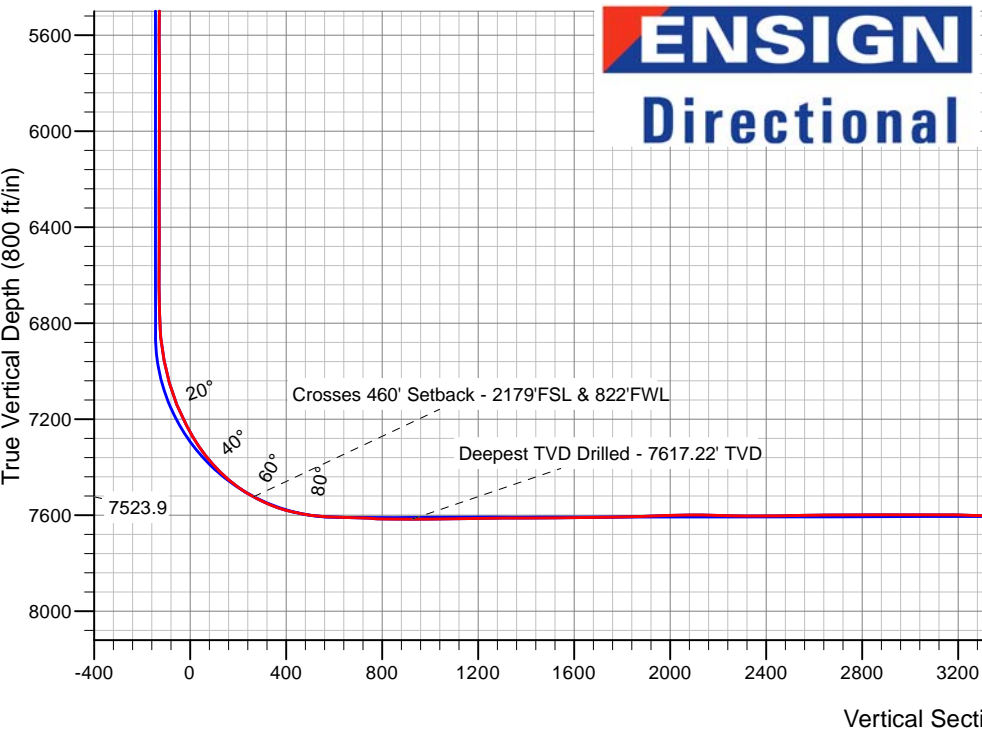
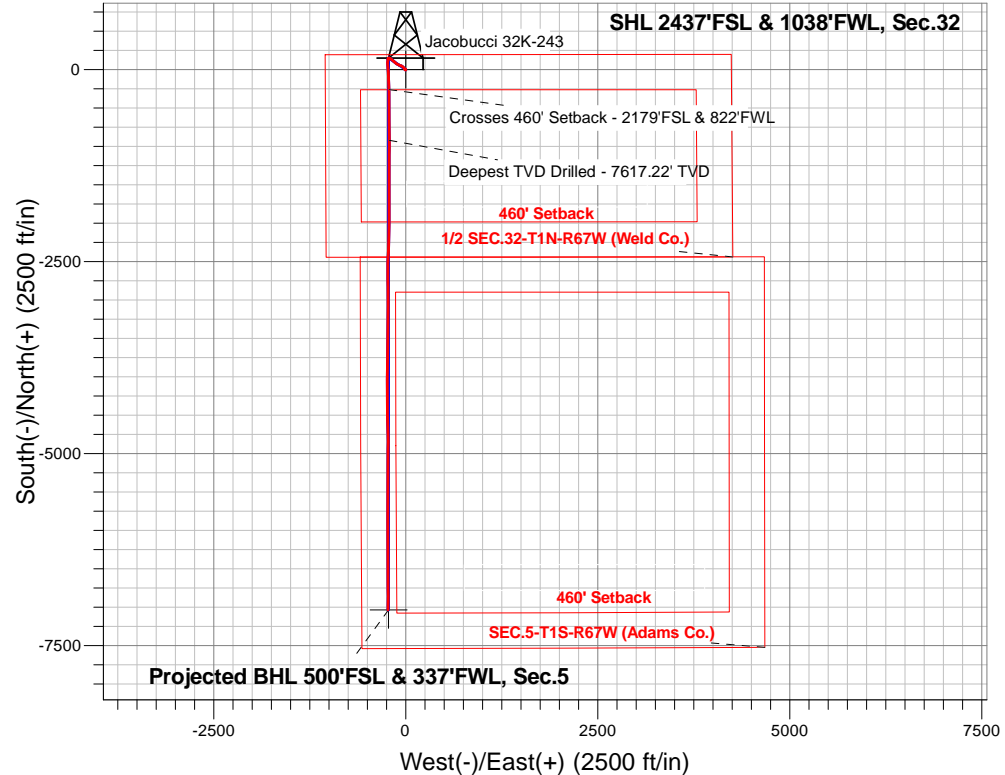


