	-180.0	294.0	373.0	348.8	24.20	15.411				
5,600.0	5,589.2	5,606.8	5,590.2	12.3	13.3	90.00	-180.0	294.0	373.0	348.3	24.61	15.156				
5,700.0	5,689.2	5,706.8	5,690.2	12.5	13.5	90.00	-180.0	294.0	373.0	347.9	25.02	14.909				
5,800.0	5,789.2	5,806.8	5,790.2	12.7	13.7	90.00	-180.0	294.0	373.0	347.5	25.43	14.668				
5,900.0	5,889.2	5,906.8	5,890.2	12.9	13.9	90.00	-180.0	294.0	373.0	347.1	25.84	14.435				
6,000.0	5,989.2	6,006.8	5,990.2	13.1	14.1	90.00	-180.0	294.0	373.0	346.7	26.25	14.208				
6,100.0	6,089.2	6,107.4	6,090.6	13.3	14.3	89.16	-174.5	293.8	372.9	346.2	26.65	13.989				
6,122.2	6,111.4	6,129.4	6,112.4	13.4	14.3	88.71	-171.6	293.8	372.9	346.1	26.74	13.943				
6,200.0	6,189.2	6,205.0	6,186.4	13.5	14.4	86.43	-156.7	293.4	373.2	346.1	27.04	13.802				
6,300.0	6,289.1	6,297.8	6,274.9	13.7	14.5	83.34	-128.6	292.8	375.2	347.8	27.39	13.698				
6,400.0	6,387.6	6,387.9	6,356.8	13.9	14.6	79.54	-91.2	291.9	378.9	351.2	27.65	13.701				

Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W - Waste Management 2T-221 - 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)			
6,500.0	6,483.2	6,475.6	6,431.8	14.0	14.6	75.99	-45.9	290.9	383.8	356.0	27.84	13.786		
6,600.0	6,574.2	6,561.2	6,499.5	14.1	14.7	72.74	6.4	289.7	389.7	361.7	27.98	13.928		
6,700.0	6,659.0	6,645.1	6,559.8	14.3	14.7	69.83	64.7	288.4	396.0	367.9	28.10	14.094		
6,800.0	6,736.2	6,727.6	6,612.4	14.4	14.8	67.28	128.1	287.0	402.4	374.2	28.26	14.240		
6,900.0	6,804.4	6,808.8	6,657.3	14.7	15.1	65.10	195.7	285.5	408.6	380.0	28.51	14.331		
7,000.0	6,862.5	6,889.0	6,694.4	15.2	15.6	63.29	266.8	283.9	414.0	385.1	28.94	14.309		
7,100.0	6,909.5	6,968.4	6,723.5	15.8	16.3	61.84	340.6	282.2	418.6	389.0	29.61	14.138		
7,200.0	6,944.5	7,050.0	6,745.3	16.6	17.1	60.74	419.2	280.4	422.1	391.5	30.60	13.794		
7,300.0	6,967.1	7,125.6	6,758.0	17.6	17.9	60.04	493.7	278.8	424.3	392.4	31.90	13.300		
7,400.0	6,978.8	7,203.6	6,763.2	18.7	18.8	59.51	571.5	277.0	426.2	392.7	33.52	12.715		
7,500.0	6,986.3	7,297.9	6,762.6	19.9	20.0	58.47	665.6	274.9	429.7	394.3	35.35	12.155		
7,600.0	6,986.8	7,397.8	6,761.7	21.2	21.3	58.25	765.6	272.6	429.7	392.1	37.62	11.422		
7,700.0	6,986.6	7,497.8	6,760.8	22.7	22.7	58.13	865.6	270.4	429.4	389.3	40.06	10.720		
7,800.0	6,986.3	7,597.8	6,759.9	24.1	24.2	58.00	965.5	268.1	429.1	386.4	42.60	10.071		
7,900.0	6,986.0	7,697.8	6,759.0	25.7	25.8	57.87	1,065.5	265.9	428.7	383.5	45.24	9.476		
8,000.0	6,985.8	7,797.8	6,758.1	27.3	27.4	57.74	1,165.5	263.6	428.4	380.4	47.96	8.931		
8,100.0	6,985.5	7,897.8	6,757.2	28.9	29.0	57.61	1,265.4	261.3	428.0	377.3	50.75	8.435		
8,200.0	6,985.3	7,997.8	6,756.4	30.6	30.7	57.48	1,365.4	259.1	427.7	374.1	53.58	7.982		
8,300.0	6,985.0	8,097.8	6,755.5	32.3	32.4	57.36	1,465.4	256.8	427.4	370.9	56.46	7.570		
8,400.0	6,984.7	8,197.8	6,754.6	34.0	34.1	57.23	1,565.3	254.6	427.0	367.7	59.37	7.193		
8,500.0	6,984.5	8,297.8	6,753.7	35.7	35.9	57.10	1,665.3	252.3	426.7	364.4	62.31	6.848		
