

VERDAD RESOURCES

**WATTENBERG FIELD
2N-63W-19 KBL PAD
KBL 1918-06H**

Wellbore #1

Plan: Design #1

Standard Planning Report

10 July, 2019

Project: WATTENBERG FIELD
Site: 2N-63W-19 KBL PAD
Well: KBL 1918-06H
Wellbore: Wellbore #1
Design: Design #1

VERDAD RESOURCES

CASING DETAILS

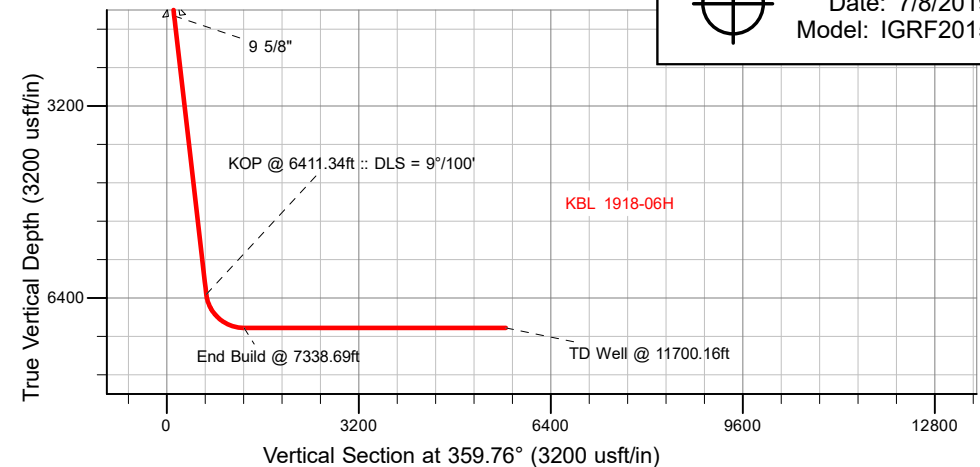
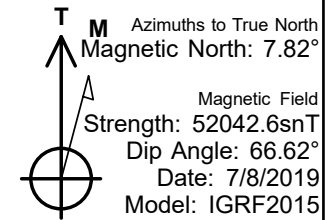
TVD	MD	Name	Size
1700.00	1712.73	9 5/8"	9-5/8

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	
3	855.50	9.11	315.75	853.58	25.88	-25.22	2.00	315.75	25.99	
4	6411.34	9.11	315.75	6339.34	655.99	-639.03	0.00	0.00	658.66	
5	7338.69	90.00	359.76	6900.00	1288.20	-704.12	9.00	44.38	1291.14	
6	11700.16	90.00	359.76	6900.00	5649.63	-722.18	0.00	0.00	5652.60	KBL 1918-06H_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KBL 1918-06H_SHL	0.00	0.00	0.00	40.121608	-104.478337
KBL 1918-06H_BHL	6900.00	5649.63	-722.18	40.137117	-104.480920



SHL
1807' FSL
2096' FEL

LP
2180' FNL
2640' FWL

BHL
2180' FSL
2640' FWL

WELL DETAILS: KBL 1918-06H

GL = 4863'
RKB = 24' @ 4887.00usft (RIG)

Plan: Design #1 (KBL 1918-06H/Wellbore #1)

Date: 7/10/2019

Hewlett-Packard

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well KBL 1918-06H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4887.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4887.00usft (RIG)
Site:	2N-63W-19 KBL PAD	North Reference:	True
Well:	KBL 1918-06H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	WATTENBERG FIELD		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		2N-63W-19 KBL PAD			
Site Position:		Northing:	1,288,791.50 usft	Latitude:	40.121610
From:	Lat/Long	Easting:	3,285,630.62 usft	Longitude:	-104.478606
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.66 °

Well	KBL 1918-06H					
Well Position	+N/-S	-0.74 usft	Northing:	1,288,791.62 usft	Latitude:	40.121608
	+E/-W	75.23 usft	Easting:	3,285,705.85 usft	Longitude:	-104.478337
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	4,863.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	7/8/2019	7.82	66.62	52,042.60825801

