

VERDAD RESOURCES

WATTENBERG FIELD

1N-65W-12 RAMEN 1423 PAD

RAMEN 1423-02H

Plan B

Plan: Permit Rev-1

Standard Planning Report

17 August, 2023

Project: WATTENBERG FIELD
Site: 1N-65W-12 RAMEN 1423 PAD
Well: RAMEN 1423-02H
Wellbore: Plan B
Design: Permit Rev-1

VERDAD RESOURCES

CASING DETAILS

TVD	MD	Name	Size
2020.00	2166.25	9 5/8"	9-5/8

SHL
2215' FSL
2363' FEL

LP/TPZ
460' FNL
1101' FWL

BPZ
460' FSL
1104' FWL

BHL
370' FSL
1104' FWL

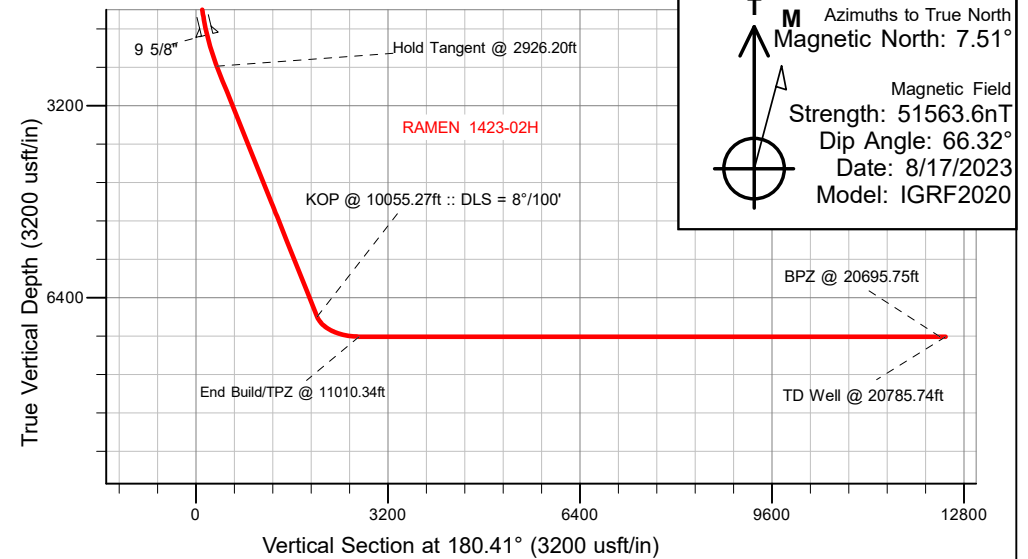
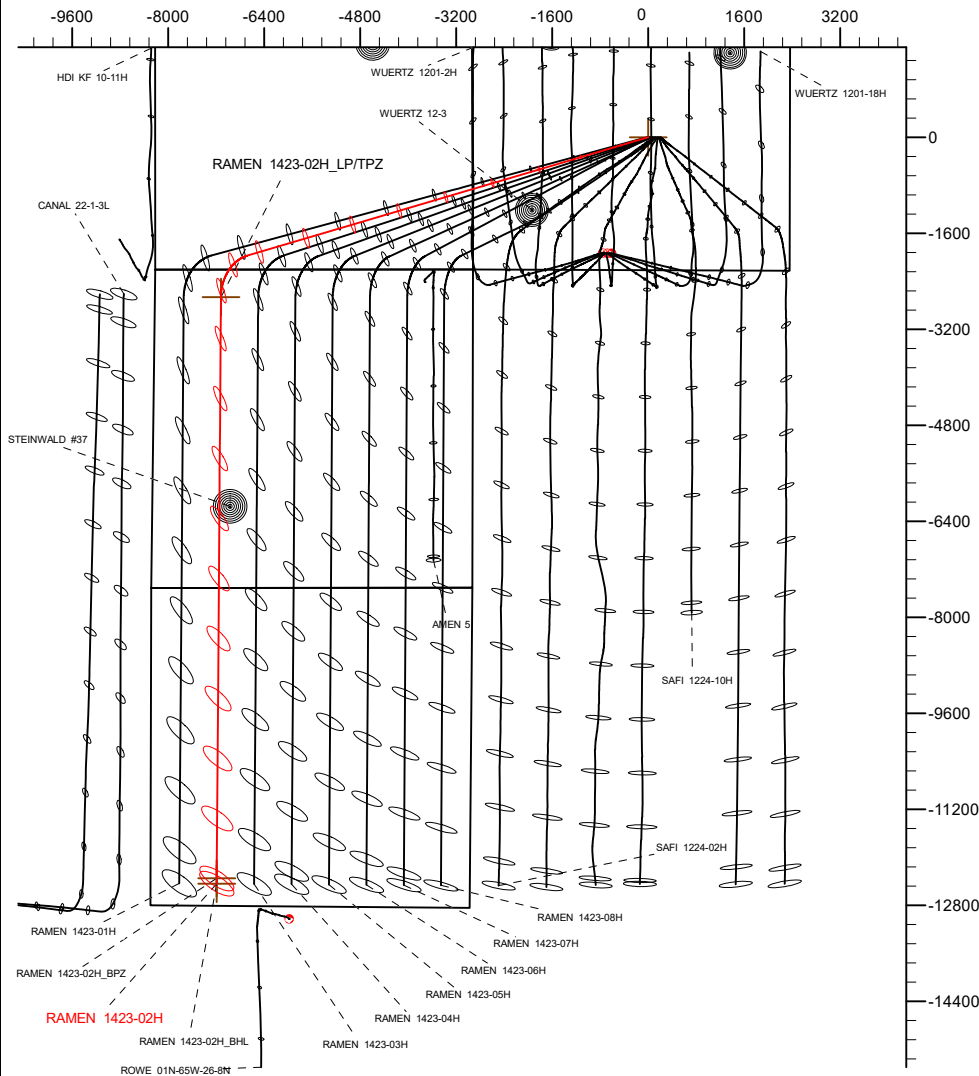
SECTION DETAILS

