

# PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Simonson/Schaefer 7J-403**

Surface Location: Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W

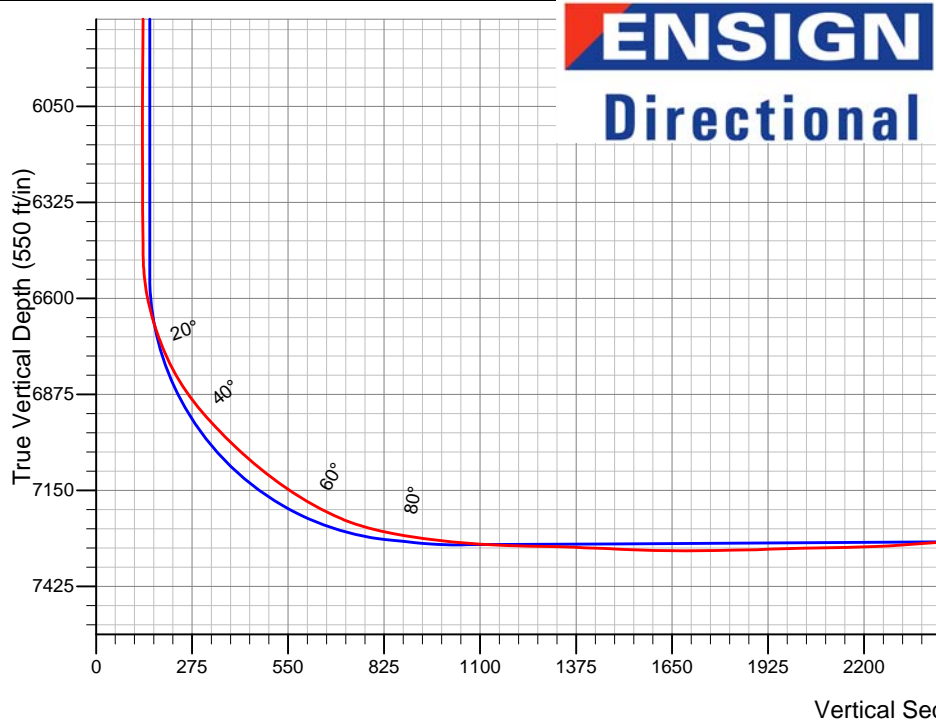
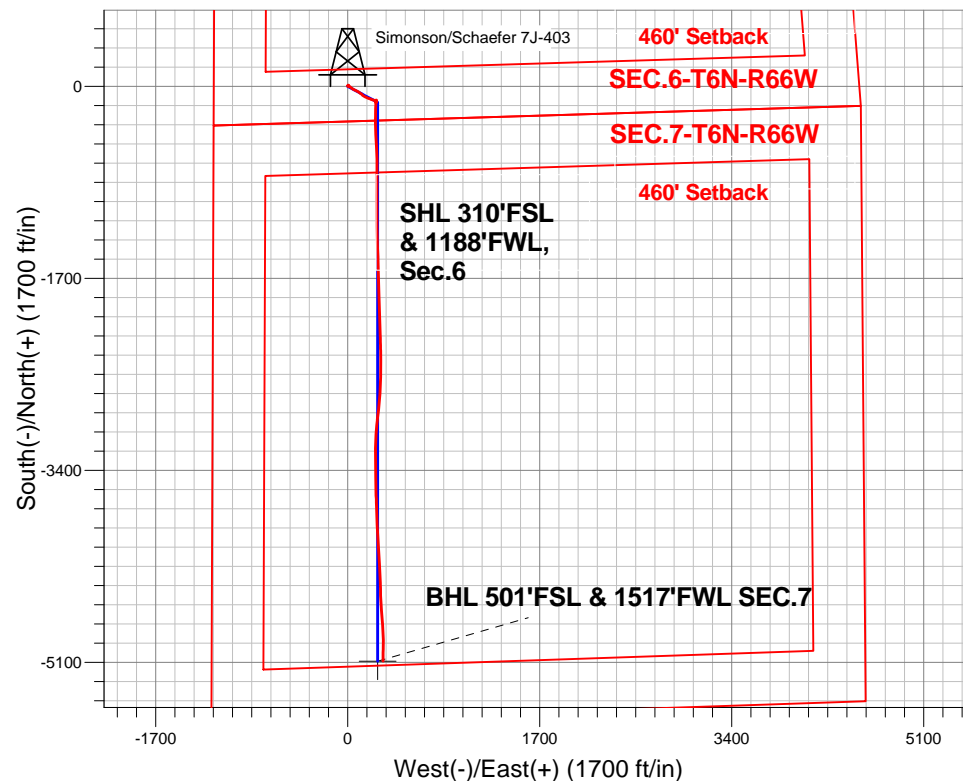
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4891.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1429286.88	3186848.34	40.509850	-104.828020	
RKB Ensign 32 - 15' WELL @ 4906.0ft (RKB Ensign 32 - 15')						

