

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Waste Management 2T-441**

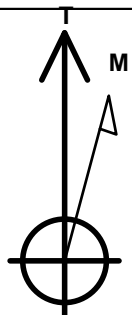
Surface Location: Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4895.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1302951.12	3275580.07	40.160790	-104.513980	

RKB - 15' WELL @ 4910.0ft (RKB - 15')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
BHL 500'FNL, 1825'FEL	6738.0	4546.4	-536.6	Point



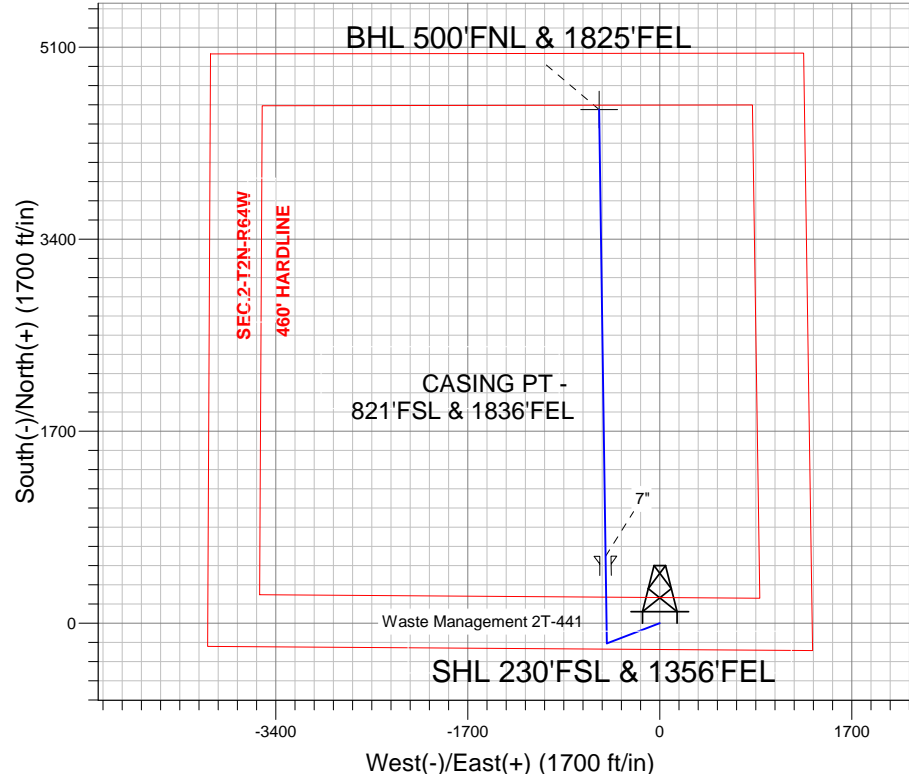
Azimuths to True North
Magnetic North: 8.49°

Magnetic Field
Strength: 52857.9nT
Dip Angle: 66.84°
Date: 2/7/2013
Model: IGRF2010

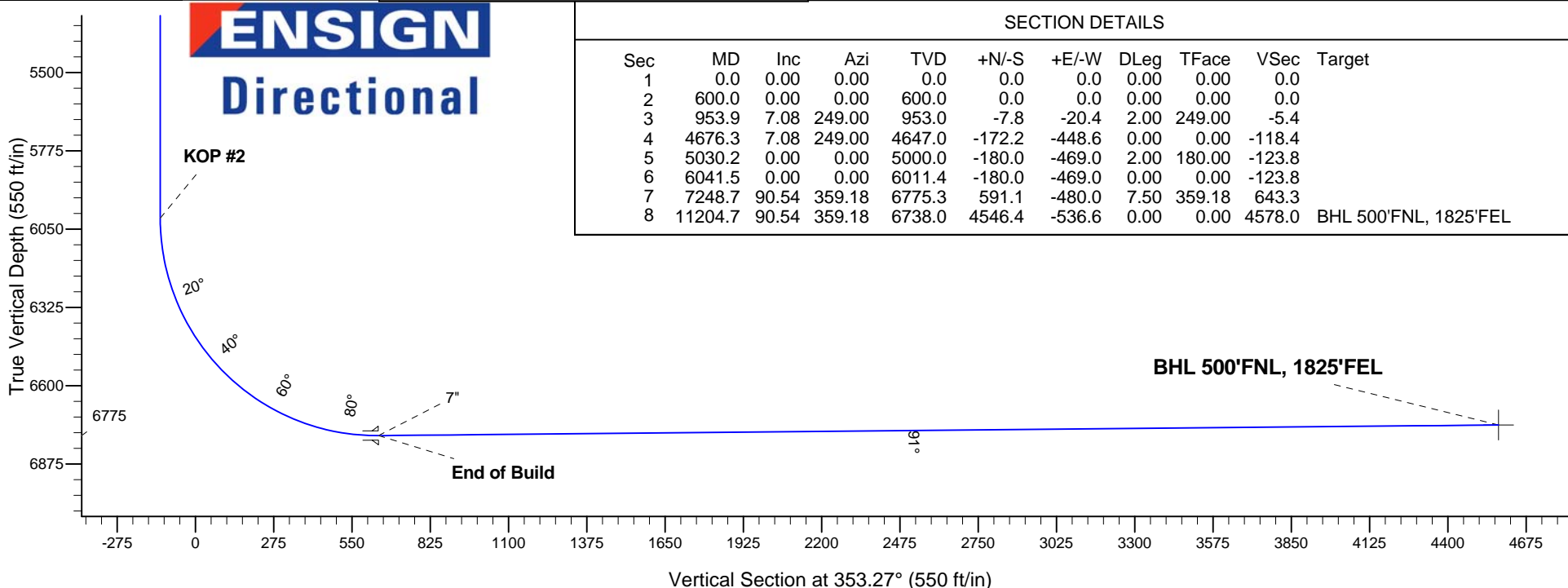
Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W
Waste Management 2T-441
Plan #1 (2-07-13)
14:52, February 07 2013

ANNOTATIONS

TVD	MD	Annotation
600.0	600.0	KOP #1
6011.3	6041.5	KOP #2
6775.3	7248.7	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	600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.0	
3	953.9	7.08	249.00	953.0	-7.8	-20.4	2.00	249.00	-5.4	
4	4676.3	7.08	249.00	4647.0	-172.2	-448.6	0.00	0.00	-118.4	
5	5030.2	0.00	0.00	5000.0	-180.0	-469.0	2.00	180.00	-123.8	
6	6041.5	0.00	0.00	6011.4	-180.0	-469.0	0.00	0.00	-123.8	
7	7248.7	90.54	359.18	6775.3	591.1	-480.0	7.50	359.18	643.3	
8	11204.7	90.54	359.18	6738.0	4546.4	-536.6	0.00	0.00	4578.0	BHL 500'FNL, 1825'FEL



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.2-T2N-R64W

Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W

Waste Management 2T-441

Wellbore #1

Plan: Plan #1 (2-07-13)

Standard Planning Report

07 February, 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	
600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.00	0.00	
953.9	7.08	249.00	953.0	-7.8	-20.4	2.00	2.00	0.00	249.00	
4,676.3	7.08	249.00	4,647.0	-172.2	-448.6	0.00	0.00	0.00	0.00	
5,030.2	0.00	0.00	5,000.0	-180.0	-469.0	2.00	-2.00	0.00	180.00	
6,041.5	0.00	0.00	6,011.4	-180.0	-469.0	0.00	0.00	0.00	0.00	
7,248.7	90.54	359.18	6,775.3	591.1	-480.0	7.50	7.50	0.00	359.18	
11,204.7	90.54	359.18	6,738.0	4,546.4	-536.6	0.00	0.00	0.00	0.00	BHL 500°FNL, 1825

Database:	Landmark	Local Co-ordinate Reference:	Well Waste Management 2T-441
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4910.0ft (RKB - 15')
Project:	SEC.2-T2N-R64W	MD Reference:	WELL @ 4910.0ft (RKB - 15')
Site:	Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W	North Reference:	True
Well:	Waste Management 2T-441	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-07-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
640.0	0.80	249.00	640.0	-0.1	-0.3	-0.1	2.00	2.00	0.00
680.0	1.60	249.00	680.0	-0.4	-1.0	-0.3	2.00	2.00	0.00
720.0	2.40	249.00	720.0	-0.9	-2.3	-0.6	2.00	2.00	0.00
760.0	3.20	249.00	759.9	-1.6	-4.2	-1.1	2.00	2.00	0.00
800.0	4.00	249.00	799.8	-2.5	-6.5	-1.7	2.00	2.00	0.00
840.0	4.80	249.00	839.7	-3.6	-9.4	-2.5	2.00	2.00	0.00
880.0	5.60	249.00	879.6	-4.9	-12.8	-3.4	2.00	2.00	0.00
920.0	6.40	249.00	919.3	-6.4	-16.7	-4.4	2.00	2.00	0.00
953.9	7.08	249.00	953.0	-7.8	-20.4	-5.4	2.00	2.00	0.00
960.0	7.08	249.00	959.1	-8.1	-21.1	-5.6	0.00	0.00	0.00
1,000.0	7.08	249.00	998.7	-9.9	-25.7	-6.8	0.00	0.00	0.00
1,040.0	7.08	249.00	1,038.4	-11.6	-30.3	-8.0	0.00	0.00	0.00
1,080.0	7.08	249.00	1,078.1	-13.4	-34.9	-9.2	0.00	0.00	0.00
1,120.0	7.08	249.00	1,117.8	-15.2	-39.5	-10.4	0.00	0.00	0.00
1,160.0	7.08	249.00	1,157.5	-16.9	-44.1	-11.6	0.00	0.00	0.00
1,200.0	7.08	249.00	1,197.2	-18.7	-48.7	-12.9	0.00	0.00	0.00
1,240.0	7.08	249.00	1,236.9	-20.5	-53.3	-14.1	0.00	0.00	0.00
1,280.0	7.08	249.00	1,276.6	-22.2	-57.9	-15.3	0.00	0.00	0.00
1,320.0	7.08	249.00	1,316.3	-24.0	-62.5	-16.5	0.00	0.00	0.00
1,360.0	7.08	249.00	1,356.0	-25.8	-67.1	-17.7	0.00	0.00	0.00
1,400.0	7.08	249.00	1,395.7	-27.5	-71.7	-18.9	0.00	0.00	0.00
1,440.0	7.08	249.00	1,435.4	-29.3	-76.3	-20.1	0.00	0.00	0.00
1,480.0	7.08	249.00	1,475.1	-31.1	-80.9	-21.4	0.00	0.00	0.00
1,520.0	7.08	249.00	1,514.8	-32.8	-85.5	-22.6	0.00	0.00	0.00
1,560.0	7.08	249.00	1,554.5	-34.6	-90.1	-23.8	0.00	0.00	0.00
1,600.0	7.08	249.00	1,594.2	-36.3	-94.7	-25.0	0.00	0.00	0.00
1,640.0	7.08	249.00	1,633.9	-38.1	-99.3	-26.2	0.00	0.00	0.00
1,680.0	7.08	249.00	1,673.6	-39.9	-103.9	-27.4	0.00	0.00	0.00
1,720.0	7.08	249.00	1,713.3	-41.6	-108.5	-28.6	0.00	0.00	0.00
1,760.0	7.08	249.00	1,753.0	-43.4	-113.1	-29.9	0.00	0.00	0.00
1,800.0	7.08	249.00	1,792.7	-45.2	-117.7	-31.1	0.00	0.00	0.00
1,840.0	7.08	249.00	1,832.3	-46.9	-122.3	-32.3	0.00	0.00	0.00
1,880.0	7.08	249.00	1,872.0	-48.7	-126.9	-33.5	0.00	0.00	0.00
1,920.0	7.08	249.00	1,911.7	-50.5	-131.5	-34.7	0.00	0.00	0.00
1,960.0	7.08	249.00	1,951.4	-52.2	-136.1	-35.9	0.00	0.00	0.00

