

VERDAD RESOURCES

**WATTENBERG FIELD
2N-64W-24 ARNOLD-HELEN PAD
HELEN 2536-08H**

**Plan B
Design #2**

Anticollision Summary Report

17 December, 2021

Anticollision Summary Report

Company:	VERDAD RESOURCES	Local Co-ordinate Reference:	Well HELEN 2536-08H
Project:	WATTENBERG FIELD	TVD Reference:	RKB = 20' @ 4945.00usft (Drilling Rig)
Reference Site:	2N-64W-24 ARNOLD-HELEN PAD	MD Reference:	RKB = 20' @ 4945.00usft (Drilling Rig)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	HELEN 2536-08H	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 #2	Offset TVD Reference:	Offset Datum

Reference	Design #2		
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	12/17/2021		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	1,908.00	Design #2 (Plan B)	ISCWSA MWD	Fixed:v2:standard declination	
1,908.00	17,091.54	Design #2 (Plan B)	ISCWSA MWD	Fixed:v2:standard declination	

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						
2N-63W-19 KBL PAD						
KBL 1930-07H - Wellbore #1 - Design #1						Out of range
2N-64W-13 L.E. GERKIN PAD (RED HAWK)						
L.E. GERKIN 10H - Red Hawk Planned Well - Cathedral	6,650.00	16,489.70	574.15	418.54	3.690	SF
L.E. GERKIN 10H - Red Hawk Planned Well - Cathedral	6,700.00	16,489.70	568.36	415.05	3.707	ES
L.E. GERKIN 10H - Red Hawk Planned Well - Cathedral	6,712.22	16,489.70	568.13	415.60	3.725	CC
L.E. GERKIN 11H - Red Hawk Planned Well - Cathedral	6,700.00	16,457.40	777.49	563.54	3.634	SF
L.E. GERKIN 11H - Red Hawk Planned Well - Cathedral	6,728.33	16,457.40	776.56	563.18	3.639	CC, ES
L.E. GERKIN 12H - Red Hawk Planned Well - Cathedral	6,745.09	16,446.50	1,033.58	794.32	4.320	CC, ES, SF
L.E. GERKIN 13H - Red Hawk Planned Well - Cathedral	6,760.28	16,448.80	1,313.86	1,062.69	5.231	CC, ES, SF
L.E. GERKIN 14H - Red Hawk Planned Well - Cathedral						Out of range
L.E. GERKIN 15H - Red Hawk Planned Well - Cathedral						Out of range
L.E. GERKIN 9H - Red Hawk Planned Well - Cathedral P	6,550.00	16,541.50	517.30	428.45	5.822	SF
L.E. GERKIN 9H - Red Hawk Planned Well - Cathedral P	6,650.00	16,541.50	484.05	403.13	5.982	ES
L.E. GERKIN 9H - Red Hawk Planned Well - Cathedral P	6,695.38	16,541.50	480.31	403.39	6.244	CC
2N-64W-13 Offsets						
ARNOLD #1 - Barrett Resources P/A Well - No Surveys						Out of range
DARYL L ARNOLD #1 - Amoco D/A Well - No Surveys						Out of range

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Reference Wellbore	Plan B	Database:	EDM 5000.16 Single User Db
Reference Design:	Design #2	Offset TVD Reference:	Offset Datum

