

VERDAD RESOURCES

WATTENBERG FIELD

1N-65W-12 RAMEN 1423 PAD

RAMEN 1423-01H

Plan B

Plan: Permit Rev-1

Standard Planning Report

17 August, 2023

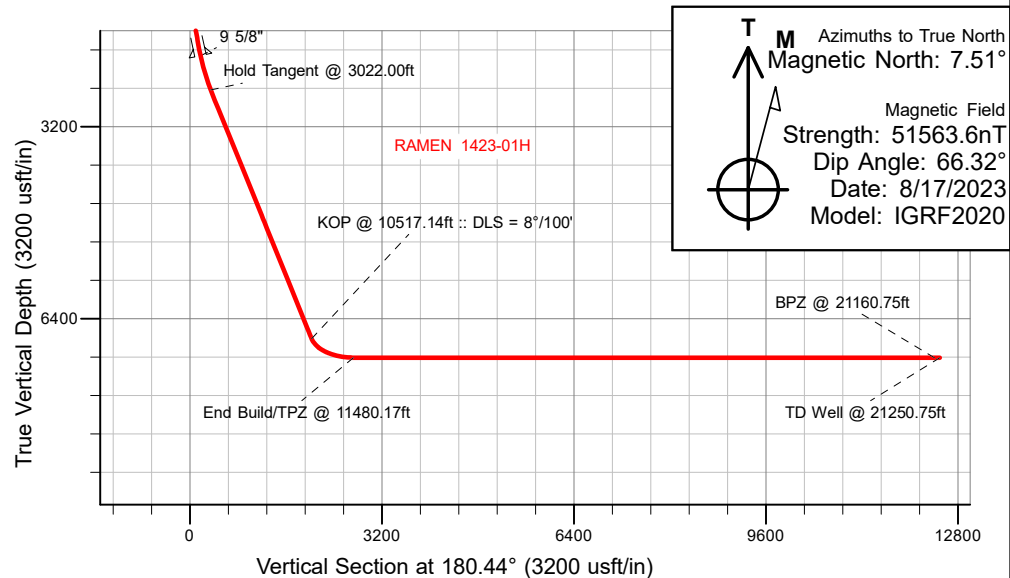
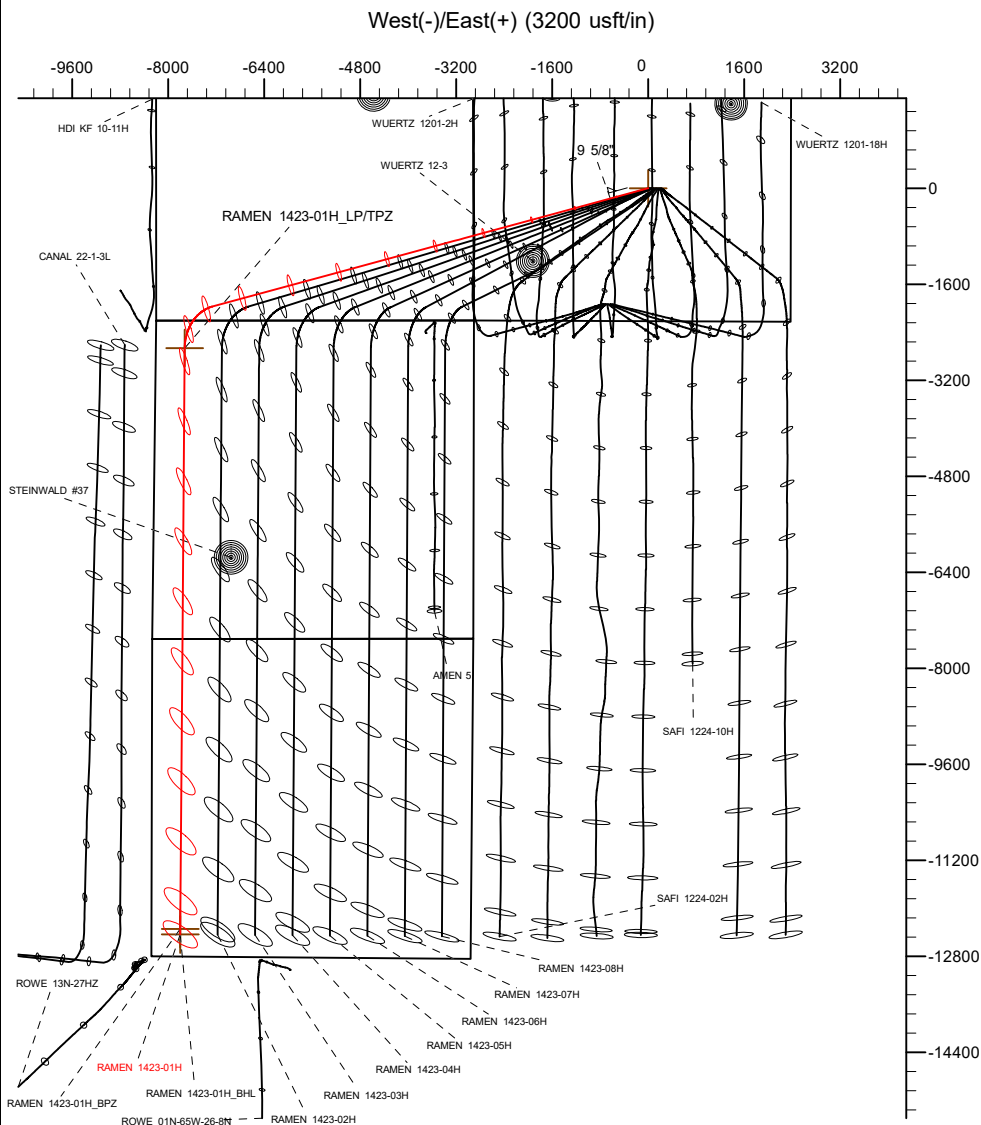
VERDAD RESOURCES

