

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Peterson 14Y-414**

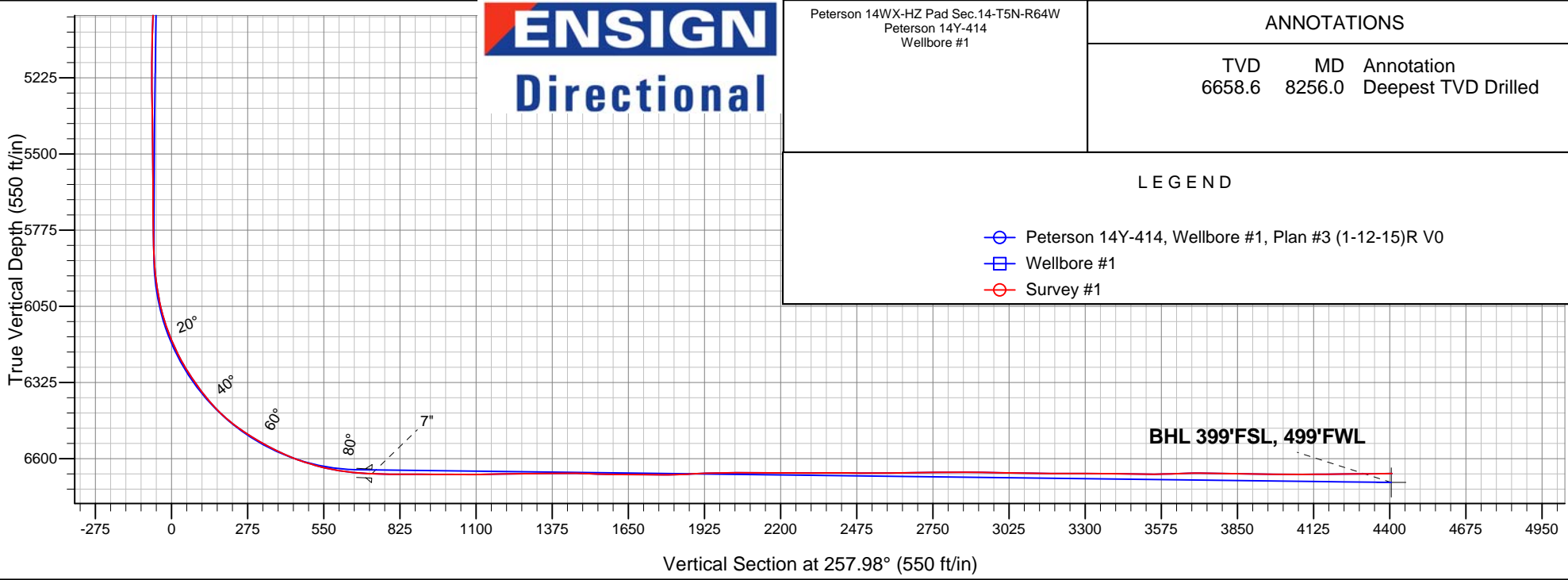
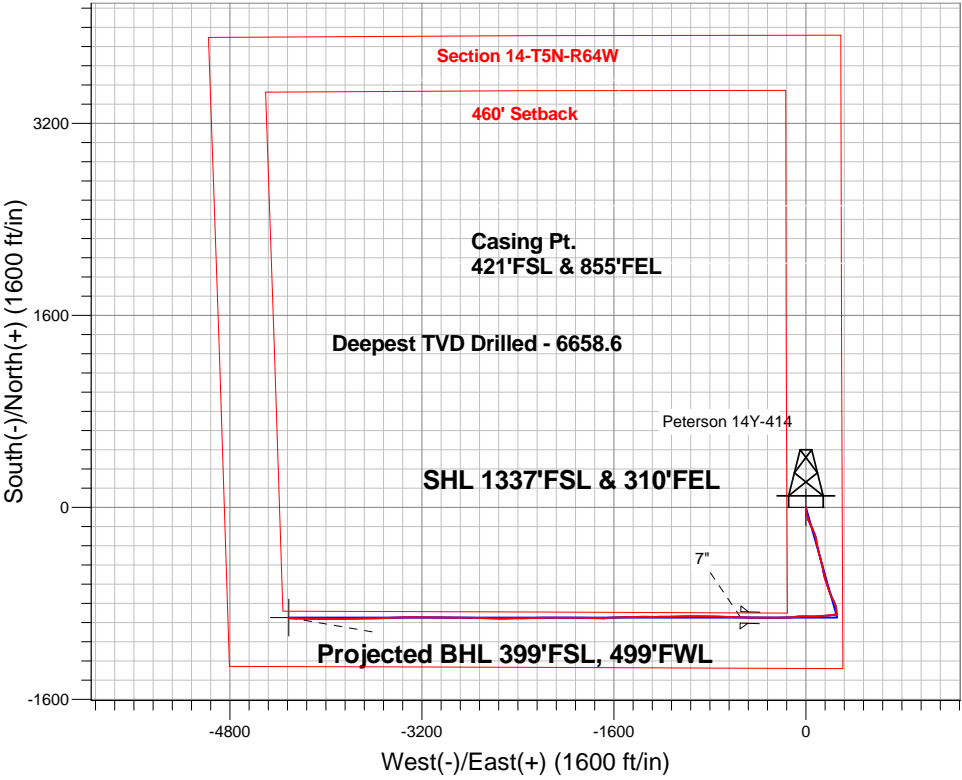
Surface Location: Peterson 14WX-HZ Pad Sec.14-T5N-R64W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4571.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1388535.63	3275959.82	40.395700	-104.509200	
Ensign Rig #32 - RKB - 15' WELL @ 4586.0ft (Ensign Rig #32 - RKB - 15')						