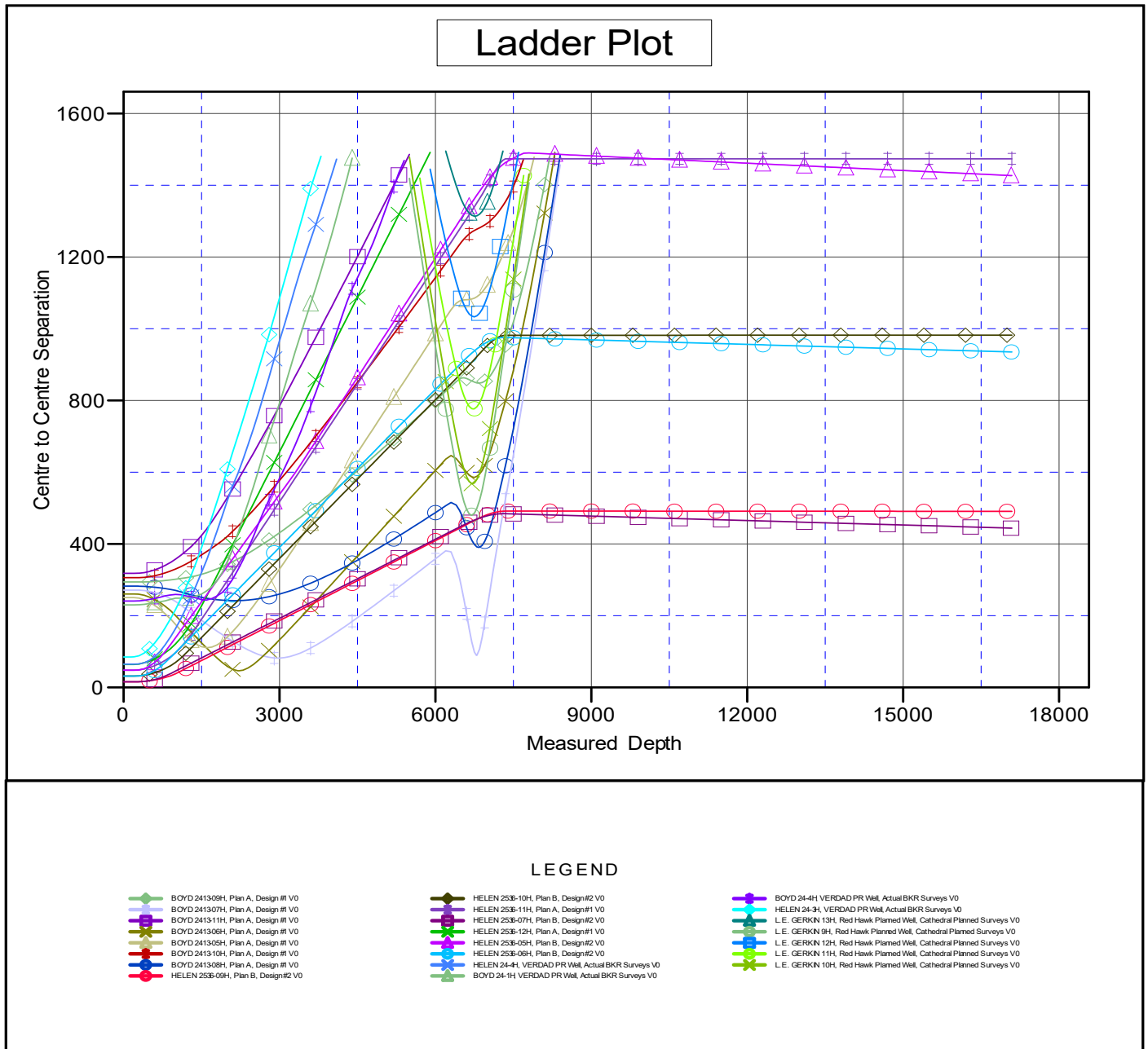
Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
2N-64W-24 ARNOLD-BOYD PAD						
BOYD 2413-05H - Plan A - Design #1	1,611.27	1,652.52	111.03	97.00	7.918	CC, ES
BOYD 2413-05H - Plan A - Design #1	1,900.00	1,933.96	128.39	109.85	6.922	SF
BOYD 2413-06H - Plan A - Design #1	2,222.78	2,258.19	46.59	29.41	2.712	CC
BOYD 2413-06H - Plan A - Design #1	2,300.00	2,334.42	48.20	28.85	2.491	ES
BOYD 2413-06H - Plan A - Design #1	2,400.00	2,433.14	54.51	32.58	2.486	SF
BOYD 2413-07H - Plan A - Design #1	2,965.16	2,993.96	81.84	57.37	3.345	CC
BOYD 2413-07H - Plan A - Design #1	6,791.16	6,929.55	89.54	21.83	1.322	Level 3, ES, SF
BOYD 2413-08H - Plan A - Design #1	2,124.25	2,143.34	242.03	219.64	10.809	CC
BOYD 2413-08H - Plan A - Design #1	2,200.00	2,218.63	242.18	219.33	10.599	ES
BOYD 2413-08H - Plan A - Design #1	6,900.00	6,923.79	396.40	325.52	5.593	SF
BOYD 2413-09H - Plan A - Design #1	333.34	333.40	294.21	286.52	38.293	CC, ES
BOYD 2413-09H - Plan A - Design #1	7,250.00	6,850.00	920.40	838.41	11.225	SF
BOYD 2413-10H - Plan A - Design #1	200.00	199.00	306.27	298.70	40.468	CC
BOYD 2413-10H - Plan A - Design #1	282.00	280.44	306.33	298.69	40.133	ES
BOYD 2413-10H - Plan A - Design #1	7,600.00	6,771.98	1,432.53	1,336.61	14.935	SF
BOYD 2413-11H - Plan A - Design #1	200.00	198.00	318.36	310.80	42.067	CC, ES
BOYD 2413-11H - Plan A - Design #1	2,000.00	1,909.63	529.70	508.26	24.704	SF
2N-64W-24 ARNOLD-HELEN PAD						
HELEN 2536-05H - Plan B - Design #2	200.00	199.00	48.10	40.53	6.356	CC, ES
HELEN 2536-05H - Plan B - Design #2	17,091.54	17,088.21	1,427.21	894.18	2.678	SF
HELEN 2536-06H - Plan B - Design #2	200.00	200.00	31.88	24.31	4.212	CC, ES