CASING DETAILS			
TVD	MD	Name	Size
2020.00	2171.67	9 5/8"	9-5/8

SHL	LP/TPZ	BPZ	BHL
2215' FSL	460' FNL	460' FSL	370' FSL
2379' FEL	480' FWL	480' FWL	480' 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	
201.50	0.00	0.00	201.50	0.00	0.00	0.00	0.00	0.00	
3022.00	56.41	254.82	2587.92	-335.13	-1235.20	2.00	254.82	344.61	
10517.14	56.41	254.82	6734.58	-1970.03	-7260.93	0.00	0.00	2025.73	
11480.17	90.00	180.44	7050.00	-2664.50	-7723.61	8.00	-81.21	2723.73	
21250.75	90.00	180.44	7050.00	-12434.80	-7797.80	0.00	0.00	12494.31	RAMEN 1423-01H_BHL

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	Northing	Easting	Latitude	Longitude
RAMEN 1423-01H_SHL	0.00	1267693.99	3248762.43	40.064787	-104.611191
RAMEN 1423-01H_LP/TPZ	7050.00	1264952.21	3241065.59	40.057470	-104.638784
RAMEN 1423-01H_BPZ	7050.00	1255271.66	3241089.44	40.030895	-104.639035
RAMEN 1423-01H_BHL	7050.00	1255181.66	3241089.66	40.030648	-104.639037



WELL DETAILS: RAMEN 1423-01H	
GL = 4971'	
RKB = 24' @ 4995.00usft (RIG)	
Plan: Permit Rev-1 (RAMEN 1423-01H/Plan B)	
Date:	8/17/2023

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well RAMEN 1423-01H
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 1423-01H	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 1423-01H			
Well Position	+N/-S	0.00 usft	Northing:	1,267,693.99 usft
	+E/-W	0.00 usft	Easting:	3,248,762.43 usft
Position Uncertainty		3.28 usft	Wellhead Elevation:	usft
Grid Convergence:		0.57 °	Ground Level:	4,971.00 usft

Wellbore	Plan B				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF202013	8/17/2023	7.51	66.32	51,563.63534717

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	180.44	

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	21,250.75	Permit Rev-1 (Plan B)	ISCWSA MWD	Fixed:v2:standard declination

