

VERDAD RESOURCES

WATTENBERG FIELD

2N-63W-19 KBL PAD

KBL 1830-18H

Plan A

Plan: Design #1

Standard Planning Report

17 September, 2024

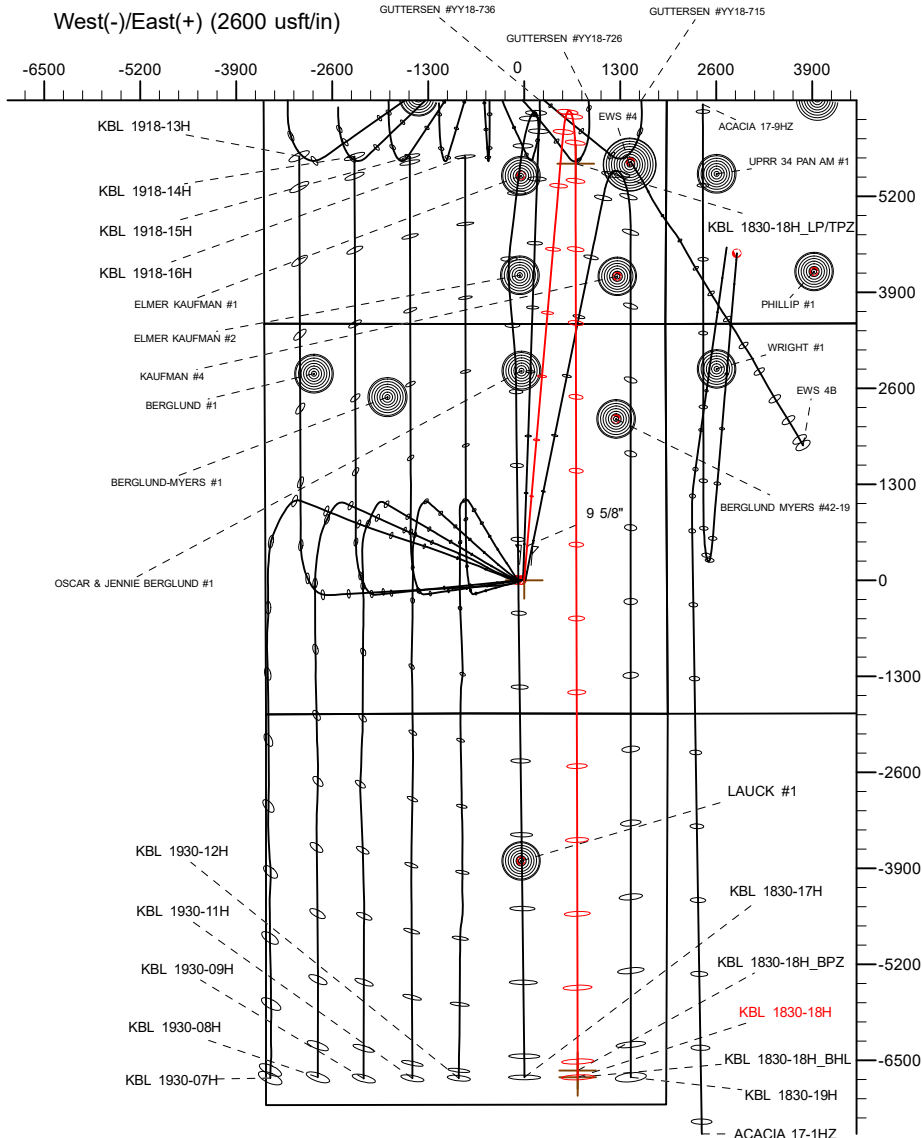
Project: WATTENBERG FIELD
Site: 2N-63W-19 KBL PAD
Well: KBL 1830-18H
Wellbore: Plan A
Design: Design #1

VERDAD RESOURCES

CASING DETAILS

TVD	MD	Name	Size
1816.00	1906.96	9 5/8"	9-5/8"

