

# **VERDAD RESOURCES**

**WATTENBERG FIELD**

**1N-64W-19 ONION 1907 PAD**

**ONION 1907-04H**

**Plan A**

**Design #1**

## **Anticollision Summary Report**

**16 March, 2022**

## Anticollision Summary Report

<b>Company:</b>	VERDAD RESOURCES	<b>Local Co-ordinate Reference:</b>	Well ONION 1907-04H
<b>Project:</b>	WATTENBERG FIELD	<b>TVD Reference:</b>	RKB = 24' @ 5035.00usft (RIG)
<b>Reference Site:</b>	1N-64W-19 ONION 1907 PAD	<b>MD Reference:</b>	RKB = 24' @ 5035.00usft (RIG)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	ONION 1907-04H	<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>	3/16/2022			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
0.00	2,156.00	Design #1 (Plan A)	ISCWSA MWD	Fixed:v2:standard declination	
2,156.00	20,044.88	Design #1 (Plan A)	ISCWSA MWD	Fixed:v2:standard declination	

<b>Summary</b>						
<b>Site Name</b>	<b>Reference Measured Depth (usft)</b>	<b>Offset Measured Depth (usft)</b>	<b>Distance Between Centres (usft)</b>	<b>Distance Between Ellipses (usft)</b>	<b>Separation Factor</b>	<b>Warning</b>
<b>Offset Well - Wellbore - Design</b>						
1N-64W-06 Offsets Incomplete						
FLANIGAN 1A-6H - CPR PR Well - Actual Cathedral Sur	20,044.88	11,531.00	894.29	785.55	8.224	CC, ES, SF
FLANIGAN 1B-6H - CPR PR Well - Actual Cathedral Sur	20,044.88	11,455.00	1,280.08	979.79	4.263	CC, ES, SF
FLANIGAN 1C-6H - CPR SI Well - Actual Cathedral Surv						Out of range
FLANIGAN 1D-6H - CPR SI Well - Actual Cathedral Surv						Out of range
FLANIGAN 2A-6H - CPR SI Well - Actual Cathedral Surv	20,044.88	11,345.00	1,479.46	1,126.04	4.186	CC, ES, SF
FLANIGAN 2B-6H - CPR PR Well - Actual Cathedral Sur	20,044.88	11,495.00	994.13	772.75	4.491	CC, ES, SF
1N-64W-07 Offsets						
UPRR 52 PAN AM #1 - AMOCO DA Well - No Surveys						Out of range
1N-64W-19 BERG 1930 PAD						
BERG 1930-01H - Wellbore #1 - Design #1	204.50	204.52	185.45	177.88	24.497	CC, ES
BERG 1930-01H - Wellbore #1 - Design #1	1,100.00	1,085.87	245.98	235.32	23.078	SF
BERG 1930-02H - Wellbore #1 - Design #1	204.00	204.00	169.99	162.42	22.456	CC, ES
BERG 1930-02H - Wellbore #1 - Design #1	1,100.00	1,090.38	223.72	213.20	21.260	SF
BERG 1930-03H - Wellbore #1 - Design #1	204.00	204.00	154.65	147.08	20.429	CC, ES
BERG 1930-03H - Wellbore #1 - Design #1	1,200.00	1,189.48	213.77	202.73	19.353	SF
BERG 1930-04H - Wellbore #1 - Design #1	204.00	204.00	139.40	131.83	18.415	CC, ES
BERG 1930-04H - Wellbore #1 - Design #1	1,200.00	1,194.75	188.61	177.68	17.255	SF
BERG 1930-05H - Wellbore #1 - Design #1	204.00	204.00	124.40	116.83	16.433	CC, ES
BERG 1930-05H - Wellbore #1 - Design #1	1,300.00	1,298.28	171.36	159.88	14.930	SF
BERG 1930-06H - Wellbore #1 - Design #1	204.00	204.00	109.67	102.10	14.488	CC, ES
BERG 1930-06H - Wellbore #1 - Design #1	1,600.00	1,602.13	154.98	141.86	11.813	SF

