

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Waste Management 2L-301**

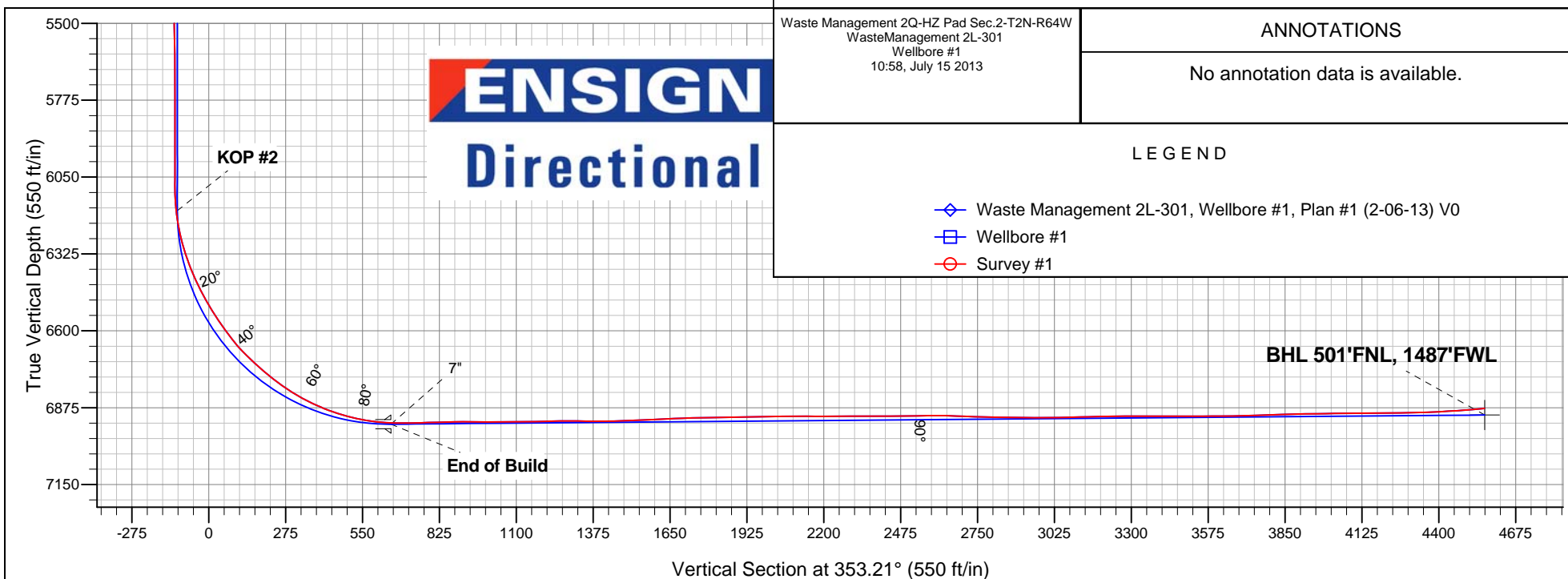
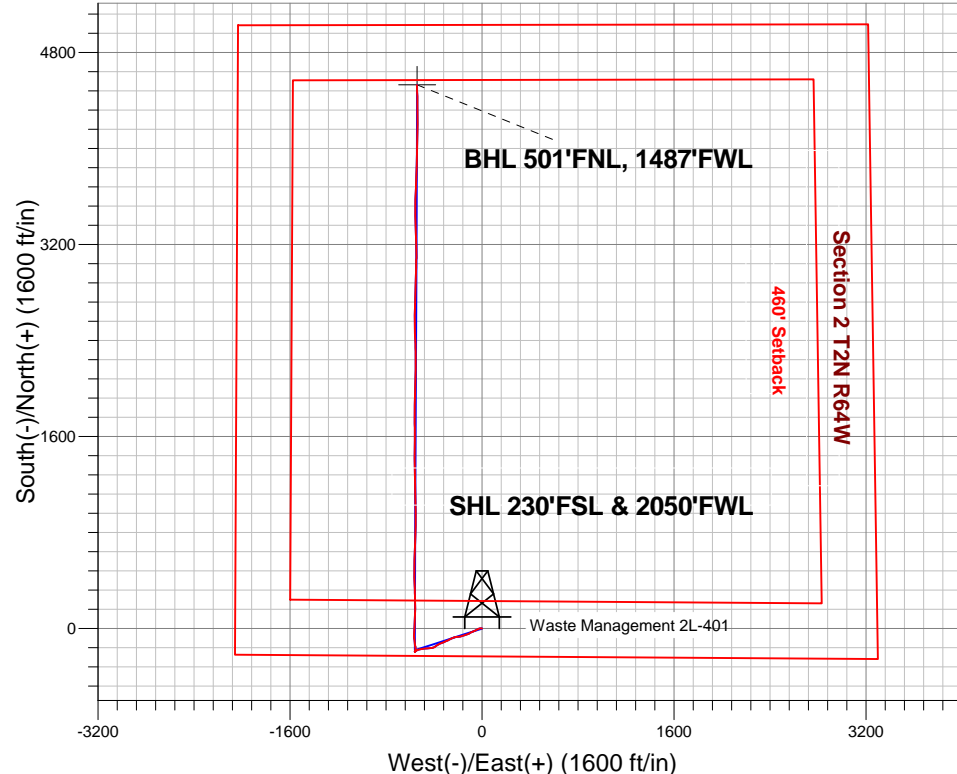
Surface Location: Waste Management 2Q-HZ Pad Sec.2-T2N-R64W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4934.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1302940.50	3273634.80	40.160820	-104.520940	