PETROLEUM DEVELOPMENT CORP DJ Basin

Well Name: **Jacobucci 32K-243**
Surface Location: Jacobucci 1N67W32K Pad Sec.32-T1N-R67W
North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
Ground Elevation: 5045.0
+N/-S+E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 245938.94 162462.77 40.007030 -104.920030
Ensign Rig #121 - RKB - 13.5'WELL @ 5058.5ft (Ensign Rig #121 - RKB - 13.5')

FINAL SURVEY

Projected Bottom Hole Location
14468'MD 7607'TVD 7035'S & 232'W of SHL
90.9 degree Incl @ 180.5 degree AZM



Jacobucci 1N67W32K Pad Sec.32-T1N-R67W Jacobucci 32K-243 Wellbore #1 8:56, April 18 2016	ANNOTATIONS		
	TVD	MD	Annotation
	7523.9	7675.7	Crosses 460' Setback - 2179'FSL & 822'FWL
	7617.2	8350.0	Deepest TVD Drilled - 7617.22' TVD
LEGEND			
✕ Jacobucci 32K-243, Wellbore #1, Plan #3 (4-8-16)R V0			
□ Wellbore #1			
○ Survey #1			



PETROLEUM DEVELOPMENT CORP DJ Basin

SEC.32-T1N-R67W

Jacobucci 1N67W32K Pad Sec.32-T1N-R67W

Jacobucci 32K-243

Wellbore #1

Survey: Survey #1

Standard Survey Report

18 April, 2016

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Jacobucci 32K-243
Project:	SEC.32-T1N-R67W	TVD Reference:	WELL @ 5058.5ft (Ensign Rig #121 - RKB - 13.5')
Site:	Jacobucci 1N67W32K Pad Sec.32-T1N-R67W	MD Reference:	WELL @ 5058.5ft (Ensign Rig #121 - RKB - 13.5')
Well:	Jacobucci 32K-243	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	US_EDM

Project	SEC.32-T1N-R67W, 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	Jacobucci 1N67W32K Pad Sec.32-T1N-R67W				
Site Position:		Northing:	1,245,939.37 usft	Latitude:	40.007030
From:	Lat/Long	Easting:	3,162,524.40 usft	Longitude:	-104.919810
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.37 °

Well	Jacobucci 32K-243					
Well Position	+N/-S	0.0 ft	Northing:	1,245,938.93 usft	Latitude:	40.007030
	+E/-W	0.0 ft	Easting:	3,162,462.77 usft	Longitude:	-104.920030
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,045.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/8/2016	8.27	66.54	52,400

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	181.83	

Survey Program	Date	4/18/2016			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
170.0	14,468.0	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 (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
1.0	0.01	211.10	1.0	0.0	0.0	0.0	0.59	0.59	0.00	
SHL 2437'FSL & 1038'FWL, Sec.32										
170.0	1.00	211.10	170.0	-1.3	-0.8	1.3	0.59	0.59	0.00	
266.0	1.30	191.80	266.0	-3.1	-1.4	3.1	0.51	0.31	-20.10	
361.0	0.30	186.20	361.0	-4.4	-1.7	4.4	1.05	-1.05	-5.89	
457.0	0.30	203.70	457.0	-4.8	-1.8	4.9	0.10	0.00	18.23	
553.0	0.30	341.60	553.0	-4.8	-2.0	4.9	0.58	0.00	143.65	
649.0	0.50	290.60	649.0	-4.4	-2.4	4.5	0.41	0.21	-53.13	

