

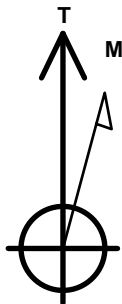
PDC Energy Inc. DJ Basin

Well Name: **Jagged 6N**

Surface Location: Jagged 4N64W08 Pad Sec.8-T4N-R64W
 North American Datum 1983 , US State Plane 1983 Colorado Northern Zone
 Ground Elevation: 4772.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1362800.10 3257713.33 40.325600 -104.575670
 Original Well Elev WELL @ 4795.0ft (Original Well Elev)

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 2167'FSL, 2320'FWL, SEC.8	1.0	0.0	0.0	Point
BHL 1610'FSL, 2297'FWL, SEC.7	6815.0	-607.9	-5057.4	Point
LPL 1610'FSL, 1908'FWL, SEC.8	6815.0	-559.6	-413.7	Point



Azimuths to True North
 Magnetic North: 7.94°

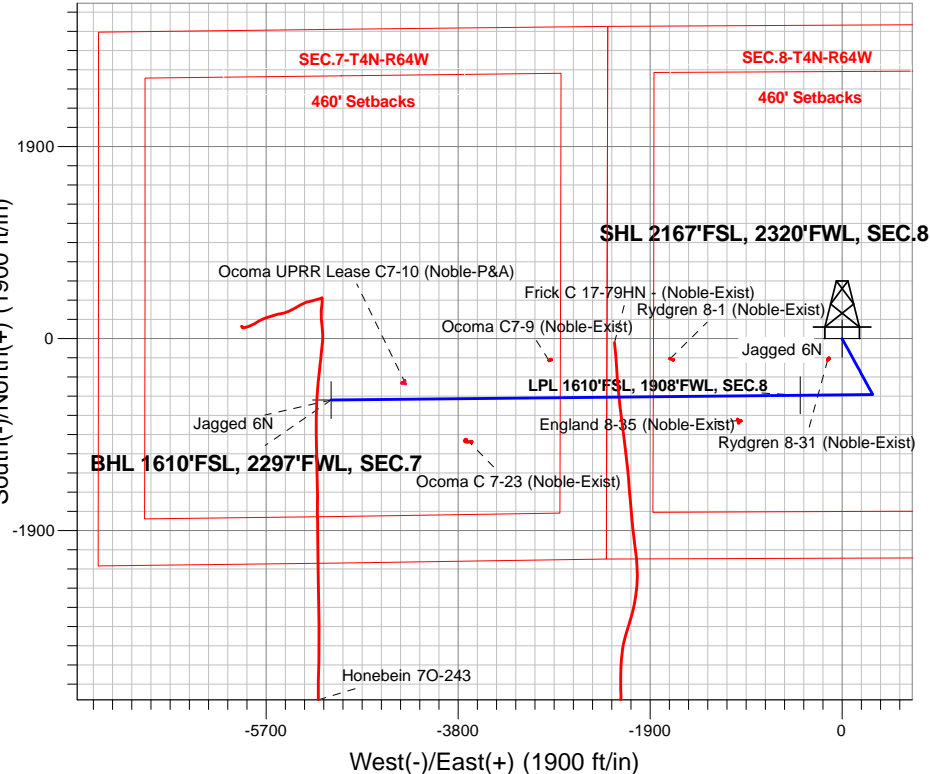
Magnetic Field
 Strength: 52476.4snT
 Dip Angle: 66.81°
 Date: 6/28/2017
 Model: IGRF2010

Jagged 4N64W08 Pad Sec.8-T4N-R64W
 Jagged 6N
 Plan #2 (6-27-17)
 9:30, June 28 2017

ANNOTATIONS

TVD	MD	Annotation
1200.0	1200.0	KOP - Start Build 1.50
5364.2	5408.6	Start Drop -2.00
6100.1	6146.3	Start Build 8.00
6815.0	7270.8	Start 1.0 hold at 7270.8 MD
6815.0	7271.8	Start 4643.9 hold at 7271.8 MD
6815.0	11915.7	TD at 11915.7

South(-)/North(+) (1900 ft/in)