FINAL SURVEY

Projected Bottom Hole Location
10969'MD 6654'TVD 924'S & 4310'W of SHL
90.7 degree Incl @ 271.2 degree AZM





PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.14-T5N-R64W

Peterson 14WX-HZ Pad Sec.14-T5N-R64W

Peterson 14Y-414

Wellbore #1

Survey: Survey #1

Standard Survey Report

27 January, 2015

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peterson 14Y-414
Project:	SEC.14-T5N-R64W	TVD Reference:	WELL @ 4586.0ft (Ensign Rig #32 - RKB - 15')
Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	MD Reference:	WELL @ 4586.0ft (Ensign Rig #32 - RKB - 15')
Well:	Peterson 14Y-414	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.14-T5N-R64W, Weld County, CO		
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		Peterson 14WX-HZ Pad Sec.14-T5N-R64W			
Site Position:		Northing:	1,388,684.96 ft	Latitude:	40.396110
From:	Lat/Long	Easting:	3,275,955.37 ft	Longitude:	-104.509210
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.64 °

Well	Peterson 14Y-414					
Well Position	+N-S	0.0 ft	Northing:	1,388,535.63 ft	Latitude:	40.395700
	+E-W	0.0 ft	Easting:	3,275,959.82 ft	Longitude:	-104.509200
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,571.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/12/2015	8.24	66.96	52,781