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Jacobucci 32K-243
Project:	SEC.32-T1N-R67W	TVD Reference:	WELL @ 5058.5ft (Ensign Rig #121 - RKB - 13.5')
Site:	Jacobucci 1N67W32K Pad Sec.32-T1N-R67W	MD Reference:	WELL @ 5058.5ft (Ensign Rig #121 - RKB - 13.5')
Well:	Jacobucci 32K-243	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	US_EDM

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
745.0	0.50	243.60	745.0	-4.5	-3.2	4.6	0.42	0.00	-48.96
840.0	0.80	312.50	839.9	-4.2	-4.1	4.3	0.82	0.32	72.53
936.0	0.90	306.40	935.9	-3.3	-5.2	3.5	0.14	0.10	-6.35
1,032.0	1.10	277.90	1,031.9	-2.7	-6.7	3.0	0.55	0.21	-29.69
1,128.0	1.30	328.20	1,127.9	-1.7	-8.2	1.9	1.08	0.21	52.40
1,224.0	1.70	325.40	1,223.9	0.4	-9.6	-0.1	0.42	0.42	-2.92
1,319.0	1.10	355.30	1,318.8	2.5	-10.4	-2.1	0.97	-0.63	31.47
1,415.0	1.10	336.50	1,414.8	4.2	-10.9	-3.9	0.37	0.00	-19.58
1,511.0	1.10	324.30	1,510.8	5.8	-11.8	-5.5	0.24	0.00	-12.71
1,607.0	1.30	335.00	1,606.8	7.6	-12.8	-7.2	0.31	0.21	11.15
1,702.0	1.20	307.10	1,701.8	9.1	-14.0	-8.7	0.64	-0.11	-29.37
1,795.0	1.50	306.90	1,794.7	10.5	-15.8	-10.0	0.32	0.32	-0.22
1,895.0	1.30	321.50	1,894.7	12.1	-17.5	-11.6	0.41	-0.20	14.60
1,990.0	2.70	325.40	1,989.7	14.8	-19.5	-14.2	1.48	1.47	4.11
2,086.0	3.80	309.40	2,085.5	18.7	-23.2	-18.0	1.47	1.15	-16.67
2,182.0	4.10	331.40	2,181.3	23.7	-27.3	-22.9	1.60	0.31	22.92
2,278.0	5.10	320.50	2,277.0	30.0	-31.7	-29.0	1.38	1.04	-11.35
2,374.0	5.80	309.00	2,372.5	36.4	-38.2	-35.2	1.35	0.73	-11.98
2,470.0	6.50	298.30	2,468.0	42.0	-46.7	-40.5	1.40	0.73	-11.15
2,566.0	7.70	295.50	2,563.2	47.4	-57.3	-45.5	1.30	1.25	-2.92
2,662.0	6.80	291.10	2,658.5	52.2	-68.4	-50.0	1.10	-0.94	-4.58
2,757.0	7.30	290.00	2,752.8	56.3	-79.3	-53.7	0.55	0.53	-1.16
2,853.0	8.10	297.10	2,847.9	61.4	-91.1	-58.5	1.29	0.83	7.40
2,949.0	7.50	295.70	2,943.0	67.2	-102.8	-63.9	0.66	-0.63	-1.46
3,044.0	8.40	304.30	3,037.1	73.8	-114.1	-70.2	1.57	0.95	9.05
3,141.0	7.60	307.80	3,133.2	81.8	-125.0	-77.7	0.97	-0.82	3.61
3,236.0	7.20	310.40	3,227.4	89.5	-134.5	-85.1	0.55	-0.42	2.74
3,332.0	8.10	310.80	3,322.5	97.8	-144.2	-93.1	0.94	0.94	0.42
3,428.0	6.90	308.30	3,417.7	105.8	-153.8	-100.8	1.30	-1.25	-2.60
3,524.0	7.30	314.00	3,512.9	113.6	-162.8	-108.3	0.84	0.42	5.94
3,619.0	7.70	305.30	3,607.1	121.5	-172.3	-115.9	1.27	0.42	-9.16
3,716.0	7.70	313.10	3,703.3	129.7	-182.3	-123.8	1.08	0.00	8.04
3,812.0	7.90	304.60	3,798.4	137.8	-192.5	-131.6	1.22	0.21	-8.85
3,907.0	7.00	304.30	3,892.6	144.8	-202.6	-138.2	0.95	-0.95	-0.32
4,003.0	5.00	288.30	3,988.1	149.4	-211.4	-142.6	2.70	-2.08	-16.67
4,099.0	2.60	283.40	4,083.8	151.2	-217.5	-144.2	2.52	-2.50	-5.10
4,195.0	2.60	274.40	4,179.7	151.9	-221.8	-144.7	0.42	0.00	-9.38
4,291.0	1.10	223.10	4,275.7	151.4	-224.6	-144.1	2.18	-1.56	-53.44
4,386.0	0.80	208.10	4,370.7	150.1	-225.5	-142.8	0.41	-0.32	-15.79
4,482.0	0.70	177.00	4,466.7	148.9	-225.8	-141.7	0.43	-0.10	-32.40
4,578.0	1.00	232.40	4,562.7	147.8	-226.5	-140.5	0.87	0.31	57.71
4,673.0	1.30	227.60	4,657.6	146.6	-227.9	-139.3	0.33	0.32	-5.05

