PDC Energy Inc. DJ Basin

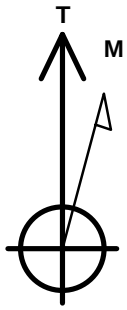
Well Name: **Bath-Schmier 4N**
Surface Location: Bath-Schmier 5N64W32 1-11 Pad Sec.32-T5N-R64W
North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
Ground Elevation: 4782.0

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1372457.65	3256020.85	40.352157	-104.581381	

RKB - 23' WELL @ 4805.0ft (RKB - 23')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 1338'FSL & 478'FWL, Sec.32	1.0	0.0	0.0	Point
BHL 1854'FSL & 150'FEL, Sec.33	6775.0	542.4	9949.1	Point
LPL 1881'FSL & 732'FWL, Sec.32	6830.0	543.2	251.5	Point



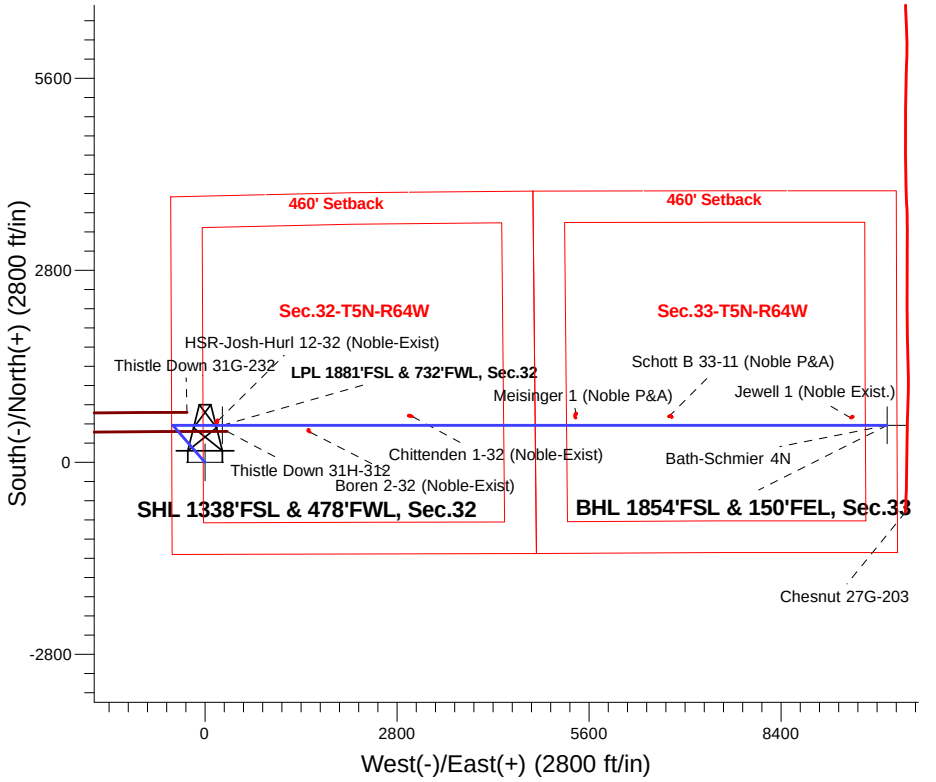
Azimuths to True North
Magnetic North: 8.00°

