

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Stonebraker 28V-414**

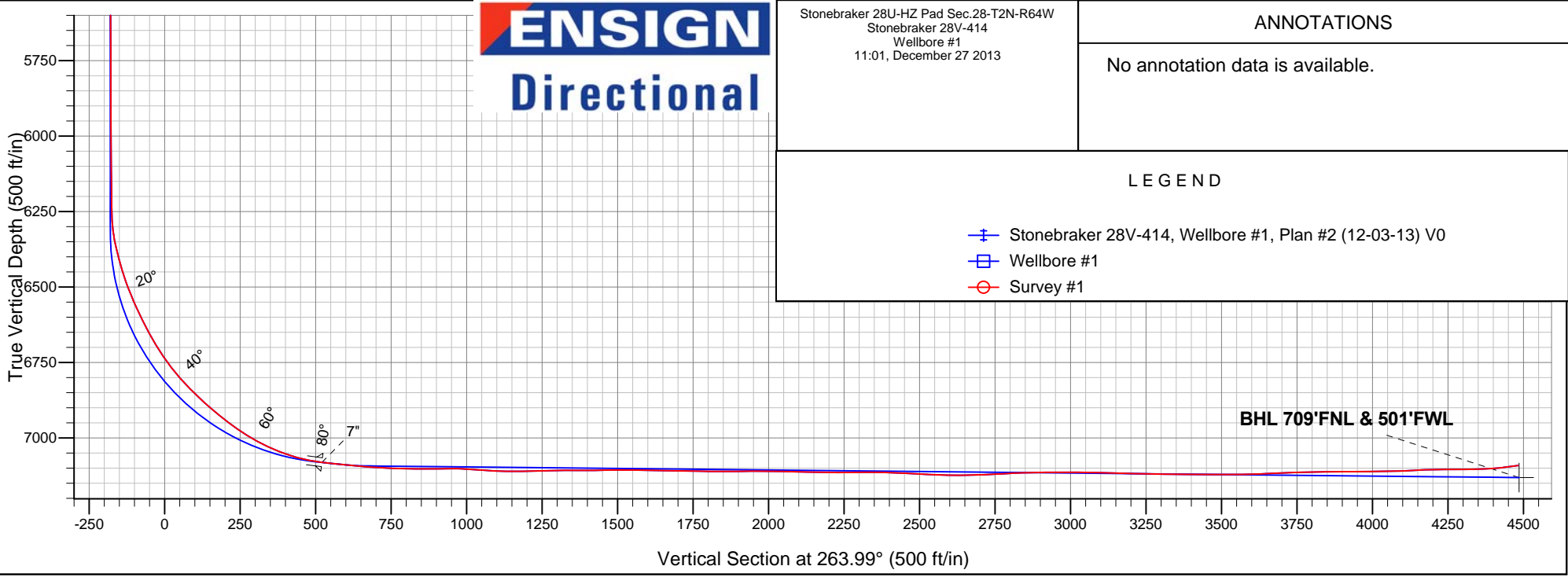
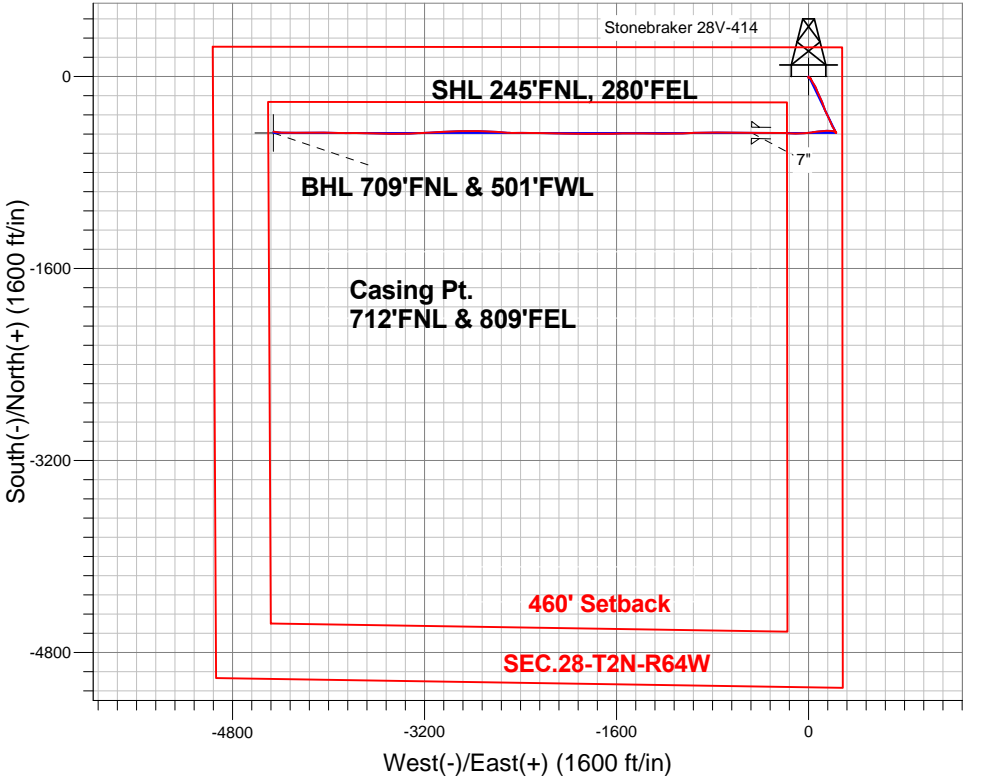
Surface Location: Stonebraker 28U-HZ Pad Sec.28-T2N-R64W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4963.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1286547.27	3266306.02	40.116040	-104.547790	
Ensign Rig #136 - RKB 12.5' WELL @ 4976ft (Ensign Rig #136 - RKB 13')						