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Jacobucci 32K-243
Project:	SEC.32-T1N-R67W	TVD Reference:	WELL @ 5058.5ft (Ensign Rig #121 - RKB - 13.5')
Site:	Jacobucci 1N67W32K Pad Sec.32-T1N-R67W	MD Reference:	WELL @ 5058.5ft (Ensign Rig #121 - RKB - 13.5')
Well:	Jacobucci 32K-243	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	US_EDM

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,769.0	1.10	199.20	4,753.6	145.0	-229.0	-137.6	0.65	-0.21	-29.58
4,865.0	1.00	189.90	4,849.6	143.3	-229.5	-135.9	0.21	-0.10	-9.69
4,961.0	1.10	190.60	4,945.6	141.6	-229.8	-134.2	0.11	0.10	0.73
5,056.0	1.20	209.50	5,040.6	139.8	-230.4	-132.4	0.41	0.11	19.89
5,152.0	1.30	207.10	5,136.5	138.0	-231.4	-130.5	0.12	0.10	-2.50
5,247.0	1.40	205.50	5,231.5	136.0	-232.4	-128.5	0.11	0.11	-1.68
5,343.0	0.30	267.90	5,327.5	134.9	-233.2	-127.4	1.34	-1.15	65.00
5,439.0	0.40	1.90	5,423.5	135.2	-233.4	-127.7	0.54	0.10	97.92
5,535.0	0.40	30.20	5,519.5	135.8	-233.2	-128.3	0.20	0.00	29.48
5,631.0	0.50	61.50	5,615.5	136.3	-232.7	-128.8	0.27	0.10	32.60
5,726.0	0.50	188.10	5,710.5	136.1	-232.4	-128.6	0.94	0.00	133.26
5,823.0	0.80	179.70	5,807.5	135.0	-232.5	-127.5	0.32	0.31	-8.66
5,918.0	0.50	23.40	5,902.5	134.7	-232.3	-127.3	1.34	-0.32	-164.53
6,014.0	0.50	31.80	5,998.5	135.5	-231.9	-128.0	0.08	0.00	8.75
6,110.0	0.70	83.20	6,094.5	135.9	-231.1	-128.5	0.57	0.21	53.54
6,206.0	0.10	351.00	6,190.5	136.1	-230.5	-128.6	0.74	-0.63	-96.04
6,301.0	0.40	37.80	6,285.5	136.4	-230.3	-129.0	0.36	0.32	49.26
6,397.0	0.20	68.60	6,381.5	136.7	-230.0	-129.3	0.26	-0.21	32.08
6,493.0	0.50	293.70	6,477.5	137.0	-230.2	-129.6	0.68	0.31	-140.52
6,589.0	0.70	256.10	6,573.5	137.0	-231.2	-129.5	0.45	0.21	-39.17
6,685.0	0.60	183.70	6,669.5	136.3	-231.8	-128.9	0.80	-0.10	-75.42
6,781.0	1.00	200.00	6,765.5	135.0	-232.1	-127.6	0.48	0.42	16.98
6,877.0	5.90	186.30	6,861.3	129.4	-232.9	-121.9	5.14	5.10	-14.27
6,973.0	10.90	192.50	6,956.2	115.6	-235.4	-108.0	5.29	5.21	6.46
7,069.0	15.40	184.10	7,049.7	94.0	-238.3	-86.4	5.08	4.69	-8.75
7,164.0	22.60	177.50	7,139.4	63.1	-238.4	-55.5	7.90	7.58	-6.95
7,259.0	27.80	174.90	7,225.4	22.8	-235.6	-15.3	5.60	5.47	-2.74
7,355.0	33.10	175.40	7,308.1	-25.7	-231.5	33.0	5.53	5.52	0.52
7,451.0	42.20	175.40	7,384.0	-84.1	-226.8	91.2	9.48	9.48	0.00
7,547.0	48.60	175.10	7,451.4	-152.1	-221.2	159.1	6.67	6.67	-0.31
7,643.0	59.40	178.40	7,507.8	-229.6	-216.9	236.3	11.59	11.25	3.44
7,675.7	61.64	179.60	7,523.9	-258.0	-216.4	264.8	7.56	6.85	3.68
Crosses 460' Setback - 2179'FSL & 822'FWL									
7,739.0	66.00	181.80	7,551.8	-314.8	-217.1	321.6	7.56	6.89	3.47
7,787.0	70.80	182.10	7,569.4	-359.4	-218.7	366.2	10.02	10.00	0.63
7,835.0	76.10	181.20	7,583.1	-405.4	-220.0	412.2	11.19	11.04	-1.88
7,883.0	78.60	179.80	7,593.6	-452.2	-220.4	459.0	5.94	5.21	-2.92
7,931.0	82.90	179.30	7,601.3	-499.6	-220.0	506.3	9.02	8.96	-1.04
7,979.0	86.40	178.60	7,605.8	-547.3	-219.1	554.0	7.43	7.29	-1.46
8,027.0	88.10	178.80	7,608.1	-595.3	-218.1	601.9	3.57	3.54	0.42
8,158.0	87.30	178.80	7,613.4	-726.1	-215.3	732.6	0.61	-0.61	0.00
8,254.0	88.70	180.20	7,616.7	-822.1	-214.5	828.5	2.06	1.46	1.46