Design	Design #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	359.76

Plan Survey Tool Program	Date	7/10/2019			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	1,700.00	Design #1 (Wellbore #1)	ISCWSA REV 2 MWD	
				Fixed:v2:standard declination	
2	1,700.00	11,700.16	Design #1 (Wellbore #1)	ISCWSA REV 2 MWD	
				Fixed:v2:standard declination	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
855.50	9.11	315.75	853.58	25.88	-25.22	2.00	2.00	0.00	315.75	
6,411.34	9.11	315.75	6,339.34	655.99	-639.03	0.00	0.00	0.00	0.00	
7,338.69	90.00	359.76	6,900.00	1,288.20	-704.12	9.00	8.72	4.75	44.38	
11,700.16	90.00	359.76	6,900.00	5,649.63	-722.18	0.00	0.00	0.00	0.00	KBL 1918-06H_BHL

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Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well KBL 1918-06H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4887.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4887.00usft (RIG)
Site:	2N-63W-19 KBL PAD	North Reference:	True
Well:	KBL 1918-06H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 400.00ft									
500.00	2.00	315.75	499.98	1.25	-1.22	1.26	2.00	2.00	0.00
600.00	4.00	315.75	599.84	5.00	-4.87	5.02	2.00	2.00	0.00
700.00	6.00	315.75	699.45	11.24	-10.95	11.29	2.00	2.00	0.00
800.00	8.00	315.75	798.70	19.97	-19.45	20.05	2.00	2.00	0.00
855.50	9.11	315.75	853.58	25.88	-25.22	25.99	2.00	2.00	0.00
Hold Tangent @ 855.50ft									
900.00	9.11	315.75	897.52	30.93	-30.13	31.06	0.00	0.00	0.00
1,000.00	9.11	315.75	996.26	42.27	-41.18	42.44	0.00	0.00	0.00
1,100.00	9.11	315.75	1,095.00	53.61	-52.23	53.83	0.00	0.00	0.00
1,200.00	9.11	315.75	1,193.74	64.95	-63.28	65.22	0.00	0.00	0.00
1,300.00	9.11	315.75	1,292.48	76.30	-74.32	76.61	0.00	0.00	0.00
1,400.00	9.11	315.75	1,391.21	87.64	-85.37	87.99	0.00	0.00	0.00
1,500.00	9.11	315.75	1,489.95	98.98	-96.42	99.38	0.00	0.00	0.00
1,600.00	9.11	315.75	1,588.69	110.32	-107.47	110.77	0.00	0.00	0.00
1,700.00	9.11	315.75	1,687.43	121.66	-118.52	122.16	0.00	0.00	0.00
1,712.73	9.11	315.75	1,700.00	123.10	-119.92	123.61	0.00	0.00	0.00
9 5/8"									
1,800.00	9.11	315.75	1,786.17	133.00	-129.57	133.54	0.00	0.00	0.00
1,900.00	9.11	315.75	1,884.91	144.34	-140.61	144.93	0.00	0.00	0.00
2,000.00	9.11	315.75	1,983.65	155.68	-151.66	156.32	0.00	0.00	0.00
2,100.00	9.11	315.75	2,082.39	167.03	-162.71	167.71	0.00	0.00	0.00
2,200.00	9.11	315.75	2,181.12	178.37	-173.76	179.09	0.00	0.00	0.00
2,300.00	9.11	315.75	2,279.86	189.71	-184.81	190.48	0.00	0.00	0.00
2,400.00	9.11	315.75	2,378.60	201.05	-195.85	201.87	0.00	0.00	0.00
2,500.00	9.11	315.75	2,477.34	212.39	-206.90	213.26	0.00	0.00	0.00
2,600.00	9.11	315.75	2,576.08	223.73	-217.95	224.64	0.00	0.00	0.00
2,700.00	9.11	315.75	2,674.82	235.07	-229.00	236.03	0.00	0.00	0.00
2,800.00	9.11	315.75	2,773.56	246.41	-240.05	247.42	0.00	0.00	0.00
2,900.00	9.11	315.75	2,872.29	257.76	-251.09	258.81	0.00	0.00	0.00
3,000.00	9.11	315.75	2,971.03	269.10	-262.14	270.19	0.00	0.00	0.00
3,100.00	9.11	315.75	3,069.77	280.44	-273.19	281.58	0.00	0.00	0.00
3,200.00	9.11	315.75	3,168.51	291.78	-284.24	292.97	0.00	0.00	0.00
3,300.00	9.11	315.75	3,267.25	303.12	-295.29	304.36	0.00	0.00	0.00
3,400.00	9.11	315.75	3,365.99	314.46	-306.34	315.74	0.00	0.00	0.00
3,500.00	9.11	315.75	3,464.73	325.80	-317.38	327.13	0.00	0.00	0.00
3,600.00	9.11	315.75	3,563.46	337.14	-328.43	338.52	0.00	0.00	0.00
3,700.00	9.11	315.75	3,662.20	348.49	-339.48	349.90	0.00	0.00	0.00
3,800.00	9.11	315.75	3,760.94	359.83	-350.53	361.29	0.00	0.00	0.00
3,900.00	9.11	315.75	3,859.68	371.17	-361.58	372.68	0.00	0.00	0.00
4,000.00	9.11	315.75	3,958.42	382.51	-372.62	384.07	0.00	0.00	0.00
4,100.00	9.11	315.75	4,057.16	393.85	-383.67	395.45	0.00	0.00	0.00
4,200.00	9.11	315.75	4,155.90	405.19	-394.72	406.84	0.00	0.00	0.00
4,300.00	9.11	315.75	4,254.64	416.53	-405.77	418.23	0.00	0.00	0.00
4,400.00	9.11	315.75	4,353.37	427.87	-416.82	429.62	0.00	0.00	0.00
4,500.00	9.11	315.75	4,452.11	439.22	-427.86	441.00	0.00	0.00	0.00
4,600.00	9.11	315.75	4,550.85	450.56	-438.91	452.39	0.00	0.00	0.00
4,700.00	9.11	315.75	4,649.59	461.90	-449.96	463.78	0.00	0.00	0.00

