

VERDAD RESOURCES

WATTENBERG FIELD

2N-63W-19 KBL PAD

KBL 1830-17H

Plan A

Plan: Design #1

Standard Planning Report

17 September, 2024

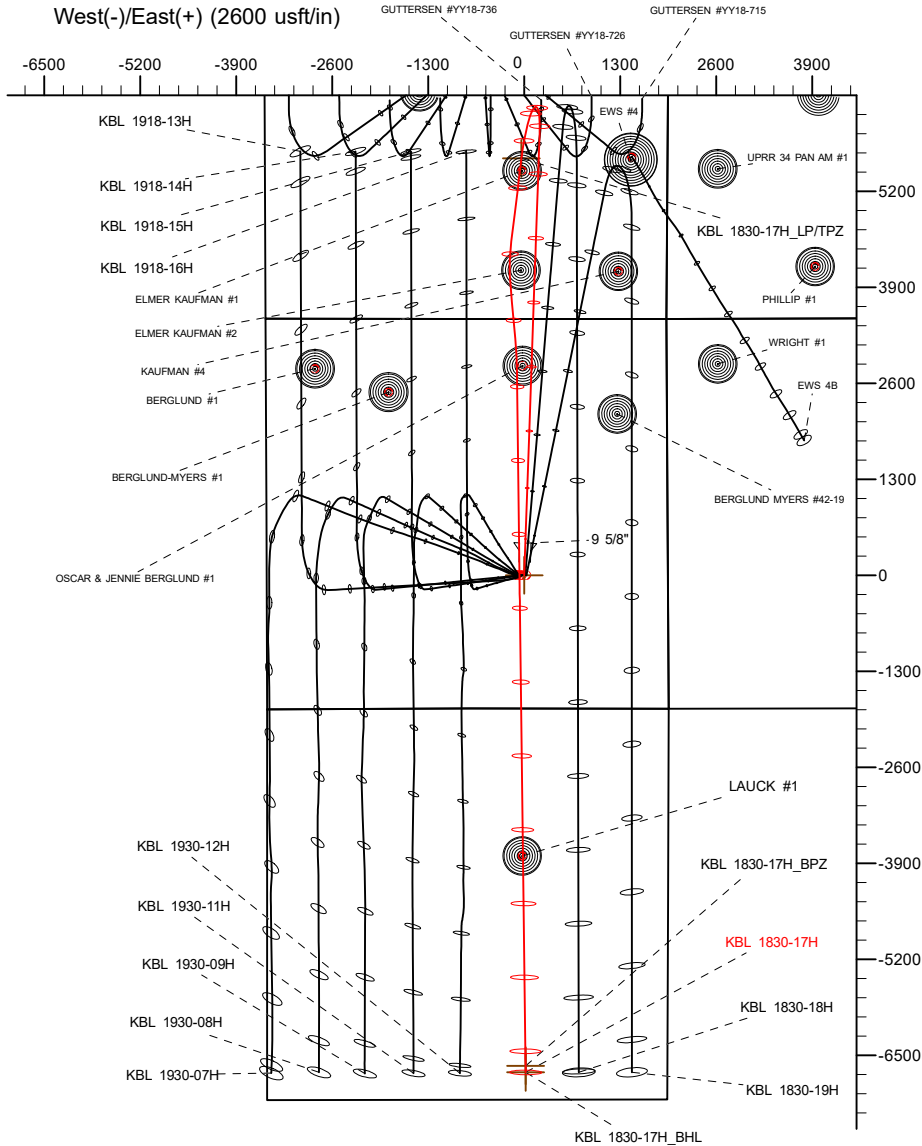
Project: WATTENBERG FIELD
Site: 2N-63W-19 KBL PAD
Well: KBL 1830-17H
Wellbore: Plan A
Design: Design #1

VERDAD RESOURCES

CASING DETAILS

TVD	MD	Name	Size
1816.00	1897.43	9 5/8"	9-5/8

West(-)/East(+) (2600 usft/in)



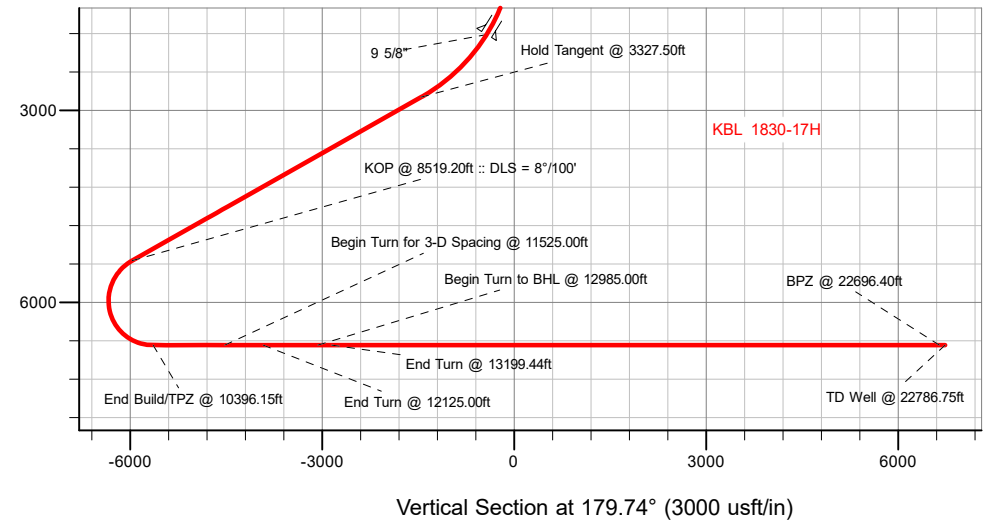
South(-)/North(+) (2600 usft/in)