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 1423-01H	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	
201.50	0.00	0.00	201.50	0.00	0.00	0.00	0.00	0.00	0.00	
3,022.00	56.41	254.82	2,587.92	-335.13	-1,235.20	2.00	2.00	0.00	254.82	
10,517.14	56.41	254.82	6,734.58	-1,970.03	-7,260.93	0.00	0.00	0.00	0.00	
11,480.17	90.00	180.44	7,050.00	-2,664.50	-7,723.61	8.00	3.49	-7.72	-81.21	
21,250.75	90.00	180.44	7,050.00	-12,434.80	-7,797.80	0.00	0.00	0.00	0.00	RAMEN 1423-01H_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 1423-01H	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
201.50	0.00	0.00	201.50	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 201.50ft									
300.00	1.97	254.82	299.98	-0.44	-1.63	0.46	2.00	2.00	0.00
400.00	3.97	254.82	399.84	-1.80	-6.63	1.85	2.00	2.00	0.00
500.00	5.97	254.82	499.46	-4.07	-15.00	4.18	2.00	2.00	0.00
600.00	7.97	254.82	598.72	-7.25	-26.71	7.45	2.00	2.00	0.00
700.00	9.97	254.82	697.49	-11.33	-41.75	11.65	2.00	2.00	0.00
800.00	11.97	254.82	795.66	-16.31	-60.12	16.77	2.00	2.00	0.00
900.00	13.97	254.82	893.10	-22.19	-81.78	22.82	2.00	2.00	0.00
1,000.00	15.97	254.82	989.70	-28.95	-106.71	29.77	2.00	2.00	0.00
1,100.00	17.97	254.82	1,085.34	-36.59	-134.87	37.63	2.00	2.00	0.00
1,200.00	19.97	254.82	1,179.91	-45.11	-166.24	46.38	2.00	2.00	0.00
1,300.00	21.97	254.82	1,273.28	-54.48	-200.78	56.02	2.00	2.00	0.00
1,400.00	23.97	254.82	1,365.34	-64.69	-238.44	66.52	2.00	2.00	0.00
1,500.00	25.97	254.82	1,455.99	-75.75	-279.18	77.89	2.00	2.00	0.00
1,600.00	27.97	254.82	1,545.11	-87.62	-322.95	90.10	2.00	2.00	0.00
1,700.00	29.97	254.82	1,632.60	-100.30	-369.69	103.14	2.00	2.00	0.00
1,800.00	31.97	254.82	1,718.33	-113.78	-419.35	117.00	2.00	2.00	0.00
1,900.00	33.97	254.82	1,802.23	-128.03	-471.87	131.65	2.00	2.00	0.00
2,000.00	35.97	254.82	1,884.17	-143.04	-527.19	147.08	2.00	2.00	0.00
2,100.00	37.97	254.82	1,964.06	-158.78	-585.22	163.27	2.00	2.00	0.00
2,171.67	39.40	254.82	2,020.00	-170.51	-628.46	175.33	2.00	2.00	0.00
9 5/8"									
2,200.00	39.97	254.82	2,041.80	-175.25	-645.92	180.20	2.00	2.00	0.00
2,300.00	41.97	254.82	2,117.30	-192.42	-709.19	197.86	2.00	2.00	0.00
2,400.00	43.97	254.82	2,190.47	-210.26	-774.97	216.21	2.00	2.00	0.00
2,500.00	45.97	254.82	2,261.21	-228.77	-843.18	235.24	2.00	2.00	0.00
2,600.00	47.97	254.82	2,329.45	-247.91	-913.72	254.92	2.00	2.00	0.00
2,700.00	49.97	254.82	2,395.09	-267.66	-986.52	275.23	2.00	2.00	0.00
2,800.00	51.97	254.82	2,458.06	-288.00	-1,061.49	296.15	2.00	2.00	0.00
2,900.00	53.97	254.82	2,518.28	-308.91	-1,138.53	317.64	2.00	2.00	0.00
3,000.00	55.97	254.82	2,575.68	-330.35	-1,217.56	339.69	2.00	2.00	0.00
3,022.00	56.41	254.82	2,587.92	-335.13	-1,235.20	344.61	2.00	2.00	0.00
Hold Tangent @ 3022.00ft									
3,100.00	56.41	254.82	2,631.07	-352.15	-1,297.91	362.10	0.00	0.00	0.00
3,200.00	56.41	254.82	2,686.40	-373.96	-1,378.30	384.53	0.00	0.00	0.00
3,300.00	56.41	254.82	2,741.72	-395.77	-1,458.70	406.96	0.00	0.00	0.00
3,400.00	56.41	254.82	2,797.05	-417.59	-1,539.09	429.39	0.00	0.00	0.00
3,500.00	56.41	254.82	2,852.37	-439.40	-1,619.49	451.82	0.00	0.00	0.00
3,600.00	56.41	254.82	2,907.70	-461.21	-1,699.88	474.25	0.00	0.00	0.00
3,700.00	56.41	254.82	2,963.02	-483.02	-1,780.28	496.68	0.00	0.00	0.00
3,800.00	56.41	254.82	3,018.35	-504.84	-1,860.67	519.11	0.00	0.00	0.00
3,900.00	56.41	254.82	3,073.67	-526.65	-1,941.07	541.54	0.00	0.00	0.00
4,000.00	56.41	254.82	3,129.00	-548.46	-2,021.46	563.97	0.00	0.00	0.00
4,100.00	56.41	254.82	3,184.32	-570.27	-2,101.86	586.40	0.00	0.00	0.00
4,200.00	56.41	254.82	3,239.64	-592.09	-2,182.25	608.83	0.00	0.00	0.00
4,300.00	56.41	254.82	3,294.97	-613.90	-2,262.65	631.26	0.00	0.00	0.00
4,400.00	56.41	254.82	3,350.29	-635.71	-2,343.04	653.69	0.00	0.00	0.00
4,500.00	56.41	254.82	3,405.62	-657.53	-2,423.44	676.12	0.00	0.00	0.00
4,600.00	56.41	254.82	3,460.94	-679.34	-2,503.84	698.55	0.00	0.00	0.00
4,700.00	56.41	254.82	3,516.27	-701.15	-2,584.23	720.98	0.00	0.00	0.00