FINAL SURVEY

Projected Bottom Hole Location
11457'MD 7092'TVD 458'S & 4460'W of SHL
97.3 degree Incl @ 276.8 degree AZM



Stonebraker 28U-HZ Pad Sec.28-T2N-R64W Stonebraker 28V-414 Wellbore #1 11:01, December 27 2013	ANNOTATIONS
	No annotation data is available.

LEGEND	
+	Stonebraker 28V-414, Wellbore #1, Plan #2 (12-03-13) V0
□	Wellbore #1
○	Survey #1



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.28-T2N-R64W

Stonebraker 28U-HZ Pad Sec.28-T2N-R64W

Stonebraker 28V-414

Wellbore #1

Survey: Survey #1

Standard Survey Report

27 December, 2013

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stonebraker 28V-414
Project:	SEC.28-T2N-R64W	TVD Reference:	WELL @ 4975.5ft (Ensign Rig #136 - RKB 12.5')
Site:	Stonebraker 28U-HZ Pad Sec.28-T2N-R64W	MD Reference:	WELL @ 4975.5ft (Ensign Rig #136 - RKB 12.5')
Well:	Stonebraker 28V-414	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.28-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	Stonebraker 28U-HZ Pad Sec.28-T2N-R64W				
Site Position:		Northing:	1,286,551.22 ft	Latitude:	40.116050
From:	Lat/Long	Easting:	3,266,333.95 ft	Longitude:	-104.547690
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.62 °

Well	Stonebraker 28V-414					
Well Position	+N/-S	0.0 ft	Northing:	1,286,547.27 ft	Latitude:	40.116040
	+E/-W	0.0 ft	Easting:	3,266,306.02 ft	Longitude:	-104.547790
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,963.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/3/2013	8.39	66.77	52,744

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	263.99	

Survey Program	Date	12/27/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
105.0	11,457.0	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	207.60	1.0	0.0	0.0	0.0	0.00	0.00	0.00	
SHL 245°FNL, 280°FEL										
105.0	0.10	207.60	105.0	-0.1	0.0	0.1	0.10	0.10	0.00	
225.0	0.20	212.50	225.0	-0.4	-0.2	0.2	0.08	0.08	4.08	
348.0	0.40	239.90	348.0	-0.7	-0.7	0.8	0.20	0.16	22.28	
506.0	0.50	177.30	506.0	-1.7	-1.1	1.3	0.30	0.06	-39.62	
664.0	0.40	206.30	664.0	-2.9	-1.3	1.6	0.16	-0.06	18.35	
823.0	0.60	275.80	823.0	-3.3	-2.4	2.8	0.37	0.13	43.71	
1,000.0	0.60	214.80	1,000.0	-4.0	-3.9	4.3	0.34	0.00	-34.46	
1,085.0	0.90	177.80	1,085.0	-5.0	-4.1	4.6	0.65	0.35	-43.53	
1,177.0	0.90	160.60	1,177.0	-6.4	-3.8	4.5	0.29	0.00	-18.70	