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Well:	Waste Management 2T-441	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-07-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
2,000.0	7.08	249.00	1,991.1	-54.0	-140.7	-37.1	0.00	0.00	0.00
2,040.0	7.08	249.00	2,030.8	-55.8	-145.3	-38.4	0.00	0.00	0.00
2,080.0	7.08	249.00	2,070.5	-57.5	-149.9	-39.6	0.00	0.00	0.00
2,120.0	7.08	249.00	2,110.2	-59.3	-154.5	-40.8	0.00	0.00	0.00
2,160.0	7.08	249.00	2,149.9	-61.1	-159.1	-42.0	0.00	0.00	0.00
2,200.0	7.08	249.00	2,189.6	-62.8	-163.7	-43.2	0.00	0.00	0.00
2,240.0	7.08	249.00	2,229.3	-64.6	-168.3	-44.4	0.00	0.00	0.00
2,280.0	7.08	249.00	2,269.0	-66.4	-172.9	-45.6	0.00	0.00	0.00
2,320.0	7.08	249.00	2,308.7	-68.1	-177.5	-46.9	0.00	0.00	0.00
2,360.0	7.08	249.00	2,348.4	-69.9	-182.1	-48.1	0.00	0.00	0.00
2,400.0	7.08	249.00	2,388.1	-71.7	-186.7	-49.3	0.00	0.00	0.00
2,440.0	7.08	249.00	2,427.8	-73.4	-191.3	-50.5	0.00	0.00	0.00
2,480.0	7.08	249.00	2,467.5	-75.2	-196.0	-51.7	0.00	0.00	0.00
2,520.0	7.08	249.00	2,507.2	-77.0	-200.6	-52.9	0.00	0.00	0.00
2,560.0	7.08	249.00	2,546.9	-78.7	-205.2	-54.1	0.00	0.00	0.00
2,600.0	7.08	249.00	2,586.6	-80.5	-209.8	-55.4	0.00	0.00	0.00
2,640.0	7.08	249.00	2,626.3	-82.3	-214.4	-56.6	0.00	0.00	0.00
2,680.0	7.08	249.00	2,665.9	-84.0	-219.0	-57.8	0.00	0.00	0.00
2,720.0	7.08	249.00	2,705.6	-85.8	-223.6	-59.0	0.00	0.00	0.00
2,760.0	7.08	249.00	2,745.3	-87.6	-228.2	-60.2	0.00	0.00	0.00
2,800.0	7.08	249.00	2,785.0	-89.3	-232.8	-61.4	0.00	0.00	0.00
2,840.0	7.08	249.00	2,824.7	-91.1	-237.4	-62.7	0.00	0.00	0.00
2,880.0	7.08	249.00	2,864.4	-92.9	-242.0	-63.9	0.00	0.00	0.00
2,920.0	7.08	249.00	2,904.1	-94.6	-246.6	-65.1	0.00	0.00	0.00
2,960.0	7.08	249.00	2,943.8	-96.4	-251.2	-66.3	0.00	0.00	0.00
3,000.0	7.08	249.00	2,983.5	-98.2	-255.8	-67.5	0.00	0.00	0.00
3,040.0	7.08	249.00	3,023.2	-99.9	-260.4	-68.7	0.00	0.00	0.00
3,080.0	7.08	249.00	3,062.9	-101.7	-265.0	-69.9	0.00	0.00	0.00
3,120.0	7.08	249.00	3,102.6	-103.5	-269.6	-71.2	0.00	0.00	0.00
3,160.0	7.08	249.00	3,142.3	-105.2	-274.2	-72.4	0.00	0.00	0.00
3,200.0	7.08	249.00	3,182.0	-107.0	-278.8	-73.6	0.00	0.00	0.00
3,240.0	7.08	249.00	3,221.7	-108.8	-283.4	-74.8	0.00	0.00	0.00
3,280.0	7.08	249.00	3,261.4	-110.5	-288.0	-76.0	0.00	0.00	0.00
3,320.0	7.08	249.00	3,301.1	-112.3	-292.6	-77.2	0.00	0.00	0.00
3,360.0	7.08	249.00	3,340.8	-114.1	-297.2	-78.4	0.00	0.00	0.00
3,400.0	7.08	249.00	3,380.5	-115.8	-301.8	-79.7	0.00	0.00	0.00
3,440.0	7.08	249.00	3,420.2	-117.6	-306.4	-80.9	0.00	0.00	0.00
3,480.0	7.08	249.00	3,459.8	-119.4	-311.0	-82.1	0.00	0.00	0.00
3,520.0	7.08	249.00	3,499.5	-121.1	-315.6	-83.3	0.00	0.00	0.00
3,560.0	7.08	249.00	3,539.2	-122.9	-320.2	-84.5	0.00	0.00	0.00
3,600.0	7.08	249.00	3,578.9	-124.7	-324.8	-85.7	0.00	0.00	0.00
3,640.0	7.08	249.00	3,618.6	-126.4	-329.4	-86.9	0.00	0.00	0.00
3,680.0	7.08	249.00	3,658.3	-128.2	-334.0	-88.2	0.00	0.00	0.00
3,720.0	7.08	249.00	3,698.0	-130.0	-338.6	-89.4	0.00	0.00	0.00
3,760.0	7.08	249.00	3,737.7	-131.7	-343.2	-90.6	0.00	0.00	0.00
3,800.0	7.08	249.00	3,777.4	-133.5	-347.8	-91.8	0.00	0.00	0.00
3,840.0	7.08	249.00	3,817.1	-135.3	-352.4	-93.0	0.00	0.00	0.00
3,880.0	7.08	249.00	3,856.8	-137.0	-357.0	-94.2	0.00	0.00	0.00
3,920.0	7.08	249.00	3,896.5	-138.8	-361.6	-95.4	0.00	0.00	0.00
3,960.0	7.08	249.00	3,936.2	-140.6	-366.2	-96.7	0.00	0.00	0.00
4,000.0	7.08	249.00	3,975.9	-142.3	-370.8	-97.9	0.00	0.00	0.00
4,040.0	7.08	249.00	4,015.6	-144.1	-375.4	-99.1	0.00	0.00	0.00

