

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Simonson/Schaefer 7E-423**

Surface Location: Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

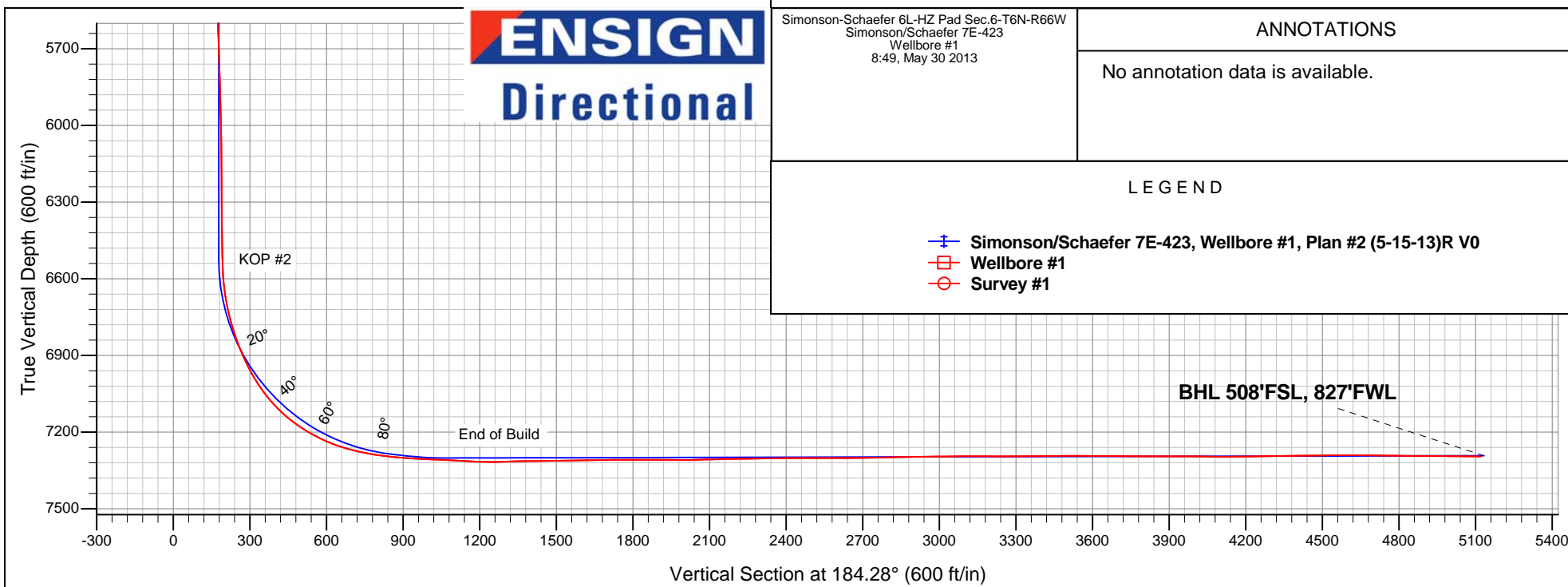
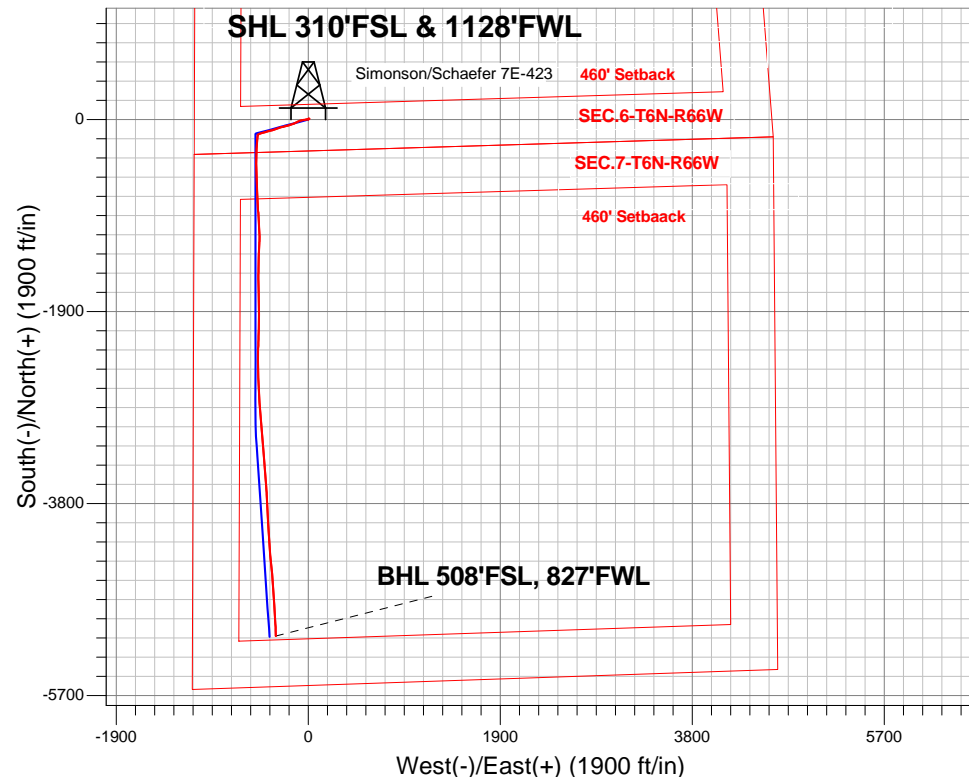
Ground Elevation: 4891.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1429286.43	3186789.95	40.509850	-104.828230	