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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)
1,267.0	0.70	163.40	1,266.9	-7.6	-3.4	4.2	0.23	-0.22	3.11
1,359.0	1.20	104.20	1,358.9	-8.4	-2.3	3.2	1.12	0.54	-64.35
1,449.0	1.60	99.40	1,448.9	-8.8	-0.2	1.1	0.46	0.44	-5.33
1,540.0	1.10	97.70	1,539.9	-9.1	1.9	-1.0	0.55	-0.55	-1.87
1,631.0	1.70	94.70	1,630.9	-9.4	4.1	-3.1	0.66	0.66	-3.30
1,722.0	1.50	104.90	1,721.8	-9.8	6.6	-5.6	0.38	-0.22	11.21
1,813.0	1.30	82.60	1,812.8	-10.0	8.8	-7.7	0.63	-0.22	-24.51
1,903.0	1.30	58.30	1,902.8	-9.3	10.7	-9.7	0.61	0.00	-27.00
1,994.0	0.40	21.00	1,993.8	-8.5	11.7	-10.7	1.11	-0.99	-40.99
2,085.0	2.40	145.10	2,084.7	-9.7	12.9	-11.8	2.91	2.20	136.37
2,176.0	4.30	162.40	2,175.6	-14.5	15.0	-13.4	2.34	2.09	19.01
2,271.0	1.80	136.50	2,270.4	-19.0	17.1	-15.0	2.94	-2.63	-27.26
2,366.0	4.00	147.10	2,365.3	-22.9	19.9	-17.4	2.37	2.32	11.16
2,461.0	6.70	152.90	2,459.9	-30.6	24.3	-20.9	2.89	2.84	6.11
2,557.0	8.90	151.80	2,555.0	-42.1	30.3	-25.7	2.30	2.29	-1.15
2,652.0	10.30	150.60	2,648.7	-56.0	38.0	-31.9	1.49	1.47	-1.26
2,747.0	11.40	148.00	2,742.0	-71.4	47.1	-39.4	1.27	1.16	-2.74
2,842.0	12.20	150.60	2,835.0	-88.1	57.0	-47.5	1.01	0.84	2.74
2,938.0	11.70	161.70	2,928.9	-106.2	65.1	-53.6	2.45	-0.52	11.56
3,033.0	13.20	157.10	3,021.7	-125.3	72.3	-58.8	1.89	1.58	-4.84
3,128.0	12.60	149.90	3,114.3	-144.2	81.7	-66.2	1.80	-0.63	-7.58
3,223.0	12.00	159.70	3,207.1	-162.5	90.3	-72.8	2.28	-0.63	10.32
3,319.0	12.20	157.80	3,301.0	-181.2	97.6	-78.1	0.46	0.21	-1.98
3,414.0	11.20	156.40	3,394.0	-199.0	105.1	-83.7	1.09	-1.05	-1.47
3,509.0	11.00	153.80	3,487.2	-215.6	112.8	-89.6	0.57	-0.21	-2.74
3,604.0	11.70	159.00	3,580.4	-232.7	120.3	-95.3	1.30	0.74	5.47
3,699.0	11.60	164.80	3,673.4	-250.9	126.2	-99.3	1.24	-0.11	6.11
3,795.0	12.00	159.00	3,767.4	-269.5	132.3	-103.4	1.30	0.42	-6.04
3,890.0	12.00	153.90	3,860.3	-287.6	140.2	-109.3	1.12	0.00	-5.37
3,985.0	10.60	156.40	3,953.5	-304.5	148.1	-115.4	1.56	-1.47	2.63
4,081.0	11.50	155.30	4,047.7	-321.3	155.6	-121.1	0.96	0.94	-1.15
4,176.0	11.30	154.50	4,140.8	-338.3	163.6	-127.3	0.27	-0.21	-0.84
4,271.0	12.50	149.70	4,233.8	-355.6	172.8	-134.6	1.64	1.26	-5.05
4,366.0	11.50	160.60	4,326.7	-373.4	181.1	-141.0	2.60	-1.05	11.47
4,461.0	12.70	160.60	4,419.6	-392.2	187.7	-145.6	1.26	1.26	0.00
4,557.0	13.90	151.70	4,513.0	-412.3	196.7	-152.4	2.47	1.25	-9.27
4,652.0	11.00	146.60	4,605.8	-429.9	207.1	-160.9	3.26	-3.05	-5.37
4,747.0	9.00	153.90	4,699.3	-444.1	215.3	-167.7	2.49	-2.11	7.68
4,842.0	6.00	150.40	4,793.5	-455.1	221.1	-172.2	3.19	-3.16	-3.68
4,938.0	3.60	153.20	4,889.2	-462.2	224.9	-175.3	2.51	-2.50	2.92
5,033.0	1.30	152.20	4,984.1	-465.8	226.7	-176.7	2.42	-2.42	-1.05
5,128.0	1.00	132.00	5,079.1	-467.3	227.9	-177.7	0.53	-0.32	-21.26
5,255.0	0.70	135.00	5,206.0	-468.6	229.2	-178.9	0.24	-0.24	2.36
5,382.0	0.40	164.80	5,333.0	-469.6	229.9	-179.5	0.32	-0.24	23.46
5,509.0	0.20	293.00	5,460.0	-469.9	229.8	-179.4	0.43	-0.16	100.95
5,636.0	0.80	332.90	5,587.0	-469.0	229.2	-178.9	0.52	0.47	31.42
5,763.0	0.90	340.60	5,714.0	-467.3	228.5	-178.3	0.12	0.08	6.06
5,890.0	0.70	357.40	5,841.0	-465.6	228.1	-178.1	0.24	-0.16	13.23
6,017.0	0.80	323.60	5,968.0	-464.1	227.5	-177.7	0.35	0.08	-26.61
6,144.0	1.10	327.30	6,095.0	-462.4	226.4	-176.7	0.24	0.24	2.91
6,239.0	1.30	328.80	6,190.0	-460.7	225.3	-175.9	0.21	0.21	1.58
6,271.0	1.20	332.20	6,221.9	-460.1	225.0	-175.6	0.39	-0.31	10.63
6,303.0	2.40	311.30	6,253.9	-459.3	224.3	-175.0	4.21	3.75	-65.31
6,334.0	4.70	294.00	6,284.9	-458.4	222.7	-173.5	8.10	7.42	-55.81