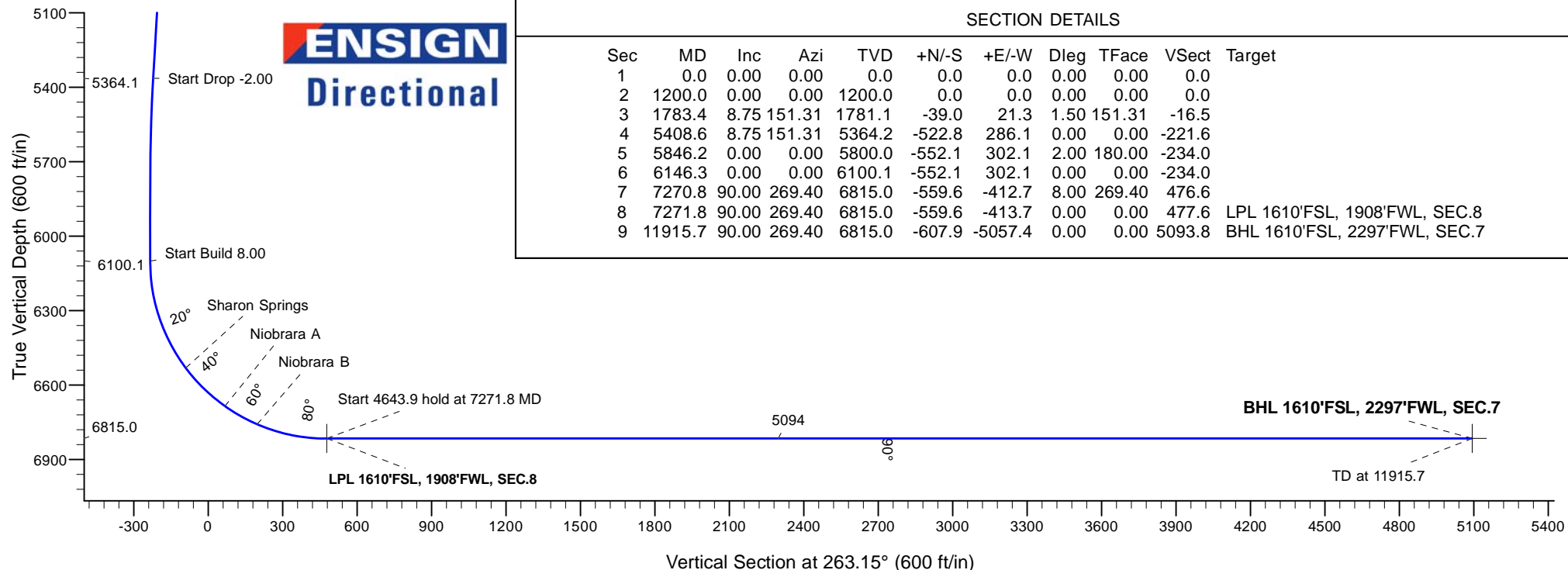


West(-)/East(+) (1900 ft/in)



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	1200.0	0.00	0.00	1200.0	0.0	0.0	0.00	0.00	0.0	
3	1783.4	8.75	151.31	1781.1	-39.0	21.3	1.50	151.31	-16.5	
4	5408.6	8.75	151.31	5364.2	-522.8	286.1	0.00	0.00	-221.6	
5	5846.2	0.00	0.00	5800.0	-552.1	302.1	2.00	180.00	-234.0	
6	6146.3	0.00	0.00	6100.1	-552.1	302.1	0.00	0.00	-234.0	
7	7270.8	90.00	269.40	6815.0	-559.6	-412.7	8.00	269.40	476.6	
8	7271.8	90.00	269.40	6815.0	-559.6	-413.7	0.00	0.00	477.6	LPL 1610'FSL, 1908'FWL, SEC.8
9	11915.7	90.00	269.40	6815.0	-607.9	-5057.4	0.00	0.00	5093.8	BHL 1610'FSL, 2297'FWL, SEC.7



Vertical Section at 263.15° (600 ft/in)

PDC Energy Inc. DJ Basin

SEC.8-T4N-R64W

Jagged 4N64W08 Pad Sec.8-T4N-R64W

Jagged 6N

Wellbore #1

Plan #2 (6-27-17)

Anticollision Summary Report

28 June, 2017

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Jagged 6N
Project:	SEC.8-T4N-R64W	TVD Reference:	WELL @ 4795.0ft (Original Well Elev)
Reference Site:	Jagged 4N64W08 Pad Sec.8-T4N-R64W	MD Reference:	WELL @ 4795.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Jagged 6N	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 #2 (6-27-17)	Offset TVD Reference:	Offset Datum