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Project:	SEC.2-T2N-R64W	MD Reference:	WELL @ 4910.0ft (RKB - 15')
Site:	Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W	North Reference:	True
Well:	Waste Management 2T-441	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-07-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,080.0	7.08	249.00	4,055.3	-145.9	-380.0	-100.3	0.00	0.00	0.00
4,120.0	7.08	249.00	4,095.0	-147.6	-384.6	-101.5	0.00	0.00	0.00
4,160.0	7.08	249.00	4,134.7	-149.4	-389.2	-102.7	0.00	0.00	0.00
4,200.0	7.08	249.00	4,174.4	-151.1	-393.8	-103.9	0.00	0.00	0.00
4,240.0	7.08	249.00	4,214.1	-152.9	-398.4	-105.2	0.00	0.00	0.00
4,280.0	7.08	249.00	4,253.8	-154.7	-403.0	-106.4	0.00	0.00	0.00
4,320.0	7.08	249.00	4,293.4	-156.4	-407.6	-107.6	0.00	0.00	0.00
4,360.0	7.08	249.00	4,333.1	-158.2	-412.2	-108.8	0.00	0.00	0.00
4,400.0	7.08	249.00	4,372.8	-160.0	-416.8	-110.0	0.00	0.00	0.00
4,440.0	7.08	249.00	4,412.5	-161.7	-421.4	-111.2	0.00	0.00	0.00
4,480.0	7.08	249.00	4,452.2	-163.5	-426.0	-112.5	0.00	0.00	0.00
4,520.0	7.08	249.00	4,491.9	-165.3	-430.6	-113.7	0.00	0.00	0.00
4,560.0	7.08	249.00	4,531.6	-167.0	-435.2	-114.9	0.00	0.00	0.00
4,600.0	7.08	249.00	4,571.3	-168.8	-439.8	-116.1	0.00	0.00	0.00
4,640.0	7.08	249.00	4,611.0	-170.6	-444.4	-117.3	0.00	0.00	0.00
4,676.3	7.08	249.00	4,647.0	-172.2	-448.6	-118.4	0.00	0.00	0.00
4,680.0	7.00	249.00	4,650.7	-172.3	-449.0	-118.5	2.00	-2.00	0.00
4,720.0	6.20	249.00	4,690.4	-174.0	-453.3	-119.7	2.00	-2.00	0.00
4,760.0	5.40	249.00	4,730.2	-175.4	-457.1	-120.7	2.00	-2.00	0.00
4,800.0	4.60	249.00	4,770.1	-176.7	-460.4	-121.5	2.00	-2.00	0.00
4,840.0	3.80	249.00	4,810.0	-177.7	-463.1	-122.2	2.00	-2.00	0.00
4,880.0	3.00	249.00	4,849.9	-178.6	-465.3	-122.8	2.00	-2.00	0.00
4,920.0	2.20	249.00	4,889.9	-179.2	-467.0	-123.3	2.00	-2.00	0.00
4,960.0	1.40	249.00	4,929.8	-179.7	-468.2	-123.6	2.00	-2.00	0.00
5,000.0	0.60	249.00	4,969.8	-179.9	-468.9	-123.8	2.00	-2.00	0.00
5,030.2	0.00	0.00	5,000.0	-180.0	-469.0	-123.8	2.00	-2.00	0.00
5,040.0	0.00	0.00	5,009.8	-180.0	-469.0	-123.8	0.00	0.00	0.00
5,080.0	0.00	0.00	5,049.8	-180.0	-469.0	-123.8	0.00	0.00	0.00
5,120.0	0.00	0.00	5,089.8	-180.0	-469.0	-123.8	0.00	0.00	0.00
5,160.0	0.00	0.00	5,129.8	-180.0	-469.0	-123.8	0.00	0.00	0.00
5,200.0	0.00	0.00	5,169.8	-180.0	-469.0	-123.8	0.00	0.00	0.00
5,240.0	0.00	0.00	5,209.8	-180.0	-469.0	-123.8	0.00	0.00	0.00
5,280.0	0.00	0.00	5,249.8	-180.0	-469.0	-123.8	0.00	0.00	0.00
5,320.0	0.00	0.00	5,289.8	-180.0	-469.0	-123.8	0.00	0.00	0.00
5,360.0	0.00	0.00	5,329.8	-180.0	-469.0	-123.8	0.00	0.00	0.00
5,400.0	0.00	0.00	5,369.8	-180.0	-469.0	-123.8	0.00	0.00	0.00
5,440.0	0.00	0.00	5,409.8	-180.0	-469.0	-123.8	0.00	0.00	0.00
5,480.0	0.00	0.00	5,449.8	-180.0	-469.0	-123.8	0.00	0.00	0.00
5,520.0	0.00	0.00	5,489.8	-180.0	-469.0	-123.8	0.00	0.00	0.00
5,560.0	0.00	0.00	5,529.8	-180.0	-469.0	-123.8	0.00	0.00	0.00
5,600.0	0.00	0.00	5,569.8	-180.0	-469.0	-123.8	0.00	0.00	0.00
5,640.0	0.00	0.00	5,609.8	-180.0	-469.0	-123.8	0.00	0.00	0.00
5,680.0	0.00	0.00	5,649.8	-180.0	-469.0	-123.8	0.00	0.00	0.00
5,720.0	0.00	0.00	5,689.8	-180.0	-469.0	-123.8	0.00	0.00	0.00
5,760.0	0.00	0.00	5,729.8	-180.0	-469.0	-123.8	0.00	0.00	0.00
5,800.0	0.00	0.00	5,769.8	-180.0	-469.0	-123.8	0.00	0.00	0.00
5,840.0	0.00	0.00	5,809.8	-180.0	-469.0	-123.8	0.00	0.00	0.00
5,880.0	0.00	0.00	5,849.8	-180.0	-469.0	-123.8	0.00	0.00	0.00
5,920.0	0.00	0.00	5,889.8	-180.0	-469.0	-123.8	0.00	0.00	0.00
5,960.0	0.00	0.00	5,929.8	-180.0	-469.0	-123.8	0.00	0.00	0.00
6,000.0	0.00	0.00	5,969.8	-180.0	-469.0	-123.8	0.00	0.00	0.00
6,040.0	0.00	0.00	6,009.8	-180.0	-469.0	-123.8	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Waste Management 2T-441
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4910.0ft (RKB - 15')
Project:	SEC.2-T2N-R64W	MD Reference:	WELL @ 4910.0ft (RKB - 15')
Site:	Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W	North Reference:	True
Well:	Waste Management 2T-441	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-07-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,041.5	0.00	0.00	6,011.3	-180.0	-469.0	-123.8	0.00	0.00	0.00
KOP #2									
6,080.0	2.88	359.18	6,049.8	-179.0	-469.0	-122.8	7.49	7.49	0.00
6,120.0	5.88	359.18	6,089.7	-176.0	-469.1	-119.8	7.50	7.50	0.00
6,160.0	8.88	359.18	6,129.4	-170.8	-469.1	-114.7	7.50	7.50	0.00
6,200.0	11.88	359.18	6,168.7	-163.6	-469.2	-107.5	7.50	7.50	0.00
6,240.0	14.88	359.18	6,207.6	-154.4	-469.4	-98.3	7.50	7.50	0.00
6,280.0	17.88	359.18	6,246.0	-143.1	-469.5	-87.1	7.50	7.50	0.00
6,320.0	20.88	359.18	6,283.7	-129.8	-469.7	-73.9	7.50	7.50	0.00
6,360.0	23.88	359.18	6,320.7	-114.6	-469.9	-58.7	7.50	7.50	0.00
6,400.0	26.88	359.18	6,356.8	-97.4	-470.2	-41.7	7.50	7.50	0.00
6,440.0	29.88	359.18	6,392.0	-78.4	-470.5	-22.8	7.50	7.50	0.00
6,480.0	32.88	359.18	6,426.2	-57.6	-470.7	-2.0	7.50	7.50	0.00
6,520.0	35.88	359.18	6,459.2	-35.0	-471.1	20.4	7.50	7.50	0.00
6,560.0	38.88	359.18	6,490.9	-10.7	-471.4	44.6	7.50	7.50	0.00
6,600.0	41.88	359.18	6,521.4	15.2	-471.8	70.4	7.50	7.50	0.00
6,640.0	44.88	359.18	6,550.5	42.6	-472.2	97.7	7.50	7.50	0.00
6,680.0	47.88	359.18	6,578.1	71.6	-472.6	126.5	7.50	7.50	0.00
6,720.0	50.88	359.18	6,604.1	102.0	-473.0	156.7	7.50	7.50	0.00
6,760.0	53.88	359.18	6,628.5	133.6	-473.5	188.2	7.50	7.50	0.00
6,800.0	56.88	359.18	6,651.2	166.5	-474.0	220.9	7.50	7.50	0.00
6,840.0	59.88	359.18	6,672.2	200.6	-474.4	254.8	7.50	7.50	0.00
6,880.0	62.88	359.18	6,691.4	235.7	-474.9	289.7	7.50	7.50	0.00
6,920.0	65.88	359.18	6,708.6	271.8	-475.5	325.6	7.50	7.50	0.00
6,960.0	68.88	359.18	6,724.0	308.7	-476.0	362.3	7.50	7.50	0.00
7,000.0	71.88	359.18	6,737.4	346.4	-476.5	399.8	7.50	7.50	0.00
7,040.0	74.88	359.18	6,748.9	384.7	-477.1	437.9	7.50	7.50	0.00
7,080.0	77.88	359.18	6,758.3	423.5	-477.6	476.6	7.50	7.50	0.00
7,120.0	80.88	359.18	6,765.7	462.8	-478.2	515.7	7.50	7.50	0.00
7,160.0	83.88	359.18	6,771.0	502.5	-478.8	555.1	7.50	7.50	0.00
7,200.0	86.88	359.18	6,774.2	542.3	-479.3	594.8	7.50	7.50	0.00
7,240.0	89.88	359.18	6,775.3	582.3	-479.9	634.6	7.50	7.50	0.00
7,248.7	90.54	359.18	6,775.3	591.0	-480.0	643.2	7.50	7.50	0.00
End of Build - 7"									
7,280.0	90.54	359.18	6,775.0	622.3	-480.5	674.3	0.01	0.01	0.00
7,320.0	90.54	359.18	6,774.6	662.3	-481.0	714.1	0.00	0.00	0.00
7,360.0	90.54	359.18	6,774.2	702.3	-481.6	753.9	0.00	0.00	0.00
7,400.0	90.54	359.18	6,773.9	742.3	-482.2	793.7	0.00	0.00	0.00
7,440.0	90.54	359.18	6,773.5	782.3	-482.8	833.5	0.00	0.00	0.00
7,480.0	90.54	359.18	6,773.1	822.3	-483.3	873.3	0.00	0.00	0.00
7,520.0	90.54	359.18	6,772.7	862.3	-483.9	913.1	0.00	0.00	0.00
7,560.0	90.54	359.18	6,772.3	902.3	-484.5	952.8	0.00	0.00	0.00
7,600.0	90.54	359.18	6,772.0	942.3	-485.0	992.6	0.00	0.00	0.00
7,640.0	90.54	359.18	6,771.6	982.3	-485.6	1,032.4	0.00	0.00	0.00
7,680.0	90.54	359.18	6,771.2	1,022.3	-486.2	1,072.2	0.00	0.00	0.00
7,720.0	90.54	359.18	6,770.8	1,062.3	-486.8	1,112.0	0.00	0.00	0.00
7,760.0	90.54	359.18	6,770.5	1,102.2	-487.3	1,151.8	0.00	0.00	0.00
7,800.0	90.54	359.18	6,770.1	1,142.2	-487.9	1,191.6	0.00	0.00	0.00
7,840.0	90.54	359.18	6,769.7	1,182.2	-488.5	1,231.3	0.00	0.00	0.00
7,880.0	90.54	359.18	6,769.3	1,222.2	-489.0	1,271.1	0.00	0.00	0.00
7,920.0	90.54	359.18	6,769.0	1,262.2	-489.6	1,310.9	0.00	0.00	0.00
7,960.0	90.54	359.18	6,768.6	1,302.2	-490.2	1,350.7	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Waste Management 2T-441
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4910.0ft (RKB - 15')
Project:	SEC.2-T2N-R64W	MD Reference:	WELL @ 4910.0ft (RKB - 15')
Site:	Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W	North Reference:	True
Well:	Waste Management 2T-441	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-07-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,000.0	90.54	359.18	6,768.2	1,342.2	-490.8	1,390.5	0.00	0.00	0.00
8,040.0	90.54	359.18	6,767.8	1,382.2	-491.3	1,430.3	0.00	0.00	0.00
8,080.0	90.54	359.18	6,767.4	1,422.2	-491.9	1,470.1	0.00	0.00	0.00
8,120.0	90.54	359.18	6,767.1	1,462.2	-492.5	1,509.8	0.00	0.00	0.00
8,160.0	90.54	359.18	6,766.7	1,502.2	-493.0	1,549.6	0.00	0.00	0.00
8,200.0	90.54	359.18	6,766.3	1,542.2	-493.6	1,589.4	0.00	0.00	0.00
8,240.0	90.54	359.18	6,765.9	1,582.2	-494.2	1,629.2	0.00	0.00	0.00
8,280.0	90.54	359.18	6,765.6	1,622.2	-494.8	1,669.0	0.00	0.00	0.00
8,320.0	90.54	359.18	6,765.2	1,662.2	-495.3	1,708.8	0.00	0.00	0.00
8,360.0	90.54	359.18	6,764.8	1,702.2	-495.9	1,748.6	0.00	0.00	0.00
8,400.0	90.54	359.18	6,764.4	1,742.2	-496.5	1,788.3	0.00	0.00	0.00
8,440.0	90.54	359.18	6,764.1	1,782.1	-497.0	1,828.1	0.00	0.00	0.00
8,480.0	90.54	359.18	6,763.7	1,822.1	-497.6	1,867.9	0.00	0.00	0.00
8,520.0	90.54	359.18	6,763.3	1,862.1	-498.2	1,907.7	0.00	0.00	0.00
8,560.0	90.54	359.18	6,762.9	1,902.1	-498.8	1,947.5	0.00	0.00	0.00
8,600.0	90.54	359.18	6,762.5	1,942.1	-499.3	1,987.3	0.00	0.00	0.00
8,640.0	90.54	359.18	6,762.2	1,982.1	-499.9	2,027.0	0.00	0.00	0.00
8,680.0	90.54	359.18	6,761.8	2,022.1	-500.5	2,066.8	0.00	0.00	0.00
8,720.0	90.54	359.18	6,761.4	2,062.1	-501.0	2,106.6	0.00	0.00	0.00
8,760.0	90.54	359.18	6,761.0	2,102.1	-501.6	2,146.4	0.00	0.00	0.00
8,800.0	90.54	359.18	6,760.7	2,142.1	-502.2	2,186.2	0.00	0.00	0.00
8,840.0	90.54	359.18	6,760.3	2,182.1	-502.8	2,226.0	0.00	0.00	0.00
8,880.0	90.54	359.18	6,759.9	2,222.1	-503.3	2,265.8	0.00	0.00	0.00
8,920.0	90.54	359.18	6,759.5	2,262.1	-503.9	2,305.5	0.00	0.00	0.00
8,960.0	90.54	359.18	6,759.2	2,302.1	-504.5	2,345.3	0.00	0.00	0.00
9,000.0	90.54	359.18	6,758.8	2,342.1	-505.0	2,385.1	0.00	0.00	0.00
9,040.0	90.54	359.18	6,758.4	2,382.1	-505.6	2,424.9	0.00	0.00	0.00
9,080.0	90.54	359.18	6,758.0	2,422.1	-506.2	2,464.7	0.00	0.00	0.00
9,120.0	90.54	359.18	6,757.6	2,462.0	-506.8	2,504.5	0.00	0.00	0.00
9,160.0	90.54	359.18	6,757.3	2,502.0	-507.3	2,544.3	0.00	0.00	0.00
9,200.0	90.54	359.18	6,756.9	2,542.0	-507.9	2,584.0	0.00	0.00	0.00
9,240.0	90.54	359.18	6,756.5	2,582.0	-508.5	2,623.8	0.00	0.00	0.00
9,280.0	90.54	359.18	6,756.1	2,622.0	-509.0	2,663.6	0.00	0.00	0.00
9,320.0	90.54	359.18	6,755.8	2,662.0	-509.6	2,703.4	0.00	0.00	0.00
9,360.0	90.54	359.18	6,755.4	2,702.0	-510.2	2,743.2	0.00	0.00	0.00
9,400.0	90.54	359.18	6,755.0	2,742.0	-510.8	2,783.0	0.00	0.00	0.00
9,440.0	90.54	359.18	6,754.6	2,782.0	-511.3	2,822.8	0.00	0.00	0.00
9,480.0	90.54	359.18	6,754.3	2,822.0	-511.9	2,862.5	0.00	0.00	0.00
9,520.0	90.54	359.18	6,753.9	2,862.0	-512.5	2,902.3	0.00	0.00	0.00
9,560.0	90.54	359.18	6,753.5	2,902.0	-513.0	2,942.1	0.00	0.00	0.00
9,600.0	90.54	359.18	6,753.1	2,942.0	-513.6	2,981.9	0.00	0.00	0.00
9,640.0	90.54	359.18	6,752.7	2,982.0	-514.2	3,021.7	0.00	0.00	0.00
9,680.0	90.54	359.18	6,752.4	3,022.0	-514.8	3,061.5	0.00	0.00	0.00
9,720.0	90.54	359.18	6,752.0	3,062.0	-515.3	3,101.3	0.00	0.00	0.00
9,760.0	90.54	359.18	6,751.6	3,102.0	-515.9	3,141.0	0.00	0.00	0.00
9,800.0	90.54	359.18	6,751.2	3,141.9	-516.5	3,180.8	0.00	0.00	0.00
9,840.0	90.54	359.18	6,750.9	3,181.9	-517.0	3,220.6	0.00	0.00	0.00
9,880.0	90.54	359.18	6,750.5	3,221.9	-517.6	3,260.4	0.00	0.00	0.00
9,920.0	90.54	359.18	6,750.1	3,261.9	-518.2	3,300.2	0.00	0.00	0.00
9,960.0	90.54	359.18	6,749.7	3,301.9	-518.8	3,340.0	0.00	0.00	0.00
10,000.0	90.54	359.18	6,749.4	3,341.9	-519.3	3,379.8	0.00	0.00	0.00
10,040.0	90.54	359.18	6,749.0	3,381.9	-519.9	3,419.5	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Waste Management 2T-441
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4910.0ft (RKB - 15')
Project:	SEC.2-T2N-R64W	MD Reference:	WELL @ 4910.0ft (RKB - 15')
Site:	Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W	North Reference:	True
Well:	Waste Management 2T-441	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-07-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,080.0	90.54	359.18	6,748.6	3,421.9	-520.5	3,459.3	0.00	0.00	0.00
10,120.0	90.54	359.18	6,748.2	3,461.9	-521.1	3,499.1	0.00	0.00	0.00
10,160.0	90.54	359.18	6,747.8	3,501.9	-521.6	3,538.9	0.00	0.00	0.00
10,200.0	90.54	359.18	6,747.5	3,541.9	-522.2	3,578.7	0.00	0.00	0.00
10,240.0	90.54	359.18	6,747.1	3,581.9	-522.8	3,618.5	0.00	0.00	0.00
10,280.0	90.54	359.18	6,746.7	3,621.9	-523.3	3,658.3	0.00	0.00	0.00
10,320.0	90.54	359.18	6,746.3	3,661.9	-523.9	3,698.0	0.00	0.00	0.00
10,360.0	90.54	359.18	6,746.0	3,701.9	-524.5	3,737.8	0.00	0.00	0.00
10,400.0	90.54	359.18	6,745.6	3,741.9	-525.1	3,777.6	0.00	0.00	0.00
10,440.0	90.54	359.18	6,745.2	3,781.9	-525.6	3,817.4	0.00	0.00	0.00
10,480.0	90.54	359.18	6,744.8	3,821.8	-526.2	3,857.2	0.00	0.00	0.00
10,520.0	90.54	359.18	6,744.5	3,861.8	-526.8	3,897.0	0.00	0.00	0.00
10,560.0	90.54	359.18	6,744.1	3,901.8	-527.3	3,936.8	0.00	0.00	0.00
10,600.0	90.54	359.18	6,743.7	3,941.8	-527.9	3,976.5	0.00	0.00	0.00
10,640.0	90.54	359.18	6,743.3	3,981.8	-528.5	4,016.3	0.00	0.00	0.00
10,680.0	90.54	359.18	6,742.9	4,021.8	-529.1	4,056.1	0.00	0.00	0.00
10,720.0	90.54	359.18	6,742.6	4,061.8	-529.6	4,095.9	0.00	0.00	0.00
10,760.0	90.54	359.18	6,742.2	4,101.8	-530.2	4,135.7	0.00	0.00	0.00
10,800.0	90.54	359.18	6,741.8	4,141.8	-530.8	4,175.5	0.00	0.00	0.00
10,840.0	90.54	359.18	6,741.4	4,181.8	-531.3	4,215.3	0.00	0.00	0.00
10,880.0	90.54	359.18	6,741.1	4,221.8	-531.9	4,255.0	0.00	0.00	0.00
10,920.0	90.54	359.18	6,740.7	4,261.8	-532.5	4,294.8	0.00	0.00	0.00
10,960.0	90.54	359.18	6,740.3	4,301.8	-533.1	4,334.6	0.00	0.00	0.00
11,000.0	90.54	359.18	6,739.9	4,341.8	-533.6	4,374.4	0.00	0.00	0.00
11,040.0	90.54	359.18	6,739.6	4,381.8	-534.2	4,414.2	0.00	0.00	0.00
11,080.0	90.54	359.18	6,739.2	4,421.8	-534.8	4,454.0	0.00	0.00	0.00
11,120.0	90.54	359.18	6,738.8	4,461.8	-535.3	4,493.7	0.00	0.00	0.00
11,160.0	90.54	359.18	6,738.4	4,501.8	-535.9	4,533.5	0.00	0.00	0.00
11,200.0	90.54	359.18	6,738.0	4,541.7	-536.5	4,573.3	0.00	0.00	0.00
11,204.7	90.54	359.18	6,738.0	4,546.4	-536.6	4,578.0	0.00	0.00	0.00
BHL 500'FNL, 1825'FEL									