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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)
6,366.0	8.20	286.30	6,316.7	-457.2	219.3	-170.2	11.24	10.94	-24.06
6,398.0	11.30	279.80	6,348.2	-456.0	214.0	-165.1	10.27	9.69	-20.31
6,430.0	14.20	278.90	6,379.4	-454.9	207.0	-158.3	9.08	9.06	-2.81
6,461.0	15.80	279.80	6,409.3	-453.6	199.1	-150.5	5.22	5.16	2.90
6,493.0	16.90	276.30	6,440.1	-452.3	190.2	-141.8	4.61	3.44	-10.94
6,525.0	18.80	273.10	6,470.5	-451.5	180.4	-132.2	6.68	5.94	-10.00
6,557.0	20.90	270.50	6,500.6	-451.2	169.6	-121.4	7.12	6.56	-8.13
6,588.0	22.50	268.90	6,529.4	-451.3	158.1	-110.0	5.50	5.16	-5.16
6,620.0	23.80	268.00	6,558.8	-451.6	145.5	-97.4	4.21	4.06	-2.81
6,652.0	25.30	265.70	6,587.9	-452.4	132.2	-84.2	5.56	4.69	-7.19
6,683.0	27.00	265.40	6,615.8	-453.4	118.6	-70.5	5.50	5.48	-0.97
6,715.0	28.50	264.50	6,644.1	-454.7	103.8	-55.6	4.87	4.69	-2.81
6,747.0	29.80	263.30	6,672.0	-456.4	88.3	-40.0	4.45	4.06	-3.75
6,779.0	31.30	262.20	6,699.6	-458.4	72.2	-23.8	5.00	4.69	-3.44
6,810.0	33.50	261.50	6,725.8	-460.8	55.7	-7.2	7.20	7.10	-2.26
6,842.0	36.30	262.40	6,752.0	-463.4	37.6	11.1	8.90	8.75	2.81
6,874.0	39.50	263.80	6,777.3	-465.7	18.1	30.8	10.35	10.00	4.38
6,906.0	41.40	263.80	6,801.6	-468.0	-2.6	51.5	5.94	5.94	0.00
6,937.0	43.40	264.90	6,824.5	-470.0	-23.4	72.4	6.88	6.45	3.55
6,969.0	45.00	265.20	6,847.4	-471.9	-45.6	94.7	5.04	5.00	0.94
7,001.0	46.70	267.10	6,869.7	-473.5	-68.5	117.7	6.81	5.31	5.94
7,033.0	48.90	269.20	6,891.2	-474.2	-92.2	141.3	8.42	6.88	6.56
7,064.0	51.00	272.10	6,911.2	-474.0	-115.9	164.9	9.86	6.77	9.35
7,096.0	51.40	273.50	6,931.2	-472.7	-140.8	189.5	3.63	1.25	4.38
7,128.0	52.60	273.50	6,950.9	-471.2	-166.0	214.4	3.75	3.75	0.00
7,160.0	55.10	272.20	6,969.8	-469.9	-191.8	239.9	8.47	7.81	-4.06
7,191.0	57.90	270.70	6,986.9	-469.3	-217.6	265.6	9.89	9.03	-4.84
7,223.0	60.60	270.10	7,003.3	-469.1	-245.1	292.9	8.59	8.44	-1.88
7,255.0	63.00	269.60	7,018.4	-469.2	-273.3	320.9	7.63	7.50	-1.56
7,287.0	65.60	269.60	7,032.3	-469.4	-302.2	349.6	8.13	8.13	0.00
7,318.0	68.30	269.60	7,044.4	-469.6	-330.7	378.0	8.71	8.71	0.00
7,350.0	71.20	270.10	7,055.5	-469.6	-360.7	407.9	9.18	9.06	1.56
7,382.0	74.60	270.50	7,064.9	-469.5	-391.3	438.3	10.69	10.63	1.25
7,414.0	78.30	271.20	7,072.4	-469.0	-422.4	469.2	11.76	11.56	2.19
7,438.0	81.00	271.20	7,076.7	-468.5	-446.0	492.6	11.25	11.25	0.00
7,467.0	82.64	271.20	7,080.8	-467.9	-474.7	521.0	5.66	5.66	0.00
7"									
7,491.0	84.00	271.20	7,083.6	-467.4	-498.5	544.7	5.66	5.66	0.00
7,522.0	84.20	271.50	7,086.8	-466.7	-529.3	575.3	1.16	0.65	0.97
7,552.0	84.30	271.20	7,089.8	-466.0	-559.2	604.9	1.05	0.33	-1.00
7,583.0	84.80	270.30	7,092.7	-465.6	-590.0	635.5	3.31	1.61	-2.90
7,614.0	85.60	269.40	7,095.3	-465.7	-620.9	666.3	3.88	2.58	-2.90
7,646.0	86.60	269.80	7,097.5	-465.9	-652.9	698.0	3.36	3.13	1.25
7,678.0	87.10	270.30	7,099.3	-465.9	-684.8	729.8	2.21	1.56	1.56
7,710.0	87.10	270.10	7,100.9	-465.7	-716.8	761.6	0.62	0.00	-0.63
7,741.0	88.00	269.40	7,102.2	-465.9	-747.7	792.4	3.68	2.90	-2.26
7,773.0	89.60	269.80	7,102.9	-466.1	-779.7	824.2	5.15	5.00	1.25
7,805.0	90.70	269.80	7,102.8	-466.2	-811.7	856.1	3.44	3.44	0.00
7,837.0	91.00	270.00	7,102.3	-466.3	-843.7	887.9	1.13	0.94	0.63
7,868.0	91.00	269.80	7,101.8	-466.3	-874.7	918.7	0.65	0.00	-0.65
7,900.0	89.70	268.90	7,101.6	-466.7	-906.7	950.6	4.94	-4.06	-2.81
7,932.0	87.40	267.50	7,102.4	-467.7	-938.7	982.5	8.41	-7.19	-4.38
7,964.0	86.10	266.40	7,104.2	-469.4	-970.6	1,014.4	5.32	-4.06	-3.44

