

VERDAD RESOURCES

WATTENBERG FIELD

1N-65W-31 COUNTY LINE 3107 PAD

COUNTY LINE 3107-07H

Wellbore #1

Design #3

Anticollision Summary Report

02 June, 2020

HP

Anticollision Summary Report

Company:	VERDAD RESOURCES	Local Co-ordinate Reference:	Well COUNTY LINE 3107-07H
Project:	WATTENBERG FIELD	TVD Reference:	RKB = 24' @ 5065.00usft (RIG)
Reference Site:	1N-65W-31 COUNTY LINE 3107 PAD	MD Reference:	RKB = 24' @ 5065.00usft (RIG)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	COUNTY LINE 3107-07H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.28 usft	Output errors are at	2.45 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Design #3	Offset TVD Reference:	Offset Datum

Reference	Design #3		
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 centre distance of 1,500.00usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.45 Sigma	Casing Method:	Added to Error Values

Survey Tool Program	Date	6/2/2020		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	1,700.00	Design #3 (Wellbore #1)	ISCWSA REV 2 MWD	Fixed:v2:standard declination
1,700.00	17,038.07	Design #3 (Wellbore #1)	ISCWSA REV 2 MWD	Fixed:v2:standard declination

Summary						
Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
1N-65W-30 JOHNSON PAD						
JOHNSON 01N-65W-30-8N - Verdad PR Well - Actual BH						Out of range
1N-65W-30 Offsets						
GILMORE #1-30 - ARLIAN INC P/A Well - No Surveys						Out of range
LEHL #1 - DEM P/A Well - No Surveys						Out of range
M B LEHL A #1 - Amoco D/A Well - No Surveys						Out of range
MARGUERITE B LEHL #A-1 - XOG SI Well - No Surveys						Out of range
1N-65W-31 COUNTY LINE 3107 PAD						
COUNTY LINE 3107-05H - Wellbore #1 - Design #3	400.00	399.00	30.00	22.22	3.856	CC, ES
COUNTY LINE 3107-05H - Wellbore #1 - Design #3	17,038.07	17,660.78	1,217.13	757.11	2.646	SF
COUNTY LINE 3107-06H - Wellbore #1 - Design #3	403.34	403.34	15.02	7.23	1.928	CC, ES
COUNTY LINE 3107-06H - Wellbore #1 - Design #3	17,038.07	17,187.98	590.17	115.51	1.243	Level 2, SF
COUNTY LINE 3107-08H - Wellbore #1 - Design #3	500.00	501.00	14.99	7.03	1.885	CC, ES
COUNTY LINE 3107-08H - Wellbore #1 - Design #3	17,032.32	17,227.03	659.76	224.80	1.517	SF
COUNTY LINE 3107-09H - Wellbore #1 - Design #3	500.00	501.00	29.98	22.02	3.769	CC, ES
COUNTY LINE 3107-09H - Wellbore #1 - Design #3	17,025.81	16,879.54	1,180.29	705.80	2.487	SF
COUNTY LINE 3107-10H - Wellbore #1 - Design #3	500.00	501.00	44.99	37.15	5.736	CC, ES, SF
COUNTY LINE 3107-11H - Wellbore #1 - Design #3	215.99	217.99	59.98	52.40	7.914	CC
COUNTY LINE 3107-11H - Wellbore #1 - Design #3	300.00	301.96	59.98	52.33	7.836	ES, SF
COUNTY LINE 3107-12H - Wellbore #1 - Design #3	115.99	117.99	75.00	67.47	9.959	CC
COUNTY LINE 3107-12H - Wellbore #1 - Design #3	200.00	201.95	75.00	67.43	9.910	ES, SF
1N-65W-31 COUNTY LINE 3112 PAD						
COUNTY LINE 3112-01H - Wellbore #1 - Design #3	200.00	196.00	90.01	82.45	11.897	CC, ES, SF
COUNTY LINE 3112-02H - Wellbore #1 - Design #3	207.11	204.11	75.02	67.45	9.909	CC, ES
COUNTY LINE 3112-02H - Wellbore #1 - Design #3	300.00	295.80	75.40	67.75	9.858	SF
COUNTY LINE 3112-03H - Wellbore #1 - Design #3	300.00	298.00	60.01	52.36	7.842	CC, ES, SF
COUNTY LINE 3112-04H - Wellbore #1 - Design #3	305.90	303.90	45.02	37.36	5.879	CC, ES
COUNTY LINE 3112-04H - Wellbore #1 - Design #3	400.00	397.25	45.42	37.64	5.839	SF