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	257.98	

Survey Program	Date	1/27/2015			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
114.0	10,969.0	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	
1.0	0.00	162.40	1.0	0.0	0.0	0.0	0.00	0.00	0.00	
SHL 1337'FSL & 310'FEL										
114.0	0.10	162.40	114.0	-0.1	0.0	0.0	0.09	0.09	0.00	
238.0	0.20	99.70	238.0	-0.2	0.3	-0.2	0.14	0.08	-50.56	
362.0	0.40	18.40	362.0	0.1	0.6	-0.6	0.34	0.16	-65.56	
424.0	0.50	26.40	424.0	0.6	0.8	-0.9	0.19	0.16	12.90	
486.0	0.10	174.90	486.0	0.8	0.9	-1.1	0.95	-0.65	239.52	
548.0	1.60	190.40	548.0	-0.1	0.8	-0.7	2.43	2.42	25.00	
610.0	3.00	187.20	609.9	-2.6	0.4	0.1	2.27	2.26	-5.16	
673.0	4.40	187.00	672.8	-6.6	-0.1	1.5	2.22	2.22	-0.32	
735.0	5.80	186.00	734.6	-12.1	-0.7	3.2	2.26	2.26	-1.61	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peterson 14Y-414
Project:	SEC.14-T5N-R64W	TVD Reference:	WELL @ 4586.0ft (Ensign Rig #32 - RKB - 15')
Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	MD Reference:	WELL @ 4586.0ft (Ensign Rig #32 - RKB - 15')
Well:	Peterson 14Y-414	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)
797.0	6.50	181.70	796.2	-18.7	-1.1	5.0	1.35	1.13	-6.94
886.0	6.90	179.50	884.6	-29.1	-1.2	7.3	0.53	0.45	-2.47
951.0	6.90	178.00	949.1	-36.9	-1.1	8.7	0.28	0.00	-2.31
1,045.0	9.20	157.80	1,042.2	-49.5	2.0	8.4	3.84	2.45	-21.49
1,138.0	8.80	157.30	1,134.1	-63.0	7.5	5.7	0.44	-0.43	-0.54
1,235.0	9.70	165.00	1,229.8	-77.7	12.5	3.9	1.58	0.93	7.94
1,325.0	9.00	161.90	1,318.6	-91.7	16.7	2.8	0.96	-0.78	-3.44
1,415.0	9.80	164.00	1,407.4	-105.8	21.0	1.5	0.97	0.89	2.33
1,507.0	9.80	154.70	1,498.1	-120.4	26.5	-0.8	1.72	0.00	-10.11
1,597.0	8.80	152.00	1,586.9	-133.4	33.0	-4.5	1.21	-1.11	-3.00
1,688.0	10.40	152.20	1,676.6	-146.8	40.1	-8.6	1.76	1.76	0.22
1,780.0	10.40	158.20	1,767.1	-161.8	47.0	-12.3	1.18	0.00	6.52
1,869.0	10.90	160.50	1,854.6	-177.2	52.8	-14.7	0.74	0.56	2.58
1,960.0	9.80	155.00	1,944.1	-192.4	59.0	-17.6	1.62	-1.21	-6.04
2,051.0	9.40	154.00	2,033.8	-206.1	65.5	-21.1	0.48	-0.44	-1.10
2,142.0	10.10	154.50	2,123.5	-220.0	72.2	-24.8	0.77	0.77	0.55
2,233.0	10.60	166.10	2,213.0	-235.3	77.6	-26.9	2.35	0.55	12.75
2,324.0	10.50	164.90	2,302.5	-251.4	81.8	-27.6	0.27	-0.11	-1.32
2,415.0	11.40	170.30	2,391.8	-268.3	85.5	-27.7	1.50	0.99	5.93
