

PDC Energy Inc. DJ Basin

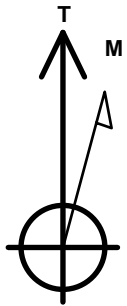
Well Name: **J Clark 9C (Codell)**
 Surface Location: Clark 5N65W14 1-21 Pad Sec.14-T5N-R65W
 North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
 Ground Elevation: 4615.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1391636.24	3242710.95	40.405169	-104.628458	

Original Well Elev WELL @ 4638.0ft (Original Well Elev)

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 550'FNL & 2054'FEL, Sec.14	1.0	0.0	0.0	Point
BHL 500'FNL & 2300'FWL, Sec.11	6938.0	5373.8	-940.4	Point
LPL 50'FSL & 2300'FWL, Sec.11	6965.0	601.7	-904.7	Point



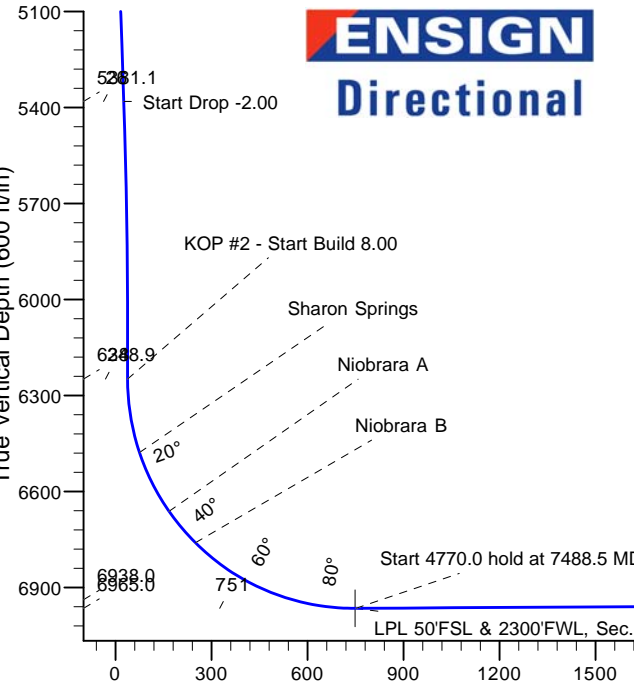
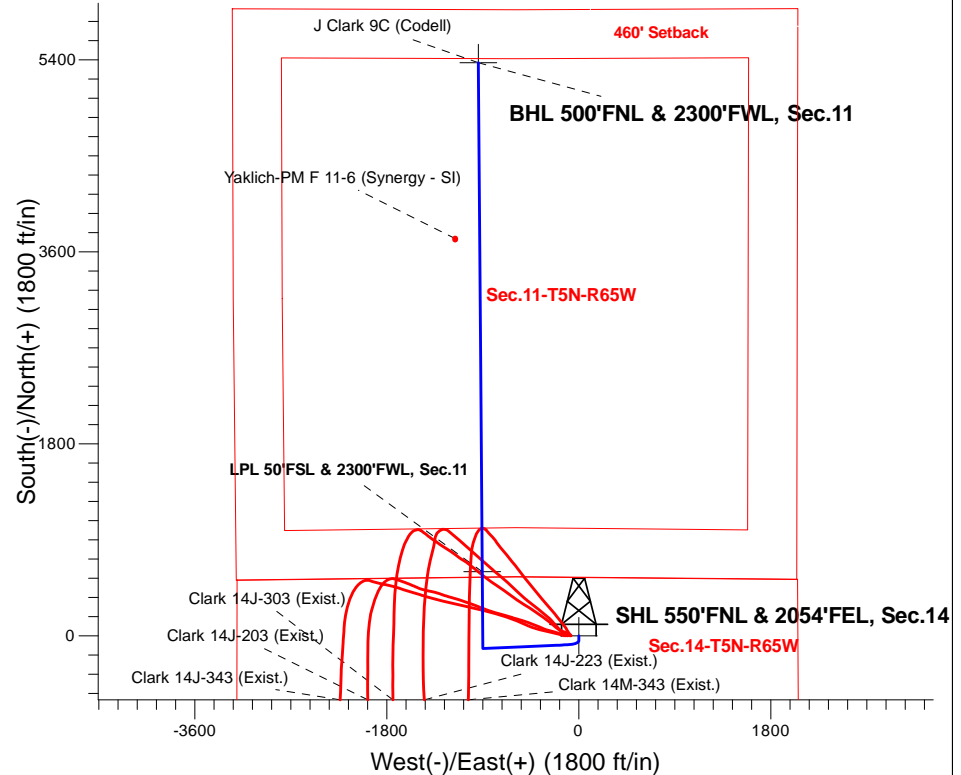
Azimuths to True North
 Magnetic North: 7.91°