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Site:	1N-65W-12 RAMEN 1423 PAD	North Reference:	True
Well:	RAMEN 1423-01H	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)	
4,800.00	56.41	254.82	3,571.59	-722.96	-2,664.63	743.41	0.00	0.00	0.00	
4,900.00	56.41	254.82	3,626.92	-744.78	-2,745.02	765.83	0.00	0.00	0.00	
5,000.00	56.41	254.82	3,682.24	-766.59	-2,825.42	788.26	0.00	0.00	0.00	
5,100.00	56.41	254.82	3,737.57	-788.40	-2,905.81	810.69	0.00	0.00	0.00	
5,200.00	56.41	254.82	3,792.89	-810.22	-2,986.21	833.12	0.00	0.00	0.00	
5,300.00	56.41	254.82	3,848.22	-832.03	-3,066.60	855.55	0.00	0.00	0.00	
5,400.00	56.41	254.82	3,903.54	-853.84	-3,147.00	877.98	0.00	0.00	0.00	
5,500.00	56.41	254.82	3,958.86	-875.65	-3,227.39	900.41	0.00	0.00	0.00	
5,600.00	56.41	254.82	4,014.19	-897.47	-3,307.79	922.84	0.00	0.00	0.00	
5,700.00	56.41	254.82	4,069.51	-919.28	-3,388.18	945.27	0.00	0.00	0.00	
5,800.00	56.41	254.82	4,124.84	-941.09	-3,468.58	967.70	0.00	0.00	0.00	
5,900.00	56.41	254.82	4,180.16	-962.90	-3,548.97	990.13	0.00	0.00	0.00	
6,000.00	56.41	254.82	4,235.49	-984.72	-3,629.37	1,012.56	0.00	0.00	0.00	
6,100.00	56.41	254.82	4,290.81	-1,006.53	-3,709.76	1,034.99	0.00	0.00	0.00	
6,200.00	56.41	254.82	4,346.14	-1,028.34	-3,790.16	1,057.42	0.00	0.00	0.00	
6,300.00	56.41	254.82	4,401.46	-1,050.16	-3,870.55	1,079.85	0.00	0.00	0.00	
6,400.00	56.41	254.82	4,456.79	-1,071.97	-3,950.95	1,102.28	0.00	0.00	0.00	
6,500.00	56.41	254.82	4,512.11	-1,093.78	-4,031.34	1,124.71	0.00	0.00	0.00	
6,600.00	56.41	254.82	4,567.44	-1,115.59	-4,111.74	1,147.14	0.00	0.00	0.00	
6,700.00	56.41	254.82	4,622.76	-1,137.41	-4,192.13	1,169.57	0.00	0.00	0.00	
6,800.00	56.41	254.82	4,678.08	-1,159.22	-4,272.53	1,192.00	0.00	0.00	0.00	
6,900.00	56.41	254.82	4,733.41	-1,181.03	-4,352.93	1,214.43	0.00	0.00	0.00	
7,000.00	56.41	254.82	4,788.73	-1,202.84	-4,433.32	1,236.85	0.00	0.00	0.00	
7,100.00	56.41	254.82	4,844.06	-1,224.66	-4,513.72	1,259.28	0.00	0.00	0.00	
7,200.00	56.41	254.82	4,899.38	-1,246.47	-4,594.11	1,281.71	0.00	0.00	0.00	
7,300.00	56.41	254.82	4,954.71	-1,268.28	-4,674.51	1,304.14	0.00	0.00	0.00	
7,400.00	56.41	254.82	5,010.03	-1,290.10	-4,754.90	1,326.57	0.00	0.00	0.00	
7,500.00	56.41	254.82	5,065.36	-1,311.91	-4,835.30	1,349.00	0.00	0.00	0.00	
7,600.00	56.41	254.82	5,120.68	-1,333.72	-4,915.69	1,371.43	0.00	0.00	0.00	
7,700.00	56.41	254.82	5,176.01	-1,355.53	-4,996.09	1,393.86	0.00	0.00	0.00	
7,800.00	56.41	254.82	5,231.33	-1,377.35	-5,076.48	1,416.29	0.00	0.00	0.00	
7,900.00	56.41	254.82	5,286.66	-1,399.16	-5,156.88	1,438.72	0.00	0.00	0.00	
8,000.00	56.41	254.82	5,341.98	-1,420.97	-5,237.27	1,461.15	0.00	0.00	0.00	
8,100.00	56.41	254.82	5,397.30	-1,442.79	-5,317.67	1,483.58	0.00	0.00	0.00	
8,200.00	56.41	254.82	5,452.63	-1,464.60	-5,398.06	1,506.01	0.00	0.00	0.00	
8,300.00	56.41	254.82	5,507.95	-1,486.41	-5,478.46	1,528.44	0.00	0.00	0.00	
8,400.00	56.41	254.82	5,563.28	-1,508.22	-5,558.85	1,550.87	0.00	0.00	0.00	
8,500.00	56.41	254.82	5,618.60	-1,530.04	-5,639.25	1,573.30	0.00	0.00	0.00	
8,600.00	56.41	254.82	5,673.93	-1,551.85	-5,719.64	1,595.73	0.00	0.00	0.00	
8,700.00	56.41	254.82	5,729.25	-1,573.66	-5,800.04	1,618.16	0.00	0.00	0.00	
8,800.00	56.41	254.82	5,784.58	-1,595.47	-5,880.43	1,640.59	0.00	0.00	0.00	
8,900.00	56.41	254.82	5,839.90	-1,617.29	-5,960.83	1,663.02	0.00	0.00	0.00	
9,000.00	56.41	254.82	5,895.23	-1,639.10	-6,041.22	1,685.44	0.00	0.00	0.00	
9,100.00	56.41	254.82	5,950.55	-1,660.91	-6,121.62	1,707.87	0.00	0.00	0.00	
9,200.00	56.41	254.82	6,005.88	-1,682.73	-6,202.01	1,730.30	0.00	0.00	0.00	
9,300.00	56.41	254.82	6,061.20	-1,704.54	-6,282.41	1,752.73	0.00	0.00	0.00	
9,400.00	56.41	254.82	6,116.52	-1,726.35	-6,362.81	1,775.16	0.00	0.00	0.00	
9,500.00	56.41	254.82	6,171.85	-1,748.16	-6,443.20	1,797.59	0.00	0.00	0.00	
9,600.00	56.41	254.82	6,227.17	-1,769.98	-6,523.60	1,820.02	0.00	0.00	0.00	
9,700.00	56.41	254.82	6,282.50	-1,791.79	-6,603.99	1,842.45	0.00	0.00	0.00	
9,800.00	56.41	254.82	6,337.82	-1,813.60	-6,684.39	1,864.88	0.00	0.00	0.00	
9,900.00	56.41	254.82	6,393.15	-1,835.42	-6,764.78	1,887.31	0.00	0.00	0.00	
10,000.00	56.41	254.82	6,448.47	-1,857.23	-6,845.18	1,909.74	0.00	0.00	0.00	
10,100.00	56.41	254.82	6,503.80	-1,879.04	-6,925.57	1,932.17	0.00	0.00	0.00	