## FINAL SURVEY

Projected Bottom Hole Location  
11900'MD 7321'TVD 5088'S & 312'E  
of SHL 90.50 degree Incl @ 181.00  
degree AZM



Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W  
Simonson/Schaefer 7J-403  
Wellbore #1  
15:20, June 24 2013

### ANNOTATIONS

No annotation data is available.

### LEGEND

- Simonson/Schaefer 7J-403, Wellbore #1, Plan #1 (6-10-13)R V0
- Wellbore #1

BHL 501'FSL & 1517'FWL, SEC.7



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.6-T6N-R66W**

**Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W**

**Simonson/Schaefer 7J-403**

**Wellbore #1**

**Design: Wellbore #1**

## **Standard Survey Report**

**24 June, 2013**

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Simonson/Schaefer 7J-403
<b>Project:</b>	SEC.6-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Site:</b>	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	<b>MD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Well:</b>	Simonson/Schaefer 7J-403	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

<b>Project</b>	SEC.6-T6N-R66W, Weld County, Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W				
Site Position:		Northing:	1,429,286.44 ft	Latitude:	40.509850
From:	Lat/Long	Easting:	3,186,789.95 ft	Longitude:	-104.828230
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.43 °

Well	Simonson/Schaefer 7J-403					
Well Position	+N-S	0.0 ft	Northing:	1,429,286.88 ft	Latitude:	40.509850
	+E-W	0.0 ft	Easting:	3,186,848.34 ft	Longitude:	-104.828020
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,891.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	6/10/2013	8.64	67.06	52,972

<b>Design</b>	Wellbore #1				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	177.03	

<b>Survey Program</b>	<b>Date</b> 6/24/2013				
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
144.0	11,900.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

<b>Survey</b>									
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
144.0	1.20	46.10	144.0	1.0	1.1	-1.0	0.83	0.83	0.00
234.0	1.50	51.70	234.0	2.4	2.7	-2.3	0.36	0.33	6.22
325.0	0.70	28.70	324.9	3.7	3.9	-3.4	0.99	-0.88	-25.27
417.0	0.70	17.70	416.9	4.7	4.3	-4.5	0.15	0.00	-11.96
508.0	1.00	16.70	507.9	6.0	4.7	-5.7	0.33	0.33	-1.10
600.0	0.60	346.50	599.9	7.2	4.8	-6.9	0.62	-0.43	-32.83
691.0	0.80	356.90	690.9	8.3	4.7	-8.1	0.26	0.22	11.43
782.0	0.60	349.40	781.9	9.4	4.6	-9.2	0.24	-0.22	-8.24
874.0	0.70	324.60	873.9	10.3	4.2	-10.1	0.32	0.11	-26.96
941.0	0.70	313.20	940.9	11.0	3.6	-10.8	0.21	0.00	-17.01

