

# **VERDAD RESOURCES**

**WATTENBERG FIELD  
2N-64W-24 ARNOLD-BOYD PAD  
BOYD 2413-05H**

**Plan A  
Design #1**

## **Anticollision Summary Report**

**11 March, 2022**

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<b>Company:</b>	VERDAD RESOURCES	<b>Local Co-ordinate Reference:</b>	Well BOYD 2413-05H
<b>Project:</b>	WATTENBERG FIELD	<b>TVD Reference:</b>	RKB = 20' @ 4944.00usft (Drilling Rig)
<b>Reference Site:</b>	2N-64W-24 ARNOLD-BOYD PAD	<b>MD Reference:</b>	RKB = 20' @ 4944.00usft (Drilling Rig)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	BOYD 2413-05H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	3.28 usft	<b>Output errors are at</b>	2.45 sigma
<b>Reference Wellbore</b>	Plan A	<b>Database:</b>	EDM 5000.16 Single User Db
<b>Reference Design:</b>	Design #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Design #1		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum centre distance of 1,500.00usft	<b>Error Surface:</b>	Pedal Curve
<b>Warning Levels Evaluated at:</b>	2.45 Sigma	<b>Casing Method:</b>	Added to Error Values

<b>Survey Tool Program</b>	<b>Date</b>	3/11/2022			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
0.00	1,934.00	Design #1 (Plan A)	ISCWSA MWD	Fixed:v2:standard declination	
1,934.00	17,118.54	Design #1 (Plan A)	ISCWSA MWD	Fixed:v2:standard declination	

<b>Summary</b>						
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
2N-64W-13 L.E. GERKIN PAD						
L.E. GERKIN 10H - Plan A - Design #1	8,159.35	16,338.47	266.15	23.57	1.097	Level 2, CC, ES, SF
L.E. GERKIN 10H - Plan A - VERDAD Existing Surface						Out of range
L.E. GERKIN 11H - Plan A - Design #2	8,200.00	16,176.57	774.99	530.15	3.165	ES, SF
L.E. GERKIN 11H - Plan A - Design #2	17,034.61	7,342.20	774.11	533.79	3.221	CC
L.E. GERKIN 11H - Plan A - VERDAD Existing Surface						Out of range
L.E. GERKIN 12H - Plan A - Design #1	8,200.00	16,100.68	1,291.01	1,046.10	5.271	ES, SF
L.E. GERKIN 12H - Plan A - Design #1	17,040.76	7,260.24	1,289.53	1,050.83	5.402	CC
L.E. GERKIN 12H - Plan A - VERDAD Existing Surface						Out of range
L.E. GERKIN 13H - Plan A - Design #1						Out of range
L.E. GERKIN 13H - Plan A - VERDAD Existing Surface						Out of range
L.E. GERKIN 14H - Plan A - Design #1						Out of range
L.E. GERKIN 14H - Plan A - VERDAD Existing Surface						Out of range
L.E. GERKIN 15H - Plan A - Design #1						Out of range
L.E. GERKIN 15H - Plan A - VERDAD Existing Surface						Out of range
L.E. GERKIN 9H - Plan A - Design #1	17,119.33	7,498.72	274.07	34.39	1.144	Level 2, CC, ES, SF
L.E. GERKIN 9H - Plan A - VERDAD Existing Surface						Out of range
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	16,480.61	6,759.00	65.06	-376.74	0.147	Level 1, CC, ES, SF
2N-64W-24 ARNOLD-BOYD PAD						
BOYD 2413-06H - Plan A - Design #1	200.75	200.75	15.94	8.37	2.106	CC, ES
BOYD 2413-06H - Plan A - Design #1	17,119.33	17,097.33	518.05	80.44	1.184	Level 2, SF
BOYD 2413-07H - Plan A - Design #1	200.75	200.75	31.88	24.31	4.212	CC, ES
BOYD 2413-07H - Plan A - Design #1	17,119.33	17,115.19	1,029.95	592.22	2.353	SF
BOYD 2413-08H - Plan A - Design #1	200.75	200.75	47.82	40.25	6.318	CC, ES, SF
BOYD 2413-09H - Plan A - Design #1	200.75	200.75	64.04	56.47	8.461	CC, ES, SF
BOYD 2413-10H - Plan A - Design #1	200.75	200.75	79.98	72.41	10.567	CC, ES, SF
BOYD 2413-11H - Plan A - Design #1	200.75	199.75	95.92	88.35	12.674	CC, ES, SF