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,248.7	6,775.3	7"	7	8-3/4

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
600.0	600.0	0.0	0.0	KOP #1
6,041.5	6,011.3	-180.0	-469.0	KOP #2
7,248.7	6,775.3	591.0	-480.0	End of Build



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.2-T2N-R64W

Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W

Waste Management 2T-441

Wellbore #1

Plan #1 (2-07-13)

Anticollision Report

07 February, 2013

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2T-441
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4910.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4910.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2T-441	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 (2-07-13)	Offset TVD Reference:	Offset Datum

Offset Design Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W - Waste Management 2Q-221 - Wellbore #1 - Plan													Offset Site Error:	0.0ft
Survey Program: 0-MWD													Offset Well Error:	0.0ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,000.0	1,991.1	1,992.9	1,977.7	5.1	5.9	24.90	-47.4	-231.7	92.2	83.0	9.16	10.064		
2,100.0	2,090.4	2,092.8	2,076.5	5.5	6.3	25.34	-50.8	-246.5	95.6	85.9	9.69	9.866		
2,200.0	2,189.6	2,192.8	2,175.3	5.8	6.6	25.75	-54.3	-261.3	99.0	88.8	10.22	9.687		
2,300.0	2,288.8	2,292.7	2,274.1	6.1	7.0	26.13	-57.7	-276.1	102.4	91.6	10.75	9.523		
2,400.0	2,388.1	2,392.6	2,372.8	6.4	7.4	26.48	-61.1	-290.9	105.8	94.5	11.29	9.374		
2,500.0	2,487.3	2,492.6	2,471.6	6.7	7.7	26.81	-64.6	-305.7	109.2	97.4	11.82	9.237		
2,600.0	2,586.6	2,592.5	2,570.4	7.1	8.1	27.13	-68.0	-320.5	112.6	100.3	12.36	9.110		
2,700.0	2,685.8	2,692.5	2,669.2	7.4	8.5	27.42	-71.5	-335.3	116.1	103.2	12.91	8.994		
2,800.0	2,785.0	2,792.4	2,767.9	7.7	8.8	27.70	-74.9	-350.2	119.5	106.1	13.45	8.886		
2,900.0	2,884.3	2,892.3	2,866.7	8.0	9.2	27.96	-78.4	-365.0	122.9	108.9	13.99	8.786		
3,000.0	2,983.5	2,992.3	2,965.5	8.4	9.6	28.21	-81.8	-379.8	126.4	111.8	14.54	8.693		
3,100.0	3,082.7	3,092.2	3,064.3	8.7	9.9	28.44	-85.3	-394.6	129.8	114.7	15.08	8.606		
3,200.0	3,182.0	3,192.2	3,163.0	9.0	10.3	28.66	-88.7	-409.4	133.3	117.6	15.63	8.525		
3,300.0	3,281.2	3,292.1	3,261.8	9.3	10.7	28.87	-92.2	-424.2	136.7	120.5	16.18	8.449		
3,400.0	3,380.5	3,392.0	3,360.6	9.7	11.0	29.08	-95.6	-439.0	140.1	123.4	16.73	8.377		
3,500.0	3,479.7	3,492.0	3,459.4	10.0	11.4	29.27	-99.0	-453.8	143.6	126.3	17.28	8.310		
3,600.0	3,578.9	3,591.9	3,558.1	10.3	11.8	29.45	-102.5	-468.7	147.0	129.2	17.83	8.246		
3,700.0	3,678.2	3,691.8	3,656.9	10.6	12.1	29.62	-105.9	-483.5	150.5	132.1	18.38	8.187		
3,800.0	3,777.4	3,791.8	3,755.7	11.0	12.5	29.79	-109.4	-498.3	153.9	135.0	18.93	8.130		
3,900.0	3,876.6	3,891.7	3,854.5	11.3	12.9	29.95	-112.8	-513.1	157.4	137.9	19.49	8.077		
4,000.0	3,975.9	3,991.7	3,953.2	11.6	13.3	30.10	-116.3	-527.9	160.8	140.8	20.04	8.026		
4,100.0	4,075.1	4,091.6	4,052.0	12.0	13.6	30.24	-119.7	-542.7	164.3	143.7	20.59	7.978		
4,200.0	4,174.4	4,191.5	4,150.8	12.3	14.0	30.38	-123.2	-557.5	167.7	146.6	21.15	7.932		
4,300.0	4,273.6	4,291.5	4,249.6	12.6	14.4	30.52	-126.6	-572.3	171.2	149.5	21.70	7.888		
4,400.0	4,372.8	4,391.4	4,348.3	12.9	14.7	30.65	-130.0	-587.2	174.7	152.4	22.26	7.847		
4,500.0	4,472.1	4,491.4	4,447.1	13.3	15.1	30.77	-133.5	-602.0	178.1	155.3	22.81	7.807		
4,600.0	4,571.3	4,591.3	4,545.9	13.6	15.5	30.89	-136.9	-616.8	181.6	158.2	23.37	7.770		
4,700.0	4,670.6	4,691.2	4,644.7	13.9	15.8	31.00	-140.4	-631.6	185.1	161.2	23.91	7.741		
4,800.0	4,770.1	4,791.1	4,743.3	14.1	16.2	30.77	-143.8	-646.4	190.8	166.4	24.33	7.840		
4,900.0	4,869.9	4,890.7	4,841.8	14.3	16.6	30.07	-147.2	-661.1	199.5	174.8	24.67	8.086		
5,000.0	4,969.8	4,989.9	4,939.8	14.5	16.9	29.01	-150.7	-675.8	211.2	186.3	24.92	8.475		
5,100.0	5,069.8	5,088.7	5,037.5	14.6	17.3	-83.32	-154.1	-690.5	225.3	200.1	25.28	8.914		
5,200.0	5,169.8	5,187.6	5,135.2	14.8	17.7	-84.55	-157.5	-705.1	239.7	214.2	25.57	9.377		
5,300.0	5,269.8	5,286.4	5,232.9	14.9	18.0	-85.64	-160.9	-719.8	254.2	228.3	25.88	9.825		
5,400.0	5,369.8	5,385.2	5,330.6	15.1	18.4	-86.61	-164.3	-734.4	268.8	242.6	26.20	10.258		
5,500.0	5,469.8	5,484.1	5,428.3	15.2	18.8	-87.49	-167.7	-749.1	283.4	256.9	26.54	10.678		
5,600.0	5,569.8	5,582.9	5,525.9	15.4	19.1	-88.27	-171.1	-763.7	298.1	271.2	26.90	11.084		
5,700.0	5,669.8	5,688.9	5,630.8	15.5	19.5	-89.00	-174.6	-778.7	312.2	284.9	27.25	11.455		
5,800.0	5,769.8	5,800.3	5,741.5	15.7	19.7	-89.53	-177.3	-790.6	322.8	295.2	27.59	11.700		
5,900.0	5,869.8	5,912.5	5,853.4	15.9	20.0	-89.85	-179.1	-798.3	329.7	301.8	27.94	11.800		
6,000.0	5,969.8	6,025.1	5,966.0	16.0	20.1	-89.99	-180.0	-801.8	332.8	304.5	28.30	11.758		
6,100.0	6,069.8	6,128.9	6,069.8	16.2	20.3	-89.57	-180.0	-802.0	332.9	304.4	28.55	11.663		
6,125.8	6,095.5	6,154.6	6,095.5	16.2	20.3	-89.98	-180.0	-802.0	332.9	304.3	28.59	11.645		
6,200.0	6,168.7	6,228.5	6,169.3	16.3	20.4	-91.72	-178.5	-802.0	333.1	304.4	28.66	11.623		
6,300.0	6,264.9	6,329.7	6,269.6	16.4	20.5	-94.16	-165.5	-802.2	333.8	305.1	28.71	11.629		
6,400.0	6,356.8	6,433.0	6,369.3	16.5	20.6	-96.53	-138.6	-802.6	335.2	306.4	28.77	11.649		
6,500.0	6,442.8	6,538.3	6,466.2	16.5	20.6	-98.80	-97.7	-803.2	337.0	308.1	28.90	11.663		
6,600.0	6,521.4	6,645.6	6,558.3	16.6	20.7	-100.91	-42.7	-804.0	339.2	310.1	29.13	11.645		
6,700.0	6,591.3	6,755.1	6,643.3	16.7	20.7	-102.82	26.1	-805.0	341.6	312.1	29.52	11.574		
6,800.0	6,651.2	6,866.4	6,718.7	16.9	20.8	-104.48	107.8	-806.2	344.1	314.0	30.10	11.431		
6,900.0	6,700.2	6,979.5	6,782.4	17.2	21.0	-105.88	201.1	-807.6	346.4	315.5	30.94	11.197		