RKB Ensign 32 - 15' WELL @ 4906.0ft (RKB Ensign 32 - 15')

FINAL SURVEY

Projected Bottom Hole Location
11988'MD 7294'TVD 5110'S &
320'W of SHL 89.30 degree Incl
@ 177.70 degree AZM



Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W
Simonson/Schaefer 7E-423
Wellbore #1
8:49, May 30 2013

ANNOTATIONS

No annotation data is available.

LEGEND

- + Simonson/Schaefer 7E-423, Wellbore #1, Plan #2 (5-15-13)R V0
- + Wellbore #1
- o Survey #1



Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.6-T6N-R66W

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

Simonson/Schaefer 7E-423

Wellbore #1

Survey: Survey #1

Standard Survey Report

30 May, 2013

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Simonson/Schaefer 7E-423
Project:	SEC.6-T6N-R66W	TVD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Site:	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	MD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Well:	Simonson/Schaefer 7E-423	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.6-T6N-R66W, 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	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 7E-423					
Well Position	+N-S	0.0 ft	Northing:	1,429,286.43 ft	Latitude:	40.509850
	+E-W	0.0 ft	Easting:	3,186,789.95 ft	Longitude:	-104.828230
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,891.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/15/2013	8.65	67.06	52,980

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	184.28	

Survey Program	Date 5/30/2013				
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
116.0	11,988.0	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
116.0	0.80	43.50	116.0	0.6	0.6	-0.6	0.69	0.69	0.00
207.0	0.80	11.30	207.0	1.7	1.1	-1.8	0.49	0.00	-35.38
298.0	0.90	10.70	298.0	3.0	1.4	-3.1	0.11	0.11	-0.66
389.0	1.20	18.60	389.0	4.6	1.8	-4.7	0.37	0.33	8.68
481.0	1.10	38.10	480.9	6.2	2.7	-6.4	0.44	-0.11	21.20
572.0	0.80	45.40	571.9	7.3	3.7	-7.6	0.35	-0.33	8.02
663.0	0.80	49.20	662.9	8.2	4.6	-8.5	0.06	0.00	4.18
754.0	0.80	95.80	753.9	8.6	5.7	-9.0	0.70	0.00	51.21
846.0	0.90	97.30	845.9	8.4	7.1	-8.9	0.11	0.11	1.63
941.0	1.50	105.60	940.9	8.0	9.0	-8.6	0.66	0.63	8.74

