

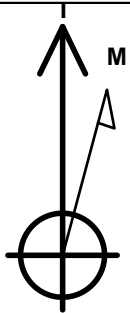
PETROLEUM DEVELOPMENT CORP DJ Basin

Well Name: **Paul 27W-434**

Surface Location: Paul 5N67W27D Pad Sec.27-T5N-R67W
 North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
 Ground Elevation: 4927.0
 +N/-S+E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1377041.791 174473.50 40.366690 -104.873850
 RKB - 23' WELL @ 4950.0ft (RKB - 23')

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 1188'FSL & 1134'FEL	1.0	0.0	0.0	Point
BHL 2085'FSL & 75'FWL	7107.0	889.2	-3915.0	Point
LP- 2077'FSL & 829'FEL	7189.5	889.2	305.1	Point



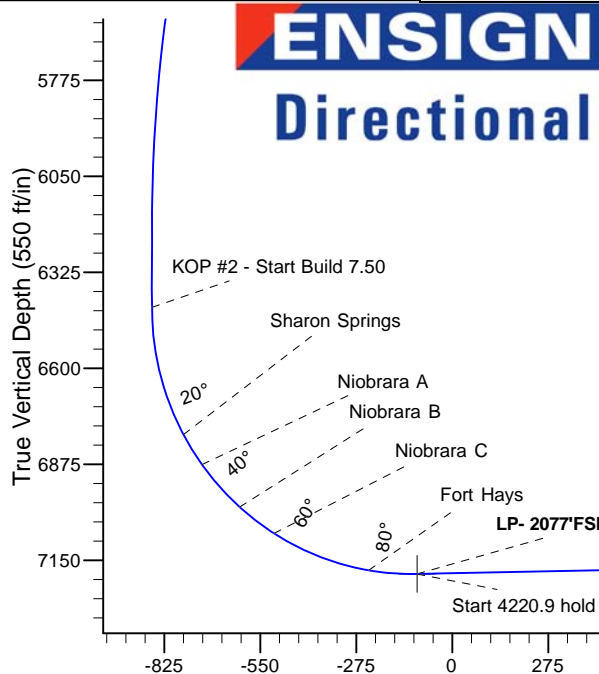
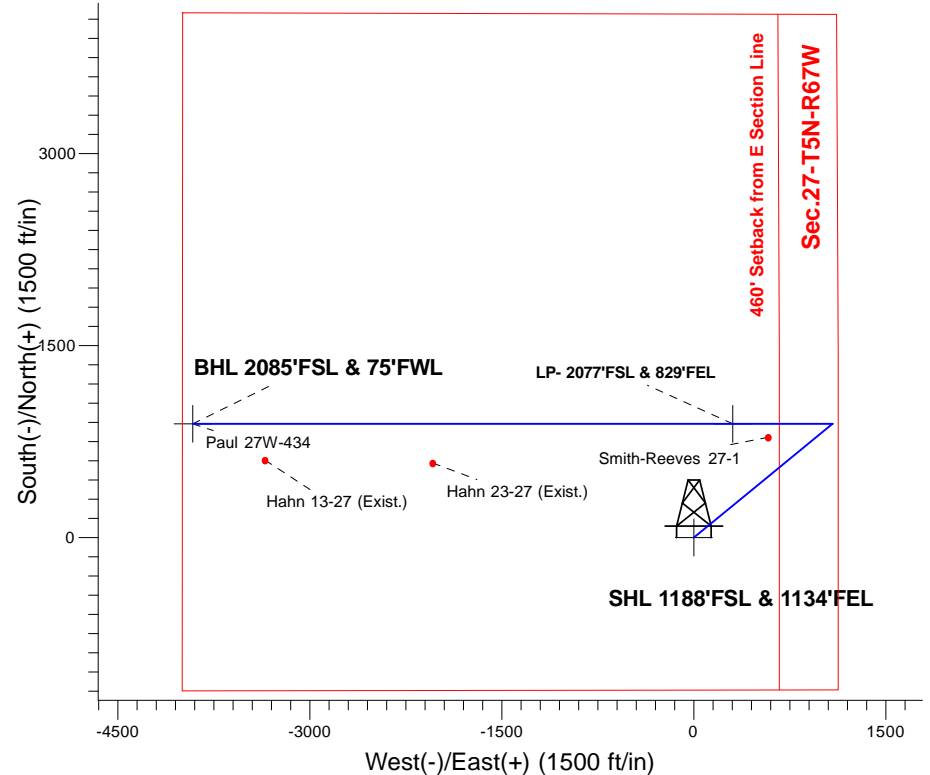
Azimuths to True North
 Magnetic North: 8.25°

Magnetic Field
 Strength: 52581.4snT
 Dip Angle: 66.83°
 Date: 5/24/2016
 Model: IGRF2010

Paul 5N67W27D Pad Sec.27-T5N-R67W
 Paul 27W-434
 Plan #1 (5-24-16)
 17:25, May 25 2016

ANNOTATIONS

TVD	MD	Annotation
600.0	600.0	KOP - Start Build 1.50
5365.6	5547.5	Start Drop -2.00
6425.7	6619.9	KOP #2 - Start Build 7.50
7189.5	7834.8	Start 4220.9 hold at 7834.8 MD
7107.0	12055.8	TD at 12055.8