# Anticollision Summary Report

<b>Company:</b>	VERDAD RESOURCES	<b>Local Co-ordinate Reference:</b>	Well ONION 1907-04H
<b>Project:</b>	WATTENBERG FIELD	<b>TVD Reference:</b>	RKB = 24' @ 5035.00usft (RIG)
<b>Reference Site:</b>	1N-64W-19 ONION 1907 PAD	<b>MD Reference:</b>	RKB = 24' @ 5035.00usft (RIG)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	ONION 1907-04H	<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

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-64W-19 GOURD 1930 PAD						
GOURD 1930-01H - Wellbore #1 - Design #1	205.24	206.32	208.51	200.94	27.541	CC, ES
GOURD 1930-01H - Wellbore #1 - Design #1	1,600.00	1,583.29	340.91	327.16	24.786	SF
GOURD 1930-02H - Wellbore #1 - Design #1	204.00	205.00	194.84	187.27	25.737	CC, ES
GOURD 1930-02H - Wellbore #1 - Design #1	1,700.00	1,697.29	290.34	276.19	20.524	SF
GOURD 1930-03H - Wellbore #1 - Design #1	204.00	205.00	181.54	173.97	23.980	CC, ES
GOURD 1930-03H - Wellbore #1 - Design #1	2,100.00	2,107.08	245.66	230.04	15.722	SF
GOURD 1930-04H - Wellbore #1 - Design #1	1,846.10	1,863.51	152.79	138.66	10.813	CC
GOURD 1930-04H - Wellbore #1 - Design #1	2,000.00	2,016.89	153.31	138.44	10.308	ES
GOURD 1930-04H - Wellbore #1 - Design #1	6,916.83	7,037.60	289.09	248.77	7.169	SF
GOURD 1930-05H - Wellbore #1 - Design #1	2,472.64	2,490.55	48.31	31.07	2.802	CC
GOURD 1930-05H - Wellbore #1 - Design #1	2,500.00	2,517.82	48.35	31.03	2.790	ES
GOURD 1930-05H - Wellbore #1 - Design #1	6,961.88	7,054.06	86.31	45.61	2.121	SF
GOURD 1930-06H - Wellbore #1 - Design #1	1,851.72	1,869.89	22.07	7.00	1.464	Level 3, CC, ES, SF
1N-64W-19 Offsets						
STEVENS #1 - KPK P/A Well - No Surveys						Out of range
WEIMER #1 - Petro-American Energy D/A Well - No Surv						Out of range
1N-64W-19 ONION 1907 PAD						
ONION 1907-01H - Plan A - Design #1	204.00	204.00	47.99	40.42	6.340	CC, ES, SF
ONION 1907-02H - Plan A - Design #1	204.00	204.00	32.01	24.44	4.228	CC, ES
ONION 1907-02H - Plan A - Design #1	20,044.88	20,068.61	1,032.17	407.21	1.652	SF
ONION 1907-03H - Plan A - Design #1	204.00	204.00	15.99	8.42	2.112	CC
ONION 1907-03H - Plan A - Design #1	20,044.88	20,054.62	516.08	-107.95	0.827	Level 1, ES, SF
ONION 1907-05H - Plan A - Design #1	381.00	380.88	15.02	7.27	1.937	CC
ONION 1907-05H - Plan A - Design #1	20,044.88	20,075.39	516.06	-108.66	0.826	Level 1, ES, SF
ONION 1907-06H - Plan A - Design #1	457.34	457.03	30.07	22.19	3.816	CC, ES
ONION 1907-06H - Plan A - Design #1	20,044.88	20,154.45	1,032.14	407.60	1.653	SF
ONION 1907-07H - Plan A - Design #1	473.65	472.97	45.39	37.48	5.738	CC, ES
ONION 1907-07H - Plan A - Design #1	500.00	498.91	45.52	37.56	5.720	SF
ONION 1907-08H - Plan A - Design #1	445.73	444.55	61.64	53.78	7.845	CC, ES
ONION 1907-08H - Plan A - Design #1	500.00	497.64	62.21	54.25	7.821	SF
ONION 1907-09H - Plan A - Design #1	443.93	442.33	77.62	69.77	9.886	CC, ES
ONION 1907-09H - Plan A - Design #1	500.00	496.87	78.21	70.27	9.840	SF