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Jacobucci 32K-243
Project:	SEC.32-T1N-R67W	TVD Reference:	WELL @ 5058.5ft (Ensign Rig #121 - RKB - 13.5')
Site:	Jacobucci 1N67W32K Pad Sec.32-T1N-R67W	MD Reference:	WELL @ 5058.5ft (Ensign Rig #121 - RKB - 13.5')
Well:	Jacobucci 32K-243	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	US_EDM

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,350.0	90.70	180.50	7,617.2	-918.0	-215.1	924.4	2.11	2.08	0.31
Deepest TVD Drilled - 7617.22' TVD									
8,446.0	90.70	180.50	7,616.0	-1,014.0	-215.9	1,020.4	0.00	0.00	0.00
8,542.0	90.70	180.70	7,614.9	-1,110.0	-216.9	1,116.4	0.21	0.00	0.21
8,637.0	90.70	180.40	7,613.7	-1,205.0	-217.8	1,211.3	0.32	0.00	-0.32
8,733.0	90.50	181.10	7,612.7	-1,301.0	-219.1	1,307.3	0.76	-0.21	0.73
8,829.0	90.30	180.00	7,612.0	-1,397.0	-220.0	1,403.3	1.16	-0.21	-1.15
8,924.0	90.00	179.00	7,611.8	-1,492.0	-219.2	1,498.2	1.10	-0.32	-1.05
9,020.0	91.10	179.00	7,610.9	-1,588.0	-217.5	1,594.1	1.15	1.15	0.00
9,116.0	90.60	179.70	7,609.4	-1,683.9	-216.4	1,690.0	0.90	-0.52	0.73
9,212.0	90.50	179.70	7,608.5	-1,779.9	-215.9	1,785.9	0.10	-0.10	0.00
9,307.0	92.80	180.70	7,605.8	-1,874.9	-216.2	1,880.8	2.64	2.42	1.05
9,404.0	92.00	180.50	7,601.7	-1,971.8	-217.2	1,977.7	0.85	-0.82	-0.21
9,499.0	90.60	181.60	7,599.6	-2,066.8	-219.0	2,072.7	1.87	-1.47	1.16
9,595.0	88.50	181.80	7,600.3	-2,162.7	-221.8	2,168.7	2.20	-2.19	0.21
9,692.0	88.50	182.30	7,602.9	-2,259.6	-225.3	2,265.6	0.52	0.00	0.52
9,787.0	90.30	182.10	7,603.9	-2,354.5	-228.9	2,360.6	1.91	1.89	-0.21
9,883.0	90.70	182.50	7,603.0	-2,450.5	-232.8	2,456.6	0.59	0.42	0.42
9,979.0	91.10	180.40	7,601.5	-2,546.4	-235.2	2,552.6	2.23	0.42	-2.19
10,075.0	90.90	180.00	7,599.8	-2,642.4	-235.6	2,648.5	0.47	-0.21	-0.42
10,171.0	90.50	179.30	7,598.7	-2,738.4	-235.0	2,744.5	0.84	-0.42	-0.73