RKB - 15' WELL @ 4949.0ft (RKB - 15')

FINAL SURVEY

Projected Bottom Hole Location
11326' MD 6878' TVD 4531' N & 542' W of SHL
94.9 degree Incl @ 357.9 degree AZM





PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.2-T2N-R64W

Waste Management 2Q-HZ Pad Sec.2-T2N-R64W

Waste Management 2L-301

Wellbore #1

Survey: Survey #1

Standard Survey Report

15 July, 2013

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2L-301
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4949.0ft (RKB - 15')
Site:	Waste Management 2Q-HZ Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4949.0ft (RKB - 15')
Well:	Waste Management 2L-301	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.2-T2N-R64W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Waste Management 2Q-HZ Pad Sec.2-T2N-R64W				
Site Position:		Northing:	1,302,940.51 ft	Latitude:	40.160820
From:	Lat/Long	Easting:	3,273,634.80 ft	Longitude:	-104.520940
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.63 °

Well	Waste Management 2L-301					
Well Position	+N-S	0.0 ft	Northing:	1,302,940.50 ft	Latitude:	40.160820
	+E-W	0.0 ft	Easting:	3,273,634.80 ft	Longitude:	-104.520940
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,934.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/5/2013	8.44	66.83	52,814

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N-S (ft)	+E-W (ft)	Direction (°)	
	0.0	0.0	0.0	353.21	

Survey Program	Date	7/15/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
120.0	11,326.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

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
120.0	0.70	300.60	120.0	0.4	-0.6	0.4	0.58	0.58	0.00
180.0	1.70	300.50	180.0	1.0	-1.7	1.2	1.67	1.67	-0.17
271.0	3.50	279.90	270.9	2.2	-5.6	2.8	2.20	1.98	-22.64
365.0	5.20	261.30	364.6	2.0	-12.7	3.5	2.33	1.81	-19.79
491.0	7.50	253.20	489.8	-1.2	-26.2	1.9	1.95	1.83	-6.43
619.0	8.70	242.10	616.6	-8.2	-42.7	-3.1	1.54	0.94	-8.67
745.0	9.10	240.70	741.1	-17.5	-59.8	-10.3	0.36	0.32	-1.11
840.0	8.40	246.70	834.9	-23.9	-72.8	-15.2	1.21	-0.74	6.32
878.0	8.30	247.00	872.5	-26.1	-77.8	-16.7	0.29	-0.26	0.79
979.0	7.60	244.40	972.6	-31.8	-90.6	-20.9	0.78	-0.69	-2.57