## Anticollision Summary Report

<b>Company:</b>	VERDAD RESOURCES	<b>Local Co-ordinate Reference:</b>	Well ONION 1907-04H
<b>Project:</b>	WATTENBERG FIELD	<b>TVD Reference:</b>	RKB = 24' @ 5035.00usft (RIG)
<b>Reference Site:</b>	1N-64W-19 ONION 1907 PAD	<b>MD Reference:</b>	RKB = 24' @ 5035.00usft (RIG)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	ONION 1907-04H	<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

Reference Depths are relative to RKB = 24' @ 5035.00usft (RIG)

Offset Depths are relative to Offset Datum

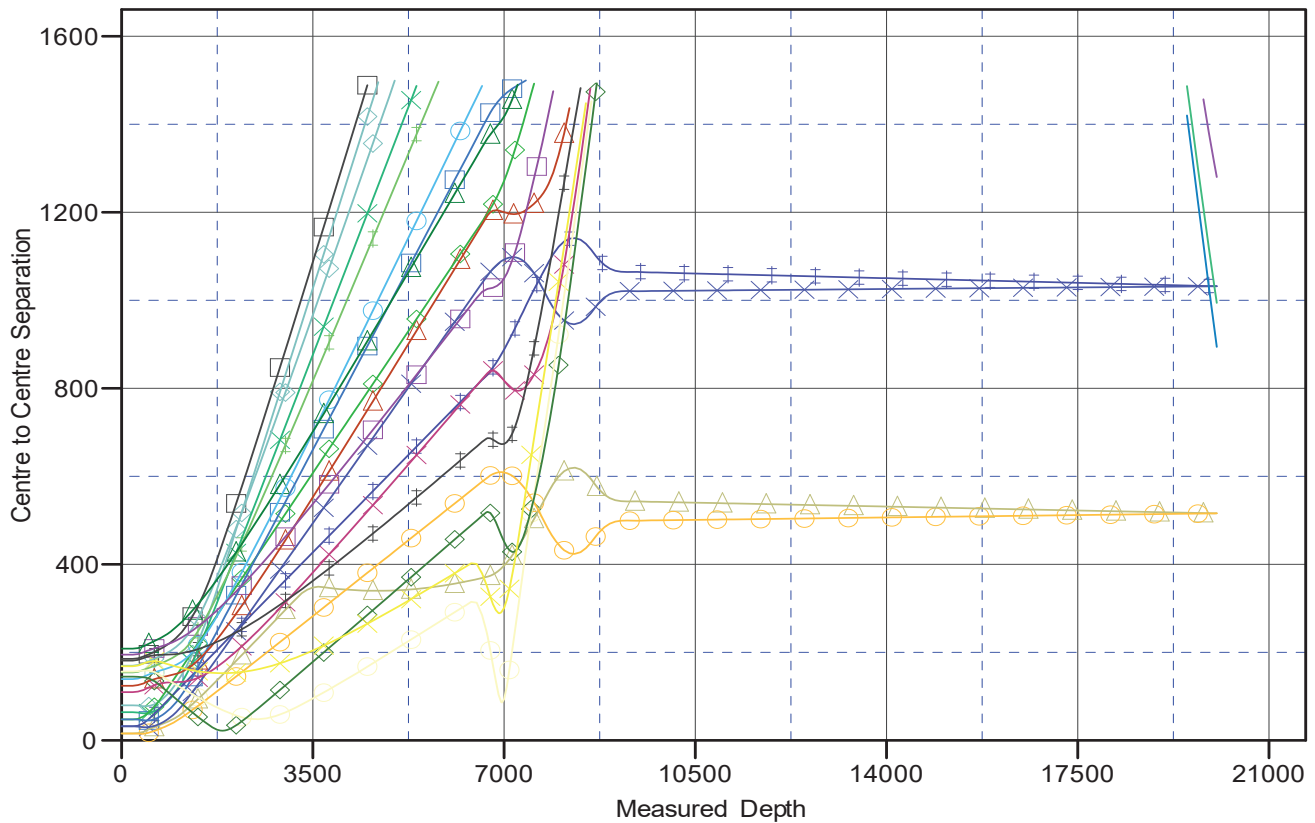
Central Meridian is -105.500000

Coordinates are relative to: ONION 1907-04H

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.58°

### Ladder Plot



#### LEGEND

ONION 190709H, Plan A, Design #1 V0	FLANIGAN1B-6H, CPR PR Well, Actual Cathedral Surveys V0	BERG 1930-06H, Wellbore #1, Design #1 V0
ONION 190708H, Plan A, Design #1 V0	FLANIGAN2A-6H, CPR SI Well, Actual Cathedral Surveys V0	BERG 1930-05H, Wellbore #1, Design #1 V0
ONION 190703H, Plan A, Design #1 V0	FLANIGAN2B-6H, CPR PR Well, Actual Cathedral Surveys V0	GOURD 1930-03H, Wellbore #1, Design #1 V0
