

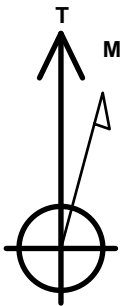
PDC Energy Inc. DJ Basin

Well Name: **High Plains 25A-401**

Surface Location: High Plains 5N65W25AF Pad Sec.25-T5N-R65W
 North American Datum 1983 , US State Plane 1983 Colorado Northern Zone
 Ground Elevation: 4639.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1380509.52 3245642.93 40.374548 -104.618328
 Original Well Elev WELL @ 4662.0ft (Original Well Elev)

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 1054'FNL, 748'FWL, SEC.25	1.0	0.0	0.0	Point
BHL 50'FNL, 1385'FWL, SEC.13	6942.0	11627.4	615.5	Point
LPL 2'FSL, 1364'FWL, SEC.24	6962.0	1055.6	615.5	Point



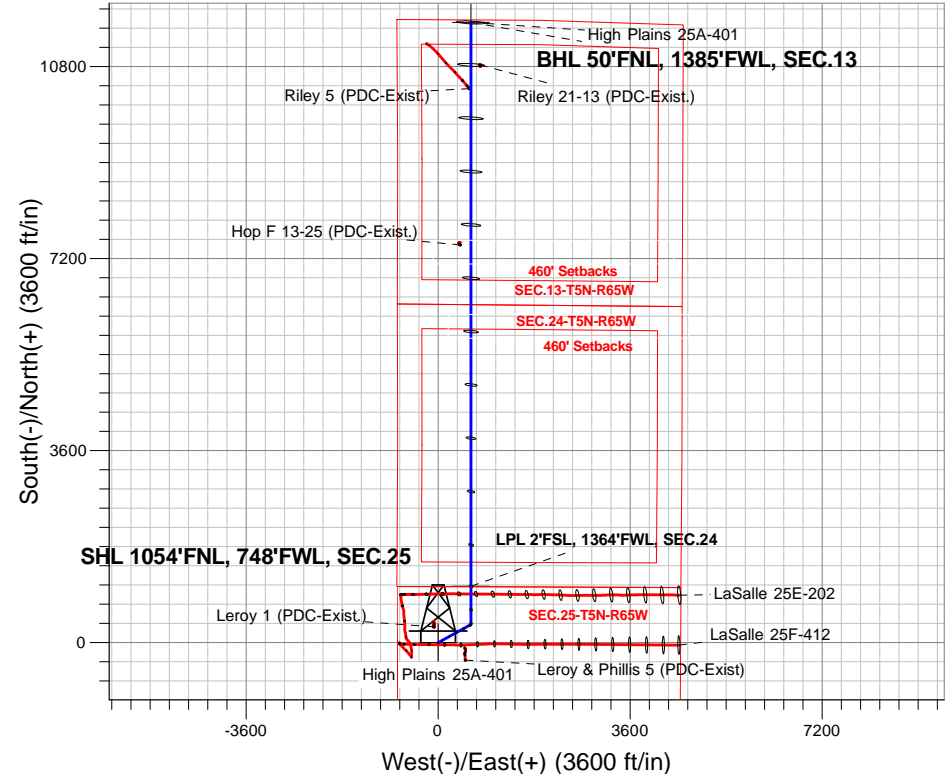
Azimuths to True North
 Magnetic North: 8.02°

Magnetic Field
 Strength: 52539.1snT
 Dip Angle: 66.86°
 Date: 2/8/2017
 Model: IGRF2010

High Plains 5N65W25AF Pad Sec.25-T5N-R65W
 High Plains 25A-401
 Plan #1 (2-03-17)
 10:37, February 08 2017