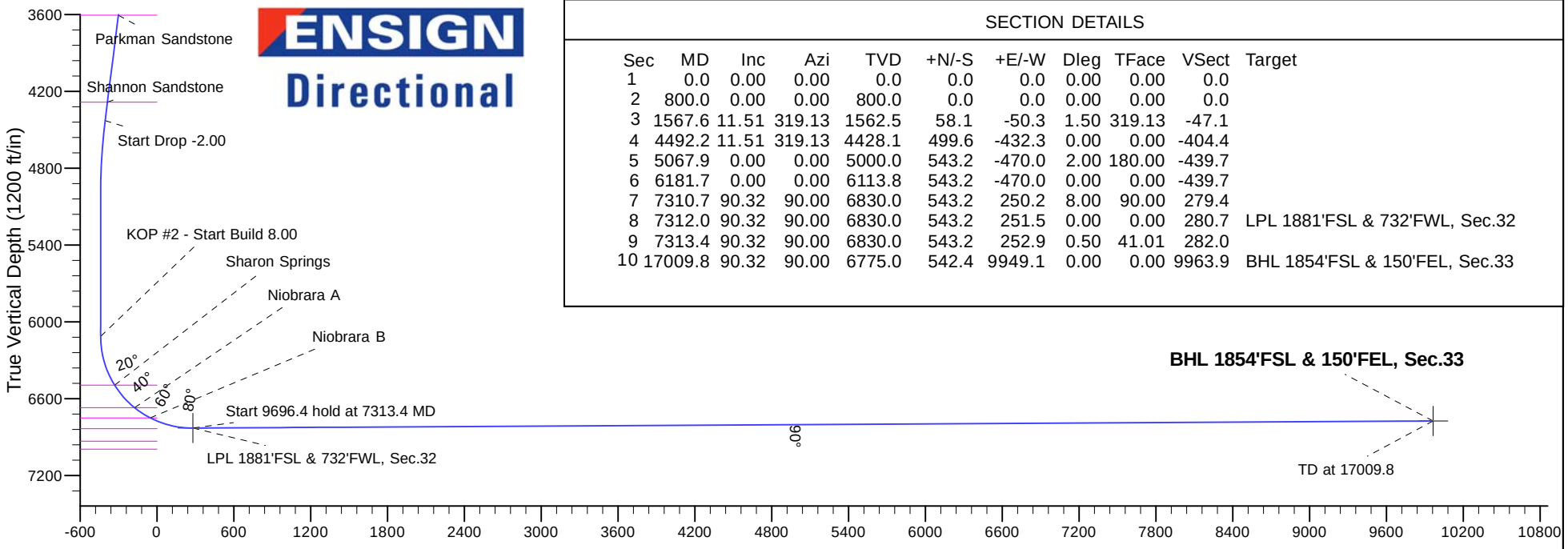
Magnetic Field
Strength: 52532.0snT
Dip Angle: 66.84°
Date: 2/1/2017
Model: IGRF2010

Bath-Schmier 5N64W32 1-11 Pad Sec.32-T5N-R64W
Bath-Schmier 4N
Plan #2 (7-19-17)
12:06, July 20 2017

ANNOTATIONS

TVD	MD	Annotation
800.0	800.0	KOP - Start Build 1.50
4428.1	4492.2	Start Drop -2.00
6113.8	6181.7	KOP #2 - Start Build 8.00
6830.0	7313.4	Start 9696.4 hold at 7313.4 MD
6775.0	17009.8	TD at 17009.8





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	800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.0	
3	1567.6	11.51	319.13	1562.5	58.1	-50.3	1.50	319.13	-47.1	
4	4492.2	11.51	319.13	4428.1	499.6	-432.3	0.00	0.00	-404.4	
5	5067.9	0.00	0.00	5000.0	543.2	-470.0	2.00	180.00	-439.7	
6	6181.7	0.00	0.00	6113.8	543.2	-470.0	0.00	0.00	-439.7	
7	7310.7	90.32	90.00	6830.0	543.2	250.2	8.00	90.00	279.4	
8	7312.0	90.32	90.00	6830.0	543.2	251.5	0.00	0.00	280.7	LPL 1881'FSL & 732'FWL, Sec.32
9	7313.4	90.32	90.00	6830.0	543.2	252.9	0.50	41.01	282.0	
10	17009.8	90.32	90.00	6775.0	542.4	9949.1	0.00	0.00	9963.9	BHL 1854'FSL & 150'FEL, Sec.33

ENSIGN Directional

PDC Energy Inc. DJ Basin

SEC.32-T5N-R64W
Bath-Schmier 5N64W32 1-11 Pad Sec.32-T5N-R64W
Bath-Schmier 4N

Wellbore #1
Plan #2 (7-19-17)

Anticollision Summary Report

20 July, 2017

PDC ENERGY
Growing E&P Value

Company:	PDC Energy Inc. DJ Basin	**Local Co-ordinate Reference:**	Well Bath-Schmier 4N
Project:	SEC.32-T5N-R64W	**TVD Reference:**	WELL @ 4805.0ft (RKB - 23')
Reference Site:	Bath-Schmier 5N64W32 1-11 Pad Sec.32-T5N-R64W	**MD Reference:**	WELL @ 4805.0ft (RKB - 23')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Bath-Schmier 4N	**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 (7-19-17)	**Offset TVD Reference:**	Offset Datum