8,600.0	6,984.2	8,397.8	6,752.8	37.5	37.6	56.97	1,765.2	250.1	426.4	361.1	65.28	6.532		
8,700.0	6,984.0	8,497.8	6,751.9	39.2	39.4	56.84	1,865.2	247.8	426.1	357.8	68.26	6.242		
8,800.0	6,983.7	8,597.8	6,751.0	41.0	41.2	56.71	1,965.2	245.6	425.8	354.5	71.26	5.974		
8,900.0	6,983.4	8,697.8	6,750.1	42.8	43.0	56.58	2,065.1	243.3	425.4	351.2	74.28	5.728		
9,000.0	6,983.2	8,797.8	6,749.2	44.6	44.8	56.45	2,165.1	241.0	425.1	347.8	77.30	5.500		
9,100.0	6,982.9	8,897.8	6,748.3	46.4	46.6	56.32	2,265.1	238.8	424.8	344.5	80.33	5.288		
9,200.0	6,982.7	8,997.8	6,747.5	48.3	48.4	56.19	2,365.0	236.5	424.5	341.1	83.37	5.092		
9,300.0	6,982.4	9,097.7	6,746.6	50.1	50.3	56.06	2,465.0	234.3	424.2	337.8	86.41	4.909		
9,400.0	6,982.2	9,197.7	6,745.7	51.9	52.1	55.93	2,565.0	232.0	423.9	334.4	89.45	4.739		
9,500.0	6,981.9	9,297.7	6,744.8	53.8	54.0	55.80	2,664.9	229.8	423.6	331.1	92.50	4.579		
9,600.0	6,981.6	9,397.7	6,743.9	55.6	55.8	55.67	2,764.9	227.5	423.3	327.7	95.55	4.430		
9,700.0	6,981.4	9,497.7	6,743.0	57.5	57.7	55.53	2,864.9	225.3	423.0	324.4	98.60	4.290		
9,800.0	6,981.1	9,597.7	6,742.1	59.4	59.5	55.40	2,964.8	223.0	422.7	321.0	101.64	4.159		
9,900.0	6,980.9	9,697.7	6,741.2	61.2	61.4	55.27	3,064.8	220.7	422.4	317.7	104.69	4.035		
10,000.0	6,980.6	9,797.7	6,740.3	63.1	63.3	55.14	3,164.8	218.5	422.1	314.4	107.73	3.918		
10,100.0	6,980.3	9,897.7	6,739.4	65.0	65.2	55.01	3,264.7	216.2	421.8	311.0	110.77	3.808		
10,200.0	6,980.1	9,997.7	6,738.6	66.8	67.0	54.87	3,364.7	214.0	421.5	307.7	113.80	3.704		
10,300.0	6,979.8	10,097.7	6,737.7	68.7	68.9	54.74	3,464.7	211.7	421.2	304.4	116.83	3.605		
10,400.0	6,979.6	10,197.7	6,736.8	70.6	70.8	54.61	3,564.6	209.5	420.9	301.1	119.86	3.512		
10,500.0	6,979.3	10,297.7	6,735.9	72.5	72.7	54.48	3,664.6	207.2	420.7	297.8	122.88	3.423		
10,600.0	6,979.0	10,397.7	6,735.0	74.3	74.6	54.34	3,764.6	205.0	420.4	294.5	125.89	3.339		
10,700.0	6,978.8	10,497.7	6,734.1	76.2	76.5	54.21	3,864.5	202.7	420.1	291.2	128.90	3.259		
10,800.0	6,978.5	10,597.7	6,733.2	78.1	78.3	54.08	3,964.5	200.5	419.8	287.9	131.91	3.183		
10,900.0	6,978.3	10,697.7	6,732.3	80.0	80.2	53.94	4,064.5	198.2	419.6	284.6	134.91	3.110		
11,000.0	6,978.0	10,797.7	6,731.4	81.9	82.1	53.81	4,164.4	195.9	419.3	281.4	137.90	3.041		
11,100.0	6,977.8	10,897.7	6,730.5	83.8	84.0	53.68	4,264.4	193.7	419.0	278.1	140.88	2.974		
11,200.0	6,977.5	10,997.6	6,729.7	85.7	85.9	53.54	4,364.3	191.4	418.7	274.9	143.86	2.911		
11,300.0	6,977.2	11,097.6	6,728.8	87.6	87.8	53.41	4,464.3	189.2	418.5	271.7	146.83	2.850		
11,367.7	6,977.1	11,165.4	6,728.2	88.9	88.9	53.32	4,532.0	187.6	418.3	269.7	148.61	2.815		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2T-401
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4907.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4907.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2T-401	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 (01-29-13)	Offset TVD Reference:	Offset Datum

