

VERDAD RESOURCES

WATTENBERG FIELD

1N-65W-12 RAMEN 1423 PAD

RAMEN 1423-04H

Plan B

Plan: Permit Rev-1

Standard Planning Report

17 August, 2023

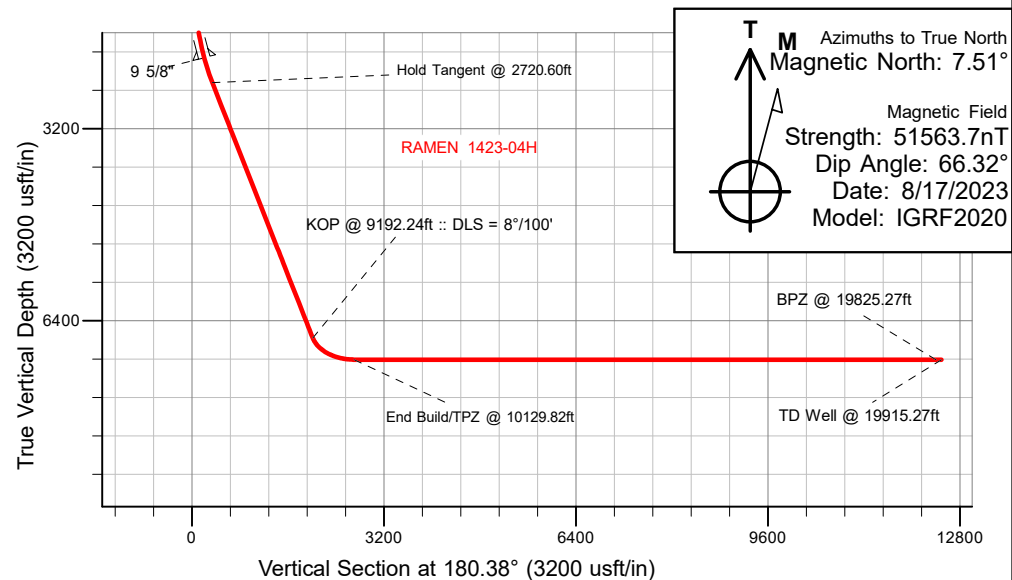
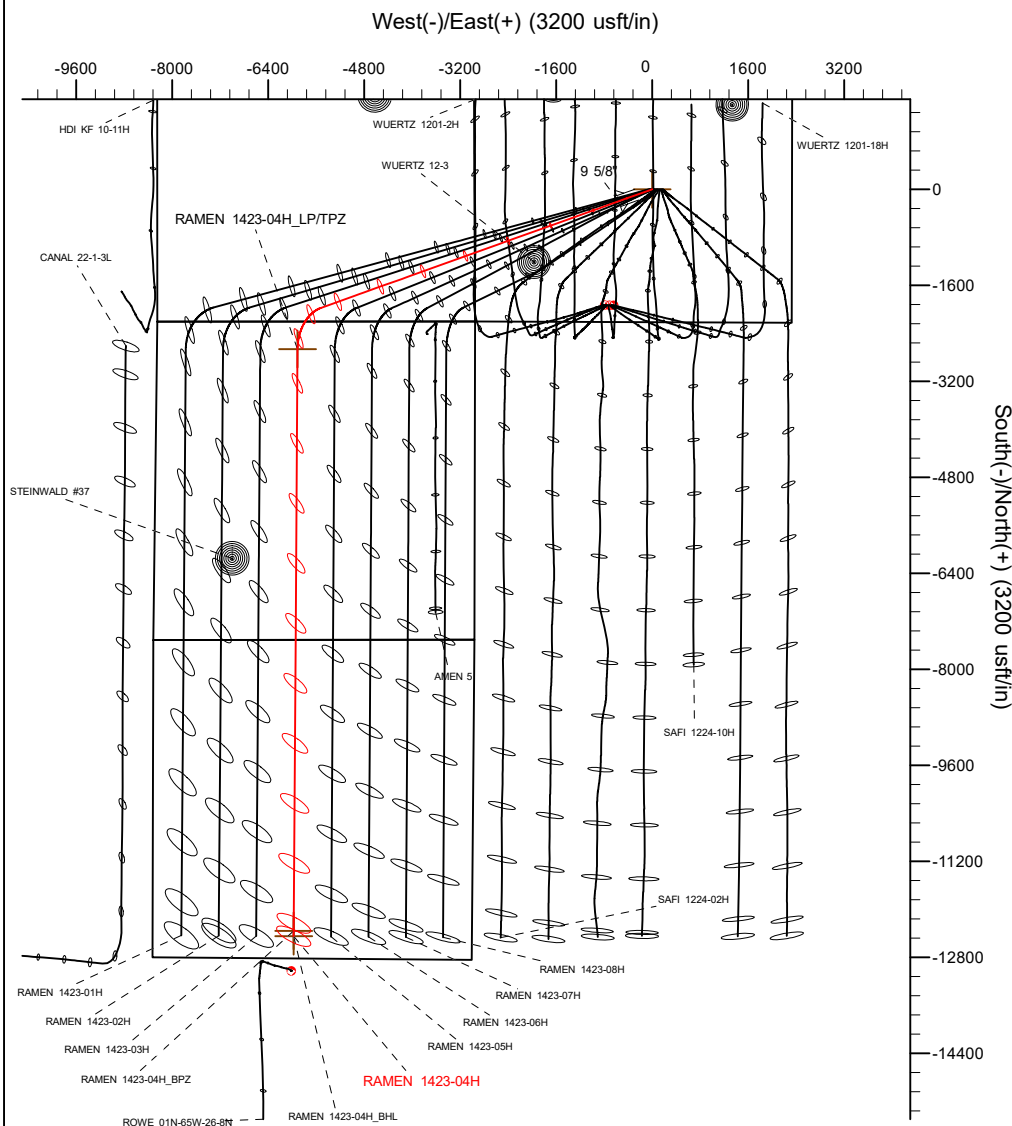
VERDAD RESOURCES