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



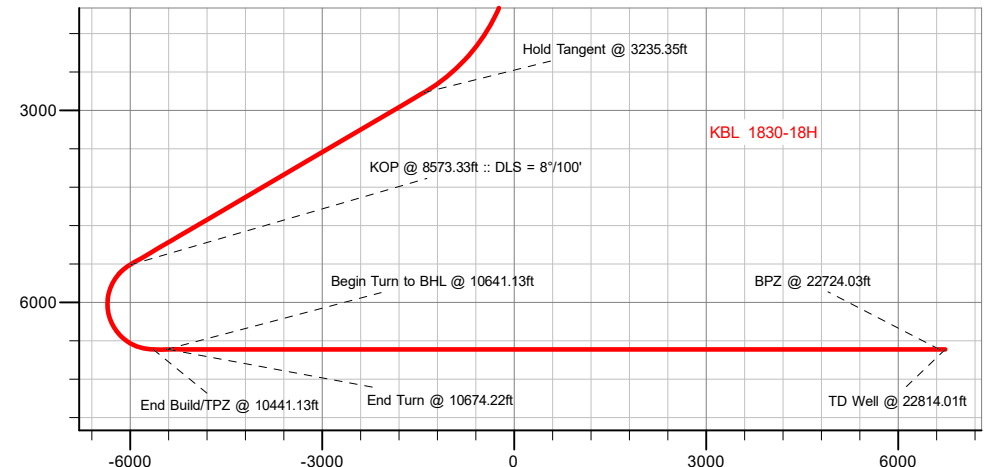
SECTION DETAILS

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	
249.35	0.00	0.00	249.35	0.00	0.00	0.00	0.00	0.00	
3235.35	59.72	4.98	2723.30	1414.93	123.29	2.00	4.98	-1414.64	
8573.33	59.72	4.98	5414.85	6007.25	523.45	0.00	0.00	-6006.05	
10441.13	90.00	180.52	6736.00	5641.36	696.09	8.00	171.21	-5639.76	
10641.13	90.00	180.52	6736.00	5441.36	694.28	0.00	0.00	-5439.78	
10674.22	90.00	179.86	6736.00	5408.27	694.17	2.00	-90.00	-5406.68	
22814.01	90.00	179.86	6736.00	-6731.48	724.22	0.00	0.00	6733.10	KBL 1830-18H_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	Northing	Easting	Latitude	Longitude
KBL 1830-18H_SHL	0.00	1288791.70	3285870.86	40.121603	-104.477747
KBL 1830-18H_LP/TPZ	6736.00	1294440.97	3286501.95	40.137090	-104.475257
KBL 1830-18H_BPZ	6736.00	1282158.99	3286671.31	40.103371	-104.475159
KBL 1830-18H_BHL	6736.00	1282069.02	3286672.63	40.103124	-104.475158

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



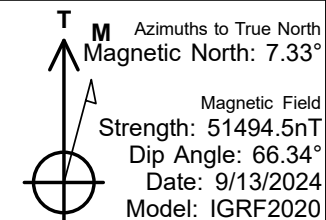
Vertical Section at 179.87° (3000 usft/in)

SHL
1805' FSL
1931' FEL

TPZ
2170' FSL
1229' FEL

BPZ
460' FSL
1200' FEL

BHL
370' FSL
1199' FEL



WELL DETAILS: KBL 1830-18H

GL = 4861'

RKB = 21' @ 4882.00usft (RIG)

Plan: Design #1 (KBL 1830-18H/Plan A)

Date: 9/17/2024

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well KBL 1830-18H
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 1830-18H	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 1830-18H			
Well Position	+N/-S	0.00 usft	Northing:	1,288,791.70 usft
	+E/-W	0.00 usft	Easting:	3,285,870.86 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	51,494.54660572

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	179.87	

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	22,814.01	Design #1 (Plan A)	ISCWSA MWD	
				Fixed:v2:standard declination	

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Well:	KBL 1830-18H	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	
249.35	0.00	0.00	249.35	0.00	0.00	0.00	0.00	0.00	0.00	
3,235.35	59.72	4.98	2,723.30	1,414.93	123.29	2.00	2.00	0.00	4.98	
8,573.33	59.72	4.98	5,414.85	6,007.25	523.45	0.00	0.00	0.00	0.00	
10,441.13	90.00	180.52	6,736.00	5,641.36	696.09	8.00	1.62	9.40	171.21	
10,641.13	90.00	180.52	6,736.00	5,441.36	694.28	0.00	0.00	0.00	0.00	
10,674.22	90.00	179.86	6,736.00	5,408.27	694.17	2.00	0.00	-2.00	-90.00	
22,814.01	90.00	179.86	6,736.00	-6,731.48	724.22	0.00	0.00	0.00	0.00	KBL 1830-18H_BHL