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Site:	Waste Management 2Q-HZ Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4949.0ft (RKB - 15')
Well:	Waste Management 2L-301	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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)
1,073.0	7.50	238.40	1,065.8	-37.7	-101.4	-25.5	0.84	-0.11	-6.38
1,167.0	7.40	246.10	1,159.0	-43.4	-112.2	-29.8	1.07	-0.11	8.19
1,291.0	7.30	249.30	1,281.9	-49.4	-126.8	-34.1	0.34	-0.08	2.58
1,413.0	7.30	254.10	1,403.0	-54.3	-141.5	-37.2	0.50	0.00	3.93
1,566.0	7.60	251.60	1,554.7	-60.1	-160.5	-40.7	0.29	0.20	-1.63
1,720.0	6.80	258.10	1,707.5	-65.2	-179.1	-43.6	0.74	-0.52	4.22
1,873.0	8.90	264.10	1,859.0	-68.3	-199.7	-44.2	1.47	1.37	3.92
2,032.0	8.00	260.70	2,016.3	-71.4	-222.9	-44.5	0.65	-0.57	-2.14
2,192.0	7.00	246.50	2,174.9	-77.1	-242.8	-47.8	1.31	-0.63	-8.88
2,351.0	7.20	239.30	2,332.7	-86.0	-260.2	-54.6	0.57	0.13	-4.53
2,510.0	7.60	243.30	2,490.4	-95.8	-278.2	-62.3	0.41	0.25	2.52
2,668.0	6.90	249.00	2,647.1	-103.9	-296.4	-68.2	0.63	-0.44	3.61
2,826.0	7.30	244.40	2,803.9	-111.6	-314.3	-73.7	0.44	0.25	-2.91
2,986.0	6.90	254.90	2,962.7	-118.5	-332.8	-78.4	0.85	-0.25	6.56
3,144.0	7.40	241.40	3,119.5	-125.9	-350.9	-83.5	1.11	0.32	-8.54
3,303.0	6.60	242.80	3,277.3	-135.0	-368.0	-90.5	0.51	-0.50	0.88
3,461.0	7.40	235.40	3,434.1	-144.9	-384.4	-98.4	0.76	0.51	-4.68
3,556.0	7.70	232.60	3,528.3	-152.2	-394.5	-104.5	0.50	0.32	-2.95
3,619.0	7.50	245.30	3,590.7	-156.5	-401.6	-108.0	2.68	-0.32	20.16
3,683.0	7.40	261.30	3,654.2	-158.9	-409.5	-109.4	3.23	-0.16	25.00
3,746.0	7.30	262.00	3,716.7	-160.1	-417.5	-109.6	0.21	-0.16	1.11
3,842.0	6.30	259.20	3,812.0	-161.9	-428.7	-110.1	1.10	-1.04	-2.92
4,000.0	7.00	267.90	3,969.0	-163.9	-446.8	-109.9	0.78	0.44	5.51
4,159.0	6.70	264.30	4,126.8	-165.1	-465.7	-108.9	0.33	-0.19	-2.26
