VERDAD RESOURCES

WATTENBERG FIELD
8N-60W-11 SONIC STAR 1101 PAD
SONIC STAR 1101-07H

Plan B
Design #1

Anticollision Summary Report

09 November, 2020

HP

Anticollision Summary Report

Company:	VERDAD RESOURCES	**Local Co-ordinate Reference:**	Well SONIC STAR 1101-07H
Project:	WATTENBERG FIELD	**TVD Reference:**	RKB = 16' @ 4897.00usft (RIG)
Reference Site:	8N-60W-11 SONIC STAR 1101 PAD	**MD Reference:**	RKB = 16' @ 4897.00usft (RIG)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	SONIC STAR 1101-07H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.28 usft	**Output errors are at**	2.45 sigma
Reference Wellbore	Plan B	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Reference	Design #1		
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** 11/9/2020

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	1,500.00	Design #1 (Plan B)	ISCWSA MWD	Fixed:v2:standard declination
1,500.00	15,037.39	Design #1 (Plan B)	ISCWSA 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
8N-60W-11 SONIC STAR 1101 PAD						
SONIC STAR 1101-01H - Plan B - Design #1	200.00	198.00	45.04	37.47	5.951	CC, ES, SF
SONIC STAR 1101-03H - Plan B - Design #1	203.52	202.52	30.03	22.46	3.966	CC, ES
SONIC STAR 1101-03H - Plan B - Design #1	14,998.90	14,419.93	1,338.98	972.14	3.650	SF
SONIC STAR 1101-05H - Plan B - Design #1	200.80	199.80	15.02	7.45	1.984	CC
SONIC STAR 1101-05H - Plan B - Design #1	260.00	258.96	15.04	7.42	1.975	ES
SONIC STAR 1101-05H - Plan B - Design #1	15,000.09	14,583.83	691.32	336.35	1.948	SF
SONIC STAR 1101-09H - Plan B - Design #1	260.00	260.00	15.01	7.40	1.971	CC, ES
SONIC STAR 1101-09H - Plan B - Design #1	1,800.00	1,803.49	35.84	14.32	1.665	SF
SONIC STAR 1101-11H - Plan B - Design #1	260.00	260.00	29.99	22.37	3.937	CC, ES
SONIC STAR 1101-11H - Plan B - Design #1	2,000.00	2,005.35	74.01	48.96	2.954	SF
SONIC STAR 1101-13H - Plan B - Design #1	260.00	261.00	45.00	37.38	5.907	CC, ES
SONIC STAR 1101-13H - Plan B - Design #1	1,900.00	1,903.88	96.61	73.28	4.140	SF
SONIC STAR 1101-16H - Plan B - Design #1	307.10	308.36	59.87	52.21	7.815	CC, ES
SONIC STAR 1101-16H - Plan B - Design #1	1,600.00	1,596.22	104.64	85.42	5.444	SF
8N-60W-12 Offsets						
COLORADO NATIONAL BANK #1 - Shell P&A Well - No						Out of range

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Reference Well:	SONIC STAR 1101-07H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.28 usft	**Output errors are at**	2.45 sigma
Reference Wellbore	Plan B	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