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Site Error:	0.00 usft	North Reference:	True
Reference Well:	COUNTY LINE 3107-07H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.28 usft	Output errors are at	2.45 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Design #3	Offset TVD Reference:	Offset Datum

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						
1N-65W-31 COUNTY LINE 3130 PAD						
COUNTY LINE 3130-01H - Wellbore #1 - Design #3	638.22	653.47	212.76	204.49	25.709	CC, ES
COUNTY LINE 3130-01H - Wellbore #1 - Design #3	900.00	914.29	225.06	215.94	24.667	SF
COUNTY LINE 3130-02H - Wellbore #1 - Design #3	505.68	510.18	240.14	232.19	30.191	CC, ES
COUNTY LINE 3130-02H - Wellbore #1 - Design #3	700.00	704.36	246.68	238.33	29.528	SF
COUNTY LINE 3130-03H - Wellbore #1 - Design #3	307.83	311.83	255.24	247.58	33.305	CC, ES
COUNTY LINE 3130-03H - Wellbore #1 - Design #3	600.00	597.74	259.96	251.84	32.014	SF
COUNTY LINE 3130-04H - Wellbore #1 - Design #3	215.28	219.28	270.26	262.68	35.659	CC
COUNTY LINE 3130-04H - Wellbore #1 - Design #3	300.00	303.73	270.26	262.61	35.306	ES
COUNTY LINE 3130-04H - Wellbore #1 - Design #3	500.00	489.95	275.49	267.56	34.779	SF
COUNTY LINE 3130-05H - Wellbore #1 - Design #3	201.60	205.60	285.25	277.68	37.683	CC, ES
COUNTY LINE 3130-05H - Wellbore #1 - Design #3	400.00	391.76	288.52	280.76	37.169	SF
COUNTY LINE 3130-06H - Wellbore #1 - Design #3	115.28	119.28	300.23	292.70	39.869	CC
COUNTY LINE 3130-06H - Wellbore #1 - Design #3	200.00	200.00	300.26	292.69	39.679	ES
COUNTY LINE 3130-06H - Wellbore #1 - Design #3	300.00	294.95	301.80	294.15	39.475	SF

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Reference Well:	COUNTY LINE 3107-07H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.28 usft	Output errors are at	2.45 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Design #3	Offset TVD Reference:	Offset Datum