HELEN 2536-06H - Plan B - Design #2	17,091.54	17,056.54	935.34	400.91	1.750	SF
HELEN 2536-07H - Plan B - Design #2	282.00	282.00	15.94	8.30	2.087	CC
HELEN 2536-07H - Plan B - Design #2	17,091.54	17,058.69	444.30	-90.53	0.831	Level 1, ES, SF
HELEN 2536-09H - Plan B - Design #2	205.85	204.85	15.94	8.37	2.105	CC
HELEN 2536-09H - Plan B - Design #2	17,091.54	17,155.93	491.02	-43.76	0.918	Level 1, ES, SF
HELEN 2536-10H - Plan B - Design #2	202.83	201.83	31.88	24.31	4.211	CC, ES
HELEN 2536-10H - Plan B - Design #2	17,091.54	17,254.30	982.04	447.10	1.836	SF
HELEN 2536-11H - Plan A - Design #1	200.00	199.00	48.10	40.53	6.356	CC, ES
HELEN 2536-11H - Plan A - Design #1	17,091.54	17,386.81	1,473.90	938.66	2.754	SF
HELEN 2536-12H - Plan A - Design #1	200.00	199.00	64.04	56.47	8.462	CC, ES, SF
2N-64W-24 Offsets						
BOYD 24-1H - VERDAD PR Well - Actual BKR Surveys	0.00	2.00	230.20			
BOYD 24-1H - VERDAD PR Well - Actual BKR Surveys	1,800.00	1,825.77	297.73	281.68	18.544	SF
BOYD 24-4H - VERDAD PR Well - Actual BKR Surveys	0.00	2.00	240.85			
BOYD 24-4H - VERDAD PR Well - Actual BKR Surveys	1,600.00	1,653.88	243.93	230.86	18.668	ES
BOYD 24-4H - VERDAD PR Well - Actual BKR Surveys	2,000.00	2,029.96	280.68	263.76	16.592	SF
HELEN 24-3H - VERDAD PR Well - Actual BKR Surveys	145.04	143.00	84.99	77.44	11.257	CC, ES, SF
HELEN 24-4H - VERDAD PR Well - Actual BKR Surveys	100.00	96.94	64.92	57.38	8.618	CC, ES
HELEN 24-4H - VERDAD PR Well - Actual BKR Surveys	282.00	278.35	65.42	57.77	8.544	SF
MCCLINTOCK ET AL #1 - JUNIPER D/A Well - No Surve						Out of range
2N-64W-36 Offsets						
STATE C 14-36 - Noble Energy T/A Well - No Surveys						Out of range
STATE C 41-36 - Prima Exploration P/A Well - No Survey						Out of range