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Well:	Simonson/Schaefer 7E-423	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)	
1,032.0	1.00	171.60	1,031.9	6.9	10.3	-7.6	1.57	-0.55	72.53	
1,125.0	2.00	258.70	1,124.8	5.7	8.8	-6.4	2.36	1.08	93.66	
1,219.0	3.30	261.90	1,218.7	5.0	4.5	-5.4	1.39	1.38	3.40	
1,314.0	3.60	260.20	1,313.6	4.1	-1.1	-4.0	0.33	0.32	-1.79	
1,409.0	4.30	261.50	1,408.3	3.1	-7.6	-2.5	0.74	0.74	1.37	
1,504.0	5.00	253.30	1,503.0	1.4	-15.1	-0.3	1.01	0.74	-8.63	
1,600.0	5.50	252.70	1,598.6	-1.2	-23.5	2.9	0.52	0.52	-0.63	
1,695.0	6.20	261.00	1,693.1	-3.3	-32.9	5.8	1.15	0.74	8.74	
1,791.0	6.50	267.80	1,788.5	-4.3	-43.5	7.6	0.84	0.31	7.08	
1,886.0	6.90	263.40	1,882.9	-5.2	-54.5	9.3	0.68	0.42	-4.63	
1,982.0	7.70	257.50	1,978.1	-7.3	-66.5	12.2	1.14	0.83	-6.15	
2,077.0	8.30	251.00	2,072.2	-10.9	-79.2	16.8	1.14	0.63	-6.84	
2,172.0	8.00	247.90	2,166.2	-15.6	-91.8	22.4	0.56	-0.32	-3.26	
2,267.0	7.70	243.30	2,260.3	-20.9	-103.6	28.6	0.73	-0.32	-4.84	
2,362.0	7.80	243.70	2,354.5	-26.7	-115.1	35.2	0.12	0.11	0.42	
2,458.0	8.00	241.60	2,449.6	-32.7	-126.8	42.1	0.37	0.21	-2.19	
2,553.0	8.40	244.90	2,543.6	-38.8	-138.9	49.1	0.65	0.42	3.47	
2,648.0	8.70	245.10	2,637.5	-44.8	-151.7	56.0	0.32	0.32	0.21	
2,744.0	8.60	252.20	2,732.5	-50.0	-165.1	62.2	1.12	-0.10	7.40	
2,839.0	8.30	258.30	2,826.4	-53.6	-178.6	66.8	0.99	-0.32	6.42	
2,934.0	9.10	255.60	2,920.3	-56.9	-192.6	71.1	0.95	0.84	-2.84	
3,029.0	8.80	252.60	3,014.2	-60.9	-206.8	76.1	0.58	-0.32	-3.16	
3,124.0	9.50	255.80	3,108.0	-65.0	-221.3	81.3	0.91	0.74	3.37	
3,219.0	8.20	254.70	3,201.8	-68.7	-235.5	86.1	1.38	-1.37	-1.16	
3,314.0	8.30	258.90	3,295.8	-71.8	-248.7	90.2	0.64	0.11	4.42	
3,409.0	8.00	258.00	3,389.9	-74.5	-261.9	93.8	0.34	-0.32	-0.95	
3,505.0	7.80	253.20	3,485.0	-77.8	-274.7	98.0	0.72	-0.21	-5.00	
3,600.0	7.00	251.80	3,579.2	-81.4	-286.4	102.6	0.86	-0.84	-1.47	
3,695.0	6.10	247.20	3,673.6	-85.2	-296.5	107.1	1.10	-0.95	-4.84	
3,790.0	6.00	246.90	3,768.0	-89.1	-305.7	111.7	0.11	-0.11	-0.32	
3,886.0	6.10	251.10	3,863.5	-92.7	-315.2	116.0	0.47	0.10	4.38	
3,981.0	5.80	251.50	3,958.0	-95.9	-324.5	119.8	0.32	-0.32	0.42	
4,076.0	5.60	248.70	4,052.5	-99.1	-333.4	123.7	0.36	-0.21	-2.95	
4,171.0	5.20	250.80	4,147.1	-102.2	-341.8	127.4	0.47	-0.42	2.21	
4,266.0	6.00	258.00	4,241.6	-104.6	-350.7	130.5	1.12	0.84	7.58	
4,360.0	5.30	255.80	4,335.2	-106.7	-359.7	133.3	0.78	-0.74	-2.34	
4,456.0	6.20	257.80	4,430.7	-108.9	-369.1	136.1	0.96	0.94	2.08	
4,551.0	5.80	256.80	4,525.2	-111.1	-378.8	139.0	0.44	-0.42	-1.05	
4,646.0	5.50	255.10	4,619.7	-113.4	-387.8	142.0	0.36	-0.32	-1.79	
4,740.0	5.40	252.20	4,713.3	-115.9	-396.4	145.1	0.31	-0.11	-3.09	
4,834.0	5.10	250.90	4,806.9	-118.6	-404.6	148.4	0.34	-0.32	-1.38	
4,930.0	5.40	257.80	4,902.5	-120.9	-413.0	151.4	0.73	0.31	7.19	
5,025.0	6.40	251.00	4,997.0	-123.6	-422.4	154.8	1.28	1.05	-7.16	
5,121.0	6.30	254.70	5,092.4	-126.7	-432.5	158.7	0.44	-0.10	3.85	
5,217.0	6.40	257.10	5,187.8	-129.3	-442.8	162.0	0.30	0.10	2.50	
5,312.0	5.80	253.80	5,282.3	-131.9	-452.6	165.2	0.73	-0.63	-3.47	
5,408.0	5.20	252.30	5,377.8	-134.5	-461.4	168.6	0.64	-0.63	-1.56	
5,503.0	4.50	253.40	5,472.5	-136.9	-469.1	171.5	0.74	-0.74	1.16	
5,599.0	4.20	248.70	5,568.2	-139.3	-475.9	174.4	0.49	-0.31	-4.90	
5,695.0	3.80	246.70	5,664.0	-141.8	-482.1	177.4	0.44	-0.42	-2.08	
5,790.0	3.30	242.20	5,758.8	-144.3	-487.5	180.3	0.60	-0.53	-4.74	
5,885.0	2.70	238.10	5,853.7	-146.8	-491.8	183.0	0.67	-0.63	-4.32	
5,980.0	2.70	233.30	5,948.6	-149.3	-495.5	185.8	0.24	0.00	-5.05	