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<b>Reference Design:</b>	Design #1	<b>Offset TVD Reference:</b>	Offset Datum

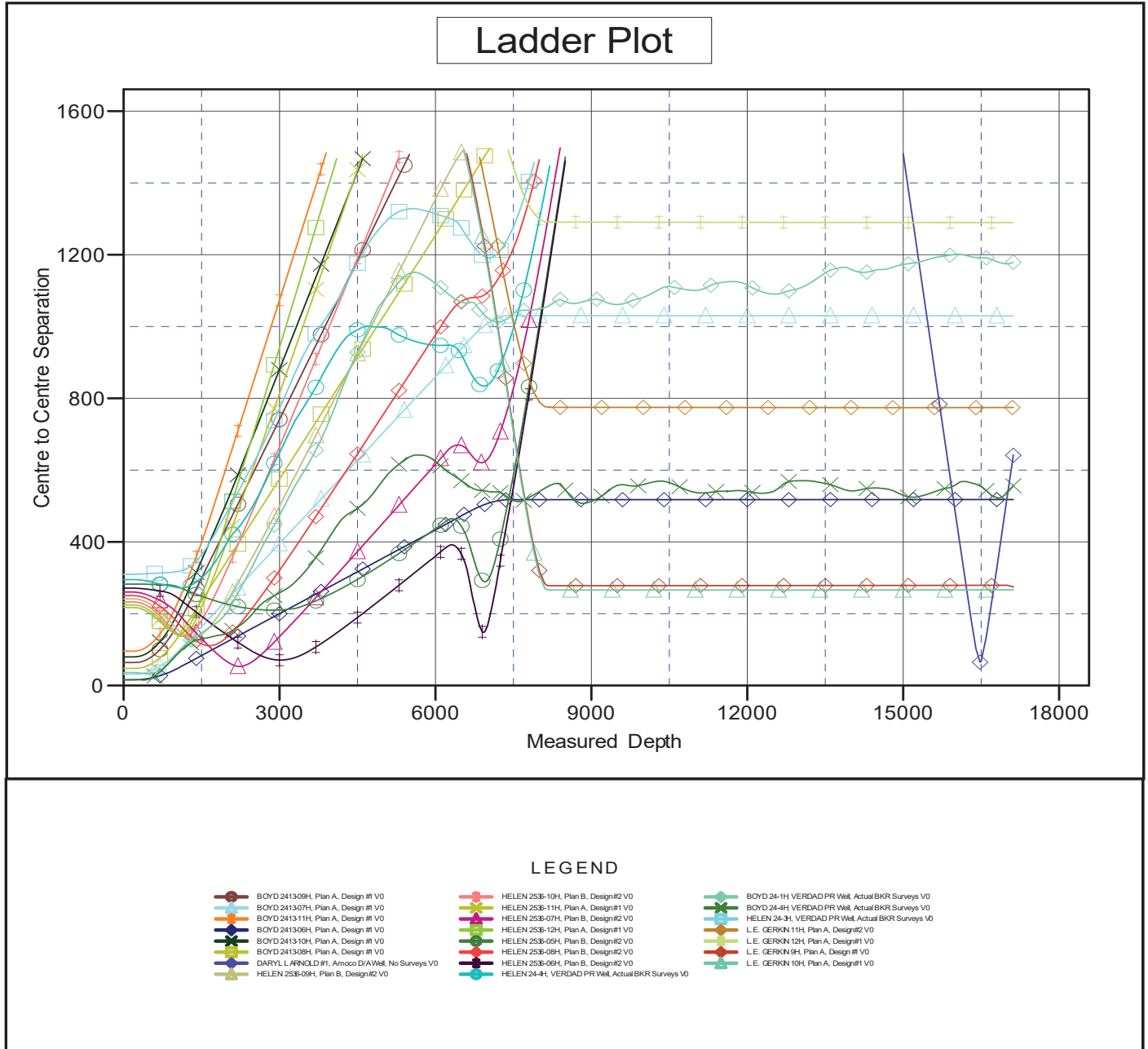
Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
2N-64W-24 ARNOLD-HELEN PAD						
HELEN 2536-05H - Plan B - Design #2	2,859.15	2,794.04	210.26	182.95	7.699	CC
HELEN 2536-05H - Plan B - Design #2	3,100.00	3,033.73	211.58	181.24	6.974	ES
HELEN 2536-05H - Plan B - Design #2	6,900.00	6,752.08	293.20	223.56	4.210	SF
HELEN 2536-06H - Plan B - Design #2	3,018.11	2,961.83	70.66	41.84	2.452	CC, ES
HELEN 2536-06H - Plan B - Design #2	6,950.00	6,769.82	149.65	82.27	2.221	SF
HELEN 2536-07H - Plan B - Design #2	2,234.28	2,187.31	53.31	34.37	2.814	CC
HELEN 2536-07H - Plan B - Design #2	2,300.00	2,252.15	54.37	33.82	2.646	ES, SF
HELEN 2536-08H - Plan B - Design #2	1,652.52	1,611.27	111.03	97.00	7.918	CC
HELEN 2536-08H - Plan B - Design #2	1,700.00	1,657.55	111.53	96.85	7.597	ES
HELEN 2536-08H - Plan B - Design #2	1,900.00	1,852.50	124.02	106.15	6.940	SF
HELEN 2536-09H - Plan B - Design #2	1,328.81	1,290.37	132.25	120.64	11.384	CC, ES
HELEN 2536-09H - Plan B - Design #2	1,600.00	1,550.02	153.66	139.11	10.558	SF
HELEN 2536-10H - Plan B - Design #2	1,167.83	1,130.70	135.90	125.27	12.786	CC, ES
