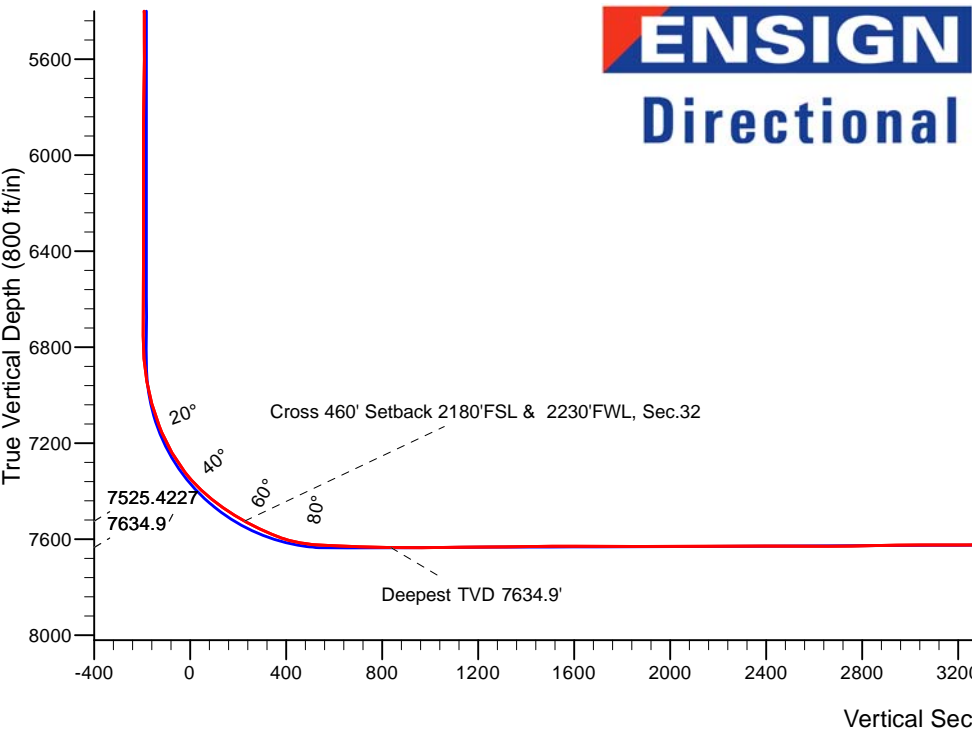
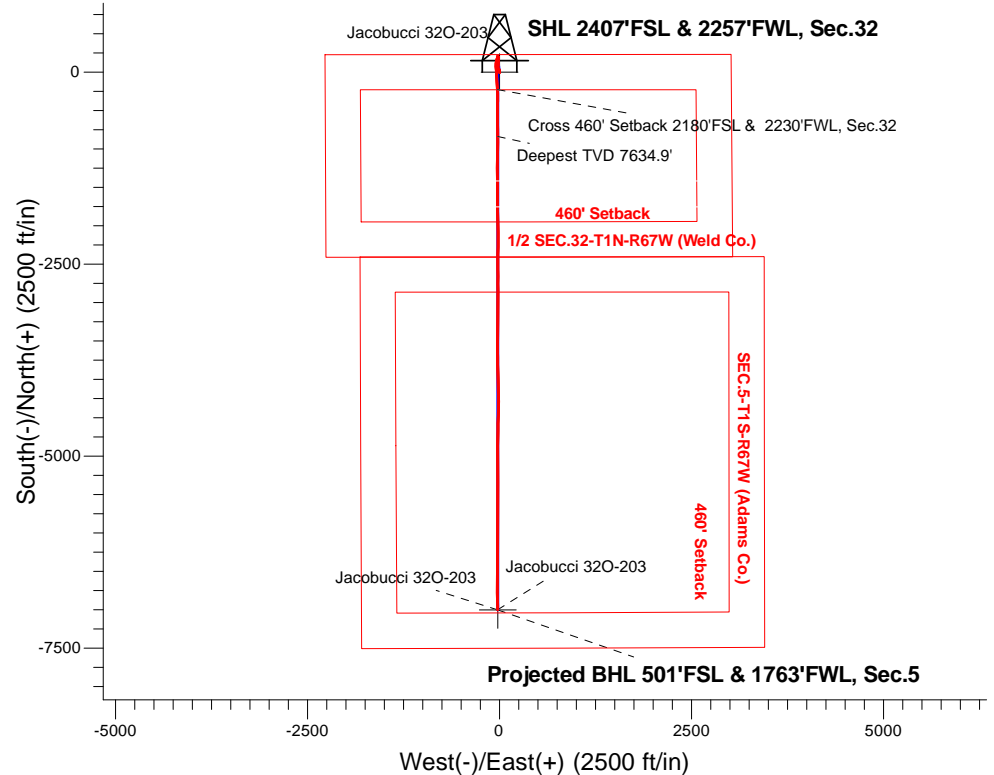