4,317.0	6.90	264.80	4,283.7	-166.9	-484.3	-108.5	0.13	0.13	0.32
4,508.0	7.20	256.50	4,473.3	-170.8	-507.4	-109.6	0.56	0.16	-4.35
4,666.0	6.20	255.80	4,630.2	-175.2	-525.3	-111.9	0.64	-0.63	-0.44
4,825.0	4.90	246.70	4,788.4	-180.0	-539.9	-114.9	0.98	-0.82	-5.72
4,953.0	3.30	237.70	4,916.1	-184.1	-548.0	-118.0	1.34	-1.25	-7.03
5,080.0	2.40	236.00	5,043.0	-187.5	-553.3	-120.8	0.71	-0.71	-1.34
5,207.0	2.10	233.30	5,169.9	-190.4	-557.4	-123.2	0.25	-0.24	-2.13
5,334.0	0.40	179.00	5,296.8	-192.2	-559.2	-124.8	1.49	-1.34	-42.76
5,493.0	1.00	354.60	5,455.8	-191.4	-559.3	-124.0	0.88	0.38	110.44
5,651.0	0.80	353.00	5,613.8	-188.9	-559.6	-121.5	0.13	-0.13	-1.01
5,810.0	0.40	123.60	5,772.8	-188.1	-559.3	-120.7	0.69	-0.25	82.14
5,970.0	0.40	82.80	5,932.8	-188.4	-558.3	-121.1	0.17	0.00	-25.50
6,096.0	0.50	89.50	6,058.8	-188.3	-557.3	-121.1	0.09	0.08	5.32
6,127.0	0.50	77.00	6,089.8	-188.3	-557.0	-121.1	0.35	0.00	-40.32
6,158.0	2.50	14.60	6,120.8	-187.6	-556.7	-120.5	7.46	6.45	-201.29
6,191.0	5.60	10.10	6,153.7	-185.3	-556.2	-118.3	9.44	9.39	-13.64
6,223.0	8.00	9.70	6,185.5	-181.6	-555.6	-114.7	7.50	7.50	-1.25
6,255.0	10.10	12.20	6,217.1	-176.7	-554.6	-109.9	6.68	6.56	7.81
6,286.0	12.10	7.10	6,247.5	-170.8	-553.6	-104.1	7.18	6.45	-16.45
6,318.0	14.80	357.60	6,278.6	-163.4	-553.4	-96.8	10.88	8.44	-29.69
6,350.0	17.10	351.80	6,309.4	-154.6	-554.2	-88.0	8.74	7.19	-18.13
6,381.0	19.10	349.90	6,338.8	-145.1	-555.8	-78.4	6.73	6.45	-6.13
6,413.0	21.20	350.60	6,368.9	-134.2	-557.6	-67.4	6.61	6.56	2.19
6,445.0	22.80	352.30	6,398.5	-122.4	-559.4	-55.4	5.38	5.00	5.31
6,476.0	24.70	352.80	6,426.9	-110.0	-561.0	-42.9	6.16	6.13	1.61
6,508.0	27.00	353.70	6,455.7	-96.2	-562.7	-29.0	7.29	7.19	2.81
6,540.0	29.20	354.80	6,483.9	-81.2	-564.2	-13.9	7.06	6.88	3.44
6,571.0	31.60	357.60	6,510.7	-65.5	-565.2	1.7	8.99	7.74	9.03
6,603.0	33.20	0.80	6,537.7	-48.4	-565.4	18.8	7.33	5.00	10.00