Reference	Plan #2 (7-19-17)		
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** 7/20/2017

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	17,009.8	Plan #2 (7-19-17) (Wellbore #1)	MWD	MWD - Standard

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Bath-Schmier 5N64W32 1-11 Pad Sec.32-T5N-R64W						
Bath-Schmier 10N - Wellbore #1 - Plan #2 (7-19-17)	400.0	398.0	90.0	88.1	46.822	CC, ES
Bath-Schmier 10N - Wellbore #1 - Plan #2 (7-19-17)	900.0	884.8	120.4	115.9	26.504	SF
Bath-Schmier 11N - Wellbore #1 - Plan #2 (7-19-17)	200.0	197.0	105.0	104.2	128.394	CC, ES
Bath-Schmier 11N - Wellbore #1 - Plan #2 (7-19-17)	900.0	872.6	164.4	159.8	35.548	SF
Bath-Schmier 1C - Wellbore #1 - Plan #2 (7-19-17)	166.3	167.3	44.9	44.3	69.821	CC
Bath-Schmier 1C - Wellbore #1 - Plan #2 (7-19-17)	200.0	201.0	44.9	44.1	54.203	ES
Bath-Schmier 1C - Wellbore #1 - Plan #2 (7-19-17)	17,009.8	17,321.2	865.8	178.9	1.261	Level 3, SF
Bath-Schmier 2N - Wellbore #1 - Plan #3 (7-19-17)	366.3	367.3	29.9	28.2	17.144	CC
Bath-Schmier 2N - Wellbore #1 - Plan #3 (7-19-17)	17,009.8	17,076.9	555.9	-146.5	0.791	Level 1, ES, SF
Bath-Schmier 3N - Wellbore #1 - Plan #2 (7-19-17)	600.0	600.0	14.9	11.9	4.932	CC
Bath-Schmier 3N - Wellbore #1 - Plan #2 (7-19-17)	17,009.8	17,110.1	290.8	-388.0	0.428	Level 1, ES, SF
Bath-Schmier 5N - Wellbore #1 - Plan #2 (7-19-17)	800.0	800.0	15.1	11.0	3.661	CC
Bath-Schmier 5N - Wellbore #1 - Plan #2 (7-19-17)	17,009.8	17,078.2	228.6	-438.9	0.342	Level 1, ES, SF
Bath-Schmier 6N - Wellbore #1 - Plan #2 (7-19-17)	800.0	799.0	30.1	25.9	7.282	CC
Bath-Schmier 6N - Wellbore #1 - Plan #2 (7-19-17)	17,009.8	16,967.5	471.9	-230.3	0.672	Level 1, ES, SF
Bath-Schmier 7N - Wellbore #1 - Plan #2 (7-19-17)	800.0	799.0	45.0	40.9	10.901	CC
Bath-Schmier 7N - Wellbore #1 - Plan #2 (7-19-17)	17,009.8	17,053.5	708.4	10.1	1.014	Level 2, ES, SF
Bath-Schmier 8N - Wellbore #1 - Plan #2 (7-19-17)	800.0	799.0	60.0	55.9	14.538	CC, ES
Bath-Schmier 8N - Wellbore #1 - Plan #2 (7-19-17)	16,800.0	16,783.5	960.1	272.7	1.397	Level 3, SF
Bath-Schmier 9N - Wellbore #1 - Plan #2 (7-19-17)	600.0	598.0	74.9	71.9	24.788	CC, ES
Bath-Schmier 9N - Wellbore #1 - Plan #2 (7-19-17)	900.0	892.5	85.9	81.3	18.851	SF
Chesnut 27G-HZ Pad Sec.27-T5N-R64W						
Chesnut 27G-203 - Wellbore #1 - Wellbore #1	17,009.8	12,504.5	292.7	-16.8	0.946	Level 1, CC, ES, SF
Existing Wells Sec.32-T5N-R64W (GRID)						
Boren 2-32 (Noble-Exist) - Wellbore #1 - Wellbore #1	8,580.1	6,790.9	92.7	13.5	1.171	Level 2, CC, ES, SF
Chittenden 1-32 (Noble-Exist) - Wellbore #1 - Wellbore #	10,076.9	6,767.4	128.9	0.5	1.004	Level 2, CC, ES, SF
HSR-Josh-Hurl 12-32 (Noble-Exist) - Wellbore #1 - Wellb	7,237.6	6,801.2	66.4	26.1	1.648	CC, ES, SF
Existing Wells Sec.33-T5N-R64W (GRID)						
Jewell 1 (Noble Exist.) - Wellbore #1 - Wellbore #1	16,478.6	6,635.4	106.2	-241.4	0.305	Level 1, CC, ES, SF
Meisinger 1 (Noble P&A) - Wellbore #1 - Wellbore #1	12,466.4	6,693.4	154.4	-55.2	0.737	Level 1, CC, ES, SF
Schott B 33-11 (Noble P&A) - Wellbore #1 - Wellbore #1	13,819.8	6,672.7	128.2	-128.3	0.500	Level 1, CC, ES, SF

