

VERDAD RESOURCES

**WATTENBERG FIELD
2N-64W-24 ARNOLD-HELEN PAD
HELEN 2536-11H**

**Plan A
Design #1**

Anticollision Summary Report

17 December, 2021

Anticollision Summary Report

Company:	VERDAD RESOURCES	Local Co-ordinate Reference:	Well HELEN 2536-11H
Project:	WATTENBERG FIELD	TVD Reference:	RKB = 20' @ 4944.00usft (Drilling Rig)
Reference Site:	2N-64W-24 ARNOLD-HELEN PAD	MD Reference:	RKB = 20' @ 4944.00usft (Drilling Rig)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	HELEN 2536-11H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.28 usft	Output errors are at	2.45 sigma
Reference Wellbore	Plan A	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	12/17/2021		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	1,908.00	Design #1 (Plan A)	ISCWSA MWD	Fixed:v2:standard declination	
1,908.00	17,397.28	Design #1 (Plan A)	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
2N-63W-19 KBL PAD						
KBL 1930-07H - Wellbore #1 - Design #1	12,038.43	15,103.27	1,007.87	700.99	3.284	CC, ES, SF
2N-64W-13 L.E. GERKIN PAD (RED HAWK)						
L.E. GERKIN 10H - Red Hawk Planned Well - Cathedral	6,780.86	16,489.70	1,169.31	934.52	4.980	CC
L.E. GERKIN 10H - Red Hawk Planned Well - Cathedral	6,800.00	16,489.70	1,169.55	933.65	4.958	ES
L.E. GERKIN 10H - Red Hawk Planned Well - Cathedral	6,900.00	16,489.70	1,178.64	938.34	4.905	SF
L.E. GERKIN 11H - Red Hawk Planned Well - Cathedral	6,843.77	16,457.40	905.57	685.64	4.118	CC
L.E. GERKIN 11H - Red Hawk Planned Well - Cathedral	6,900.00	16,457.40	908.33	684.97	4.067	ES
L.E. GERKIN 11H - Red Hawk Planned Well - Cathedral	6,950.00	16,457.40	915.36	689.98	4.061	SF
L.E. GERKIN 12H - Red Hawk Planned Well - Cathedral	6,904.17	16,446.50	668.83	479.35	3.530	CC
L.E. GERKIN 12H - Red Hawk Planned Well - Cathedral	6,950.00	16,446.50	671.38	478.55	3.482	ES, SF
L.E. GERKIN 13H - Red Hawk Planned Well - Cathedral	6,959.94	16,448.80	504.98	380.11	4.044	CC, ES
L.E. GERKIN 13H - Red Hawk Planned Well - Cathedral	7,000.00	16,448.80	507.66	380.50	3.992	SF
L.E. GERKIN 14H - Red Hawk Planned Well - Cathedral	6,950.00	16,481.10	499.17	362.31	3.647	SF
L.E. GERKIN 14H - Red Hawk Planned Well - Cathedral	7,000.00	16,481.10	492.71	360.91	3.738	ES
L.E. GERKIN 14H - Red Hawk Planned Well - Cathedral	7,011.26	16,481.10	492.48	362.00	3.774	CC
L.E. GERKIN 15H - Red Hawk Planned Well - Cathedral	7,050.00	16,511.10	640.81	423.27	2.946	ES, SF
L.E. GERKIN 15H - Red Hawk Planned Well - Cathedral	7,058.04	16,511.10	640.72	423.55	2.950	CC
L.E. GERKIN 9H - Red Hawk Planned Well - Cathedral P	6,683.62	16,541.50	1,447.31	1,206.26	6.004	CC
L.E. GERKIN 9H - Red Hawk Planned Well - Cathedral P	6,774.83	16,541.50	1,450.18	1,204.82	5.910	ES
L.E. GERKIN 9H - Red Hawk Planned Well - Cathedral P	6,850.00	16,541.50	1,457.84	1,209.69	5.875	SF
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 A	Database:	EDM 5000.16 Single User Db
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