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Survey									
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6,635.0	34.40	3.00	6,564.3	-30.6	-564.8	36.4	5.36	3.75	6.88
6,667.0	34.60	3.60	6,590.7	-12.5	-563.8	54.2	1.23	0.63	1.88
6,698.0	37.00	3.70	6,615.8	5.6	-562.6	72.1	7.74	7.74	0.32
6,730.0	39.70	2.50	6,640.9	25.4	-561.6	91.6	8.75	8.44	-3.75
6,762.0	43.20	2.70	6,664.9	46.6	-560.6	112.5	10.95	10.94	0.63
6,793.0	45.80	3.00	6,687.0	68.3	-559.5	133.9	8.41	8.39	0.97
6,825.0	47.70	2.50	6,708.9	91.6	-558.4	156.9	6.05	5.94	-1.56
6,857.0	48.90	2.90	6,730.2	115.4	-557.3	180.5	3.86	3.75	1.25
6,889.0	50.00	1.30	6,751.0	139.7	-556.4	204.5	5.12	3.44	-5.00
6,920.0	52.10	0.10	6,770.5	163.8	-556.1	228.4	7.41	6.77	-3.87
6,952.0	54.10	359.00	6,789.7	189.4	-556.3	253.8	6.83	6.25	-3.44
6,984.0	56.00	358.50	6,808.0	215.6	-556.9	279.9	6.07	5.94	-1.56
7,015.0	58.70	358.60	6,824.8	241.7	-557.5	305.9	8.71	8.71	0.32
7,047.0	61.60	358.60	6,840.7	269.5	-558.2	333.6	9.06	9.06	0.00
7,079.0	64.50	358.10	6,855.2	298.0	-559.0	362.0	9.17	9.06	-1.56
7,111.0	66.00	358.60	6,868.6	327.0	-559.9	390.9	4.90	4.69	1.56
7,142.0	68.30	358.30	6,880.6	355.6	-560.7	419.3	7.47	7.42	-0.97
7,174.0	71.20	357.90	6,891.7	385.6	-561.7	449.3	9.14	9.06	-1.25
7,206.0	74.00	358.50	6,901.3	416.1	-562.6	479.7	8.93	8.75	1.88
7,237.0	76.10	358.80	6,909.3	446.0	-563.3	509.5	6.84	6.77	0.97
7,269.0	78.60	0.10	6,916.3	477.3	-563.6	540.5	8.76	7.81	4.06
7,301.0	81.10	1.60	6,921.9	508.8	-563.1	571.7	9.07	7.81	4.69
7,333.0	84.40	2.30	6,925.9	540.5	-562.1	603.1	10.54	10.31	2.19
7,372.0	87.60	1.80	6,928.7	579.4	-560.7	641.5	8.30	8.21	-1.28
7,420.0	89.80	1.60	6,929.8	627.3	-559.3	689.0	4.60	4.58	-0.42
7,452.0	90.70	2.00	6,929.6	659.3	-558.2	720.6	3.08	2.81	1.25
7,484.0	91.20	1.60	6,929.1	691.3	-557.2	752.3	2.00	1.56	-1.25
7,516.0	91.60	1.30	6,928.3	723.3	-556.4	783.9	1.56	1.25	-0.94
7,547.0	91.80	1.10	6,927.4	754.2	-555.8	814.6	0.91	0.65	-0.65
7,579.0	91.40	1.10	6,926.5	786.2	-555.2	846.3	1.25	-1.25	0.00
7,611.0	91.10	0.90	6,925.8	818.2	-554.6	878.0	1.13	-0.94	-0.63
7,642.0	90.50	0.80	6,925.4	849.2	-554.2	908.7	1.96	-1.94	-0.32
7,674.0	90.00	1.10	6,925.2	881.2	-553.6	940.4	1.82	-1.56	0.94
7,705.0	89.30	0.80	6,925.4	912.2	-553.1	971.2	2.46	-2.26	-0.97
7,737.0	89.10	359.50	6,925.9	944.2	-553.0	1,002.9	4.11	-0.63	-4.06
7,769.0	89.60	359.20	6,926.2	976.2	-553.4	1,034.7	1.82	1.56	-0.94
7,800.0	90.20	359.30	6,926.3	1,007.2	-553.8	1,065.6	1.96	1.94	0.32
7,832.0	90.70	359.50	6,926.0	1,039.2	-554.1	1,097.4	1.68	1.56	0.63
7,864.0	91.40	359.00	6,925.4	1,071.2	-554.5	1,129.2	2.69	2.19	-1.56
7,895.0	91.50	358.60	6,924.7	1,102.2	-555.2	1,160.0	1.33	0.32	-1.29
7,927.0	91.10	358.60	6,923.9	1,134.1	-556.0	1,191.9	1.25	-1.25	0.00
7,959.0	91.40	359.00	6,923.2	1,166.1	-556.6	1,223.7	1.56	0.94	1.25
7,991.0	90.60	358.60	6,922.7	1,198.1	-557.3	1,255.6	2.80	-2.50	-1.25
8,022.0	90.00	357.90	6,922.5	1,229.1	-558.3	1,286.5	2.97	-1.94	-2.26
8,054.0	89.60	358.80	6,922.6	1,261.1	-559.2	1,318.3	3.08	-1.25	2.81
8,086.0	89.30	359.20	6,922.9	1,293.1	-559.7	1,350.2	1.56	-0.94	1.25
8,118.0	89.40	359.20	6,923.3	1,325.1	-560.2	1,382.0	0.31	0.31	0.00
8,149.0	90.00	359.70	6,923.5	1,356.1	-560.5	1,412.8	2.52	1.94	1.61
8,181.0	90.70	359.90	6,923.3	1,388.1	-560.6	1,444.6	2.28	2.19	0.63
8,213.0	91.90	0.40	6,922.5	1,420.1	-560.5	1,476.3	4.06	3.75	1.56
8,244.0	92.70	0.40	6,921.3	1,451.0	-560.3	1,507.1	2.58	2.58	0.00
8,276.0	92.90	1.10	6,919.7	1,483.0	-559.9	1,538.8	2.27	0.63	2.19