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						
1N-65W-31 Offsets						
ADAM TEN 1-A - CPR P&A Well - No Surveys	500.00	475.00	1,434.37	1,414.68	72.819	CC
ADAM TEN 1-A - CPR P&A Well - No Surveys	600.00	574.98	1,436.11	1,412.84	61.711	ES
ADAM TEN 1-A - CPR P&A Well - No Surveys	1,100.00	1,070.62	1,496.74	1,455.29	36.114	SF
DREYER 1 - EnCana P&A Well - No Surveys						Out of range
EPPINGER 1 - CPR P&A Well - No Surveys	6,801.55	6,603.61	932.31	667.13	3.516	CC
EPPINGER 1 - CPR P&A Well - No Surveys	6,850.00	6,650.36	934.05	666.83	3.496	ES
EPPINGER 1 - CPR P&A Well - No Surveys	6,900.00	6,697.89	939.51	670.19	3.488	SF
LOCHBUIE #1 - EnCana P&A Well - No Surveys						Out of range
LOCHBUIE 21-31 - CPR P&A Well - No Surveys						Out of range
Lochbuie 2A-31H - CPR PR Well - Actual Cathedral Surv						Out of range
Lochbuie 2B-31H - CPR PR Well - Actual Cathedral Surv	7,308.41	12,051.00	1,473.40	1,343.14	11.311	CC, ES
Lochbuie 2B-31H - CPR PR Well - Actual Cathedral Surv	7,400.00	12,051.00	1,480.34	1,348.56	11.234	SF
Lochbuie 2C-31H - CPR PR Well - Actual Cathedral Surv	7,218.79	11,822.00	1,110.86	980.68	8.533	CC, ES
Lochbuie 2C-31H - CPR PR Well - Actual Cathedral Surv	7,250.00	11,822.00	1,111.77	981.30	8.521	SF
Lochbuie 2D-31H - CPR PR Well - Actual Cathedral Surv	7,269.74	12,087.00	874.01	765.45	8.051	CC, ES, SF
Lochbuie 2E-31H - CPR PR Well - Actual Cathedral Surv	7,188.87	11,932.00	651.67	566.88	7.686	CC, ES, SF
Lochbuie 2F-31H - CPR PR Well - Actual Cathedral Surv	7,117.33	11,821.00	965.36	887.50	12.400	CC, ES
Lochbuie 2F-31H - CPR PR Well - Actual Cathedral Surv	7,200.00	11,821.00	974.07	894.70	12.273	SF
Lochbuie 2G-31H - CPR PR Well - Actual Cathedral Surv	7,105.96	12,011.00	739.34	626.93	6.577	CC, ES
Lochbuie 2G-31H - CPR PR Well - Actual Cathedral Surv	7,200.00	12,011.00	750.11	634.08	6.465	SF
Lochbuie 2H-31H - CPR PR Well - Actual Cathedral Surv	7,145.64	12,290.00	1,092.14	967.98	8.796	CC
Lochbuie 2H-31H - CPR PR Well - Actual Cathedral Surv	7,150.00	12,290.00	1,092.15	967.82	8.784	ES
Lochbuie 2H-31H - CPR PR Well - Actual Cathedral Surv	7,250.00	12,290.00	1,101.56	973.98	8.634	SF
LUTZ 1 - EnCana P&A Well - No Surveys						Out of range
LUTZ 1A - CPR D/A Well - No Surveys						Out of range
SACK-DREYER #1 - CPR P&A Well - No Surveys						Out of range
Walla #5-10-2L - Confluence Planned Well - Planned Pro	500.00	499.00	1,415.03	1,407.08	177.973	CC, ES
Walla #5-10-2L - Confluence Planned Well - Planned Pro	1,200.00	1,192.22	1,496.90	1,486.85	149.047	SF
Walla #5-10-4L - Confluence Planned Well - Planned Pro	500.00	497.00	1,391.63	1,383.68	175.051	CC, ES
Walla #5-10-4L - Confluence Planned Well - Planned Pro	1,300.00	1,287.78	1,494.71	1,484.26	143.070	SF
Walla #5-6-2L - Confluence Planned Well - Planned Pro D						Out of range
Walla #5-7-1L - Confluence Planned Well - Planned Pro D						Out of range
Walla #5-8-4L - Confluence Planned Well - Planned Pro D	500.00	500.00	1,482.96	1,475.01	186.495	CC, ES
Walla #5-8-4L - Confluence Planned Well - Planned Pro D	800.00	799.45	1,498.23	1,489.58	173.132	SF
Walla #5-9-1L - Confluence Planned Well - Planned Pro D	500.00	499.00	1,461.10	1,453.15	183.768	CC, ES
Walla #5-9-1L - Confluence Planned Well - Planned Pro D	900.00	897.70	1,488.20	1,479.25	166.207	SF
Walla #5-9-3L - Confluence Planned Well - Planned Pro D	500.00	499.00	1,438.49	1,430.54	180.924	CC, ES
Walla #5-9-3L - Confluence Planned Well - Planned Pro D	1,100.00	1,094.62	1,499.30	1,489.65	155.343	SF
1S-65W-06 Offsets						
ADAM 10 'B' UNIT #1 - Verdad SI Well - No Surveys						Out of range
ADAM TEN LTD #1 - KPK P/A Well - No Surveys						Out of range
HSR-MILE HIGH #6-6 - HS Resources P/A Well - No Sur	8,243.86	7,155.00	224.31	-63.95	0.778	Level 1, CC, ES, SF
MILE-HI DUCK CLUB-PASCOE #1 - VESSELS P/A Well	11,254.15	7,162.00	369.23	14.10	1.040	Level 2, CC
MILE-HI DUCK CLUB-PASCOE #1 - VESSELS P/A Well	11,300.00	7,162.00	372.06	13.25	1.037	Level 2, ES, SF
1S-65W-07 Offsets						
EDNA #1 - Verdad PR Well - No Surveys						Out of range
GREEN #1 - Verdad PR Well - No Surveys	16,422.93	7,199.00	396.97	-79.63	0.833	Level 1, CC, ES, SF
VAN AIRE #1 - Patina P/A Well - No Surveys						Out of range

