

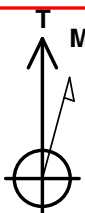


Well Name: Erwin 1N
Surface Location: Erwin 5N64W27 PAD
North American Datum 1983
US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4684.0
WELL @ 4707.0usft (Original Well Elev)

+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1377056.41 3268929.60 40° 21' 51.854 N 104° 32' 5.596 W

SECTION DETAILS

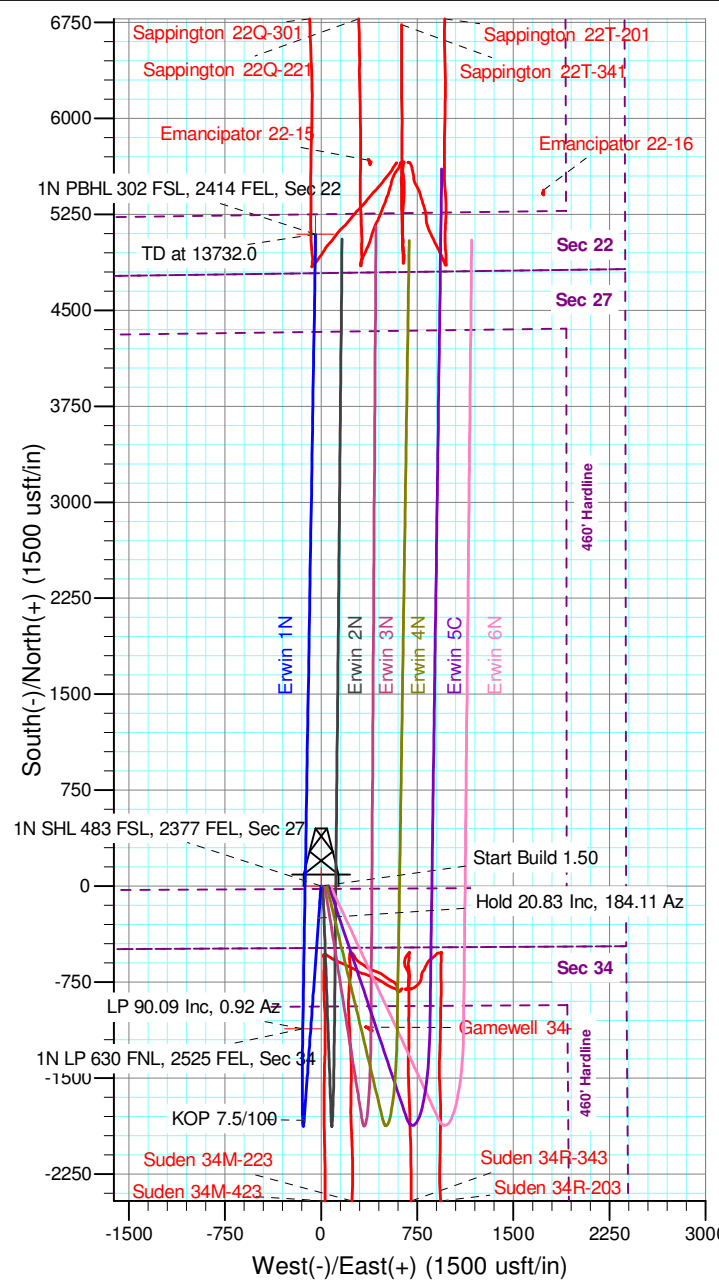