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8,308.0	92.90	0.20	6,918.1	1,514.9	-559.5	1,570.4	2.81	0.00	-2.81
8,340.0	92.90	1.60	6,916.5	1,546.9	-559.0	1,602.1	4.37	0.00	4.38
8,372.0	92.40	359.30	6,915.0	1,578.9	-558.8	1,633.8	7.35	-1.56	-7.19
8,404.0	92.30	359.20	6,913.7	1,610.8	-559.2	1,665.6	0.44	-0.31	-0.31
8,435.0	91.80	359.30	6,912.6	1,641.8	-559.6	1,696.4	1.64	-1.61	0.32
8,467.0	91.50	359.50	6,911.7	1,673.8	-559.9	1,728.2	1.13	-0.94	0.63
8,499.0	91.30	359.90	6,910.9	1,705.8	-560.1	1,760.0	1.40	-0.63	1.25
8,530.0	91.20	358.50	6,910.2	1,736.8	-560.5	1,790.8	4.53	-0.32	-4.52
8,562.0	91.00	359.90	6,909.6	1,768.8	-561.0	1,822.7	4.42	-0.63	4.38
8,594.0	90.80	0.80	6,909.1	1,800.8	-560.8	1,854.4	2.88	-0.63	2.81
8,626.0	90.30	0.90	6,908.8	1,832.8	-560.3	1,886.1	1.59	-1.56	0.31
8,657.0	90.40	1.50	6,908.6	1,863.7	-559.7	1,916.8	1.96	0.32	1.94
8,689.0	91.10	1.60	6,908.2	1,895.7	-558.8	1,948.5	2.21	2.19	0.31
8,721.0	91.60	1.80	6,907.4	1,927.7	-557.8	1,980.1	1.68	1.56	0.63
8,753.0	91.20	0.90	6,906.6	1,959.7	-557.1	2,011.8	3.08	-1.25	-2.81
8,784.0	91.50	2.00	6,905.9	1,990.7	-556.3	2,042.5	3.68	0.97	3.55
8,816.0	90.70	1.80	6,905.3	2,022.6	-555.2	2,074.1	2.58	-2.50	-0.63
8,848.0	89.90	1.10	6,905.1	2,054.6	-554.4	2,105.8	3.32	-2.50	-2.19
8,880.0	89.00	0.60	6,905.4	2,086.6	-554.0	2,137.5	3.22	-2.81	-1.56
8,911.0	89.30	0.40	6,905.9	2,117.6	-553.7	2,168.2	1.16	0.97	-0.65
8,943.0	90.20	0.80	6,906.0	2,149.6	-553.3	2,199.9	3.08	2.81	1.25
8,975.0	90.90	1.10	6,905.7	2,181.6	-552.8	2,231.7	2.38	2.19	0.94
9,007.0	90.70	0.80	6,905.3	2,213.6	-552.3	2,263.4	1.13	-0.63	-0.94
9,039.0	89.90	359.30	6,905.1	2,245.6	-552.3	2,295.1	5.31	-2.50	-4.69
9,070.0	89.30	359.30	6,905.3	2,276.6	-552.6	2,326.0	1.94	-1.94	0.00
9,103.0	89.40	358.50	6,905.7	2,309.6	-553.3	2,358.8	2.44	0.30	-2.42