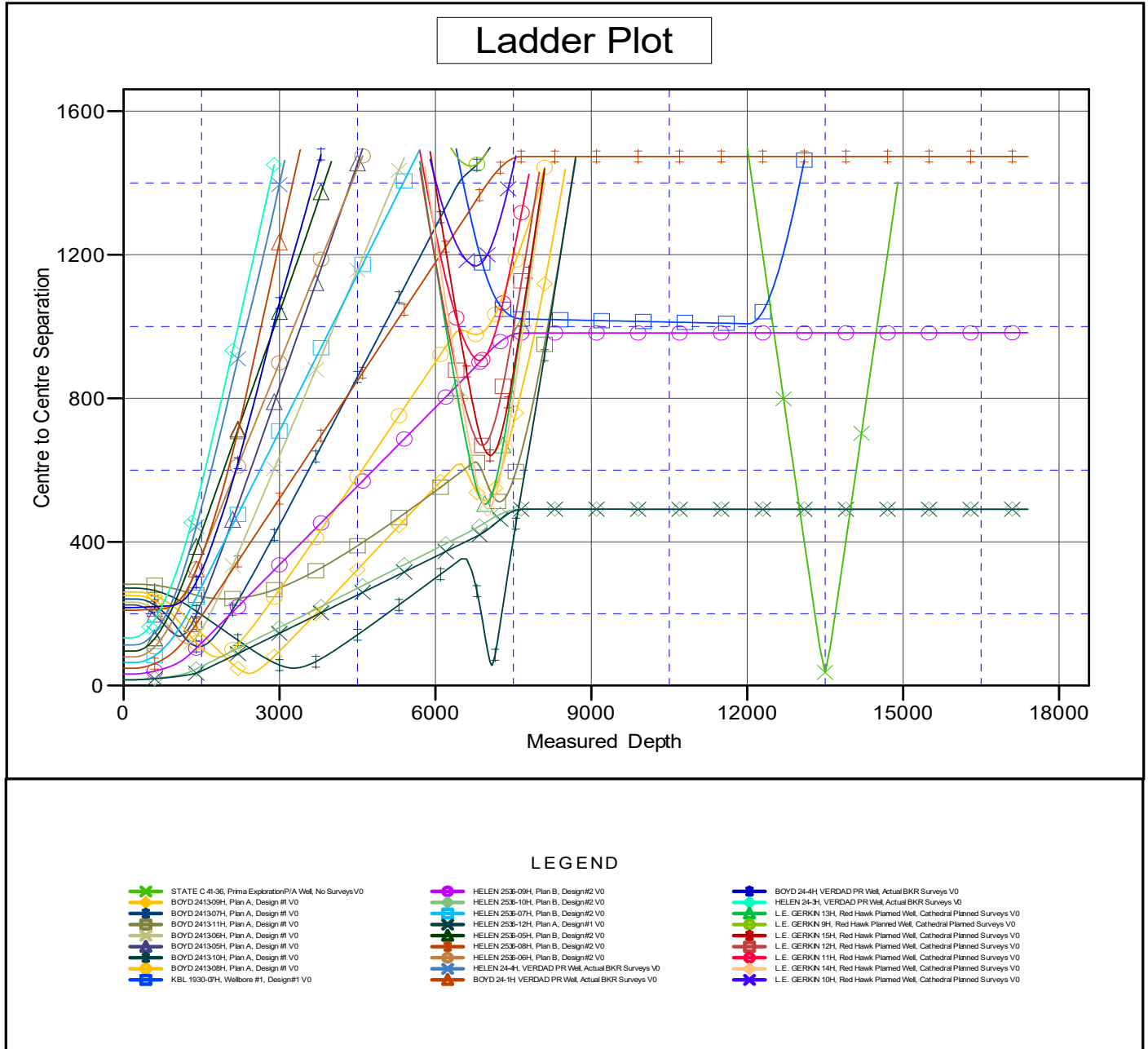
Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
2N-64W-24 ARNOLD-BOYD PAD						
BOYD 2413-05H - Plan A - Design #1	1,077.98	1,112.40	136.97	126.56	13.161	CC, ES
BOYD 2413-05H - Plan A - Design #1	1,200.00	1,225.18	146.60	135.09	12.732	SF
BOYD 2413-06H - Plan A - Design #1	1,221.66	1,252.29	116.64	105.52	10.487	CC, ES
BOYD 2413-06H - Plan A - Design #1	1,309.60	1,335.00	121.41	109.57	10.257	SF
BOYD 2413-07H - Plan A - Design #1	1,450.33	1,474.27	108.02	95.37	8.545	CC, ES
BOYD 2413-07H - Plan A - Design #1	1,500.00	1,521.96	108.91	96.03	8.459	SF
BOYD 2413-08H - Plan A - Design #1	1,800.00	1,813.24	79.25	63.85	5.146	SF
BOYD 2413-08H - Plan A - Design #1	1,813.73	1,826.64	79.20	63.83	5.154	CC, ES
BOYD 2413-09H - Plan A - Design #1	2,300.00	2,302.99	38.41	17.21	1.811	SF
BOYD 2413-09H - Plan A - Design #1	2,400.00	2,401.80	33.88	16.74	1.976	ES
BOYD 2413-09H - Plan A - Design #1	2,418.87	2,420.44	33.76	17.09	2.025	CC
BOYD 2413-10H - Plan A - Design #1	3,276.79	3,266.34	48.39	26.16	2.177	CC
BOYD 2413-10H - Plan A - Design #1	7,050.00	7,172.68	66.28	-13.39	0.832	Level 1, ES
BOYD 2413-10H - Plan A - Design #1	7,085.43	7,177.88	56.16	-12.75	0.815	Level 1, SF
BOYD 2413-11H - Plan A - Design #1	1,951.04	1,923.24	241.40	216.58	9.723	CC
BOYD 2413-11H - Plan A - Design #1	2,000.00	1,971.85	241.48	216.17	9.543	ES
BOYD 2413-11H - Plan A - Design #1	7,450.00	7,242.81	553.89	452.25	5.450	SF
2N-64W-24 ARNOLD-HELEN PAD						
HELEN 2536-05H - Plan B - Design #2	200.00	200.00	96.20	88.63	12.711	CC, ES
HELEN 2536-05H - Plan B - Design #2	220.10	219.86	96.22	88.64	12.692	SF
HELEN 2536-06H - Plan B - Design #2	220.10	221.10	79.98	72.40	10.548	CC, ES, SF