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<b>Site:</b>	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	<b>MD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Well:</b>	Simonson/Schaefer 7J-403	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	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)
1,033.0	0.50	131.40	1,032.9	11.1	3.5	-10.9	1.30	-0.22	193.70
1,125.0	2.40	138.70	1,124.9	9.4	5.1	-9.1	2.07	2.07	7.93
1,218.0	3.30	120.90	1,217.7	6.5	8.7	-6.1	1.35	0.97	-19.14
1,313.0	4.00	130.10	1,312.6	3.0	13.6	-2.3	0.96	0.74	9.68
1,409.0	4.00	130.30	1,408.3	-1.3	18.7	2.3	0.01	0.00	0.21
1,504.0	3.80	133.40	1,503.1	-5.6	23.5	6.9	0.31	-0.21	3.26
1,600.0	5.00	132.70	1,598.8	-10.7	28.9	12.1	1.25	1.25	-0.73
1,695.0	5.80	124.50	1,693.4	-16.2	35.9	18.0	1.17	0.84	-8.63
1,791.0	5.90	123.40	1,788.9	-21.7	44.0	23.9	0.16	0.10	-1.15
1,886.0	5.40	120.80	1,883.4	-26.6	51.9	29.3	0.59	-0.53	-2.74
1,982.0	4.70	113.40	1,979.1	-30.5	59.4	33.5	0.99	-0.73	-7.71
2,077.0	5.40	119.60	2,073.7	-34.3	66.9	37.7	0.93	0.74	6.53
2,172.0	4.80	113.30	2,168.3	-38.0	74.4	41.8	0.86	-0.63	-6.63
2,268.0	5.70	111.10	2,263.9	-41.3	82.5	45.6	0.96	0.94	-2.29
2,364.0	5.20	118.00	2,359.5	-45.1	90.8	49.8	0.86	-0.52	7.19
2,459.0	5.50	126.90	2,454.1	-49.9	98.3	54.9	0.93	0.32	9.37
2,554.0	5.20	128.90	2,548.7	-55.3	105.2	60.7	0.37	-0.32	2.11
2,650.0	4.90	125.10	2,644.3	-60.4	112.0	66.1	0.47	-0.31	-3.96
2,745.0	4.60	133.70	2,739.0	-65.4	118.1	71.4	0.81	-0.32	9.05
2,840.0	5.70	130.20	2,833.6	-71.0	124.4	77.4	1.20	1.16	-3.68
2,935.0	5.80	133.10	2,928.1	-77.4	131.5	84.1	0.32	0.11	3.05
3,030.0	6.00	125.30	3,022.6	-83.5	139.1	90.6	0.87	0.21	-8.21
3,126.0	6.40	115.10	3,118.0	-88.7	148.0	96.2	1.22	0.42	-10.63
3,220.0	5.40	116.70	3,211.5	-92.9	156.7	100.9	1.08	-1.06	1.70
3,315.0	5.80	114.10	3,306.1	-96.8	165.1	105.3	0.50	0.42	-2.74
3,410.0	6.20	114.70	3,400.6	-101.0	174.1	109.8	0.43	0.42	0.63
3,506.0	5.90	115.70	3,496.0	-105.3	183.3	114.6	0.33	-0.31	1.04
3,601.0	6.30	110.70	3,590.5	-109.2	192.6	119.1	0.70	0.42	-5.26
3,696.0	5.60	109.90	3,685.0	-112.6	201.8	122.9	0.74	-0.74	-0.84
3,791.0	5.70	111.60	3,779.5	-116.0	210.6	126.7	0.21	0.11	1.79
3,887.0	5.60	110.10	3,875.0	-119.3	219.4	130.5	0.19	-0.10	-1.56
3,982.0	5.70	106.60	3,969.6	-122.3	228.3	133.9	0.38	0.11	-3.68
4,077.0	5.10	109.70	4,064.2	-125.0	236.8	137.1	0.70	-0.63	3.26
4,172.0	4.30	115.70	4,158.8	-128.0	243.9	140.5	0.99	-0.84	6.32
4,267.0	3.00	129.90	4,253.7	-131.1	249.1	143.9	1.66	-1.37	14.95
4,362.0	1.50	159.90	4,348.6	-133.9	251.4	146.8	1.96	-1.58	31.58
4,458.0	1.50	166.00	4,444.5	-136.3	252.1	149.2	0.17	0.00	6.35
4,553.0	1.10	204.50	4,539.5	-138.3	252.0	151.2	0.99	-0.42	40.53
4,648.0	1.10	230.00	4,634.5	-139.8	251.0	152.6	0.51	0.00	26.84
4,744.0	1.40	227.20	4,730.5	-141.1	249.4	153.9	0.32	0.31	-2.92
4,838.0	1.60	34.40	4,824.5	-140.8	249.3	153.6	3.17	0.21	177.87
4,933.0	1.70	25.40	4,919.4	-138.5	250.7	151.3	0.29	0.11	-9.47
5,029.0	1.70	23.80	5,015.4	-135.9	251.8	148.8	0.05	0.00	-1.67
5,125.0	1.60	14.80	5,111.4	-133.3	252.8	146.2	0.29	-0.10	-9.38
5,220.0	1.40	8.40	5,206.3	-130.9	253.3	143.8	0.27	-0.21	-6.74
5,315.0	1.10	3.10	5,301.3	-128.8	253.5	141.8	0.34	-0.32	-5.58
5,411.0	1.10	353.10	5,397.3	-127.0	253.4	139.9	0.20	0.00	-10.42
5,506.0	0.70	37.20	5,492.3	-125.6	253.7	138.6	0.81	-0.42	46.42
5,602.0	1.00	5.10	5,588.3	-124.3	254.1	137.3	0.57	0.31	-33.44
5,697.0	0.90	23.60	5,683.2	-122.8	254.5	135.8	0.34	-0.11	19.47
5,792.0	0.50	1.80	5,778.2	-121.7	254.8	134.7	0.50	-0.42	-22.95
5,887.0	0.60	321.00	5,873.2	-120.9	254.5	133.9	0.42	0.11	-42.95
5,982.0	0.70	293.50	5,968.2	-120.3	253.6	133.3	0.34	0.11	-28.95