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Reference Site:	Bath-Schmier 5N64W32 1-11 Pad Sec.32-T5N-R64W	**MD Reference:**	WELL @ 4805.0ft (RKB - 23')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Bath-Schmier 4N	**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 (7-19-17)	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Thistle Down 5N64W31H Pad Sec.31-T5N-R64W						
Thistle Down 31G-232 - Wellbore #1 - Plan #2 (7-19-17)	6,864.4	12,279.3	249.6	98.0	1.646	CC, ES, SF
Thistle Down 31H-312 - Wellbore #1 - Plan #1 (2-28-17)	7,364.4	12,897.6	116.7	-65.1	0.642	Level 1, CC, ES, SF

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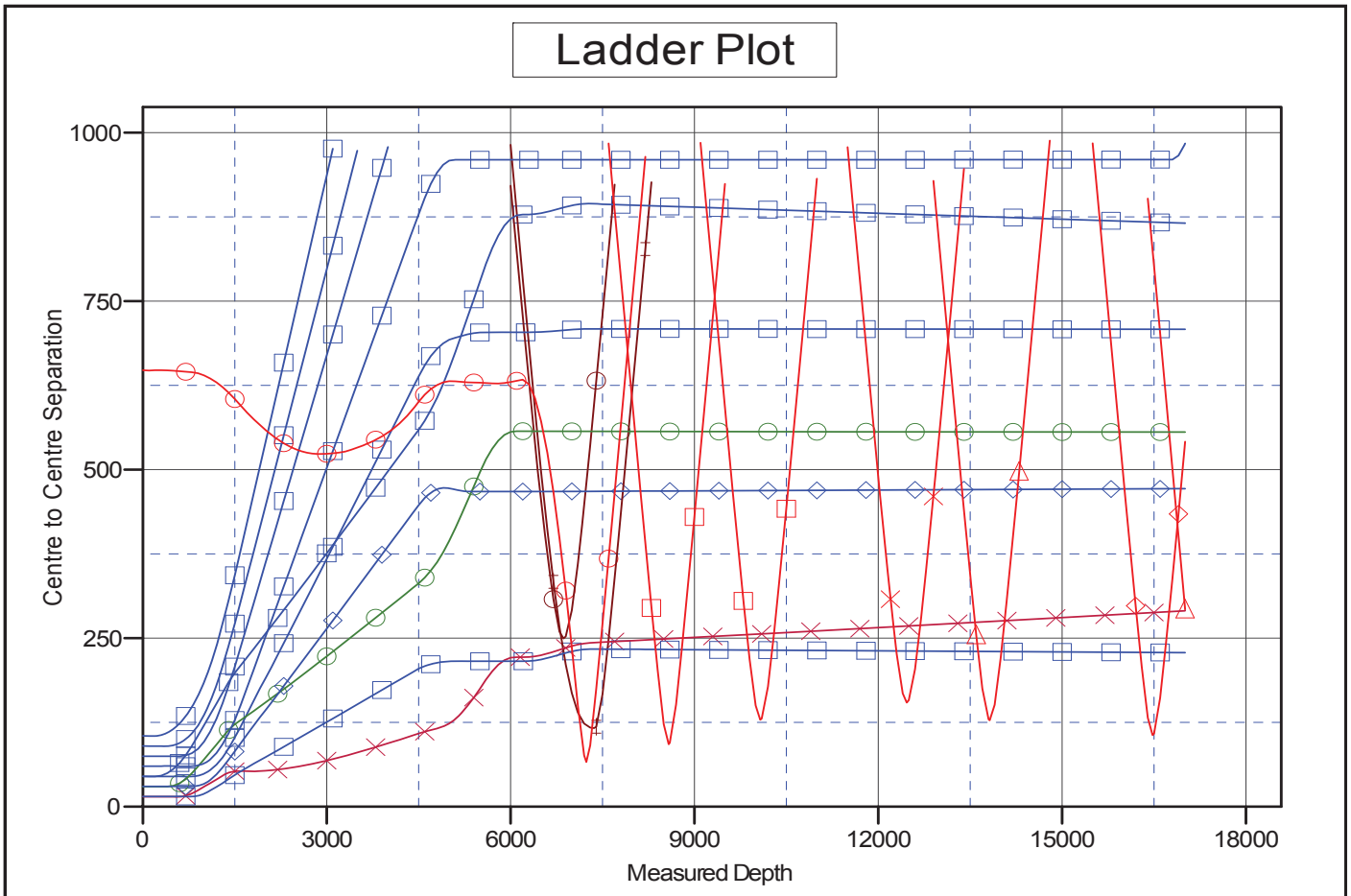
Reference Site:	Bath-Schmier 5N64W32 1-11 Pad Sec.32-T5N-R64W	**MD Reference:**	WELL @ 4805.0ft (RKB - 23')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Bath-Schmier 4N	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-19-17)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4805.0ft (RKB - 23')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: Bath-Schmier 4N
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.59°