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Planning Report

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Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4887.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4887.00usft (RIG)
Site:	2N-63W-19 KBL PAD	North Reference:	True
Well:	KBL 1918-06H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,800.00	9.11	315.75	4,748.33	473.24	-461.01	475.17	0.00	0.00	0.00
4,900.00	9.11	315.75	4,847.07	484.58	-472.06	486.55	0.00	0.00	0.00
5,000.00	9.11	315.75	4,945.81	495.92	-483.11	497.94	0.00	0.00	0.00
5,100.00	9.11	315.75	5,044.54	507.26	-494.15	509.33	0.00	0.00	0.00
5,200.00	9.11	315.75	5,143.28	518.60	-505.20	520.72	0.00	0.00	0.00
5,300.00	9.11	315.75	5,242.02	529.95	-516.25	532.10	0.00	0.00	0.00
5,400.00	9.11	315.75	5,340.76	541.29	-527.30	543.49	0.00	0.00	0.00
5,500.00	9.11	315.75	5,439.50	552.63	-538.35	554.88	0.00	0.00	0.00
5,600.00	9.11	315.75	5,538.24	563.97	-549.39	566.27	0.00	0.00	0.00
5,700.00	9.11	315.75	5,636.98	575.31	-560.44	577.65	0.00	0.00	0.00
5,800.00	9.11	315.75	5,735.71	586.65	-571.49	589.04	0.00	0.00	0.00
5,900.00	9.11	315.75	5,834.45	597.99	-582.54	600.43	0.00	0.00	0.00
6,000.00	9.11	315.75	5,933.19	609.33	-593.59	611.82	0.00	0.00	0.00
6,100.00	9.11	315.75	6,031.93	620.68	-604.64	623.20	0.00	0.00	0.00
6,200.00	9.11	315.75	6,130.67	632.02	-615.68	634.59	0.00	0.00	0.00
6,300.00	9.11	315.75	6,229.41	643.36	-626.73	645.98	0.00	0.00	0.00
6,400.00	9.11	315.75	6,328.15	654.70	-637.78	657.36	0.00	0.00	0.00
6,411.34	9.11	315.75	6,339.34	655.99	-639.03	658.66	0.00	0.00	0.00
KOP @ 6411.34ft :: DLS = 9°/100'									
6,500.00	15.82	336.61	6,425.90	672.13	-648.74	674.84	9.00	7.57	23.53
6,600.00	24.31	345.49	6,519.77	704.64	-659.34	707.40	9.00	8.49	8.88
6,700.00	33.07	349.91	6,607.42	751.53	-669.30	754.32	9.00	8.75	4.42
6,800.00	41.91	352.63	6,686.69	811.63	-678.38	814.47	9.00	8.85	2.72
6,900.00	50.81	354.55	6,755.63	883.48	-686.36	886.35	9.00	8.89	1.92
7,000.00	59.72	356.03	6,812.55	965.30	-693.04	968.20	9.00	8.92	1.48