Offset Design												Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W - Waste Management 2T-221 - 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					
11,391.1	6,977.0	11,183.4	6,728.0	89.3	89.1	53.29	4,550.1	187.2	418.3	269.1	149.17	2.804 SF					

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							
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	2.0	2.0	0.0	0.0	90.00	0.0	89.4	89.4	89.4	0.00	N/A		
100.0	100.0	102.0	102.0	0.1	0.1	90.00	0.0	89.4	89.4	89.2	0.23	390.130		
166.0	166.0	168.0	168.0	0.3	0.3	90.00	0.0	89.4	89.4	88.9	0.53	170.076 CC		
200.0	200.0	201.9	201.9	0.3	0.3	90.00	0.0	89.4	89.4	88.8	0.68	131.837 ES		
300.0	300.0	300.0	300.0	0.6	0.6	90.23	-0.4	91.1	91.2	90.1	1.11	81.996		
400.0	400.0	395.7	395.6	0.8	0.8	90.84	-1.4	96.0	96.2	94.7	1.55	62.133		
500.0	500.0	492.0	491.5	1.0	1.0	91.73	-3.1	104.0	104.6	102.6	2.00	52.210		
600.0	600.0	587.7	586.5	1.2	1.3	92.75	-5.5	115.1	116.2	113.7	2.47	47.026		
700.0	700.0	682.9	680.6	1.5	1.6	93.79	-8.5	129.1	131.2	128.2	2.96	44.365		
800.0	800.0	781.6	777.9	1.7	1.9	94.72	-12.0	145.0	147.5	144.0	3.45	42.755		
900.0	900.0	880.2	875.2	1.9	2.3	95.46	-15.4	160.9	163.8	159.9	3.94	41.546		
1,000.0	1,000.0	978.8	972.5	2.1	2.7	96.07	-18.8	176.7	180.2	175.7	4.44	40.585		
1,100.0	1,100.0	1,077.5	1,069.8	2.4	3.0	96.58	-22.2	192.6	196.5	191.6	4.94	39.807		
1,200.0	1,200.0	1,176.1	1,167.1	2.6	3.4	97.01	-25.6	208.5	212.9	207.5	5.44	39.166		
1,300.0	1,300.0	1,274.7	1,264.4	2.8	3.8	97.38	-29.0	224.3	229.3	223.4	5.94	38.630		
1,400.0	1,400.0	1,373.4	1,361.7	3.0	4.2	97.70	-32.5	240.2	245.7	239.3	6.44	38.176		
1,500.0	1,500.0	1,472.0	1,459.0	3.3	4.5	97.98	-35.9	256.1	262.1	255.2	6.94	37.786		
1,600.0	1,600.0	1,570.6	1,556.3	3.5	4.9	98.22	-39.3	271.9	278.6	271.1	7.44	37.448		
1,700.0	1,700.0	1,669.3	1,653.6	3.7	5.3	98.44	-42.7	287.8	295.0	287.0	7.94	37.153		
1,800.0	1,800.0	1,767.9	1,750.8	3.9	5.7	98.64	-46.1	303.7	311.4	303.0	8.44	36.892		
1,900.0	1,900.0	1,866.6	1,848.1	4.2	6.1	98.81	-49.6	319.6	327.8	318.9	8.94	36.661		
2,000.0	2,000.0	1,965.2	1,945.4	4.4	6.4	98.97	-53.0	335.4	344.3	334.8	9.44	36.454		
2,100.0	2,100.0	2,063.8	2,042.7	4.6	6.8	99.12	-56.4	351.3	360.7	350.8	9.95	36.268		
2,200.0	2,200.0	2,162.5	2,140.0	4.8	7.2	99.25	-59.8	367.2	377.1	366.7	10.45	36.100		
2,300.0	2,300.0	2,261.1	2,237.3	5.1	7.6	99.37	-63.2	383.0	393.6	382.6	10.95	35.947		
2,400.0	2,400.0	2,359.7	2,334.6	5.3	8.0	99.48	-66.6	398.9	410.0	398.6	11.45	35.808		
2,500.0	2,500.0	2,458.4	2,431.9	5.5	8.3	99.59	-70.1	414.8	426.5	414.5	11.95	35.681		
2,600.0	2,600.0	2,557.0	2,529.2	5.7	8.7	99.68	-73.5	430.6	442.9	430.4	12.45	35.563		
2,700.0	2,700.0	2,655.6	2,626.5	6.0	9.1	99.77	-76.9	446.5	459.3	446.4	12.96	35.455		
2,800.0	2,800.0	2,754.3	2,723.8	6.2	9.5	99.85	-80.3	462.4	475.8	462.3	13.46	35.355		
2,900.0	2,900.0	2,852.9	2,821.1	6.4	9.9	99.93	-83.7	478.3	492.2	478.3	13.96	35.262		
3,000.0	3,000.0	2,951.6	2,918.3	6.6	10.3	100.00	-87.1	494.1	508.7	494.2	14.46	35.176 SF		
3,100.0	3,100.0	3,050.1	3,015.6	6.8	10.6	-103.48	-90.6	510.0	525.5	511.4	14.10	37.269		