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

Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W - Waste Management 2Q-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	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre		Between	Between	Minimum	Separation	Warning	
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	Toolface (°)	+N/-S (ft)	+E/-W (ft)	Centres (ft)	Ellipses (ft)	Separation (ft)	Factor		
7,000.0	6,737.4	7,094.0	6,832.2	17.7	21.3	-106.97	304.1	-809.1	348.4	316.3	32.04	10.872		
7,100.0	6,762.2	7,209.7	6,866.2	18.5	21.9	-107.74	414.6	-810.8	349.9	316.4	33.45	10.459		
7,200.0	6,774.2	7,326.1	6,883.3	19.5	22.7	-108.17	529.7	-812.5	350.8	315.6	35.16	9.976		
7,300.0	6,774.8	7,434.9	6,884.8	20.7	23.6	-108.26	638.4	-814.1	351.0	313.7	37.29	9.413		
7,400.0	6,773.9	7,534.9	6,883.9	21.9	24.6	-108.27	738.3	-815.5	351.1	311.3	39.73	8.836		
7,500.0	6,772.9	7,634.9	6,883.0	23.3	25.8	-108.27	838.3	-817.0	351.1	308.8	42.36	8.290		
7,600.0	6,772.0	7,734.9	6,882.1	24.7	27.1	-108.28	938.3	-818.5	351.2	306.1	45.13	7.782		
7,700.0	6,771.0	7,834.9	6,881.2	26.2	28.4	-108.28	1,038.3	-820.0	351.3	303.2	48.02	7.315		
7,800.0	6,770.1	7,934.9	6,880.3	27.8	29.8	-108.29	1,138.3	-821.5	351.3	300.3	51.02	6.887		
7,900.0	6,769.1	8,034.9	6,879.5	29.4	31.3	-108.30	1,238.3	-822.9	351.4	297.3	54.10	6.496		
8,000.0	6,768.2	8,134.9	6,878.6	31.0	32.8	-108.30	1,338.3	-824.4	351.5	294.2	57.25	6.139		
8,100.0	6,767.3	8,234.9	6,877.7	32.7	34.4	-108.31	1,438.2	-825.9	351.5	291.1	60.46	5.814		
8,200.0	6,766.3	8,334.9	6,876.8	34.4	36.0	-108.31	1,538.2	-827.4	351.6	287.9	63.72	5.518		
8,300.0	6,765.4	8,434.9	6,875.9	36.1	37.7	-108.32	1,638.2	-828.9	351.7	284.6	67.02	5.247		
8,400.0	6,764.4	8,534.9	6,875.0	37.8	39.3	-108.32	1,738.2	-830.3	351.7	281.4	70.36	4.999		
8,500.0	6,763.5	8,634.9	6,874.1	39.5	41.0	-108.33	1,838.2	-831.8	351.8	278.0	73.74	4.771		
8,600.0	6,762.5	8,734.9	6,873.2	41.3	42.7	-108.33	1,938.2	-833.3	351.9	274.7	77.14	4.561		
8,700.0	6,761.6	8,834.9	6,872.3	43.1	44.4	-108.34	2,038.2	-834.8	351.9	271.4	80.56	4.368		
8,800.0	6,760.7	8,934.9	6,871.4	44.9	46.2	-108.34	2,138.1	-836.3	352.0	268.0	84.01	4.190		
8,900.0	6,759.7	9,034.9	6,870.5	46.7	47.9	-108.35	2,238.1	-837.7	352.0	264.6	87.48	4.024		
9,000.0	6,758.8	9,134.9	6,869.7	48.5	49.7	-108.36	2,338.1	-839.2	352.1	261.2	90.96	3.871		
9,100.0	6,757.8	9,234.9	6,868.8	50.3	51.5	-108.36	2,438.1	-840.7	352.2	257.7	94.46	3.728		
9,200.0	6,756.9	9,334.9	6,867.9	52.1	53.2	-108.37	2,538.1	-842.2	352.2	254.3	97.97	3.596		
9,300.0	6,756.0	9,434.9	6,867.0	54.0	55.0	-108.37	2,638.1	-843.7	352.3	250.8	101.49	3.471		
9,400.0	6,755.0	9,534.9	6,866.1	55.8	56.8	-108.38	2,738.0	-845.1	352.4	247.3	105.02	3.355		
9,500.0	6,754.1	9,634.9	6,865.2	57.6	58.7	-108.38	2,838.0	-846.6	352.4	243.9	108.56	3.246		
9,600.0	6,753.1	9,734.9	6,864.3	59.5	60.5	-108.39	2,938.0	-848.1	352.5	240.4	112.11	3.144		
9,700.0	6,752.2	9,834.9	6,863.4	61.3	62.3	-108.39	3,038.0	-849.6	352.6	236.9	115.67	3.048		
9,800.0	6,751.2	9,934.9	6,862.5	63.2	64.1	-108.40	3,138.0	-851.1	352.6	233.4	119.23	2.957		
9,900.0	6,750.3	10,034.9	6,861.6	65.1	66.0	-108.40	3,238.0	-852.5	352.7	229.9	122.81	2.872		
10,000.0	6,749.4	10,134.9	6,860.8	66.9	67.8	-108.41	3,338.0	-854.0	352.8	226.4	126.38	2.791		
10,100.0	6,748.4	10,234.9	6,859.9	68.8	69.6	-108.42	3,437.9	-855.5	352.8	222.9	129.97	2.715		
10,200.0	6,747.5	10,334.9	6,859.0	70.7	71.5	-108.42	3,537.9	-857.0	352.9	219.3	133.55	2.642		
10,300.0	6,746.5	10,434.9	6,858.1	72.5	73.3	-108.43	3,637.9	-858.5	353.0	215.8	137.15	2.574		
10,400.0	6,745.6	10,534.9	6,857.2	74.4	75.2	-108.43	3,737.9	-859.9	353.0	212.3	140.74	2.508		
10,500.0	6,744.6	10,634.9	6,856.3	76.3	77.1	-108.44	3,837.9	-861.4	353.1	208.7	144.34	2.446		
10,600.0	6,743.7	10,734.9	6,855.4	78.2	78.9	-108.44	3,937.9	-862.9	353.1	205.2	147.95	2.387		
10,700.0	6,742.8	10,834.9	6,854.5	80.1	80.8	-108.45	4,037.9	-864.4	353.2	201.7	151.55	2.331		
10,800.0	6,741.8	10,934.9	6,853.6	81.9	82.7	-108.45	4,137.8	-865.9	353.3	198.1	155.16	2.277		
10,900.0	6,740.9	11,034.9	6,852.7	83.8	84.5	-108.46	4,237.8	-867.3	353.3	194.6	158.77	2.225		
11,000.0	6,739.9	11,134.9	6,851.9	85.7	86.4	-108.46	4,337.8	-868.8	353.4	191.0	162.39	2.176		
11,100.0	6,739.0	11,234.9	6,851.0	87.6	88.3	-108.47	4,437.8	-870.3	353.5	187.5	166.01	2.129		
11,200.0	6,738.0	11,334.9	6,850.1	89.5	90.2	-108.48	4,537.8	-871.8	353.5	183.9	169.63	2.084		
11,204.7	6,738.0	11,339.6	6,850.0	89.6	90.2	-108.48	4,542.5	-871.8	353.5	183.7	169.80	2.082 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2T-441
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4910.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4910.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2T-441	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 (2-07-13)	Offset TVD Reference:	Offset Datum

Offset Design		Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W - Waste Management 2Q-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 (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
0.0	0.0	0.0	0.0	0.0	0.0	-90.00	0.0	-58.7	58.7							
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	0.0	-58.7	58.7	58.5	0.22	261.143				
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-58.7	58.7	58.0	0.67	87.048	CC, ES			
300.0	300.0	298.0	298.0	0.6	0.5	-90.27	-0.3	-60.3	60.4	59.3	1.11	54.507				
400.0	400.0	395.7	395.6	0.8	0.8	-90.97	-1.1	-65.3	65.4	63.9	1.55	42.274				
500.0	500.0	493.0	492.5	1.0	1.0	-91.92	-2.5	-73.5	73.9	71.9	2.01	36.739				
600.0	600.0	589.7	588.5	1.2	1.3	-92.94	-4.4	-84.8	85.7	83.2	2.50	34.246				
700.0	700.0	685.7	683.3	1.4	1.6	17.31	-6.8	-99.2	99.2	96.3	2.89	34.347				
800.0	799.8	781.2	777.2	1.6	2.0	17.07	-9.7	-116.7	112.7	109.3	3.31	33.991				
900.0	899.5	879.4	873.3	1.9	2.4	17.23	-13.0	-136.9	125.2	121.5	3.76	33.300				
1,000.0	998.7	978.9	970.6	2.1	2.8	17.78	-16.5	-157.5	135.0	130.7	4.23	31.921				
1,100.0	1,098.0	1,078.5	1,067.9	2.4	3.3	18.35	-19.9	-178.1	144.2	139.5	4.71	30.592				
1,200.0	1,197.2	1,178.1	1,165.3	2.7	3.7	18.86	-23.4	-198.8	153.5	148.3	5.21	29.457				
1,300.0	1,296.5	1,277.6	1,262.6	3.0	4.2	19.30	-26.8	-219.4	162.8	157.1	5.71	28.493				
1,400.0	1,395.7	1,377.2	1,359.9	3.3	4.6	19.70	-30.3	-240.0	172.1	165.9	6.23	27.646				
1,500.0	1,494.9	1,476.7	1,457.3	3.6	5.1	20.05	-33.7	-260.7	181.4	174.7	6.74	26.911				
1,600.0	1,594.2	1,576.3	1,554.6	3.9	5.6	20.38	-37.1	-281.3	190.7	183.5	7.26	26.267				
1,700.0	1,693.4	1,675.9	1,651.9	4.2	6.0	20.67	-40.6	-301.9	200.0	192.3	7.78	25.699				
1,800.0	1,792.7	1,775.4	1,749.3	4.5	6.5	20.93	-44.0	-322.5	209.4	201.1	8.31	25.193				
1,900.0	1,891.9	1,875.0	1,846.6	4.8	6.9	21.18	-47.5	-343.2	218.7	209.9	8.84	24.742				
2,000.0	1,991.1	1,974.5	1,944.0	5.1	7.4	21.40	-50.9	-363.8	228.0	218.7	9.37	24.336				
2,100.0	2,090.4	2,074.1	2,041.3	5.5	7.9	21.60	-54.3	-384.4	237.4	227.5	9.90	23.969				
2,200.0	2,189.6	2,173.7	2,138.6	5.8	8.3	21.79	-57.8	-405.1	246.7	236.3	10.44	23.637				
2,300.0	2,288.8	2,273.2	2,236.0	6.1	8.8	21.97	-61.2	-425.7	256.0	245.1	10.97	23.333				
2,400.0	2,388.1	2,372.8	2,333.3	6.4	9.3	22.13	-64.7	-446.3	265.4	253.9	11.51	23.056				
2,500.0	2,487.3	2,472.3	2,430.7	6.7	9.7	22.29	-68.1	-466.9	274.7	262.7	12.05	22.802				
2,600.0	2,586.6	2,571.9	2,528.0	7.1	10.2	22.43	-71.5	-487.6	284.1	271.5	12.59	22.567				
2,700.0	2,685.8	2,671.5	2,625.3	7.4	10.7	22.56	-75.0	-508.2	293.4	280.3	13.13	22.351				
2,800.0	2,785.0	2,771.0	2,722.7	7.7	11.1	22.69	-78.4	-528.8	302.8	289.1	13.67	22.150				
2,900.0	2,884.3	2,870.6	2,820.0	8.0	11.6	22.80	-81.9	-549.5	312.1	297.9	14.21	21.964				
3,000.0	2,983.5	2,970.1	2,917.4	8.4	12.0	22.92	-85.3	-570.1	321.5	306.7	14.75	21.790				
3,100.0	3,082.7	3,069.7	3,014.7	8.7	12.5	23.02	-88.8	-590.7	330.8	315.5	15.30	21.628				
3,200.0	3,182.0	3,169.3	3,112.0	9.0	13.0	23.12	-92.2	-611.3	340.2	324.3	15.84	21.476				
3,300.0	3,281.2	3,268.8	3,209.4	9.3	13.4	23.21	-95.6	-632.0	349.5	333.1	16.38	21.334				
3,400.0	3,380.5	3,368.4	3,306.7	9.7	13.9	23.30	-99.1	-652.6	358.9	341.9	16.93	21.200				
3,500.0	3,479.7	3,467.9	3,404.0	10.0	14.4	23.39	-102.5	-673.2	368.2	350.8	17.47	21.075				
3,600.0	3,578.9	3,567.5	3,501.4	10.3	14.8	23.47	-106.0	-693.9	377.6	359.6	18.02	20.956				
3,700.0	3,678.2	3,667.1	3,598.7	10.6	15.3	23.54	-109.4	-714.5	386.9	368.4	18.56	20.844				
3,800.0	3,777.4	3,766.6	3,696.1	11.0	15.8	23.61	-112.8	-735.1	396.3	377.2	19.11	20.738				
3,900.0	3,876.6	3,866.2	3,793.4	11.3	16.2	23.68	-116.3	-755.7	405.7	386.0	19.66	20.638				
4,000.0	3,975.9	3,965.7	3,890.7	11.6	16.7	23.75	-119.7	-776.4	415.0	394.8	20.20	20.543				
4,100.0	4,075.1	4,065.3	3,988.1	12.0	17.2	23.81	-123.2	-797.0	424.4	403.6	20.75	20.452				
4,200.0	4,174.4	4,164.9	4,085.4	12.3	17.6	23.87	-126.6	-817.6	433.7	412.4	21.30	20.366				
4,300.0	4,273.6	4,264.4	4,182.8	12.6	18.1	23.93	-130.1	-838.3	443.1	421.2	21.84	20.284				
4,400.0	4,372.8	4,364.0	4,280.1	12.9	18.6	23.99	-133.5	-858.9	452.4	430.1	22.39	20.206				
4,500.0	4,472.1	4,463.5	4,377.4	13.3	19.0	24.04	-136.9	-879.5	461.8	438.9	22.94	20.132				
4,600.0	4,571.3	4,563.1	4,474.8	13.6	19.5	24.09	-140.4	-900.1	471.2	447.7	23.49	20.060				
4,700.0	4,670.6	4,662.7	4,572.1	13.9	20.0	24.15	-143.8	-920.8	480.6	456.6	24.02	20.006				
4,800.0	4,770.1	4,762.0	4,669.2	14.1	20.4	24.17	-147.2	-941.3	492.3	467.9	24.46	20.129				
4,900.0	4,869.9	4,860.8	4,765.8	14.3	20.9	24.06	-150.7	-961.8	507.2	482.3	24.84	20.415				
5,000.0	4,969.8	4,959.1	4,862.0	14.5	21.4	23.83	-154.1	-982.2	525.2	500.0	25.18	20.859				