CASING DETAILS			
TVD 2020.00	MD 2151.14	Name 9 5/8"	Size 9-5/8

SHL	LP/TPZ	BPZ	BHL
2215' FSL	460' FNL	460' FSL	370' FSL
2331' FEL	2343' FWL	2352' FWL	2352' FWL

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	
275.60	0.00	0.00	275.60	0.00	0.00	0.00	0.00	0.00	
2720.60	48.90	250.30	2434.40	-330.88	-924.10	2.00	250.30	337.00	
9192.24	48.90	250.30	6688.70	-1974.82	-5515.45	0.00	0.00	2011.35	
10129.82	90.00	180.38	7050.00	-2664.04	-5909.02	8.00	-76.49	2703.17	
19915.27	90.00	180.38	7050.00	-12449.28	-5973.79	0.00	0.00	12488.62	RAMEN 1423-04H_BHL

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	Northing	Easting	Latitude	Longitude
RAMEN 1423-04H_SHL	0.00	1267694.27	3248810.43	40.064787	-104.611019
RAMEN 1423-04H_LP/TPZ	7050.00	1264971.31	3242928.43	40.057472	-104.632129
RAMEN 1423-04H_BPZ	7050.00	1255275.73	3242961.44	40.030857	-104.632350
RAMEN 1423-04H_BHL	7050.00	1255185.73	3242961.74	40.030609	-104.632352



WELL DETAILS: RAMEN 1423-04H
GL = 4971'
RKB = 24' @ 4995.00usft (RIG)
Plan: Permit Rev-1 (RAMEN 1423-04H/Plan B)
Date: 8/17/2023

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well RAMEN 1423-04H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4995.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4995.00usft (RIG)
Site:	1N-65W-12 RAMEN 1423 PAD	North Reference:	True
Well:	RAMEN 1423-04H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
Design:	Permit Rev-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		1N-65W-12 RAMEN 1423 PAD			
Site Position:		Northing:	1,267,694.08 usft	Latitude:	40.064787
From:	Map	Easting:	3,248,778.43 usft	Longitude:	-104.611134
Position Uncertainty:		0.00 usft	Slot Radius:	13-3/16 "	

Well		RAMEN 1423-04H				
Well Position	+N/-S	0.00 usft	Northing:	1,267,694.27 usft	Latitude:	40.064787
	+E/-W	0.00 usft	Easting:	3,248,810.43 usft	Longitude:	-104.611019
Position Uncertainty		3.28 usft	Wellhead Elevation:	usft	Ground Level:	4,971.00 usft
Grid Convergence:		0.57 °				

Wellbore	Plan B				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF202013	8/17/2023	7.51	66.32	51,563.65263388

Design	Permit Rev-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	180.38	

Plan Survey Tool Program		Date	8/17/2023		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	2,020.00	Permit Rev-1 (Plan B)	ISCWSA MWD	
				Fixed:v2:standard declination	
2	2,020.00	19,915.27	Permit Rev-1 (Plan B)	ISCWSA MWD	
				Fixed:v2:standard declination	

Planning Report

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Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4995.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4995.00usft (RIG)
Site:	1N-65W-12 RAMEN 1423 PAD	North Reference:	True
Well:	RAMEN 1423-04H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
Design:	Permit Rev-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	
275.60	0.00	0.00	275.60	0.00	0.00	0.00	0.00	0.00	0.00	
2,720.60	48.90	250.30	2,434.40	-330.88	-924.10	2.00	2.00	0.00	250.30	
9,192.24	48.90	250.30	6,688.70	-1,974.82	-5,515.45	0.00	0.00	0.00	0.00	
10,129.82	90.00	180.38	7,050.00	-2,664.04	-5,909.02	8.00	4.38	-7.46	-76.49	
19,915.27	90.00	180.38	7,050.00	-12,449.28	-5,973.79	0.00	0.00	0.00	0.00	RAMEN 1423-04H_B

