

VERDAD RESOURCES

WATTENBERG FIELD

1N-65W-12 RAMEN 1423 PAD

RAMEN 1423-08H

Plan A

Plan: Permit Rev-1

Standard Planning Report

17 August, 2023

Project: WATTENBERG FIELD
Site: 1N-65W-12 RAMEN 1423 PAD
Well: RAMEN 1423-08H
Wellbore: Plan A
Design: Permit Rev-1

VERDAD RESOURCES

CASING DETAILS

TVD	MD	Name	Size
2020.00	2163.23	9 5/8"	9-5/8

SHL	LP/TPZ	BPZ	BHL
2215' FSL	460' FNL	460' FSL	370' FSL
2267' FEL	480' FEL	480' FEL	480' FEL

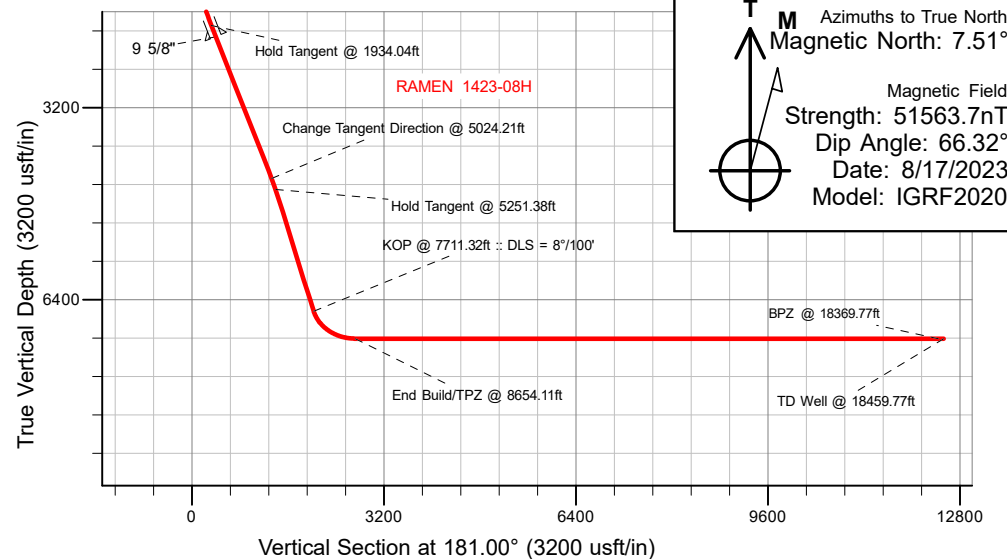
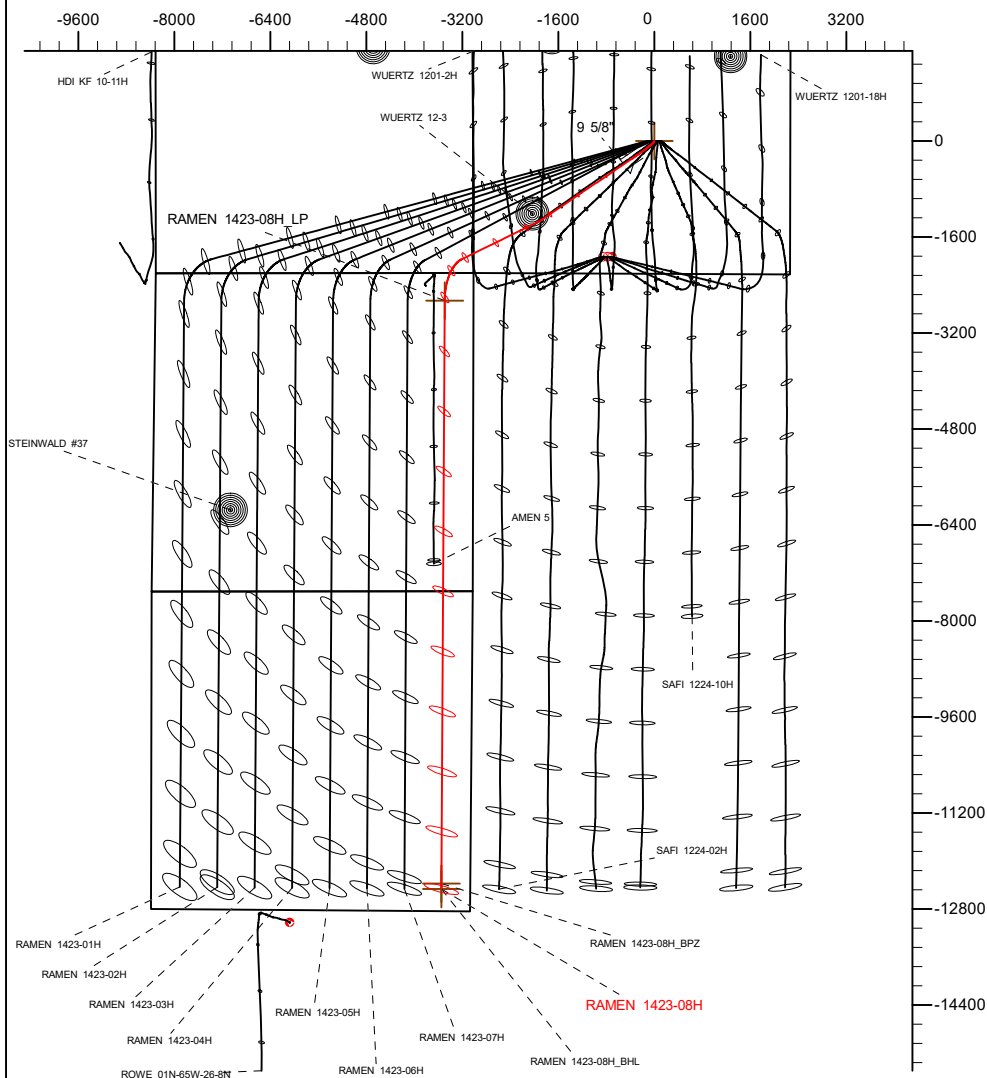
SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
151.00	0.00	0.00	151.00	0.00	0.00	0.00	0.00	0.00	
301.00	3.00	185.00	300.93	-3.91	-0.34	2.00	185.00	3.92	
1934.04	34.48	235.90	1831.07	-314.08	-397.65	2.00	54.50	320.97	
5024.21	34.48	235.90	4378.37	-1294.86	-1846.26	0.00	0.00	1326.89	
5251.38	34.48	243.93	4565.73	-1359.21	-1957.33	2.00	93.31	1393.16	
7711.32	34.48	243.93	6593.52	-1971.22	-3208.26	0.00	0.00	2026.91	
8654.11	90.00	180.33	7050.00	-2662.75	-3493.01	8.00	-67.75	2723.31	
18459.77	90.00	180.33	7050.00	-12468.26	-3548.81	0.00	0.00	12528.30	RAMEN 1423-08H_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	Northing	Easting	Latitude	Longitude
RAMEN 1423-08H_SHL	0.00	1267694.66	3248874.43	40.064786	-104.610790
RAMEN 1423-08H_LP	7050.00	1264996.87	3245408.21	40.057475	-104.623269
RAMEN 1423-08H_BPZ	7050.00	1255281.44	3245450.43	40.030805	-104.623462
RAMEN 1423-08H_BHL	7050.00	1255191.44	3245450.82	40.030558	-104.623463