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	
220.20	0.00	0.00	220.20	0.00	0.00	0.00	0.00	0.00	
2926.20	54.12	253.55	2541.38	-335.78	-1137.23	2.00	253.55	343.91	
10055.27	54.12	253.55	6719.66	-1971.51	-6677.09	0.00	0.00	2019.24	
11010.34	90.00	180.41	7050.00	-2664.46	-7119.16	8.00	-79.93	2715.34	
20785.74	90.00	180.41	7050.00	-12439.62	-7189.79	0.00	0.00	12490.75	RAMEN 1423-02H_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	Northing	Easting	Latitude	Longitude
RAMEN 1423-02H_SHL	0.00	1267694.08	3248778.43	40.064787	-104.611133
RAMEN 1423-02H_LP/TPZ	7050.00	1264958.58	3241686.53	40.057471	-104.636566
RAMEN 1423-02H_BPZ	7050.00	1255273.02	3241713.44	40.030883	-104.636806
RAMEN 1423-02H_BHL	7050.00	1255183.02	3241713.69	40.030635	-104.636809

West(-)/East(+) (3200 usft/in)



WELL DETAILS: RAMEN 1423-02H

GL = 4971'

RKB = 24' @ 4995.00usft (RIG)

Plan: Permit Rev-1 (RAMEN 1423-02H/Plan B)

Date: 8/17/2023

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well RAMEN 1423-02H
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 1423-02H	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 1423-02H				
Well Position	+N/-S	0.00 usft	Northing:	1,267,694.08 usft	Latitude:	40.064787
	+E/-W	0.00 usft	Easting:	3,248,778.43 usft	Longitude:	-104.611134
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	51,563.64110462

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	180.41	

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	20,785.74	Permit Rev-1 (Plan B)	ISCWSA MWD	
				Fixed:v2:standard declination	

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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 1423-02H	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	
220.20	0.00	0.00	220.20	0.00	0.00	0.00	0.00	0.00	0.00	
2,926.20	54.12	253.55	2,541.38	-335.78	-1,137.23	2.00	2.00	0.00	253.55	
10,055.27	54.12	253.55	6,719.66	-1,971.51	-6,677.09	0.00	0.00	0.00	0.00	
11,010.34	90.00	180.41	7,050.00	-2,664.46	-7,119.16	8.00	3.76	-7.66	-79.93	
20,785.74	90.00	180.41	7,050.00	-12,439.62	-7,189.79	0.00	0.00	0.00	0.00	RAMEN 1423-02H_B