7,100.00	68.66	357.27	6,856.05	1,055.08	-698.26	1,058.00	9.00	8.93	1.23
7,200.00	77.60	358.36	6,885.05	1,150.61	-701.88	1,153.54	9.00	8.94	1.09
7,300.00	86.54	359.38	6,898.83	1,249.53	-703.83	1,252.47	9.00	8.94	1.02
7,338.69	90.00	359.76	6,900.00	1,288.20	-704.12	1,291.14	9.00	8.94	1.00
End Build @ 7338.69ft									
7,400.00	90.00	359.76	6,900.00	1,349.51	-704.37	1,352.45	0.00	0.00	0.00
7,500.00	90.00	359.76	6,900.00	1,449.51	-704.79	1,452.45	0.00	0.00	0.00
7,600.00	90.00	359.76	6,900.00	1,549.51	-705.20	1,552.45	0.00	0.00	0.00
7,700.00	90.00	359.76	6,900.00	1,649.51	-705.61	1,652.45	0.00	0.00	0.00
7,800.00	90.00	359.76	6,900.00	1,749.51	-706.03	1,752.45	0.00	0.00	0.00
7,900.00	90.00	359.76	6,900.00	1,849.50	-706.44	1,852.45	0.00	0.00	0.00
8,000.00	90.00	359.76	6,900.00	1,949.50	-706.86	1,952.45	0.00	0.00	0.00
8,100.00	90.00	359.76	6,900.00	2,049.50	-707.27	2,052.45	0.00	0.00	0.00
8,200.00	90.00	359.76	6,900.00	2,149.50	-707.69	2,152.45	0.00	0.00	0.00
8,300.00	90.00	359.76	6,900.00	2,249.50	-708.10	2,252.45	0.00	0.00	0.00
8,400.00	90.00	359.76	6,900.00	2,349.50	-708.51	2,352.45	0.00	0.00	0.00
8,500.00	90.00	359.76	6,900.00	2,449.50	-708.93	2,452.45	0.00	0.00	0.00
8,600.00	90.00	359.76	6,900.00	2,549.50	-709.34	2,552.45	0.00	0.00	0.00
8,700.00	90.00	359.76	6,900.00	2,649.50	-709.76	2,652.45	0.00	0.00	0.00
8,800.00	90.00	359.76	6,900.00	2,749.50	-710.17	2,752.45	0.00	0.00	0.00
8,900.00	90.00	359.76	6,900.00	2,849.50	-710.58	2,852.45	0.00	0.00	0.00
9,000.00	90.00	359.76	6,900.00	2,949.49	-711.00	2,952.45	0.00	0.00	0.00
9,100.00	90.00	359.76	6,900.00	3,049.49	-711.41	3,052.45	0.00	0.00	0.00
9,200.00	90.00	359.76	6,900.00	3,149.49	-711.83	3,152.45	0.00	0.00	0.00
9,300.00	90.00	359.76	6,900.00	3,249.49	-712.24	3,252.45	0.00	0.00	0.00
9,400.00	90.00	359.76	6,900.00	3,349.49	-712.66	3,352.45	0.00	0.00	0.00
9,500.00	90.00	359.76	6,900.00	3,449.49	-713.07	3,452.45	0.00	0.00	0.00
9,600.00	90.00	359.76	6,900.00	3,549.49	-713.48	3,552.45	0.00	0.00	0.00
9,700.00	90.00	359.76	6,900.00	3,649.49	-713.90	3,652.45	0.00	0.00	0.00