3,200.0	3,199.8	3,148.4	3,112.5	7.0	11.0	-103.61	-94.0	525.8	543.2	528.7	14.51	37.442		
3,300.0	3,299.5	3,246.4	3,209.2	7.2	11.4	-104.04	-97.4	541.6	561.7	546.8	14.92	37.652		
3,400.0	3,398.8	3,344.0	3,305.4	7.4	11.8	-104.91	-100.7	557.3	581.1	565.8	15.35	37.859		
3,500.0	3,498.1	3,441.6	3,401.7	7.5	12.1	-105.88	-104.1	573.0	600.7	584.9	15.80	38.028		
3,600.0	3,597.4	3,539.1	3,497.9	7.8	12.5	-106.78	-107.5	588.7	620.4	604.2	16.25	38.172		
3,700.0	3,696.7	3,636.7	3,594.2	8.0	12.9	-107.64	-110.9	604.4	640.3	623.6	16.72	38.296		
3,800.0	3,796.0	3,734.3	3,690.4	8.2	13.3	-108.44	-114.3	620.1	660.3	643.1	17.20	38.400		
3,900.0	3,895.3	3,831.8	3,786.6	8.4	13.7	-109.19	-117.6	635.8	680.5	662.8	17.68	38.489		
4,000.0	3,994.6	3,929.4	3,882.9	8.6	14.0	-109.90	-121.0	651.4	700.7	682.5	18.17	38.563		
4,100.0	4,093.9	4,027.0	3,979.1	8.9	14.4	-110.57	-124.4	667.1	721.1	702.4	18.67	38.626		
4,200.0	4,193.3	4,124.5	4,075.3	9.1	14.8	-111.21	-127.8	682.8	741.5	722.3	19.17	38.678		
4,300.0	4,292.6	4,222.1	4,171.6	9.3	15.2	-111.81	-131.1	698.5	762.0	742.3	19.68	38.721		
4,400.0	4,391.9	4,319.7	4,267.8	9.6	15.6	-112.38	-134.5	714.2	782.6	762.4	20.19	38.757		
4,500.0	4,491.2	4,417.3	4,364.1	9.8	15.9	-112.92	-137.9	729.9	803.2	782.5	20.71	38.786		
4,600.0	4,590.5	4,514.8	4,460.3	10.1	16.3	-113.43	-141.3	745.6	824.0	802.7	21.23	38.809		
4,700.0	4,689.8	4,612.4	4,556.5	10.4	16.7	-114.01	-144.7	761.3	844.7	822.9	21.77	38.803		
4,800.0	4,789.4	4,710.3	4,653.1	10.6	17.1	-114.68	-148.1	777.1	864.5	842.1	22.33	38.716		
4,900.0	4,889.2	4,808.6	4,750.1	10.8	17.5	-115.10	-151.5	792.9	882.8	859.9	22.86	38.613		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2T-401
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4907.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4907.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2T-401	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 (01-29-13)	Offset TVD Reference:	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	4,989.2	4,907.2	4,847.3	11.0	17.8	-115.28	-154.9	808.8	899.7	876.3	23.37	38.501			
5,100.0	5,089.2	5,005.8	4,944.6	11.2	18.2	88.62	-158.3	824.6	915.7	891.9	23.77	38.527			
5,200.0	5,189.2	5,104.4	5,041.9	11.5	18.6	88.86	-161.7	840.5	931.7	907.5	24.22	38.471			
5,300.0	5,289.2	5,203.1	5,139.2	11.7	19.0	89.09	-165.1	856.4	947.8	923.1	24.67	38.416			
5,400.0	5,389.2	5,301.7	5,236.4	11.9	19.4	89.31	-168.5	872.2	963.8	938.7	25.12	38.362			
5,500.0	5,489.2	5,403.0	5,336.3	12.1	19.8	89.53	-172.1	888.5	979.9	954.3	25.58	38.305			
5,600.0	5,589.2	5,552.3	5,484.2	12.3	20.1	89.79	-176.3	908.4	993.2	967.1	26.06	38.110			

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	1.0	1.0	0.0	0.0	90.00	0.0	58.7	58.7	58.7	0.00	N/A		
100.0	100.0	101.0	101.0	0.1	0.1	90.00	0.0	58.7	58.7	58.5	0.23	258.558		
200.0	200.0	201.0	201.0	0.3	0.3	90.00	0.0	58.7	58.7	58.0	0.68	86.759		
300.0	300.0	301.0	301.0	0.6	0.6	90.00	0.0	58.7	58.7	57.6	1.13	52.124		