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 1423-02H	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
220.20	0.00	0.00	220.20	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 220.20ft									
300.00	1.60	253.55	299.99	-0.31	-1.07	0.32	2.00	2.00	0.00
400.00	3.60	253.55	399.88	-1.60	-5.41	1.64	2.00	2.00	0.00
500.00	5.60	253.55	499.56	-3.87	-13.09	3.96	2.00	2.00	0.00
600.00	7.60	253.55	598.89	-7.12	-24.11	7.29	2.00	2.00	0.00
700.00	9.60	253.55	697.76	-11.35	-38.44	11.63	2.00	2.00	0.00
800.00	11.60	253.55	796.05	-16.56	-56.08	16.96	2.00	2.00	0.00
900.00	13.60	253.55	893.64	-22.73	-76.99	23.28	2.00	2.00	0.00
1,000.00	15.60	253.55	990.41	-29.87	-101.16	30.59	2.00	2.00	0.00
1,100.00	17.60	253.55	1,086.24	-37.96	-128.55	38.88	2.00	2.00	0.00
1,200.00	19.60	253.55	1,181.01	-46.99	-159.13	48.12	2.00	2.00	0.00
1,300.00	21.60	253.55	1,274.61	-56.95	-192.87	58.33	2.00	2.00	0.00
1,400.00	23.60	253.55	1,366.93	-67.83	-229.72	69.47	2.00	2.00	0.00
1,500.00	25.60	253.55	1,457.85	-79.61	-269.63	81.54	2.00	2.00	0.00
1,600.00	27.60	253.55	1,547.27	-92.29	-312.57	94.53	2.00	2.00	0.00
1,700.00	29.60	253.55	1,635.07	-105.84	-358.47	108.41	2.00	2.00	0.00
1,800.00	31.60	253.55	1,721.14	-120.26	-407.28	123.17	2.00	2.00	0.00
1,900.00	33.60	253.55	1,805.38	-135.51	-458.95	138.79	2.00	2.00	0.00
2,000.00	35.60	253.55	1,887.70	-151.59	-513.40	155.26	2.00	2.00	0.00
2,100.00	37.60	253.55	1,967.98	-168.47	-570.57	172.55	2.00	2.00	0.00
2,166.25	38.92	253.55	2,020.00	-180.09	-609.92	184.45	2.00	2.00	0.00
9 5/8"									
2,200.00	39.60	253.55	2,046.13	-186.13	-630.40	190.64	2.00	2.00	0.00
2,300.00	41.60	253.55	2,122.06	-204.56	-692.80	209.51	2.00	2.00	0.00
2,400.00	43.60	253.55	2,195.67	-223.73	-757.71	229.14	2.00	2.00	0.00
2,500.00	45.60	253.55	2,266.87	-243.61	-825.05	249.50	2.00	2.00	0.00
2,600.00	47.60	253.55	2,335.58	-264.18	-894.72	270.57	2.00	2.00	0.00
2,700.00	49.60	253.55	2,401.72	-285.42	-966.65	292.33	2.00	2.00	0.00
2,800.00	51.60	253.55	2,465.19	-307.30	-1,040.76	314.74	2.00	2.00	0.00
2,900.00	53.60	253.55	2,525.93	-329.79	-1,116.94	337.78	2.00	2.00	0.00
2,926.20	54.12	253.55	2,541.38	-335.78	-1,137.23	343.91	2.00	2.00	0.00
Hold Tangent @ 2926.20ft									
3,000.00	54.12	253.55	2,584.64	-352.72	-1,194.58	361.26	0.00	0.00	0.00
3,100.00	54.12	253.55	2,643.25	-375.66	-1,272.29	384.76	0.00	0.00	0.00
3,200.00	54.12	253.55	2,701.86	-398.61	-1,349.99	408.26	0.00	0.00	0.00
3,300.00	54.12	253.55	2,760.46	-421.55	-1,427.70	431.76	0.00	0.00	0.00
3,400.00	54.12	253.55	2,819.07	-444.49	-1,505.41	455.26	0.00	0.00	0.00
3,500.00	54.12	253.55	2,877.68	-467.44	-1,583.12	478.76	0.00	0.00	0.00
3,600.00	54.12	253.55	2,936.29	-490.38	-1,660.83	502.26	0.00	0.00	0.00
3,700.00	54.12	253.55	2,994.90	-513.33	-1,738.53	525.75	0.00	0.00	0.00
3,800.00	54.12	253.55	3,053.51	-536.27	-1,816.24	549.25	0.00	0.00	0.00
3,900.00	54.12	253.55	3,112.12	-559.22	-1,893.95	572.75	0.00	0.00	0.00
4,000.00	54.12	253.55	3,170.73	-582.16	-1,971.66	596.25	0.00	0.00	0.00
4,100.00	54.12	253.55	3,229.34	-605.11	-2,049.37	619.75	0.00	0.00	0.00
4,200.00	54.12	253.55	3,287.95	-628.05	-2,127.07	643.25	0.00	0.00	0.00
4,300.00	54.12	253.55	3,346.55	-650.99	-2,204.78	666.75	0.00	0.00	0.00
4,400.00	54.12	253.55	3,405.16	-673.94	-2,282.49	690.25	0.00	0.00	0.00
4,500.00	54.12	253.55	3,463.77	-696.88	-2,360.20	713.75	0.00	0.00	0.00
4,600.00	54.12	253.55	3,522.38	-719.83	-2,437.91	737.25	0.00	0.00	0.00