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

Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W - Waste Management 2Q-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)			
5,100.0	5,069.8	5,056.9	4,957.6	14.6	21.8	-87.58	-157.4	-1,002.5	545.6	519.9	25.66	21.264		
5,200.0	5,169.8	5,154.7	5,053.2	14.8	22.3	-88.02	-160.8	-1,022.7	566.2	540.1	26.05	21.737		
5,300.0	5,269.8	5,252.5	5,148.8	14.9	22.7	-88.42	-164.2	-1,043.0	586.8	560.4	26.44	22.191		
5,400.0	5,369.8	5,350.2	5,244.3	15.1	23.2	-88.80	-167.6	-1,063.2	607.5	580.6	26.84	22.629		
5,500.0	5,469.8	5,459.7	5,351.5	15.2	23.7	-89.19	-171.3	-1,085.4	627.7	600.5	27.26	23.029		
5,600.0	5,569.8	5,585.9	5,475.8	15.4	24.1	-89.53	-174.8	-1,106.5	644.5	616.8	27.67	23.295		
5,700.0	5,669.8	5,713.7	5,602.6	15.5	24.4	-89.78	-177.5	-1,122.4	656.9	628.8	28.06	23.410		
5,800.0	5,769.8	5,842.7	5,731.2	15.7	24.6	-89.93	-179.2	-1,132.8	664.9	636.5	28.45	23.372		
5,900.0	5,869.8	5,972.5	5,860.8	15.9	24.8	-90.00	-180.0	-1,137.4	668.5	639.7	28.83	23.187		
6,000.0	5,969.8	6,081.5	5,969.8	16.0	24.9	-90.00	-180.0	-1,137.7	668.7	639.5	29.19	22.906		
6,100.0	6,069.8	6,180.9	6,069.2	16.2	25.0	-89.25	-178.6	-1,137.7	668.7	639.3	29.43	22.724		
6,200.0	6,168.7	6,279.8	6,167.3	16.3	25.1	-89.39	-166.3	-1,137.9	668.7	639.0	29.67	22.534		
6,300.0	6,264.9	6,379.0	6,263.1	16.4	25.1	-89.54	-141.2	-1,138.3	668.7	638.8	29.85	22.398		
6,303.4	6,268.1	6,382.3	6,266.4	16.4	25.1	-89.54	-140.1	-1,138.3	668.7	638.8	29.86	22.394		
6,400.0	6,356.8	6,478.3	6,355.1	16.5	25.2	-89.68	-103.7	-1,138.8	668.7	638.7	30.01	22.281		
6,500.0	6,442.8	6,577.9	6,441.6	16.5	25.2	-89.83	-54.5	-1,139.5	668.7	638.5	30.21	22.133		
6,600.0	6,521.4	6,677.7	6,521.0	16.6	25.3	-89.97	5.8	-1,140.4	668.7	638.2	30.53	21.903		
6,700.0	6,591.3	6,777.7	6,592.0	16.7	25.3	-90.10	76.1	-1,141.5	668.7	637.7	31.05	21.539		
6,800.0	6,651.2	6,877.9	6,653.2	16.9	25.5	-90.22	155.4	-1,142.6	668.8	636.9	31.83	21.008		
6,900.0	6,700.2	6,978.3	6,703.6	17.2	25.6	-90.33	242.1	-1,143.9	668.8	635.9	32.94	20.303		
7,000.0	6,737.4	7,078.9	6,742.1	17.7	25.9	-90.43	334.9	-1,145.3	668.9	634.5	34.39	19.449		
7,100.0	6,762.2	7,179.6	6,768.1	18.5	26.3	-90.51	432.2	-1,146.7	668.9	632.7	36.17	18.492		
7,200.0	6,774.2	7,280.5	6,780.9	19.5	26.8	-90.58	532.1	-1,148.2	669.0	630.7	38.25	17.489		
7,300.0	6,774.8	7,380.9	6,781.9	20.7	27.5	-90.61	632.5	-1,149.7	669.0	628.4	40.58	16.486		
7,400.0	6,773.9	7,480.9	6,781.0	21.9	28.3	-90.61	732.5	-1,151.1	669.1	625.9	43.13	15.512		
7,500.0	6,772.9	7,580.9	6,780.0	23.3	29.2	-90.61	832.5	-1,152.6	669.1	623.2	45.86	14.590		
7,600.0	6,772.0	7,680.9	6,779.1	24.7	30.3	-90.61	932.5	-1,154.1	669.1	620.4	48.74	13.729		
7,700.0	6,771.0	7,780.9	6,778.1	26.2	31.4	-90.61	1,032.5	-1,155.5	669.2	617.4	51.74	12.933		
7,800.0	6,770.1	7,880.9	6,777.2	27.8	32.6	-90.61	1,132.5	-1,157.0	669.2	614.4	54.85	12.201		
7,900.0	6,769.1	7,980.9	6,776.2	29.4	34.0	-90.61	1,232.4	-1,158.5	669.3	611.2	58.05	11.529		
8,000.0	6,768.2	8,080.9	6,775.3	31.0	35.3	-90.61	1,332.4	-1,160.0	669.3	608.0	61.32	10.915		
8,100.0	6,767.3	8,180.9	6,774.4	32.7	36.8	-90.61	1,432.4	-1,161.4	669.3	604.7	64.66	10.352		
8,200.0	6,766.3	8,280.9	6,773.4	34.4	38.2	-90.61	1,532.4	-1,162.9	669.4	601.3	68.05	9.837		
8,300.0	6,765.4	8,380.9	6,772.5	36.1	39.8	-90.61	1,632.4	-1,164.4	669.4	598.0	71.48	9.365		
8,400.0	6,764.4	8,480.9	6,771.5	37.8	41.3	-90.61	1,732.4	-1,165.8	669.5	594.5	74.96	8.931		
8,500.0	6,763.5	8,580.9	6,770.6	39.5	42.9	-90.61	1,832.4	-1,167.3	669.5	591.0	78.47	8.532		
8,600.0	6,762.5	8,680.9	6,769.6	41.3	44.5	-90.61	1,932.3	-1,168.8	669.6	587.6	82.01	8.164		
8,700.0	6,761.6	8,780.9	6,768.7	43.1	46.2	-90.61	2,032.3	-1,170.3	669.6	584.0	85.58	7.825		
8,800.0	6,760.7	8,880.9	6,767.8	44.9	47.8	-90.61	2,132.3	-1,171.7	669.6	580.5	89.17	7.510		
8,900.0	6,759.7	8,980.9	6,766.8	46.7	49.5	-90.61	2,232.3	-1,173.2	669.7	576.9	92.78	7.218		
9,000.0	6,758.8	9,080.9	6,765.9	48.5	51.2	-90.61	2,332.3	-1,174.7	669.7	573.3	96.41	6.947		
9,100.0	6,757.8	9,180.9	6,764.9	50.3	53.0	-90.61	2,432.3	-1,176.1	669.8	569.7	100.05	6.694		
9,200.0	6,756.9	9,280.9	6,764.0	52.1	54.7	-90.61	2,532.2	-1,177.6	669.8	566.1	103.71	6.458		
9,300.0	6,756.0	9,380.9	6,763.0	54.0	56.4	-90.61	2,632.2	-1,179.1	669.9	562.5	107.38	6.238		
9,400.0	6,755.0	9,480.9	6,762.1	55.8	58.2	-90.61	2,732.2	-1,180.6	669.9	558.8	111.07	6.031		
9,500.0	6,754.1	9,580.9	6,761.2	57.6	59.9	-90.61	2,832.2	-1,182.0	669.9	555.2	114.76	5.838		
9,600.0	6,753.1	9,680.9	6,760.2	59.5	61.7	-90.61	2,932.2	-1,183.5	670.0	551.5	118.47	5.655		
9,700.0	6,752.2	9,780.9	6,759.3	61.3	63.5	-90.61	3,032.2	-1,185.0	670.0	547.8	122.18	5.484		
9,800.0	6,751.2	9,880.9	6,758.3	63.2	65.3	-90.61	3,132.2	-1,186.4	670.1	544.2	125.90	5.322		
9,900.0	6,750.3	9,980.9	6,757.4	65.1	67.1	-90.61	3,232.1	-1,187.9	670.1	540.5	129.63	5.169		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2T-441
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4910.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4910.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2T-441	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 (2-07-13)	Offset TVD Reference:	Offset Datum