Magnetic Field
 Strength: 52463.7snT
 Dip Angle: 66.85°
 Date: 12/19/2017
 Model: IGRF2010

Clark 5N65W14 1-21 Pad Sec.14-T5N-R65W
 J Clark 9C (Codell)
 Plan #1 (1-10-18)
 12:36, January 12 2018

ANNOTATIONS

TVD	MD	Annotation
1000.0	1000.0	KOP - Start Build 1.50
1266.5	1266.7	Start 500.0 hold at 1266.7 MD
1765.2	1766.7	Start DLS 1.50 TFO 102.68
5381.1	5481.2	Start Drop -2.00
6248.9	6356.7	KOP #2 - Start Build 8.00
6965.0	7488.5	Start 4770.0 hold at 7488.5 MD
6938.0	12258.5	TD at 12258.5



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	1266.7	4.00	180.00	1266.5	-9.3	0.0	1.50	180.00	-9.2	
4	1766.7	4.00	180.00	1765.2	-44.2	0.0	0.00	0.00	-43.5	
5	2759.2	14.53	267.45	2746.2	-84.6	-125.1	1.50	102.68	-61.7	
6	5481.2	14.53	267.45	5381.2	-114.9	-807.4	0.00	0.00	26.0	
7	6207.8	0.00	0.00	6100.0	-119.0	-899.0	2.00	180.00	37.8	
8	6356.7	0.00	0.00	6248.8	-119.0	-899.0	0.00	0.00	37.8	
9	7485.7	90.32	359.55	6965.0	601.2	-904.7	8.00	359.55	748.1	
10	7486.2	90.32	359.55	6965.0	601.7	-904.7	0.00	0.00	748.6	LPL 50'FSL & 2300'FWL, Sec.11
11	7488.5	90.32	359.57	6965.0	604.0	-904.7	1.00	79.76	750.9	
12	12258.5	90.32	359.57	6938.0	5373.8	-940.4	0.00	0.00	5455.5	BHL 500'FNL & 2300'FWL, Sec.11

BHL 500'FNL & 2300'FWL, Sec.11

Vertical Section at 350.07° (600 ft/in)



Directional

PDC Energy Inc. DJ Basin

SEC.14-T5N-R65W

Clark 5N65W14 1-21 Pad Sec.14-T5N-R65W

J Clark 9C (Codell)

Wellbore #1

Plan #1 (1-10-18)

Anticollision Summary Report

12 January, 2018



Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well J Clark 9C (Codell)
Project:	SEC.14-T5N-R65W	TVD Reference:	WELL @ 4638.0ft (Original Well Elev)
Reference Site:	Clark 5N65W14 1-21 Pad Sec.14-T5N-R65W	MD Reference:	WELL @ 4638.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	J Clark 9C (Codell)	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 (1-10-18)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (1-10-18)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 50.0ft	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	1/12/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	12,258.5	Plan #1 (1-10-18) (Wellbore #1)	MWD	MWD - Standard