2,508.0	10.70	168.20	2,483.1	-285.8	88.8	-27.3	0.87	-0.75	-2.26
2,602.0	10.60	167.50	2,575.5	-302.8	92.5	-27.4	0.17	-0.11	-0.74
2,697.0	12.70	173.10	2,668.5	-321.7	95.6	-26.5	2.51	2.21	5.89
2,792.0	11.60	168.60	2,761.4	-341.4	98.7	-25.5	1.53	-1.16	-4.74
2,887.0	11.10	168.00	2,854.5	-359.7	102.5	-25.4	0.54	-0.53	-0.63
2,982.0	12.20	165.20	2,947.6	-378.4	107.0	-25.8	1.30	1.16	-2.95
3,076.0	12.20	163.00	3,039.5	-397.5	112.4	-27.2	0.49	0.00	-2.34
3,171.0	7.80	167.80	3,133.0	-413.4	116.7	-28.1	4.71	-4.63	5.05
3,266.0	8.10	166.40	3,227.1	-426.2	119.7	-28.3	0.38	0.32	-1.47
3,361.0	9.50	158.50	3,321.0	-440.0	124.1	-29.8	1.94	1.47	-8.32
3,456.0	10.40	157.50	3,414.5	-455.2	130.3	-32.6	0.96	0.95	-1.05
3,550.0	12.40	174.00	3,506.7	-473.1	134.6	-33.1	4.05	2.13	17.55
3,645.0	14.80	170.70	3,599.0	-495.2	137.6	-31.4	2.65	2.53	-3.47
3,740.0	14.60	168.70	3,690.9	-518.9	141.9	-30.7	0.57	-0.21	-2.11
3,835.0	13.70	167.50	3,783.0	-541.6	146.7	-30.7	1.00	-0.95	-1.26
3,929.0	14.90	167.00	3,874.1	-564.3	151.8	-31.0	1.28	1.28	-0.53
4,024.0	13.50	164.30	3,966.2	-586.9	157.6	-31.9	1.63	-1.47	-2.84
4,119.0	12.50	163.10	4,058.8	-607.4	163.6	-33.5	1.09	-1.05	-1.26
4,214.0	12.80	159.40	4,151.5	-627.1	170.3	-35.9	0.91	0.32	-3.89
4,308.0	11.90	161.30	4,243.3	-646.0	177.0	-38.6	1.05	-0.96	2.02
4,403.0	14.30	162.00	4,335.8	-666.4	183.8	-41.0	2.53	2.53	0.74
4,498.0	13.30	161.70	4,428.1	-688.0	190.8	-43.4	1.06	-1.05	-0.32
4,593.0	12.00	159.10	4,520.8	-707.6	197.8	-46.1	1.49	-1.37	-2.74
4,688.0	12.20	158.00	4,613.7	-726.1	205.1	-49.3	0.32	0.21	-1.16
4,782.0	11.50	152.90	4,705.7	-743.6	213.1	-53.5	1.34	-0.74	-5.43
4,877.0	11.10	154.30	4,798.8	-760.3	221.4	-58.1	0.51	-0.42	1.47
4,972.0	12.50	155.40	4,891.8	-777.9	229.6	-62.5	1.49	1.47	1.16
5,067.0	10.10	154.00	4,985.0	-794.7	237.5	-66.8	2.54	-2.53	-1.47
5,162.0	9.90	161.00	5,078.5	-810.0	243.8	-69.8	1.30	-0.21	7.37
5,257.0	10.40	167.80	5,172.0	-826.1	248.3	-70.8	1.37	0.53	7.16
5,351.0	8.30	168.20	5,264.8	-841.0	251.5	-70.8	2.24	-2.23	0.43
5,447.0	8.70	178.20	5,359.7	-855.0	253.1	-69.5	1.59	0.42	10.42
5,541.0	7.10	171.20	5,452.8	-867.9	254.3	-67.9	1.98	-1.70	-7.45
5,636.0	5.60	170.50	5,547.3	-878.3	255.9	-67.4	1.58	-1.58	-0.74
5,731.0	4.50	168.90	5,641.9	-886.5	257.4	-67.1	1.17	-1.16	-1.68