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
8N-60W-14 Offsets						
BOOMSLANG FED 8-60 14A-13-18-1 - Bison Planned W	6,597.87	8,422.76	83.89	-60.35	0.582	Level 1, CC
BOOMSLANG FED 8-60 14A-13-18-1 - Bison Planned W	6,600.00	8,423.59	83.91	-61.72	0.576	Level 1, ES, SF
BOOMSLANG FED 8-60 14A-13-18-10 - Bison Planned W						Out of range
BOOMSLANG FED 8-60 14A-13-18-2 - Bison PR Well - A	6,720.28	8,602.16	200.09	106.03	2.127	CC
BOOMSLANG FED 8-60 14A-13-18-2 - Bison PR Well - A	6,750.00	8,612.69	202.68	101.88	2.011	ES, SF
BOOMSLANG FED 8-60 14A-13-18-3 - Bison PR Well - A	6,508.55	8,486.45	715.24	612.23	6.943	CC, ES
BOOMSLANG FED 8-60 14A-13-18-3 - Bison PR Well - A	6,600.00	8,524.16	726.54	619.80	6.807	SF
BOOMSLANG FED 8-60 14A-13-18-4 - Bison PR Well - A	6,476.39	8,490.55	1,349.68	1,245.88	13.004	CC
BOOMSLANG FED 8-60 14A-13-18-4 - Bison PR Well - A	6,500.00	8,502.39	1,350.28	1,245.79	12.923	ES
BOOMSLANG FED 8-60 14A-13-18-4 - Bison PR Well - A	6,600.00	8,535.09	1,366.21	1,259.10	12.755	SF
BOOMSLANG FED 8-60 14A-13-18-5 - Bison Planned W	6,467.53	8,119.65	1,131.38	984.88	7.723	CC
BOOMSLANG FED 8-60 14A-13-18-5 - Bison Planned W	6,500.00	8,133.07	1,132.59	984.61	7.653	ES
BOOMSLANG FED 8-60 14A-13-18-5 - Bison Planned W	6,600.00	8,173.29	1,151.36	999.46	7.580	SF
BOOMSLANG FED 8-60 14A-13-18-6 - Bison Planned W	6,509.78	8,312.63	1,355.18	1,211.42	9.427	CC
BOOMSLANG FED 8-60 14A-13-18-6 - Bison Planned W	6,550.00	8,328.97	1,356.94	1,211.26	9.315	ES
BOOMSLANG FED 8-60 14A-13-18-6 - Bison Planned W	6,650.00	8,368.12	1,376.40	1,226.47	9.180	SF
BOOMSLANG FED 8-60 14A-13-18-7 - Bison Planned W	6,417.45	8,013.19	1,493.46	1,346.75	10.180	CC, ES
BOOMSLANG FED 8-60 14A-13-18-7 - Bison Planned W	6,450.00	8,026.80	1,494.58	1,346.77	10.112	SF
BOOMSLANG FED 8-60 14A-13-18-8 - Bison Planned W						Out of range
BOOMSLANG FED 8-60 14A-13-18-9 - Bison Planned W						Out of range
HNIZDIL #1-14 - Gemini D/A Well - No Surveys						Out of range
Schneider 1-14-8-60 - Verdad PR Well - Actual Precision						Out of range
Schneider 2-14-8-60 - Verdad PR Well - Actual Precision						Out of range
8N-60W-14 SCHNEIDER 1414 PAD						
SCHNEIDER 1414-01H - Wellbore #1 - Design #1						Out of range
SCHNEIDER 1414-02H - Wellbore #1 - Design #1						Out of range
SCHNEIDER 1414-03H - Wellbore #1 - Design #3						Out of range
SCHNEIDER 1414-04H - Wellbore #1 - Design #2						Out of range
SCHNEIDER 1414-05H - Wellbore #1 - Design #2						Out of range
SCHNEIDER 1414-06H - Wellbore #1 - Design #2						Out of range
SCHNEIDER 1414-07H - Wellbore #1 - Design #3						Out of range
SCHNEIDER 1414-08H - Wellbore #1 - Design #2						Out of range
SCHNEIDER 1414-09H - Wellbore #1 - Design #2						Out of range
SCHNEIDER 1414-10H - Wellbore #1 - Design #3						Out of range
SCHNEIDER 1414-11H - Wellbore #1 - Design #2						Out of range
SCHNEIDER 1414-12H - Wellbore #1 - Design #2						Out of range
9N-59W-30 MARTIN FED PAD						
MARTIN 3030 01H - Wellbore #1 - Design #1						Out of range
MARTIN 3030 02H - Wellbore #1 - Design #1						Out of range
MARTIN 3030 03H - Wellbore #1 - Design #1						Out of range
MARTIN FED 3031 01H - Wellbore #1 - Design #2						Out of range
MARTIN FED 3031 02H - Wellbore #1 - Design #2						Out of range
MARTIN FED 3031 03H - Wellbore #1 - Design #2						Out of range
MARTIN FED 3031 04H - Wellbore #1 - Design #2						Out of range

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Reference Site:	8N-60W-11 SONIC STAR 1101 PAD	**MD Reference:**	RKB = 16' @ 4897.00usft (RIG)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	SONIC STAR 1101-07H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.28 usft	**Output errors are at**	2.45 sigma
Reference Wellbore	Plan B	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