Site Name	Reference	Offset	Distance		Separation Factor	Warning
	Measured Depth (ft)	Measured Depth (ft)	Between Centres (ft)	Between Ellipses (ft)		
Clark 5N65W14 1-21 Pad Sec.14-T5N-R65W						
J Clark 10N (Nio B) - Wellbore #1 - Plan #1 (12-18-17)	1,031.9	1,031.9	15.0	9.6	2.777	CC
J Clark 10N (Nio B) - Wellbore #1 - Plan #1 (12-18-17)	1,150.0	1,150.0	15.2	9.3	2.545	ES
J Clark 10N (Nio B) - Wellbore #1 - Plan #1 (12-18-17)	12,258.5	12,019.4	477.9	236.0	1.975	SF
J Clark 11N (Nio C) - Wellbore #1 - Plan #1 (12-18-17)	1,046.2	1,046.2	30.0	24.5	5.484	CC
J Clark 11N (Nio C) - Wellbore #1 - Plan #1 (12-18-17)	1,150.0	1,150.0	30.1	24.1	5.026	ES
J Clark 11N (Nio C) - Wellbore #1 - Plan #1 (12-18-17)	12,258.5	12,071.9	607.7	355.4	2.409	SF
J Clark 12N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	1,057.0	1,057.0	45.0	39.5	8.146	CC
J Clark 12N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	1,200.0	1,199.9	45.3	39.0	7.259	ES
J Clark 12N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	1,950.0	1,951.4	63.8	53.8	6.370	SF
J Clark 1C (Codell) - Wellbore #1 - Plan #1 (1-10-18)	182.6	184.6	195.1	194.4	265.148	CC
J Clark 1C (Codell) - Wellbore #1 - Plan #1 (1-10-18)	200.0	200.0	195.1	194.3	236.239	ES
J Clark 1C (Codell) - Wellbore #1 - Plan #1 (1-10-18)	1,350.0	1,267.3	356.9	349.9	51.029	SF
J Clark 2N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	382.6	384.6	180.1	178.3	98.034	CC
J Clark 2N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	400.0	400.0	180.1	178.2	93.457	ES
J Clark 2N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	1,300.0	1,247.2	280.4	273.8	42.299	SF
J Clark 3N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	309.3	311.3	165.1	163.7	117.854	CC
J Clark 3N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	500.0	500.0	165.3	162.9	68.315	ES
J Clark 3N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	1,300.0	1,258.1	247.3	240.6	37.029	SF
J Clark 4N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	304.2	306.2	150.1	148.7	109.224	CC
J Clark 4N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	550.0	551.5	150.7	148.0	55.458	ES
J Clark 4N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	1,350.0	1,319.0	213.8	206.8	30.614	SF
J Clark 5N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	265.4	265.4	60.0	58.9	51.439	CC
J Clark 5N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	400.0	399.8	60.2	58.3	32.191	ES
J Clark 5N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	900.0	893.1	82.9	78.3	17.874	SF
J Clark 6N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	458.1	458.1	45.0	42.8	20.199	CC
J Clark 6N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	600.0	599.8	45.3	42.3	15.342	ES
J Clark 6N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	12,258.5	12,246.5	768.8	515.0	3.028	SF
J Clark 7N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	648.2	648.2	30.0	26.7	9.152	CC
J Clark 7N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	750.0	749.9	30.1	26.3	7.938	ES
J Clark 7N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	12,258.5	12,260.0	507.9	252.7	1.990	SF
J Clark 8N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	834.7	834.7	15.0	10.7	3.484	CC
J Clark 8N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	950.0	949.9	15.3	10.4	3.121	ES
J Clark 8N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	12,258.5	12,153.8	296.8	69.7	1.307	Level 3, SF