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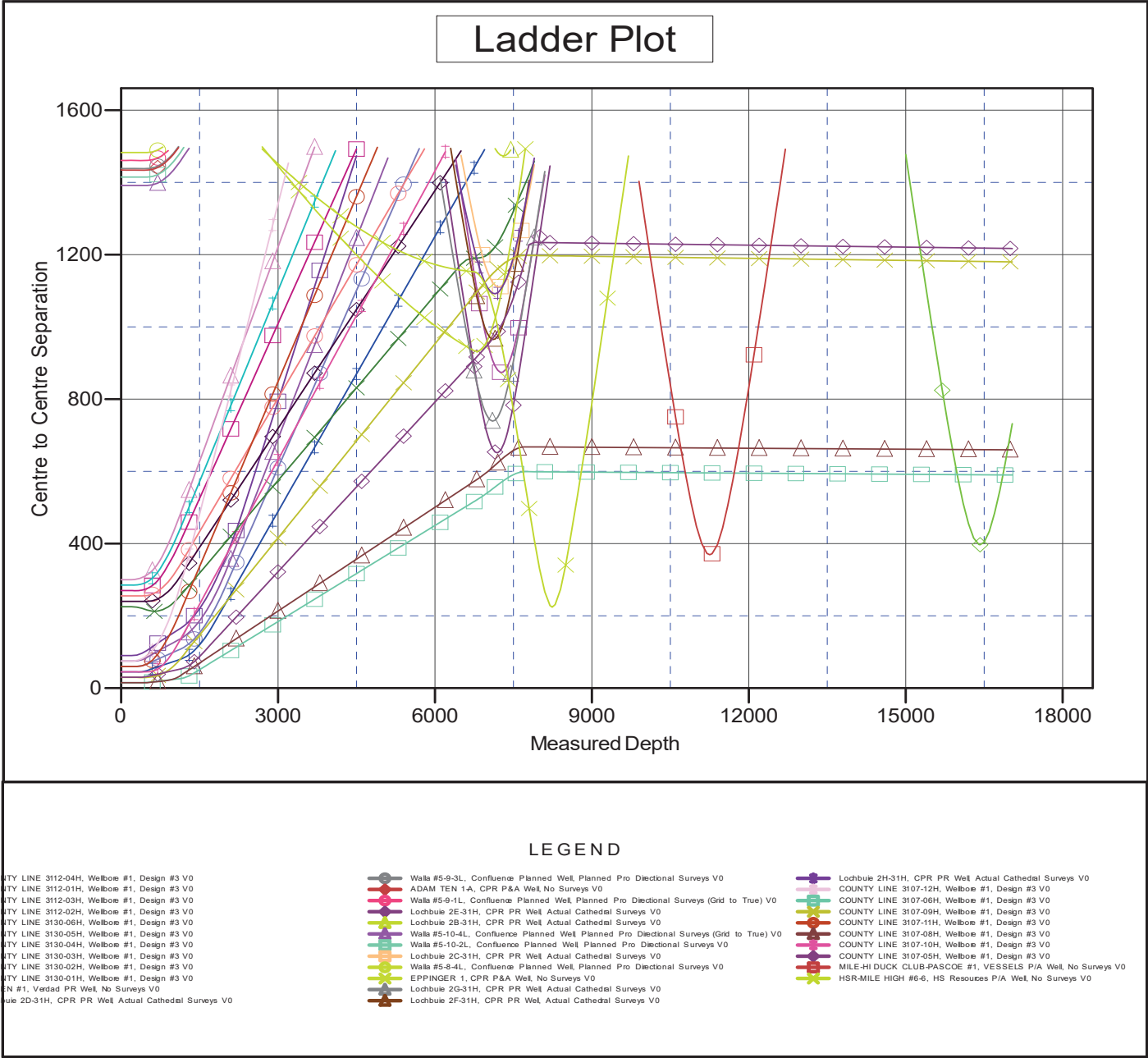
Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
1S-66W-01 Offsets						
HSR-EPPINGER #1-1 - Kerr McGee P&A Well - No Surv						Out of range
HSR-EPPINGER #6-1 - Great Western PR Well - No Su						Out of range
1S-66W-12 Offsets						
MILE-HI DUCK CLUB-TRACY #1 - Vessels Oil P/A Well						Out of range
DUCK CLUB 12W-20-10N - XOG PR Well - Actual Integr						Out of range
DUCK CLUB 12W-20-11N - XOG PR Well - Actual Integr						Out of range
DUCK CLUB 12W-20-12C - XOG PR Well - Actual Integr						Out of range
DUCK CLUB 12W-20-1C - XOG PR Well - Actual XOG S						Out of range
DUCK CLUB 12W-20-2N - XOG PR Well - Actual Integr						Out of range
DUCK CLUB 12W-20-3N - XOG PR Well - Actual Integr						Out of range
DUCK CLUB 12W-20-4N - XOG PR Well - Actual Integr						Out of range
DUCK CLUB 12W-20-5C - XOG PR Well - Actual Integr						Out of range
DUCK CLUB 12W-20-6N - XOG PR Well - Actual Integr						Out of range
DUCK CLUB 12W-20-7N - XOG PR Well - Actual Integr						Out of range
DUCK CLUB 12W-20-8C - XOG PR Well - Actual Integr						Out of range
DUCK CLUB 12W-20-9N - XOG PR Well - Actual Integr						Out of range