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Well:	RAMEN 1423-02H	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	54.12	253.55	3,580.99	-742.77	-2,515.62	760.75	0.00	0.00	0.00
4,800.00	54.12	253.55	3,639.60	-765.72	-2,593.32	784.25	0.00	0.00	0.00
4,900.00	54.12	253.55	3,698.21	-788.66	-2,671.03	807.75	0.00	0.00	0.00
5,000.00	54.12	253.55	3,756.82	-811.61	-2,748.74	831.25	0.00	0.00	0.00
5,100.00	54.12	253.55	3,815.43	-834.55	-2,826.45	854.75	0.00	0.00	0.00
5,200.00	54.12	253.55	3,874.04	-857.49	-2,904.16	878.25	0.00	0.00	0.00
5,300.00	54.12	253.55	3,932.64	-880.44	-2,981.86	901.75	0.00	0.00	0.00
5,400.00	54.12	253.55	3,991.25	-903.38	-3,059.57	925.25	0.00	0.00	0.00
5,500.00	54.12	253.55	4,049.86	-926.33	-3,137.28	948.75	0.00	0.00	0.00
5,600.00	54.12	253.55	4,108.47	-949.27	-3,214.99	972.25	0.00	0.00	0.00
5,700.00	54.12	253.55	4,167.08	-972.22	-3,292.70	995.75	0.00	0.00	0.00
5,800.00	54.12	253.55	4,225.69	-995.16	-3,370.40	1,019.25	0.00	0.00	0.00
5,900.00	54.12	253.55	4,284.30	-1,018.11	-3,448.11	1,042.75	0.00	0.00	0.00
6,000.00	54.12	253.55	4,342.91	-1,041.05	-3,525.82	1,066.25	0.00	0.00	0.00
6,100.00	54.12	253.55	4,401.52	-1,063.99	-3,603.53	1,089.75	0.00	0.00	0.00
6,200.00	54.12	253.55	4,460.12	-1,086.94	-3,681.24	1,113.25	0.00	0.00	0.00
6,300.00	54.12	253.55	4,518.73	-1,109.88	-3,758.94	1,136.75	0.00	0.00	0.00
6,400.00	54.12	253.55	4,577.34	-1,132.83	-3,836.65	1,160.25	0.00	0.00	0.00
6,500.00	54.12	253.55	4,635.95	-1,155.77	-3,914.36	1,183.75	0.00	0.00	0.00
6,600.00	54.12	253.55	4,694.56	-1,178.72	-3,992.07	1,207.25	0.00	0.00	0.00
6,700.00	54.12	253.55	4,753.17	-1,201.66	-4,069.78	1,230.75	0.00	0.00	0.00
6,800.00	54.12	253.55	4,811.78	-1,224.60	-4,147.48	1,254.25	0.00	0.00	0.00
6,900.00	54.12	253.55	4,870.39	-1,247.55	-4,225.19	1,277.75	0.00	0.00	0.00
7,000.00	54.12	253.55	4,929.00	-1,270.49	-4,302.90	1,301.25	0.00	0.00	0.00
7,100.00	54.12	253.55	4,987.61	-1,293.44	-4,380.61	1,324.75	0.00	0.00	0.00
7,200.00	54.12	253.55	5,046.21	-1,316.38	-4,458.32	1,348.25	0.00	0.00	0.00
7,300.00	54.12	253.55	5,104.82	-1,339.33	-4,536.02	1,371.75	0.00	0.00	0.00
7,400.00	54.12	253.55	5,163.43	-1,362.27	-4,613.73	1,395.25	0.00	0.00	0.00
7,500.00	54.12	253.55	5,222.04	-1,385.22	-4,691.44	1,418.75	0.00	0.00	0.00
7,600.00	54.12	253.55	5,280.65	-1,408.16	-4,769.15	1,442.25	0.00	0.00	0.00
7,700.00	54.12	253.55	5,339.26	-1,431.10	-4,846.86	1,465.75	0.00	0.00	0.00
7,800.00	54.12	253.55	5,397.87	-1,454.05	-4,924.57	1,489.25	0.00	0.00	0.00
7,900.00	54.12	253.55	5,456.48	-1,476.99	-5,002.27	1,512.75	0.00	0.00	0.00
8,000.00	54.12	253.55	5,515.09	-1,499.94	-5,079.98	1,536.25	0.00	0.00	0.00
8,100.00	54.12	253.55	5,573.69	-1,522.88	-5,157.69	1,559.75	0.00	0.00	0.00
8,200.00	54.12	253.55	5,632.30	-1,545.83	-5,235.40	1,583.25	0.00	0.00	0.00
8,300.00	54.12	253.55	5,690.91	-1,568.77	-5,313.11	1,606.75	0.00	0.00	0.00
8,400.00	54.12	253.55	5,749.52	-1,591.72	-5,390.81	1,630.25	0.00	0.00	0.00
8,500.00	54.12	253.55	5,808.13	-1,614.66	-5,468.52	1,653.75	0.00	0.00	0.00
8,600.00	54.12	253.55	5,866.74	-1,637.60	-5,546.23	1,677.25	0.00	0.00	0.00
8,700.00	54.12	253.55	5,925.35	-1,660.55	-5,623.94	1,700.75	0.00	0.00	0.00