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peterson 14Y-414
Project:	SEC.14-T5N-R64W	TVD Reference:	WELL @ 4586.0ft (Ensign Rig #32 - RKB - 15')
Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	MD Reference:	WELL @ 4586.0ft (Ensign Rig #32 - RKB - 15')
Well:	Peterson 14Y-414	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)
5,826.0	2.20	179.50	5,736.7	-892.0	258.1	-66.7	2.50	-2.42	11.16
5,921.0	2.10	253.10	5,831.7	-894.3	256.5	-64.6	2.71	-0.11	77.47
5,953.0	2.00	265.90	5,863.6	-894.5	255.4	-63.4	1.46	-0.31	40.00
5,985.0	3.70	271.70	5,895.6	-894.5	253.8	-61.9	5.38	5.31	18.13
6,016.0	6.20	278.80	5,926.5	-894.2	251.1	-59.4	8.29	8.06	22.90
6,048.0	8.10	273.80	5,958.2	-893.8	247.2	-55.6	6.24	5.94	-15.63
6,080.0	9.00	266.10	5,989.9	-893.8	242.4	-50.9	4.54	2.81	-24.06
6,111.0	10.50	261.40	6,020.4	-894.4	237.2	-45.7	5.47	4.84	-15.16
6,142.0	12.70	259.60	6,050.8	-895.5	231.1	-39.5	7.19	7.10	-5.81
6,174.0	15.60	263.80	6,081.8	-896.6	223.3	-31.7	9.61	9.06	13.13
6,206.0	18.40	264.20	6,112.4	-897.5	214.0	-22.4	8.76	8.75	1.25
6,238.0	20.70	267.90	6,142.6	-898.3	203.3	-11.8	8.16	7.19	11.56
6,269.0	23.10	265.10	6,171.3	-899.0	191.8	-0.3	8.44	7.74	-9.03
6,301.0	24.40	260.80	6,200.6	-900.6	179.0	12.5	6.76	4.06	-13.44
6,332.0	27.60	263.10	6,228.5	-902.5	165.6	26.0	10.82	10.32	7.42
6,364.0	29.70	264.70	6,256.6	-904.1	150.3	41.3	6.99	6.56	5.00
6,396.0	31.90	264.90	6,284.1	-905.6	134.0	57.6	6.88	6.88	0.63
6,427.0	33.90	264.90	6,310.1	-907.1	117.2	74.3	6.45	6.45	0.00
6,459.0	36.10	267.00	6,336.3	-908.3	98.9	92.4	7.84	6.88	6.56
6,491.0	38.50	269.50	6,361.8	-908.9	79.5	111.5	8.87	7.50	7.81
6,527.0	40.70	271.60	6,389.5	-908.7	56.6	133.9	7.15	6.11	5.83
6,554.0	43.50	272.60	6,409.5	-908.0	38.5	151.5	10.66	10.37	3.70
6,586.0	46.20	271.20	6,432.2	-907.3	16.0	173.4	8.98	8.44	-4.38
6,617.0	49.30	269.10	6,453.0	-907.2	-7.0	195.8	11.19	10.00	-6.77
6,649.0	52.00	266.50	6,473.3	-908.2	-31.7	220.2	10.52	8.44	-8.13
6,680.0	55.00	265.40	6,491.8	-910.0	-56.6	244.9	10.09	9.68	-3.55
6,712.0	57.20	265.20	6,509.6	-912.1	-83.0	271.2	6.89	6.88	-0.63
6,743.0	59.30	265.80	6,525.9	-914.2	-109.3	297.3	6.97	6.77	1.94
6,775.0	61.00	266.60	6,541.9	-916.0	-137.0	324.8	5.74	5.31	2.50
6,807.0	62.30	267.70	6,557.1	-917.4	-165.1	352.6	5.07	4.06	3.44
6,839.0	63.70	268.40	6,571.6	-918.4	-193.6	380.7	4.79	4.38	2.19
6,870.0	66.00	268.90	6,584.8	-919.1	-221.7	408.2	7.56	7.42	1.61
6,902.0	68.80	268.70	6,597.1	-919.7	-251.2	437.3	8.77	8.75	-0.63
6,934.0	71.60	269.30	6,607.9	-920.2	-281.3	466.8	8.93	8.75	1.88
6,965.0	73.30	269.80	6,617.2	-920.4	-310.9	495.8	5.70	5.48	1.61
6,997.0	75.40	270.20	6,625.9	-920.4	-341.7	525.9	6.67	6.56	1.25
7,028.0	77.20	271.00	6,633.2	-920.1	-371.8	555.3	6.32	5.81	2.58
7,060.0	79.00	271.20	6,639.8	-919.5	-403.1	585.8	5.66	5.63	0.63
7,091.0	81.30	271.70	6,645.1	-918.8	-433.6	615.5	7.59	7.42	1.61
7,123.0	83.60	271.70	6,649.3	-917.8	-465.3	646.3	7.19	7.19	0.00
7,155.0	86.40	270.70	6,652.1	-917.1	-497.2	677.3	9.29	8.75	-3.13
7,163.0	87.20	270.90	6,652.6	-917.0	-505.2	685.1	10.31	10.00	2.50
7,203.0	88.31	271.92	6,654.1	-916.0	-545.1	724.0	3.76	2.77	2.55
7"									
7,210.0	88.50	272.10	6,654.3	-915.8	-552.1	730.8	3.76	2.77	2.55
7,242.0	88.40	272.40	6,655.2	-914.5	-584.1	761.8	0.99	-0.31	0.94
7,273.0	88.70	270.70	6,656.0	-913.7	-615.1	791.9	5.57	0.97	-5.48
7,307.0	88.90	269.80	6,656.7	-913.6	-649.1	825.1	2.71	0.59	-2.65
7,370.0	90.30	272.30	6,657.1	-912.4	-712.0	886.5	4.55	2.22	3.97
7,433.0	90.30	272.40	6,656.8	-909.8	-775.0	947.5	0.16	0.00	0.16
7,496.0	89.70	271.60	6,656.8	-907.6	-838.0	1,008.6	1.59	-0.95	-1.27
7,559.0	89.60	270.20	6,657.2	-906.6	-900.9	1,070.0	2.23	-0.16	-2.22
7,622.0	90.70	268.90	6,657.0	-907.1	-963.9	1,131.7	2.70	1.75	-2.06