ONION 190705H, Plan A, Design #1 V0	FLANIGAN1A-6H, CPR PR Well, Actual Cathedral Surveys V0	GOURD 1930-02H, Wellbore #1, Design #1 V0
ONION 190701H, Plan A, Design #1 V0	BERG 1930-03H, Wellbore #1, Design #1 V0	GOURD 1930-05H, Wellbore #1, Design #1 V0
ONION 190702H, Plan A, Design #1 V0	BERG 1930-01H, Wellbore #1, Design #1 V0	GOURD 1930-06H, Wellbore #1, Design #1 V0
ONION 190706H, Plan A, Design #1 V0	BERG 1930-04H, Wellbore #1, Design #1 V0	GOURD 1930-04H, Wellbore #1, Design #1 V0
ONION 190707H, Plan A, Design #1 V0	BERG 1930-02H, Wellbore #1, Design #1 V0	GOURD 1930-01H, Wellbore #1, Design #1 V0

## Anticollision Summary Report

<b>Company:</b>	VERDAD RESOURCES	<b>Local Co-ordinate Reference:</b>	Well ONION 1907-04H
<b>Project:</b>	WATTENBERG FIELD	<b>TVD Reference:</b>	RKB = 24' @ 5035.00usft (RIG)
<b>Reference Site:</b>	1N-64W-19 ONION 1907 PAD	<b>MD Reference:</b>	RKB = 24' @ 5035.00usft (RIG)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	ONION 1907-04H	<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

Reference Depths are relative to RKB = 24' @ 5035.00usft (RIG)