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well RAMEN 1423-01H
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 1423-01H	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)
10,200.00	56.41	254.82	6,559.12	-1,900.85	-7,005.97	1,954.60	0.00	0.00	0.00
10,300.00	56.41	254.82	6,614.45	-1,922.67	-7,086.36	1,977.03	0.00	0.00	0.00
10,400.00	56.41	254.82	6,669.77	-1,944.48	-7,166.76	1,999.46	0.00	0.00	0.00
10,500.00	56.41	254.82	6,725.10	-1,966.29	-7,247.15	2,021.89	0.00	0.00	0.00
10,517.14	56.41	254.82	6,734.58	-1,970.03	-7,260.93	2,025.73	0.00	0.00	0.00
KOP @ 10517.14ft :: DLS = 8°/100'									
10,550.00	56.85	251.72	6,752.66	-1,977.93	-7,287.21	2,033.83	8.00	1.34	-9.44
10,600.00	57.67	247.06	6,779.71	-1,992.74	-7,326.55	2,048.94	8.00	1.63	-9.31
10,650.00	58.65	242.50	6,806.10	-2,010.84	-7,364.96	2,067.34	8.00	1.97	-9.13
10,700.00	59.79	238.03	6,831.69	-2,032.14	-7,402.24	2,088.93	8.00	2.28	-8.93
10,750.00	61.08	233.68	6,856.37	-2,056.55	-7,438.21	2,113.61	8.00	2.58	-8.71
10,800.00	62.50	229.44	6,880.01	-2,083.95	-7,472.70	2,141.27	8.00	2.85	-8.48
10,850.00	64.05	225.31	6,902.50	-2,114.19	-7,505.55	2,171.76	8.00	3.10	-8.26
10,900.00	65.72	221.29	6,923.73	-2,147.13	-7,536.58	2,204.95	8.00	3.33	-8.03
10,950.00	67.49	217.38	6,943.59	-2,182.62	-7,565.65	2,240.66	8.00	3.53	-7.82
11,000.00	69.35	213.57	6,961.99	-2,220.48	-7,592.62	2,278.72	8.00	3.72	-7.62
11,050.00	71.29	209.86	6,978.84	-2,260.52	-7,617.35	2,318.95	8.00	3.88	-7.43
11,100.00	73.30	206.23	6,994.05	-2,302.56	-7,639.73	2,361.16	8.00	4.02	-7.26
11,150.00	75.37	202.67	7,007.55	-2,346.37	-7,659.65	2,405.13	8.00	4.15	-7.11
11,200.00	77.50	199.19	7,019.28	-2,391.76	-7,677.00	2,450.65	8.00	4.25	-6.97
11,250.00	79.67	195.76	7,029.18	-2,438.50	-7,691.71	2,497.50	8.00	4.34	-6.86
11,300.00	81.88	192.38	7,037.20	-2,486.37	-7,703.70	2,545.45	8.00	4.41	-6.76
11,350.00	84.11	189.04	7,043.30	-2,535.12	-7,712.92	2,594.27	8.00	4.47	-6.69
11,400.00	86.36	185.72	7,047.45	-2,584.52	-7,719.32	2,643.73	8.00	4.51	-6.63
11,450.00	88.63	182.42	7,049.64	-2,634.34	-7,722.86	2,693.57	8.00	4.53	-6.60
11,480.17	90.00	180.44	7,050.00	-2,664.50	-7,723.61	2,723.73	8.00	4.54	-6.59
End Build/TPZ @ 11480.17ft									
11,500.00	90.00	180.44	7,050.00	-2,684.32	-7,723.76	2,743.56	0.00	0.00	0.00
11,600.00	90.00	180.44	7,050.00	-2,784.32	-7,724.52	2,843.56	0.00	0.00	0.00
11,700.00	90.00	180.44	7,050.00	-2,884.32	-7,725.28	2,943.56	0.00	0.00	0.00
11,800.00	90.00	180.44	7,050.00	-2,984.32	-7,726.04	3,043.56	0.00	0.00	0.00
11,900.00	90.00	180.44	7,050.00	-3,084.31	-7,726.80	3,143.56	0.00	0.00	0.00
12,000.00	90.00	180.44	7,050.00	-3,184.31	-7,727.56	3,243.56	0.00	0.00	0.00
12,100.00	90.00	180.44	7,050.00	-3,284.31	-7,728.32	3,343.56	0.00	0.00	0.00
12,200.00	90.00	180.44	7,050.00	-3,384.30	-7,729.08	3,443.56	0.00	0.00	0.00