8,800.00	54.12	253.55	5,983.96	-1,683.49	-5,701.65	1,724.25	0.00	0.00	0.00
8,900.00	54.12	253.55	6,042.57	-1,706.44	-5,779.35	1,747.75	0.00	0.00	0.00
9,000.00	54.12	253.55	6,101.18	-1,729.38	-5,857.06	1,771.25	0.00	0.00	0.00
9,100.00	54.12	253.55	6,159.78	-1,752.33	-5,934.77	1,794.75	0.00	0.00	0.00
9,200.00	54.12	253.55	6,218.39	-1,775.27	-6,012.48	1,818.25	0.00	0.00	0.00
9,300.00	54.12	253.55	6,277.00	-1,798.22	-6,090.19	1,841.75	0.00	0.00	0.00
9,400.00	54.12	253.55	6,335.61	-1,821.16	-6,167.89	1,865.25	0.00	0.00	0.00
9,500.00	54.12	253.55	6,394.22	-1,844.10	-6,245.60	1,888.75	0.00	0.00	0.00
9,600.00	54.12	253.55	6,452.83	-1,867.05	-6,323.31	1,912.25	0.00	0.00	0.00
9,700.00	54.12	253.55	6,511.44	-1,889.99	-6,401.02	1,935.75	0.00	0.00	0.00
9,800.00	54.12	253.55	6,570.05	-1,912.94	-6,478.73	1,959.25	0.00	0.00	0.00
9,900.00	54.12	253.55	6,628.66	-1,935.88	-6,556.43	1,982.75	0.00	0.00	0.00
10,000.00	54.12	253.55	6,687.27	-1,958.83	-6,634.14	2,006.25	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well RAMEN 1423-02H
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 1423-02H	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)
10,055.27	54.12	253.55	6,719.66	-1,971.51	-6,677.09	2,019.24	0.00	0.00	0.00
KOP @ 10055.27ft :: DLS = 8°/100'									
10,100.00	54.82	249.24	6,745.66	-1,983.12	-6,711.58	2,031.10	8.00	1.57	-9.64
10,150.00	55.79	244.52	6,774.13	-1,999.27	-6,749.36	2,047.51	8.00	1.93	-9.44
10,200.00	56.93	239.91	6,801.84	-2,018.68	-6,786.16	2,067.18	8.00	2.28	-9.21
10,250.00	58.23	235.43	6,828.66	-2,041.25	-6,821.81	2,090.01	8.00	2.61	-8.96
10,300.00	59.69	231.08	6,854.45	-2,066.88	-6,856.11	2,115.88	8.00	2.91	-8.70
10,350.00	61.28	226.87	6,879.09	-2,095.44	-6,888.92	2,144.68	8.00	3.19	-8.43
10,400.00	63.01	222.78	6,902.46	-2,126.79	-6,920.06	2,176.25	8.00	3.45	-8.17
10,450.00	64.84	218.83	6,924.44	-2,160.78	-6,949.39	2,210.45	8.00	3.67	-7.91
10,500.00	66.78	214.99	6,944.93	-2,197.25	-6,976.77	2,247.12	8.00	3.88	-7.67
10,550.00	68.81	211.27	6,963.83	-2,236.01	-7,002.05	2,286.06	8.00	4.06	-7.45
10,600.00	70.92	207.65	6,981.04	-2,276.88	-7,025.12	2,327.09	8.00	4.22	-7.24
10,650.00	73.10	204.12	6,996.49	-2,319.66	-7,045.87	2,370.02	8.00	4.35	-7.06
10,700.00	75.33	200.67	7,010.09	-2,364.14	-7,064.19	2,414.63	8.00	4.47	-6.89
10,750.00	77.62	197.30	7,021.79	-2,410.10	-7,079.99	2,460.70	8.00	4.57	-6.75
10,800.00	79.95	193.98	7,031.51	-2,457.32	-7,093.20	2,508.02	8.00	4.65	-6.63
10,850.00	82.31	190.71	7,039.23	-2,505.57	-7,103.76	2,556.34	8.00	4.72	-6.54
10,900.00	84.69	187.48	7,044.89	-2,554.62	-7,111.60	2,605.44	8.00	4.77	-6.47
10,950.00	87.09	184.27	7,048.47	-2,604.22	-7,116.70	2,655.07	8.00	4.80	-6.42
11,000.00	89.50	181.07	7,049.96	-2,654.13	-7,119.03	2,705.00	8.00	4.82	-6.39
11,010.34	90.00	180.41	7,050.00	-2,664.46	-7,119.16	2,715.34	8.00	4.82	-6.38
End Build/TPZ @ 11010.34ft									
11,100.00	90.00	180.41	7,050.00	-2,754.13	-7,119.81	2,805.00	0.00	0.00	0.00
11,200.00	90.00	180.41	7,050.00	-2,854.12	-7,120.53	2,905.00	0.00	0.00	0.00
11,300.00	90.00	180.41	7,050.00	-2,954.12	-7,121.25	3,005.00	0.00	0.00	0.00
11,400.00	90.00	180.41	7,050.00	-3,054.12	-7,121.98	3,105.00	0.00	0.00	0.00