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well RAMEN 1423-04H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4995.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4995.00usft (RIG)
Site:	1N-65W-12 RAMEN 1423 PAD	North Reference:	True
Well:	RAMEN 1423-04H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
Design:	Permit Rev-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
275.60	0.00	0.00	275.60	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 275.60ft									
300.00	0.49	250.30	300.00	-0.04	-0.10	0.04	2.00	2.00	0.00
400.00	2.49	250.30	399.96	-0.91	-2.54	0.93	2.00	2.00	0.00
500.00	4.49	250.30	499.77	-2.96	-8.27	3.02	2.00	2.00	0.00
600.00	6.49	250.30	599.31	-6.18	-17.27	6.30	2.00	2.00	0.00
700.00	8.49	250.30	698.45	-10.58	-29.54	10.77	2.00	2.00	0.00
800.00	10.49	250.30	797.08	-16.13	-45.06	16.43	2.00	2.00	0.00
900.00	12.49	250.30	895.07	-22.85	-63.81	23.27	2.00	2.00	0.00
1,000.00	14.49	250.30	992.30	-30.71	-85.77	31.28	2.00	2.00	0.00
1,100.00	16.49	250.30	1,088.67	-39.71	-110.91	40.45	2.00	2.00	0.00
1,200.00	18.49	250.30	1,184.04	-49.84	-139.20	50.76	2.00	2.00	0.00
1,300.00	20.49	250.30	1,278.31	-61.09	-170.60	62.22	2.00	2.00	0.00
1,400.00	22.49	250.30	1,371.35	-73.43	-205.09	74.79	2.00	2.00	0.00
1,500.00	24.49	250.30	1,463.06	-86.87	-242.61	88.47	2.00	2.00	0.00
1,600.00	26.49	250.30	1,553.33	-101.37	-283.12	103.25	2.00	2.00	0.00
1,700.00	28.49	250.30	1,642.03	-116.93	-326.57	119.09	2.00	2.00	0.00
1,800.00	30.49	250.30	1,729.07	-133.52	-372.92	135.99	2.00	2.00	0.00
1,900.00	32.49	250.30	1,814.34	-151.13	-422.09	153.93	2.00	2.00	0.00
2,000.00	34.49	250.30	1,897.74	-169.73	-474.03	172.87	2.00	2.00	0.00
2,100.00	36.49	250.30	1,979.16	-189.30	-528.68	192.80	2.00	2.00	0.00
2,151.14	37.51	250.30	2,020.00	-199.67	-557.66	203.36	2.00	2.00	0.00
9 5/8"									
2,200.00	38.49	250.30	2,058.50	-209.81	-585.98	213.69	2.00	2.00	0.00
2,300.00	40.49	250.30	2,135.68	-231.25	-645.85	235.52	2.00	2.00	0.00
2,400.00	42.49	250.30	2,210.58	-253.58	-708.21	258.27	2.00	2.00	0.00
2,500.00	44.49	250.30	2,283.13	-276.77	-773.00	281.89	2.00	2.00	0.00
2,600.00	46.49	250.30	2,353.23	-300.81	-840.13	306.38	2.00	2.00	0.00
2,700.00	48.49	250.30	2,420.80	-325.66	-909.53	331.68	2.00	2.00	0.00
2,720.60	48.90	250.30	2,434.40	-330.88	-924.10	337.00	2.00	2.00	0.00
Hold Tangent @ 2720.60ft									
2,800.00	48.90	250.30	2,486.60	-351.04	-980.43	357.54	0.00	0.00	0.00
2,900.00	48.90	250.30	2,552.33	-376.45	-1,051.37	383.41	0.00	0.00	0.00
3,000.00	48.90	250.30	2,618.07	-401.85	-1,122.32	409.28	0.00	0.00	0.00
3,100.00	48.90	250.30	2,683.81	-427.25	-1,193.27	435.16	0.00	0.00	0.00
3,200.00	48.90	250.30	2,749.55	-452.65	-1,264.21	461.03	0.00	0.00	0.00
3,300.00	48.90	250.30	2,815.28	-478.06	-1,335.16	486.90	0.00	0.00	0.00
3,400.00	48.90	250.30	2,881.02	-503.46	-1,406.10	512.77	0.00	0.00	0.00
3,500.00	48.90	250.30	2,946.76	-528.86	-1,477.05	538.64	0.00	0.00	0.00
3,600.00	48.90	250.30	3,012.50	-554.26	-1,548.00	564.52	0.00	0.00	0.00
3,700.00	48.90	250.30	3,078.23	-579.66	-1,618.94	590.39	0.00	0.00	0.00
3,800.00	48.90	250.30	3,143.97	-605.07	-1,689.89	616.26	0.00	0.00	0.00
3,900.00	48.90	250.30	3,209.71	-630.47	-1,760.83	642.13	0.00	0.00	0.00
4,000.00	48.90	250.30	3,275.45	-655.87	-1,831.78	668.01	0.00	0.00	0.00
4,100.00	48.90	250.30	3,341.18	-681.27	-1,902.72	693.88	0.00	0.00	0.00
4,200.00	48.90	250.30	3,406.92	-706.68	-1,973.67	719.75	0.00	0.00	0.00
4,300.00	48.90	250.30	3,472.66	-732.08	-2,044.62	745.62	0.00	0.00	0.00
4,400.00	48.90	250.30	3,538.40	-757.48	-2,115.56	771.49	0.00	0.00	0.00
4,500.00	48.90	250.30	3,604.13	-782.88	-2,186.51	797.37	0.00	0.00	0.00
4,600.00	48.90	250.30	3,669.87	-808.29	-2,257.45	823.24	0.00	0.00	0.00