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 1830-18H	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
249.35	0.00	0.00	249.35	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 249.35ft									
300.00	1.01	4.98	300.00	0.45	0.04	-0.45	2.00	2.00	0.00
400.00	3.01	4.98	399.93	3.95	0.34	-3.94	2.00	2.00	0.00
500.00	5.01	4.98	499.68	10.92	0.95	-10.91	2.00	2.00	0.00
600.00	7.01	4.98	599.13	21.35	1.86	-21.35	2.00	2.00	0.00
700.00	9.01	4.98	698.14	35.24	3.07	-35.23	2.00	2.00	0.00
800.00	11.01	4.98	796.62	52.56	4.58	-52.55	2.00	2.00	0.00
900.00	13.01	4.98	894.42	73.29	6.39	-73.28	2.00	2.00	0.00
1,000.00	15.01	4.98	991.44	97.41	8.49	-97.39	2.00	2.00	0.00
1,100.00	17.01	4.98	1,087.55	124.89	10.88	-124.87	2.00	2.00	0.00
1,200.00	19.01	4.98	1,182.65	155.70	13.57	-155.67	2.00	2.00	0.00
1,300.00	21.01	4.98	1,276.61	189.79	16.54	-189.75	2.00	2.00	0.00
1,400.00	23.01	4.98	1,369.31	227.13	19.79	-227.08	2.00	2.00	0.00
1,500.00	25.01	4.98	1,460.65	267.67	23.32	-267.62	2.00	2.00	0.00
1,600.00	27.01	4.98	1,550.52	311.36	27.13	-311.30	2.00	2.00	0.00
1,700.00	29.01	4.98	1,638.80	358.15	31.21	-358.07	2.00	2.00	0.00
1,800.00	31.01	4.98	1,725.38	407.97	35.55	-407.89	2.00	2.00	0.00
1,900.00	33.01	4.98	1,810.17	460.78	40.15	-460.69	2.00	2.00	0.00
1,906.96	33.15	4.98	1,816.00	464.57	40.48	-464.47	2.00	2.00	0.00
9 5/8"									
2,000.00	35.01	4.98	1,893.06	516.51	45.01	-516.40	2.00	2.00	0.00
2,100.00	37.01	4.98	1,973.94	575.08	50.11	-574.96	2.00	2.00	0.00
2,200.00	39.01	4.98	2,052.73	636.43	55.46	-636.30	2.00	2.00	0.00
2,300.00	41.01	4.98	2,129.31	700.48	61.04	-700.34	2.00	2.00	0.00
2,400.00	43.01	4.98	2,203.61	767.15	66.85	-767.00	2.00	2.00	0.00
2,500.00	45.01	4.98	2,275.52	836.37	72.88	-836.20	2.00	2.00	0.00
2,600.00	47.01	4.98	2,344.97	908.04	79.12	-907.86	2.00	2.00	0.00
2,700.00	49.01	4.98	2,411.86	982.09	85.58	-981.89	2.00	2.00	0.00
2,800.00	51.01	4.98	2,476.12	1,058.41	92.23	-1,058.20	2.00	2.00	0.00
2,900.00	53.01	4.98	2,537.66	1,136.93	99.07	-1,136.70	2.00	2.00	0.00
3,000.00	55.01	4.98	2,596.42	1,217.53	106.09	-1,217.29	2.00	2.00	0.00
3,100.00	57.01	4.98	2,652.32	1,300.13	113.29	-1,299.87	2.00	2.00	0.00
3,200.00	59.01	4.98	2,705.29	1,384.62	120.65	-1,384.35	2.00	2.00	0.00
3,235.35	59.72	4.98	2,723.30	1,414.93	123.29	-1,414.64	2.00	2.00	0.00
Hold Tangent @ 3235.35ft									
3,300.00	59.72	4.98	2,755.90	1,470.54	128.14	-1,470.25	0.00	0.00	0.00
3,400.00	59.72	4.98	2,806.32	1,556.58	135.64	-1,556.26	0.00	0.00	0.00
3,500.00	59.72	4.98	2,856.74	1,642.61	143.13	-1,642.28	0.00	0.00	0.00
3,600.00	59.72	4.98	2,907.17	1,728.64	150.63	-1,728.29	0.00	0.00	0.00
3,700.00	59.72	4.98	2,957.59	1,814.67	158.12	-1,814.31	0.00	0.00	0.00
3,800.00	59.72	4.98	3,008.01	1,900.70	165.62	-1,900.32	0.00	0.00	0.00
3,900.00	59.72	4.98	3,058.43	1,986.73	173.12	-1,986.33	0.00	0.00	0.00
4,000.00	59.72	4.98	3,108.86	2,072.76	180.61	-2,072.35	0.00	0.00	0.00
4,100.00	59.72	4.98	3,159.28	2,158.79	188.11	-2,158.36	0.00	0.00	0.00
4,200.00	59.72	4.98	3,209.70	2,244.83	195.61	-2,244.38	0.00	0.00	0.00
4,300.00	59.72	4.98	3,260.12	2,330.86	203.10	-2,330.39	0.00	0.00	0.00
4,400.00	59.72	4.98	3,310.55	2,416.89	210.60	-2,416.40	0.00	0.00	0.00
4,500.00	59.72	4.98	3,360.97	2,502.92	218.10	-2,502.42	0.00	0.00	0.00
4,600.00	59.72	4.98	3,411.39	2,588.95	225.59	-2,588.43	0.00	0.00	0.00

