

VERDAD RESOURCES

WATTENBERG FIELD

1N-65W-31 COUNTY LINE 3107 PAD

COUNTY LINE 3107-09H

Wellbore #1

Design #3

Anticollision Summary Report

02 June, 2020

HP

Anticollision Summary Report

Company:	VERDAD RESOURCES	Local Co-ordinate Reference:	Well COUNTY LINE 3107-09H
Project:	WATTENBERG FIELD	TVD Reference:	RKB = 24' @ 5066.00usft (RIG)
Reference Site:	1N-65W-31 COUNTY LINE 3107 PAD	MD Reference:	RKB = 24' @ 5066.00usft (RIG)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	COUNTY LINE 3107-09H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.28 usft	Output errors are at	2.45 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Design #3	Offset TVD Reference:	Offset Datum

Reference	Design #3		
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	6/2/2020		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	1,700.00	Design #3 (Wellbore #1)	ISCWSA REV 2 MWD	Fixed:v2:standard declination
1,700.00	16,879.54	Design #3 (Wellbore #1)	ISCWSA REV 2 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						
1N-65W-30 JOHNSON PAD						
JOHNSON 01N-65W-30-8N - Verdad PR Well - Actual BH						Out of range
1N-65W-30 Offsets						
GILMORE #1-30 - ARLIAN INC P/A Well - No Surveys						Out of range
LEHL #1 - DEM P/A Well - No Surveys						Out of range
M B LEHL A #1 - Amoco D/A Well - No Surveys						Out of range
MARGUERITE B LEHL #A-1 - XOG SI Well - No Surveys						Out of range
1N-65W-31 COUNTY LINE 3107 PAD						
COUNTY LINE 3107-05H - Wellbore #1 - Design #3	400.00	398.00	59.98	52.20	7.709	CC, ES, SF
COUNTY LINE 3107-06H - Wellbore #1 - Design #3	404.64	403.64	44.99	37.20	5.777	CC, ES
COUNTY LINE 3107-06H - Wellbore #1 - Design #3	500.00	498.24	45.40	37.46	5.713	SF
COUNTY LINE 3107-07H - Wellbore #1 - Design #3	500.00	499.00	29.98	22.02	3.770	CC, ES
COUNTY LINE 3107-07H - Wellbore #1 - Design #3	16,879.54	17,025.83	1,180.29	705.80	2.487	SF
COUNTY LINE 3107-08H - Wellbore #1 - Design #3	503.37	503.37	14.99	7.03	1.883	CC, ES
COUNTY LINE 3107-08H - Wellbore #1 - Design #3	16,879.54	17,219.96	660.22	229.57	1.533	SF
COUNTY LINE 3107-10H - Wellbore #1 - Design #3	600.00	600.00	15.02	6.96	1.865	CC, ES
COUNTY LINE 3107-10H - Wellbore #1 - Design #3	16,879.54	16,879.05	590.19	115.58	1.244	Level 2, SF
COUNTY LINE 3107-11H - Wellbore #1 - Design #3	216.33	217.33	30.00	22.43	3.959	CC
COUNTY LINE 3107-11H - Wellbore #1 - Design #3	300.00	300.99	30.00	22.35	3.920	ES
COUNTY LINE 3107-11H - Wellbore #1 - Design #3	16,879.54	17,220.88	1,216.69	754.61	2.633	SF
COUNTY LINE 3107-12H - Wellbore #1 - Design #3	116.33	117.33	45.02	37.49	5.978	CC
COUNTY LINE 3107-12H - Wellbore #1 - Design #3	200.00	200.98	45.02	37.45	5.949	ES, SF
1N-65W-31 COUNTY LINE 3112 PAD						
COUNTY LINE 3112-01H - Wellbore #1 - Design #3	200.00	195.00	119.99	112.42	15.859	CC, ES, SF
COUNTY LINE 3112-02H - Wellbore #1 - Design #3	208.27	204.27	105.00	97.43	13.868	CC, ES
COUNTY LINE 3112-02H - Wellbore #1 - Design #3	300.00	294.37	105.36	97.71	13.775	SF
COUNTY LINE 3112-03H - Wellbore #1 - Design #3	300.00	297.00	89.98	82.33	11.760	CC, ES, SF
COUNTY LINE 3112-04H - Wellbore #1 - Design #3	307.11	304.11	75.00	67.34	9.792	CC, ES
COUNTY LINE 3112-04H - Wellbore #1 - Design #3	400.00	395.80	75.37	67.59	9.692	SF