366.3	366.3	367.3	367.3	0.7	0.7	90.00	0.0	58.7	58.7	57.3	1.42	41.212 CC		
400.0	400.0	401.0	401.0	0.8	0.8	90.00	0.0	58.7	58.7	57.1	1.58	37.258 ES		
500.0	500.0	500.0	500.0	1.0	1.0	90.53	-0.6	60.3	60.4	58.4	2.01	30.079		
600.0	600.0	596.9	596.7	1.2	1.2	91.91	-2.2	65.1	65.3	62.8	2.43	26.838		
700.0	700.0	694.2	693.7	1.5	1.4	93.80	-4.8	73.0	73.5	70.6	2.88	25.566		
800.0	800.0	792.5	791.4	1.7	1.7	95.76	-8.4	83.6	84.6	81.2	3.34	25.357		
900.0	900.0	891.8	890.0	1.9	2.0	97.33	-12.2	94.6	96.0	92.2	3.80	25.276		
1,000.0	1,000.0	991.2	988.6	2.1	2.2	98.56	-15.9	105.6	107.5	103.2	4.27	25.201		
1,100.0	1,100.0	1,090.5	1,087.3	2.4	2.5	99.55	-19.6	116.6	119.0	114.3	4.74	25.133		
1,200.0	1,200.0	1,189.8	1,185.9	2.6	2.8	100.37	-23.3	127.6	130.6	125.4	5.21	25.074		
1,300.0	1,300.0	1,289.1	1,284.5	2.8	3.1	101.06	-27.1	138.6	142.1	136.5	5.68	25.023		
1,400.0	1,400.0	1,388.4	1,383.2	3.0	3.4	101.64	-30.8	149.6	153.7	147.6	6.15	24.978		
1,500.0	1,500.0	1,487.7	1,481.8	3.3	3.7	102.14	-34.5	160.5	165.3	158.7	6.63	24.939		
1,600.0	1,600.0	1,587.0	1,580.4	3.5	4.1	102.57	-38.3	171.5	177.0	169.9	7.11	24.905		
1,700.0	1,700.0	1,686.4	1,679.1	3.7	4.4	102.95	-42.0	182.5	188.6	181.0	7.58	24.875		
1,800.0	1,800.0	1,785.7	1,777.7	3.9	4.7	103.29	-45.7	193.5	200.2	192.2	8.06	24.849		
1,900.0	1,900.0	1,885.0	1,876.3	4.2	5.0	103.59	-49.4	204.5	211.9	203.3	8.53	24.825		
2,000.0	2,000.0	1,984.3	1,975.0	4.4	5.3	103.86	-53.2	215.5	223.5	214.5	9.01	24.804		
2,100.0	2,100.0	2,083.6	2,073.6	4.6	5.6	104.10	-56.9	226.5	235.1	225.7	9.49	24.785		
2,200.0	2,200.0	2,182.9	2,172.2	4.8	5.9	104.32	-60.6	237.5	246.8	236.8	9.96	24.767		
2,300.0	2,300.0	2,282.2	2,270.9	5.1	6.2	104.52	-64.3	248.5	258.5	248.0	10.44	24.752		
2,400.0	2,400.0	2,381.6	2,369.5	5.3	6.5	104.70	-68.1	259.5	270.1	259.2	10.92	24.737		
2,500.0	2,500.0	2,480.9	2,468.1	5.5	6.9	104.86	-71.8	270.5	281.8	270.4	11.40	24.724		
2,600.0	2,600.0	2,580.2	2,566.8	5.7	7.2	105.02	-75.5	281.5	293.4	281.6	11.87	24.712		
2,700.0	2,700.0	2,679.5	2,665.4	6.0	7.5	105.16	-79.2	292.5	305.1	292.8	12.35	24.701		
2,800.0	2,800.0	2,778.8	2,764.0	6.2	7.8	105.29	-83.0	303.5	316.8	303.9	12.83	24.691		
2,900.0	2,900.0	2,878.1	2,862.7	6.4	8.1	105.41	-86.7	314.5	328.4	315.1	13.31	24.681		
3,000.0	3,000.0	2,977.4	2,961.3	6.6	8.4	105.53	-90.4	325.5	340.1	326.3	13.79	24.672		
3,100.0	3,100.0	3,076.7	3,059.9	6.8	8.7	-98.11	-94.2	336.4	352.0	338.2	13.79	25.531		
3,200.0	3,199.8	3,175.8	3,158.3	7.0	9.0	-98.57	-97.9	347.4	364.5	350.3	14.19	25.680		
3,300.0	3,299.5	3,274.7	3,256.5	7.2	9.4	-99.50	-101.6	358.4	377.5	362.9	14.60	25.850		
3,400.0	3,398.8	3,373.2	3,354.4	7.4	9.7	-100.91	-105.3	369.3	391.2	376.2	15.03	26.030		
3,500.0	3,498.1	3,471.7	3,452.2	7.5	10.0	-102.35	-109.0	380.2	405.3	389.8	15.47	26.195		
3,600.0	3,597.4	3,570.2	3,550.0	7.8	10.3	-103.69	-112.7	391.1	419.5	403.6	15.92	26.348		
3,700.0	3,696.7	3,668.7	3,647.9	8.0	10.6	-104.95	-116.4	402.0	434.0	417.6	16.38	26.490		