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Well:	Simonson/Schaefer 7E-423	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)
6,076.0	1.50	262.40	6,044.5	-150.8	-498.5	187.6	1.63	-1.25	30.31
6,171.0	0.70	177.70	6,139.5	-151.5	-499.7	188.4	1.68	-0.84	-89.16
6,266.0	0.70	202.80	6,234.5	-152.7	-499.9	189.5	0.32	0.00	26.42
6,361.0	0.40	167.50	6,329.5	-153.5	-500.1	190.4	0.46	-0.32	-37.16
6,457.0	0.70	187.60	6,425.5	-154.4	-500.1	191.3	0.37	0.31	20.94
6,518.0	0.70	204.90	6,486.5	-155.1	-500.3	192.0	0.35	0.00	28.36
6,549.0	0.40	178.60	6,517.5	-155.4	-500.4	192.3	1.24	-0.97	-84.84
6,581.0	1.70	180.00	6,549.5	-156.0	-500.4	192.9	4.06	4.06	4.38
6,613.0	4.00	182.30	6,581.4	-157.6	-500.4	194.5	7.19	7.19	7.19
6,646.0	6.10	183.20	6,614.3	-160.5	-500.6	197.4	6.37	6.36	2.73
6,677.0	7.60	184.80	6,645.1	-164.2	-500.8	201.1	4.88	4.84	5.16
6,709.0	9.10	185.20	6,676.7	-168.8	-501.2	205.7	4.69	4.69	1.25
6,741.0	11.50	182.90	6,708.2	-174.5	-501.6	211.5	7.61	7.50	-7.19
6,772.0	13.80	182.50	6,738.5	-181.3	-501.9	218.2	7.42	7.42	-1.29
6,804.0	15.70	183.60	6,769.4	-189.4	-502.4	226.4	6.00	5.94	3.44
6,836.0	17.50	184.30	6,800.1	-198.6	-503.0	235.5	5.66	5.63	2.19
6,868.0	19.10	185.50	6,830.5	-208.6	-503.9	245.6	5.14	5.00	3.75
6,899.0	20.80	185.60	6,859.6	-219.1	-504.9	256.1	5.48	5.48	0.32
6,931.0	23.10	184.20	6,889.3	-231.0	-505.9	268.1	7.37	7.19	-4.38
6,963.0	24.90	185.50	6,918.5	-244.0	-507.0	281.1	5.86	5.63	4.06
6,995.0	26.90	185.80	6,947.3	-257.9	-508.4	295.1	6.26	6.25	0.94
7,026.0	29.50	185.20	6,974.6	-272.5	-509.8	309.7	8.44	8.39	-1.94
7,058.0	32.00	183.80	7,002.1	-288.8	-511.1	326.1	8.13	7.81	-4.38
7,090.0	34.90	182.80	7,028.8	-306.4	-512.1	343.7	9.22	9.06	-3.13
7,121.0	38.00	182.30	7,053.7	-324.8	-512.9	362.1	10.05	10.00	-1.61
7,153.0	41.10	181.80	7,078.4	-345.1	-513.6	382.5	9.74	9.69	-1.56
7,185.0	44.00	181.30	7,102.0	-366.8	-514.2	404.1	9.12	9.06	-1.56
7,216.0	47.00	180.80	7,123.7	-388.9	-514.6	426.2	9.75	9.68	-1.61
7,248.0	50.50	180.50	7,144.8	-412.9	-514.9	450.2	10.96	10.94	-0.94
7,280.0	54.10	180.40	7,164.4	-438.2	-515.1	475.4	11.25	11.25	-0.31
7,311.0	57.20	180.50	7,181.9	-463.8	-515.3	501.0	10.00	10.00	0.32
7,343.0	59.20	178.30	7,198.7	-491.0	-515.0	528.1	8.56	6.25	-6.88
7,375.0	61.90	177.70	7,214.4	-518.9	-514.0	555.8	8.59	8.44	-1.88
7,407.0	64.90	177.20	7,228.8	-547.4	-512.7	584.2	9.48	9.38	-1.56
7,438.0	68.30	176.70	7,241.1	-575.9	-511.2	612.4	11.07	10.97	-1.61
7,470.0	71.30	177.00	7,252.1	-605.8	-509.6	642.2	9.42	9.38	0.94
7,502.0	73.50	177.60	7,261.8	-636.3	-508.1	672.4	7.10	6.88	1.88
7,534.0	75.60	177.90	7,270.3	-667.1	-506.9	703.1	6.62	6.56	0.94
7,566.0	77.50	177.40	7,277.8	-698.2	-505.7	734.0	6.13	5.94	-1.56
7,598.0	79.40	177.60	7,284.2	-729.5	-504.3	765.1	5.97	5.94	0.63
7,630.0	81.40	178.20	7,289.5	-761.1	-503.1	796.5	6.52	6.25	1.88
7,662.0	83.40	177.30	7,293.7	-792.8	-501.9	828.0	6.84	6.25	-2.81
7,686.0	85.10	176.90	7,296.2	-816.6	-500.7	851.7	7.27	7.08	-1.67
7,735.0	85.10	176.90	7,300.3	-865.4	-498.0	900.1	0.00	0.00	0.00
7,761.0	86.50	177.70	7,302.2	-891.3	-496.8	925.8	6.20	5.38	3.08
7,792.0	86.90	176.10	7,304.0	-922.2	-495.1	956.5	5.31	1.29	-5.16
7,822.0	86.90	175.80	7,305.7	-952.0	-493.0	986.2	1.00	0.00	-1.00
7,853.0	87.30	176.70	7,307.2	-982.9	-491.0	1,016.8	3.17	1.29	2.90
7,883.0	87.30	176.60	7,308.6	-1,012.8	-489.3	1,046.5	0.33	0.00	-0.33
7,914.0	87.00	176.80	7,310.2	-1,043.8	-487.5	1,077.2	1.16	-0.97	0.65
7,944.0	87.60	177.10	7,311.6	-1,073.7	-485.9	1,106.9	2.24	2.00	1.00
7,975.0	87.30	177.30	7,313.0	-1,104.6	-484.4	1,137.7	1.16	-0.97	0.65