Anticollision Summary Report

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Project:	WATTENBERG FIELD	TVD Reference:	RKB = 24' @ 5066.00usft (RIG)
Reference Site:	1N-65W-31 COUNTY LINE 3107 PAD	MD Reference:	RKB = 24' @ 5066.00usft (RIG)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	COUNTY LINE 3107-09H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.28 usft	Output errors are at	2.45 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Design #3	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						
1N-65W-31 COUNTY LINE 3130 PAD						
COUNTY LINE 3130-01H - Wellbore #1 - Design #3	6,974.11	7,053.06	66.27	31.04	1.881	CC, ES, SF
COUNTY LINE 3130-02H - Wellbore #1 - Design #3	606.19	609.74	209.96	201.82	25.772	CC, ES
COUNTY LINE 3130-02H - Wellbore #1 - Design #3	7,200.00	7,136.61	434.76	396.32	11.309	SF
COUNTY LINE 3130-03H - Wellbore #1 - Design #3	309.38	312.38	225.27	217.60	29.389	CC, ES
COUNTY LINE 3130-03H - Wellbore #1 - Design #3	7,000.00	7,032.93	623.94	588.65	17.681	SF
COUNTY LINE 3130-04H - Wellbore #1 - Design #3	215.64	218.64	240.28	232.70	31.704	CC
COUNTY LINE 3130-04H - Wellbore #1 - Design #3	300.00	300.00	240.30	232.65	31.400	ES
COUNTY LINE 3130-04H - Wellbore #1 - Design #3	7,700.00	6,864.13	1,331.50	1,287.08	29.974	SF
COUNTY LINE 3130-05H - Wellbore #1 - Design #3	200.00	203.00	255.27	247.70	33.729	CC, ES
COUNTY LINE 3130-05H - Wellbore #1 - Design #3	7,700.00	7,014.41	1,495.04	1,446.63	30.881	SF
COUNTY LINE 3130-06H - Wellbore #1 - Design #3	115.64	118.64	270.26	262.73	35.888	CC
COUNTY LINE 3130-06H - Wellbore #1 - Design #3	200.00	200.00	270.28	262.71	35.717	ES
COUNTY LINE 3130-06H - Wellbore #1 - Design #3	300.00	294.86	271.80	264.16	35.552	SF
1N-65W-31 Offsets						
ADAM TEN 1-A - CPR P&A Well - No Surveys	600.00	574.00	1,405.11	1,381.86	60.450	CC
ADAM TEN 1-A - CPR P&A Well - No Surveys	700.00	673.98	1,406.72	1,379.87	52.390	ES
ADAM TEN 1-A - CPR P&A Well - No Surveys	2,700.00	2,671.65	1,496.38	1,396.47	14.977	SF
DREYER 1 - EnCana P&A Well - No Surveys						Out of range
EPPINGER 1 - CPR P&A Well - No Surveys						Out of range
LOCHBUIE #1 - EnCana P&A Well - No Surveys						Out of range
LOCHBUIE 21-31 - CPR P&A Well - No Surveys						Out of range
Lochbuie 2A-31H - CPR PR Well - Actual Cathedral Surv						Out of range
Lochbuie 2B-31H - CPR PR Well - Actual Cathedral Surv						Out of range
Lochbuie 2C-31H - CPR PR Well - Actual Cathedral Surv						Out of range
Lochbuie 2D-31H - CPR PR Well - Actual Cathedral Surv						Out of range
Lochbuie 2E-31H - CPR PR Well - Actual Cathedral Surv						Out of range
Lochbuie 2F-31H - CPR PR Well - Actual Cathedral Surv	6,950.00	11,821.00	1,422.65	1,326.15	14.742	SF
Lochbuie 2F-31H - CPR PR Well - Actual Cathedral Surv	6,995.86	11,821.00	1,420.77	1,324.40	14.744	CC, ES
Lochbuie 2G-31H - CPR PR Well - Actual Cathedral Surv	7,000.00	12,011.00	910.07	808.50	8.960	SF
Lochbuie 2G-31H - CPR PR Well - Actual Cathedral Surv	7,018.43	12,011.00	909.71	808.42	8.981	CC, ES
Lochbuie 2H-31H - CPR PR Well - Actual Cathedral Surv	7,000.00	12,290.00	780.95	706.83	10.536	SF
Lochbuie 2H-31H - CPR PR Well - Actual Cathedral Surv	7,077.23	12,290.00	772.83	700.44	10.676	CC, ES
LUTZ 1 - EnCana P&A Well - No Surveys						Out of range
LUTZ 1A - CPR D/A Well - No Surveys						Out of range
SACK-DREYER #1 - CPR P&A Well - No Surveys						Out of range
Walla #5-10-2L - Confluence Planned Well - Planned Pro	600.00	598.00	1,387.21	1,379.06	170.050	CC, ES
Walla #5-10-2L - Confluence Planned Well - Planned Pro	3,000.00	2,995.30	1,497.27	1,481.04	92.288	SF
Walla #5-10-4L - Confluence Planned Well - Planned Pro	600.00	596.00	1,363.89	1,355.73	167.214	CC, ES
Walla #5-10-4L - Confluence Planned Well - Planned Pro	3,500.00	3,492.72	1,497.79	1,479.44	81.627	SF
Walla #5-6-2L - Confluence Planned Well - Planned Pro D						Out of range
Walla #5-7-1L - Confluence Planned Well - Planned Pro D						Out of range
Walla #5-8-4L - Confluence Planned Well - Planned Pro D	600.00	599.00	1,454.95	1,446.79	178.328	CC, ES
Walla #5-8-4L - Confluence Planned Well - Planned Pro D	1,600.00	1,597.94	1,498.65	1,487.13	130.090	SF
Walla #5-9-1L - Confluence Planned Well - Planned Pro D	600.00	598.00	1,433.16	1,425.00	175.682	CC, ES
Walla #5-9-1L - Confluence Planned Well - Planned Pro D	2,000.00	1,996.47	1,495.77	1,482.98	116.936	SF
Walla #5-9-3L - Confluence Planned Well - Planned Pro D	600.00	598.00	1,410.60	1,402.45	172.917	CC, ES
Walla #5-9-3L - Confluence Planned Well - Planned Pro D	2,500.00	2,495.89	1,496.89	1,482.55	104.388	SF