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.50	0.00	0.00	300.50	0.00	0.00	0.00	0.00	0.00	
3327.50	60.54	2.00	2794.87	1454.95	50.81	2.00	0.00	-1454.71	
8519.20	60.54	2.00	5348.23	5972.61	208.57	0.00	0.00	-5971.60	
10396.15	90.00	187.00	6670.00	5643.72	-37.29	8.00	-169.91	-5643.83	
11525.00	90.00	187.00	6670.00	4523.28	-174.87	0.00	0.00	-4524.03	
12125.00	90.00	175.00	6670.00	3924.47	-185.32	0.00	-90.00	-3925.27	
12985.00	90.00	175.00	6670.00	3067.75	-110.36	0.00	0.00	-3068.22	
13199.44	90.00	179.29	6670.00	2853.62	-99.68	2.00	90.00	-2854.04	
22786.75	90.00	179.29	6670.00	-6732.95	19.30	0.00	0.00	6732.97	KBL 1830-17H_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	Northing	Easting	Latitude	Longitude
KBL 1830-17H_SHL	0.00	1288791.53	3285855.76	40.121603	-104.477801
KBL 1830-17H_LP/TPZ	6670.00	1294434.15	3285753.24	40.137095	-104.477935
KBL 1830-17H_BPZ	6670.00	1282149.58	3285951.35	40.103368	-104.477733
KBL 1830-17H_BHL	6670.00	1282059.25	3285952.67	40.103120	-104.477732

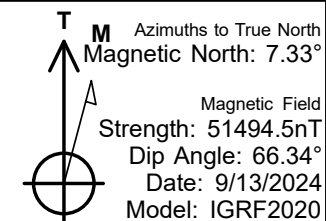


SHL
1805' FSL
1946' FEL

TPZ
2172' FSL
1977' FEL

BPZ
460' FSL
1920' FEL

BHL
370' FSL
1919' FEL



WELL DETAILS: KBL 1830-17H

GL = 4861'

RKB = 21' @ 4882.00usft (RIG)

Plan: Design #1 (KBL 1830-17H/Plan A)

Date: 9/17/2024

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well KBL 1830-17H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 21' @ 4882.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 21' @ 4882.00usft (RIG)
Site:	2N-63W-19 KBL PAD	North Reference:	True
Well:	KBL 1830-17H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
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 "	

Well	KBL 1830-17H			
Well Position	+N/-S	0.00 usft	Northing:	1,288,791.53 usft
	+E/-W	0.00 usft	Easting:	3,285,855.76 usft
Position Uncertainty		3.28 usft	Wellhead Elevation:	usft
Grid Convergence:		0.66 °	Ground Level:	4,861.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF202013	9/13/2024	7.33	66.34	51,494.54116487

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	179.74

Plan Survey Tool Program		Date	9/17/2024		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	1,816.00	Design #1 (Plan A)	ISCWSA MWD	
				Fixed:v2:standard declination	
2	1,816.00	22,786.75	Design #1 (Plan A)	ISCWSA MWD	
				Fixed:v2:standard declination	

Planning Report

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Project:	WATTENBERG FIELD	MD Reference:	RKB = 21' @ 4882.00usft (RIG)
Site:	2N-63W-19 KBL PAD	North Reference:	True
Well:	KBL 1830-17H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Design #1		

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	
300.50	0.00	0.00	300.50	0.00	0.00	0.00	0.00	0.00	0.00	
3,327.50	60.54	2.00	2,794.87	1,454.95	50.81	2.00	2.00	0.00	2.00	
8,519.20	60.54	2.00	5,348.23	5,972.61	208.57	0.00	0.00	0.00	0.00	
10,396.15	90.00	187.00	6,670.00	5,643.72	-37.29	8.00	1.57	-9.32	-169.91	
11,525.00	90.00	187.00	6,670.00	4,523.28	-174.87	0.00	0.00	0.00	0.00	
12,125.00	90.00	175.00	6,670.00	3,924.47	-185.32	2.00	0.00	-2.00	-90.00	
12,985.00	90.00	175.00	6,670.00	3,067.75	-110.36	0.00	0.00	0.00	0.00	
13,199.44	90.00	179.29	6,670.00	2,853.62	-99.68	2.00	0.00	2.00	90.00	
22,786.75	90.00	179.29	6,670.00	-6,732.95	19.30	0.00	0.00	0.00	0.00	KBL 1830-17H_BHL