11,500.00	90.00	180.41	7,050.00	-3,154.11	-7,122.70	3,205.00	0.00	0.00	0.00
11,600.00	90.00	180.41	7,050.00	-3,254.11	-7,123.42	3,305.00	0.00	0.00	0.00
11,700.00	90.00	180.41	7,050.00	-3,354.11	-7,124.14	3,405.00	0.00	0.00	0.00
11,800.00	90.00	180.41	7,050.00	-3,454.11	-7,124.87	3,505.00	0.00	0.00	0.00
11,900.00	90.00	180.41	7,050.00	-3,554.10	-7,125.59	3,605.00	0.00	0.00	0.00
12,000.00	90.00	180.41	7,050.00	-3,654.10	-7,126.31	3,705.00	0.00	0.00	0.00
12,100.00	90.00	180.41	7,050.00	-3,754.10	-7,127.04	3,805.00	0.00	0.00	0.00
12,200.00	90.00	180.41	7,050.00	-3,854.10	-7,127.76	3,905.00	0.00	0.00	0.00
12,300.00	90.00	180.41	7,050.00	-3,954.09	-7,128.48	4,005.00	0.00	0.00	0.00
12,400.00	90.00	180.41	7,050.00	-4,054.09	-7,129.20	4,105.00	0.00	0.00	0.00
12,500.00	90.00	180.41	7,050.00	-4,154.09	-7,129.93	4,205.00	0.00	0.00	0.00
12,600.00	90.00	180.41	7,050.00	-4,254.09	-7,130.65	4,305.00	0.00	0.00	0.00
12,700.00	90.00	180.41	7,050.00	-4,354.08	-7,131.37	4,405.00	0.00	0.00	0.00
12,800.00	90.00	180.41	7,050.00	-4,454.08	-7,132.09	4,505.00	0.00	0.00	0.00
12,900.00	90.00	180.41	7,050.00	-4,554.08	-7,132.82	4,605.00	0.00	0.00	0.00
13,000.00	90.00	180.41	7,050.00	-4,654.08	-7,133.54	4,705.00	0.00	0.00	0.00
13,100.00	90.00	180.41	7,050.00	-4,754.07	-7,134.26	4,805.00	0.00	0.00	0.00
13,200.00	90.00	180.41	7,050.00	-4,854.07	-7,134.98	4,905.00	0.00	0.00	0.00
13,300.00	90.00	180.41	7,050.00	-4,954.07	-7,135.71	5,005.00	0.00	0.00	0.00
13,400.00	90.00	180.41	7,050.00	-5,054.07	-7,136.43	5,105.00	0.00	0.00	0.00
13,500.00	90.00	180.41	7,050.00	-5,154.06	-7,137.15	5,205.00	0.00	0.00	0.00
13,600.00	90.00	180.41	7,050.00	-5,254.06	-7,137.87	5,305.00	0.00	0.00	0.00
13,700.00	90.00	180.41	7,050.00	-5,354.06	-7,138.60	5,405.00	0.00	0.00	0.00
13,800.00	90.00	180.41	7,050.00	-5,454.06	-7,139.32	5,505.00	0.00	0.00	0.00
13,900.00	90.00	180.41	7,050.00	-5,554.05	-7,140.04	5,605.00	0.00	0.00	0.00
14,000.00	90.00	180.41	7,050.00	-5,654.05	-7,140.76	5,705.00	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well RAMEN 1423-02H
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 1423-02H	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	180.41	7,050.00	-5,754.05	-7,141.49	5,805.00	0.00	0.00	0.00	
14,200.00	90.00	180.41	7,050.00	-5,854.04	-7,142.21	5,905.00	0.00	0.00	0.00	
14,300.00	90.00	180.41	7,050.00	-5,954.04	-7,142.93	6,005.00	0.00	0.00	0.00	
14,400.00	90.00	180.41	7,050.00	-6,054.04	-7,143.65	6,105.00	0.00	0.00	0.00	
14,500.00	90.00	180.41	7,050.00	-6,154.04	-7,144.38	6,205.00	0.00	0.00	0.00	
14,600.00	90.00	180.41	7,050.00	-6,254.03	-7,145.10	6,305.00	0.00	0.00	0.00	
14,700.00	90.00	180.41	7,050.00	-6,354.03	-7,145.82	6,405.00	0.00	0.00	0.00	
14,800.00	90.00	180.41	7,050.00	-6,454.03	-7,146.54	6,505.00	0.00	0.00	0.00	
14,900.00	90.00	180.41	7,050.00	-6,554.03	-7,147.27	6,605.00	0.00	0.00	0.00	
15,000.00	90.00	180.41	7,050.00	-6,654.02	-7,147.99	6,705.00	0.00	0.00	0.00	
15,100.00	90.00	180.41	7,050.00	-6,754.02	-7,148.71	6,805.00	0.00	0.00	0.00	
15,200.00	90.00	180.41	7,050.00	-6,854.02	-7,149.43	6,905.00	0.00	0.00	0.00	
15,300.00	90.00	180.41	7,050.00	-6,954.02	-7,150.16	7,005.00	0.00	0.00	0.00	