12,300.00	90.00	180.44	7,050.00	-3,484.30	-7,729.84	3,543.56	0.00	0.00	0.00
12,400.00	90.00	180.44	7,050.00	-3,584.30	-7,730.60	3,643.56	0.00	0.00	0.00
12,500.00	90.00	180.44	7,050.00	-3,684.30	-7,731.36	3,743.56	0.00	0.00	0.00
12,600.00	90.00	180.44	7,050.00	-3,784.29	-7,732.12	3,843.56	0.00	0.00	0.00
12,700.00	90.00	180.44	7,050.00	-3,884.29	-7,732.88	3,943.56	0.00	0.00	0.00
12,800.00	90.00	180.44	7,050.00	-3,984.29	-7,733.63	4,043.56	0.00	0.00	0.00
12,900.00	90.00	180.44	7,050.00	-4,084.28	-7,734.39	4,143.56	0.00	0.00	0.00
13,000.00	90.00	180.44	7,050.00	-4,184.28	-7,735.15	4,243.56	0.00	0.00	0.00
13,100.00	90.00	180.44	7,050.00	-4,284.28	-7,735.91	4,343.56	0.00	0.00	0.00
13,200.00	90.00	180.44	7,050.00	-4,384.28	-7,736.67	4,443.56	0.00	0.00	0.00
13,300.00	90.00	180.44	7,050.00	-4,484.27	-7,737.43	4,543.56	0.00	0.00	0.00
13,400.00	90.00	180.44	7,050.00	-4,584.27	-7,738.19	4,643.56	0.00	0.00	0.00
13,500.00	90.00	180.44	7,050.00	-4,684.27	-7,738.95	4,743.56	0.00	0.00	0.00
13,600.00	90.00	180.44	7,050.00	-4,784.26	-7,739.71	4,843.56	0.00	0.00	0.00
13,700.00	90.00	180.44	7,050.00	-4,884.26	-7,740.47	4,943.56	0.00	0.00	0.00
13,800.00	90.00	180.44	7,050.00	-4,984.26	-7,741.23	5,043.56	0.00	0.00	0.00
13,900.00	90.00	180.44	7,050.00	-5,084.26	-7,741.99	5,143.56	0.00	0.00	0.00
14,000.00	90.00	180.44	7,050.00	-5,184.25	-7,742.75	5,243.56	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well RAMEN 1423-01H
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 1423-01H	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	180.44	7,050.00	-5,284.25	-7,743.50	5,343.56	0.00	0.00	0.00	
14,200.00	90.00	180.44	7,050.00	-5,384.25	-7,744.26	5,443.56	0.00	0.00	0.00	
14,300.00	90.00	180.44	7,050.00	-5,484.24	-7,745.02	5,543.56	0.00	0.00	0.00	
14,400.00	90.00	180.44	7,050.00	-5,584.24	-7,745.78	5,643.56	0.00	0.00	0.00	
14,500.00	90.00	180.44	7,050.00	-5,684.24	-7,746.54	5,743.56	0.00	0.00	0.00	
14,600.00	90.00	180.44	7,050.00	-5,784.24	-7,747.30	5,843.56	0.00	0.00	0.00	
14,700.00	90.00	180.44	7,050.00	-5,884.23	-7,748.06	5,943.56	0.00	0.00	0.00	
14,800.00	90.00	180.44	7,050.00	-5,984.23	-7,748.82	6,043.56	0.00	0.00	0.00	
14,900.00	90.00	180.44	7,050.00	-6,084.23	-7,749.58	6,143.56	0.00	0.00	0.00	
15,000.00	90.00	180.44	7,050.00	-6,184.22	-7,750.34	6,243.56	0.00	0.00	0.00	
15,100.00	90.00	180.44	7,050.00	-6,284.22	-7,751.10	6,343.56	0.00	0.00	0.00	
15,200.00	90.00	180.44	7,050.00	-6,384.22	-7,751.86	6,443.56	0.00	0.00	0.00	
15,300.00	90.00	180.44	7,050.00	-6,484.21	-7,752.62	6,543.56	0.00	0.00	0.00	
15,400.00	90.00	180.44	7,050.00	-6,584.21	-7,753.38	6,643.56	0.00	0.00	0.00	
15,500.00	90.00	180.44	7,050.00	-6,684.21	-7,754.13	6,743.56	0.00	0.00	0.00	
15,600.00	90.00	180.44	7,050.00	-6,784.21	-7,754.89	6,843.56	0.00	0.00	0.00	
15,700.00	90.00	180.44	7,050.00	-6,884.20	-7,755.65	6,943.56	0.00	0.00	0.00	