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well KBL 1830-17H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 21' @ 4882.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 21' @ 4882.00usft (RIG)
Site:	2N-63W-19 KBL PAD	North Reference:	True
Well:	KBL 1830-17H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
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
300.50	0.00	0.00	300.50	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 300.50ft									
400.00	1.99	2.00	399.98	1.73	0.06	-1.73	2.00	2.00	0.00
500.00	3.99	2.00	499.84	6.94	0.24	-6.94	2.00	2.00	0.00
600.00	5.99	2.00	599.45	15.63	0.55	-15.63	2.00	2.00	0.00
700.00	7.99	2.00	698.71	27.79	0.97	-27.79	2.00	2.00	0.00
800.00	9.99	2.00	797.47	43.41	1.52	-43.40	2.00	2.00	0.00
900.00	11.99	2.00	895.63	62.46	2.18	-62.45	2.00	2.00	0.00
1,000.00	13.99	2.00	993.07	84.92	2.97	-84.91	2.00	2.00	0.00
1,100.00	15.99	2.00	1,089.66	110.77	3.87	-110.75	2.00	2.00	0.00
1,200.00	17.99	2.00	1,185.29	139.97	4.89	-139.95	2.00	2.00	0.00
1,300.00	19.99	2.00	1,279.85	172.49	6.02	-172.46	2.00	2.00	0.00
1,400.00	21.99	2.00	1,373.21	208.29	7.27	-208.25	2.00	2.00	0.00
1,500.00	23.99	2.00	1,465.26	247.32	8.64	-247.28	2.00	2.00	0.00
1,600.00	25.99	2.00	1,555.89	289.54	10.11	-289.49	2.00	2.00	0.00
1,700.00	27.99	2.00	1,645.00	334.89	11.69	-334.84	2.00	2.00	0.00
1,800.00	29.99	2.00	1,732.46	383.33	13.39	-383.26	2.00	2.00	0.00
1,897.43	31.94	2.00	1,816.00	433.42	15.14	-433.35	2.00	2.00	0.00
9 5/8"									
1,900.00	31.99	2.00	1,818.18	434.78	15.18	-434.71	2.00	2.00	0.00
2,000.00	33.99	2.00	1,902.06	489.19	17.08	-489.11	2.00	2.00	0.00
2,100.00	35.99	2.00	1,983.98	546.50	19.08	-546.41	2.00	2.00	0.00
2,200.00	37.99	2.00	2,063.85	606.63	21.18	-606.52	2.00	2.00	0.00
2,300.00	39.99	2.00	2,141.57	669.50	23.38	-669.39	2.00	2.00	0.00
2,400.00	41.99	2.00	2,217.05	735.05	25.67	-734.93	2.00	2.00	0.00
2,500.00	43.99	2.00	2,290.19	803.20	28.05	-803.06	2.00	2.00	0.00
2,600.00	45.99	2.00	2,360.91	873.85	30.52	-873.70	2.00	2.00	0.00
2,700.00	47.99	2.00	2,429.12	946.92	33.07	-946.76	2.00	2.00	0.00
2,800.00	49.99	2.00	2,494.73	1,022.33	35.70	-1,022.16	2.00	2.00	0.00
2,900.00	51.99	2.00	2,557.68	1,099.98	38.41	-1,099.80	2.00	2.00	0.00
3,000.00	53.99	2.00	2,617.87	1,179.78	41.20	-1,179.59	2.00	2.00	0.00
3,100.00	55.99	2.00	2,675.24	1,261.64	44.06	-1,261.42	2.00	2.00	0.00
3,200.00	57.99	2.00	2,729.71	1,345.44	46.98	-1,345.21	2.00	2.00	0.00
3,300.00	59.99	2.00	2,781.23	1,431.09	49.97	-1,430.85	2.00	2.00	0.00
3,327.50	60.54	2.00	2,794.87	1,454.95	50.81	-1,454.71	2.00	2.00	0.00
Hold Tangent @ 3327.50ft									
3,400.00	60.54	2.00	2,830.53	1,518.04	53.01	-1,517.78	0.00	0.00	0.00
3,500.00	60.54	2.00	2,879.71	1,605.06	56.05	-1,604.79	0.00	0.00	0.00
3,600.00	60.54	2.00	2,928.89	1,692.07	59.09	-1,691.79	0.00	0.00	0.00
3,700.00	60.54	2.00	2,978.07	1,779.09	62.13	-1,778.79	0.00	0.00	0.00
3,800.00	60.54	2.00	3,027.25	1,866.11	65.17	-1,865.79	0.00	0.00	0.00
3,900.00	60.54	2.00	3,076.43	1,953.13	68.20	-1,952.80	0.00	0.00	0.00
4,000.00	60.54	2.00	3,125.62	2,040.14	71.24	-2,039.80	0.00	0.00	0.00
4,100.00	60.54	2.00	3,174.80	2,127.16	74.28	-2,126.80	0.00	0.00	0.00
4,200.00	60.54	2.00	3,223.98	2,214.18	77.32	-2,213.80	0.00	0.00	0.00
4,300.00	60.54	2.00	3,273.16	2,301.19	80.36	-2,300.80	0.00	0.00	0.00
4,400.00	60.54	2.00	3,322.34	2,388.21	83.40	-2,387.81	0.00	0.00	0.00
4,500.00	60.54	2.00	3,371.52	2,475.23	86.44	-2,474.81	0.00	0.00	0.00
4,600.00	60.54	2.00	3,420.71	2,562.24	89.48	-2,561.81	0.00	0.00	0.00
4,700.00	60.54	2.00	3,469.89	2,649.26	92.51	-2,648.81	0.00	0.00	0.00