Offset Depths are relative to Offset Datum

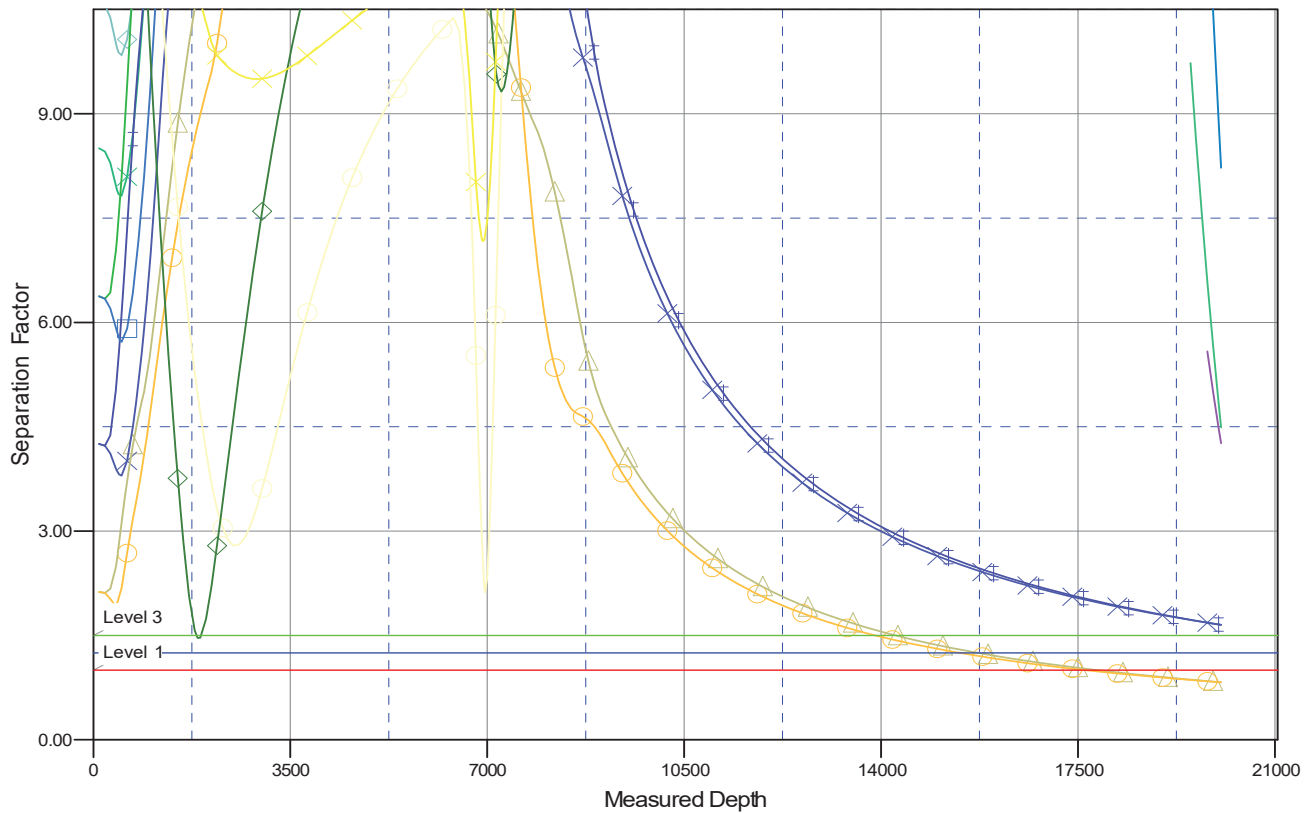
Central Meridian is -105.500000

Coordinates are relative to: ONION 1907-04H

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.58°

### Separation Factor Plot



#### LEGEND

ONION 190709H, Plan A, Design #1 V0  
ONION 190709H, Plan A, Design #1 V0  
ONION 190703H, Plan A, Design #1 V0  
ONION 190705H, Plan A, Design #1 V0  
ONION 190701H, Plan A, Design #1 V0  
ONION 190702H, Plan A, Design #1 V0  
ONION 190706H, Plan A, Design #1 V0  
ONION 190707H, Plan A, Design #1 V0

FLANIGAN 1B-6H, OPR PR Well, Actual Cathedral Surveys V0  
FLANIGAN 2A-6H, OPR SI Well, Actual Cathedral Surveys V0  
FLANIGAN 2B-6H, OPR PR Well, Actual Cathedral Surveys V0  
FLANIGAN 1A-6H, OPR PR Well, Actual Cathedral Surveys V0  
BERG 193003H, Wellbore #1, Design #1 V0  
BERG 193001H, Wellbore #1, Design #1 V0  
BERG 193004H, Wellbore #1, Design #1 V0  
BERG 193002H, Wellbore #1, Design #1 V0

BERG 193006H, Wellbore #1, Design #1 V0  
BERG 193005H, Wellbore #1, Design #1 V0  
GOURD 193003H, Wellbore #1, Design #1 V0  
GOURD 193002H, Wellbore #1, Design #1 V0  
GOURD 193005H, Wellbore #1, Design #1 V0  
GOURD 193006H, Wellbore #1, Design #1 V0  
GOURD 193004H, Wellbore #1, Design #1 V0  
GOURD 193001H, Wellbore #1, Design #1 V0