15,800.00	90.00	180.44	7,050.00	-6,984.20	-7,756.41	7,043.56	0.00	0.00	0.00	
15,900.00	90.00	180.44	7,050.00	-7,084.20	-7,757.17	7,143.56	0.00	0.00	0.00	
16,000.00	90.00	180.44	7,050.00	-7,184.19	-7,757.93	7,243.56	0.00	0.00	0.00	
16,100.00	90.00	180.44	7,050.00	-7,284.19	-7,758.69	7,343.56	0.00	0.00	0.00	
16,200.00	90.00	180.44	7,050.00	-7,384.19	-7,759.45	7,443.56	0.00	0.00	0.00	
16,300.00	90.00	180.44	7,050.00	-7,484.19	-7,760.21	7,543.56	0.00	0.00	0.00	
16,400.00	90.00	180.44	7,050.00	-7,584.18	-7,760.97	7,643.56	0.00	0.00	0.00	
16,500.00	90.00	180.44	7,050.00	-7,684.18	-7,761.73	7,743.56	0.00	0.00	0.00	
16,600.00	90.00	180.44	7,050.00	-7,784.18	-7,762.49	7,843.56	0.00	0.00	0.00	
16,700.00	90.00	180.44	7,050.00	-7,884.17	-7,763.25	7,943.56	0.00	0.00	0.00	
16,800.00	90.00	180.44	7,050.00	-7,984.17	-7,764.00	8,043.56	0.00	0.00	0.00	
16,900.00	90.00	180.44	7,050.00	-8,084.17	-7,764.76	8,143.56	0.00	0.00	0.00	
17,000.00	90.00	180.44	7,050.00	-8,184.17	-7,765.52	8,243.56	0.00	0.00	0.00	
17,100.00	90.00	180.44	7,050.00	-8,284.16	-7,766.28	8,343.56	0.00	0.00	0.00	
17,200.00	90.00	180.44	7,050.00	-8,384.16	-7,767.04	8,443.56	0.00	0.00	0.00	
17,300.00	90.00	180.44	7,050.00	-8,484.16	-7,767.80	8,543.56	0.00	0.00	0.00	
17,400.00	90.00	180.44	7,050.00	-8,584.15	-7,768.56	8,643.56	0.00	0.00	0.00	
17,500.00	90.00	180.44	7,050.00	-8,684.15	-7,769.32	8,743.56	0.00	0.00	0.00	
17,600.00	90.00	180.44	7,050.00	-8,784.15	-7,770.08	8,843.56	0.00	0.00	0.00	
17,700.00	90.00	180.44	7,050.00	-8,884.15	-7,770.84	8,943.56	0.00	0.00	0.00	
17,800.00	90.00	180.44	7,050.00	-8,984.14	-7,771.60	9,043.56	0.00	0.00	0.00	
17,900.00	90.00	180.44	7,050.00	-9,084.14	-7,772.36	9,143.56	0.00	0.00	0.00	
18,000.00	90.00	180.44	7,050.00	-9,184.14	-7,773.12	9,243.56	0.00	0.00	0.00	
18,100.00	90.00	180.44	7,050.00	-9,284.13	-7,773.87	9,343.56	0.00	0.00	0.00	
18,200.00	90.00	180.44	7,050.00	-9,384.13	-7,774.63	9,443.56	0.00	0.00	0.00	
18,300.00	90.00	180.44	7,050.00	-9,484.13	-7,775.39	9,543.56	0.00	0.00	0.00	
18,400.00	90.00	180.44	7,050.00	-9,584.13	-7,776.15	9,643.56	0.00	0.00	0.00	
18,500.00	90.00	180.44	7,050.00	-9,684.12	-7,776.91	9,743.56	0.00	0.00	0.00	
18,600.00	90.00	180.44	7,050.00	-9,784.12	-7,777.67	9,843.56	0.00	0.00	0.00	
18,700.00	90.00	180.44	7,050.00	-9,884.12	-7,778.43	9,943.56	0.00	0.00	0.00	
18,800.00	90.00	180.44	7,050.00	-9,984.11	-7,779.19	10,043.56	0.00	0.00	0.00	
18,900.00	90.00	180.44	7,050.00	-10,084.11	-7,779.95	10,143.56	0.00	0.00	0.00	
19,000.00	90.00	180.44	7,050.00	-10,184.11	-7,780.71	10,243.56	0.00	0.00	0.00	
19,100.00	90.00	180.44	7,050.00	-10,284.11	-7,781.47	10,343.56	0.00	0.00	0.00	
19,200.00	90.00	180.44	7,050.00	-10,384.10	-7,782.23	10,443.56	0.00	0.00	0.00	
19,300.00	90.00	180.44	7,050.00	-10,484.10	-7,782.99	10,543.56	0.00	0.00	0.00	
19,400.00	90.00	180.44	7,050.00	-10,584.10	-7,783.74	10,643.56	0.00	0.00	0.00	