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peterson 14Y-414
Project:	SEC.14-T5N-R64W	TVD Reference:	WELL @ 4586.0ft (Ensign Rig #32 - RKB - 15')
Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	MD Reference:	WELL @ 4586.0ft (Ensign Rig #32 - RKB - 15')
Well:	Peterson 14Y-414	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)
7,685.0	92.00	268.70	6,655.5	-908.4	-1,026.9	1,193.6	2.09	2.06	-0.32
7,749.0	90.70	269.10	6,654.0	-909.7	-1,090.9	1,256.4	2.13	-2.03	0.63
7,812.0	90.20	268.70	6,653.5	-910.9	-1,153.9	1,318.3	1.02	-0.79	-0.63
7,875.0	90.20	268.60	6,653.3	-912.4	-1,216.8	1,380.2	0.16	0.00	-0.16
7,938.0	90.20	269.80	6,653.1	-913.3	-1,279.8	1,442.0	1.90	0.00	1.90
8,002.0	87.70	270.20	6,654.3	-913.3	-1,343.8	1,504.6	3.96	-3.91	0.63
8,066.0	88.20	269.80	6,656.5	-913.3	-1,407.8	1,567.1	1.00	0.78	-0.63
8,129.0	90.40	269.80	6,657.3	-913.5	-1,470.8	1,628.8	3.49	3.49	0.00
8,193.0	88.80	266.80	6,657.8	-915.4	-1,534.7	1,691.7	5.31	-2.50	-4.69
8,256.0	89.70	266.50	6,658.6	-919.1	-1,597.6	1,754.0	1.51	1.43	-0.48
Deepest TVD Drilled									
8,319.0	91.40	268.00	6,658.0	-922.1	-1,660.5	1,816.2	3.60	2.70	2.38
8,382.0	93.70	271.20	6,655.2	-922.5	-1,723.5	1,877.8	6.25	3.65	5.08
8,446.0	91.40	271.00	6,652.3	-921.3	-1,787.4	1,940.1	3.61	-3.59	-0.31
8,509.0	90.70	270.30	6,651.2	-920.6	-1,850.4	2,001.5	1.57	-1.11	-1.11
8,572.0	90.20	270.70	6,650.7	-920.0	-1,913.4	2,063.0	1.02	-0.79	0.63
8,635.0	90.00	270.50	6,650.6	-919.4	-1,976.4	2,124.5	0.45	-0.32	-0.32
8,698.0	89.10	270.30	6,651.1	-918.9	-2,039.4	2,186.0	1.46	-1.43	-0.32
8,762.0	89.50	269.30	6,651.8	-919.1	-2,103.3	2,248.7	1.68	0.63	-1.56
8,825.0	90.50	269.30	6,651.8	-919.9	-2,166.3	2,310.4	1.59	1.59	0.00
8,888.0	90.10	269.30	6,651.5	-920.7	-2,229.3	2,372.2	0.63	-0.63	0.00
8,951.0	90.10	269.10	6,651.4	-921.6	-2,292.3	2,434.0	0.32	0.00	-0.32
9,015.0	89.80	269.10	6,651.5	-922.6	-2,356.3	2,496.8	0.47	-0.47	0.00
9,078.0	89.20	268.90	6,652.0	-923.7	-2,419.3	2,558.6	1.00	-0.95	-0.32
9,141.0	90.60	268.70	6,652.1	-925.0	-2,482.3	2,620.5	2.24	2.22	-0.32
9,204.0	91.70	270.20	6,650.9	-925.6	-2,545.3	2,682.2	2.95	1.75	2.38
9,268.0	90.70	271.70	6,649.5	-924.5	-2,609.2	2,744.6	2.82	-1.56	2.34
9,331.0	90.00	271.60	6,649.1	-922.7	-2,672.2	2,805.8	1.12	-1.11	-0.16
9,395.0	89.60	271.00	6,649.4	-921.3	-2,736.2	2,868.1	1.13	-0.63	-0.94
9,458.0	89.40	271.00	6,649.9	-920.2	-2,799.2	2,929.5	0.32	-0.32	0.00