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Project:	WATTENBERG FIELD	MD Reference:	RKB = 21' @ 4882.00usft (RIG)
Site:	2N-63W-19 KBL PAD	North Reference:	True
Well:	KBL 1830-17H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
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	60.54	2.00	3,519.07	2,736.28	95.55	-2,735.82	0.00	0.00	0.00
4,900.00	60.54	2.00	3,568.25	2,823.29	98.59	-2,822.82	0.00	0.00	0.00
5,000.00	60.54	2.00	3,617.43	2,910.31	101.63	-2,909.82	0.00	0.00	0.00
5,100.00	60.54	2.00	3,666.61	2,997.33	104.67	-2,996.82	0.00	0.00	0.00
5,200.00	60.54	2.00	3,715.79	3,084.34	107.71	-3,083.82	0.00	0.00	0.00
5,300.00	60.54	2.00	3,764.98	3,171.36	110.75	-3,170.83	0.00	0.00	0.00
5,400.00	60.54	2.00	3,814.16	3,258.38	113.79	-3,257.83	0.00	0.00	0.00
5,500.00	60.54	2.00	3,863.34	3,345.40	116.82	-3,344.83	0.00	0.00	0.00
5,600.00	60.54	2.00	3,912.52	3,432.41	119.86	-3,431.83	0.00	0.00	0.00
5,700.00	60.54	2.00	3,961.70	3,519.43	122.90	-3,518.84	0.00	0.00	0.00
5,800.00	60.54	2.00	4,010.88	3,606.45	125.94	-3,605.84	0.00	0.00	0.00
5,900.00	60.54	2.00	4,060.07	3,693.46	128.98	-3,692.84	0.00	0.00	0.00
6,000.00	60.54	2.00	4,109.25	3,780.48	132.02	-3,779.84	0.00	0.00	0.00
6,100.00	60.54	2.00	4,158.43	3,867.50	135.06	-3,866.84	0.00	0.00	0.00
6,200.00	60.54	2.00	4,207.61	3,954.51	138.09	-3,953.85	0.00	0.00	0.00
6,300.00	60.54	2.00	4,256.79	4,041.53	141.13	-4,040.85	0.00	0.00	0.00
6,400.00	60.54	2.00	4,305.97	4,128.55	144.17	-4,127.85	0.00	0.00	0.00
6,500.00	60.54	2.00	4,355.16	4,215.56	147.21	-4,214.85	0.00	0.00	0.00
6,600.00	60.54	2.00	4,404.34	4,302.58	150.25	-4,301.86	0.00	0.00	0.00
6,700.00	60.54	2.00	4,453.52	4,389.60	153.29	-4,388.86	0.00	0.00	0.00
6,800.00	60.54	2.00	4,502.70	4,476.61	156.33	-4,475.86	0.00	0.00	0.00
6,900.00	60.54	2.00	4,551.88	4,563.63	159.37	-4,562.86	0.00	0.00	0.00
7,000.00	60.54	2.00	4,601.06	4,650.65	162.40	-4,649.86	0.00	0.00	0.00
7,100.00	60.54	2.00	4,650.24	4,737.67	165.44	-4,736.87	0.00	0.00	0.00
7,200.00	60.54	2.00	4,699.43	4,824.68	168.48	-4,823.87	0.00	0.00	0.00
7,300.00	60.54	2.00	4,748.61	4,911.70	171.52	-4,910.87	0.00	0.00	0.00
7,400.00	60.54	2.00	4,797.79	4,998.72	174.56	-4,997.87	0.00	0.00	0.00
7,500.00	60.54	2.00	4,846.97	5,085.73	177.60	-5,084.87	0.00	0.00	0.00
7,600.00	60.54	2.00	4,896.15	5,172.75	180.64	-5,171.88	0.00	0.00	0.00
7,700.00	60.54	2.00	4,945.33	5,259.77	183.68	-5,258.88	0.00	0.00	0.00
7,800.00	60.54	2.00	4,994.52	5,346.78	186.71	-5,345.88	0.00	0.00	0.00
7,900.00	60.54	2.00	5,043.70	5,433.80	189.75	-5,432.88	0.00	0.00	0.00
8,000.00	60.54	2.00	5,092.88	5,520.82	192.79	-5,519.89	0.00	0.00	0.00
8,100.00	60.54	2.00	5,142.06	5,607.83	195.83	-5,606.89	0.00	0.00	0.00
8,200.00	60.54	2.00	5,191.24	5,694.85	198.87	-5,693.89	0.00	0.00	0.00
8,300.00	60.54	2.00	5,240.42	5,781.87	201.91	-5,780.89	0.00	0.00	0.00
8,400.00	60.54	2.00	5,289.61	5,868.89	204.95	-5,867.89	0.00	0.00	0.00
8,500.00	60.54	2.00	5,338.79	5,955.90	207.98	-5,954.90	0.00	0.00	0.00
8,519.20	60.54	2.00	5,348.23	5,972.61	208.57	-5,971.60	0.00	0.00	0.00
KOP @ 8519.20ft :: DLS = 8°/100'									
8,550.00	58.12	1.49	5,363.94	5,999.09	209.38	-5,998.07	8.00	-7.87	-1.65
8,600.00	54.18	0.61	5,391.79	6,040.59	210.14	-6,039.58	8.00	-7.86	-1.77
8,650.00	50.26	359.63	5,422.41	6,080.10	210.23	-6,079.09	8.00	-7.85	-1.96
8,700.00	46.34	358.53	5,455.67	6,117.42	209.65	-6,116.41	8.00	-7.83	-2.19
8,750.00	42.44	357.29	5,491.39	6,152.37	208.38	-6,151.36	8.00	-7.81	-2.50
8,800.00	38.55	355.84	5,529.41	6,184.77	206.45	-6,183.77	8.00	-7.78	-2.90
8,850.00	34.68	354.12	5,569.53	6,214.48	203.86	-6,213.49	8.00	-7.73	-3.44
8,900.00	30.85	352.03	5,611.57	6,241.33	200.63	-6,240.36	8.00	-7.67	-4.18
8,950.00	27.05	349.41	5,655.32	6,265.22	196.76	-6,264.26	8.00	-7.59	-5.23
9,000.00	23.32	346.03	5,700.56	6,286.00	192.28	-6,285.07	8.00	-7.47	-6.77
9,050.00	19.68	341.45	5,747.07	6,303.60	187.21	-6,302.68	8.00	-7.27	-9.15
9,100.00	16.22	334.96	5,794.64	6,317.91	181.57	-6,317.02	8.00	-6.94	-12.99
9,150.00	13.04	325.24	5,843.02	6,328.88	175.39	-6,328.02	8.00	-6.34	-19.43
9,200.00	10.44	310.17	5,891.98	6,336.44	168.71	-6,335.61	8.00	-5.20	-30.14