Planning Report

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Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4995.00usft (RIG)
Site:	1N-65W-12 RAMEN 1423 PAD	North Reference:	True
Well:	RAMEN 1423-04H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
Design:	Permit Rev-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	48.90	250.30	3,735.61	-833.69	-2,328.40	849.11	0.00	0.00	0.00
4,800.00	48.90	250.30	3,801.35	-859.09	-2,399.34	874.98	0.00	0.00	0.00
4,900.00	48.90	250.30	3,867.08	-884.49	-2,470.29	900.86	0.00	0.00	0.00
5,000.00	48.90	250.30	3,932.82	-909.89	-2,541.24	926.73	0.00	0.00	0.00
5,100.00	48.90	250.30	3,998.56	-935.30	-2,612.18	952.60	0.00	0.00	0.00
5,200.00	48.90	250.30	4,064.30	-960.70	-2,683.13	978.47	0.00	0.00	0.00
5,300.00	48.90	250.30	4,130.03	-986.10	-2,754.07	1,004.34	0.00	0.00	0.00
5,400.00	48.90	250.30	4,195.77	-1,011.50	-2,825.02	1,030.22	0.00	0.00	0.00
5,500.00	48.90	250.30	4,261.51	-1,036.91	-2,895.97	1,056.09	0.00	0.00	0.00
5,600.00	48.90	250.30	4,327.25	-1,062.31	-2,966.91	1,081.96	0.00	0.00	0.00
5,700.00	48.90	250.30	4,392.98	-1,087.71	-3,037.86	1,107.83	0.00	0.00	0.00
5,800.00	48.90	250.30	4,458.72	-1,113.11	-3,108.80	1,133.71	0.00	0.00	0.00
5,900.00	48.90	250.30	4,524.46	-1,138.51	-3,179.75	1,159.58	0.00	0.00	0.00
6,000.00	48.90	250.30	4,590.20	-1,163.92	-3,250.69	1,185.45	0.00	0.00	0.00
6,100.00	48.90	250.30	4,655.93	-1,189.32	-3,321.64	1,211.32	0.00	0.00	0.00
6,200.00	48.90	250.30	4,721.67	-1,214.72	-3,392.59	1,237.20	0.00	0.00	0.00
6,300.00	48.90	250.30	4,787.41	-1,240.12	-3,463.53	1,263.07	0.00	0.00	0.00
6,400.00	48.90	250.30	4,853.15	-1,265.53	-3,534.48	1,288.94	0.00	0.00	0.00
6,500.00	48.90	250.30	4,918.88	-1,290.93	-3,605.42	1,314.81	0.00	0.00	0.00
6,600.00	48.90	250.30	4,984.62	-1,316.33	-3,676.37	1,340.68	0.00	0.00	0.00
6,700.00	48.90	250.30	5,050.36	-1,341.73	-3,747.31	1,366.56	0.00	0.00	0.00
6,800.00	48.90	250.30	5,116.10	-1,367.14	-3,818.26	1,392.43	0.00	0.00	0.00
6,900.00	48.90	250.30	5,181.83	-1,392.54	-3,889.21	1,418.30	0.00	0.00	0.00
7,000.00	48.90	250.30	5,247.57	-1,417.94	-3,960.15	1,444.17	0.00	0.00	0.00
7,100.00	48.90	250.30	5,313.31	-1,443.34	-4,031.10	1,470.05	0.00	0.00	0.00
7,200.00	48.90	250.30	5,379.05	-1,468.74	-4,102.04	1,495.92	0.00	0.00	0.00
7,300.00	48.90	250.30	5,444.78	-1,494.15	-4,172.99	1,521.79	0.00	0.00	0.00
7,400.00	48.90	250.30	5,510.52	-1,519.55	-4,243.93	1,547.66	0.00	0.00	0.00
7,500.00	48.90	250.30	5,576.26	-1,544.95	-4,314.88	1,573.53	0.00	0.00	0.00
7,600.00	48.90	250.30	5,642.00	-1,570.35	-4,385.83	1,599.41	0.00	0.00	0.00
7,700.00	48.90	250.30	5,707.73	-1,595.76	-4,456.77	1,625.28	0.00	0.00	0.00
7,800.00	48.90	250.30	5,773.47	-1,621.16	-4,527.72	1,651.15	0.00	0.00	0.00
7,900.00	48.90	250.30	5,839.21	-1,646.56	-4,598.66	1,677.02	0.00	0.00	0.00
8,000.00	48.90	250.30	5,904.95	-1,671.96	-4,669.61	1,702.90	0.00	0.00	0.00
8,100.00	48.90	250.30	5,970.68	-1,697.36	-4,740.56	1,728.77	0.00	0.00	0.00
8,200.00	48.90	250.30	6,036.42	-1,722.77	-4,811.50	1,754.64	0.00	0.00	0.00
8,300.00	48.90	250.30	6,102.16	-1,748.17	-4,882.45	1,780.51	0.00	0.00	0.00
8,400.00	48.90	250.30	6,167.90	-1,773.57	-4,953.39	1,806.38	0.00	0.00	0.00
8,500.00	48.90	250.30	6,233.63	-1,798.97	-5,024.34	1,832.26	0.00	0.00	0.00
8,600.00	48.90	250.30	6,299.37	-1,824.38	-5,095.28	1,858.13	0.00	0.00	0.00
8,700.00	48.90	250.30	6,365.11	-1,849.78	-5,166.23	1,884.00	0.00	0.00	0.00
8,800.00	48.90	250.30	6,430.85	-1,875.18	-5,237.18	1,909.87	0.00	0.00	0.00
8,900.00	48.90	250.30	6,496.58	-1,900.58	-5,308.12	1,935.75	0.00	0.00	0.00
9,000.00	48.90	250.30	6,562.32	-1,925.98	-5,379.07	1,961.62	0.00	0.00	0.00
9,100.00	48.90	250.30	6,628.06	-1,951.39	-5,450.01	1,987.49	0.00	0.00	0.00
9,192.24	48.90	250.30	6,688.70	-1,974.82	-5,515.45	2,011.35	0.00	0.00	0.00
KOP @ 9192.24ft :: DLS = 8°/100'									
9,200.00	49.05	249.50	6,693.79	-1,976.83	-5,520.95	2,013.40	8.00	1.90	-10.30
9,250.00	50.13	244.44	6,726.22	-1,991.73	-5,555.96	2,028.53	8.00	2.16	-10.12
9,300.00	51.42	239.56	6,757.84	-2,009.91	-5,590.13	2,046.95	8.00	2.59	-9.77
9,350.00	52.91	234.85	6,788.52	-2,031.31	-5,623.30	2,068.56	8.00	2.98	-9.40
9,400.00	54.58	230.35	6,818.10	-2,055.80	-5,655.31	2,093.26	8.00	3.34	-9.02
9,450.00	56.41	226.03	6,846.43	-2,083.27	-5,686.00	2,120.94	8.00	3.66	-8.64
9,500.00	58.38	221.90	6,873.38	-2,113.59	-5,715.21	2,151.45	8.00	3.94	-8.26