Reference	Plan #2 (6-27-17)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 800.0 ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.45 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	6/28/2017		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,915.7	Plan #2 (6-27-17) (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						
Existing Wells Sec.7-T4N-R64W						
Ocoma C7-9 (Noble-Exist) - Wellbore #1 - Wellbore #1	9,755.0	6,863.7	372.0	251.8	3.094	CC, ES
Ocoma C7-9 (Noble-Exist) - Wellbore #1 - Wellbore #1	9,800.0	6,863.9	374.7	252.9	3.078	SF
Existing Wells Sec.7-T4N-R64W (GRID)						
Ocoma C 7-23 (Noble-Exist) - Wellbore #1 - Wellbore #1	10,587.3	6,853.0	402.1	252.9	2.695	CC
Ocoma C 7-23 (Noble-Exist) - Wellbore #1 - Wellbore #1	10,600.0	6,852.7	402.3	252.7	2.689	ES, SF
Ocoma UPRR Lease C7-10 (Noble-P&A) - Wellbore #1 -	11,186.1	6,882.2	165.8	-3.3	0.981	Level 1, CC, ES, SF
Existing Wells Sec.8-T4N-R64W						
Rydgren 8-1 (Noble-Exist) - Wellbore #1 - Wellbore #1	8,555.3	6,842.2	379.8	299.1	4.706	CC, ES
Rydgren 8-1 (Noble-Exist) - Wellbore #1 - Wellbore #1	8,600.0	6,841.9	382.4	300.3	4.654	SF
Existing Wells Sec.8-T4N-R64W (GRID)						
England 8-35 (Noble-Exist) - Wellbore #1 - Wellbore #1	7,890.8	6,819.1	246.7	187.3	4.153	CC
England 8-35 (Noble-Exist) - Wellbore #1 - Wellbore #1	7,900.0	6,819.2	246.9	187.2	4.136	ES, SF
Rydgren 8-31 (Noble-Exist) - Wellbore #1 - Wellbore #1	2,264.9	2,234.8	208.7	196.5	17.028	CC
Rydgren 8-31 (Noble-Exist) - Wellbore #1 - Wellbore #1	2,300.0	2,269.4	208.8	196.4	16.826	ES
Rydgren 8-31 (Noble-Exist) - Wellbore #1 - Wellbore #1	7,050.0	6,759.1	346.4	309.3	9.349	SF
Frick Pad 18-4N-64W						
Frick C 17-79HN - (Noble-Exist) - API #05-123-33279 - M	9,065.1	10,195.4	81.2	25.1	1.448	Level 3, CC, ES, SF
Honebein 4N64W7K Pad Sec.7-T4N-R64W						
Honebein 7O-243 - Wellbore #1 - Wellbore #1	11,915.7	7,759.8	162.5	100.6	2.628	CC, ES, SF

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Jagged 6N
Project:	SEC.8-T4N-R64W	TVD Reference:	WELL @ 4795.0ft (Original Well Elev)
Reference Site:	Jagged 4N64W08 Pad Sec.8-T4N-R64W	MD Reference:	WELL @ 4795.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Jagged 6N	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 #2 (6-27-17)	Offset TVD Reference:	Offset Datum

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						
Jagged 4N64W08 Pad Sec.8-T4N-R64W						
Jagged 10N - Wellbore #1 - Plan #2 (6-27-17)	499.9	500.2	60.2	57.8	24.811	CC
Jagged 10N - Wellbore #1 - Plan #2 (6-27-17)	500.0	500.3	60.2	57.8	24.806	ES
Jagged 10N - Wellbore #1 - Plan #2 (6-27-17)	900.0	894.4	79.6	74.6	15.919	SF
Jagged 1N - Wellbore #1 - Plan #3 (6-27-17)	200.0	200.0	75.3	74.5	91.141	CC
Jagged 1N - Wellbore #1 - Plan #3 (6-27-17)	300.0	299.4	75.7	74.3	55.072	ES
Jagged 1N - Wellbore #1 - Plan #3 (6-27-17)	1,100.0	1,086.3	139.3	133.0	22.133	SF
Jagged 2N - Wellbore #1 - Plan #3 (6-27-17)	400.0	400.0	58.6	56.6	30.380	CC, ES
Jagged 2N - Wellbore #1 - Plan #3 (6-27-17)	900.0	893.9	78.4	73.7	16.558	SF
Jagged 3N - Wellbore #1 - Plan #3 (6-27-17)	600.0	600.0	44.6	41.6	14.721	CC, ES
Jagged 3N - Wellbore #1 - Plan #3 (6-27-17)	11,915.7	11,979.8	796.3	439.9	2.234	SF
Jagged 4N - Wellbore #1 - Plan #2 (6-27-17)	800.0	800.0	30.7	26.5	7.426	CC, ES
Jagged 4N - Wellbore #1 - Plan #2 (6-27-17)	11,915.7	11,892.0	534.0	176.4	1.493	Level 3, SF
Jagged 5N - Wellbore #1 - Plan #2 (6-27-17)	1,000.0	1,000.0	13.9	8.7	2.665	CC
Jagged 5N - Wellbore #1 - Plan #2 (6-27-17)	11,915.7	12,010.5	286.3	-41.3	0.874	Level 1, ES, SF
Jagged 7N - Wellbore #1 - Plan #3 (6-27-17)	1,018.1	1,018.2	15.5	10.3	2.966	CC
Jagged 7N - Wellbore #1 - Plan #3 (6-27-17)	11,915.7	12,064.3	270.1	-51.4	0.840	Level 1, ES, SF
Jagged 8N - Wellbore #1 - Plan #2 (6-27-17)	866.4	866.6	29.2	24.8	6.658	CC
Jagged 8N - Wellbore #1 - Plan #2 (6-27-17)	900.0	900.1	29.3	24.8	6.427	ES
Jagged 8N - Wellbore #1 - Plan #2 (6-27-17)	11,915.7	11,974.5	490.0	133.0	1.373	Level 3, SF
Jagged 9C - Wellbore #1 - Plan #3 (6-27-17)	693.0	693.3	43.2	39.7	12.522	CC
Jagged 9C - Wellbore #1 - Plan #3 (6-27-17)	700.0	700.3	43.2	39.7	12.389	ES
Jagged 9C - Wellbore #1 - Plan #3 (6-27-17)	11,915.7	12,208.3	790.3	442.1	2.269	SF