HP

Anticollision Summary Report

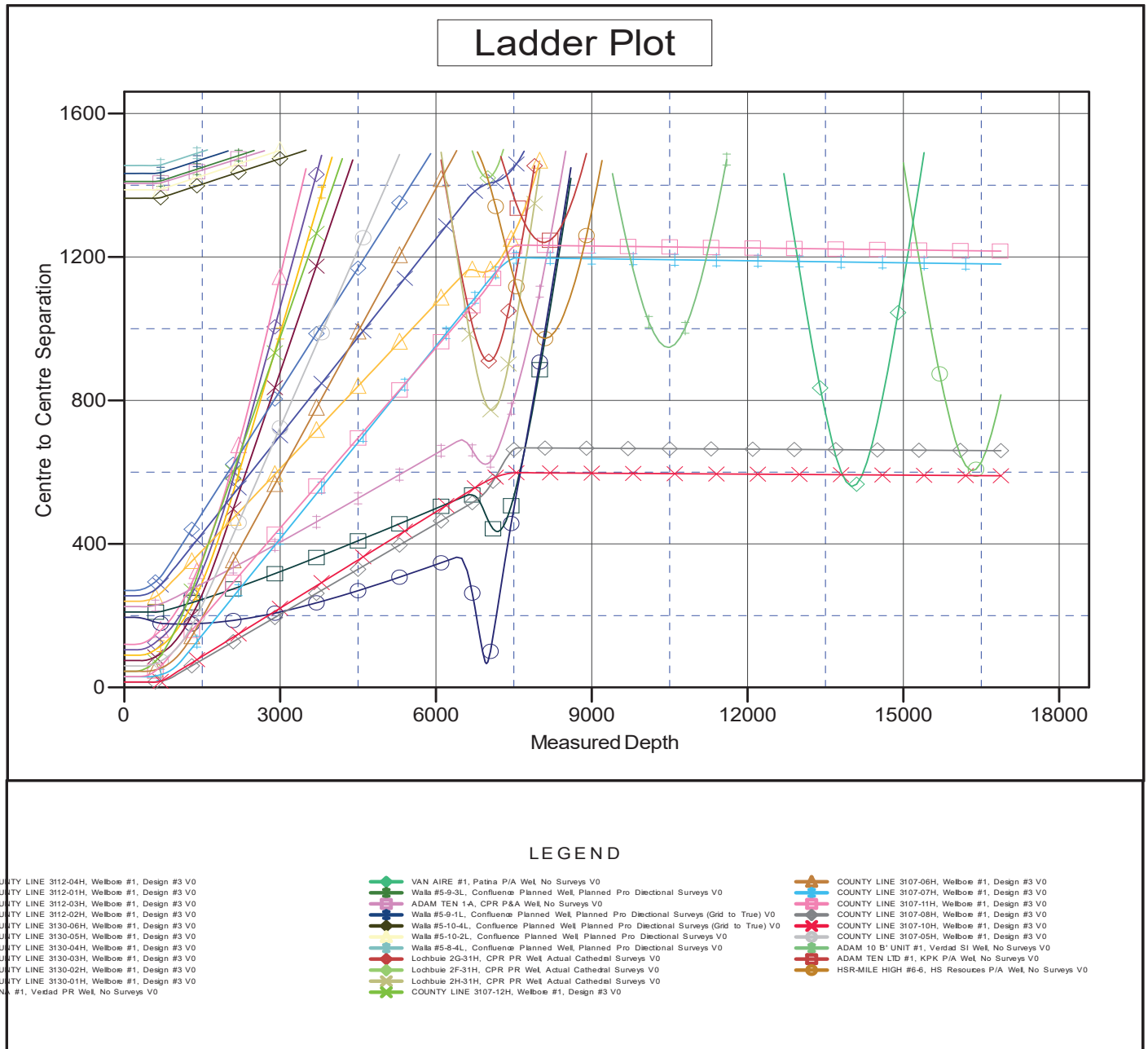
Company:	VERDAD RESOURCES	Local Co-ordinate Reference:	Well COUNTY LINE 3107-09H
Project:	WATTENBERG FIELD	TVD Reference:	RKB = 24' @ 5066.00usft (RIG)
Reference Site:	1N-65W-31 COUNTY LINE 3107 PAD	MD Reference:	RKB = 24' @ 5066.00usft (RIG)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	COUNTY LINE 3107-09H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.28 usft	Output errors are at	2.45 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Design #3	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						
1S-65W-06 Offsets						
ADAM 10 'B' UNIT #1 - Verdad SI Well - No Surveys	10,474.20	7,179.00	948.01	606.81	2.778	CC
ADAM 10 'B' UNIT #1 - Verdad SI Well - No Surveys	10,500.00	7,179.00	948.37	606.75	2.776	ES, SF
ADAM TEN LTD #1 - KPK P/A Well - No Surveys	8,077.26	7,176.00	1,240.43	952.96	4.315	CC
ADAM TEN LTD #1 - KPK P/A Well - No Surveys	8,100.00	7,176.00	1,240.64	952.79	4.310	ES
ADAM TEN LTD #1 - KPK P/A Well - No Surveys	8,200.00	7,176.00	1,246.49	957.09	4.307	SF
HSR-MILE HIGH #6-6 - HS Resources P/A Well - No Sur	8,099.41	7,154.00	972.77	685.62	3.388	CC
HSR-MILE HIGH #6-6 - HS Resources P/A Well - No Sur	8,100.00	7,154.00	972.77	685.61	3.388	ES
HSR-MILE HIGH #6-6 - HS Resources P/A Well - No Sur	8,200.00	7,154.00	977.96	688.35	3.377	SF