Ladder Plot



LEGEND

Wellbore #1, Wellbore #1 V0
232, Wellbore #1, Plan #2 (7-19-17) V0
112, Wellbore #1, Plan #1 (2-28-17) V0
Wellbore #1, Plan #2 (7-19-17) V0
Wellbore #1, Plan #2 (7-19-17) V0
Wellbore #1, Plan #2 (7-19-17) V0
Wellbore #1, Plan #2 (7-19-17) V0

Bath-Schmier 5N, Wellbore #1, Plan #2 (7-19-17) V0
Bath-Schmier 2N, Wellbore #1, Plan #3 (7-19-17) V0
Bath-Schmier 8N, Wellbore #1, Plan #2 (7-19-17) V0
Bath-Schmier 6N, Wellbore #1, Plan #2 (7-19-17) V0
Bath-Schmier 10N, Wellbore #1, Plan #2 (7-19-17) V0
Bath-Schmier 9N, Wellbore #1, Plan #2 (7-19-17) V0
Boren 2-32 (Noble-Exist), Wellbore #1, Wellbore #1 V0

Chittenden 1-32 (Noble-Exist), Wellbore #
HSR-Josh-Hurl 12-32 (Noble-Exist), Wel
Jewell 1 (Noble Exist.), Wellbore #1, Well
Meisinger 1 (Noble P&A), Wellbore #1, V
Schott B 33-11 (Noble P&A), Wellbore #1