Offset Design		Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W - Waste Management 2Q-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)				
10,000.0	6,749.4	10,080.9	6,756.4	66.9	68.9	-90.61	3,332.1	-1,189.4	670.2	536.8	133.37	5.025			
10,100.0	6,748.4	10,180.9	6,755.5	68.8	70.7	-90.61	3,432.1	-1,190.9	670.2	533.1	137.11	4.888			
10,200.0	6,747.5	10,280.9	6,754.6	70.7	72.5	-90.61	3,532.1	-1,192.3	670.2	529.4	140.86	4.758			
10,300.0	6,746.5	10,380.9	6,753.6	72.5	74.4	-90.61	3,632.1	-1,193.8	670.3	525.7	144.61	4.635			
10,400.0	6,745.6	10,480.9	6,752.7	74.4	76.2	-90.61	3,732.1	-1,195.3	670.3	522.0	148.37	4.518			
10,500.0	6,744.6	10,580.9	6,751.7	76.3	78.0	-90.61	3,832.1	-1,196.7	670.4	518.2	152.13	4.407			
10,600.0	6,743.7	10,680.9	6,750.8	78.2	79.9	-90.61	3,932.0	-1,198.2	670.4	514.5	155.90	4.300			
10,700.0	6,742.8	10,780.9	6,749.8	80.1	81.7	-90.61	4,032.0	-1,199.7	670.5	510.8	159.67	4.199			
10,800.0	6,741.8	10,880.9	6,748.9	81.9	83.5	-90.61	4,132.0	-1,201.2	670.5	507.1	163.44	4.102			
10,900.0	6,740.9	10,980.9	6,748.0	83.8	85.4	-90.61	4,232.0	-1,202.6	670.5	503.3	167.22	4.010			
11,000.0	6,739.9	11,080.9	6,747.0	85.7	87.2	-90.61	4,332.0	-1,204.1	670.6	499.6	171.00	3.922			
11,100.0	6,739.0	11,180.9	6,746.1	87.6	89.1	-90.61	4,432.0	-1,205.6	670.6	495.8	174.78	3.837			
11,200.0	6,738.0	11,280.9	6,745.1	89.5	91.0	-90.61	4,531.9	-1,207.0	670.7	492.1	178.56	3.756			
11,204.7	6,738.0	11,285.6	6,745.1	89.6	91.0	-90.61	4,536.6	-1,207.1	670.7	491.9	178.74	3.752 SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2T-441
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4910.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4910.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2T-441	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 (2-07-13)	Offset TVD Reference:	Offset Datum

Offset Design		Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W - Waste Management 2T-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				
0.0	0.0	0.0	0.0	0.0	0.0	96.76	-3.6	30.7	31.0							
100.0	100.0	99.0	99.0	0.1	0.1	96.76	-3.6	30.7	31.0	30.7	0.22	138.437				
200.0	200.0	199.0	199.0	0.3	0.3	96.76	-3.6	30.7	31.0	30.3	0.67	46.069				
300.0	300.0	299.0	299.0	0.6	0.6	96.76	-3.6	30.7	31.0	29.8	1.12	27.604				
400.0	400.0	399.0	399.0	0.8	0.8	96.76	-3.6	30.7	31.0	29.4	1.57	19.706				
500.0	500.0	499.0	499.0	1.0	1.0	96.76	-3.6	30.7	31.0	28.9	2.02	15.322				
600.0	600.0	599.0	599.0	1.2	1.2	96.76	-3.6	30.7	31.0	28.5	2.47	12.534 CC, ES				
700.0	700.0	699.0	699.0	1.4	1.5	-153.66	-3.6	30.7	32.5	29.6	2.90	11.203				
800.0	799.8	798.8	798.8	1.6	1.7	-157.20	-3.6	30.7	37.3	34.0	3.32	11.216				
900.0	899.5	898.5	898.5	1.9	1.9	-161.41	-3.6	30.7	45.4	41.7	3.75	12.112				
1,000.0	998.7	997.7	997.7	2.1	2.1	-165.18	-3.6	30.7	56.8	52.6	4.18	13.570				
1,100.0	1,098.0	1,097.0	1,097.0	2.4	2.4	-167.81	-3.6	30.7	68.8	64.1	4.62	14.877				
1,200.0	1,197.2	1,196.2	1,196.2	2.7	2.6	-169.65	-3.6	30.7	80.9	75.8	5.06	15.963				
1,300.0	1,296.5	1,295.5	1,295.5	3.0	2.8	-171.01	-3.6	30.7	93.0	87.5	5.51	16.877				
1,400.0	1,395.7	1,394.7	1,394.7	3.3	3.0	-172.06	-3.6	30.7	105.2	99.2	5.96	17.652				
1,500.0	1,494.9	1,493.9	1,493.9	3.6	3.2	-172.89	-3.6	30.7	117.4	111.0	6.41	18.318				
1,600.0	1,594.2	1,593.2	1,593.2	3.9	3.5	-173.57	-3.6	30.7	129.7	122.8	6.86	18.894				
1,700.0	1,693.4	1,692.4	1,692.4	4.2	3.7	-174.12	-3.6	30.7	141.9	134.6	7.32	19.398				
1,800.0	1,792.7	1,791.7	1,791.7	4.5	3.9	-174.59	-3.6	30.7	154.2	146.4	7.77	19.842				
1,900.0	1,891.9	1,890.9	1,890.9	4.8	4.1	-174.99	-3.6	30.7	166.4	158.2	8.23	20.235				
2,000.0	1,991.1	1,990.1	1,990.1	5.1	4.4	-175.34	-3.6	30.7	178.7	170.0	8.68	20.586				
2,100.0	2,090.4	2,089.4	2,089.4	5.5	4.6	-175.64	-3.6	30.7	191.0	181.9	9.14	20.901				
2,200.0	2,189.6	2,188.6	2,188.6	5.8	4.8	-175.90	-3.6	30.7	203.3	193.7	9.60	21.185				
2,300.0	2,288.8	2,287.8	2,287.8	6.1	5.0	-176.14	-3.6	30.7	215.6	205.5	10.05	21.442				
2,400.0	2,388.1	2,387.1	2,387.1	6.4	5.3	-176.34	-3.6	30.7	227.9	217.4	10.51	21.677				
2,500.0	2,487.3	2,486.3	2,486.3	6.7	5.5	-176.53	-3.6	30.7	240.2	229.2	10.97	21.891				
2,600.0	2,586.6	2,585.6	2,585.6	7.1	5.7	-176.70	-3.6	30.7	252.5	241.1	11.43	22.088				
2,700.0	2,685.8	2,684.8	2,684.8	7.4	5.9	-176.85	-3.6	30.7	264.8	252.9	11.89	22.269				
2,800.0	2,785.0	2,784.0	2,784.0	7.7	6.1	-176.99	-3.6	30.7	277.1	264.7	12.35	22.437				
2,900.0	2,884.3	2,883.3	2,883.3	8.0	6.4	-177.12	-3.6	30.7	289.4	276.6	12.81	22.592				
3,000.0	2,983.5	2,982.5	2,982.5	8.4	6.6	-177.24	-3.6	30.7	301.7	288.4	13.27	22.736				
3,100.0	3,082.7	3,090.4	3,090.3	8.7	6.8	-177.23	-4.7	29.8	312.9	299.2	13.73	22.795				
3,200.0	3,182.0	3,200.6	3,200.5	9.0	7.0	-176.85	-8.8	26.0	320.8	306.6	14.16	22.655				
3,300.0	3,281.2	3,311.3	3,310.7	9.3	7.2	-176.12	-16.1	19.4	325.4	310.8	14.60	22.286				
3,400.0	3,380.5	3,418.6	3,417.2	9.7	7.4	-175.08	-26.1	10.3	326.9	311.9	15.05	21.726				
3,500.0	3,479.7	3,518.4	3,516.1	10.0	7.6	-174.03	-36.1	1.2	327.7	312.2	15.49	21.160				
3,600.0	3,578.9	3,618.3	3,615.0	10.3	7.8	-172.98	-46.0	-7.9	328.6	312.7	15.94	20.622				
3,700.0	3,678.2	3,718.1	3,713.9	10.6	8.1	-171.94	-56.0	-17.0	329.7	313.3	16.39	20.109				
3,800.0	3,777.4	3,817.9	3,812.8	11.0	8.3	-170.91	-66.0	-26.0	330.8	313.9	16.86	19.619				
3,900.0	3,876.6	3,917.7	3,911.7	11.3	8.5	-169.89	-75.9	-35.1	332.0	314.7	17.34	19.152				
4,000.0	3,975.9	4,017.5	4,010.6	11.6	8.8	-168.87	-85.9	-44.2	333.4	315.6	17.82	18.707				
4,100.0	4,075.1	4,117.3	4,109.5	12.0	9.0	-167.86	-95.9	-53.3	334.8	316.5	18.31	18.283				
4,200.0	4,174.4	4,217.1	4,208.4	12.3	9.3	-166.86	-105.8	-62.4	336.4	317.6	18.82	17.877				
4,300.0	4,273.6	4,317.0	4,307.3	12.6	9.6	-165.87	-115.8	-71.4	338.0	318.7	19.33	17.490				
4,400.0	4,372.8	4,416.8	4,406.2	12.9	9.8	-164.89	-125.8	-80.5	339.8	319.9	19.85	17.121				
4,500.0	4,472.1	4,516.6	4,505.1	13.3	10.1	-163.92	-135.7	-89.6	341.6	321.3	20.37	16.768				
4,600.0	4,571.3	4,616.4	4,604.0	13.6	10.4	-162.96	-145.7	-98.7	343.6	322.7	20.91	16.431				
4,700.0	4,670.6	4,716.2	4,702.9	13.9	10.7	-162.01	-155.7	-107.8	345.6	324.1	21.46	16.106				
4,800.0	4,770.1	4,816.0	4,801.7	14.1	11.0	-160.93	-165.6	-116.8	345.3	323.3	21.97	15.719				
4,900.0	4,869.9	4,915.7	4,900.5	14.3	11.2	-159.64	-175.6	-125.9	341.8	319.4	22.47	15.215				
5,000.0	4,969.8	5,000.0	4,984.1	14.5	11.5	-158.44	-183.3	-133.0	336.3	313.4	22.89	14.688				

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-441
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4910.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4910.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2T-441	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 (2-07-13)	Offset TVD Reference:	Offset Datum