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<b>Well:</b>	Simonson/Schaefer 7J-403	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	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)
6,077.0	0.70	276.00	6,063.2	-120.0	252.5	132.9	0.22	0.00	-18.42
6,172.0	0.70	260.50	6,158.2	-120.0	251.4	132.9	0.20	0.00	-16.32
6,267.0	0.80	249.30	6,253.2	-120.3	250.2	133.1	0.19	0.11	-11.79
6,362.0	0.90	246.30	6,348.2	-120.9	248.9	133.6	0.12	0.11	-3.16
6,457.0	0.70	227.20	6,443.2	-121.6	247.8	134.2	0.35	-0.21	-20.11
6,489.0	1.10	173.70	6,475.2	-122.0	247.7	134.7	2.77	1.25	-167.19
6,521.0	3.10	170.60	6,507.2	-123.2	247.8	135.8	6.26	6.25	-9.69
6,552.0	6.00	173.20	6,538.1	-125.6	248.2	138.3	9.38	9.35	8.39
6,584.0	8.80	176.70	6,569.8	-129.7	248.5	142.4	8.86	8.75	10.94
6,615.0	11.50	178.80	6,600.3	-135.2	248.7	147.9	8.79	8.71	6.77
6,647.0	13.90	179.80	6,631.5	-142.2	248.8	154.9	7.53	7.50	3.13
6,679.0	16.40	180.90	6,662.4	-150.6	248.7	163.2	7.86	7.81	3.44
6,710.0	18.60	181.80	6,692.0	-159.9	248.5	172.5	7.15	7.10	2.90
6,742.0	21.10	182.10	6,722.1	-170.7	248.1	183.4	7.82	7.81	0.94
6,774.0	23.10	182.50	6,751.7	-182.8	247.6	195.4	6.27	6.25	1.25
6,805.0	25.80	181.80	6,779.9	-195.6	247.2	208.1	8.76	8.71	-2.26
6,837.0	28.40	182.30	6,808.4	-210.2	246.6	222.7	8.16	8.13	1.56
6,869.0	31.40	181.20	6,836.1	-226.1	246.2	238.6	9.53	9.38	-3.44
6,901.0	34.20	180.50	6,863.0	-243.4	245.9	255.8	8.83	8.75	-2.19
6,932.0	37.00	179.20	6,888.2	-261.5	246.0	273.9	9.36	9.03	-4.19
6,964.0	39.50	179.80	6,913.4	-281.3	246.1	293.7	7.90	7.81	1.88
6,995.0	41.10	180.00	6,937.0	-301.3	246.2	313.7	5.18	5.16	0.65
7,027.0	43.10	180.40	6,960.8	-322.8	246.1	335.1	6.31	6.25	1.25
7,059.0	44.50	180.40	6,983.9	-344.9	245.9	357.2	4.38	4.38	0.00
7,091.0	45.80	179.10	7,006.4	-367.6	246.0	379.9	4.98	4.06	-4.06
7,123.0	47.30	177.70	7,028.4	-390.8	246.7	403.1	5.66	4.69	-4.38
7,154.0	47.50	177.80	7,049.4	-413.6	247.6	425.9	0.69	0.65	0.32
7,186.0	49.00	177.30	7,070.7	-437.5	248.6	449.8	4.83	4.69	-1.56
7,218.0	51.10	176.80	7,091.3	-462.0	249.9	474.3	6.67	6.56	-1.56
7,250.0	53.30	176.30	7,110.9	-487.2	251.4	499.6	6.98	6.88	-1.56
7,281.0	55.20	176.50	7,129.0	-512.3	253.0	524.8	6.15	6.13	0.65
7,313.0	55.60	176.00	7,147.2	-538.6	254.7	551.1	1.79	1.25	-1.56
7,345.0	57.20	177.50	7,164.9	-565.2	256.2	577.7	6.34	5.00	4.69
7,376.0	58.90	178.10	7,181.3	-591.5	257.2	604.0	5.72	5.48	1.94
7,408.0	61.30	178.30	7,197.2	-619.2	258.1	631.8	7.52	7.50	0.63
7,440.0	63.70	178.20	7,212.0	-647.6	259.0	660.1	7.51	7.50	-0.31
7,472.0	66.20	178.80	7,225.5	-676.6	259.7	689.1	7.99	7.81	1.88
7,503.0	69.10	180.10	7,237.3	-705.2	260.0	717.8	10.13	9.35	4.19
7,535.0	72.10	180.40	7,248.0	-735.4	259.9	747.9	9.42	9.38	0.94
7,567.0	74.70	180.10	7,257.1	-766.1	259.7	778.5	8.17	8.13	-0.94
7,598.0	76.50	180.50	7,264.8	-796.1	259.6	808.5	5.94	5.81	1.29
7,630.0	78.30	179.70	7,271.8	-827.3	259.5	839.7	6.13	5.63	-2.50
7,662.0	80.30	179.70	7,277.7	-858.8	259.7	871.1	6.25	6.25	0.00
7,693.0	81.60	180.40	7,282.6	-889.4	259.6	901.7	4.75	4.19	2.26
7,719.0	82.40	180.40	7,286.2	-915.1	259.5	927.4	3.08	3.08	0.00
7,795.0	83.50	181.00	7,295.6	-990.6	258.5	1,002.6	1.65	1.45	0.79
7,825.0	84.40	179.60	7,298.7	-1,020.4	258.4	1,032.4	5.53	3.00	-4.67
7,856.0	85.30	180.50	7,301.5	-1,051.3	258.4	1,063.2	4.10	2.90	2.90
7,887.0	86.40	180.40	7,303.7	-1,082.2	258.1	1,094.1	3.56	3.55	-0.32
7,917.0	86.90	180.40	7,305.5	-1,112.1	257.9	1,124.0	1.67	1.67	0.00
7,948.0	87.90	179.90	7,306.9	-1,143.1	257.8	1,154.9	3.61	3.23	-1.61
7,979.0	88.10	179.80	7,308.0	-1,174.1	257.9	1,185.9	0.72	0.65	-0.32