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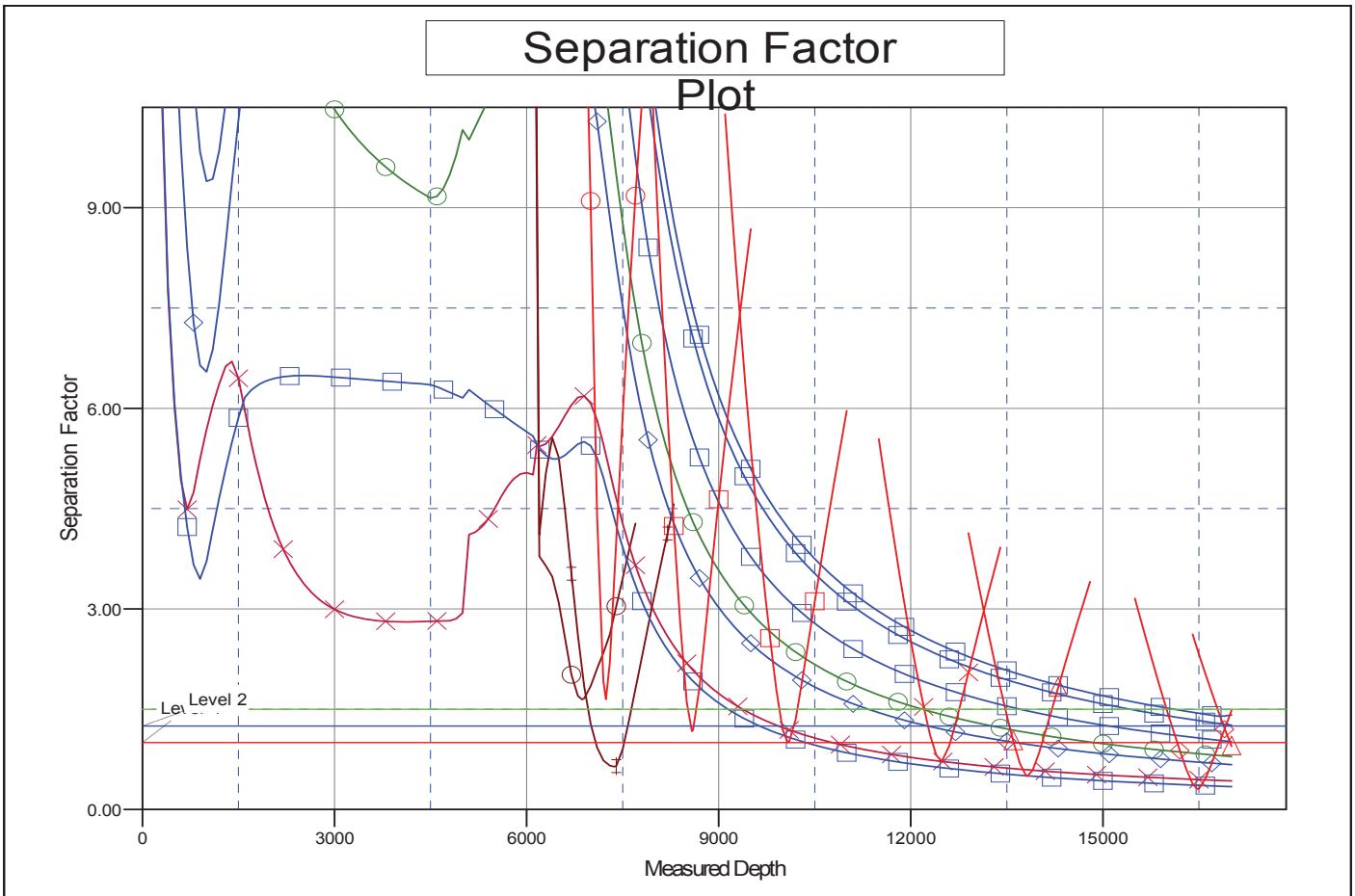
Reference Site:	Bath-Schmier 5N64W32 1-11 Pad Sec.32-T5N-R64W	**MD Reference:**	WELL @ 4805.0ft (RKB - 23')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Bath-Schmier 4N	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (7-19-17)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4805.0ft (RKB - 23')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: Bath-Schmier 4N
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.59°



LEGEND

Wellbore #1, Wellbore #1 V0
232, Wellbore #1, Plan #2 (7-19-17) V0
112, Wellbore #1, Plan #1 (2-28-17) V0
Wellbore #1, Plan #2 (7-19-17) V0
Wellbore #1, Plan #2 (7-19-17) V0
Wellbore #1, Plan #2 (7-19-17) V0
Wellbore #1, Plan #2 (7-19-17) V0
Bath-Schmier 5N, Wellbore #1, Plan #2 (7-19-17) V0
Bath-Schmier 2N, Wellbore #1, Plan #3 (7-19-17) V0
Bath-Schmier 8N, Wellbore #1, Plan #2 (7-19-17) V0
Bath-Schmier 6N, Wellbore #1, Plan #2 (7-19-17) V0
Bath-Schmier 10N, Wellbore #1, Plan #2 (7-19-17) V0
Bath-Schmier 9N, Wellbore #1, Plan #2 (7-19-17) V0
Boren 2-32 (Noble-Exist), Wellbore #1, Wellbore #1 V0
Chittenden 1-32 (Noble-Exist), Wellbore #
HSR-Josh-Hurl 12-32 (Noble-Exist), Wel
Jewell 1 (Noble Exist.), Wellbore #1, Well
Meisinger 1 (Noble P&A), Wellbore #1, V
Schott B 33-11 (Noble P&A), Wellbore #1