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well RAMEN 1423-01H
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 1423-01H	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	180.44	7,050.00	-10,684.09	-7,784.50	10,743.56	0.00	0.00	0.00	
19,600.00	90.00	180.44	7,050.00	-10,784.09	-7,785.26	10,843.56	0.00	0.00	0.00	
19,700.00	90.00	180.44	7,050.00	-10,884.09	-7,786.02	10,943.56	0.00	0.00	0.00	
19,800.00	90.00	180.44	7,050.00	-10,984.09	-7,786.78	11,043.56	0.00	0.00	0.00	
19,900.00	90.00	180.44	7,050.00	-11,084.08	-7,787.54	11,143.56	0.00	0.00	0.00	
20,000.00	90.00	180.44	7,050.00	-11,184.08	-7,788.30	11,243.56	0.00	0.00	0.00	
20,100.00	90.00	180.44	7,050.00	-11,284.08	-7,789.06	11,343.56	0.00	0.00	0.00	
20,200.00	90.00	180.44	7,050.00	-11,384.07	-7,789.82	11,443.56	0.00	0.00	0.00	
20,300.00	90.00	180.44	7,050.00	-11,484.07	-7,790.58	11,543.56	0.00	0.00	0.00	
20,400.00	90.00	180.44	7,050.00	-11,584.07	-7,791.34	11,643.56	0.00	0.00	0.00	
20,500.00	90.00	180.44	7,050.00	-11,684.07	-7,792.10	11,743.56	0.00	0.00	0.00	
20,600.00	90.00	180.44	7,050.00	-11,784.06	-7,792.86	11,843.56	0.00	0.00	0.00	
20,700.00	90.00	180.44	7,050.00	-11,884.06	-7,793.62	11,943.56	0.00	0.00	0.00	
20,800.00	90.00	180.44	7,050.00	-11,984.06	-7,794.37	12,043.56	0.00	0.00	0.00	
20,900.00	90.00	180.44	7,050.00	-12,084.05	-7,795.13	12,143.56	0.00	0.00	0.00	
21,000.00	90.00	180.44	7,050.00	-12,184.05	-7,795.89	12,243.56	0.00	0.00	0.00	
21,100.00	90.00	180.44	7,050.00	-12,284.05	-7,796.65	12,343.56	0.00	0.00	0.00	
21,160.75	90.00	180.44	7,050.00	-12,344.80	-7,797.11	12,404.31	0.00	0.00	0.00	
BPZ @ 21160.75ft										
21,200.00	90.00	180.44	7,050.00	-12,384.05	-7,797.41	12,443.56	0.00	0.00	0.00	
21,250.75	90.00	180.44	7,050.00	-12,434.80	-7,797.80	12,494.31	0.00	0.00	0.00	
TD Well @ 21250.75ft										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (")	Hole Diameter (")
2,171.67	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)		
201.50	201.50	0.00	0.00	Begin Nudge @ 201.50ft	
3,022.00	2,587.92	-335.13	-1,235.20	Hold Tangent @ 3022.00ft	
10,517.14	6,734.58	-1,970.03	-7,260.93	KOP @ 10517.14ft :: DLS = 8°/100'	
11,480.17	7,050.00	-2,664.50	-7,723.61	End Build/TPZ @ 11480.17ft	
21,160.75	7,050.00	-12,344.80	-7,797.11	BPZ @ 21160.75ft	
21,250.75	7,050.00	-12,434.80	-7,797.80	TD Well @ 21250.75ft	