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<b>Design:</b>	Wellbore #1	<b>Database:</b>	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)	
8,009.0	88.20	179.60	7,309.0	-1,204.1	258.1	1,215.8	0.75	0.33	-0.67	
8,040.0	88.70	178.30	7,309.8	-1,235.0	258.6	1,246.8	4.49	1.61	-4.19	
8,070.0	89.10	179.00	7,310.4	-1,265.0	259.3	1,276.8	2.69	1.33	2.33	
8,101.0	88.60	178.40	7,311.0	-1,296.0	260.0	1,307.7	2.52	-1.61	-1.94	
8,131.0	88.00	178.10	7,311.9	-1,326.0	261.0	1,337.7	2.24	-2.00	-1.00	
8,162.0	88.00	178.40	7,313.0	-1,356.9	261.9	1,368.7	0.97	0.00	0.97	
8,192.0	87.40	178.20	7,314.2	-1,386.9	262.8	1,398.7	2.11	-2.00	-0.67	
8,223.0	87.70	178.40	7,315.5	-1,417.9	263.7	1,429.6	1.16	0.97	0.65	
8,253.0	87.70	177.90	7,316.7	-1,447.8	264.7	1,459.6	1.67	0.00	-1.67	
8,284.0	87.60	177.30	7,318.0	-1,478.8	266.0	1,490.6	1.96	-0.32	-1.94	
8,314.0	87.60	177.30	7,319.2	-1,508.7	267.4	1,520.5	0.00	0.00	0.00	
8,345.0	87.70	178.90	7,320.5	-1,539.7	268.4	1,551.5	5.17	0.32	5.16	
8,375.0	88.10	178.90	7,321.6	-1,569.6	269.0	1,581.5	1.33	1.33	0.00	
8,405.0	88.60	179.50	7,322.5	-1,599.6	269.4	1,611.4	2.60	1.67	2.00	
8,436.0	89.50	178.70	7,323.0	-1,630.6	269.9	1,642.4	3.88	2.90	-2.58	
8,466.0	90.30	178.80	7,323.0	-1,660.6	270.6	1,672.4	2.69	2.67	0.33	
8,497.0	90.60	179.00	7,322.8	-1,691.6	271.1	1,703.4	1.16	0.97	0.65	
8,527.0	90.50	178.60	7,322.5	-1,721.6	271.8	1,733.4	1.37	-0.33	-1.33	
8,558.0	91.00	178.60	7,322.1	-1,752.6	272.5	1,764.4	1.61	1.61	0.00	
8,589.0	90.90	178.00	7,321.6	-1,783.6	273.5	1,795.3	1.96	-0.32	-1.94	
8,621.0	90.90	177.50	7,321.1	-1,815.5	274.7	1,827.3	1.56	0.00	-1.56	
8,653.0	91.20	178.30	7,320.5	-1,847.5	275.9	1,859.3	2.67	0.94	2.50	
8,685.0	91.50	177.50	7,319.7	-1,879.5	277.1	1,891.3	2.67	0.94	-2.50	
8,716.0	91.80	178.80	7,318.8	-1,910.5	278.1	1,922.3	4.30	0.97	4.19	
8,748.0	91.80	177.40	7,317.8	-1,942.4	279.1	1,954.3	4.37	0.00	-4.38	
8,780.0	91.80	177.40	7,316.8	-1,974.4	280.6	1,986.3	0.00	0.00	0.00	
8,812.0	91.80	178.60	7,315.8	-2,006.3	281.7	2,018.2	3.75	0.00	3.75	
8,844.0	91.60	178.40	7,314.9	-2,038.3	282.5	2,050.2	0.88	-0.63	-0.63	
8,875.0	90.80	178.60	7,314.2	-2,069.3	283.3	2,081.2	2.66	-2.58	0.65	
8,907.0	90.80	178.00	7,313.8	-2,101.3	284.3	2,113.2	1.87	0.00	-1.88	
8,939.0	90.90	178.20	7,313.3	-2,133.3	285.3	2,145.2	0.70	0.31	0.63	
8,970.0	91.30	178.10	7,312.7	-2,164.2	286.3	2,176.2	1.33	1.29	-0.32	
9,003.0	91.40	178.20	7,311.9	-2,197.2	287.4	2,209.2	0.43	0.30	0.30	
9,034.0	92.90	178.20	7,310.8	-2,228.2	288.4	2,240.1	4.84	4.84	0.00	
9,066.0	93.60	178.90	7,309.0	-2,260.1	289.2	2,272.1	3.09	2.19	2.19	
9,098.0	94.20	178.70	7,306.8	-2,292.0	289.9	2,304.0	1.98	1.88	-0.63	