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Survey									
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8,005.0	87.70	178.50	7,314.3	-1,134.6	-483.3	1,167.5	4.21	1.33	4.00
8,036.0	87.70	180.50	7,315.5	-1,165.5	-483.0	1,198.3	6.45	0.00	6.45
8,066.0	88.70	181.10	7,316.5	-1,195.5	-483.4	1,228.2	3.89	3.33	2.00
8,097.0	90.60	182.60	7,316.7	-1,226.5	-484.4	1,259.2	7.81	6.13	4.84
8,127.0	91.80	182.00	7,316.0	-1,256.5	-485.6	1,289.2	4.47	4.00	-2.00
8,157.0	91.90	182.40	7,315.1	-1,286.4	-486.8	1,319.2	1.37	0.33	1.33
8,188.0	92.00	182.70	7,314.0	-1,317.4	-488.1	1,350.1	1.02	0.32	0.97
8,220.0	90.90	180.90	7,313.2	-1,349.4	-489.2	1,382.1	6.59	-3.44	-5.63
8,251.0	90.60	181.30	7,312.8	-1,380.3	-489.7	1,413.0	1.61	-0.97	1.29
8,283.0	90.60	182.10	7,312.4	-1,412.3	-490.7	1,445.0	2.50	0.00	2.50
8,315.0	90.50	181.90	7,312.1	-1,444.3	-491.8	1,477.0	0.70	-0.31	-0.63
8,347.0	90.70	181.10	7,311.8	-1,476.3	-492.7	1,508.9	2.58	0.63	-2.50
8,379.0	90.80	181.00	7,311.4	-1,508.3	-493.2	1,540.9	0.44	0.31	-0.31
8,410.0	90.90	180.30	7,310.9	-1,539.3	-493.6	1,571.8	2.28	0.32	-2.26
8,442.0	90.90	179.70	7,310.4	-1,571.3	-493.6	1,603.7	1.87	0.00	-1.88
8,474.0	90.90	180.30	7,309.9	-1,603.3	-493.6	1,635.6	1.87	0.00	1.88
8,506.0	90.80	178.20	7,309.4	-1,635.3	-493.2	1,667.5	6.57	-0.31	-6.56
8,538.0	90.80	177.90	7,309.0	-1,667.2	-492.1	1,699.3	0.94	0.00	-0.94
8,569.0	90.90	178.10	7,308.5	-1,698.2	-491.0	1,730.1	0.72	0.32	0.65
8,601.0	90.20	179.00	7,308.2	-1,730.2	-490.2	1,762.0	3.56	-2.19	2.81
8,633.0	90.20	178.50	7,308.1	-1,762.2	-489.5	1,793.8	1.56	0.00	-1.56
8,664.0	90.40	178.00	7,308.0	-1,793.2	-488.5	1,824.6	1.74	0.65	-1.61
8,696.0	89.30	179.40	7,308.0	-1,825.2	-487.8	1,856.5	5.56	-3.44	4.38
8,728.0	89.30	179.30	7,308.4	-1,857.2	-487.5	1,888.4	0.31	0.00	-0.31
8,760.0	89.40	179.40	7,308.8	-1,889.2	-487.1	1,920.2	0.44	0.31	0.31
8,792.0	89.50	179.10	7,309.1	-1,921.2	-486.7	1,952.1	0.99	0.31	-0.94