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
9N-59W-31 Offsets						
AF 1 - Mallard Planned Well - Planned Surveys						Out of range
AF 2 - Mallard Planned Well - Planned MWD Surveys						Out of range
ANDERSEN FED 6-5-1HN - Mallard Planned Well - Plan						Out of range
ANDERSEN FED 6-5-2HN - Mallard Planned Well - Plan						Out of range
ANDERSON FED 6-5-10HN - Mallard Planned Well - Pla						Out of range
ANDERSON FED 6-5-3HC - Mallard Planned Well - Plan						Out of range
ANDERSON FED 6-5-4HN - Mallard Planned Well - Plan						Out of range
ANDERSON FED 6-5-5HN - Mallard Planned Well - Plan						Out of range
ANDERSON FED 6-5-6HN - Mallard Planned Well - Plan						Out of range
ANDERSON FED 6-5-7HN - Mallard Planned Well - Plan						Out of range
ANDERSON FED 6-5-8HC - Mallard Planned Well - Plan						Out of range
ANDERSON FED 6-5-9HN - Mallard Planned Well - Plan						Out of range
RAINBOW-SHULL #1 - Toltek D/A Well - No Surveys						Out of range
SHULL FED 31-32-10HN - Mallard Planned Well - Planne						Out of range
SHULL FED 31-32-1HN - Mallard PR Well - Actual Mallar						Out of range
SHULL FED 31-32-2HC - Mallard PR Well - Actual Mallar						Out of range
SHULL FED 31-32-3HN - Mallard Planned Well (Now Pro						Out of range
SHULL FED 31-32-4HN - Mallard Planned Well (Now PR						Out of range
SHULL FED 31-32-5HN - Mallard Planned Well - Planned						Out of range
SHULL FED 31-32-6HN - Mallard Planned Well - Planned						Out of range
SHULL FED 31-32-7HN - Mallard Planned Well - Planned						Out of range
SHULL FED 31-32-8HC - Mallard Planned Well - Planned						Out of range
SHULL FED 31-32-9HN - Mallard Planned Well - Planned						Out of range
Shull Fed-9-59-31-0508CDE - Mallard Planned Well - Pla						Out of range
Shull Fed-9-59-31-1209AE - Mallard Planned Well - Plan						Out of range
Shull Fed-9-59-31-2124BE - Mallard Planned Well - Plan						Out of range
Shull Fed-9-59-31-2124CE2 - Mallard Planned Well - Pla						Out of range
9N-60W-25 PEGGY 2501 PAD						
PEGGY 2501-01H - Verdad SI Well - Actual Baker Surve						Out of range
PEGGY 2501-02H - Verdad PR Well - Actual Baker Surve						Out of range
PEGGY 2501-04H - Wellbore #2 - Design #1						Out of range
PEGGY 2501-06H - Wellbore #2 - Design #1	15,037.39	14,238.85	1,079.78	703.15	2.867	CC, ES, SF
PEGGY 2501-08H - Wellbore #2 - Design #1	15,037.39	14,399.40	448.84	73.72	1.197	Level 2, CC, ES, SF
PEGGY 2501-10H - Wellbore #2 - Design #1	15,037.39	14,235.97	329.24	82.70	1.335	Level 3, CC, ES, SF
PEGGY 2501-12H - Wellbore #2 - Design #1	15,037.39	14,306.14	867.31	504.81	2.393	CC, ES, SF
PEGGY 2501-14H - Wellbore #2 - Design #1	15,037.39	14,647.68	1,460.51	1,084.08	3.880	CC, ES, SF
PEGGY 2501-16H - Wellbore #2 - Design #1						Out of range

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Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	SONIC STAR 1101-07H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.28 usft	**Output errors are at**	2.45 sigma
Reference Wellbore	Plan B	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

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
9N-60W-25 PEGGY 2525 PAD						
PEGGY 2525-01H - Wellbore #1 - Design #2						Out of range
PEGGY 2525-02H - Wellbore #1 - Design #2						Out of range
PEGGY 2525-03H - Wellbore #1 - Design #2						Out of range
PEGGY 2525-04H - Wellbore #1 - Design #2						Out of range
PEGGY 2525-05H - Wellbore #1 - Design #2						Out of range
PEGGY 2525-06H - Wellbore #1 - Design #2						Out of range
PEGGY 2525-07H - Wellbore #1 - Design #2						Out of range
9N-60W-35 Offsets Incomplete						
PINTAIL FED 2-11-8HN - Mallard Planned Well - Planned						Out of range
PINTAIL FED 2-11-9HN - Mallard Planned Well - Planned						Out of range
Shull 1-35-9-60 - Carrizo PR Well - Actual Precision Surv						Out of range
Shull 2-35-9-60 - Verdad PR Well - Actual Precision Surv						Out of range
Shull 3-35-9-60 - Verdad PR Well - Actual Precision Surv						Out of range