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well RAMEN 1423-04H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4995.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4995.00usft (RIG)
Site:	1N-65W-12 RAMEN 1423 PAD	North Reference:	True
Well:	RAMEN 1423-04H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
Design:	Permit Rev-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)
9,550.00	60.48	217.94	6,898.81	-2,146.61	-5,742.82	2,184.65	8.00	4.20	-7.91
9,600.00	62.69	214.15	6,922.61	-2,182.16	-5,768.67	2,220.37	8.00	4.42	-7.58
9,650.00	65.00	210.51	6,944.65	-2,220.08	-5,792.66	2,258.45	8.00	4.62	-7.28
9,700.00	67.40	207.01	6,964.83	-2,260.18	-5,814.65	2,298.69	8.00	4.79	-7.00
9,750.00	69.87	203.63	6,983.05	-2,302.26	-5,834.55	2,340.91	8.00	4.94	-6.76
9,800.00	72.40	200.35	6,999.23	-2,346.13	-5,852.25	2,384.89	8.00	5.06	-6.55
9,850.00	74.98	197.17	7,013.27	-2,391.56	-5,867.67	2,430.42	8.00	5.17	-6.37
9,900.00	77.61	194.07	7,025.12	-2,438.33	-5,880.74	2,477.28	8.00	5.25	-6.21
9,950.00	80.27	191.02	7,034.72	-2,486.22	-5,891.39	2,525.24	8.00	5.32	-6.09
10,000.00	82.95	188.03	7,042.02	-2,534.99	-5,899.57	2,574.06	8.00	5.37	-5.99
10,050.00	85.66	185.07	7,046.98	-2,584.41	-5,905.24	2,623.52	8.00	5.41	-5.92
10,100.00	88.38	182.13	7,049.58	-2,634.24	-5,908.37	2,673.36	8.00	5.44	-5.88
10,129.82	90.00	180.38	7,050.00	-2,664.04	-5,909.02	2,703.17	8.00	5.44	-5.86
End Build/TPZ @ 10129.82ft									
10,200.00	90.00	180.38	7,050.00	-2,734.22	-5,909.49	2,773.35	0.00	0.00	0.00
10,300.00	90.00	180.38	7,050.00	-2,834.22	-5,910.15	2,873.35	0.00	0.00	0.00
10,400.00	90.00	180.38	7,050.00	-2,934.22	-5,910.81	2,973.35	0.00	0.00	0.00
10,500.00	90.00	180.38	7,050.00	-3,034.22	-5,911.47	3,073.35	0.00	0.00	0.00
10,600.00	90.00	180.38	7,050.00	-3,134.21	-5,912.14	3,173.35	0.00	0.00	0.00
10,700.00	90.00	180.38	7,050.00	-3,234.21	-5,912.80	3,273.35	0.00	0.00	0.00
10,800.00	90.00	180.38	7,050.00	-3,334.21	-5,913.46	3,373.35	0.00	0.00	0.00
10,900.00	90.00	180.38	7,050.00	-3,434.21	-5,914.12	3,473.35	0.00	0.00	0.00
11,000.00	90.00	180.38	7,050.00	-3,534.20	-5,914.78	3,573.35	0.00	0.00	0.00
11,100.00	90.00	180.38	7,050.00	-3,634.20	-5,915.45	3,673.35	0.00	0.00	0.00
11,200.00	90.00	180.38	7,050.00	-3,734.20	-5,916.11	3,773.35	0.00	0.00	0.00
11,300.00	90.00	180.38	7,050.00	-3,834.20	-5,916.77	3,873.35	0.00	0.00	0.00
11,400.00	90.00	180.38	7,050.00	-3,934.20	-5,917.43	3,973.35	0.00	0.00	0.00
11,500.00	90.00	180.38	7,050.00	-4,034.19	-5,918.09	4,073.35	0.00	0.00	0.00
11,600.00	90.00	180.38	7,050.00	-4,134.19	-5,918.75	4,173.35	0.00	0.00	0.00
11,700.00	90.00	180.38	7,050.00	-4,234.19	-5,919.42	4,273.35	0.00	0.00	0.00
11,800.00	90.00	180.38	7,050.00	-4,334.19	-5,920.08	4,373.35	0.00	0.00	0.00
11,900.00	90.00	180.38	7,050.00	-4,434.18	-5,920.74	4,473.35	0.00	0.00	0.00
12,000.00	90.00	180.38	7,050.00	-4,534.18	-5,921.40	4,573.35	0.00	0.00	0.00
12,100.00	90.00	180.38	7,050.00	-4,634.18	-5,922.06	4,673.35	0.00	0.00	0.00
12,200.00	90.00	180.38	7,050.00	-4,734.18	-5,922.73	4,773.35	0.00	0.00	0.00