MILE-HI DUCK CLUB-PASCOE #1 - VESSELS P/A Well						Out of range
1S-65W-07 Offsets						
EDNA #1 - Verdad PR Well - No Surveys	16,331.65	7,205.00	604.49	125.99	1.263	Level 3, CC, ES, SF
GREEN #1 - Verdad PR Well - No Surveys						Out of range
VAN AIRE #1 - Patina P/A Well - No Surveys	14,018.34	7,190.00	560.87	136.93	1.323	Level 3, CC, ES, SF
1S-66W-01 Offsets						
HSR-EPPINGER #1-1 - Kerr McGee P&A Well - No Surv						Out of range
HSR-EPPINGER #6-1 - Great Western PR Well - No Su						Out of range
1S-66W-12 Offsets						
MILE-HI DUCK CLUB-TRACY #1 - Vessels Oil P/A Well						Out of range
DUCK CLUB 12W-20-10N - XOG PR Well - Actual Integr						Out of range
DUCK CLUB 12W-20-11N - XOG PR Well - Actual Integr						Out of range
DUCK CLUB 12W-20-12C - XOG PR Well - Actual Integr						Out of range
DUCK CLUB 12W-20-1C - XOG PR Well - Actual XOG S						Out of range
DUCK CLUB 12W-20-2N - XOG PR Well - Actual Integr						Out of range
DUCK CLUB 12W-20-3N - XOG PR Well - Actual Integr						Out of range
DUCK CLUB 12W-20-4N - XOG PR Well - Actual Integr						Out of range
DUCK CLUB 12W-20-5C - XOG PR Well - Actual Integr						Out of range
DUCK CLUB 12W-20-6N - XOG PR Well - Actual Integr						Out of range
DUCK CLUB 12W-20-7N - XOG PR Well - Actual Integr						Out of range
DUCK CLUB 12W-20-8C - XOG PR Well - Actual Integr						Out of range
DUCK CLUB 12W-20-9N - XOG PR Well - Actual Integr						Out of range