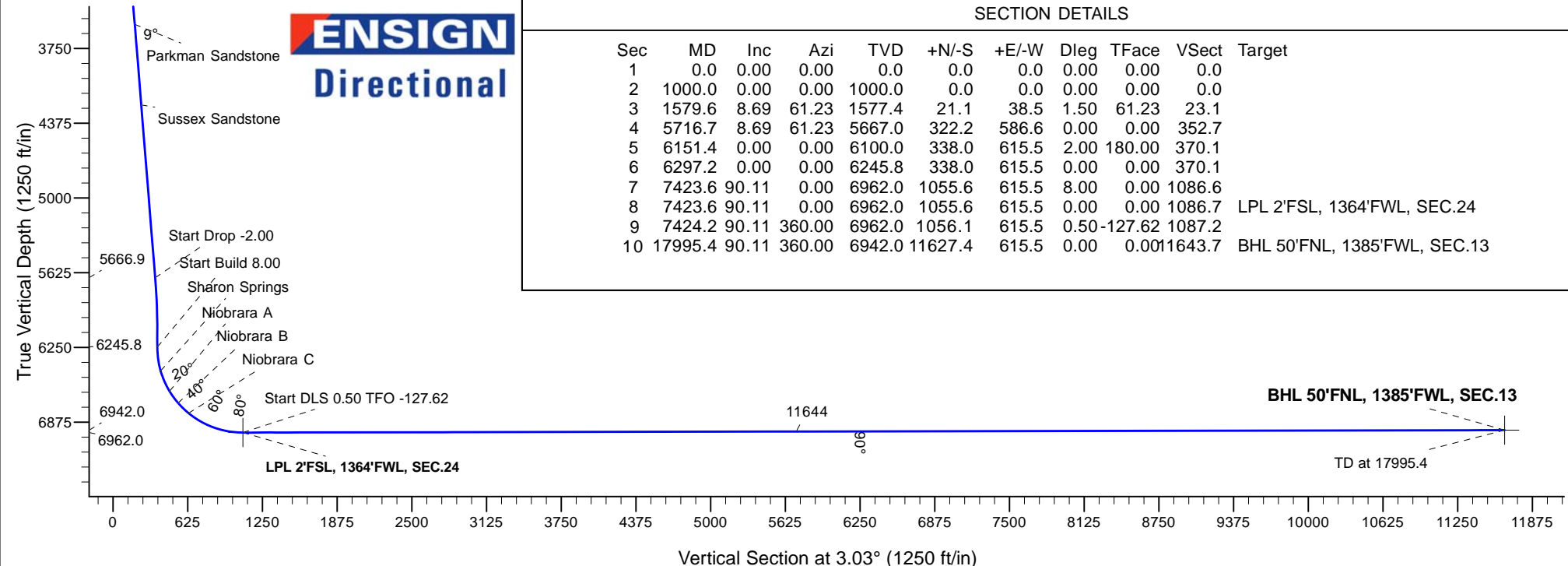
ANNOTATIONS

TVD	MD	Annotation
1000.0	1000.0	KOP - Start Build 1.50
5666.9	5716.7	Start Drop -2.00
6245.8	6297.2	Start Build 8.00
6962.0	7423.6	Start DLS 0.50 TFO -127.62
6962.0	7424.2	Start 10571.3 hold at 7424.2 MD
6942.0	17995.4	TD at 17995.4



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1579.6	8.69	61.23	1577.4	21.1	38.5	1.50	61.23	23.1	
4	5716.7	8.69	61.23	5667.0	322.2	586.6	0.00	0.00	352.7	
5	6151.4	0.00	0.00	6100.0	338.0	615.5	2.00	180.00	370.1	
6	6297.2	0.00	0.00	6245.8	338.0	615.5	0.00	0.00	370.1	
7	7423.6	90.11	0.00	6962.0	1055.6	615.5	8.00	0.00	1086.6	
8	7423.6	90.11	0.00	6962.0	1055.6	615.5	0.00	0.00	1086.7	LPL 2'FSL, 1364'FWL, SEC.24
9	7424.2	90.11	360.00	6962.0	1056.1	615.5	0.50	-127.62	1087.2	
10	17995.4	90.11	360.00	6942.0	11627.4	615.5	0.00	0.00	11643.7	BHL 50'FNL, 1385'FWL, SEC.13





PDC Energy Inc. DJ Basin

SEC.25-T5N-R65W

High Plains 5N65W25AF Pad Sec.25-T5N-R65W

High Plains 25A-401

Wellbore #1

Plan #1 (2-03-17)