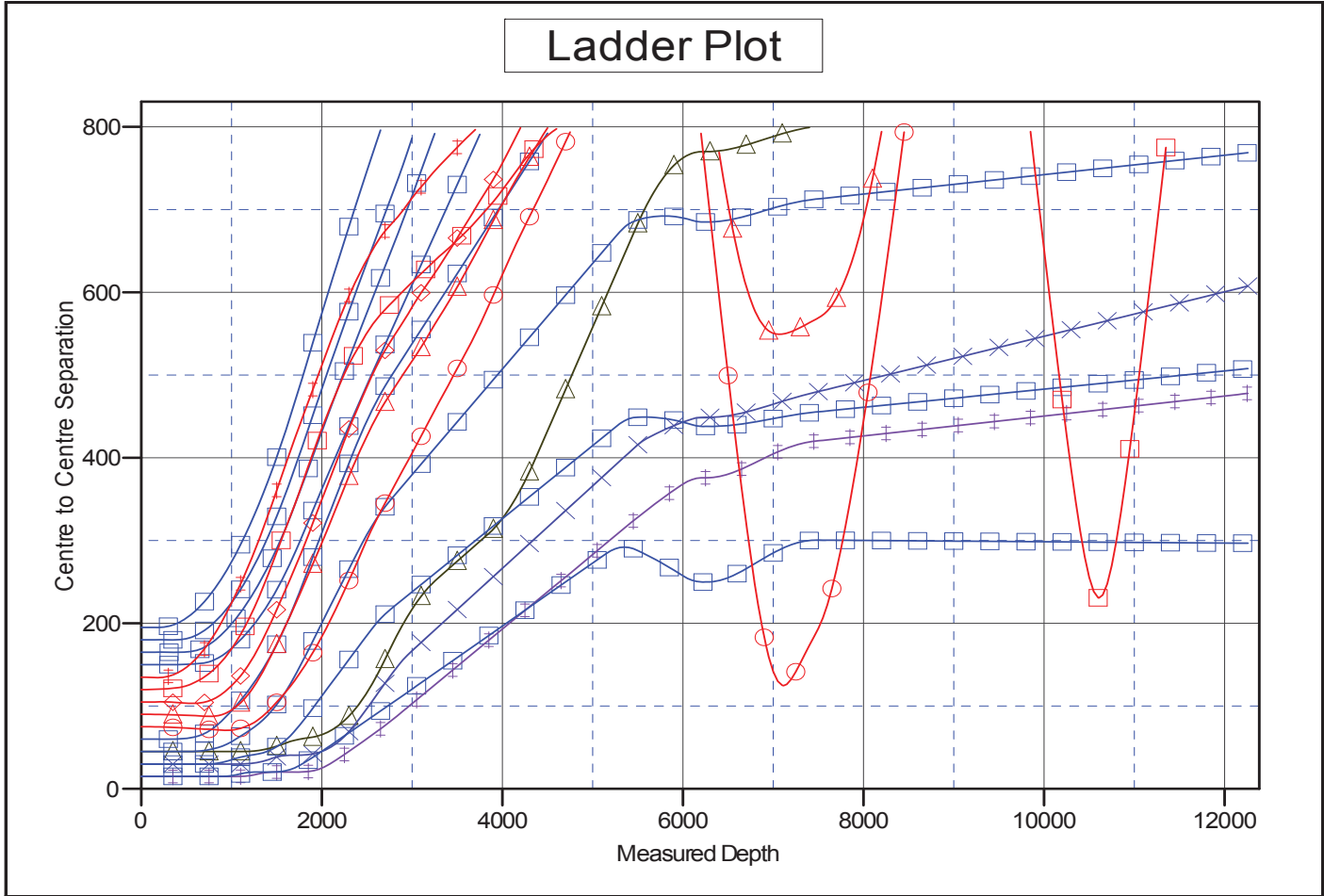
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well J Clark 9C (Codell)
Project:	SEC.14-T5N-R65W	TVD Reference:	WELL @ 4638.0ft (Original Well Elev)
Reference Site:	Clark 5N65W14 1-21 Pad Sec.14-T5N-R65W	MD Reference:	WELL @ 4638.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	J Clark 9C (Codell)	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 (1-10-18)	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						
Clark 5N65W14EJ Pad Sec.14-T5N-R65W						
Clark 14J-203 (Exist.) - Wellbore #1 - Wellbore #1	0.0	1.0	119.9	119.9	10,000.000	CC
Clark 14J-203 (Exist.) - Wellbore #1 - Wellbore #1	150.0	150.5	120.2	119.7	249.055	ES
Clark 14J-203 (Exist.) - Wellbore #1 - Wellbore #1	4,600.0	4,491.4	797.6	764.9	24.349	SF
Clark 14J-223 (Exist.) - Wellbore #1 - Wellbore #1	759.8	760.8	87.5	83.8	23.293	CC
Clark 14J-223 (Exist.) - Wellbore #1 - Wellbore #1	800.0	800.3	87.7	83.7	22.063	ES
Clark 14J-223 (Exist.) - Wellbore #1 - Wellbore #1	7,550.0	7,097.5	572.8	523.4	11.597	SF
Clark 14J-303 (Exist.) - Wellbore #1 - Wellbore #1	583.5	584.5	103.2	100.5	37.223	CC
Clark 14J-303 (Exist.) - Wellbore #1 - Wellbore #1	600.0	600.8	103.2	100.4	36.107	ES
Clark 14J-303 (Exist.) - Wellbore #1 - Wellbore #1	1,100.0	1,084.8	136.6	131.0	24.741	SF
Clark 14J-343 (Exist.) - Wellbore #1 - Wellbore #1	180.4	181.4	134.5	133.9	210.589	CC
Clark 14J-343 (Exist.) - Wellbore #1 - Wellbore #1	200.0	200.5	134.5	133.8	181.828	ES
Clark 14J-343 (Exist.) - Wellbore #1 - Wellbore #1	3,700.0	3,554.0	796.6	772.7	33.265	SF
Clark 14M-343 (Exist.) - Wellbore #1 - Wellbore #1	948.7	948.7	70.7	66.0	14.979	CC
Clark 14M-343 (Exist.) - Wellbore #1 - Wellbore #1	950.0	950.0	70.7	66.0	14.958	ES
Clark 14M-343 (Exist.) - Wellbore #1 - Wellbore #1	7,150.0	7,485.3	126.2	83.4	2.948	SF
Existing Wells Sec.11-T5N-R65W						
Yaklich-PM F 11-6 (Synergy - SI) - Wellbore #1 - Wellbor	10,610.0	6,918.3	230.8	-29.0	0.888	Level 1, CC, ES, SF