8,823.0	90.10	180.40	7,309.2	-1,952.2	-486.5	1,983.0	4.62	1.94	4.19
8,855.0	91.00	181.90	7,308.9	-1,984.2	-487.2	2,015.0	5.47	2.81	4.69
8,887.0	91.40	181.40	7,308.2	-2,016.1	-488.1	2,046.9	2.00	1.25	-1.56
8,919.0	91.60	182.10	7,307.4	-2,048.1	-489.1	2,078.9	2.27	0.63	2.19
8,950.0	91.80	182.20	7,306.5	-2,079.1	-490.2	2,109.8	0.72	0.65	0.32
8,982.0	90.90	182.50	7,305.7	-2,111.0	-491.6	2,141.8	2.96	-2.81	0.94
9,014.0	90.90	181.20	7,305.2	-2,143.0	-492.6	2,173.8	4.06	0.00	-4.06
9,046.0	91.10	181.10	7,304.7	-2,175.0	-493.2	2,205.7	0.70	0.63	-0.31
9,078.0	91.20	181.90	7,304.0	-2,207.0	-494.1	2,237.7	2.52	0.31	2.50
9,109.0	90.70	181.80	7,303.5	-2,238.0	-495.1	2,268.7	1.64	-1.61	-0.32
9,141.0	90.80	181.00	7,303.1	-2,270.0	-495.8	2,300.6	2.52	0.31	-2.50
9,173.0	90.90	180.70	7,302.6	-2,301.9	-496.3	2,332.6	0.99	0.31	-0.94
9,204.0	91.00	180.40	7,302.1	-2,332.9	-496.6	2,363.5	1.02	0.32	-0.97
9,236.0	90.10	180.40	7,301.8	-2,364.9	-496.8	2,395.4	2.81	-2.81	0.00
9,268.0	89.90	180.00	7,301.8	-2,396.9	-497.0	2,427.3	1.40	-0.63	-1.25
9,299.0	90.00	179.60	7,301.8	-2,427.9	-496.8	2,458.2	1.33	0.32	-1.29
9,331.0	90.20	179.30	7,301.8	-2,459.9	-496.5	2,490.1	1.13	0.63	-0.94
9,363.0	90.30	178.90	7,301.6	-2,491.9	-496.0	2,522.0	1.29	0.31	-1.25
9,395.0	90.20	179.20	7,301.5	-2,523.9	-495.5	2,553.9	0.99	-0.31	0.94
9,427.0	90.30	178.20	7,301.3	-2,555.9	-494.8	2,585.7	3.14	0.31	-3.13
9,458.0	90.20	177.40	7,301.2	-2,586.9	-493.6	2,616.5	2.60	-0.32	-2.58
9,490.0	90.50	177.20	7,301.0	-2,618.9	-492.1	2,648.3	1.13	0.94	-0.63
9,522.0	90.50	177.20	7,300.7	-2,650.8	-490.5	2,680.0	0.00	0.00	0.00
9,554.0	90.60	177.80	7,300.4	-2,682.8	-489.1	2,711.8	1.90	0.31	1.88
9,585.0	90.90	177.00	7,300.0	-2,713.7	-487.7	2,742.6	2.76	0.97	-2.58
9,617.0	91.00	176.20	7,299.5	-2,745.7	-485.8	2,774.3	2.52	0.31	-2.50
9,649.0	91.30	175.60	7,298.8	-2,777.6	-483.5	2,805.9	2.10	0.94	-1.88