12,300.00	90.00	180.38	7,050.00	-4,834.18	-5,923.39	4,873.35	0.00	0.00	0.00
12,400.00	90.00	180.38	7,050.00	-4,934.17	-5,924.05	4,973.35	0.00	0.00	0.00
12,500.00	90.00	180.38	7,050.00	-5,034.17	-5,924.71	5,073.35	0.00	0.00	0.00
12,600.00	90.00	180.38	7,050.00	-5,134.17	-5,925.37	5,173.35	0.00	0.00	0.00
12,700.00	90.00	180.38	7,050.00	-5,234.17	-5,926.04	5,273.35	0.00	0.00	0.00
12,800.00	90.00	180.38	7,050.00	-5,334.16	-5,926.70	5,373.35	0.00	0.00	0.00
12,900.00	90.00	180.38	7,050.00	-5,434.16	-5,927.36	5,473.35	0.00	0.00	0.00
13,000.00	90.00	180.38	7,050.00	-5,534.16	-5,928.02	5,573.35	0.00	0.00	0.00
13,100.00	90.00	180.38	7,050.00	-5,634.16	-5,928.68	5,673.35	0.00	0.00	0.00
13,200.00	90.00	180.38	7,050.00	-5,734.16	-5,929.35	5,773.35	0.00	0.00	0.00
13,300.00	90.00	180.38	7,050.00	-5,834.15	-5,930.01	5,873.35	0.00	0.00	0.00
13,400.00	90.00	180.38	7,050.00	-5,934.15	-5,930.67	5,973.35	0.00	0.00	0.00
13,500.00	90.00	180.38	7,050.00	-6,034.15	-5,931.33	6,073.35	0.00	0.00	0.00
13,600.00	90.00	180.38	7,050.00	-6,134.15	-5,931.99	6,173.35	0.00	0.00	0.00
13,700.00	90.00	180.38	7,050.00	-6,234.15	-5,932.65	6,273.35	0.00	0.00	0.00
13,800.00	90.00	180.38	7,050.00	-6,334.14	-5,933.32	6,373.35	0.00	0.00	0.00
13,900.00	90.00	180.38	7,050.00	-6,434.14	-5,933.98	6,473.35	0.00	0.00	0.00
14,000.00	90.00	180.38	7,050.00	-6,534.14	-5,934.64	6,573.35	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well RAMEN 1423-04H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4995.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4995.00usft (RIG)
Site:	1N-65W-12 RAMEN 1423 PAD	North Reference:	True
Well:	RAMEN 1423-04H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
Design:	Permit Rev-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)	
14,100.00	90.00	180.38	7,050.00	-6,634.14	-5,935.30	6,673.35	0.00	0.00	0.00	
14,200.00	90.00	180.38	7,050.00	-6,734.13	-5,935.96	6,773.35	0.00	0.00	0.00	
14,300.00	90.00	180.38	7,050.00	-6,834.13	-5,936.63	6,873.35	0.00	0.00	0.00	
14,400.00	90.00	180.38	7,050.00	-6,934.13	-5,937.29	6,973.35	0.00	0.00	0.00	
14,500.00	90.00	180.38	7,050.00	-7,034.13	-5,937.95	7,073.35	0.00	0.00	0.00	
14,600.00	90.00	180.38	7,050.00	-7,134.13	-5,938.61	7,173.35	0.00	0.00	0.00	
14,700.00	90.00	180.38	7,050.00	-7,234.12	-5,939.27	7,273.35	0.00	0.00	0.00	
14,800.00	90.00	180.38	7,050.00	-7,334.12	-5,939.94	7,373.35	0.00	0.00	0.00	
14,900.00	90.00	180.38	7,050.00	-7,434.12	-5,940.60	7,473.35	0.00	0.00	0.00	
15,000.00	90.00	180.38	7,050.00	-7,534.12	-5,941.26	7,573.35	0.00	0.00	0.00	
15,100.00	90.00	180.38	7,050.00	-7,634.11	-5,941.92	7,673.35	0.00	0.00	0.00	
15,200.00	90.00	180.38	7,050.00	-7,734.11	-5,942.58	7,773.35	0.00	0.00	0.00	
15,300.00	90.00	180.38	7,050.00	-7,834.11	-5,943.25	7,873.35	0.00	0.00	0.00	
15,400.00	90.00	180.38	7,050.00	-7,934.11	-5,943.91	7,973.35	0.00	0.00	0.00	
15,500.00	90.00	180.38	7,050.00	-8,034.11	-5,944.57	8,073.35	0.00	0.00	0.00	
15,600.00	90.00	180.38	7,050.00	-8,134.10	-5,945.23	8,173.35	0.00	0.00	0.00	