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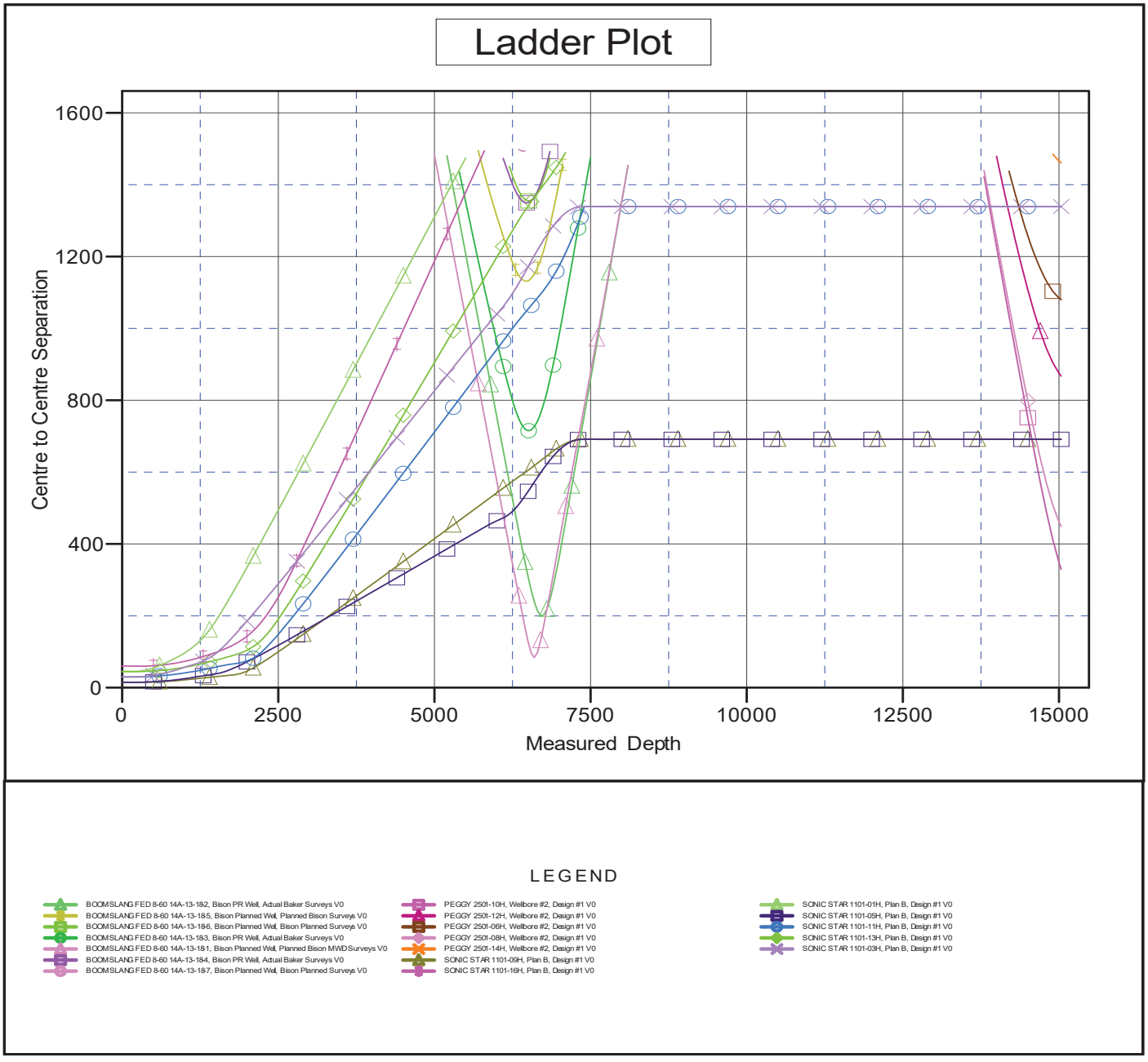
Reference Well:	SONIC STAR 1101-07H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.28 usft	**Output errors are at**	2.45 sigma
Reference Wellbore	Plan B	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to RKB = 16' @ 4897.00usft (RIG)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: SONIC STAR 1101-07H
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.94°