HELEN 2536-07H - Plan B - Design #2	220.10	221.10	64.04	56.46	8.446	CC, ES, SF
HELEN 2536-08H - Plan B - Design #2	220.10	221.10	48.10	40.52	6.344	CC, ES
HELEN 2536-08H - Plan B - Design #2	17,397.29	17,091.54	1,473.94	938.89	2.755	SF
HELEN 2536-09H - Plan B - Design #2	220.10	220.10	32.16	24.58	4.242	CC, ES
HELEN 2536-09H - Plan B - Design #2	17,397.29	17,159.27	982.90	447.86	1.837	SF
HELEN 2536-10H - Plan B - Design #2	220.10	220.10	16.22	8.64	2.139	CC
HELEN 2536-10H - Plan B - Design #2	17,392.76	17,260.26	491.86	-43.80	0.918	Level 1, ES, SF
HELEN 2536-12H - Plan A - Design #1	200.00	200.00	15.94	8.37	2.106	CC
HELEN 2536-12H - Plan A - Design #1	17,397.66	17,561.80	491.02	-45.57	0.915	Level 1, ES, SF
2N-64W-24 Offsets						
BOYD 24-1H - VERDAD PR Well - Actual BKR Surveys	0.00	3.00	209.84			
BOYD 24-1H - VERDAD PR Well - Actual BKR Surveys	100.00	102.98	209.84	202.31	27.858	ES
BOYD 24-1H - VERDAD PR Well - Actual BKR Surveys	1,100.00	1,115.14	240.98	230.69	23.431	SF
BOYD 24-4H - VERDAD PR Well - Actual BKR Surveys	0.00	3.00	217.05			
BOYD 24-4H - VERDAD PR Well - Actual BKR Surveys	1,200.00	1,218.90	243.45	232.59	22.430	SF
HELEN 24-3H - VERDAD PR Well - Actual BKR Surveys	143.95	143.01	133.09	125.54	17.628	CC, ES
HELEN 24-3H - VERDAD PR Well - Actual BKR Surveys	200.00	196.85	133.53	125.95	17.613	SF
HELEN 24-4H - VERDAD PR Well - Actual BKR Surveys	0.00	0.00	113.00			
HELEN 24-4H - VERDAD PR Well - Actual BKR Surveys	220.10	217.85	113.20	105.60	14.896	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	13,498.20	6,778.00	36.70	-379.19	0.088	Level 1, CC
STATE C 41-36 - Prima Exploration P/A Well - No Survey	13,500.00	6,778.00	36.74	-381.18	0.088	Level 1, ES, SF