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7,995.0	85.80	266.40	7,106.4	-471.3	-1,001.4	1,045.3	0.97	-0.97	0.00
8,027.0	87.00	267.70	7,108.4	-473.0	-1,033.3	1,077.2	5.52	3.75	4.06
8,059.0	88.10	268.20	7,109.8	-474.1	-1,065.3	1,109.1	3.78	3.44	1.56
8,091.0	89.30	269.60	7,110.5	-474.7	-1,097.3	1,140.9	5.76	3.75	4.38
8,122.0	90.20	270.30	7,110.6	-474.8	-1,128.3	1,171.8	3.68	2.90	2.26
8,154.0	91.00	271.00	7,110.3	-474.4	-1,160.3	1,203.5	3.32	2.50	2.19
8,186.0	91.80	271.50	7,109.5	-473.7	-1,192.3	1,235.3	2.95	2.50	1.56
8,218.0	91.30	270.70	7,108.7	-473.1	-1,224.2	1,267.0	2.95	-1.56	-2.50
8,249.0	91.50	270.30	7,107.9	-472.8	-1,255.2	1,297.8	1.44	0.65	-1.29
8,281.0	90.00	269.40	7,107.5	-472.9	-1,287.2	1,329.6	5.47	-4.69	-2.81
8,313.0	89.60	269.40	7,107.6	-473.2	-1,319.2	1,361.5	1.25	-1.25	0.00
8,345.0	90.00	270.00	7,107.7	-473.4	-1,351.2	1,393.3	2.25	1.25	1.88
8,376.0	90.10	269.80	7,107.7	-473.5	-1,382.2	1,424.2	0.72	0.32	-0.65
8,408.0	90.70	270.70	7,107.5	-473.3	-1,414.2	1,456.0	3.38	1.88	2.81
8,440.0	91.10	270.00	7,107.0	-473.1	-1,446.2	1,487.8	2.52	1.25	-2.19
8,472.0	91.10	269.80	7,106.3	-473.2	-1,478.2	1,519.6	0.62	0.00	-0.63
8,503.0	90.10	269.60	7,106.0	-473.3	-1,509.2	1,550.5	3.29	-3.23	-0.65
8,535.0	88.80	269.80	7,106.3	-473.5	-1,541.2	1,582.3	4.11	-4.06	0.63
8,567.0	88.50	268.90	7,107.1	-473.9	-1,573.2	1,614.1	2.96	-0.94	-2.81
8,599.0	88.10	267.80	7,108.0	-474.8	-1,605.2	1,646.0	3.66	-1.25	-3.44
8,630.0	88.90	268.20	7,108.8	-475.9	-1,636.1	1,677.0	2.89	2.58	1.29
8,662.0	89.30	269.40	7,109.3	-476.5	-1,668.1	1,708.8	3.95	1.25	3.75
8,694.0	89.00	270.50	7,109.8	-476.6	-1,700.1	1,740.7	3.56	-0.94	3.44
8,726.0	89.20	270.10	7,110.3	-476.4	-1,732.1	1,772.5	1.40	0.63	-1.25
8,757.0	90.00	271.00	7,110.5	-476.1	-1,763.1	1,803.3	3.88	2.58	2.90
8,789.0	90.00	270.50	7,110.5	-475.7	-1,795.1	1,835.0	1.56	0.00	-1.56