Offset Design		Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W - Waste Management 2T-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		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
							+N/-S (ft)	+E/-W (ft)							
5,046.0	5,015.9	5,030.7	5,014.9	14.5	11.5	-158.39	-183.6	-133.3	336.0	312.9	23.04	14.585			
5,100.0	5,069.8	5,084.7	5,068.8	14.6	11.6	90.62	-183.6	-133.3	335.8	312.5	23.28	14.422			
5,200.0	5,169.8	5,184.7	5,168.8	14.8	11.8	90.62	-183.6	-133.3	335.8	312.1	23.66	14.191			
5,300.0	5,269.8	5,284.7	5,268.8	14.9	12.0	90.62	-183.6	-133.3	335.8	311.7	24.04	13.965			
5,400.0	5,369.8	5,384.7	5,368.8	15.1	12.2	90.62	-183.6	-133.3	335.8	311.3	24.43	13.744			
5,500.0	5,469.8	5,484.7	5,468.8	15.2	12.4	90.62	-183.6	-133.3	335.8	310.9	24.82	13.530			
5,600.0	5,569.8	5,584.7	5,568.8	15.4	12.6	90.62	-183.6	-133.3	335.8	310.6	25.21	13.321			
5,700.0	5,669.8	5,684.7	5,668.8	15.5	12.8	90.62	-183.6	-133.3	335.8	310.2	25.60	13.117			
5,800.0	5,769.8	5,784.7	5,768.8	15.7	13.0	90.62	-183.6	-133.3	335.8	309.8	25.99	12.919			
5,900.0	5,869.8	5,884.7	5,868.8	15.9	13.3	90.62	-183.6	-133.3	335.8	309.4	26.39	12.725			
6,000.0	5,969.8	5,984.7	5,968.8	16.0	13.5	90.62	-183.6	-133.3	335.8	309.0	26.78	12.537			
6,024.5	5,994.3	6,009.2	5,993.3	16.1	13.5	91.48	-183.6	-133.3	335.8	308.9	26.84	12.511			
6,100.0	6,069.8	6,084.6	6,068.8	16.2	13.7	91.82	-183.6	-133.3	335.8	308.7	27.15	12.368			
6,200.0	6,168.7	6,185.2	6,169.3	16.3	13.9	93.90	-181.9	-133.3	336.5	308.9	27.60	12.190			
6,300.0	6,264.9	6,288.3	6,271.4	16.4	14.0	96.20	-167.9	-133.5	337.7	309.7	27.96	12.076			
6,400.0	6,356.8	6,393.4	6,372.5	16.5	14.2	98.40	-139.7	-133.9	339.4	311.1	28.22	12.026			
6,500.0	6,442.8	6,500.5	6,470.7	16.5	14.3	100.45	-97.0	-134.5	341.4	313.0	28.41	12.017			
6,600.0	6,521.4	6,609.6	6,563.4	16.6	14.4	102.31	-39.8	-135.3	343.6	315.0	28.61	12.011			
6,700.0	6,591.3	6,720.6	6,648.5	16.7	14.5	103.94	31.3	-136.3	345.9	317.0	28.93	11.957			
6,800.0	6,651.2	6,833.2	6,723.4	16.9	14.7	105.31	115.3	-137.5	348.1	318.6	29.50	11.799			
6,900.0	6,700.2	6,947.2	6,785.8	17.2	15.3	106.39	210.6	-138.9	349.9	319.5	30.43	11.498			
7,000.0	6,737.4	7,062.4	6,833.7	17.7	16.1	107.16	315.2	-140.4	351.3	319.5	31.83	11.036			
7,100.0	6,762.2	7,178.4	6,865.6	18.5	17.2	107.60	426.5	-142.0	352.1	318.4	33.72	10.441			
7,200.0	6,774.2	7,294.6	6,880.2	19.5	18.5	107.71	541.8	-143.7	352.3	316.2	36.07	9.767			
7,300.0	6,774.8	7,401.2	6,880.5	20.7	19.8	107.64	648.3	-145.2	352.2	313.6	38.57	9.130			
7,400.0	6,773.9	7,501.2	6,879.4	21.9	21.1	107.62	748.3	-146.6	352.1	311.0	41.12	8.563			
7,500.0	6,772.9	7,601.2	6,878.4	23.3	22.5	107.60	848.2	-148.1	352.1	308.2	43.83	8.033			
7,600.0	6,772.0	7,701.2	6,877.3	24.7	24.0	107.58	948.2	-149.5	352.0	305.4	46.67	7.542			
7,700.0	6,771.0	7,801.2	6,876.2	26.2	25.5	107.57	1,048.2	-150.9	352.0	302.3	49.63	7.092			
7,800.0	6,770.1	7,901.2	6,875.2	27.8	27.1	107.55	1,148.2	-152.4	351.9	299.3	52.69	6.680			
7,900.0	6,769.1	8,001.2	6,874.1	29.4	28.8	107.53	1,248.2	-153.8	351.9	296.1	55.82	6.304			
8,000.0	6,768.2	8,101.2	6,873.1	31.0	30.4	107.51	1,348.2	-155.3	351.9	292.8	59.01	5.962			
8,100.0	6,767.3	8,201.2	6,872.0	32.7	32.1	107.49	1,448.1	-156.7	351.8	289.5	62.27	5.650			
8,200.0	6,766.3	8,301.2	6,870.9	34.4	33.8	107.47	1,548.1	-158.1	351.8	286.2	65.57	5.365			
8,300.0	6,765.4	8,401.2	6,869.9	36.1	35.6	107.45	1,648.1	-159.6	351.7	282.8	68.91	5.104			
8,400.0	6,764.4	8,501.2	6,868.8	37.8	37.3	107.43	1,748.1	-161.0	351.7	279.4	72.29	4.865			
8,500.0	6,763.5	8,601.2	6,867.7	39.5	39.1	107.42	1,848.1	-162.4	351.6	275.9	75.69	4.645			
8,600.0	6,762.5	8,701.2	6,866.7	41.3	40.9	107.40	1,948.1	-163.9	351.6	272.5	79.13	4.443			
8,700.0	6,761.6	8,801.2	6,865.6	43.1	42.7	107.38	2,048.0	-165.3	351.5	269.0	82.59	4.257			
8,800.0	6,760.7	8,901.2	6,864.5	44.9	44.5	107.36	2,148.0	-166.7	351.5	265.4	86.07	4.084			
8,900.0	6,759.7	9,001.2	6,863.5	46.7	46.3	107.34	2,248.0	-168.2	351.5	261.9	89.57	3.924			
9,000.0	6,758.8	9,101.2	6,862.4	48.5	48.1	107.32	2,348.0	-169.6	351.4	258.3	93.08	3.775			
9,100.0	6,757.8	9,201.2	6,861.3	50.3	50.0	107.30	2,448.0	-171.1	351.4	254.8	96.61	3.637			
9,200.0	6,756.9	9,301.2	6,860.3	52.1	51.8	107.29	2,548.0	-172.5	351.3	251.2	100.15	3.508			
9,300.0	6,756.0	9,401.2	6,859.2	54.0	53.7	107.27	2,648.0	-173.9	351.3	247.6	103.71	3.387			
9,400.0	6,755.0	9,501.2	6,858.2	55.8	55.5	107.25	2,747.9	-175.4	351.2	244.0	107.27	3.274			
9,500.0	6,754.1	9,601.2	6,857.1	57.6	57.4	107.23	2,847.9	-176.8	351.2	240.4	110.85	3.168			
9,600.0	6,753.1	9,701.2	6,856.0	59.5	59.2	107.21	2,947.9	-178.2	351.2	236.7	114.43	3.069			
9,700.0	6,752.2	9,801.2	6,855.0	61.3	61.1	107.19	3,047.9	-179.7	351.1	233.1	118.02	2.975			
9,800.0	6,751.2	9,901.2	6,853.9	63.2	63.0	107.17	3,147.9	-181.1	351.1	229.4	121.62	2.887			

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

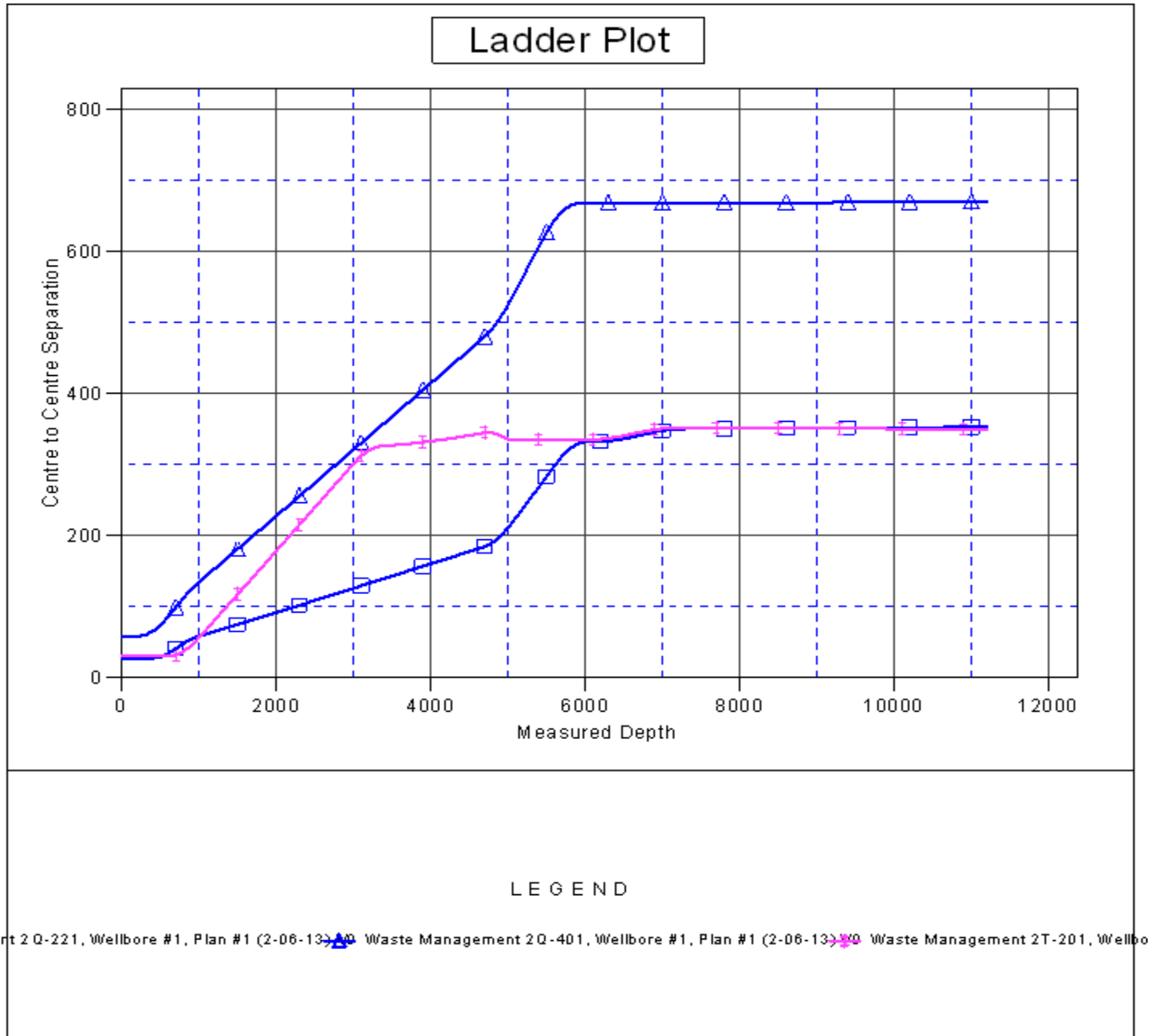
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2T-441
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4910.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4910.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2T-441	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 (2-07-13)	Offset TVD Reference:	Offset Datum

Offset Design		Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W - Waste Management 2T-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 Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
9,900.0	6,750.3	10,001.2	6,852.8	65.1	64.8	107.15	3,247.9	-182.5	351.0	225.8	125.23	2.803			
10,000.0	6,749.4	10,101.2	6,851.8	66.9	66.7	107.14	3,347.8	-184.0	351.0	222.1	128.84	2.724			
10,100.0	6,748.4	10,201.2	6,850.7	68.8	68.6	107.12	3,447.8	-185.4	350.9	218.5	132.46	2.649			
10,200.0	6,747.5	10,301.2	6,849.6	70.7	70.5	107.10	3,547.8	-186.9	350.9	214.8	136.09	2.578			
10,300.0	6,746.5	10,401.2	6,848.6	72.5	72.3	107.08	3,647.8	-188.3	350.9	211.1	139.72	2.511			
10,400.0	6,745.6	10,501.2	6,847.5	74.4	74.2	107.06	3,747.8	-189.7	350.8	207.5	143.35	2.447			
10,500.0	6,744.6	10,601.2	6,846.4	76.3	76.1	107.04	3,847.8	-191.2	350.8	203.8	146.99	2.386			
10,600.0	6,743.7	10,701.2	6,845.4	78.2	78.0	107.02	3,947.7	-192.6	350.7	200.1	150.63	2.328			
10,700.0	6,742.8	10,801.2	6,844.3	80.1	79.9	107.01	4,047.7	-194.0	350.7	196.4	154.28	2.273			
10,800.0	6,741.8	10,901.2	6,843.2	81.9	81.8	106.99	4,147.7	-195.5	350.6	192.7	157.93	2.220			
10,900.0	6,740.9	11,001.2	6,842.2	83.8	83.7	106.97	4,247.7	-196.9	350.6	189.0	161.59	2.170			
11,000.0	6,739.9	11,101.2	6,841.1	85.7	85.6	106.95	4,347.7	-198.3	350.6	185.3	165.25	2.121			
11,100.0	6,739.0	11,201.2	6,840.1	87.6	87.5	106.93	4,447.7	-199.8	350.5	181.6	168.91	2.075			
11,172.0	6,738.3	11,273.2	6,839.3	89.0	88.8	106.92	4,519.7	-200.8	350.5	178.9	171.55	2.043			
11,200.0	6,738.0	11,300.0	6,839.0	89.5	89.3	106.91	4,546.4	-201.2	350.5	177.9	172.55	2.031			
11,204.7	6,738.0	11,300.0	6,839.0	89.6	89.3	106.91	4,546.4	-201.2	350.5	177.9	172.63	2.030 SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2T-441
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4910.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4910.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2T-441	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 (2-07-13)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4910.0ft (RKB - 15')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Waste Management 2T-441
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-441
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4910.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4910.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
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