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Well:	KBL 1830-18H	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)
4,700.00	59.72	4.98	3,461.82	2,674.98	233.09	-2,674.45	0.00	0.00	0.00
4,800.00	59.72	4.98	3,512.24	2,761.01	240.59	-2,760.46	0.00	0.00	0.00
4,900.00	59.72	4.98	3,562.66	2,847.04	248.08	-2,846.47	0.00	0.00	0.00
5,000.00	59.72	4.98	3,613.08	2,933.07	255.58	-2,932.49	0.00	0.00	0.00
5,100.00	59.72	4.98	3,663.51	3,019.11	263.08	-3,018.50	0.00	0.00	0.00
5,200.00	59.72	4.98	3,713.93	3,105.14	270.57	-3,104.52	0.00	0.00	0.00
5,300.00	59.72	4.98	3,764.35	3,191.17	278.07	-3,190.53	0.00	0.00	0.00
5,400.00	59.72	4.98	3,814.77	3,277.20	285.57	-3,276.54	0.00	0.00	0.00
5,500.00	59.72	4.98	3,865.20	3,363.23	293.06	-3,362.56	0.00	0.00	0.00
5,600.00	59.72	4.98	3,915.62	3,449.26	300.56	-3,448.57	0.00	0.00	0.00
5,700.00	59.72	4.98	3,966.04	3,535.29	308.05	-3,534.58	0.00	0.00	0.00
5,800.00	59.72	4.98	4,016.46	3,621.32	315.55	-3,620.60	0.00	0.00	0.00
5,900.00	59.72	4.98	4,066.89	3,707.36	323.05	-3,706.61	0.00	0.00	0.00
6,000.00	59.72	4.98	4,117.31	3,793.39	330.54	-3,792.63	0.00	0.00	0.00
6,100.00	59.72	4.98	4,167.73	3,879.42	338.04	-3,878.64	0.00	0.00	0.00
6,200.00	59.72	4.98	4,218.15	3,965.45	345.54	-3,964.65	0.00	0.00	0.00
6,300.00	59.72	4.98	4,268.58	4,051.48	353.03	-4,050.67	0.00	0.00	0.00
6,400.00	59.72	4.98	4,319.00	4,137.51	360.53	-4,136.68	0.00	0.00	0.00
6,500.00	59.72	4.98	4,369.42	4,223.54	368.03	-4,222.70	0.00	0.00	0.00
6,600.00	59.72	4.98	4,419.85	4,309.57	375.52	-4,308.71	0.00	0.00	0.00
6,700.00	59.72	4.98	4,470.27	4,395.60	383.02	-4,394.72	0.00	0.00	0.00
6,800.00	59.72	4.98	4,520.69	4,481.64	390.52	-4,480.74	0.00	0.00	0.00
6,900.00	59.72	4.98	4,571.11	4,567.67	398.01	-4,566.75	0.00	0.00	0.00
7,000.00	59.72	4.98	4,621.54	4,653.70	405.51	-4,652.77	0.00	0.00	0.00
7,100.00	59.72	4.98	4,671.96	4,739.73	413.01	-4,738.78	0.00	0.00	0.00
7,200.00	59.72	4.98	4,722.38	4,825.76	420.50	-4,824.79	0.00	0.00	0.00
7,300.00	59.72	4.98	4,772.80	4,911.79	428.00	-4,910.81	0.00	0.00	0.00
7,400.00	59.72	4.98	4,823.23	4,997.82	435.49	-4,996.82	0.00	0.00	0.00
7,500.00	59.72	4.98	4,873.65	5,083.85	442.99	-5,082.84	0.00	0.00	0.00
7,600.00	59.72	4.98	4,924.07	5,169.89	450.49	-5,168.85	0.00	0.00	0.00
7,700.00	59.72	4.98	4,974.49	5,255.92	457.98	-5,254.86	0.00	0.00	0.00
7,800.00	59.72	4.98	5,024.92	5,341.95	465.48	-5,340.88	0.00	0.00	0.00
7,900.00	59.72	4.98	5,075.34	5,427.98	472.98	-5,426.89	0.00	0.00	0.00
8,000.00	59.72	4.98	5,125.76	5,514.01	480.47	-5,512.91	0.00	0.00	0.00
8,100.00	59.72	4.98	5,176.18	5,600.04	487.97	-5,598.92	0.00	0.00	0.00
8,200.00	59.72	4.98	5,226.61	5,686.07	495.47	-5,684.93	0.00	0.00	0.00
8,300.00	59.72	4.98	5,277.03	5,772.10	502.96	-5,770.95	0.00	0.00	0.00
8,400.00	59.72	4.98	5,327.45	5,858.13	510.46	-5,856.96	0.00	0.00	0.00
8,500.00	59.72	4.98	5,377.88	5,944.17	517.96	-5,942.98	0.00	0.00	0.00
8,573.33	59.72	4.98	5,414.85	6,007.25	523.45	-6,006.05	0.00	0.00	0.00
KOP @ 8573.33ft :: DLS = 8°/100'									
8,600.00	57.61	5.37	5,428.72	6,029.94	525.51	-6,028.73	8.00	-7.90	1.45
8,650.00	53.66	6.14	5,456.93	6,071.00	529.64	-6,069.78	8.00	-7.90	1.55
8,700.00	49.72	7.00	5,487.92	6,109.97	534.12	-6,108.74	8.00	-7.89	1.72
8,750.00	45.78	7.97	5,521.53	6,146.66	538.93	-6,145.42	8.00	-7.87	1.93
8,800.00	41.86	9.07	5,557.60	6,180.89	544.04	-6,179.64	8.00	-7.85	2.21
8,850.00	37.94	10.35	5,595.95	6,212.50	549.44	-6,211.24	8.00	-7.83	2.57
8,900.00	34.05	11.89	5,636.40	6,241.33	555.09	-6,240.05	8.00	-7.80	3.07
8,950.00	30.17	13.76	5,678.74	6,267.24	560.96	-6,265.95	8.00	-7.75	3.75
9,000.00	26.33	16.13	5,722.78	6,290.11	567.03	-6,288.80	8.00	-7.68	4.73
9,050.00	22.54	19.23	5,768.29	6,309.82	573.27	-6,308.50	8.00	-7.58	6.21
9,100.00	18.83	23.50	5,815.06	6,326.27	579.65	-6,324.94	8.00	-7.42	8.53
9,150.00	15.27	29.72	5,862.86	6,339.40	586.14	-6,338.05	8.00	-7.13	12.44
9,200.00	11.97	39.42	5,911.46	6,349.13	592.70	-6,347.77	8.00	-6.59	19.41