3,800.0	3,796.0	3,767.3	3,745.7	8.2	10.9	-106.12	-120.1	412.9	448.7	431.8	16.85	26.622		
3,900.0	3,895.3	3,865.8	3,843.5	8.4	11.2	-107.22	-123.8	423.8	463.5	446.2	17.33	26.745		
4,000.0	3,994.6	3,964.3	3,941.4	8.6	11.5	-108.25	-127.5	434.7	478.6	460.7	17.82	26.860		
4,100.0	4,093.9	4,062.8	4,039.2	8.9	11.8	-109.22	-131.2	445.6	493.7	475.4	18.31	26.967		
4,200.0	4,193.3	4,161.3	4,137.0	9.1	12.2	-110.14	-134.9	456.5	509.0	490.2	18.80	27.068		
4,300.0	4,292.6	4,259.8	4,234.9	9.3	12.5	-111.00	-138.5	467.4	524.4	505.1	19.31	27.163		
4,400.0	4,391.9	4,358.3	4,332.7	9.6	12.8	-111.81	-142.2	478.3	539.9	520.1	19.81	27.252		
4,500.0	4,491.2	4,456.8	4,430.5	9.8	13.1	-112.57	-145.9	489.2	555.5	535.2	20.32	27.337		
4,600.0	4,590.5	4,555.3	4,528.4	10.1	13.4	-113.29	-149.6	500.1	571.2	550.4	20.83	27.416		
4,700.0	4,689.8	4,653.8	4,626.2	10.4	13.7	-114.04	-153.3	511.0	586.9	565.6	21.36	27.480		
4,800.0	4,789.4	4,752.7	4,724.4	10.6	14.0	-114.73	-157.0	522.0	601.7	579.8	21.89	27.486		
4,900.0	4,889.2	4,851.7	4,822.8	10.8	14.3	-115.08	-160.8	532.9	615.0	592.6	22.40	27.460		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2T-401
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4907.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4907.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2T-401	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 (01-29-13)	Offset TVD Reference:	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 (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	4,989.2	4,951.0	4,921.4	11.0	14.7	-115.10	-164.5	543.9	626.9	604.0	22.88	27.405		
5,100.0	5,089.2	5,050.3	5,020.0	11.2	15.0	88.93	-168.2	554.9	637.9	614.6	23.28	27.402		
5,200.0	5,189.2	5,149.6	5,118.6	11.5	15.3	89.28	-171.9	565.9	648.9	625.2	23.72	27.355		
5,300.0	5,289.2	5,263.6	5,231.8	11.7	15.6	89.65	-176.0	577.8	659.4	635.2	24.16	27.296		
5,400.0	5,389.2	5,391.3	5,359.2	11.9	15.8	89.90	-178.9	586.4	666.1	641.6	24.58	27.099		
5,500.0	5,489.2	5,519.5	5,487.4	12.1	16.0	90.00	-180.0	589.7	668.7	643.7	25.00	26.744		
5,600.0	5,589.2	5,622.3	5,590.2	12.3	16.2	90.00	-180.0	589.7	668.7	643.3	25.40	26.329		
5,700.0	5,689.2	5,722.3	5,690.2	12.5	16.3	90.00	-180.0	589.7	668.7	642.9	25.79	25.932		
5,800.0	5,789.2	5,822.3	5,790.2	12.7	16.5	90.00	-180.0	589.7	668.7	642.5	26.18	25.546		
5,900.0	5,889.2	5,922.3	5,890.2	12.9	16.6	90.00	-180.0	589.7	668.7	642.1	26.57	25.168		
6,000.0	5,989.2	6,022.3	5,990.2	13.1	16.8	90.00	-180.0	589.7	668.7	641.7	26.96	24.801		
6,100.0	6,089.2	6,122.3	6,090.2	13.3	17.0	90.00	-180.0	589.7	668.7	641.3	27.36	24.442		
6,200.0	6,189.2	6,222.3	6,190.2	13.5	17.1	90.00	-180.0	589.7	668.7	640.9	27.76	24.092		
6,300.0	6,289.1	6,323.3	6,291.1	13.7	17.3	90.83	-176.0	589.6	668.7	640.5	28.15	23.752		
6,400.0	6,387.6	6,424.6	6,390.8	13.9	17.4	90.80	-159.1	589.4	668.7	640.2	28.44	23.515		
6,500.0	6,483.2	6,525.8	6,487.4	14.0	17.5	90.75	-129.1	588.9	668.7	640.0	28.66	23.333		
6,600.0	6,574.2	6,626.9	6,579.2	14.1	17.5	90.70	-86.7	588.3	668.7	639.8	28.87	23.160		