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Site Error:	0.0 ft	North Reference:	True
Reference Well:	J Clark 9C (Codell)	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 (1-10-18)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4638.0ft (Original Well Elev) Coordinates are relative to: J Clark 9C (Codell)
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
 Central Meridian is -105.500000 Grid Convergence at Surface is: 0.56°



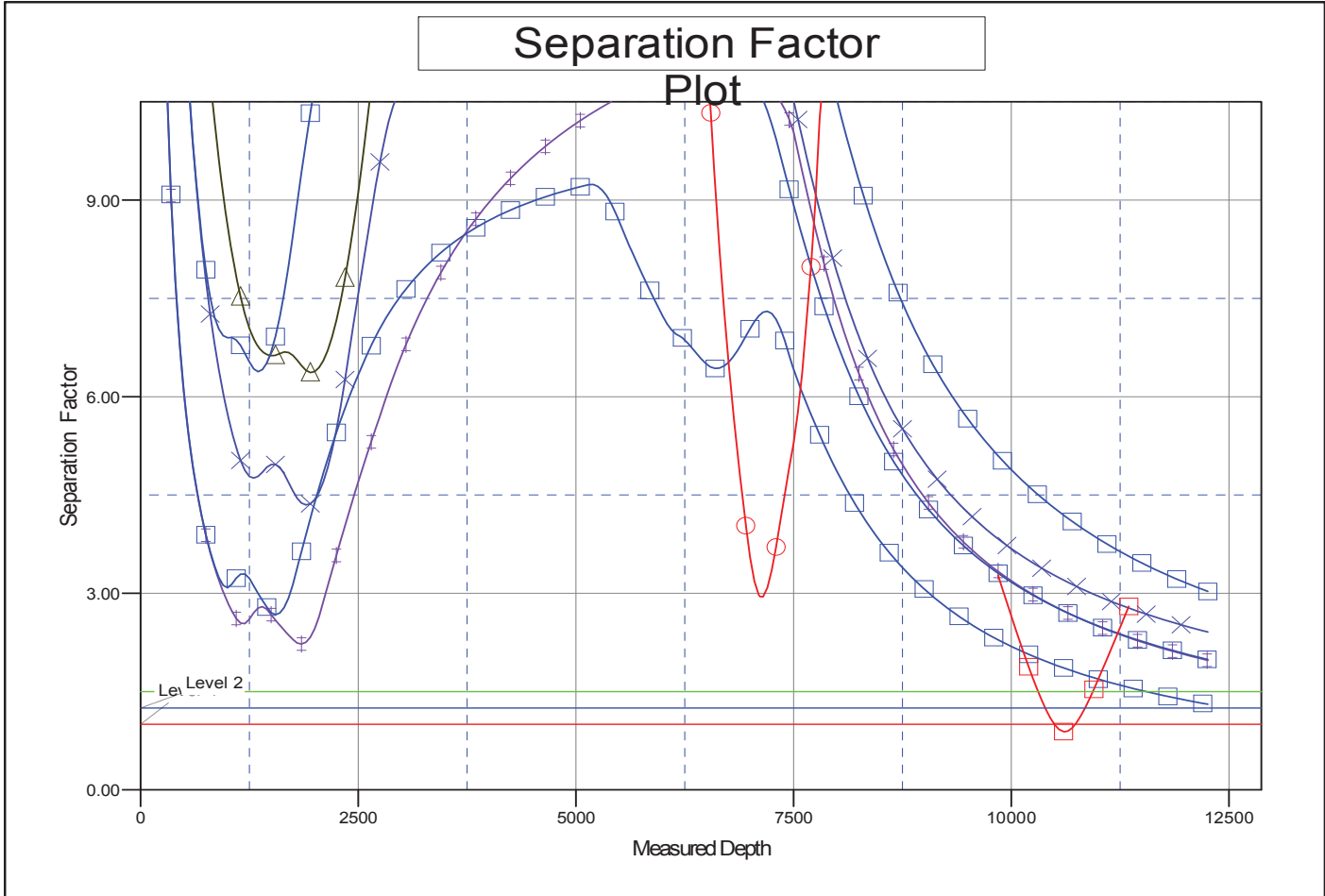
LEGEND

- o B), Wellbore #1, Plan #1 (12-18-17) V0
- JClark4N (Nio B), Wellbore #1, Plan #1 (1-10-18) V0
- Clark 14J-343 (Exist), Wellbore #1, Wellbore #1 V0
- o C), Wellbore #1, Plan #1 (12-18-17) V0
- JClark5N (Nio C), Wellbore #1, Plan #1 (1-10-18) V0
- Clark 14J-303 (Exist), Wellbore #1, Wellbore #1 V0
- o B), Wellbore #1, Plan #1 (1-10-18) V0
- JClark6N (Nio B), Wellbore #1, Plan #1 (1-10-18) V0
- Clark 14J-223 (Exist), Wellbore #1, Wellbore #1 V0
- del), Wellbore #1, Plan #1 (1-10-18) V0
- JClark7N (Nio C), Wellbore #1, Plan #1 (1-10-18) V0
- Clark 14J-203 (Exist), Wellbore #1, Wellbore #1 V0
- B), Wellbore #1, Plan #1 (1-10-18) V0
- JClark8N (Nio B), Wellbore #1, Plan #1 (1-10-18) V0
- Yaklich-PMF 11-6 (Synergy - SI), Wellbore #1, Wellbore #1 V0
- o C), Wellbore #1, Plan #1 (1-10-18) V0
- Clark 14M-343 (Exist), Wellbore #1, Wellbore #1 V0

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