9,521.0	89.00	270.50	6,650.8	-919.3	-2,862.2	2,990.9	1.02	-0.63	-0.79
9,585.0	89.10	270.90	6,651.8	-918.6	-2,926.2	3,053.3	0.64	0.16	0.63
9,648.0	88.90	271.00	6,652.9	-917.5	-2,989.1	3,114.7	0.35	-0.32	0.16
9,710.0	89.60	270.70	6,653.8	-916.6	-3,051.1	3,175.1	1.23	1.13	-0.48
9,774.0	90.30	270.70	6,653.8	-915.8	-3,115.1	3,237.6	1.09	1.09	0.00
9,838.0	90.00	270.70	6,653.6	-915.0	-3,179.1	3,300.0	0.47	-0.47	0.00
9,902.0	89.20	269.80	6,654.1	-914.8	-3,243.1	3,362.5	1.88	-1.25	-1.41
9,965.0	89.30	269.30	6,654.9	-915.2	-3,306.1	3,424.2	0.81	0.16	-0.79
10,028.0	89.30	268.40	6,655.7	-916.5	-3,369.1	3,486.1	1.43	0.00	-1.43
10,092.0	89.90	267.30	6,656.1	-918.9	-3,433.0	3,549.2	1.96	0.94	-1.72
10,155.0	91.70	267.90	6,655.3	-921.6	-3,496.0	3,611.3	3.01	2.86	0.95
10,218.0	92.00	269.10	6,653.2	-923.2	-3,558.9	3,673.2	1.96	0.48	1.90
10,281.0	89.60	270.00	6,652.3	-923.7	-3,621.9	3,734.9	4.07	-3.81	1.43
10,345.0	88.00	268.70	6,653.7	-924.4	-3,685.9	3,797.6	3.22	-2.50	-2.03
10,408.0	88.80	268.60	6,655.4	-925.9	-3,748.8	3,859.5	1.28	1.27	-0.16
10,472.0	89.60	268.70	6,656.3	-927.4	-3,812.8	3,922.4	1.26	1.25	0.16
10,535.0	90.00	269.10	6,656.6	-928.6	-3,875.8	3,984.2	0.90	0.63	0.63
10,598.0	90.20	270.00	6,656.4	-929.1	-3,938.8	4,045.9	1.46	0.32	1.43
10,661.0	89.70	270.50	6,656.5	-928.8	-4,001.8	4,107.5	1.12	-0.79	0.79
10,724.0	90.70	270.90	6,656.3	-928.1	-4,064.8	4,169.0	1.71	1.59	0.63
10,788.0	90.40	271.00	6,655.7	-927.0	-4,128.8	4,231.3	0.49	-0.47	0.16
10,851.0	90.50	271.00	6,655.2	-925.9	-4,191.8	4,292.7	0.16	0.16	0.00
10,914.0	90.70	271.20	6,654.5	-924.7	-4,254.8	4,354.1	0.45	0.32	0.32

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peterson 14Y-414
Project:	SEC.14-T5N-R64W	TVD Reference:	WELL @ 4586.0ft (Ensign Rig #32 - RKB - 15')
Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	MD Reference:	WELL @ 4586.0ft (Ensign Rig #32 - RKB - 15')
Well:	Peterson 14Y-414	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)
10,968.2	90.70	271.20	6,653.9	-923.6	-4,308.9	4,406.8	0.00	0.00	0.00
BHL 405'FSL, 500'FWL									
10,969.0	90.70	271.20	6,653.8	-923.5	-4,309.7	4,407.6	0.00	0.00	0.00

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,203.0	6,654.1	7"	7	7-1/2

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
8,256.0	6,658.6	-919.1	-1,597.6	Deepest TVD Drilled

Checked By: _____ Approved By: _____ Date: _____