6,700.0	6,659.0	6,728.0	6,664.4	14.3	17.6	90.63	-32.5	587.5	668.6	639.5	29.14	22.943		
6,800.0	6,736.2	6,828.9	6,741.7	14.4	17.6	90.55	32.2	586.5	668.6	639.1	29.55	22.623		
6,900.0	6,804.4	6,929.7	6,809.6	14.7	17.7	90.46	106.5	585.4	668.6	638.4	30.19	22.149		
7,000.0	6,862.5	7,030.3	6,867.2	15.2	17.8	90.37	189.0	584.2	668.6	637.5	31.10	21.497		
7,100.0	6,909.5	7,130.8	6,913.3	15.8	18.1	90.26	278.2	582.9	668.6	636.2	32.35	20.667		
7,200.0	6,944.5	7,231.1	6,947.3	16.6	18.7	90.16	372.5	581.5	668.5	634.6	33.94	19.698		
7,300.0	6,967.1	7,331.3	6,968.6	17.6	19.5	90.05	470.3	580.0	668.5	632.7	35.85	18.646		
7,400.0	6,978.8	7,431.3	6,979.9	18.7	20.5	90.00	569.6	578.6	668.5	630.4	38.05	17.571		
7,500.0	6,986.3	7,531.2	6,986.6	19.9	21.6	89.94	669.3	577.1	668.5	628.0	40.48	16.513		
7,600.0	6,986.8	7,631.2	6,986.8	21.2	22.9	89.91	769.2	575.6	668.5	625.3	43.11	15.505		
7,700.0	6,986.6	7,731.2	6,986.5	22.7	24.2	89.91	869.2	574.1	668.4	622.5	45.91	14.561		
7,800.0	6,986.3	7,831.2	6,986.3	24.1	25.6	89.91	969.2	572.7	668.4	619.6	48.84	13.685		
7,900.0	6,986.0	7,931.2	6,986.0	25.7	27.1	89.91	1,069.2	571.2	668.4	616.5	51.90	12.878		
8,000.0	6,985.8	8,031.2	6,985.7	27.3	28.6	89.91	1,169.2	569.7	668.4	613.3	55.06	12.140		
8,100.0	6,985.5	8,131.2	6,985.5	28.9	30.2	89.91	1,269.2	568.2	668.4	610.1	58.30	11.465		
8,200.0	6,985.3	8,231.2	6,985.2	30.6	31.8	89.91	1,369.2	566.8	668.4	606.8	61.61	10.849		
8,300.0	6,985.0	8,331.2	6,985.0	32.3	33.5	89.91	1,469.2	565.3	668.3	603.4	64.98	10.286		
8,400.0	6,984.7	8,431.2	6,984.7	34.0	35.1	89.91	1,569.1	563.8	668.3	599.9	68.40	9.772		
8,500.0	6,984.5	8,531.2	6,984.5	35.7	36.8	89.91	1,669.1	562.3	668.3	596.5	71.86	9.300		
8,600.0	6,984.2	8,631.2	6,984.2	37.5	38.6	89.91	1,769.1	560.9	668.3	592.9	75.36	8.868		
8,700.0	6,984.0	8,731.2	6,983.9	39.2	40.3	89.91	1,869.1	559.4	668.3	589.4	78.89	8.471		
8,800.0	6,983.7	8,831.2	6,983.7	41.0	42.0	89.91	1,969.1	557.9	668.3	585.8	82.45	8.105		
8,900.0	6,983.4	8,931.2	6,983.4	42.8	43.8	89.91	2,069.1	556.4	668.2	582.2	86.04	7.767		
9,000.0	6,983.2	9,031.2	6,983.2	44.6	45.6	89.91	2,169.1	555.0	668.2	578.6	89.64	7.454		
9,100.0	6,982.9	9,131.2	6,982.9	46.4	47.4	89.91	2,269.1	553.5	668.2	574.9	93.27	7.164		
9,200.0	6,982.7	9,231.2	6,982.6	48.3	49.2	89.91	2,369.1	552.0	668.2	571.3	96.91	6.895		
9,300.0	6,982.4	9,331.2	6,982.4	50.1	51.0	89.91	2,469.0	550.5	668.2	567.6	100.57	6.644		
9,400.0	6,982.2	9,431.2	6,982.1	51.9	52.8	89.91	2,569.0	549.0	668.2	563.9	104.24	6.410		
9,500.0	6,981.9	9,531.2	6,981.9	53.8	54.6	89.91	2,669.0	547.6	668.1	560.2	107.93	6.191		
9,600.0	6,981.6	9,631.2	6,981.6	55.6	56.5	89.91	2,769.0	546.1	668.1	556.5	111.62	5.986		
9,700.0	6,981.4	9,731.2	6,981.3	57.5	58.3	89.91	2,869.0	544.6	668.1	552.8	115.33	5.793		
9,800.0	6,981.1	9,831.2	6,981.1	59.4	60.1	89.91	2,969.0	543.1	668.1	549.1	119.04	5.612		
9,900.0	6,980.9	9,931.2	6,980.8	61.2	62.0	89.91	3,069.0	541.7	668.1	545.3	122.76	5.442		

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