10,266.0	89.50	178.80	7,598.7	-2,833.4	-233.4	2,839.4	1.18	-1.05	-0.53
10,362.0	90.50	178.80	7,598.7	-2,929.3	-231.4	2,935.2	1.04	1.04	0.00
10,458.0	89.50	180.00	7,598.7	-3,025.3	-230.4	3,031.1	1.63	-1.04	1.25
10,553.0	90.60	180.20	7,598.6	-3,120.3	-230.6	3,126.1	1.18	1.16	0.21
10,649.0	88.10	179.80	7,599.7	-3,216.3	-230.6	3,222.0	2.64	-2.60	-0.42
10,745.0	88.20	180.70	7,602.8	-3,312.3	-231.0	3,317.9	0.94	0.10	0.94
10,841.0	89.40	181.10	7,604.8	-3,408.2	-232.5	3,413.9	1.32	1.25	0.42
10,936.0	90.70	181.80	7,604.7	-3,503.2	-234.9	3,508.9	1.55	1.37	0.74
11,032.0	89.30	181.10	7,604.7	-3,599.2	-237.3	3,604.9	1.63	-1.46	-0.73
11,128.0	90.50	181.80	7,604.9	-3,695.1	-239.7	3,700.9	1.45	1.25	0.73
11,224.0	90.20	180.90	7,604.3	-3,791.1	-242.0	3,796.9	0.99	-0.31	-0.94
11,319.0	91.30	180.00	7,603.0	-3,886.1	-242.7	3,891.8	1.50	1.16	-0.95
11,415.0	90.00	179.10	7,601.9	-3,982.1	-242.0	3,987.8	1.65	-1.35	-0.94
11,511.0	90.30	179.50	7,601.7	-4,078.1	-240.8	4,083.7	0.52	0.31	0.42
11,607.0	90.10	180.00	7,601.4	-4,174.1	-240.4	4,179.6	0.56	-0.21	0.52
11,703.0	90.60	180.20	7,600.8	-4,270.1	-240.6	4,275.6	0.56	0.52	0.21
11,799.0	90.70	179.30	7,599.7	-4,366.1	-240.2	4,371.5	0.94	0.10	-0.94
11,895.0	88.60	178.10	7,600.3	-4,462.0	-238.0	4,467.3	2.52	-2.19	-1.25
11,991.0	89.00	178.40	7,602.3	-4,558.0	-235.0	4,563.1	0.52	0.42	0.31
12,087.0	89.00	178.80	7,604.0	-4,653.9	-232.7	4,659.0	0.42	0.00	0.42
12,183.0	89.90	179.50	7,604.9	-4,749.9	-231.3	4,754.9	1.19	0.94	0.73

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Jacobucci 32K-243
Project:	SEC.32-T1N-R67W	TVD Reference:	WELL @ 5058.5ft (Ensign Rig #121 - RKB - 13.5')
Site:	Jacobucci 1N67W32K Pad Sec.32-T1N-R67W	MD Reference:	WELL @ 5058.5ft (Ensign Rig #121 - RKB - 13.5')
Well:	Jacobucci 32K-243	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	US_EDM