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well KBL 1830-17H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 21' @ 4882.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 21' @ 4882.00usft (RIG)
Site:	2N-63W-19 KBL PAD	North Reference:	True
Well:	KBL 1830-17H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
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)
9,250.00	8.93	287.96	5,941.28	6,340.56	161.55	-6,339.76	8.00	-3.03	-44.41
9,300.00	9.07	262.20	5,990.69	6,341.22	153.95	-6,340.46	8.00	0.27	-51.54
9,350.00	10.79	241.06	6,039.95	6,338.42	145.95	-6,337.70	8.00	3.44	-42.27
9,400.00	13.50	226.98	6,088.84	6,332.17	137.58	-6,331.48	8.00	5.43	-28.17
9,450.00	16.73	217.88	6,137.11	6,322.50	128.89	-6,321.85	8.00	6.46	-18.21
9,500.00	20.24	211.74	6,184.52	6,309.46	119.92	-6,308.85	8.00	7.00	-12.26
9,550.00	23.89	207.39	6,230.86	6,293.11	110.71	-6,292.55	8.00	7.31	-8.71
9,600.00	27.63	204.14	6,275.88	6,273.54	101.31	-6,273.01	8.00	7.49	-6.49
9,650.00	31.44	201.62	6,319.38	6,250.83	91.76	-6,250.35	8.00	7.61	-5.04
9,700.00	35.28	199.60	6,361.14	6,225.09	82.11	-6,224.66	8.00	7.69	-4.05
9,750.00	39.15	197.93	6,400.95	6,196.46	72.40	-6,196.07	8.00	7.74	-3.34
9,800.00	43.04	196.51	6,438.63	6,165.07	62.69	-6,164.73	8.00	7.78	-2.83
9,850.00	46.94	195.29	6,473.98	6,131.08	53.02	-6,130.78	8.00	7.81	-2.44
9,900.00	50.86	194.21	6,506.84	6,094.65	43.44	-6,094.39	8.00	7.83	-2.15
9,950.00	54.79	193.25	6,537.05	6,055.95	33.99	-6,055.74	8.00	7.85	-1.92
10,000.00	58.72	192.38	6,564.46	6,015.19	24.72	-6,015.01	8.00	7.87	-1.75
10,050.00	62.66	191.58	6,588.93	5,972.54	15.68	-5,972.41	8.00	7.88	-1.61
10,100.00	66.60	190.83	6,610.35	5,928.23	6.91	-5,928.14	8.00	7.89	-1.50
10,150.00	70.55	190.12	6,628.61	5,882.47	-1.54	-5,882.42	8.00	7.89	-1.41
10,200.00	74.50	189.45	6,643.62	5,835.49	-9.65	-5,835.47	8.00	7.90	-1.34
10,250.00	78.45	188.81	6,655.32	5,787.50	-17.36	-5,787.52	8.00	7.90	-1.29
10,300.00	82.40	188.18	6,663.64	5,738.75	-24.64	-5,738.80	8.00	7.90	-1.26
10,350.00	86.35	187.56	6,668.54	5,689.47	-31.45	-5,689.55	8.00	7.91	-1.23
10,396.15	90.00	187.00	6,670.00	5,643.72	-37.29	-5,643.83	8.00	7.91	-1.22
End Build/TPZ @ 10396.15ft									
10,400.00	90.00	187.00	6,670.00	5,639.90	-37.76	-5,640.01	0.00	0.00	0.00
10,500.00	90.00	187.00	6,670.00	5,540.64	-49.95	-5,540.81	0.00	0.00	0.00
10,600.00	90.00	187.00	6,670.00	5,441.39	-62.14	-5,441.61	0.00	0.00	0.00
10,700.00	90.00	187.00	6,670.00	5,342.13	-74.32	-5,342.42	0.00	0.00	0.00
10,800.00	90.00	187.00	6,670.00	5,242.88	-86.51	-5,243.22	0.00	0.00	0.00
10,900.00	90.00	187.00	6,670.00	5,143.62	-98.70	-5,144.02	0.00	0.00	0.00
11,000.00	90.00	187.00	6,670.00	5,044.37	-110.88	-5,044.82	0.00	0.00	0.00
11,100.00	90.00	187.00	6,670.00	4,945.12	-123.07	-4,945.62	0.00	0.00	0.00
11,200.00	90.00	187.00	6,670.00	4,845.86	-135.26	-4,846.42	0.00	0.00	0.00
11,300.00	90.00	187.00	6,670.00	4,746.61	-147.45	-4,747.23	0.00	0.00	0.00
11,400.00	90.00	187.00	6,670.00	4,647.35	-159.63	-4,648.03	0.00	0.00	0.00
11,500.00	90.00	187.00	6,670.00	4,548.10	-171.82	-4,548.83	0.00	0.00	0.00
11,525.00	90.00	187.00	6,670.00	4,523.28	-174.87	-4,524.03	0.00	0.00	0.00
Begin Turn for 3-D Spacing @ 11525.00ft									
11,600.00	90.00	185.50	6,670.00	4,448.73	-183.03	-4,449.52	2.00	0.00	-2.00
11,700.00	90.00	183.50	6,670.00	4,349.04	-190.88	-4,349.87	2.00	0.00	-2.00
11,800.00	90.00	181.50	6,670.00	4,249.14	-195.24	-4,249.99	2.00	0.00	-2.00
11,900.00	90.00	179.50	6,670.00	4,149.15	-196.11	-4,150.00	2.00	0.00	-2.00
12,000.00	90.00	177.50	6,670.00	4,049.19	-193.49	-4,050.03	2.00	0.00	-2.00
12,100.00	90.00	175.50	6,670.00	3,949.38	-187.39	-3,950.19	2.00	0.00	-2.00
12,125.00	90.00	175.00	6,670.00	3,924.47	-185.32	-3,925.27	2.00	0.00	-2.00
End Turn @ 12125.00ft									
12,200.00	90.00	175.00	6,670.00	3,849.76	-178.78	-3,850.53	0.00	0.00	0.00
12,300.00	90.00	175.00	6,670.00	3,750.14	-170.07	-3,750.87	0.00	0.00	0.00
12,400.00	90.00	175.00	6,670.00	3,650.52	-161.35	-3,651.21	0.00	0.00	0.00
12,500.00	90.00	175.00	6,670.00	3,550.90	-152.64	-3,551.55	0.00	0.00	0.00
12,600.00	90.00	175.00	6,670.00	3,451.28	-143.92	-3,451.90	0.00	0.00	0.00