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well KBL 1830-18H
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 1830-18H	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	9.24	55.47	5,960.61	6,355.41	599.30	-6,354.03	8.00	-5.47	32.10
9,300.00	7.69	80.84	6,010.08	6,358.22	605.92	-6,356.83	8.00	-3.09	50.73
9,350.00	8.05	110.24	6,059.63	6,357.54	612.51	-6,356.14	8.00	0.72	58.81
9,400.00	10.11	132.22	6,109.01	6,353.38	619.05	-6,351.96	8.00	4.12	43.97
9,450.00	13.10	145.60	6,157.99	6,345.75	625.50	-6,344.31	8.00	5.97	26.76
9,500.00	16.51	153.82	6,206.33	6,334.69	631.84	-6,333.24	8.00	6.83	16.44
9,550.00	20.14	159.22	6,253.79	6,320.26	638.03	-6,318.80	8.00	7.25	10.80
9,600.00	23.88	163.01	6,300.14	6,302.53	644.04	-6,301.05	8.00	7.48	7.58
9,650.00	27.69	165.82	6,345.16	6,281.58	649.85	-6,280.09	8.00	7.62	5.61
9,700.00	31.54	167.99	6,388.62	6,257.51	655.42	-6,256.01	8.00	7.71	4.34
9,750.00	35.43	169.73	6,430.31	6,230.45	660.73	-6,228.94	8.00	7.77	3.48
9,800.00	39.33	171.17	6,470.04	6,200.52	665.75	-6,199.00	8.00	7.81	2.87
9,850.00	43.25	172.38	6,507.60	6,167.87	670.45	-6,166.34	8.00	7.84	2.43
9,900.00	47.18	173.43	6,542.81	6,132.67	674.82	-6,131.12	8.00	7.86	2.10
9,950.00	51.12	174.35	6,575.51	6,095.07	678.84	-6,093.51	8.00	7.88	1.85
10,000.00	55.06	175.18	6,605.53	6,055.26	682.47	-6,053.70	8.00	7.89	1.65
10,050.00	59.01	175.93	6,632.73	6,013.44	685.72	-6,011.87	8.00	7.90	1.50
10,100.00	62.97	176.62	6,656.98	5,969.82	688.55	-5,968.24	8.00	7.91	1.38
10,150.00	66.93	177.27	6,678.15	5,924.59	690.96	-5,923.01	8.00	7.91	1.29
10,200.00	70.88	177.87	6,696.14	5,878.00	692.93	-5,876.41	8.00	7.92	1.21
10,250.00	74.85	178.45	6,710.87	5,830.25	694.46	-5,828.66	8.00	7.92	1.16
10,300.00	78.81	179.01	6,722.26	5,781.59	695.54	-5,779.99	8.00	7.93	1.11
10,350.00	82.77	179.55	6,730.26	5,732.25	696.15	-5,730.65	8.00	7.93	1.08
10,400.00	86.74	180.09	6,734.83	5,682.47	696.31	-5,680.87	8.00	7.93	1.07
10,441.13	90.00	180.52	6,736.00	5,641.36	696.09	-5,639.76	8.00	7.93	1.06
End Build/TPZ @ 10441.13ft									
10,500.00	90.00	180.52	6,736.00	5,582.49	695.56	-5,580.90	0.00	0.00	0.00
10,600.00	90.00	180.52	6,736.00	5,482.50	694.65	-5,480.90	0.00	0.00	0.00
10,641.13	90.00	180.52	6,736.00	5,441.36	694.28	-5,439.78	0.00	0.00	0.00
Begin Turn to BHL @ 10641.13ft									
10,674.22	90.00	179.86	6,736.00	5,408.27	694.17	-5,406.68	2.00	0.00	-2.00
End Turn @ 10674.22ft									
10,700.00	90.00	179.86	6,736.00	5,382.50	694.23	-5,380.91	0.00	0.00	0.00
10,800.00	90.00	179.86	6,736.00	5,282.50	694.48	-5,280.91	0.00	0.00	0.00
10,900.00	90.00	179.86	6,736.00	5,182.50	694.73	-5,180.91	0.00	0.00	0.00
11,000.00	90.00	179.86	6,736.00	5,082.50	694.98	-5,080.91	0.00	0.00	0.00
11,100.00	90.00	179.86	6,736.00	4,982.50	695.22	-4,980.91	0.00	0.00	0.00
11,200.00	90.00	179.86	6,736.00	4,882.50	695.47	-4,880.91	0.00	0.00	0.00
11,300.00	90.00	179.86	6,736.00	4,782.50	695.72	-4,780.91	0.00	0.00	0.00
11,400.00	90.00	179.86	6,736.00	4,682.50	695.97	-4,680.91	0.00	0.00	0.00
11,500.00	90.00	179.86	6,736.00	4,582.50	696.21	-4,580.91	0.00	0.00	0.00
11,600.00	90.00	179.86	6,736.00	4,482.50	696.46	-4,480.91	0.00	0.00	0.00
11,700.00	90.00	179.86	6,736.00	4,382.50	696.71	-4,380.91	0.00	0.00	0.00
11,800.00	90.00	179.86	6,736.00	4,282.50	696.96	-4,280.91	0.00	0.00	0.00
11,900.00	90.00	179.86	6,736.00	4,182.50	697.20	-4,180.91	0.00	0.00	0.00
12,000.00	90.00	179.86	6,736.00	4,082.50	697.45	-4,080.91	0.00	0.00	0.00
12,100.00	90.00	179.86	6,736.00	3,982.50	697.70	-3,980.91	0.00	0.00	0.00
12,200.00	90.00	179.86	6,736.00	3,882.50	697.95	-3,880.91	0.00	0.00	0.00
12,300.00	90.00	179.86	6,736.00	3,782.50	698.19	-3,780.91	0.00	0.00	0.00
12,400.00	90.00	179.86	6,736.00	3,682.50	698.44	-3,680.91	0.00	0.00	0.00
12,500.00	90.00	179.86	6,736.00	3,582.50	698.69	-3,580.91	0.00	0.00	0.00
12,600.00	90.00	179.86	6,736.00	3,482.50	698.94	-3,480.91	0.00	0.00	0.00
12,700.00	90.00	179.86	6,736.00	3,382.50	699.18	-3,380.91	0.00	0.00	0.00