15,700.00	90.00	180.38	7,050.00	-8,234.10	-5,945.89	8,273.35	0.00	0.00	0.00	
15,800.00	90.00	180.38	7,050.00	-8,334.10	-5,946.56	8,373.35	0.00	0.00	0.00	
15,900.00	90.00	180.38	7,050.00	-8,434.10	-5,947.22	8,473.35	0.00	0.00	0.00	
16,000.00	90.00	180.38	7,050.00	-8,534.09	-5,947.88	8,573.35	0.00	0.00	0.00	
16,100.00	90.00	180.38	7,050.00	-8,634.09	-5,948.54	8,673.35	0.00	0.00	0.00	
16,200.00	90.00	180.38	7,050.00	-8,734.09	-5,949.20	8,773.35	0.00	0.00	0.00	
16,300.00	90.00	180.38	7,050.00	-8,834.09	-5,949.86	8,873.35	0.00	0.00	0.00	
16,400.00	90.00	180.38	7,050.00	-8,934.09	-5,950.53	8,973.35	0.00	0.00	0.00	
16,500.00	90.00	180.38	7,050.00	-9,034.08	-5,951.19	9,073.35	0.00	0.00	0.00	
16,600.00	90.00	180.38	7,050.00	-9,134.08	-5,951.85	9,173.35	0.00	0.00	0.00	
16,700.00	90.00	180.38	7,050.00	-9,234.08	-5,952.51	9,273.35	0.00	0.00	0.00	
16,800.00	90.00	180.38	7,050.00	-9,334.08	-5,953.17	9,373.35	0.00	0.00	0.00	
16,900.00	90.00	180.38	7,050.00	-9,434.08	-5,953.84	9,473.35	0.00	0.00	0.00	
17,000.00	90.00	180.38	7,050.00	-9,534.07	-5,954.50	9,573.35	0.00	0.00	0.00	
17,100.00	90.00	180.38	7,050.00	-9,634.07	-5,955.16	9,673.35	0.00	0.00	0.00	
17,200.00	90.00	180.38	7,050.00	-9,734.07	-5,955.82	9,773.35	0.00	0.00	0.00	
17,300.00	90.00	180.38	7,050.00	-9,834.07	-5,956.48	9,873.35	0.00	0.00	0.00	
17,400.00	90.00	180.38	7,050.00	-9,934.06	-5,957.15	9,973.35	0.00	0.00	0.00	
17,500.00	90.00	180.38	7,050.00	-10,034.06	-5,957.81	10,073.35	0.00	0.00	0.00	
17,600.00	90.00	180.38	7,050.00	-10,134.06	-5,958.47	10,173.35	0.00	0.00	0.00	
17,700.00	90.00	180.38	7,050.00	-10,234.06	-5,959.13	10,273.35	0.00	0.00	0.00	
17,800.00	90.00	180.38	7,050.00	-10,334.06	-5,959.79	10,373.35	0.00	0.00	0.00	
17,900.00	90.00	180.38	7,050.00	-10,434.05	-5,960.46	10,473.35	0.00	0.00	0.00	
18,000.00	90.00	180.38	7,050.00	-10,534.05	-5,961.12	10,573.35	0.00	0.00	0.00	
18,100.00	90.00	180.38	7,050.00	-10,634.05	-5,961.78	10,673.35	0.00	0.00	0.00	
18,200.00	90.00	180.38	7,050.00	-10,734.05	-5,962.44	10,773.35	0.00	0.00	0.00	
18,300.00	90.00	180.38	7,050.00	-10,834.04	-5,963.10	10,873.35	0.00	0.00	0.00	
18,400.00	90.00	180.38	7,050.00	-10,934.04	-5,963.76	10,973.35	0.00	0.00	0.00	
18,500.00	90.00	180.38	7,050.00	-11,034.04	-5,964.43	11,073.35	0.00	0.00	0.00	
18,600.00	90.00	180.38	7,050.00	-11,134.04	-5,965.09	11,173.35	0.00	0.00	0.00	
18,700.00	90.00	180.38	7,050.00	-11,234.04	-5,965.75	11,273.35	0.00	0.00	0.00	
18,800.00	90.00	180.38	7,050.00	-11,334.03	-5,966.41	11,373.35	0.00	0.00	0.00	
18,900.00	90.00	180.38	7,050.00	-11,434.03	-5,967.07	11,473.35	0.00	0.00	0.00	
19,000.00	90.00	180.38	7,050.00	-11,534.03	-5,967.74	11,573.35	0.00	0.00	0.00	
19,100.00	90.00	180.38	7,050.00	-11,634.03	-5,968.40	11,673.35	0.00	0.00	0.00	
19,200.00	90.00	180.38	7,050.00	-11,734.02	-5,969.06	11,773.35	0.00	0.00	0.00	
19,300.00	90.00	180.38	7,050.00	-11,834.02	-5,969.72	11,873.35	0.00	0.00	0.00	
19,400.00	90.00	180.38	7,050.00	-11,934.02	-5,970.38	11,973.35	0.00	0.00	0.00	