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
12,278.0	90.30	180.00	7,604.7	-4,844.9	-230.9	4,849.8	0.67	0.42	0.53	
12,374.0	90.80	180.40	7,603.8	-4,940.9	-231.2	4,945.7	0.67	0.52	0.42	
12,470.0	88.90	179.80	7,604.0	-5,036.9	-231.4	5,041.7	2.08	-1.98	-0.63	
12,566.0	89.30	180.40	7,605.6	-5,132.9	-231.5	5,137.6	0.75	0.42	0.63	
12,662.0	90.00	180.50	7,606.1	-5,228.9	-232.3	5,233.6	0.74	0.73	0.10	
12,758.0	90.50	181.20	7,605.7	-5,324.9	-233.7	5,329.6	0.90	0.52	0.73	
12,854.0	89.70	179.70	7,605.5	-5,420.8	-234.5	5,425.6	1.77	-0.83	-1.56	
12,950.0	89.70	179.80	7,606.1	-5,516.8	-234.0	5,521.5	0.10	0.00	0.10	
13,046.0	90.40	180.40	7,606.0	-5,612.8	-234.2	5,617.5	0.96	0.73	0.63	
13,142.0	91.30	180.50	7,604.5	-5,708.8	-235.0	5,713.4	0.94	0.94	0.10	
13,238.0	89.70	179.70	7,603.7	-5,804.8	-235.1	5,809.4	1.86	-1.67	-0.83	
13,334.0	89.50	180.20	7,604.4	-5,900.8	-235.0	5,905.3	0.56	-0.21	0.52	
13,430.0	89.80	180.50	7,605.0	-5,996.8	-235.6	6,001.3	0.44	0.31	0.31	
13,525.0	90.50	179.80	7,604.7	-6,091.8	-235.9	6,096.2	1.04	0.74	-0.74	
13,621.0	89.40	179.70	7,604.8	-6,187.8	-235.5	6,192.2	1.15	-1.15	-0.10	
13,717.0	90.30	179.80	7,605.1	-6,283.8	-235.0	6,288.1	0.94	0.94	0.10	
13,813.0	90.80	180.20	7,604.1	-6,379.8	-235.0	6,384.1	0.67	0.52	0.42	
13,908.0	90.00	179.50	7,603.5	-6,474.8	-234.8	6,479.0	1.12	-0.84	-0.74	
14,004.0	90.00	179.30	7,603.5	-6,570.8	-233.8	6,574.9	0.21	0.00	-0.21	
14,100.0	88.90	179.30	7,604.4	-6,666.8	-232.6	6,670.8	1.15	-1.15	0.00	
14,196.0	89.10	179.50	7,606.1	-6,762.8	-231.6	6,766.7	0.29	0.21	0.21	
14,291.0	89.40	179.80	7,607.3	-6,857.7	-231.0	6,861.6	0.45	0.32	0.32	
14,418.0	90.40	180.50	7,607.5	-6,984.7	-231.4	6,988.6	0.96	0.79	0.55	
14,467.6	90.90	180.50	7,607.0	-7,034.4	-231.8	7,038.2	1.00	1.00	0.00	
BHL 500'FSL & 345'FWL, Sec.5										
14,468.0	90.90	180.50	7,607.0	-7,034.7	-231.8	7,038.6	1.00	1.00	0.00	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
SHL 2437'FSL & 1038'F ¹	0.00	0.00	1.0	0.0	0.0	1,245,938.96	3,162,462.77	40.007030	-104.920030	
- hit/miss target										
- Shape										
- survey hits target center										
- Point										
BHL 500'FSL & 345'FWL	0.00	0.00	7,600.0	-7,034.4	-224.2	1,238,903.52	3,162,284.62	39.987720	-104.920830	
- survey misses target center by 10.3ft at 14467.6ft MD (7607.0 TVD, -7034.4 N, -231.8 E)										
- Point										

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Jacobucci 32K-243
Project:	SEC.32-T1N-R67W	TVD Reference:	WELL @ 5058.5ft (Ensign Rig #121 - RKB - 13.5')
Site:	Jacobucci 1N67W32K Pad Sec.32-T1N-R67W	MD Reference:	WELL @ 5058.5ft (Ensign Rig #121 - RKB - 13.5')
Well:	Jacobucci 32K-243	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	US_EDM

Survey Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
7,675.7	7,523.9	-258.0	-216.4	Crosses 460' Setback - 2179'FSL & 822'FWL	
8,350.0	7,617.2	-918.0	-215.1	Deepest TVD Drilled - 7617.22' TVD	

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------