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Well Error:	3.28 usft	Output errors are at	2.45 sigma
Reference Wellbore	Plan A	Database:	EDM 5000.16 Single User Db
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

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: HELEN 2536-11H
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 0.65°



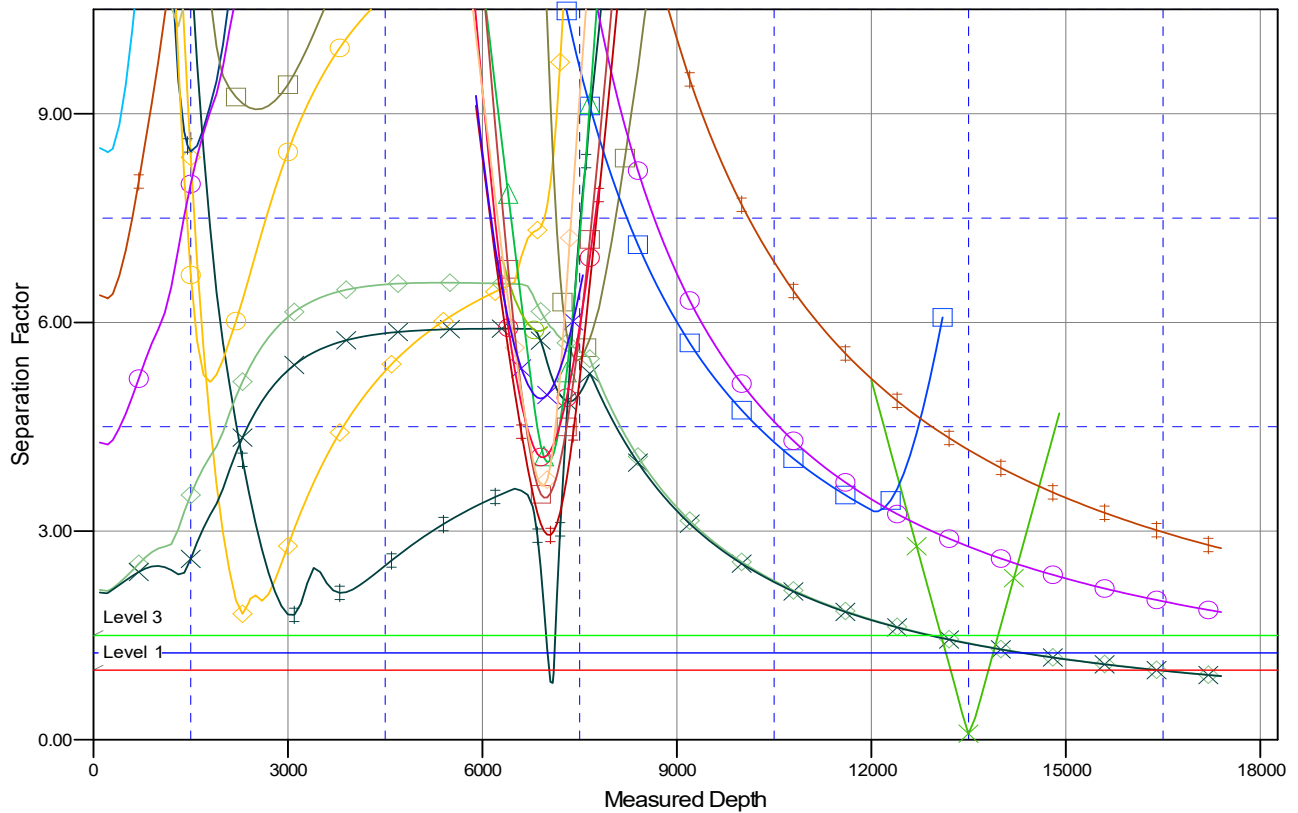
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Reference Wellbore	Plan A	Database:	EDM 5000.16 Single User Db
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

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Coordinates are relative to: HELEN 2536-11H
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 0.65°

Separation Factor Plot



LEGEND

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|---|---|--|
| <ul style="list-style-type: none"> STATE C 41-36, Prima Exploration P/A Well, No Surveys V0 BOYD 241308H, Plan A, Design #1 V0 BOYD 241307H, Plan A, Design #1 V0 BOYD 241311H, Plan A, Design #1 V0 BOYD 241308H, Plan A, Design #1 V0 BOYD 241308H, Plan A, Design #1 V0 BOYD 241310H, Plan A, Design #1 V0 BOYD 241308H, Plan A, Design #1 V0 KBL 1930-07H, Wellbore #1, Design #1 V0 | <ul style="list-style-type: none"> HELEN 2536-09H, Plan B, Design #2 V0 HELEN 2536-10H, Plan B, Design #2 V0 HELEN 2536-07H, Plan B, Design #2 V0 HELEN 2536-12H, Plan A, Design #1 V0 HELEN 2536-09H, Plan B, Design #2 V0 HELEN 2536-08H, Plan B, Design #2 V0 HELEN 2536-08H, Plan B, Design #2 V0 HELEN 24-4H, VERDAD PR Well, Actual BKR Surveys V0 BOYD 24-1H, VERDAD PR Well, Actual BKR Surveys V0 | <ul style="list-style-type: none"> BOYD 24-4H, VERDAD PR Well, Actual BKR Surveys V0 HELEN 24-3H, VERDAD PR Well, Actual BKR Surveys V0 L.E. GERKIN 13H, Red Hawk Planned Well, Cathedral Planned Surveys V0 L.E. GERKIN 9H, Red Hawk Planned Well, Cathedral Planned Surveys V0 L.E. GERKIN 15H, Red Hawk Planned Well, Cathedral Planned Surveys V0 L.E. GERKIN 12H, Red Hawk Planned Well, Cathedral Planned Surveys V0 L.E. GERKIN 11H, Red Hawk Planned Well, Cathedral Planned Surveys V0 L.E. GERKIN 14H, Red Hawk Planned Well, Cathedral Planned Surveys V0 L.E. GERKIN 10H, Red Hawk Planned Well, Cathedral Planned Surveys V0 |
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