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Well Error:	0.0 ft	Output errors are at	2.45 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (1-10-18)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4638.0ft (Original Well Elev) Coordinates are relative to: J Clark 9C (Codell)
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
 Central Meridian is -105.500000 Grid Convergence at Surface is: 0.56°



LEGEND

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| o B), Wellbore #1, Plan #1 (12-18-17) V0 | —■ JClark4N (Nio B), Wellbore #1, Plan #1 (1-10-18) V0 | —◆ Clark 14J-343 (Exist), Wellbore #1, Wellbore #1 V0 |
| o C), Wellbore #1, Plan #1 (12-18-17) V0 | —■ JClark5N (Nio C), Wellbore #1, Plan #1 (1-10-18) V0 | —◆ Clark 14J-303 (Exist), Wellbore #1, Wellbore #1 V0 |
| o B), Wellbore #1, Plan #1 (1-10-18) V0 | —■ JClark6N (Nio B), Wellbore #1, Plan #1 (1-10-18) V0 | —▲ Clark 14J-223 (Exist), Wellbore #1, Wellbore #1 V0 |
| o C), Wellbore #1, Plan #1 (1-10-18) V0 | —■ JClark7N (Nio C), Wellbore #1, Plan #1 (1-10-18) V0 | —■ Clark 14J-203 (Exist), Wellbore #1, Wellbore #1 V0 |
| o B), Wellbore #1, Plan #1 (1-10-18) V0 | —■ JClark8N (Nio B), Wellbore #1, Plan #1 (1-10-18) V0 | —■ Yakich-PMF 11-6 (Synergy - SI), Wellbore #1, Wellbore #1 V0 |
| o C), Wellbore #1, Plan #1 (1-10-18) V0 | —○ Clark 14M-343 (Exist), Wellbore #1, Wellbore #1 V0 | |