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Reference Design:	Design #2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB = 20' @ 4945.00usft (Drilling Rig)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: HELEN 2536-08H
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.65°



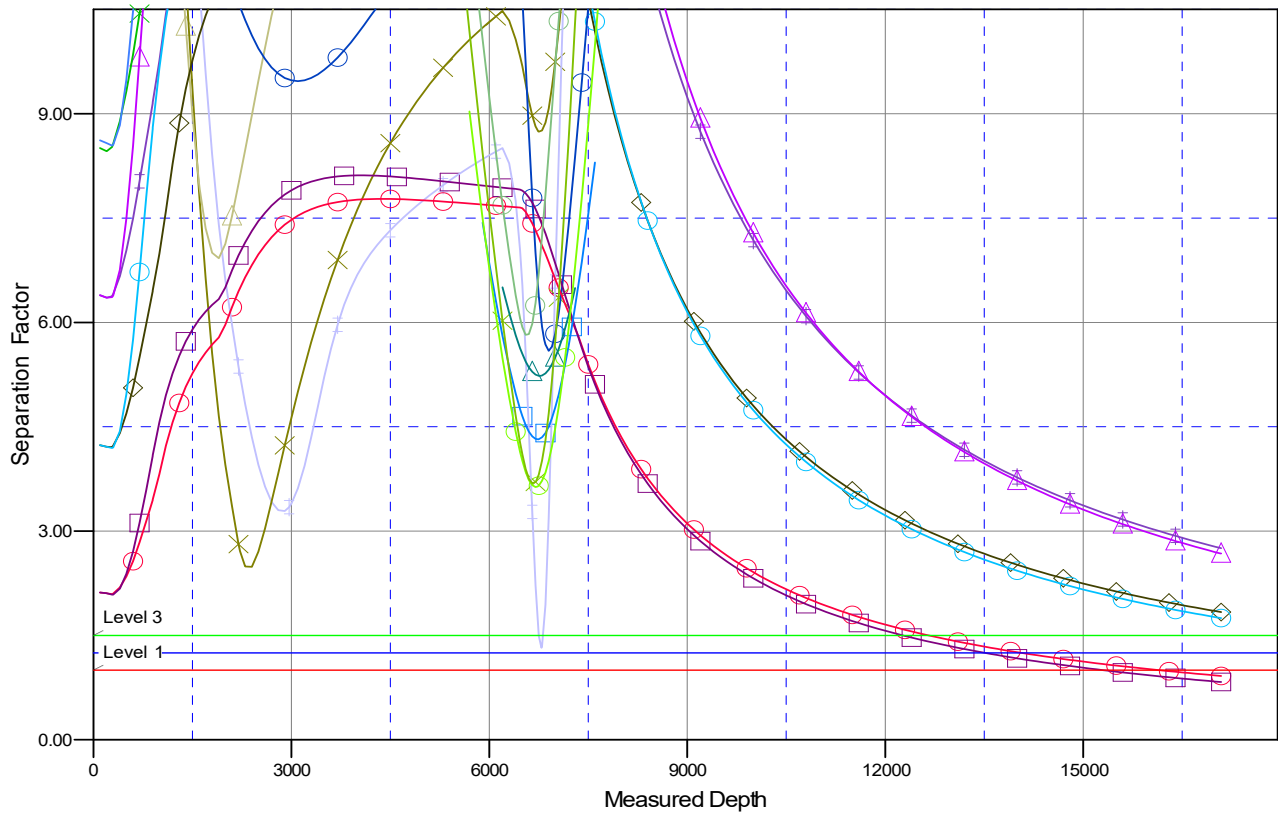
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Separation Factor Plot



LEGEND

BOYD 241308H, Plan A, Design #1 V0	HELEN 2536-10H, Plan B, Design#2 V0	BOYD 24-4H VERDAD PR Well, Actual BKR Surveys V0
BOYD 241307H, Plan A, Design #1 V0	HELEN 2536-11H, Plan A, Design#1 V0	HELEN 24-3H, VERDAD PR Well, Actual BKR Surveys V0
BOYD 241311H, Plan A, Design #1 V0	HELEN 2536-07H, Plan B, Design#2 V0	L.E. GERKIN 13H, Red Hawk Planned Well, Cathedral Planned Surveys V0
BOYD 241308H, Plan A, Design #1 V0	HELEN 2536-12H, Plan A, Design#1 V0	L.E. GERKIN 9H, Red Hawk Planned Well, Cathedral Planned Surveys V0
BOYD 241305H, Plan A, Design #1 V0	HELEN 2536-09H, Plan B, Design#2 V0	L.E. GERKIN 12H, Red Hawk Planned Well, Cathedral Planned Surveys V0
BOYD 241310H, Plan A, Design #1 V0	HELEN 2536-06H, Plan B, Design#2 V0	L.E. GERKIN 11H, Red Hawk Planned Well, Cathedral Planned Surveys V0
BOYD 241308H, Plan A, Design #1 V0	HELEN 24-4H, VERDAD PR Well, Actual BKR Surveys V0	L.E. GERKIN 10H, Red Hawk Planned Well, Cathedral Planned Surveys V0
HELEN 2536-09H, Plan B, Design#2 V0	BOYD 24-1H VERDAD PR Well, Actual BKR Surveys V0	