PETROLEUM DEVELOPMENT CORP DJ Basin

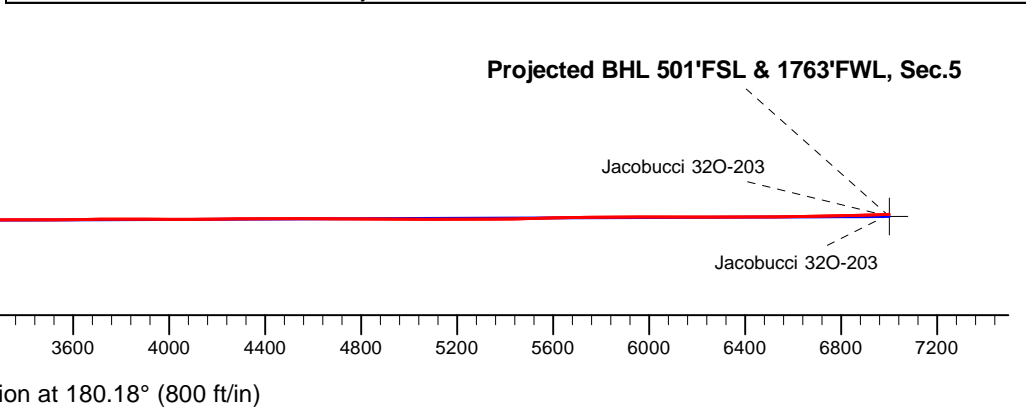
Well Name: **Jacobucci 32O-203**
Surface Location: Jacobucci 1N67W32O Pad Sec.32-T1N-R67W
North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
Ground Elevation: 5058.0
+N/-S+E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1245914.17 3163684.30 40.006940 -104.915670
Ensign Rig #121 - RKB - 13.5'WELL @ 5071.5ft (Ensign Rig #121 - RKB - 13.5')

FINAL SURVEY

Projected Bottom Hole Location
14486'MD 7601'TVD 7000'S & 23'W of SHL
92.1 degree Incl @ 178.4 degree AZM



Jacobucci 1N67W32O Pad Sec.32-T1N-R67W Jacobucci 32O-203 Wellbore #1 10:24, August 29 2016	ANNOTATIONS		
	TVD	MD	Annotation
	7525.4	7692.9	Cross 460' Setback 2180'FSL & 2230'FWL, Sec.32
	7634.9	8321.1	Deepest TVD 7634.9'
LEGEND			
○ Jacobucci 32O-203, Wellbore #1, Plan #2 (8-19-16)R V0			
□ Wellbore #1			
○ Survey #1			





PETROLEUM DEVELOPMENT CORP DJ Basin

SEC.32-T1N-R67W

Jacobucci 1N67W32O Pad Sec.32-T1N-R67W

Jacobucci 32O-203

Wellbore #1

Survey: Survey #1

Standard Survey Report

29 August, 2016

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Jacobucci 32O-203
Project:	SEC.32-T1N-R67W	TVD Reference:	WELL @ 5071.5ft (Ensign Rig #121 - RKB - 13.5')
Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	MD Reference:	WELL @ 5071.5ft (Ensign Rig #121 - RKB - 13.5')
Well:	Jacobucci 32O-203	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 1N67W32O Pad Sec.32-T1N-R67W				
Site Position:		Northing:	1,245,914.62 usft	Latitude:	40.006940
From:	Lat/Long	Easting:	3,163,748.73 usft	Longitude:	-104.915440
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.38 °