Anticollision Report

08 February, 2017



Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well High Plains 25A-401
Project:	SEC.25-T5N-R65W	TVD Reference:	WELL @ 4662.0ft (Original Well Elev)
Reference Site:	High Plains 5N65W25AF Pad Sec.25-T5N-R65W	MD Reference:	WELL @ 4662.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	High Plains 25A-401	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 (2-03-17)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (2-03-17)		
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 2/8/2017			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	17,995.4	Plan #1 (2-03-17) (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.13-T5N-R65W						
Hop F 13-25 (PDC-Exist.) - Wellbore #1 - Wellbore #1	13,823.5	6,927.0	200.6	9.5	1.050	Level 2, CC, ES, SF
Riley 21-13 (PDC-Exist.) - Wellbore #1 - Wellbore #1	17,195.3	6,895.9	167.5	-100.9	0.624	Level 1, CC
Riley 21-13 (PDC-Exist.) - Wellbore #1 - Wellbore #1	17,200.0	6,896.0	167.6	-101.0	0.624	Level 1, ES, SF
Riley 5 (PDC-Exist.) - Wellbore #1 - Wellbore #1	16,763.4	7,024.9	40.9	-224.5	0.154	Level 1, CC, ES, SF
Existing Wells Sec.25-T5N-R65W						
Leroy & Phillis 5 (PDC-Exist.) - Wellbore #1 - Wellbore #1	2,751.7	2,688.9	385.7	370.2	24.867	CC
Leroy & Phillis 5 (PDC-Exist.) - Wellbore #1 - Wellbore #1	3,500.0	3,446.5	390.3	369.0	18.293	ES
Leroy & Phillis 5 (PDC-Exist.) - Wellbore #1 - Wellbore #1	4,900.0	4,827.7	457.7	426.7	14.773	SF
Leroy 1 (PDC-Exist.) - Wellbore #1 - Wellbore #1	2,495.8	2,472.3	371.6	357.4	26.179	CC
Leroy 1 (PDC-Exist.) - Wellbore #1 - Wellbore #1	2,600.0	2,574.6	372.0	357.1	24.935	ES
Leroy 1 (PDC-Exist.) - Wellbore #1 - Wellbore #1	6,700.0	6,609.3	713.5	675.2	18.647	SF
High Plains 5N65W25AF Pad Sec.25-T5N-R65W						
High Plains 25A-221 - Wellbore #1 - Plan #1 (2-03-17)	856.5	856.5	15.3	10.9	3.454	CC
High Plains 25A-221 - Wellbore #1 - Plan #1 (2-03-17)	17,995.4	17,638.0	327.7	-160.4	0.671	Level 1, ES, SF
High Plains 25A-241 - Wellbore #1 - Plan #1 (2-03-17)	800.0	800.0	14.9	10.8	3.616	CC
High Plains 25A-241 - Wellbore #1 - Plan #1 (2-03-17)	17,995.4	17,560.2	410.6	-95.9	0.811	Level 1, ES, SF
High Plains 25A-321 - Wellbore #1 - Plan #1 (2-03-17)	830.6	830.7	29.4	25.2	6.900	CC, ES
High Plains 25A-321 - Wellbore #1 - Plan #1 (2-03-17)	17,995.4	18,090.0	575.7	37.1	1.069	Level 2, SF
High Plains 25A-341 - Wellbore #1 - Plan #1 (2-03-17)	600.0	600.0	29.9	26.8	9.862	CC, ES
High Plains 25A-341 - Wellbore #1 - Plan #1 (2-03-17)	17,995.4	17,878.2	726.9	185.8	1.343	Level 3, SF
High Plains 25F-221 - Wellbore #1 - Plan #1 (2-03-17)	400.0	400.0	44.8	42.9	23.248	CC, ES
High Plains 25F-221 - Wellbore #1 - Plan #1 (2-03-17)	800.0	795.8	59.4	55.3	14.436	SF
High Plains 25F-301 - Wellbore #1 - Plan #1 (2-03-17)	200.0	200.0	59.7	58.9	72.330	CC
High Plains 25F-301 - Wellbore #1 - Plan #1 (2-03-17)	300.0	299.4	60.2	58.9	44.030	ES
High Plains 25F-301 - Wellbore #1 - Plan #1 (2-03-17)	1,000.0	990.5	111.7	106.3	20.814	SF
High Plains 25N-241 - Wellbore #1 - Plan #1 (2-03-17)	765.0	765.5	41.7	37.7	10.628	CC
High Plains 25N-241 - Wellbore #1 - Plan #1 (2-03-17)	800.0	800.4	41.8	37.7	10.163	ES
High Plains 25N-241 - Wellbore #1 - Plan #1 (2-03-17)	900.0	899.4	44.4	39.7	9.503	SF
High Plains 25N-301 - Wellbore #1 - Plan #1 (2-03-17)	477.4	477.6	59.3	56.9	25.326	CC
High Plains 25N-301 - Wellbore #1 - Plan #1 (2-03-17)	500.0	500.2	59.3	56.8	24.050	ES
High Plains 25N-301 - Wellbore #1 - Plan #1 (2-03-17)	800.0	796.7	69.8	65.6	16.799	SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