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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 1830-18H	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	179.86	6,736.00	3,282.50	699.43	-3,280.91	0.00	0.00	0.00
12,900.00	90.00	179.86	6,736.00	3,182.50	699.68	-3,180.91	0.00	0.00	0.00
13,000.00	90.00	179.86	6,736.00	3,082.50	699.93	-3,080.91	0.00	0.00	0.00
13,100.00	90.00	179.86	6,736.00	2,982.50	700.17	-2,980.91	0.00	0.00	0.00
13,200.00	90.00	179.86	6,736.00	2,882.50	700.42	-2,880.91	0.00	0.00	0.00
13,300.00	90.00	179.86	6,736.00	2,782.51	700.67	-2,780.91	0.00	0.00	0.00
13,400.00	90.00	179.86	6,736.00	2,682.51	700.92	-2,680.91	0.00	0.00	0.00
13,500.00	90.00	179.86	6,736.00	2,582.51	701.16	-2,580.91	0.00	0.00	0.00
13,600.00	90.00	179.86	6,736.00	2,482.51	701.41	-2,480.91	0.00	0.00	0.00
13,700.00	90.00	179.86	6,736.00	2,382.51	701.66	-2,380.91	0.00	0.00	0.00
13,800.00	90.00	179.86	6,736.00	2,282.51	701.91	-2,280.91	0.00	0.00	0.00
13,900.00	90.00	179.86	6,736.00	2,182.51	702.15	-2,180.91	0.00	0.00	0.00
14,000.00	90.00	179.86	6,736.00	2,082.51	702.40	-2,080.91	0.00	0.00	0.00
14,100.00	90.00	179.86	6,736.00	1,982.51	702.65	-1,980.91	0.00	0.00	0.00
14,200.00	90.00	179.86	6,736.00	1,882.51	702.90	-1,880.91	0.00	0.00	0.00
14,300.00	90.00	179.86	6,736.00	1,782.51	703.14	-1,780.91	0.00	0.00	0.00
14,400.00	90.00	179.86	6,736.00	1,682.51	703.39	-1,680.91	0.00	0.00	0.00
14,500.00	90.00	179.86	6,736.00	1,582.51	703.64	-1,580.91	0.00	0.00	0.00
14,600.00	90.00	179.86	6,736.00	1,482.51	703.89	-1,480.91	0.00	0.00	0.00
14,700.00	90.00	179.86	6,736.00	1,382.51	704.13	-1,380.91	0.00	0.00	0.00
14,800.00	90.00	179.86	6,736.00	1,282.51	704.38	-1,280.91	0.00	0.00	0.00
14,900.00	90.00	179.86	6,736.00	1,182.51	704.63	-1,180.91	0.00	0.00	0.00
15,000.00	90.00	179.86	6,736.00	1,082.51	704.88	-1,080.91	0.00	0.00	0.00
15,100.00	90.00	179.86	6,736.00	982.51	705.12	-980.91	0.00	0.00	0.00
15,200.00	90.00	179.86	6,736.00	882.51	705.37	-880.91	0.00	0.00	0.00
15,300.00	90.00	179.86	6,736.00	782.51	705.62	-780.91	0.00	0.00	0.00
15,400.00	90.00	179.86	6,736.00	682.51	705.87	-680.91	0.00	0.00	0.00
15,500.00	90.00	179.86	6,736.00	582.51	706.12	-580.91	0.00	0.00	0.00
15,600.00	90.00	179.86	6,736.00	482.51	706.36	-480.91	0.00	0.00	0.00
15,700.00	90.00	179.86	6,736.00	382.51	706.61	-380.91	0.00	0.00	0.00
15,800.00	90.00	179.86	6,736.00	282.51	706.86	-280.91	0.00	0.00	0.00
15,900.00	90.00	179.86	6,736.00	182.51	707.11	-180.91	0.00	0.00	0.00
16,000.00	90.00	179.86	6,736.00	82.51	707.35	-80.91	0.00	0.00	0.00
16,100.00	90.00	179.86	6,736.00	-17.49	707.60	19.09	0.00	0.00	0.00
16,200.00	90.00	179.86	6,736.00	-117.49	707.85	119.09	0.00	0.00	0.00
16,300.00	90.00	179.86	6,736.00	-217.49	708.10	219.09	0.00	0.00	0.00
16,400.00	90.00	179.86	6,736.00	-317.49	708.34	319.09	0.00	0.00	0.00
16,500.00	90.00	179.86	6,736.00	-417.49	708.59	419.09	0.00	0.00	0.00
16,600.00	90.00	179.86	6,736.00	-517.48	708.84	519.09	0.00	0.00	0.00
16,700.00	90.00	179.86	6,736.00	-617.48	709.09	619.09	0.00	0.00	0.00
16,800.00	90.00	179.86	6,736.00	-717.48	709.33	719.09	0.00	0.00	0.00
16,900.00	90.00	179.86	6,736.00	-817.48	709.58	819.09	0.00	0.00	0.00
17,000.00	90.00	179.86	6,736.00	-917.48	709.83	919.09	0.00	0.00	0.00
17,100.00	90.00	179.86	6,736.00	-1,017.48	710.08	1,019.09	0.00	0.00	0.00
17,200.00	90.00	179.86	6,736.00	-1,117.48	710.32	1,119.09	0.00	0.00	0.00
17,300.00	90.00	179.86	6,736.00	-1,217.48	710.57	1,219.09	0.00	0.00	0.00
17,400.00	90.00	179.86	6,736.00	-1,317.48	710.82	1,319.09	0.00	0.00	0.00
17,500.00	90.00	179.86	6,736.00	-1,417.48	711.07	1,419.09	0.00	0.00	0.00
17,600.00	90.00	179.86	6,736.00	-1,517.48	711.31	1,519.09	0.00	0.00	0.00
17,700.00	90.00	179.86	6,736.00	-1,617.48	711.56	1,619.09	0.00	0.00	0.00
17,800.00	90.00	179.86	6,736.00	-1,717.48	711.81	1,719.09	0.00	0.00	0.00
17,900.00	90.00	179.86	6,736.00	-1,817.48	712.06	1,819.09	0.00	0.00	0.00
18,000.00	90.00	179.86	6,736.00	-1,917.48	712.30	1,919.09	0.00	0.00	0.00
18,100.00	90.00	179.86	6,736.00	-2,017.48	712.55	2,019.09	0.00	0.00	0.00