8,819.0	89.60	270.00	7,110.6	-475.6	-1,825.1	1,864.9	2.13	-1.33	-1.67
8,853.0	90.10	269.80	7,110.7	-475.6	-1,859.1	1,898.7	1.58	1.47	-0.59
8,884.0	90.80	269.60	7,110.5	-475.8	-1,890.1	1,929.5	2.35	2.26	-0.65
8,916.0	90.00	269.80	7,110.3	-475.9	-1,922.1	1,961.4	2.58	-2.50	0.63
8,948.0	89.50	270.70	7,110.4	-475.8	-1,954.1	1,993.2	3.22	-1.56	2.81
8,980.0	89.50	270.50	7,110.7	-475.5	-1,986.1	2,025.0	0.62	0.00	-0.63
9,011.0	89.10	270.80	7,111.1	-475.1	-2,017.1	2,055.7	1.61	-1.29	0.97
9,043.0	88.20	271.50	7,111.8	-474.5	-2,049.1	2,087.5	3.56	-2.81	2.19
9,075.0	88.20	271.20	7,112.8	-473.7	-2,081.0	2,119.2	0.94	0.00	-0.94
9,106.0	89.20	271.90	7,113.5	-472.9	-2,112.0	2,149.9	3.94	3.23	2.26
9,138.0	89.50	271.50	7,113.9	-471.9	-2,144.0	2,181.6	1.56	0.94	-1.25
9,170.0	89.80	271.00	7,114.1	-471.2	-2,176.0	2,213.4	1.82	0.94	-1.56
9,202.0	90.00	270.80	7,114.1	-470.7	-2,208.0	2,245.1	0.88	0.63	-0.63
9,233.0	90.20	270.80	7,114.1	-470.3	-2,239.0	2,275.9	0.65	0.65	0.00
9,265.0	90.60	271.00	7,113.9	-469.8	-2,271.0	2,307.7	1.40	1.25	0.63
9,297.0	90.00	270.30	7,113.7	-469.4	-2,303.0	2,339.5	2.88	-1.88	-2.19
9,329.0	88.80	270.30	7,114.0	-469.3	-2,335.0	2,371.3	3.75	-3.75	0.00
9,360.0	87.50	269.60	7,115.0	-469.3	-2,366.0	2,402.1	4.76	-4.19	-2.26
9,392.0	87.50	268.70	7,116.4	-469.8	-2,397.9	2,433.9	2.81	0.00	-2.81
9,424.0	87.00	270.50	7,118.0	-470.0	-2,429.9	2,465.7	5.83	-1.56	5.63
9,456.0	87.50	271.50	7,119.5	-469.4	-2,461.9	2,497.5	3.49	1.56	3.13
9,487.0	87.20	272.90	7,120.9	-468.2	-2,492.8	2,528.1	4.61	-0.97	4.52
9,519.0	87.80	274.20	7,122.3	-466.3	-2,524.7	2,559.6	4.47	1.88	4.06
9,551.0	88.60	273.60	7,123.3	-464.1	-2,556.6	2,591.1	3.12	2.50	-1.88
9,583.0	90.00	273.60	7,123.7	-462.1	-2,588.5	2,622.7	4.38	4.38	0.00
9,614.0	90.90	273.10	7,123.5	-460.3	-2,619.5	2,653.3	3.32	2.90	-1.61
9,646.0	91.50	272.90	7,122.8	-458.6	-2,651.4	2,684.9	1.98	1.88	-0.63