HP

Company:	VERDAD RESOURCES	Local Co-ordinate Reference:	Well COUNTY LINE 3107-09H
Project:	WATTENBERG FIELD	TVD Reference:	RKB = 24' @ 5066.00usft (RIG)
Reference Site:	1N-65W-31 COUNTY LINE 3107 PAD	MD Reference:	RKB = 24' @ 5066.00usft (RIG)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	COUNTY LINE 3107-09H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.28 usft	Output errors are at	2.45 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Design #3	Offset TVD Reference:	Offset Datum

Coordinates are relative to: COUNTY LINE 3107-09H
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.51°



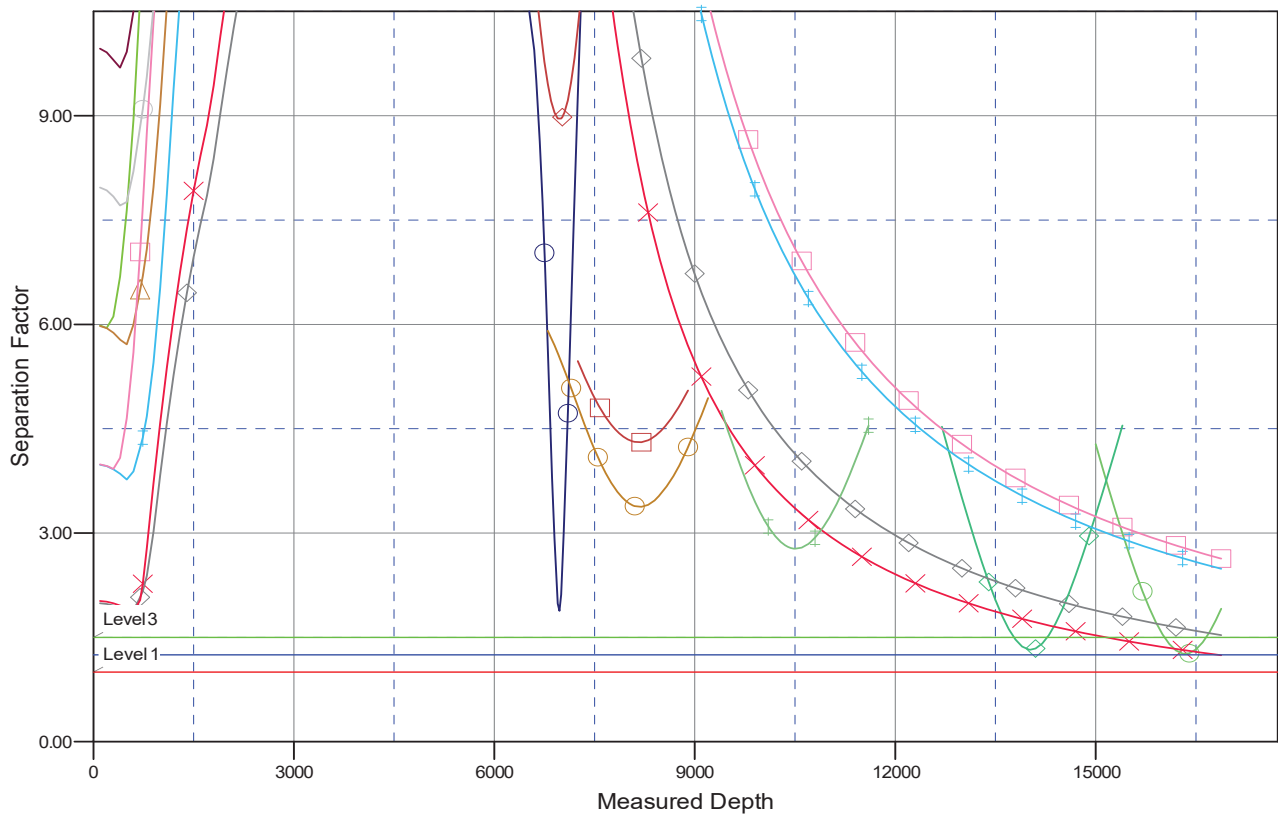
HP
Anticollision Summary Report

Company:	VERDAD RESOURCES	Local Co-ordinate Reference:	Well COUNTY LINE 3107-09H
Project:	WATTENBERG FIELD	TVD Reference:	RKB = 24' @ 5066.00usft (RIG)
Reference Site:	1N-65W-31 COUNTY LINE 3107 PAD	MD Reference:	RKB = 24' @ 5066.00usft (RIG)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	COUNTY LINE 3107-09H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.28 usft	Output errors are at	2.45 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.16 Single User Db
Reference Design:	Design #3	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB = 24' @ 5066.00usft (RIG)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: COUNTY LINE 3107-09H
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.51°

Separation Factor Plot



LEGEND

COUNTY LINE 3112-04H, Wellbore #1, Design #3 V0
COUNTY LINE 3112-01H, Wellbore #1, Design #3 V0