9,129.0	94.30	178.10	7,304.5	-2,322.9	290.7	2,334.9	1.96	0.32	-1.94	
9,161.0	94.00	179.30	7,302.2	-2,354.8	291.4	2,366.8	3.86	-0.94	3.75	
9,193.0	94.00	178.90	7,299.9	-2,386.8	291.9	2,398.7	1.25	0.00	-1.25	
9,225.0	93.80	179.30	7,297.8	-2,418.7	292.4	2,430.6	1.39	-0.63	1.25	
9,257.0	93.00	180.10	7,295.9	-2,450.6	292.6	2,462.5	3.53	-2.50	2.50	
9,288.0	93.10	180.60	7,294.2	-2,481.6	292.4	2,493.4	1.64	0.32	1.61	
9,320.0	91.30	181.10	7,293.0	-2,513.5	291.9	2,525.3	5.84	-5.63	1.56	
9,352.0	89.90	181.20	7,292.6	-2,545.5	291.3	2,557.2	4.39	-4.38	0.31	
9,383.0	89.10	180.70	7,292.9	-2,576.5	290.8	2,588.1	3.04	-2.58	-1.61	
9,416.0	90.90	181.40	7,292.9	-2,609.5	290.2	2,621.1	5.85	5.45	2.12	
9,447.0	91.60	182.50	7,292.2	-2,640.5	289.1	2,651.9	4.21	2.26	3.55	
9,479.0	90.70	182.70	7,291.6	-2,672.5	287.7	2,683.8	2.88	-2.81	0.63	
9,511.0	90.70	181.80	7,291.2	-2,704.4	286.4	2,715.6	2.81	0.00	-2.81	
9,543.0	91.50	184.90	7,290.6	-2,736.4	284.6	2,747.4	10.00	2.50	9.69	
9,575.0	90.60	184.90	7,290.0	-2,768.2	281.8	2,779.1	2.81	-2.81	0.00	
9,606.0	89.70	185.60	7,289.9	-2,799.1	279.0	2,809.8	3.68	-2.90	2.26	
9,638.0	90.10	187.10	7,290.0	-2,830.9	275.4	2,841.4	4.85	1.25	4.69	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Simonson/Schaefer 7J-403
<b>Project:</b>	SEC.6-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Site:</b>	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	<b>MD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Well:</b>	Simonson/Schaefer 7J-403	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	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)
9,670.0	90.60	187.00	7,289.8	-2,862.7	271.5	2,872.9	1.59	1.56	-0.31
9,702.0	89.80	187.00	7,289.7	-2,894.4	267.6	2,904.4	2.50	-2.50	0.00
9,734.0	89.30	186.90	7,289.9	-2,926.2	263.7	2,935.9	1.59	-1.56	-0.31
9,765.0	87.60	185.50	7,290.8	-2,957.0	260.4	2,966.5	7.10	-5.48	-4.52
9,797.0	85.40	185.30	7,292.7	-2,988.8	257.4	2,998.1	6.90	-6.88	-0.63
9,829.0	84.70	185.20	7,295.5	-3,020.5	254.5	3,029.7	2.21	-2.19	-0.31
9,861.0	85.50	184.20	7,298.2	-3,052.3	251.9	3,061.3	3.99	2.50	-3.13
9,893.0	86.00	182.90	7,300.6	-3,084.2	249.9	3,093.0	4.34	1.56	-4.06
9,924.0	86.90	182.90	7,302.5	-3,115.1	248.3	3,123.8	2.90	2.90	0.00
9,956.0	87.20	182.50	7,304.1	-3,147.0	246.8	3,155.6	1.56	0.94	-1.25
9,988.0	87.80	181.60	7,305.5	-3,178.9	245.7	3,187.4	3.38	1.88	-2.81
10,019.0	88.10	180.60	7,306.7	-3,209.9	245.1	3,218.3	3.37	0.97	-3.23
10,051.0	88.70	179.50	7,307.5	-3,241.9	245.1	3,250.2	3.91	1.88	-3.44
10,083.0	88.40	179.50	7,308.4	-3,273.9	245.3	3,282.2	0.94	-0.94	0.00