12,700.00	90.00	175.00	6,670.00	3,351.66	-135.20	-3,352.24	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well KBL 1830-17H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 21' @ 4882.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 21' @ 4882.00usft (RIG)
Site:	2N-63W-19 KBL PAD	North Reference:	True
Well:	KBL 1830-17H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
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)
12,800.00	90.00	175.00	6,670.00	3,252.04	-126.49	-3,252.58	0.00	0.00	0.00
12,900.00	90.00	175.00	6,670.00	3,152.42	-117.77	-3,152.92	0.00	0.00	0.00
12,985.00	90.00	175.00	6,670.00	3,067.75	-110.36	-3,068.22	0.00	0.00	0.00
Begin Turn to BHL @ 12985.00ft									
13,000.00	90.00	175.30	6,670.00	3,052.80	-109.10	-3,053.26	2.00	0.00	2.00
13,100.00	90.00	177.30	6,670.00	2,953.01	-102.64	-2,953.45	2.00	0.00	2.00
13,199.44	90.00	179.29	6,670.00	2,853.62	-99.68	-2,854.04	2.00	0.00	2.00
End Turn @ 13199.44ft									
13,300.00	90.00	179.29	6,670.00	2,753.07	-98.44	-2,753.49	0.00	0.00	0.00
13,400.00	90.00	179.29	6,670.00	2,653.07	-97.20	-2,653.49	0.00	0.00	0.00
13,500.00	90.00	179.29	6,670.00	2,553.08	-95.95	-2,553.49	0.00	0.00	0.00
13,600.00	90.00	179.29	6,670.00	2,453.09	-94.71	-2,453.49	0.00	0.00	0.00
13,700.00	90.00	179.29	6,670.00	2,353.10	-93.47	-2,353.50	0.00	0.00	0.00
13,800.00	90.00	179.29	6,670.00	2,253.11	-92.23	-2,253.50	0.00	0.00	0.00
13,900.00	90.00	179.29	6,670.00	2,153.11	-90.99	-2,153.50	0.00	0.00	0.00
14,000.00	90.00	179.29	6,670.00	2,053.12	-89.75	-2,053.51	0.00	0.00	0.00
14,100.00	90.00	179.29	6,670.00	1,953.13	-88.51	-1,953.51	0.00	0.00	0.00
14,200.00	90.00	179.29	6,670.00	1,853.14	-87.27	-1,853.51	0.00	0.00	0.00
14,300.00	90.00	179.29	6,670.00	1,753.14	-86.03	-1,753.52	0.00	0.00	0.00
14,400.00	90.00	179.29	6,670.00	1,653.15	-84.78	-1,653.52	0.00	0.00	0.00
14,500.00	90.00	179.29	6,670.00	1,553.16	-83.54	-1,553.52	0.00	0.00	0.00
14,600.00	90.00	179.29	6,670.00	1,453.17	-82.30	-1,453.53	0.00	0.00	0.00
14,700.00	90.00	179.29	6,670.00	1,353.17	-81.06	-1,353.53	0.00	0.00	0.00
14,800.00	90.00	179.29	6,670.00	1,253.18	-79.82	-1,253.53	0.00	0.00	0.00
14,900.00	90.00	179.29	6,670.00	1,153.19	-78.58	-1,153.53	0.00	0.00	0.00
15,000.00	90.00	179.29	6,670.00	1,053.20	-77.34	-1,053.54	0.00	0.00	0.00
15,100.00	90.00	179.29	6,670.00	953.21	-76.10	-953.54	0.00	0.00	0.00
15,200.00	90.00	179.29	6,670.00	853.21	-74.86	-853.54	0.00	0.00	0.00
15,300.00	90.00	179.29	6,670.00	753.22	-73.61	-753.55	0.00	0.00	0.00
15,400.00	90.00	179.29	6,670.00	653.23	-72.37	-653.55	0.00	0.00	0.00
15,500.00	90.00	179.29	6,670.00	553.24	-71.13	-553.55	0.00	0.00	0.00
15,600.00	90.00	179.29	6,670.00	453.24	-69.89	-453.56	0.00	0.00	0.00
15,700.00	90.00	179.29	6,670.00	353.25	-68.65	-353.56	0.00	0.00	0.00
15,800.00	90.00	179.29	6,670.00	253.26	-67.41	-253.56	0.00	0.00	0.00
15,900.00	90.00	179.29	6,670.00	153.27	-66.17	-153.57	0.00	0.00	0.00
16,000.00	90.00	179.29	6,670.00	53.27	-64.93	-53.57	0.00	0.00	0.00
16,100.00	90.00	179.29	6,670.00	-46.72	-63.69	46.43	0.00	0.00	0.00
16,200.00	90.00	179.29	6,670.00	-146.71	-62.45	146.42	0.00	0.00	0.00
16,300.00	90.00	179.29	6,670.00	-246.70	-61.20	246.42	0.00	0.00	0.00
16,400.00	90.00	179.29	6,670.00	-346.69	-59.96	346.42	0.00	0.00	0.00
16,500.00	90.00	179.29	6,670.00	-446.69	-58.72	446.42	0.00	0.00	0.00
16,600.00	90.00	179.29	6,670.00	-546.68	-57.48	546.41	0.00	0.00	0.00
16,700.00	90.00	179.29	6,670.00	-646.67	-56.24	646.41	0.00	0.00	0.00
16,800.00	90.00	179.29	6,670.00	-746.66	-55.00	746.41	0.00	0.00	0.00
16,900.00	90.00	179.29	6,670.00	-846.66	-53.76	846.40	0.00	0.00	0.00
17,000.00	90.00	179.29	6,670.00	-946.65	-52.52	946.40	0.00	0.00	0.00
17,100.00	90.00	179.29	6,670.00	-1,046.64	-51.28	1,046.40	0.00	0.00	0.00
17,200.00	90.00	179.29	6,670.00	-1,146.63	-50.03	1,146.39	0.00	0.00	0.00
17,300.00	90.00	179.29	6,670.00	-1,246.63	-48.79	1,246.39	0.00	0.00	0.00
17,400.00	90.00	179.29	6,670.00	-1,346.62	-47.55	1,346.39	0.00	0.00	0.00
17,500.00	90.00	179.29	6,670.00	-1,446.61	-46.31	1,446.38	0.00	0.00	0.00
17,600.00	90.00	179.29	6,670.00	-1,546.60	-45.07	1,546.38	0.00	0.00	0.00
17,700.00	90.00	179.29	6,670.00	-1,646.59	-43.83	1,646.38	0.00	0.00	0.00