Well	Jacobucci 32O-203					
Well Position	+N/-S	0.0 ft	Northing:	1,245,914.16 usft	Latitude:	40.006940
	+E/-W	0.0 ft	Easting:	3,163,684.31 usft	Longitude:	-104.915670
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,058.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/19/2016	8.22	66.53	52,362

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	180.18	

Survey Program	Date	8/29/2016			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
152.0	14,486.0	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	
152.0	0.30	188.70	152.0	-0.4	-0.1	0.4	0.20	0.20	0.00	
248.0	0.30	133.60	248.0	-0.8	0.1	0.8	0.29	0.00	-57.40	
343.0	0.20	89.60	343.0	-1.0	0.4	1.0	0.22	-0.11	-46.32	
439.0	0.40	341.30	439.0	-0.7	0.5	0.7	0.52	0.21	-112.81	
630.0	0.80	4.50	630.0	1.3	0.4	-1.3	0.24	0.21	12.15	
726.0	1.80	4.50	726.0	3.5	0.6	-3.5	1.04	1.04	0.00	
821.0	2.70	357.10	820.9	7.2	0.6	-7.2	0.99	0.95	-7.79	
917.0	3.40	356.80	916.7	12.3	0.3	-12.3	0.73	0.73	-0.31	

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Jacobucci 32O-203
Project:	SEC.32-T1N-R67W	TVD Reference:	WELL @ 5071.5ft (Ensign Rig #121 - RKB - 13.5')
Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	MD Reference:	WELL @ 5071.5ft (Ensign Rig #121 - RKB - 13.5')
Well:	Jacobucci 32O-203	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)	
1,013.0	2.50	349.20	1,012.6	17.2	-0.3	-17.2	1.02	-0.94	-7.92	
1,109.0	2.70	343.40	1,108.5	21.4	-1.3	-21.4	0.34	0.21	-6.04	
1,205.0	2.80	337.30	1,204.4	25.7	-2.9	-25.7	0.32	0.10	-6.35	
1,301.0	3.20	338.20	1,300.3	30.4	-4.8	-30.4	0.42	0.42	0.94	
1,396.0	1.40	332.70	1,395.2	33.9	-6.3	-33.9	1.91	-1.89	-5.79	
1,492.0	1.70	324.80	1,491.2	36.1	-7.6	-36.1	0.38	0.31	-8.23	
1,588.0	1.60	324.30	1,587.1	38.3	-9.2	-38.3	0.11	-0.10	-0.52	
1,684.0	2.10	320.80	1,683.1	40.8	-11.1	-40.8	0.53	0.52	-3.65	
1,780.0	2.10	317.10	1,779.0	43.4	-13.4	-43.4	0.14	0.00	-3.85	
1,875.0	1.50	317.90	1,874.0	45.6	-15.5	-45.6	0.63	-0.63	0.84	
1,971.0	1.80	314.60	1,969.9	47.6	-17.4	-47.6	0.33	0.31	-3.44	