COUNTY LINE 3112-03H, Wellbore #1, Design #3 V0
COUNTY LINE 3112-02H, Wellbore #1, Design #3 V0
COUNTY LINE 3130-06H, Wellbore #1, Design #3 V0
COUNTY LINE 3130-05H, Wellbore #1, Design #3 V0
COUNTY LINE 3130-04H, Wellbore #1, Design #3 V0
COUNTY LINE 3130-03H, Wellbore #1, Design #3 V0
COUNTY LINE 3130-02H, Wellbore #1, Design #3 V0
COUNTY LINE 3130-01H, Wellbore #1, Design #3 V0
DNN #1, Verdad PR Well, No Surveys V0

VAN AIRE #1, Patina P/A Well, No Surveys V0
Wala #5-9-3L, Confluence Planned Well, Planned Pro Directional Surveys V0
ADAM TEN 1-A, CPR P&A Well, No Surveys V0
Wala #5-9-1L, Confluence Planned Well, Planned Pro Directional Surveys (Grid to True) V0
Wala #5-10-4L, Confluence Planned Well, Planned Pro Directional Surveys (Grid to True) V0
Wala #5-10-2L, Confluence Planned Well, Planned Pro Directional Surveys V0
Wala #5-8-4L, Confluence Planned Well, Planned Pro Directional Surveys V0
Lochbuie 20-31H, CPR PR Well, Actual Cathedral Surveys V0
Lochbuie 2F-31H, CPR PR Well, Actual Cathedral Surveys V0
Lochbuie 2H-31H, CPR PR Well, Actual Cathedral Surveys V0
COUNTY LINE 3107-12H, Wellbore #1, Design #3 V0

COUNTY LINE 3107-06H, Wellbore #1, Design #3 V0
COUNTY LINE 3107-07H, Wellbore #1, Design #3 V0
COUNTY LINE 3107-11H, Wellbore #1, Design #3 V0
COUNTY LINE 3107-08H, Wellbore #1, Design #3 V0
COUNTY LINE 3107-10H, Wellbore #1, Design #3 V0
COUNTY LINE 3107-05H, Wellbore #1, Design #3 V0
ADAM 10 B' UNIT #1, Verdad SI Well, No Surveys V0
ADAM TEN LTD #1, KPK P/A Well, No Surveys V0
HSR-MILE HIGH #6-6, HS Resources P/A Well, No Surveys V0