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Site:	2N-63W-19 KBL PAD	North Reference:	True
Well:	KBL 1830-18H	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)
18,200.00	90.00	179.86	6,736.00	-2,117.48	712.80	2,119.09	0.00	0.00	0.00
18,300.00	90.00	179.86	6,736.00	-2,217.48	713.05	2,219.09	0.00	0.00	0.00
18,400.00	90.00	179.86	6,736.00	-2,317.48	713.29	2,319.09	0.00	0.00	0.00
18,500.00	90.00	179.86	6,736.00	-2,417.48	713.54	2,419.09	0.00	0.00	0.00
18,600.00	90.00	179.86	6,736.00	-2,517.48	713.79	2,519.09	0.00	0.00	0.00
18,700.00	90.00	179.86	6,736.00	-2,617.48	714.04	2,619.09	0.00	0.00	0.00
18,800.00	90.00	179.86	6,736.00	-2,717.48	714.28	2,719.09	0.00	0.00	0.00
18,900.00	90.00	179.86	6,736.00	-2,817.48	714.53	2,819.09	0.00	0.00	0.00
19,000.00	90.00	179.86	6,736.00	-2,917.48	714.78	2,919.09	0.00	0.00	0.00
19,100.00	90.00	179.86	6,736.00	-3,017.48	715.03	3,019.09	0.00	0.00	0.00
19,200.00	90.00	179.86	6,736.00	-3,117.48	715.27	3,119.09	0.00	0.00	0.00
19,300.00	90.00	179.86	6,736.00	-3,217.48	715.52	3,219.09	0.00	0.00	0.00
19,400.00	90.00	179.86	6,736.00	-3,317.48	715.77	3,319.09	0.00	0.00	0.00
19,500.00	90.00	179.86	6,736.00	-3,417.48	716.02	3,419.09	0.00	0.00	0.00
19,600.00	90.00	179.86	6,736.00	-3,517.48	716.26	3,519.09	0.00	0.00	0.00
19,700.00	90.00	179.86	6,736.00	-3,617.48	716.51	3,619.09	0.00	0.00	0.00
19,800.00	90.00	179.86	6,736.00	-3,717.48	716.76	3,719.09	0.00	0.00	0.00
19,900.00	90.00	179.86	6,736.00	-3,817.47	717.01	3,819.09	0.00	0.00	0.00
20,000.00	90.00	179.86	6,736.00	-3,917.47	717.25	3,919.09	0.00	0.00	0.00
20,100.00	90.00	179.86	6,736.00	-4,017.47	717.50	4,019.09	0.00	0.00	0.00
20,200.00	90.00	179.86	6,736.00	-4,117.47	717.75	4,119.09	0.00	0.00	0.00
20,300.00	90.00	179.86	6,736.00	-4,217.47	718.00	4,219.09	0.00	0.00	0.00
20,400.00	90.00	179.86	6,736.00	-4,317.47	718.25	4,319.09	0.00	0.00	0.00
20,500.00	90.00	179.86	6,736.00	-4,417.47	718.49	4,419.09	0.00	0.00	0.00
20,600.00	90.00	179.86	6,736.00	-4,517.47	718.74	4,519.09	0.00	0.00	0.00
20,700.00	90.00	179.86	6,736.00	-4,617.47	718.99	4,619.09	0.00	0.00	0.00
20,800.00	90.00	179.86	6,736.00	-4,717.47	719.24	4,719.09	0.00	0.00	0.00
20,900.00	90.00	179.86	6,736.00	-4,817.47	719.48	4,819.09	0.00	0.00	0.00
21,000.00	90.00	179.86	6,736.00	-4,917.47	719.73	4,919.09	0.00	0.00	0.00