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Reference Well:	SONIC STAR 1101-07H	**Survey Calculation Method:**	Minimum Curvature
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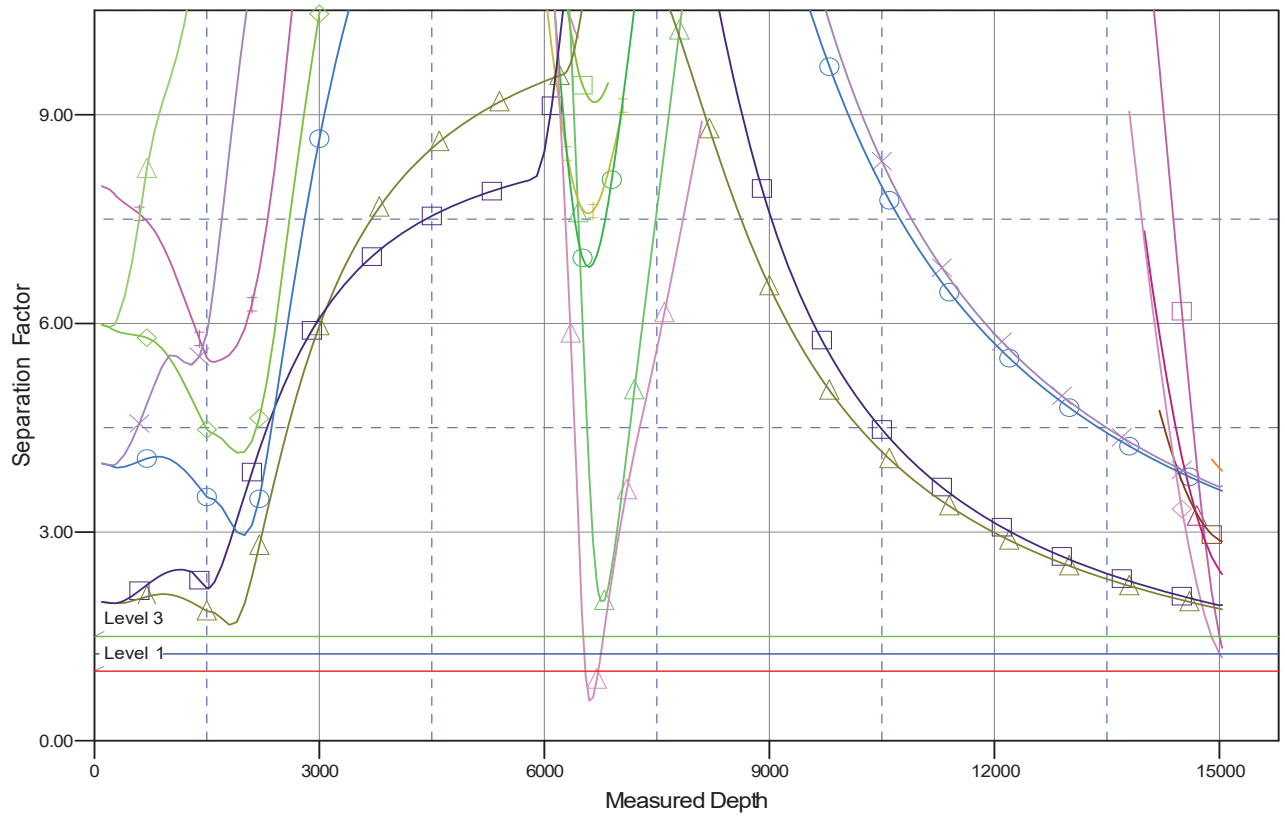
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to RKB = 16' @ 4897.00usft (RIG)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: SONIC STAR 1101-07H
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.94°

Separation Factor Plot



LEGEND

BOOMSLANG FED 8-60 14A-13-182, Bison PR Well, Actual Baker Surveys V0
BOOMSLANG FED 8-60 14A-13-185, Bison Planned Well, Planned Bison Surveys V0
BOOMSLANG FED 8-60 14A-13-186, Bison Planned Well, Bison Planned Surveys V0
BOOMSLANG FED 8-60 14A-13-183, Bison PR Well, Actual Baker Surveys V0
BOOMSLANG FED 8-60 14A-13-181, Bison Planned Well, Planned Bison MWD Surveys V0
BOOMSLANG FED 8-60 14A-13-184, Bison PR Well, Actual Baker Surveys V0
BOOMSLANG FED 8-60 14A-13-187, Bison Planned Well, Bison Planned Surveys V0
PEGGY 250I-10H, Wellbore #2, Design #1 V0
PEGGY 250I-12H, Wellbore #2, Design #1 V0
PEGGY 250I-06H, Wellbore #2, Design #1 V0
PEGGY 250I-08H, Wellbore #2, Design #1 V0
PEGGY 250I-14H, Wellbore #2, Design #1 V0
SONIC STAR 1101-09H, Plan B, Design #1 V0
SONIC STAR 1101-16H, Plan B, Design #1 V0
SONIC STAR 1101-01H, Plan B, Design #1 V0
SONIC STAR 1101-05H, Plan B, Design #1 V0
SONIC STAR 1101-11H, Plan B, Design #1 V0
SONIC STAR 1101-13H, Plan B, Design #1 V0
SONIC STAR 1101-03H, Plan B, Design #1 V0