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Reference Design:	Design #3	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB = 24' @ 5065.00usft (RIG)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: COUNTY LINE 3107-07H
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.51°



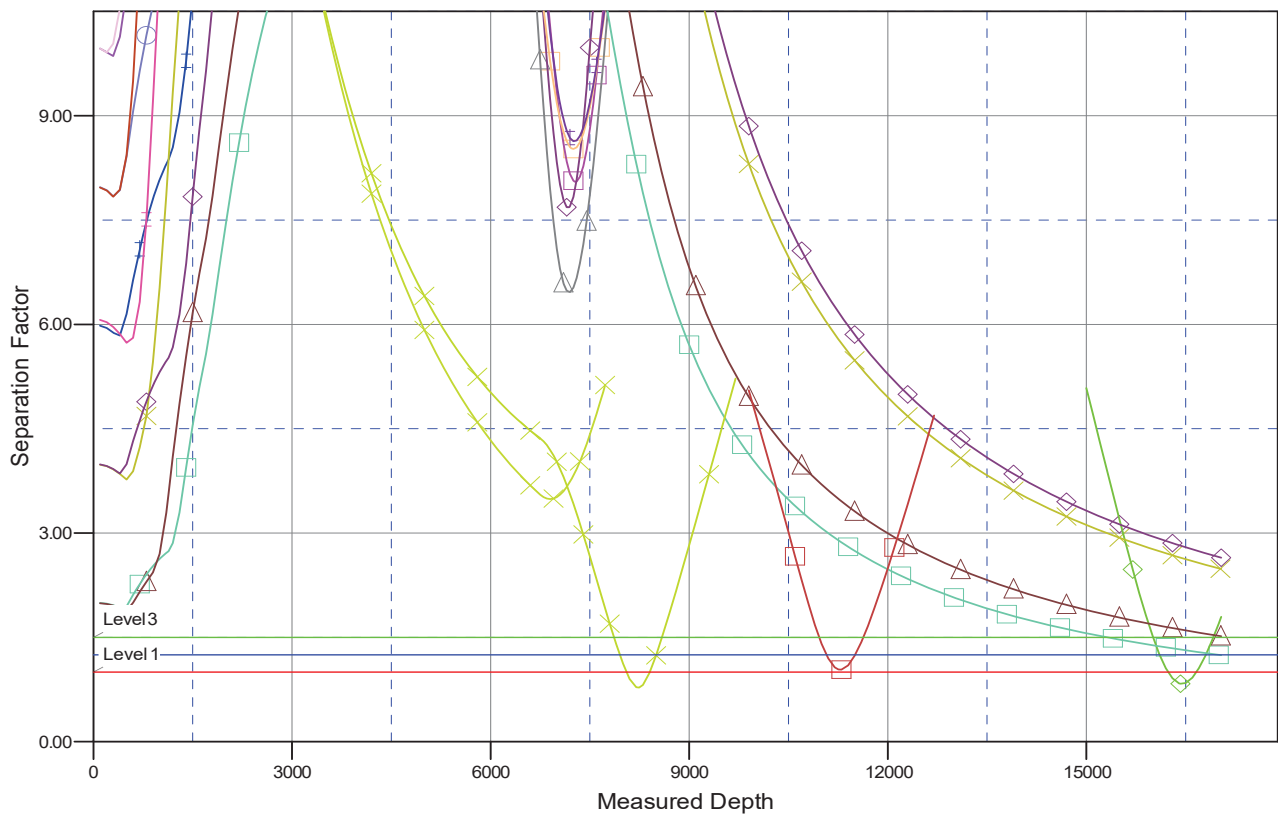
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Coordinates are relative to: COUNTY LINE 3107-07H
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.51°