21,100.00	90.00	179.86	6,736.00	-5,017.47	719.98	5,019.09	0.00	0.00	0.00
21,200.00	90.00	179.86	6,736.00	-5,117.47	720.23	5,119.09	0.00	0.00	0.00
21,300.00	90.00	179.86	6,736.00	-5,217.47	720.47	5,219.09	0.00	0.00	0.00
21,400.00	90.00	179.86	6,736.00	-5,317.47	720.72	5,319.09	0.00	0.00	0.00
21,500.00	90.00	179.86	6,736.00	-5,417.47	720.97	5,419.09	0.00	0.00	0.00
21,600.00	90.00	179.86	6,736.00	-5,517.47	721.22	5,519.09	0.00	0.00	0.00
21,700.00	90.00	179.86	6,736.00	-5,617.47	721.46	5,619.09	0.00	0.00	0.00
21,800.00	90.00	179.86	6,736.00	-5,717.47	721.71	5,719.09	0.00	0.00	0.00
21,900.00	90.00	179.86	6,736.00	-5,817.47	721.96	5,819.09	0.00	0.00	0.00
22,000.00	90.00	179.86	6,736.00	-5,917.47	722.21	5,919.09	0.00	0.00	0.00
22,100.00	90.00	179.86	6,736.00	-6,017.47	722.45	6,019.09	0.00	0.00	0.00
22,200.00	90.00	179.86	6,736.00	-6,117.47	722.70	6,119.09	0.00	0.00	0.00
22,300.00	90.00	179.86	6,736.00	-6,217.47	722.95	6,219.09	0.00	0.00	0.00
22,400.00	90.00	179.86	6,736.00	-6,317.47	723.20	6,319.09	0.00	0.00	0.00
22,500.00	90.00	179.86	6,736.00	-6,417.47	723.44	6,419.09	0.00	0.00	0.00
22,600.00	90.00	179.86	6,736.00	-6,517.47	723.69	6,519.09	0.00	0.00	0.00
22,700.00	90.00	179.86	6,736.00	-6,617.47	723.94	6,619.09	0.00	0.00	0.00
22,724.03	90.00	179.86	6,736.00	-6,641.50	724.00	6,643.12	0.00	0.00	0.00
BPZ @ 22724.03ft									
22,800.00	90.00	179.86	6,736.00	-6,717.47	724.19	6,719.09	0.00	0.00	0.00
22,814.01	90.00	179.86	6,736.00	-6,731.48	724.22	6,733.10	0.00	0.00	0.00
TD Well @ 22814.01ft									

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well KBL 1830-18H
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 1830-18H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Design #1		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (")	Hole Diameter (")
1,906.96	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)		
249.35	249.35	0.00	0.00	Begin Nudge @ 249.35ft	
3,235.35	2,723.30	1,414.93	123.29	Hold Tangent @ 3235.35ft	
8,573.33	5,414.85	6,007.25	523.45	KOP @ 8573.33ft :: DLS = 8°/100'	
10,441.13	6,736.00	5,641.36	696.09	End Build/TPZ @ 10441.13ft	
10,641.13	6,736.00	5,441.36	694.28	Begin Turn to BHL @ 10641.13ft	
10,674.22	6,736.00	5,408.27	694.17	End Turn @ 10674.22ft	
22,724.03	6,736.00	-6,641.50	724.00	BPZ @ 22724.03ft	
22,814.01	6,736.00	-6,731.48	724.22	TD Well @ 22814.01ft	