2,028.0	1.60	316.90	2,026.9	48.8	-18.6	-48.8	0.37	-0.35	4.04	
2,162.0	2.00	302.70	2,160.8	51.5	-21.8	-51.4	0.44	0.30	-10.60	
2,258.0	2.10	358.60	2,256.8	54.1	-23.3	-54.1	2.00	0.10	58.23	
2,354.0	3.60	8.40	2,352.7	58.9	-22.9	-58.8	1.64	1.56	10.21	
2,449.0	4.90	13.10	2,447.4	65.8	-21.5	-65.7	1.42	1.37	4.95	
2,545.0	5.70	11.40	2,543.0	74.4	-19.6	-74.4	0.85	0.83	-1.77	
2,641.0	7.40	7.00	2,638.4	85.3	-17.9	-85.2	1.85	1.77	-4.58	
2,737.0	7.00	2.10	2,733.6	97.2	-17.0	-97.2	0.76	-0.42	-5.10	
2,833.0	7.70	3.60	2,828.8	109.5	-16.3	-109.5	0.76	0.73	1.56	
2,928.0	6.70	0.00	2,923.1	121.4	-15.9	-121.3	1.15	-1.05	-3.79	
3,024.0	6.90	5.10	3,018.4	132.7	-15.4	-132.7	0.66	0.21	5.31	
3,120.0	6.30	0.80	3,113.7	143.8	-14.8	-143.7	0.81	-0.63	-4.48	
3,216.0	7.50	0.10	3,209.1	155.3	-14.8	-155.2	1.25	1.25	-0.73	
3,312.0	6.90	355.20	3,304.3	167.3	-15.2	-167.2	0.89	-0.63	-5.10	
3,408.0	5.70	349.90	3,399.7	177.7	-16.6	-177.7	1.39	-1.25	-5.52	
3,504.0	5.20	345.00	3,495.3	186.6	-18.5	-186.6	0.71	-0.52	-5.10	
3,599.0	4.20	340.80	3,590.0	194.1	-20.8	-194.0	1.11	-1.05	-4.42	
3,695.0	2.30	331.00	3,685.8	199.1	-22.9	-199.0	2.05	-1.98	-10.21	
3,791.0	0.50	274.00	3,781.8	200.8	-24.2	-200.7	2.16	-1.88	-59.38	
3,887.0	0.60	297.90	3,877.8	201.1	-25.1	-201.0	0.26	0.10	24.90	
3,983.0	1.80	338.50	3,973.7	202.7	-26.1	-202.6	1.46	1.25	42.29	
4,078.0	0.40	326.00	4,068.7	204.4	-26.8	-204.3	1.49	-1.47	-13.16	
4,173.0	1.20	24.70	4,163.7	205.5	-26.6	-205.5	1.10	0.84	61.79	
4,269.0	1.10	160.30	4,259.7	205.6	-25.8	-205.5	2.22	-0.10	141.25	
4,365.0	1.10	157.50	4,355.7	203.9	-25.2	-203.8	0.06	0.00	-2.92	
4,461.0	1.00	160.30	4,451.7	202.2	-24.5	-202.1	0.12	-0.10	2.92	
4,558.0	0.80	151.10	4,548.7	200.8	-23.9	-200.8	0.25	-0.21	-9.48	
4,653.0	0.70	160.10	4,643.7	199.7	-23.4	-199.6	0.16	-0.11	9.47	
4,749.0	0.40	168.40	4,739.7	198.8	-23.2	-198.8	0.32	-0.31	8.65	
4,845.0	0.40	159.70	4,835.6	198.2	-23.0	-198.1	0.06	0.00	-9.06	
4,941.0	0.80	146.90	4,931.6	197.3	-22.5	-197.2	0.44	0.42	-13.33	