HELEN 2536-10H - Plan B - Design #2	1,300.00	1,253.48	144.36	132.71	12.389	SF
HELEN 2536-11H - Plan A - Design #1	1,112.40	1,077.98	136.97	126.56	13.162	CC, ES
HELEN 2536-11H - Plan A - Design #1	1,200.00	1,155.89	141.74	130.76	12.898	SF
HELEN 2536-12H - Plan A - Design #1	1,064.17	1,031.39	141.37	131.19	13.883	CC
HELEN 2536-12H - Plan A - Design #1	1,067.75	1,034.57	141.38	131.18	13.854	ES
HELEN 2536-12H - Plan A - Design #1	1,100.00	1,063.20	142.15	131.75	13.663	SF
2N-64W-24 Offsets						
BOYD 24-1H - VERDAD PR Well - Actual BKR Surveys	470.13	472.87	32.92	25.01	4.163	CC, ES
BOYD 24-1H - VERDAD PR Well - Actual BKR Surveys	17,119.33	17,361.00	1,179.53	766.08	2.853	SF
BOYD 24-4H - VERDAD PR Well - Actual BKR Surveys	393.93	396.95	15.03	7.25	1.933	CC, ES
BOYD 24-4H - VERDAD PR Well - Actual BKR Surveys	16,900.00	17,086.07	524.41	124.66	1.312	Level 3, SF
HELEN 24-3H - VERDAD PR Well - Actual BKR Surveys	164.88	163.88	309.43	301.87	40.926	CC, ES
HELEN 24-3H - VERDAD PR Well - Actual BKR Surveys	6,700.00	6,878.76	1,230.86	1,157.09	16.686	SF
HELEN 24-4H - VERDAD PR Well - Actual BKR Surveys	1,117.66	1,048.26	271.59	261.32	26.445	CC, ES
HELEN 24-4H - VERDAD PR Well - Actual BKR Surveys	6,750.00	6,902.47	854.00	782.48	11.941	SF
MCCLINTOCK ET AL #1 - JUNIPER D/A Well - No Surve						Out of range