9,135.0	90.30	358.60	6,905.8	2,341.6	-554.1	2,390.7	2.83	2.81	0.31
9,167.0	91.00	359.20	6,905.4	2,373.6	-554.7	2,422.5	2.88	2.19	1.88
9,198.0	90.90	358.30	6,904.9	2,404.6	-555.4	2,453.3	2.92	-0.32	-2.90
9,230.0	90.50	358.10	6,904.5	2,436.5	-556.4	2,485.2	1.40	-1.25	-0.63
9,262.0	90.20	358.30	6,904.3	2,468.5	-557.4	2,517.1	1.13	-0.94	0.63
9,294.0	90.90	359.20	6,904.0	2,500.5	-558.1	2,548.9	3.56	2.19	2.81
9,326.0	90.70	359.50	6,903.6	2,532.5	-558.4	2,580.8	1.13	-0.63	0.94
9,358.0	89.80	359.00	6,903.4	2,564.5	-558.9	2,612.6	3.22	-2.81	-1.56
9,389.0	88.50	358.60	6,903.9	2,595.5	-559.5	2,643.4	4.39	-4.19	-1.29
9,421.0	87.90	359.50	6,904.9	2,627.5	-560.0	2,675.2	3.38	-1.88	2.81
9,453.0	88.10	0.80	6,906.0	2,659.5	-560.0	2,707.0	4.11	0.63	4.06
9,485.0	88.20	2.20	6,907.0	2,691.4	-559.1	2,738.6	4.38	0.31	4.38
9,516.0	88.30	2.90	6,908.0	2,722.4	-557.7	2,769.2	2.28	0.32	2.26
9,548.0	88.60	2.50	6,908.9	2,754.3	-556.2	2,800.8	1.56	0.94	-1.25
9,579.0	88.90	2.30	6,909.5	2,785.3	-554.9	2,831.4	1.16	0.97	-0.65
9,611.0	89.20	2.30	6,910.1	2,817.3	-553.7	2,863.0	0.94	0.94	0.00
9,643.0	89.40	1.80	6,910.5	2,849.2	-552.5	2,894.6	1.68	0.63	-1.56
9,675.0	89.80	2.00	6,910.7	2,881.2	-551.4	2,926.2	1.40	1.25	0.63
9,707.0	89.90	1.60	6,910.8	2,913.2	-550.4	2,957.8	1.29	0.31	-1.25
9,739.0	90.20	1.30	6,910.7	2,945.2	-549.6	2,989.5	1.33	0.94	-0.94
9,771.0	90.70	1.30	6,910.5	2,977.2	-548.9	3,021.2	1.56	1.56	0.00
9,802.0	91.00	1.30	6,910.0	3,008.2	-548.2	3,051.9	0.97	0.97	0.00
9,834.0	91.30	0.90	6,909.4	3,040.2	-547.6	3,083.6	1.56	0.94	-1.25
9,866.0	91.70	0.20	6,908.5	3,072.2	-547.3	3,115.3	2.52	1.25	-2.19
9,897.0	91.50	1.50	6,907.7	3,103.1	-546.8	3,146.0	4.24	-0.65	4.19
9,929.0	91.20	359.50	6,906.9	3,135.1	-546.5	3,177.7	6.32	-0.94	-6.25
9,961.0	91.10	359.00	6,906.3	3,167.1	-547.0	3,209.6	1.59	-0.31	-1.56