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well RAMEN 1423-04H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4995.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4995.00usft (RIG)
Site:	1N-65W-12 RAMEN 1423 PAD	North Reference:	True
Well:	RAMEN 1423-04H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
Design:	Permit Rev-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)
19,500.00	90.00	180.38	7,050.00	-12,034.02	-5,971.05	12,073.35	0.00	0.00	0.00
19,600.00	90.00	180.38	7,050.00	-12,134.02	-5,971.71	12,173.35	0.00	0.00	0.00
19,700.00	90.00	180.38	7,050.00	-12,234.01	-5,972.37	12,273.35	0.00	0.00	0.00
19,800.00	90.00	180.38	7,050.00	-12,334.01	-5,973.03	12,373.35	0.00	0.00	0.00
19,825.27	90.00	180.38	7,050.00	-12,359.28	-5,973.20	12,398.62	0.00	0.00	0.00
BPZ @ 19825.27ft									
19,900.00	90.00	180.38	7,050.00	-12,434.01	-5,973.69	12,473.35	0.00	0.00	0.00
19,915.27	90.00	180.38	7,050.00	-12,449.28	-5,973.79	12,488.62	0.00	0.00	0.00
TD Well @ 19915.27ft									

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
2,151.14	2,020.00	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)	
275.60	275.60	0.00	0.00	Begin Nudge @ 275.60ft
2,720.60	2,434.40	-330.88	-924.10	Hold Tangent @ 2720.60ft
9,192.24	6,688.70	-1,974.82	-5,515.45	KOP @ 9192.24ft :: DLS = 8°/100'
10,129.82	7,050.00	-2,664.04	-5,909.02	End Build/TPZ @ 10129.82ft
19,825.27	7,050.00	-12,359.28	-5,973.20	BPZ @ 19825.27ft
19,915.27	7,050.00	-12,449.28	-5,973.79	TD Well @ 19915.27ft