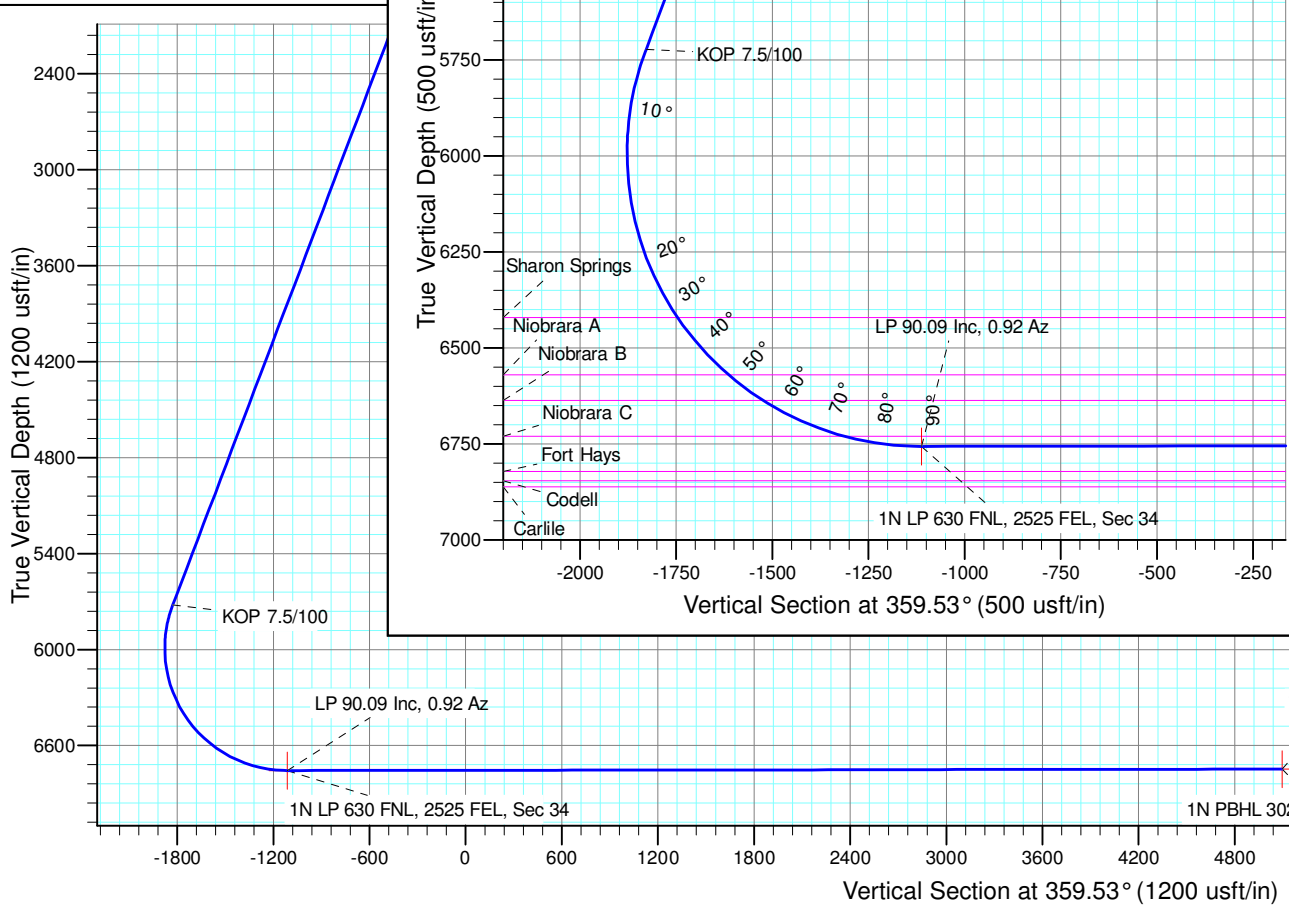
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	1588.7	20.83	184.11	1558.3	-249.0	-17.9	1.50	184.11	-248.9	
4	6043.6	20.83	184.11	5722.1	-1829.1	-131.5	0.00	0.00	-1827.9	
5	7522.0	90.09	0.92	6757.0	-1113.5	-142.0	7.50	176.58	-1112.3	1N LP 630 FNL, 2525 FEL, Sec 34
6	13732.0	90.09	0.92	6747.7	5095.7	-42.2	0.00	0.00	5095.8	