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Simonson/Schaefer 7E-423
Project:	SEC.6-T6N-R66W	TVD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Site:	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	MD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Well:	Simonson/Schaefer 7E-423	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)
9,680.0	91.20	176.00	7,298.2	-2,808.5	-481.3	2,836.6	1.33	-0.32	1.29
9,712.0	91.30	175.00	7,297.5	-2,840.4	-478.8	2,868.2	3.14	0.31	-3.13
9,744.0	91.50	176.00	7,296.7	-2,872.3	-476.2	2,899.8	3.19	0.63	3.13
9,776.0	90.50	175.90	7,296.1	-2,904.2	-474.0	2,931.5	3.14	-3.13	-0.31
9,807.0	90.50	176.10	7,295.9	-2,935.1	-471.8	2,962.2	0.65	0.00	0.65
9,839.0	90.70	176.70	7,295.5	-2,967.1	-469.8	2,993.8	1.98	0.63	1.88
9,845.4	90.74	176.50	7,295.4	-2,973.4	-469.4	3,000.2	3.19	0.63	-3.12
WP 1									
9,871.0	90.90	175.70	7,295.1	-2,999.0	-467.7	3,025.5	3.19	0.62	-3.13
9,902.0	90.70	175.70	7,294.6	-3,029.9	-465.4	3,056.2	0.65	-0.65	0.00
9,934.0	90.60	174.70	7,294.3	-3,061.8	-462.7	3,087.8	3.14	-0.31	-3.13
9,966.0	90.30	174.20	7,294.0	-3,093.6	-459.6	3,119.3	1.82	-0.94	-1.56
9,998.0	90.10	174.50	7,293.9	-3,125.5	-456.4	3,150.8	1.13	-0.63	0.94
10,028.0	90.00	173.50	7,293.9	-3,155.3	-453.3	3,180.3	3.35	-0.33	-3.33
10,061.0	89.50	175.30	7,294.0	-3,188.2	-450.1	3,212.8	5.66	-1.52	5.45
10,092.0	89.20	175.40	7,294.4	-3,219.1	-447.6	3,243.5	1.02	-0.97	0.32
10,124.0	89.50	176.20	7,294.8	-3,251.0	-445.2	3,275.1	2.67	0.94	2.50
10,156.0	89.90	175.10	7,294.9	-3,282.9	-442.8	3,306.8	3.66	1.25	-3.44
10,188.0	90.40	176.60	7,294.8	-3,314.8	-440.5	3,338.4	4.94	1.56	4.69
10,219.0	90.90	176.20	7,294.5	-3,345.7	-438.5	3,369.1	2.07	1.61	-1.29
10,251.0	91.10	176.30	7,293.9	-3,377.7	-436.5	3,400.8	0.70	0.63	0.31
10,283.0	91.40	175.50	7,293.2	-3,409.6	-434.2	3,432.4	2.67	0.94	-2.50
10,314.0	90.20	176.50	7,292.8	-3,440.5	-432.0	3,463.1	5.04	-3.87	3.23
10,346.0	90.00	175.30	7,292.7	-3,472.4	-429.7	3,494.8	3.80	-0.63	-3.75
10,378.0	89.80	174.90	7,292.8	-3,504.3	-427.0	3,526.4	1.40	-0.63	-1.25
10,409.0	89.80	174.60	7,292.9	-3,535.2	-424.1	3,556.9	0.97	0.00	-0.97
10,441.0	89.90	174.50	7,293.0	-3,567.0	-421.1	3,588.5	0.44	0.31	-0.31
10,473.0	89.60	174.70	7,293.1	-3,598.9	-418.1	3,620.0	1.13	-0.94	0.63
10,505.0	89.20	176.90	7,293.5	-3,630.8	-415.7	3,651.7	6.99	-1.25	6.88
10,536.0	89.40	176.00	7,293.8	-3,661.7	-413.8	3,682.4	2.97	0.65	-2.90
10,568.0	89.30	175.80	7,294.2	-3,693.6	-411.5	3,714.0	0.70	-0.31	-0.63
10,600.0	89.90	177.00	7,294.4	-3,725.6	-409.5	3,745.7	4.19	1.88	3.75
10,631.0	90.20	177.80	7,294.4	-3,756.5	-408.1	3,776.5	2.76	0.97	2.58
10,663.0	90.10	177.00	7,294.3	-3,788.5	-406.7	3,808.3	2.52	-0.31	-2.50
10,695.0	90.40	177.50	7,294.2	-3,820.5	-405.1	3,840.0	1.82	0.94	1.56
10,726.0	89.70	176.50	7,294.2	-3,851.4	-403.5	3,870.8	3.94	-2.26	-3.23
10,758.0	89.70	177.60	7,294.3	-3,883.4	-401.9	3,902.5	3.44	0.00	3.44
10,790.0	89.60	176.70	7,294.5	-3,915.3	-400.3	3,934.3	2.83	-0.31	-2.81
10,822.0	89.60	177.50	7,294.7	-3,947.3	-398.7	3,966.0	2.50	0.00	2.50
10,853.0	89.50	177.40	7,295.0	-3,978.3	-397.3	3,996.8	0.46	-0.32	-0.32
10,885.0	89.10	177.50	7,295.4	-4,010.2	-395.9	4,028.6	1.29	-1.25	0.31
10,917.0	89.10	177.50	7,295.9	-4,042.2	-394.5	4,060.4	0.00	0.00	0.00
10,948.0	89.50	176.00	7,296.3	-4,073.1	-392.7	4,091.1	5.01	1.29	-4.84
10,980.0	90.30	176.10	7,296.3	-4,105.1	-390.5	4,122.8	2.52	2.50	0.31
11,012.0	90.50	177.00	7,296.1	-4,137.0	-388.6	4,154.5	2.88	0.63	2.81
11,043.0	90.80	176.10	7,295.7	-4,167.9	-386.7	4,185.2	3.06	0.97	-2.90
11,075.0	91.20	175.40	7,295.2	-4,199.9	-384.3	4,216.8	2.52	1.25	-2.19
11,107.0	91.20	175.80	7,294.5	-4,231.7	-381.9	4,248.4	1.25	0.00	1.25
11,139.0	91.10	175.80	7,293.9	-4,263.7	-379.5	4,280.1	0.31	-0.31	0.00
11,170.0	90.50	176.00	7,293.4	-4,294.6	-377.3	4,310.8	2.04	-1.94	0.65
11,202.0	90.70	175.00	7,293.1	-4,326.5	-374.8	4,342.4	3.19	0.63	-3.13
11,234.0	90.90	173.90	7,292.6	-4,358.3	-371.7	4,373.9	3.49	0.63	-3.44