10,115.0	87.30	179.40	7,309.6	-3,305.9	245.6	3,314.2	3.45	-3.44	-0.31
10,146.0	87.10	179.00	7,311.1	-3,336.8	246.1	3,345.1	1.44	-0.65	-1.29
10,178.0	86.60	179.40	7,312.8	-3,368.8	246.5	3,377.0	2.00	-1.56	1.25
10,210.0	86.40	179.00	7,314.8	-3,400.7	247.0	3,408.9	1.40	-0.63	-1.25
10,241.0	86.20	179.50	7,316.8	-3,431.6	247.4	3,439.9	1.73	-0.65	1.61
10,273.0	86.00	179.50	7,319.0	-3,463.6	247.6	3,471.7	0.63	-0.63	0.00
10,305.0	86.50	178.60	7,321.1	-3,495.5	248.2	3,503.7	3.21	1.56	-2.81
10,336.0	87.00	179.00	7,322.8	-3,526.4	248.8	3,534.6	2.06	1.61	1.29
10,368.0	87.80	179.30	7,324.3	-3,558.4	249.3	3,566.5	2.67	2.50	0.94
10,400.0	88.40	178.00	7,325.3	-3,590.4	250.1	3,598.5	4.47	1.88	-4.06
10,432.0	89.10	178.30	7,326.0	-3,622.3	251.1	3,630.5	2.38	2.19	0.94
10,463.0	89.00	178.50	7,326.5	-3,653.3	252.0	3,661.5	0.72	-0.32	0.65
10,495.0	89.00	177.40	7,327.1	-3,685.3	253.1	3,693.5	3.44	0.00	-3.44
10,527.0	88.80	178.20	7,327.7	-3,717.3	254.3	3,725.5	2.58	-0.63	2.50
10,558.0	88.90	178.50	7,328.3	-3,748.3	255.2	3,756.4	1.02	0.32	0.97
10,590.0	88.80	177.90	7,329.0	-3,780.2	256.2	3,788.4	1.90	-0.31	-1.88
10,622.0	88.60	177.20	7,329.7	-3,812.2	257.6	3,820.4	2.27	-0.63	-2.19
10,653.0	88.90	177.70	7,330.4	-3,843.2	259.0	3,851.4	1.88	0.97	1.61
10,685.0	89.10	177.20	7,330.9	-3,875.1	260.4	3,883.4	1.68	0.63	-1.56
10,717.0	89.50	176.90	7,331.3	-3,907.1	262.0	3,915.4	1.56	1.25	-0.94
10,749.0	90.10	177.20	7,331.4	-3,939.0	263.7	3,947.4	2.10	1.88	0.94
10,780.0	90.40	176.40	7,331.3	-3,970.0	265.4	3,978.4	2.76	0.97	-2.58
10,812.0	90.90	177.50	7,330.9	-4,001.9	267.1	4,010.4	3.78	1.56	3.44
10,844.0	91.40	177.20	7,330.3	-4,033.9	268.6	4,042.4	1.82	1.56	-0.94
10,875.0	91.50	176.70	7,329.5	-4,064.8	270.2	4,073.4	1.64	0.32	-1.61
10,907.0	91.00	175.70	7,328.8	-4,096.8	272.4	4,105.4	3.49	-1.56	-3.13
10,938.0	90.90	176.70	7,328.3	-4,127.7	274.4	4,136.4	3.24	-0.32	3.23
10,970.0	90.70	175.90	7,327.9	-4,159.6	276.5	4,168.4	2.58	-0.63	-2.50
11,002.0	90.90	176.40	7,327.4	-4,191.5	278.6	4,200.4	1.68	0.63	1.56
11,033.0	91.30	177.60	7,326.8	-4,222.5	280.3	4,231.3	4.08	1.29	3.87
11,065.0	91.60	177.40	7,326.0	-4,254.5	281.7	4,263.3	1.13	0.94	-0.63
11,097.0	91.60	176.60	7,325.1	-4,286.4	283.3	4,295.3	2.50	0.00	-2.50
11,128.0	91.30	177.30	7,324.3	-4,317.3	285.0	4,326.3	2.46	-0.97	2.26
11,160.0	90.80	177.90	7,323.7	-4,349.3	286.3	4,358.3	2.44	-1.56	1.88
11,192.0	91.00	178.60	7,323.2	-4,381.3	287.3	4,390.3	2.27	0.63	2.19
11,224.0	90.30	177.30	7,322.9	-4,413.3	288.4	4,422.3	4.61	-2.19	-4.06
11,255.0	89.90	178.20	7,322.8	-4,444.2	289.7	4,453.3	3.18	-1.29	2.90
11,286.0	89.60	177.00	7,323.0	-4,475.2	291.0	4,484.3	3.99	-0.97	-3.87