Hewlett-Packard

Planning Report

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Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4887.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4887.00usft (RIG)
Site:	2N-63W-19 KBL PAD	North Reference:	True
Well:	KBL 1918-06H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
9,800.00	90.00	359.76	6,900.00	3,749.49	-714.31	3,752.45	0.00	0.00	0.00	
9,900.00	90.00	359.76	6,900.00	3,849.49	-714.73	3,852.45	0.00	0.00	0.00	
10,000.00	90.00	359.76	6,900.00	3,949.49	-715.14	3,952.45	0.00	0.00	0.00	
10,100.00	90.00	359.76	6,900.00	4,049.49	-715.55	4,052.45	0.00	0.00	0.00	
10,200.00	90.00	359.76	6,900.00	4,149.48	-715.97	4,152.45	0.00	0.00	0.00	
10,300.00	90.00	359.76	6,900.00	4,249.48	-716.38	4,252.45	0.00	0.00	0.00	
10,400.00	90.00	359.76	6,900.00	4,349.48	-716.80	4,352.45	0.00	0.00	0.00	
10,500.00	90.00	359.76	6,900.00	4,449.48	-717.21	4,452.45	0.00	0.00	0.00	
10,600.00	90.00	359.76	6,900.00	4,549.48	-717.63	4,552.45	0.00	0.00	0.00	
10,700.00	90.00	359.76	6,900.00	4,649.48	-718.04	4,652.45	0.00	0.00	0.00	
10,800.00	90.00	359.76	6,900.00	4,749.48	-718.45	4,752.45	0.00	0.00	0.00	
10,900.00	90.00	359.76	6,900.00	4,849.48	-718.87	4,852.45	0.00	0.00	0.00	
11,000.00	90.00	359.76	6,900.00	4,949.48	-719.28	4,952.45	0.00	0.00	0.00	
11,100.00	90.00	359.76	6,900.00	5,049.48	-719.70	5,052.45	0.00	0.00	0.00	
11,200.00	90.00	359.76	6,900.00	5,149.48	-720.11	5,152.45	0.00	0.00	0.00	
11,300.00	90.00	359.76	6,900.00	5,249.48	-720.52	5,252.45	0.00	0.00	0.00	
11,400.00	90.00	359.76	6,900.00	5,349.47	-720.94	5,352.45	0.00	0.00	0.00	
11,500.00	90.00	359.76	6,900.00	5,449.47	-721.35	5,452.45	0.00	0.00	0.00	
11,600.00	90.00	359.76	6,900.00	5,549.47	-721.77	5,552.45	0.00	0.00	0.00	
11,700.00	90.00	359.76	6,900.00	5,649.47	-722.18	5,652.45	0.00	0.00	0.00	
11,700.16	90.00	359.76	6,900.00	5,649.63	-722.18	5,652.60	0.00	0.00	0.00	
TD Well @ 11700.16ft										

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,712.73	1,700.00	9 5/8"	9-5/8	13-1/2

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
400.00	400.00	0.00	0.00	Begin Nudge @ 400.00ft
855.50	853.58	25.88	-25.22	Hold Tangent @ 855.50ft
6,411.34	6,339.34	655.99	-639.03	KOP @ 6411.34ft :: DLS = 9°/100'
7,338.69	6,900.00	1,288.20	-704.12	End Build @ 7338.69ft
11,700.16	6,900.00	5,649.63	-722.18	TD Well @ 11700.16ft