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Reference Depths are relative to RKB = 20' @ 4944.00usft (Drilling Rig)  
 Offset Depths are relative to Offset Datum  
 Central Meridian is -105.500000

Coordinates are relative to: BOYD 2413-05H  
 Coordinate System is US State Plane 1983, Colorado Northern Zone  
 Grid Convergence at Surface is: 0.65°



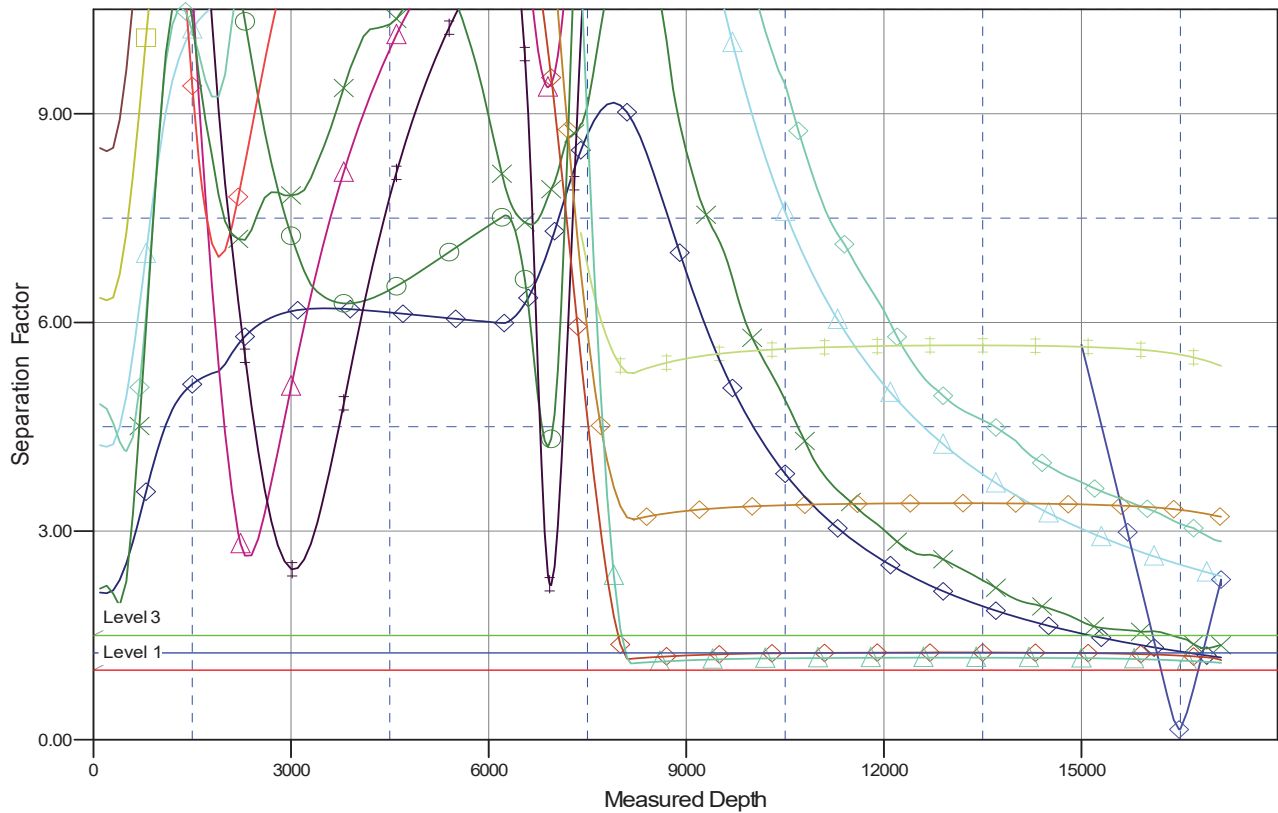
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### Separation Factor Plot



#### LEGEND

BOYD 2413-09H, Plan A, Design #1 V0	HELEN 2536-10H, Plan B, Design#2 V0	BOYD 24-1H VERDAD PR Well, Actual BKR Surveys V0
BOYD 2413-07H, Plan A, Design #1 V0	HELEN 2536-11H, Plan A, Design#1 V0	BOYD 24-4H VERDAD PR Well, Actual BKR Surveys V0
BOYD 2413-11H, Plan A, Design #1 V0	HELEN 2536-07H, Plan B, Design#2 V0	HELEN 24-5H VERDAD PR Well, Actual BKR Surveys V0
BOYD 2413-06H, Plan A, Design #1 V0	HELEN 2536-12H, Plan A, Design#1 V0	L.E. GERKN 11H, Plan A, Design#2 V0
BOYD 2413-10H, Plan A, Design #1 V0	HELEN 2536-05H, Plan B, Design#2 V0	L.E. GERKN 12H, Plan A, Design#1 V0
BOYD 2413-08H, Plan A, Design #1 V0	HELEN 2536-08H, Plan B, Design#2 V0	L.E. GERKN 9H, Plan A, Design#1 V0
DARYL L ARNOLD #1, Amoco D/A Well, No Surveys V0	HELEN 2536-06H, Plan B, Design#2 V0	L.E. GERKN 10H, Plan A, Design#1 V0
HELEN 2536-09H, Plan B, Design#2 V0	HELEN 24-4H, VERDAD PR Well, Actual BKR Surveys V0	