17,800.00	90.00	179.29	6,670.00	-1,746.59	-42.59	1,746.38	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well KBL 1830-17H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 21' @ 4882.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 21' @ 4882.00usft (RIG)
Site:	2N-63W-19 KBL PAD	North Reference:	True
Well:	KBL 1830-17H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
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)
17,900.00	90.00	179.29	6,670.00	-1,846.58	-41.35	1,846.37	0.00	0.00	0.00
18,000.00	90.00	179.29	6,670.00	-1,946.57	-40.11	1,946.37	0.00	0.00	0.00
18,100.00	90.00	179.29	6,670.00	-2,046.56	-38.86	2,046.37	0.00	0.00	0.00
18,200.00	90.00	179.29	6,670.00	-2,146.56	-37.62	2,146.36	0.00	0.00	0.00
18,300.00	90.00	179.29	6,670.00	-2,246.55	-36.38	2,246.36	0.00	0.00	0.00
18,400.00	90.00	179.29	6,670.00	-2,346.54	-35.14	2,346.36	0.00	0.00	0.00
18,500.00	90.00	179.29	6,670.00	-2,446.53	-33.90	2,446.35	0.00	0.00	0.00
18,600.00	90.00	179.29	6,670.00	-2,546.52	-32.66	2,546.35	0.00	0.00	0.00
18,700.00	90.00	179.29	6,670.00	-2,646.52	-31.42	2,646.35	0.00	0.00	0.00
18,800.00	90.00	179.29	6,670.00	-2,746.51	-30.18	2,746.34	0.00	0.00	0.00
18,900.00	90.00	179.29	6,670.00	-2,846.50	-28.94	2,846.34	0.00	0.00	0.00
19,000.00	90.00	179.29	6,670.00	-2,946.49	-27.69	2,946.34	0.00	0.00	0.00
19,100.00	90.00	179.29	6,670.00	-3,046.49	-26.45	3,046.34	0.00	0.00	0.00
19,200.00	90.00	179.29	6,670.00	-3,146.48	-25.21	3,146.33	0.00	0.00	0.00
19,300.00	90.00	179.29	6,670.00	-3,246.47	-23.97	3,246.33	0.00	0.00	0.00
19,400.00	90.00	179.29	6,670.00	-3,346.46	-22.73	3,346.33	0.00	0.00	0.00
19,500.00	90.00	179.29	6,670.00	-3,446.46	-21.49	3,446.32	0.00	0.00	0.00
19,600.00	90.00	179.29	6,670.00	-3,546.45	-20.25	3,546.32	0.00	0.00	0.00
19,700.00	90.00	179.29	6,670.00	-3,646.44	-19.01	3,646.32	0.00	0.00	0.00
19,800.00	90.00	179.29	6,670.00	-3,746.43	-17.77	3,746.31	0.00	0.00	0.00
19,900.00	90.00	179.29	6,670.00	-3,846.42	-16.53	3,846.31	0.00	0.00	0.00
20,000.00	90.00	179.29	6,670.00	-3,946.42	-15.28	3,946.31	0.00	0.00	0.00
20,100.00	90.00	179.29	6,670.00	-4,046.41	-14.04	4,046.30	0.00	0.00	0.00
20,200.00	90.00	179.29	6,670.00	-4,146.40	-12.80	4,146.30	0.00	0.00	0.00
20,300.00	90.00	179.29	6,670.00	-4,246.39	-11.56	4,246.30	0.00	0.00	0.00
20,400.00	90.00	179.29	6,670.00	-4,346.39	-10.32	4,346.29	0.00	0.00	0.00
20,500.00	90.00	179.29	6,670.00	-4,446.38	-9.08	4,446.29	0.00	0.00	0.00
20,600.00	90.00	179.29	6,670.00	-4,546.37	-7.84	4,546.29	0.00	0.00	0.00
20,700.00	90.00	179.29	6,670.00	-4,646.36	-6.60	4,646.29	0.00	0.00	0.00
20,800.00	90.00	179.29	6,670.00	-4,746.36	-5.36	4,746.28	0.00	0.00	0.00
20,900.00	90.00	179.29	6,670.00	-4,846.35	-4.11	4,846.28	0.00	0.00	0.00
21,000.00	90.00	179.29	6,670.00	-4,946.34	-2.87	4,946.28	0.00	0.00	0.00
21,100.00	90.00	179.29	6,670.00	-5,046.33	-1.63	5,046.27	0.00	0.00	0.00
21,200.00	90.00	179.29	6,670.00	-5,146.32	-0.39	5,146.27	0.00	0.00	0.00
21,300.00	90.00	179.29	6,670.00	-5,246.32	0.85	5,246.27	0.00	0.00	0.00
21,400.00	90.00	179.29	6,670.00	-5,346.31	2.09	5,346.26	0.00	0.00	0.00
21,500.00	90.00	179.29	6,670.00	-5,446.30	3.33	5,446.26	0.00	0.00	0.00
21,600.00	90.00	179.29	6,670.00	-5,546.29	4.57	5,546.26	0.00	0.00	0.00
21,700.00	90.00	179.29	6,670.00	-5,646.29	5.81	5,646.25	0.00	0.00	0.00
21,800.00	90.00	179.29	6,670.00	-5,746.28	7.06	5,746.25	0.00	0.00	0.00
21,900.00	90.00	179.29	6,670.00	-5,846.27	8.30	5,846.25	0.00	0.00	0.00
22,000.00	90.00	179.29	6,670.00	-5,946.26	9.54	5,946.25	0.00	0.00	0.00
22,100.00	90.00	179.29	6,670.00	-6,046.26	10.78	6,046.24	0.00	0.00	0.00
22,200.00	90.00	179.29	6,670.00	-6,146.25	12.02	6,146.24	0.00	0.00	0.00
22,300.00	90.00	179.29	6,670.00	-6,246.24	13.26	6,246.24	0.00	0.00	0.00
22,400.00	90.00	179.29	6,670.00	-6,346.23	14.50	6,346.23	0.00	0.00	0.00
22,500.00	90.00	179.29	6,670.00	-6,446.22	15.74	6,446.23	0.00	0.00	0.00
22,600.00	90.00	179.29	6,670.00	-6,546.22	16.98	6,546.23	0.00	0.00	0.00
22,696.40	90.00	179.29	6,670.00	-6,642.61	18.18	6,642.62	0.00	0.00	0.00
BPZ @ 22696.40ft									
22,700.00	90.00	179.29	6,670.00	-6,646.21	18.22	6,646.22	0.00	0.00	0.00
22,786.75	90.00	179.29	6,670.00	-6,732.95	19.30	6,732.97	0.00	0.00	0.00
TD Well @ 22786.75ft									