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2L-301
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4949.0ft (RKB - 15')
Site:	Waste Management 2Q-HZ Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4949.0ft (RKB - 15')
Well:	Waste Management 2L-301	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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)
9,993.0	91.00	358.80	6,905.7	3,199.1	-547.6	3,241.4	0.70	-0.31	-0.63
10,024.0	90.60	358.10	6,905.3	3,230.1	-548.4	3,272.3	2.60	-1.29	-2.26
10,056.0	90.00	358.30	6,905.1	3,262.1	-549.4	3,304.1	1.98	-1.88	0.63
10,088.0	90.10	358.10	6,905.1	3,294.1	-550.4	3,336.0	0.70	0.31	-0.63
10,120.0	89.00	358.30	6,905.3	3,326.0	-551.4	3,367.9	3.49	-3.44	0.63
10,152.0	89.90	357.60	6,905.6	3,358.0	-552.6	3,399.8	3.56	2.81	-2.19
10,183.0	89.80	357.90	6,905.7	3,389.0	-553.8	3,430.7	1.02	-0.32	0.97
10,215.0	90.00	358.10	6,905.8	3,421.0	-554.9	3,462.6	0.88	0.63	0.63
10,247.0	90.10	359.50	6,905.7	3,453.0	-555.6	3,494.4	4.39	0.31	4.38
10,278.0	90.30	0.60	6,905.6	3,484.0	-555.6	3,525.2	3.61	0.65	3.55
10,311.0	90.40	2.20	6,905.4	3,517.0	-554.7	3,557.9	4.86	0.30	4.85
10,342.0	90.50	2.70	6,905.2	3,547.9	-553.4	3,588.5	1.64	0.32	1.61
10,374.0	90.60	2.00	6,904.9	3,579.9	-552.1	3,620.1	2.21	0.31	-2.19
10,405.0	90.70	1.30	6,904.5	3,610.9	-551.2	3,650.7	2.28	0.32	-2.26
10,437.0	90.60	1.30	6,904.2	3,642.9	-550.5	3,682.4	0.31	-0.31	0.00
10,468.0	91.40	0.90	6,903.6	3,673.9	-549.9	3,713.1	2.89	2.58	-1.29
10,500.0	92.40	2.20	6,902.6	3,705.8	-549.0	3,744.7	5.12	3.13	4.06
10,531.0	92.40	2.70	6,901.3	3,736.8	-547.7	3,775.3	1.61	0.00	1.61
10,563.0	91.80	3.00	6,900.1	3,768.7	-546.1	3,806.8	2.10	-1.88	0.94
10,595.0	91.20	2.20	6,899.2	3,800.7	-544.7	3,838.4	3.12	-1.88	-2.50
10,627.0	91.50	2.00	6,898.5	3,832.6	-543.5	3,870.0	1.13	0.94	-0.63
10,658.0	91.10	1.60	6,897.8	3,863.6	-542.5	3,900.7	1.82	-1.29	-1.29
10,690.0	91.20	0.80	6,897.1	3,895.6	-541.8	3,932.3	2.52	0.31	-2.50
10,722.0	90.90	0.90	6,896.6	3,927.6	-541.4	3,964.1	0.99	-0.94	0.31
10,753.0	90.70	0.90	6,896.1	3,958.6	-540.9	3,994.8	0.65	-0.65	0.00
10,785.0	90.40	0.90	6,895.8	3,990.6	-540.4	4,026.5	0.94	-0.94	0.00
10,817.0	90.60	1.10	6,895.5	4,022.6	-539.8	4,058.2	0.88	0.63	0.63
10,849.0	90.70	0.90	6,895.2	4,054.6	-539.3	4,089.9	0.70	0.31	-0.63
10,880.0	90.70	1.50	6,894.8	4,085.6	-538.6	4,120.6	1.94	0.00	1.94
10,912.0	90.30	1.50	6,894.5	4,117.5	-537.8	4,152.2	1.25	-1.25	0.00
10,943.0	90.40	1.10	6,894.3	4,148.5	-537.1	4,182.9	1.33	0.32	-1.29
10,975.0	90.60	0.20	6,894.1	4,180.5	-536.7	4,214.7	2.88	0.63	-2.81
11,007.0	90.90	0.40	6,893.6	4,212.5	-536.5	4,246.4	1.13	0.94	0.63
11,039.0	90.70	0.20	6,893.2	4,244.5	-536.4	4,278.2	0.88	-0.63	-0.63
11,070.0	91.30	359.50	6,892.6	4,275.5	-536.5	4,309.0	2.97	1.94	-2.26
11,102.0	91.70	359.30	6,891.8	4,307.5	-536.8	4,340.8	1.40	1.25	-0.63
11,134.0	92.20	359.30	6,890.7	4,339.5	-537.2	4,372.6	1.56	1.56	0.00
11,166.0	92.80	359.00	6,889.3	4,371.5	-537.7	4,404.4	2.10	1.88	-0.94
11,197.0	93.40	358.80	6,887.6	4,402.4	-538.3	4,435.2	2.04	1.94	-0.65
11,229.0	93.90	358.80	6,885.6	4,434.3	-538.9	4,466.9	1.56	1.56	0.00
11,271.0	94.90	357.90	6,882.4	4,476.2	-540.1	4,508.7	3.20	2.38	-2.14
11,324.8	94.90	357.90	6,877.8	4,529.8	-542.1	4,562.1	0.00	0.00	0.00
BHL 500'FNL, 1490'FWL									
11,326.0	94.90	357.90	6,877.7	4,531.0	-542.1	4,563.3	0.00	0.00	0.00

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2L-301
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4949.0ft (RKB - 15')
Site:	Waste Management 2Q-HZ Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4949.0ft (RKB - 15')
Well:	Waste Management 2L-301	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
BHL 500'FNL, 1490'F ¹	0.00	0.00	6,901.0	4,531.9	-539.3	1,307,465.94	3,273,045.48	40.173260	-104.522870
- survey misses target center by 23.5ft at 11324.8ft MD (6877.8 TVD, 4529.8 N, -542.1 E)									
- Point									

Checked By: _____	Approved By: _____	Date: _____
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