Separation Factor Plot



LEGEND

COUNTY LINE 3112-04H, Wellbore #1, Design #3 V0	Walla #5-9-3L, Confluence Planned Well, Planned Pro Directional Surveys V0	Lochbuie 2H-31H, CPR PR Well Actual Cathedral Surveys V0
COUNTY LINE 3112-01H, Wellbore #1, Design #3 V0	ADAM TEN 1-A, CPR P&A Well, No Surveys V0	COUNTY LINE 3107-12H, Wellbore #1, Design #3 V0
COUNTY LINE 3112-03H, Wellbore #1, Design #3 V0	Walla #5-9-1L, Confluence Planned Well, Planned Pro Directional Surveys (Grid to True) V0	COUNTY LINE 3107-06H, Wellbore #1, Design #3 V0
COUNTY LINE 3112-02H, Wellbore #1, Design #3 V0	Lochbuie 2E-31H, CPR PR Well Actual Cathedral Surveys V0	COUNTY LINE 3107-09H, Wellbore #1, Design #3 V0
COUNTY LINE 3130-06H, Wellbore #1, Design #3 V0	Lochbuie 2B-31H, CPR PR Well Actual Cathedral Surveys V0	COUNTY LINE 3107-11H, Wellbore #1, Design #3 V0
COUNTY LINE 3130-05H, Wellbore #1, Design #3 V0	Walla #5-10-4L, Confluence Planned Well, Planned Pro Directional Surveys (Grid to True) V0	COUNTY LINE 3107-08H, Wellbore #1, Design #3 V0
COUNTY LINE 3130-04H, Wellbore #1, Design #3 V0	Walla #5-10-2L, Confluence Planned Well, Planned Pro Directional Surveys V0	COUNTY LINE 3107-10H, Wellbore #1, Design #3 V0
COUNTY LINE 3130-03H, Wellbore #1, Design #3 V0	Lochbuie 2C-31H, CPR PR Well Actual Cathedral Surveys V0	COUNTY LINE 3107-05H, Wellbore #1, Design #3 V0
COUNTY LINE 3130-02H, Wellbore #1, Design #3 V0	Walla #5-8-4L, Confluence Planned Well, Planned Pro Directional Surveys V0	MILE-HI DUCK CLUB-PASCOE #1, VESSELS P/A Well, No Surveys V0
COUNTY LINE 3130-01H, Wellbore #1, Design #3 V0	EPPINGER 1, CPR P&A Well, No Surveys V0	HSR-MILE HIGH #6-6, HS Resources P/A Well, No Surveys V0
GREEN #1, Verdad PR Well, No Surveys V0	Lochbuie 2G-31H, CPR PR Well Actual Cathedral Surveys V0	
Lochbuie 2D-31H, CPR PR Well Actual Cathedral Surveys V0	Lochbuie 2F-31H, CPR PR Well Actual Cathedral Surveys V0	