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stonebraker 28V-414
Project:	SEC.28-T2N-R64W	TVD Reference:	WELL @ 4975.5ft (Ensign Rig #136 - RKB 12.5')
Site:	Stonebraker 28U-HZ Pad Sec.28-T2N-R64W	MD Reference:	WELL @ 4975.5ft (Ensign Rig #136 - RKB 12.5')
Well:	Stonebraker 28V-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)
9,678.0	92.60	272.60	7,121.7	-457.1	-2,683.4	2,716.5	3.56	3.44	-0.94
9,710.0	92.90	272.80	7,120.1	-455.6	-2,715.3	2,748.1	1.13	0.94	0.63
9,741.0	93.10	271.90	7,118.5	-454.3	-2,746.2	2,778.7	2.97	0.65	-2.90
9,773.0	92.70	270.30	7,116.9	-453.7	-2,778.2	2,810.4	5.15	-1.25	-5.00
9,805.0	92.40	270.50	7,115.5	-453.4	-2,810.2	2,842.2	1.13	-0.94	0.63
9,836.0	90.50	269.40	7,114.7	-453.5	-2,841.2	2,873.0	7.08	-6.13	-3.55
9,868.0	90.10	268.50	7,114.5	-454.1	-2,873.1	2,904.9	3.08	-1.25	-2.81
9,900.0	90.40	268.50	7,114.4	-454.9	-2,905.1	2,936.8	0.94	0.94	0.00
9,932.0	90.70	268.70	7,114.1	-455.7	-2,937.1	2,968.7	1.13	0.94	0.63
9,963.0	90.40	268.00	7,113.8	-456.6	-2,968.1	2,999.6	2.46	-0.97	-2.26
9,995.0	89.70	267.10	7,113.7	-457.9	-3,000.1	3,031.5	3.56	-2.19	-2.81
10,027.0	88.50	267.30	7,114.2	-459.5	-3,032.0	3,063.5	3.80	-3.75	0.63
10,059.0	88.40	267.10	7,115.1	-461.1	-3,064.0	3,095.4	0.70	-0.31	-0.63
10,090.0	88.50	267.10	7,115.9	-462.6	-3,094.9	3,126.4	0.32	0.32	0.00
10,122.0	88.40	266.40	7,116.8	-464.4	-3,126.9	3,158.3	2.21	-0.31	-2.19
10,154.0	88.50	266.80	7,117.7	-466.3	-3,158.8	3,190.3	1.29	0.31	1.25
10,186.0	88.50	266.40	7,118.5	-468.2	-3,190.7	3,222.2	1.25	0.00	-1.25
10,212.0	89.10	266.60	7,119.1	-469.8	-3,216.7	3,248.2	2.43	2.31	0.77
10,249.0	89.30	267.70	7,119.6	-471.7	-3,253.6	3,285.1	3.02	0.54	2.97
10,281.0	89.00	267.70	7,120.0	-473.0	-3,285.6	3,317.1	0.94	-0.94	0.00
10,312.0	89.60	267.80	7,120.4	-474.2	-3,316.6	3,348.0	1.96	1.94	0.32
10,344.0	89.90	268.20	7,120.6	-475.3	-3,348.6	3,379.9	1.56	0.94	1.25
10,376.0	89.80	269.10	7,120.6	-476.0	-3,380.5	3,411.8	2.83	-0.31	2.81
10,408.0	89.70	270.10	7,120.8	-476.3	-3,412.5	3,443.7	3.14	-0.31	3.13
10,440.0	89.50	270.80	7,121.0	-476.0	-3,444.5	3,475.4	2.27	-0.63	2.19
10,471.0	90.00	270.50	7,121.1	-475.7	-3,475.5	3,506.2	1.88	1.61	-0.97
10,503.0	90.30	271.00	7,121.1	-475.2	-3,507.5	3,538.0	1.82	0.94	1.56
10,535.0	91.00	271.20	7,120.7	-474.6	-3,539.5	3,569.8	2.28	2.19	0.63
10,566.0	91.50	271.00	7,120.0	-474.0	-3,570.5	3,600.5	1.74	1.61	-0.65
10,598.0	92.10	270.80	7,119.0	-473.5	-3,602.5	3,632.3	1.98	1.88	-0.63