15,400.00	90.00	180.41	7,050.00	-7,054.01	-7,150.88	7,105.00	0.00	0.00	0.00	
15,500.00	90.00	180.41	7,050.00	-7,154.01	-7,151.60	7,205.00	0.00	0.00	0.00	
15,600.00	90.00	180.41	7,050.00	-7,254.01	-7,152.32	7,305.00	0.00	0.00	0.00	
15,700.00	90.00	180.41	7,050.00	-7,354.01	-7,153.05	7,405.00	0.00	0.00	0.00	
15,800.00	90.00	180.41	7,050.00	-7,454.00	-7,153.77	7,505.00	0.00	0.00	0.00	
15,900.00	90.00	180.41	7,050.00	-7,554.00	-7,154.49	7,605.00	0.00	0.00	0.00	
16,000.00	90.00	180.41	7,050.00	-7,654.00	-7,155.21	7,705.00	0.00	0.00	0.00	
16,100.00	90.00	180.41	7,050.00	-7,754.00	-7,155.94	7,805.00	0.00	0.00	0.00	
16,200.00	90.00	180.41	7,050.00	-7,853.99	-7,156.66	7,905.00	0.00	0.00	0.00	
16,300.00	90.00	180.41	7,050.00	-7,953.99	-7,157.38	8,005.00	0.00	0.00	0.00	
16,400.00	90.00	180.41	7,050.00	-8,053.99	-7,158.10	8,105.00	0.00	0.00	0.00	
16,500.00	90.00	180.41	7,050.00	-8,153.98	-7,158.83	8,205.00	0.00	0.00	0.00	
16,600.00	90.00	180.41	7,050.00	-8,253.98	-7,159.55	8,305.00	0.00	0.00	0.00	
16,700.00	90.00	180.41	7,050.00	-8,353.98	-7,160.27	8,405.00	0.00	0.00	0.00	
16,800.00	90.00	180.41	7,050.00	-8,453.98	-7,160.99	8,505.00	0.00	0.00	0.00	
16,900.00	90.00	180.41	7,050.00	-8,553.97	-7,161.72	8,605.00	0.00	0.00	0.00	
17,000.00	90.00	180.41	7,050.00	-8,653.97	-7,162.44	8,705.00	0.00	0.00	0.00	
17,100.00	90.00	180.41	7,050.00	-8,753.97	-7,163.16	8,805.00	0.00	0.00	0.00	
17,200.00	90.00	180.41	7,050.00	-8,853.97	-7,163.88	8,905.00	0.00	0.00	0.00	
17,300.00	90.00	180.41	7,050.00	-8,953.96	-7,164.61	9,005.00	0.00	0.00	0.00	
17,400.00	90.00	180.41	7,050.00	-9,053.96	-7,165.33	9,105.00	0.00	0.00	0.00	
17,500.00	90.00	180.41	7,050.00	-9,153.96	-7,166.05	9,205.00	0.00	0.00	0.00	
17,600.00	90.00	180.41	7,050.00	-9,253.96	-7,166.77	9,305.00	0.00	0.00	0.00	
17,700.00	90.00	180.41	7,050.00	-9,353.95	-7,167.50	9,405.00	0.00	0.00	0.00	
17,800.00	90.00	180.41	7,050.00	-9,453.95	-7,168.22	9,505.00	0.00	0.00	0.00	
17,900.00	90.00	180.41	7,050.00	-9,553.95	-7,168.94	9,605.00	0.00	0.00	0.00	
18,000.00	90.00	180.41	7,050.00	-9,653.95	-7,169.66	9,705.00	0.00	0.00	0.00	
18,100.00	90.00	180.41	7,050.00	-9,753.94	-7,170.39	9,805.00	0.00	0.00	0.00	
18,200.00	90.00	180.41	7,050.00	-9,853.94	-7,171.11	9,905.00	0.00	0.00	0.00	
18,300.00	90.00	180.41	7,050.00	-9,953.94	-7,171.83	10,005.00	0.00	0.00	0.00	
18,400.00	90.00	180.41	7,050.00	-10,053.94	-7,172.55	10,105.00	0.00	0.00	0.00	
18,500.00	90.00	180.41	7,050.00	-10,153.93	-7,173.28	10,205.00	0.00	0.00	0.00	
18,600.00	90.00	180.41	7,050.00	-10,253.93	-7,174.00	10,305.00	0.00	0.00	0.00	
18,700.00	90.00	180.41	7,050.00	-10,353.93	-7,174.72	10,405.00	0.00	0.00	0.00	
18,800.00	90.00	180.41	7,050.00	-10,453.92	-7,175.44	10,505.00	0.00	0.00	0.00	
18,900.00	90.00	180.41	7,050.00	-10,553.92	-7,176.17	10,605.00	0.00	0.00	0.00	
19,000.00	90.00	180.41	7,050.00	-10,653.92	-7,176.89	10,705.00	0.00	0.00	0.00	
19,100.00	90.00	180.41	7,050.00	-10,753.92	-7,177.61	10,805.00	0.00	0.00	0.00	
19,200.00	90.00	180.41	7,050.00	-10,853.91	-7,178.34	10,905.00	0.00	0.00	0.00	
19,300.00	90.00	180.41	7,050.00	-10,953.91	-7,179.06	11,005.00	0.00	0.00	0.00	
19,400.00	90.00	180.41	7,050.00	-11,053.91	-7,179.78	11,105.00	0.00	0.00	0.00	