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.0	
3	1728.9	16.93	50.64	1712.6	105.0	128.0	1.50	50.64	-101.6	
4	5547.5	16.93	50.64	5365.6	810.5	988.0	0.00	0.00	-783.9	
5	6394.2	0.00	0.00	6200.0	889.2	1084.0	2.00	180.00	-860.1	
6	6619.9	0.00	0.00	6425.7	889.2	1084.0	0.00	0.00	-860.1	
7	7834.8	91.12	270.00	7189.5	889.2	305.1	7.50	270.00	-100.6	
8	12055.8	91.12	270.00	7107.0	889.2	-3915.0	0.00	0.00	4014.7	BHL 2085'FSL & 75'FWL

Vertical Section at 282.80° (550 ft/in)



PETROLEUM DEVELOPMENT CORP DJ Basin

SEC.27-T5N-R67W

Paul 5N67W27D Pad Sec.27-T5N-R67W

Paul 27W-434

Wellbore #1

Plan #1 (5-24-16)

Anticollision Report

25 May, 2016



Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Paul 27W-434
Project:	SEC.27-T5N-R67W	TVD Reference:	WELL @ 4950.0ft (RKB - 23')
Reference Site:	Paul 5N67W27D Pad Sec.27-T5N-R67W	MD Reference:	WELL @ 4950.0ft (RKB - 23')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Paul 27W-434	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.45 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (5-24-16)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (5-24-16)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0 ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.45 Sigma	Casing Method:	Not applied

Survey Tool Program	Date 5/25/2016			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	12,055.8	Plan #1 (5-24-16) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Offset Wells Sec.27-T5N-R67W						
Hahn 13-27 (Exist.) - Wellbore #1 - Wellbore #1	11,490.1	7,020.1	284.3	-29.7	0.905	Level 1, CC
Hahn 13-27 (Exist.) - Wellbore #1 - Wellbore #1	11,500.0	7,019.9	284.4	-29.9	0.905	Level 1, ES, SF
Hahn 23-27 (Exist.) - Wellbore #1 - Wellbore #1	10,180.2	7,090.7	306.3	34.1	1.125	Level 2, CC, ES
Hahn 23-27 (Exist.) - Wellbore #1 - Wellbore #1	10,200.0	7,090.3	306.9	34.1	1.125	Level 2, SF
Smith-Reeves 27-1 - Wellbore #1 - Wellbore #1	7,552.1	7,145.2	106.0	-99.3	0.516	Level 1, CC, ES, SF
Paul 5N67W27D Pad Sec.27-T5N-R67W						
Paul 27W-204 - Wellbore #1 - Plan #1 (5-24-16)	392.0	392.1	28.6	26.7	15.190	CC
Paul 27W-204 - Wellbore #1 - Plan #1 (5-24-16)	400.0	400.1	28.6	26.7	14.844	ES
Paul 27W-204 - Wellbore #1 - Plan #1 (5-24-16)	12,055.8	11,970.5	468.2	150.6	1.474	Level 3, SF
Paul 27W-334 - Wellbore #1 - Plan #1 (5-24-16)	587.4	587.5	15.0	12.1	5.093	CC
Paul 27W-334 - Wellbore #1 - Plan #1 (5-24-16)	12,055.8	12,012.3	230.0	-91.7	0.715	Level 1, ES, SF
Paul 27X-214 - Wellbore #1 - Plan #1 (5-24-16)	713.5	713.5	15.5	11.9	4.256	CC
Paul 27X-214 - Wellbore #1 - Plan #1 (5-24-16)	12,055.8	11,852.7	247.3	-52.1	0.826	Level 1, ES, SF
Paul 27X-234 - Wellbore #1 - Plan #1 (5-24-16)	845.6	845.7	73.9	69.5	16.942	CC, ES
Paul 27X-234 - Wellbore #1 - Plan #1 (5-24-16)	1,200.0	1,193.1	89.9	83.5	14.096	SF
Paul 27X-304 - Wellbore #1 - Plan #1 (5-24-16)	900.7	900.4	42.7	38.0	9.133	CC, ES
Paul 27X-304 - Wellbore #1 - Plan #1 (5-24-16)	12,055.8	11,904.7	688.7	366.0	2.134	SF
Paul 27X-404 - Wellbore #1 - Plan #1 (5-24-16)	744.7	745.9	58.6	54.9	15.721	CC
Paul 27X-404 - Wellbore #1 - Plan #1 (5-24-16)	800.0	801.1	58.7	54.7	14.623	ES
Paul 27X-404 - Wellbore #1 - Plan #1 (5-24-16)	12,055.8	11,992.6	918.1	594.5	2.837	SF
Paul 27X-414 - Wellbore #1 - Plan #1 (5-24-16)	844.7	844.6	30.0	25.6	6.871	CC
Paul 27X-414 - Wellbore #1 - Plan #1 (5-24-16)	900.0	899.7	30.2	25.6	6.475	ES
Paul 27X-414 - Wellbore #1 - Plan #1 (5-24-16)	12,055.8	11,998.8	459.0	136.5	1.423	Level 3, SF
Paul 27X-434 - Wellbore #1 - Plan #1 (5-24-16)	366.3	367.3	90.9	89.2	52.098	CC
Paul 27X-434 - Wellbore #1 - Plan #1 (5-24-16)	400.0	400.0	90.9	89.0	47.164	ES
Paul 27X-434 - Wellbore #1 - Plan #1 (5-24-16)	3,300.0	3,192.8	675.9	646.5	22.999	SF
Paul 27Y-314 - Wellbore #1 - Plan #1 (5-24-16)	166.3	167.3	104.2	103.6	161.981	CC
Paul 27Y-314 - Wellbore #1 - Plan #1 (5-24-16)	200.0	200.0	104.2	103.4	126.167	ES
Paul 27Y-314 - Wellbore #1 - Plan #1 (5-24-16)	3,800.0	3,614.9	999.7	965.0	28.748	SF