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Simonson/Schaefer 7E-423
Project:	SEC.6-T6N-R66W	TVD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Site:	Simonson-Schaefer 6L-HZ Pad Sec.6-T6N-R66W	MD Reference:	WELL @ 4906.0ft (RKB Ensign 32 - 15')
Well:	Simonson/Schaefer 7E-423	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)
11,265.0	90.30	174.80	7,292.3	-4,389.2	-368.7	4,404.4	3.49	-1.94	2.90
11,298.0	90.60	173.50	7,292.1	-4,422.0	-365.3	4,436.9	4.04	0.91	-3.94
11,329.0	91.40	174.50	7,291.5	-4,452.8	-362.1	4,467.4	4.13	2.58	3.23
11,361.0	90.80	173.80	7,290.9	-4,484.6	-358.8	4,498.9	2.88	-1.88	-2.19
11,393.0	90.40	175.60	7,290.6	-4,516.5	-355.8	4,530.5	5.76	-1.25	5.63
11,424.0	90.80	174.80	7,290.3	-4,547.4	-353.3	4,561.1	2.89	1.29	-2.58
11,456.0	90.20	175.30	7,290.0	-4,579.3	-350.5	4,592.7	2.44	-1.88	1.56
11,488.0	89.00	176.60	7,290.2	-4,611.2	-348.2	4,624.3	5.53	-3.75	4.06
11,519.0	89.20	176.20	7,290.7	-4,642.1	-346.3	4,655.0	1.44	0.65	-1.29
11,551.0	89.00	176.20	7,291.2	-4,674.1	-344.2	4,686.7	0.63	-0.63	0.00
11,583.0	89.30	177.20	7,291.7	-4,706.0	-342.3	4,718.4	3.26	0.94	3.13
11,615.0	89.70	175.90	7,291.9	-4,737.9	-340.4	4,750.1	4.25	1.25	-4.06
11,646.0	89.80	176.40	7,292.1	-4,768.9	-338.3	4,780.8	1.64	0.32	1.61
11,678.0	89.40	176.10	7,292.3	-4,800.8	-336.2	4,812.5	1.56	-1.25	-0.94
11,710.0	89.30	176.60	7,292.7	-4,832.7	-334.2	4,844.2	1.59	-0.31	1.56
11,741.0	89.50	176.50	7,293.0	-4,863.7	-332.3	4,874.9	0.72	0.65	-0.32
11,773.0	89.80	177.10	7,293.2	-4,895.6	-330.5	4,906.6	2.10	0.94	1.88
11,805.0	89.40	176.80	7,293.4	-4,927.6	-328.8	4,938.4	1.56	-1.25	-0.94
11,836.0	89.20	177.30	7,293.8	-4,958.5	-327.2	4,969.1	1.74	-0.65	1.61
11,868.0	89.60	176.80	7,294.1	-4,990.5	-325.6	5,000.9	2.00	1.25	-1.56
11,900.0	89.80	177.50	7,294.3	-5,022.4	-324.0	5,032.6	2.28	0.63	2.19
11,932.0	89.30	177.70	7,294.5	-5,054.4	-322.7	5,064.4	1.68	-1.56	0.63
11,988.0	89.30	177.70	7,295.2	-5,110.4	-320.4	5,120.0	0.00	0.00	0.00
DRILL TARGET BHL 500'FSL & 764'FWL - PERMIT BHL 500'FSL & 624'FWL									

Checked By: _____	Approved By: _____	Date: _____
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