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Jacobucci 32O-203
Project:	SEC.32-T1N-R67W	TVD Reference:	WELL @ 5071.5ft (Ensign Rig #121 - RKB - 13.5')
Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	MD Reference:	WELL @ 5071.5ft (Ensign Rig #121 - RKB - 13.5')
Well:	Jacobucci 32O-203	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)
5,037.0	0.40	160.30	5,027.6	196.4	-22.0	-196.4	0.44	-0.42	13.96
5,133.0	0.60	135.70	5,123.6	195.8	-21.5	-195.7	0.30	0.21	-25.63
5,228.0	1.00	140.20	5,218.6	194.8	-20.7	-194.7	0.43	0.42	4.74
5,324.0	1.60	150.10	5,314.6	193.0	-19.5	-192.9	0.67	0.63	10.31
5,420.0	1.80	117.40	5,410.6	191.1	-17.5	-191.0	1.02	0.21	-34.06
5,516.0	0.50	52.70	5,506.5	190.7	-15.8	-190.6	1.72	-1.35	-67.40
5,612.0	0.50	42.10	5,602.5	191.2	-15.2	-191.2	0.10	0.00	-11.04
5,708.0	0.60	313.90	5,698.5	191.9	-15.2	-191.8	0.80	0.10	-91.88
5,804.0	1.40	356.30	5,794.5	193.4	-15.7	-193.4	1.08	0.83	44.17
5,899.0	0.40	120.00	5,889.5	194.4	-15.5	-194.4	1.74	-1.05	130.21
5,995.0	0.20	130.20	5,985.5	194.1	-15.1	-194.1	0.21	-0.21	10.63
6,091.0	0.50	257.50	6,081.5	193.9	-15.3	-193.9	0.67	0.31	132.60
6,283.0	0.40	277.00	6,273.5	193.8	-16.8	-193.8	0.09	-0.05	10.16
6,379.0	0.30	269.60	6,369.5	193.9	-17.4	-193.8	0.11	-0.10	-7.71
6,475.0	0.60	335.70	6,465.5	194.3	-17.9	-194.3	0.57	0.31	68.85
6,571.0	0.60	314.40	6,561.5	195.1	-18.4	-195.1	0.23	0.00	-22.19
6,666.0	0.40	95.90	6,656.5	195.4	-18.5	-195.4	1.00	-0.21	148.95
6,762.0	1.10	279.50	6,752.5	195.6	-19.0	-195.5	1.56	0.73	-183.75
6,858.0	4.80	207.60	6,848.4	192.2	-21.8	-192.1	4.77	3.85	-74.90
6,954.0	11.00	209.50	6,943.4	180.6	-28.2	-180.5	6.46	6.46	1.98
7,049.0	16.40	196.10	7,035.7	159.8	-36.4	-159.7	6.56	5.68	-14.11
7,146.0	21.20	187.20	7,127.5	129.2	-42.4	-129.1	5.75	4.95	-9.18
7,175.0	22.70	188.20	7,154.4	118.5	-43.8	-118.4	5.33	5.17	3.45
7,271.0	30.60	178.60	7,240.2	75.6	-45.9	-75.5	9.35	8.23	-10.00
7,367.0	36.80	175.20	7,320.0	22.5	-42.9	-22.4	6.75	6.46	-3.54
7,462.0	46.90	176.10	7,390.7	-40.6	-38.1	40.7	10.65	10.63	0.95
7,558.0	53.20	176.30	7,452.3	-114.0	-33.2	114.1	6.56	6.56	0.21
7,654.0	58.80	176.80	7,506.0	-193.4	-28.5	193.5	5.85	5.83	0.52
7,692.9	61.07	177.59	7,525.4	-227.0	-26.8	227.1	6.09	5.83	2.04
Cross 460' Setback 2180'FSL & 2230'FWL, Sec.32									
7,750.0	64.40	178.70	7,551.6	-277.8	-25.2	277.8	6.09	5.84	1.94
7,846.0	68.70	181.20	7,589.8	-365.8	-25.1	365.9	5.08	4.48	2.60
7,941.0	80.40	180.10	7,615.1	-457.2	-26.2	457.3	12.37	12.32	-1.16
8,037.0	87.10	180.10	7,625.5	-552.6	-26.3	552.7	6.98	6.98	0.00
8,133.0	88.10	179.10	7,629.5	-648.5	-25.7	648.6	1.47	1.04	-1.04
8,228.0	87.30	179.40	7,633.3	-743.4	-24.4	743.5	0.90	-0.84	0.32
8,321.1	90.79	180.47	7,634.9	-836.5	-24.3	836.5	3.92	3.75	1.15
Deepest TVD 7634.9'									
8,324.0	90.90	180.50	7,634.9	-839.4	-24.3	839.4	3.92	3.75	1.15
8,419.0	89.30	179.80	7,634.7	-934.4	-24.6	934.4	1.84	-1.68	-0.74
8,515.0	90.40	181.20	7,634.9	-1,030.4	-25.4	1,030.4	1.85	1.15	1.46
8,611.0	90.60	180.80	7,634.1	-1,126.3	-27.1	1,126.4	0.47	0.21	-0.42