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Simonson/Schaefer 7J-403
<b>Project:</b>	SEC.6-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Site:</b>	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	<b>MD Reference:</b>	WELL @ 4906.0ft (RKB Ensign 32 - 15')
<b>Well:</b>	Simonson/Schaefer 7J-403	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	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)
11,318.0	89.70	178.10	7,323.1	-4,507.2	292.3	4,516.3	3.45	0.31	3.44
11,350.0	89.80	177.60	7,323.3	-4,539.2	293.5	4,548.3	1.59	0.31	-1.56
11,382.0	89.90	178.10	7,323.4	-4,571.1	294.7	4,580.3	1.59	0.31	1.56
11,413.0	89.30	177.20	7,323.6	-4,602.1	296.0	4,611.3	3.49	-1.94	-2.90
11,445.0	89.40	177.00	7,323.9	-4,634.1	297.6	4,643.3	0.70	0.31	-0.63
11,477.0	89.10	176.30	7,324.4	-4,666.0	299.5	4,675.3	2.38	-0.94	-2.19
11,508.0	89.10	175.70	7,324.9	-4,696.9	301.6	4,706.3	1.94	0.00	-1.94
11,540.0	89.60	175.90	7,325.2	-4,728.8	304.0	4,738.2	1.68	1.56	0.63
11,572.0	89.60	175.00	7,325.4	-4,760.7	306.5	4,770.2	2.81	0.00	-2.81
11,603.0	90.20	175.30	7,325.5	-4,791.6	309.1	4,801.2	2.16	1.94	0.97
11,635.0	91.10	174.90	7,325.1	-4,823.5	311.9	4,833.2	3.08	2.81	-1.25
11,667.0	91.30	177.40	7,324.5	-4,855.4	314.0	4,865.2	7.84	0.63	7.81
11,699.0	91.80	179.00	7,323.6	-4,887.4	315.0	4,897.2	5.24	1.56	5.00
11,730.0	90.90	181.50	7,322.9	-4,918.4	314.9	4,928.1	8.57	-2.90	8.06
11,762.0	90.70	180.40	7,322.4	-4,950.4	314.4	4,960.0	3.49	-0.63	-3.44
11,794.0	90.50	181.50	7,322.1	-4,982.4	313.8	4,991.9	3.49	-0.63	3.44
11,825.0	90.70	181.70	7,321.8	-5,013.4	313.0	5,022.8	0.91	0.65	0.65
11,844.0	90.50	180.90	7,321.6	-5,032.4	312.5	5,041.8	4.34	-1.05	-4.21
11,900.0	90.50	181.00	7,321.1	-5,088.3	311.6	5,097.7	0.18	0.00	0.18
BHL 500'FSL & 1470'FWL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N-S (ft)	+E-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
BHL 500'FSL & 1470'I	0.00	0.00	7,281.0	-5,089.5	264.2	1,424,199.68	3,187,151.11	40.495880	-104.827070
- actual wellpath misses target center by 62.1ft at 11900.0ft MD (7321.1 TVD, -5088.3 N, 311.6 E)									
- Point									

Checked By: _____	Approved By: _____	Date: _____
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