10,630.0	92.90	271.90	7,117.6	-472.8	-3,634.5	3,664.0	4.25	2.50	3.44
10,662.0	92.50	272.10	7,116.1	-471.7	-3,666.4	3,695.6	1.40	-1.25	0.63
10,693.0	91.80	270.70	7,115.0	-470.9	-3,697.4	3,726.4	5.05	-2.26	-4.52
10,725.0	91.40	269.40	7,114.1	-470.9	-3,729.4	3,758.2	4.25	-1.25	-4.06
10,757.0	91.20	269.80	7,113.3	-471.1	-3,761.3	3,790.0	1.40	-0.63	1.25
10,789.0	90.90	269.60	7,112.7	-471.3	-3,793.3	3,821.8	1.13	-0.94	-0.63
10,820.0	90.80	270.70	7,112.3	-471.2	-3,824.3	3,852.7	3.56	-0.32	3.55
10,852.0	90.70	271.20	7,111.9	-470.7	-3,856.3	3,884.4	1.59	-0.31	1.56
10,884.0	90.50	270.80	7,111.5	-470.1	-3,888.3	3,916.2	1.40	-0.63	-1.25
10,916.0	90.50	271.20	7,111.3	-469.5	-3,920.3	3,947.9	1.25	0.00	1.25
10,947.0	90.40	271.00	7,111.0	-468.9	-3,951.3	3,978.7	0.72	-0.32	-0.65
10,979.0	90.30	270.80	7,110.8	-468.4	-3,983.3	4,010.5	0.70	-0.31	-0.63
11,011.0	90.60	270.70	7,110.6	-468.0	-4,015.3	4,042.2	0.99	0.94	-0.31
11,043.0	91.10	270.70	7,110.1	-467.6	-4,047.3	4,074.0	1.56	1.56	0.00
11,074.0	92.40	271.90	7,109.1	-466.9	-4,078.3	4,104.7	5.71	4.19	3.87
11,106.0	92.80	271.50	7,107.7	-466.0	-4,110.2	4,136.4	1.77	1.25	-1.25
11,138.0	92.20	270.80	7,106.3	-465.3	-4,142.2	4,168.1	2.88	-1.88	-2.19
11,169.0	91.60	269.20	7,105.3	-465.3	-4,173.2	4,199.0	5.51	-1.94	-5.16
11,201.0	90.90	268.50	7,104.6	-466.0	-4,205.2	4,230.8	3.09	-2.19	-2.19
11,233.0	90.70	268.40	7,104.1	-466.8	-4,237.1	4,262.7	0.70	-0.63	-0.31
11,265.0	89.90	267.70	7,104.0	-467.9	-4,269.1	4,294.7	3.32	-2.50	-2.19
11,296.0	90.60	269.60	7,103.8	-468.7	-4,300.1	4,325.5	6.53	2.26	6.13
11,328.0	91.90	271.00	7,103.1	-468.5	-4,332.1	4,357.3	5.97	4.06	4.38
11,360.0	92.60	271.50	7,101.9	-467.8	-4,364.1	4,389.1	2.69	2.19	1.56

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stonebraker 28V-414
Project:	SEC.28-T2N-R64W	TVD Reference:	WELL @ 4975.5ft (Ensign Rig #136 - RKB 12.5')
Site:	Stonebraker 28U-HZ Pad Sec.28-T2N-R64W	MD Reference:	WELL @ 4975.5ft (Ensign Rig #136 - RKB 12.5')
Well:	Stonebraker 28V-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)
11,406.0	97.30	276.80	7,097.9	-464.5	-4,409.7	4,434.1	15.36	10.22	11.52
11,451.8	97.30	276.80	7,092.1	-459.1	-4,454.9	4,478.4	0.00	0.00	0.00
BHL 720'FNL & 500'FWL									
11,457.0	97.30	276.80	7,091.4	-458.5	-4,460.0	4,483.5	0.00	0.00	0.00

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,467.0	7,080.8	7"	7	7-1/2

Checked By: _____ Approved By: _____ Date: _____