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Jacobucci 32O-203
Project:	SEC.32-T1N-R67W	TVD Reference:	WELL @ 5071.5ft (Ensign Rig #121 - RKB - 13.5')
Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	MD Reference:	WELL @ 5071.5ft (Ensign Rig #121 - RKB - 13.5')
Well:	Jacobucci 32O-203	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)	
8,706.0	90.50	180.50	7,633.2	-1,221.3	-28.2	1,221.4	0.33	-0.11	-0.32	
8,802.0	90.70	179.80	7,632.2	-1,317.3	-28.4	1,317.4	0.76	0.21	-0.73	
8,898.0	91.00	178.90	7,630.8	-1,413.3	-27.3	1,413.4	0.99	0.31	-0.94	
8,993.0	90.10	180.50	7,629.8	-1,508.3	-26.8	1,508.4	1.93	-0.95	1.68	
9,090.0	89.80	179.80	7,629.9	-1,605.3	-27.1	1,605.4	0.79	-0.31	-0.72	
9,185.0	89.70	178.60	7,630.3	-1,700.3	-25.8	1,700.4	1.27	-0.11	-1.26	
9,281.0	90.00	178.60	7,630.6	-1,796.3	-23.4	1,796.3	0.31	0.31	0.00	
9,377.0	90.20	180.00	7,630.4	-1,892.2	-22.2	1,892.3	1.47	0.21	1.46	
9,473.0	90.20	178.90	7,630.1	-1,988.2	-21.3	1,988.3	1.15	0.00	-1.15	
9,569.0	90.20	178.20	7,629.8	-2,084.2	-18.9	2,084.3	0.73	0.00	-0.73	
9,665.0	89.90	179.80	7,629.7	-2,180.2	-17.2	2,180.2	1.70	-0.31	1.67	
9,760.0	90.20	181.50	7,629.6	-2,275.2	-18.3	2,275.2	1.82	0.32	1.79	
9,856.0	89.90	181.70	7,629.5	-2,371.1	-21.0	2,371.2	0.38	-0.31	0.21	
9,952.0	89.70	180.10	7,629.8	-2,467.1	-22.5	2,467.2	1.68	-0.21	-1.67	
10,048.0	89.80	178.40	7,630.3	-2,563.1	-21.2	2,563.2	1.77	0.10	-1.77	
10,144.0	90.50	180.50	7,630.0	-2,659.1	-20.3	2,659.2	2.31	0.73	2.19	
10,240.0	90.80	180.10	7,628.9	-2,755.1	-20.8	2,755.1	0.52	0.31	-0.42	
10,335.0	91.40	179.30	7,627.1	-2,850.1	-20.3	2,850.1	1.05	0.63	-0.84	
10,431.0	91.00	180.50	7,625.1	-2,946.1	-20.1	2,946.1	1.32	-0.42	1.25	
10,527.0	90.00	181.00	7,624.3	-3,042.0	-21.4	3,042.1	1.16	-1.04	0.52	
10,623.0	90.00	180.10	7,624.3	-3,138.0	-22.3	3,138.1	0.94	0.00	-0.94	
10,719.0	90.10	180.30	7,624.2	-3,234.0	-22.7	3,234.1	0.23	0.10	0.21	
10,815.0	90.20	180.70	7,623.9	-3,330.0	-23.5	3,330.1	0.43	0.10	0.42	
10,911.0	90.10	180.50	7,623.7	-3,426.0	-24.5	3,426.1	0.23	-0.10	-0.21	
11,006.0	90.20	180.50	7,623.4	-3,521.0	-25.3	3,521.1	0.11	0.11	0.00	
11,102.0	90.70	179.80	7,622.7	-3,617.0	-25.6	3,617.1	0.90	0.52	-0.73	
11,197.0	90.70	179.40	7,621.5	-3,712.0	-24.9	3,712.1	0.42	0.00	-0.42	
11,293.0	89.80	179.40	7,621.1	-3,808.0	-23.9	3,808.1	0.94	-0.94	0.00	
11,388.0	89.60	178.70	7,621.6	-3,903.0	-22.3	3,903.0	0.77	-0.21	-0.74	
11,484.0	90.00	177.80	7,621.9	-3,998.9	-19.4	3,999.0	1.03	0.42	-0.94	
11,580.0	90.10	177.10	7,621.8	-4,094.8	-15.1	4,094.9	0.74	0.10	-0.73	
11,676.0	90.60	179.10	7,621.2	-4,190.8	-12.0	4,190.8	2.15	0.52	2.08	
11,771.0	91.20	181.20	7,619.8	-4,285.8	-12.2	4,285.8	2.30	0.63	2.21	
11,868.0	89.80	181.50	7,618.9	-4,382.7	-14.5	4,382.8	1.48	-1.44	0.31	
11,963.0	89.70	181.40	7,619.3	-4,477.7	-16.9	4,477.7	0.15	-0.11	-0.11	
12,059.0	89.70	180.80	7,619.8	-4,573.7	-18.7	4,573.7	0.62	0.00	-0.63	
12,155.0	90.80	180.50	7,619.4	-4,669.7	-19.8	4,669.7	1.19	1.15	-0.31	
12,251.0	89.20	181.40	7,619.4	-4,765.7	-21.4	4,765.7	1.91	-1.67	0.94	
12,347.0	89.40	181.00	7,620.6	-4,861.6	-23.4	4,861.7	0.47	0.21	-0.42	
12,443.0	89.40	180.80	7,621.6	-4,957.6	-24.9	4,957.7	0.21	0.00	-0.21	
12,539.0	89.90	180.50	7,622.2	-5,053.6	-26.0	5,053.7	0.61	0.52	-0.31	
12,635.0	90.00	179.80	7,622.3	-5,149.6	-26.3	5,149.7	0.74	0.10	-0.73	