Azimuths to True North
Magnetic North: 8.09°

Magnetic Field
Strength: 52398.6snT
Dip Angle: 66.86°
Date: 06/18/2017
Model: IGRF2015

Project: SEC. 27-T5N-R64W
Site: Erwin 5N64W27 PAD
Well: Erwin 1N
Wellbore: Wellbore #1
Design: Plan #2 19Jul17 kjs





PDC Energy Inc. DJ Basin

SEC. 27-T5N-R64W

Erwin 5N64W27 PAD

Erwin 1N

Wellbore #1

Plan #2 19Jul17 kjs

Anticollision Report

19 July, 2017

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Erwin 1N
Project:	SEC. 27-T5N-R64W	TVD Reference:	WELL @ 4707.0usft (Original Well Elev)
Reference Site:	Erwin 5N64W27 PAD	MD Reference:	WELL @ 4707.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Erwin 1N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.45 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #2 19Jul17 kjs	Offset TVD Reference:	Offset Datum

Reference	Plan #2 19Jul17 kjs		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,682.5 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.45 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	07/19/17		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	13,732.0	Plan #2 19Jul17 kjs (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Erwin 5N64W27 PAD						
Erwin 2N - Wellbore #1 - Design #1 18Jun17 jps	200.0	200.0	14.9	14.2	19.584	CC
Erwin 2N - Wellbore #1 - Design #1 18Jun17 jps	13,700.0	13,615.4	222.3	-37.5	0.856	Level 1, ES, SF
Erwin 3N - Wellbore #1 - Design #1 18Jun17 jps	200.0	200.0	30.0	29.2	39.350	CC
Erwin 3N - Wellbore #1 - Design #1 18Jun17 jps	300.0	299.9	30.3	29.1	24.155	ES
Erwin 3N - Wellbore #1 - Design #1 18Jun17 jps	13,732.0	13,734.1	470.8	195.4	1.709	SF
Erwin 4N - Wellbore #1 - Design #1 18Jun17 jps	200.0	200.0	44.9	44.2	58.897	CC
Erwin 4N - Wellbore #1 - Design #1 18Jun17 jps	300.0	299.7	45.3	44.1	36.115	ES
Erwin 4N - Wellbore #1 - Design #1 18Jun17 jps	13,732.0	13,621.9	736.5	463.4	2.697	SF
Erwin 5C - Wellbore #1 - Design #1 18Jun17 jps	200.0	200.0	59.9	59.2	78.590	CC
Erwin 5C - Wellbore #1 - Design #1 18Jun17 jps	400.0	399.9	60.6	58.8	33.478	ES
Erwin 5C - Wellbore #1 - Design #1 18Jun17 jps	13,732.0	13,916.4	981.7	708.2	3.589	SF
Erwin 6N - Wellbore #1 - Design #1 18Jun17 jps	200.0	200.0	74.9	74.1	98.210	CC, ES
Erwin 6N - Wellbore #1 - Design #1 18Jun17 jps	13,732.0	13,685.6	1,222.1	947.5	4.451	SF
Existing Wells Sec 34 T5N R64W						
Gamewell 34-1 - Wellbore #1 - Wellbore #1	3,907.8	3,702.4	447.3	410.8	12.229	CC
Gamewell 34-1 - Wellbore #1 - Wellbore #1	4,000.0	3,791.8	448.3	410.7	11.933	ES
Gamewell 34-1 - Wellbore #1 - Wellbore #1	7,500.0	6,500.0	548.0	497.9	10.935	SF
Suden 34M-223 - Wellbore #1 - Wellbore #1	7,100.0	7,354.5	386.5	319.6	5.780	SF
Suden 34M-223 - Wellbore #1 - Wellbore #1	7,500.0	6,964.0	372.5	316.0	6.597	ES
Suden 34M-223 - Wellbore #1 - Wellbore #1	7,535.1	6,935.8	372.2	316.5	6.683	CC
Suden 34M-423 - Wellbore #1 - Wellbore #1	7,600.0	6,983.1	173.3	116.8	3.066	SF
Suden 34M-423 - Wellbore #1 - Wellbore #1	7,700.0	6,888.1	168.2	113.6	3.079	ES
Suden 34M-423 - Wellbore #1 - Wellbore #1	7,701.1	6,887.2	168.2	113.6	3.080	CC
Suden 34R-203 - Wellbore #1 - Wellbore #1	2,663.7	2,531.1	831.5	808.3	35.861	CC
Suden 34R-203 - Wellbore #1 - Wellbore #1	2,700.0	2,561.9	831.7	808.1	35.263	ES
Suden 34R-203 - Wellbore #1 - Wellbore #1	6,700.0	7,612.5	1,130.1	1,057.0	15.452	SF
Suden 34R-343 - Wellbore #1 - Wellbore #1	2,815.9	2,670.7	735.0	710.5	29.948	CC, ES
Suden 34R-343 - Wellbore #1 - Wellbore #1	6,900.0	7,523.1	871.5	801.8	12.516	SF
Existing Wells Sec. 22-T5N-R64W						
Emancipator 22-15 - Wellbore #1 - Wellbore #1	13,732.0	6,642.5	709.8	555.6	4.603	CC, ES, SF
Emancipator 22-16 - Wellbore #1 - Wellbore #1						Out of range
Sappington 22Q-221 - Wellbore #1 - Wellbore #1	13,732.0	6,692.1	399.4	252.0	2.710	CC, ES, SF
Sappington 22Q-301 - Wellbore #1 - Wellbore #1	13,732.0	6,747.0	139.9	48.2	1.526	CC, ES, SF
Sappington 22T-201 - Wellbore #1 - Wellbore #1	13,732.0	6,647.5	1,034.8	879.5	6.666	CC, ES, SF
Sappington 22T-341 - Wellbore #1 - Wellbore #1	13,732.0	6,710.0	694.1	539.3	4.483	CC, ES, SF

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