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well RAMEN 1423-02H
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 1423-02H	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	180.41	7,050.00	-11,153.91	-7,180.50	11,205.00	0.00	0.00	0.00	
19,600.00	90.00	180.41	7,050.00	-11,253.90	-7,181.23	11,305.00	0.00	0.00	0.00	
19,700.00	90.00	180.41	7,050.00	-11,353.90	-7,181.95	11,405.00	0.00	0.00	0.00	
19,800.00	90.00	180.41	7,050.00	-11,453.90	-7,182.67	11,505.00	0.00	0.00	0.00	
19,900.00	90.00	180.41	7,050.00	-11,553.90	-7,183.39	11,605.00	0.00	0.00	0.00	
20,000.00	90.00	180.41	7,050.00	-11,653.89	-7,184.12	11,705.00	0.00	0.00	0.00	
20,100.00	90.00	180.41	7,050.00	-11,753.89	-7,184.84	11,805.00	0.00	0.00	0.00	
20,200.00	90.00	180.41	7,050.00	-11,853.89	-7,185.56	11,905.00	0.00	0.00	0.00	
20,300.00	90.00	180.41	7,050.00	-11,953.89	-7,186.28	12,005.00	0.00	0.00	0.00	
20,400.00	90.00	180.41	7,050.00	-12,053.88	-7,187.01	12,105.00	0.00	0.00	0.00	
20,500.00	90.00	180.41	7,050.00	-12,153.88	-7,187.73	12,205.00	0.00	0.00	0.00	
20,600.00	90.00	180.41	7,050.00	-12,253.88	-7,188.45	12,305.00	0.00	0.00	0.00	
20,695.75	90.00	180.41	7,050.00	-12,349.63	-7,189.14	12,400.75	0.00	0.00	0.00	
BPZ @ 20695.75ft										
20,700.00	90.00	180.41	7,050.00	-12,353.88	-7,189.17	12,405.00	0.00	0.00	0.00	
20,785.74	90.00	180.41	7,050.00	-12,439.62	-7,189.79	12,490.75	0.00	0.00	0.00	
TD Well @ 20785.74ft										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (")	Hole Diameter (")
2,166.25	2,020.00	9 5/8"		9-5/8	13-1/2

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
220.20	220.20	+N/-S (usft)	+E/-W (usft)	Begin Nudge @ 220.20ft	
2,926.20	2,541.38	-335.78	-1,137.23	Hold Tangent @ 2926.20ft	
10,055.27	6,719.66	-1,971.51	-6,677.09	KOP @ 10055.27ft :: DLS = 8°/100'	
11,010.34	7,050.00	-2,664.46	-7,119.16	End Build/TPZ @ 11010.34ft	
20,695.75	7,050.00	-12,349.63	-7,189.14	BPZ @ 20695.75ft	
20,785.74	7,050.00	-12,439.62	-7,189.79	TD Well @ 20785.74ft	