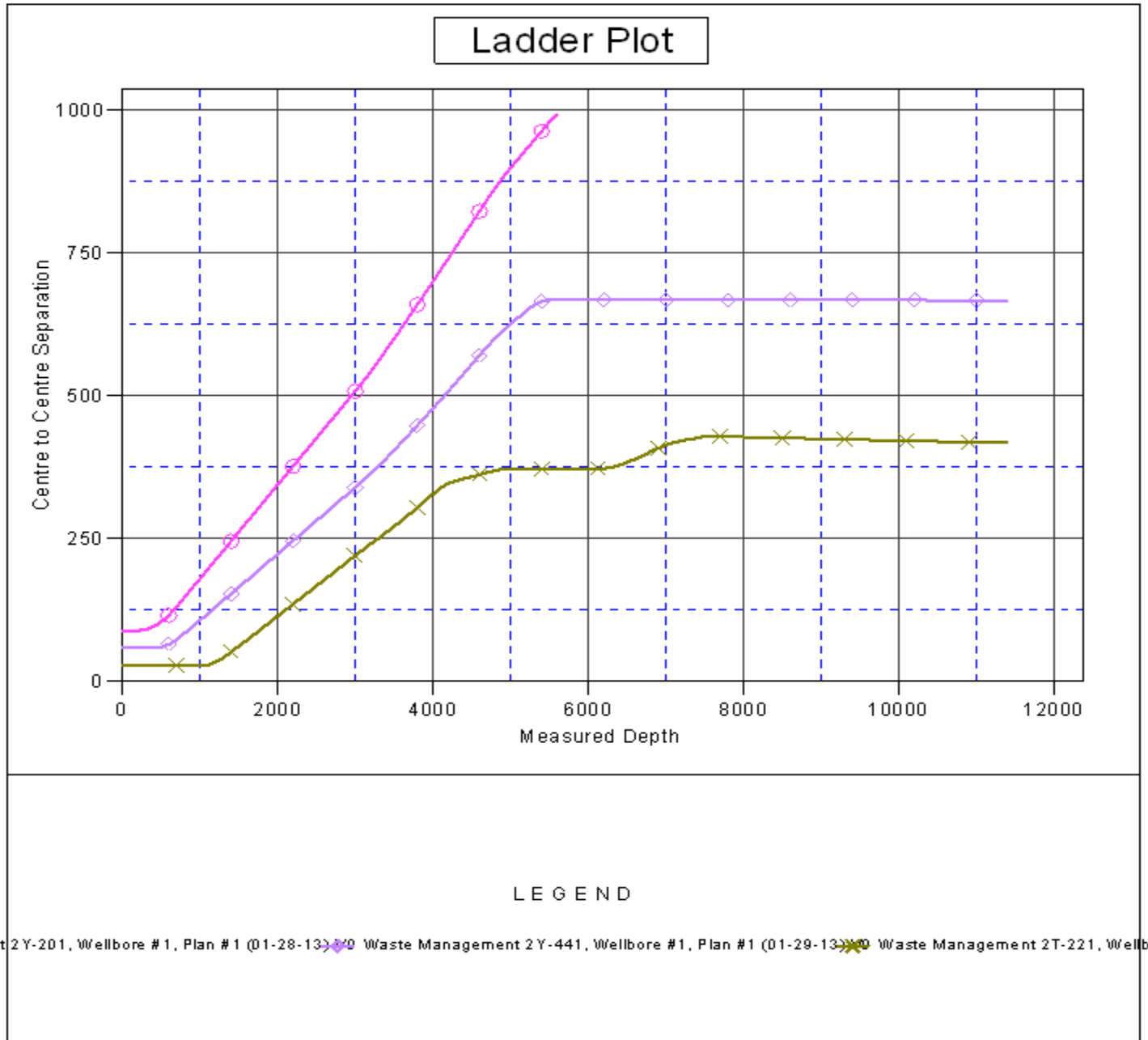
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2T-401
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4907.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4907.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2T-401	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 (01-29-13)	Offset TVD Reference:	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 (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	
10,000.0	6,980.6	10,031.2	6,980.6	63.1	63.8	89.91	3,169.0	540.2	668.1	541.6	126.49	5.281	
10,100.0	6,980.3	10,131.2	6,980.3	65.0	65.7	89.91	3,268.9	538.7	668.0	537.8	130.23	5.130	
10,200.0	6,980.1	10,231.2	6,980.1	66.8	67.5	89.91	3,368.9	537.2	668.0	534.1	133.97	4.986	
10,300.0	6,979.8	10,331.2	6,979.8	68.7	69.4	89.91	3,468.9	535.8	668.0	530.3	137.72	4.851	
10,400.0	6,979.6	10,431.2	6,979.5	70.6	71.3	89.91	3,568.9	534.3	668.0	526.5	141.47	4.722	
10,500.0	6,979.3	10,531.2	6,979.3	72.5	73.1	89.91	3,668.9	532.8	668.0	522.7	145.23	4.599	
10,600.0	6,979.0	10,631.2	6,979.0	74.3	75.0	89.91	3,768.9	531.3	668.0	519.0	149.00	4.483	
10,700.0	6,978.8	10,731.2	6,978.8	76.2	76.9	89.91	3,868.9	529.9	667.9	515.2	152.76	4.372	
10,800.0	6,978.5	10,831.2	6,978.5	78.1	78.8	89.91	3,968.9	528.4	667.9	511.4	156.53	4.267	
10,900.0	6,978.3	10,931.2	6,978.2	80.0	80.6	89.91	4,068.9	526.9	667.9	507.6	160.31	4.166	
11,000.0	6,978.0	11,031.2	6,978.0	81.9	82.5	89.91	4,168.8	525.4	667.9	503.8	164.09	4.070	
11,100.0	6,977.8	11,131.2	6,977.7	83.8	84.4	89.91	4,268.8	523.9	667.9	500.0	167.87	3.979	
11,200.0	6,977.5	11,231.2	6,977.5	85.7	86.3	89.91	4,368.8	522.5	667.9	496.2	171.65	3.891	
11,300.0	6,977.2	11,331.2	6,977.2	87.6	88.2	89.91	4,468.8	521.0	667.8	492.4	175.44	3.807	
11,362.7	6,977.1	11,393.9	6,977.0	88.8	89.4	89.91	4,531.5	520.1	667.8	490.0	177.81	3.756	
11,391.1	6,977.0	11,412.5	6,977.0	89.3	89.7	89.91	4,550.1	519.8	667.9	489.2	178.71	3.737 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2T-401
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4907.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4907.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2T-401	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 (01-29-13)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4907.0ft (RKB - 15')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Waste Management 2T-401
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.64°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2T-401
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4907.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4907.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2T-401	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 (01-29-13)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4907.0ft (RKB - 15')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Waste Management 2T-401
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.64°