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Reference Site:	High Plains 5N65W25AF Pad Sec.25-T5N-R65W	MD Reference:	WELL @ 4662.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	High Plains 25A-401	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 (2-03-17)	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						
LaSalle 25F-HZ Pad Sec.25-T5N-R65W						
LaSalle 25E-202 - Wellbore #1 - Wellbore #1	7,150.0	7,867.3	173.8	137.6	4.802	SF
LaSalle 25E-202 - Wellbore #1 - Wellbore #1	7,235.8	7,867.9	156.4	125.6	5.070	CC, ES
LaSalle 25F-412 - Wellbore #1 - Wellbore #1	986.2	979.2	568.7	563.7	115.036	CC
LaSalle 25F-412 - Wellbore #1 - Wellbore #1	6,600.0	7,986.6	597.3	534.2	9.475	SF
LaSalle 25F-412 - Wellbore #1 - Wellbore #1	6,700.0	7,987.5	580.7	521.3	9.765	ES

Offset Design Existing Wells Sec.13-T5N-R65W - Hop F 13-25 (PDC-Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference Measured Depth (ft)	Vertical Depth (ft)	Offset Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance				Warning	
				Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,100.0	6,951.3	6,928.6	6,927.7	158.5	16.2	-91.09	7,455.4	414.9	750.8	576.5	174.22	4.309		
13,200.0	6,951.1	6,928.3	6,927.5	160.8	16.2	-91.02	7,455.4	414.9	654.9	478.4	176.55	3.710		
13,300.0	6,950.9	6,928.1	6,927.3	163.1	16.2	-90.96	7,455.4	414.9	560.6	381.7	178.89	3.134		
13,400.0	6,950.7	6,927.9	6,927.0	165.5	16.2	-90.90	7,455.4	414.9	468.6	287.3	181.22	2.586		
13,500.0	6,950.5	6,927.7	6,926.8	167.8	16.2	-90.84	7,455.4	414.9	380.6	197.1	183.55	2.074		
13,600.0	6,950.3	6,927.5	6,926.6	170.1	16.2	-90.78	7,455.4	414.9	300.3	114.4	185.89	1.615		
13,700.0	6,950.1	6,927.3	6,926.4	172.4	16.2	-90.72	7,455.4	414.9	235.6	47.3	188.22	1.251	Level 3	
13,800.0	6,949.9	6,927.0	6,926.2	174.8	16.2	-90.65	7,455.4	414.9	202.0	11.4	190.56	1.060	Level 2	
13,823.5	6,949.9	6,927.0	6,926.1	175.3	16.2	-90.64	7,455.4	414.9	200.6	9.5	191.11	1.050	Level 2, CC, ES, SF	
13,900.0	6,949.7	6,926.8	6,926.0	177.1	16.2	-90.59	7,455.4	414.9	214.7	21.8	192.90	1.113	Level 2	
14,000.0	6,949.6	6,926.6	6,925.8	179.4	16.2	-90.53	7,455.4	414.9	267.2	72.0	195.23	1.369	Level 3	
14,100.0	6,949.4	6,926.4	6,925.5	181.8	16.2	-90.47	7,455.4	414.9	341.6	144.1	197.57	1.729		
14,200.0	6,949.2	6,926.2	6,925.3	184.1	16.2	-90.41	7,455.4	414.9	426.6	226.7	199.90	2.134		
14,300.0	6,949.0	6,926.0	6,925.1	186.4	16.2	-90.35	7,455.4	414.9	517.0	314.8	202.24	2.557		
14,400.0	6,948.8	6,925.7	6,924.9	188.8	16.2	-90.28	7,455.4	414.9	610.4	405.9	204.58	2.984		
14,500.0	6,948.6	6,925.5	6,924.7	191.1	16.2	-90.22	7,455.4	414.9	705.7	498.7	206.91	3.410		