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Jacobucci 32O-203
Project:	SEC.32-T1N-R67W	TVD Reference:	WELL @ 5071.5ft (Ensign Rig #121 - RKB - 13.5')
Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	MD Reference:	WELL @ 5071.5ft (Ensign Rig #121 - RKB - 13.5')
Well:	Jacobucci 32O-203	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)	
12,731.0	90.70	179.80	7,621.7	-5,245.6	-25.9	5,245.7	0.73	0.73	0.00	
12,827.0	90.00	179.40	7,621.1	-5,341.6	-25.3	5,341.6	0.84	-0.73	-0.42	
12,922.0	90.80	179.10	7,620.4	-5,436.6	-24.0	5,436.6	0.90	0.84	-0.32	
13,018.0	91.70	178.60	7,618.3	-5,532.5	-22.1	5,532.6	1.07	0.94	-0.52	
13,114.0	91.50	178.70	7,615.6	-5,628.5	-19.8	5,628.5	0.23	-0.21	0.10	
13,210.0	91.00	180.10	7,613.5	-5,724.4	-18.8	5,724.5	1.55	-0.52	1.46	
13,306.0	89.80	181.20	7,612.9	-5,820.4	-19.9	5,820.5	1.70	-1.25	1.15	
13,402.0	90.80	180.80	7,612.4	-5,916.4	-21.6	5,916.5	1.12	1.04	-0.42	
13,498.0	90.10	181.00	7,611.6	-6,012.4	-23.1	6,012.4	0.76	-0.73	0.21	
13,593.0	90.00	181.00	7,611.5	-6,107.4	-24.8	6,107.4	0.11	-0.11	0.00	
13,689.0	89.60	181.40	7,611.9	-6,203.4	-26.8	6,203.4	0.59	-0.42	0.42	
13,785.0	89.70	180.50	7,612.5	-6,299.3	-28.4	6,299.4	0.94	0.10	-0.94	
13,881.0	90.70	180.00	7,612.1	-6,395.3	-28.8	6,395.4	1.16	1.04	-0.52	
13,977.0	90.00	180.30	7,611.5	-6,491.3	-29.0	6,491.4	0.79	-0.73	0.31	
14,073.0	90.70	180.30	7,611.0	-6,587.3	-29.5	6,587.4	0.73	0.73	0.00	
14,168.0	91.60	179.80	7,609.0	-6,682.3	-29.6	6,682.4	1.08	0.95	-0.53	
14,263.0	90.70	178.90	7,607.1	-6,777.3	-28.5	6,777.3	1.34	-0.95	-0.95	
14,359.0	91.60	178.60	7,605.2	-6,873.2	-26.4	6,873.3	0.99	0.94	-0.31	
14,426.0	92.10	178.40	7,603.1	-6,940.2	-24.7	6,940.2	0.80	0.75	-0.30	
14,486.0	92.10	178.40	7,600.9	-7,000.1	-23.0	7,000.2	0.00	0.00	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 2407'FSL & 2257'F' - hit/miss target - Shape - Point	0.00	0.00	1.0	0.0	0.0	1,245,914.19	3,163,684.31	40.006940 -104.915670		
BHL 500'FSL & 1764'FM - survey misses target center by 9.3ft at 14486.0ft MD (7600.9 TVD, -7000.1 N, -23.0 E) - Point	0.00	0.00	7,610.0	-7,001.6	-22.4	1,238,912.86	3,163,708.03	39.987720 -104.915750		

Survey Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
7,692.9	7,525.4	+N/-S (ft)	+E/-W (ft)	Cross 460' Setback 2180'FSL & 2230'FWL, Sec.32	
8,321.1	7,634.9	-227.0	-26.8	Deepest TVD 7634.9'	
		-836.5	-24.3		

Checked By: _____	Approved By: _____	Date: _____
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