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well KBL 1830-17H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 21' @ 4882.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 21' @ 4882.00usft (RIG)
Site:	2N-63W-19 KBL PAD	North Reference:	True
Well:	KBL 1830-17H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Design #1		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (")	Hole Diameter (")
1,897.43	1,816.00	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)		
300.50	300.50	0.00	0.00	Begin Nudge @ 300.50ft	
3,327.50	2,794.87	1,454.95	50.81	Hold Tangent @ 3327.50ft	
8,519.20	5,348.23	5,972.61	208.57	KOP @ 8519.20ft :: DLS = 8"/100'	
10,396.15	6,670.00	5,643.72	-37.29	End Build/TPZ @ 10396.15ft	
11,525.00	6,670.00	4,523.28	-174.87	Begin Turn for 3-D Spacing @ 11525.00ft	
12,125.00	6,670.00	3,924.47	-185.32	End Turn @ 12125.00ft	
12,985.00	6,670.00	3,067.75	-110.36	Begin Turn to BHL @ 12985.00ft	
13,199.44	6,670.00	2,853.62	-99.68	End Turn @ 13199.44ft	
22,696.40	6,670.00	-6,642.61	18.18	BPZ @ 22696.40ft	
22,786.75	6,670.00	-6,732.95	19.30	TD Well @ 22786.75ft	