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



WELL DETAILS: RAMEN 1423-08H

GL = 4971'

RKB = 24' @ 4995.00usft (RIG)

Plan: Permit Rev-1 (RAMEN 1423-08H/Plan A)

Date: 8/17/2023

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well RAMEN 1423-08H
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 1423-08H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
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 1423-08H				
Well Position	+N/-S	0.00 usft	Northing:	1,267,694.66 usft	Latitude:	40.064786
	+E/-W	0.00 usft	Easting:	3,248,874.43 usft	Longitude:	-104.610791
Position Uncertainty		3.28 usft	Wellhead Elevation:	usft	Ground Level:	4,971.00 usft
Grid Convergence:		0.57 °				

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF202013	8/17/2023	7.51	66.32	51,563.67570644

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	181.00	

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 A)	ISCWSA MWD	Fixed:v2:standard declination
2	2,020.00	18,459.52	Permit Rev-1 (Plan A)	ISCWSA MWD	Fixed:v2:standard declination

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well RAMEN 1423-08H
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 1423-08H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
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	
151.00	0.00	0.00	151.00	0.00	0.00	0.00	0.00	0.00	0.00	
301.00	3.00	185.00	300.93	-3.91	-0.34	2.00	2.00	0.00	185.00	
1,934.04	34.48	235.90	1,831.07	-314.08	-397.65	2.00	1.93	3.12	54.50	
5,024.21	34.48	235.90	4,378.37	-1,294.86	-1,846.26	0.00	0.00	0.00	0.00	
5,251.38	34.48	243.93	4,565.73	-1,359.21	-1,957.33	2.00	0.00	3.53	93.31	
7,711.32	34.48	243.93	6,593.52	-1,971.22	-3,208.26	0.00	0.00	0.00	0.00	
8,654.11	90.00	180.33	7,050.00	-2,662.75	-3,493.01	8.00	5.89	-6.75	-67.75	
18,459.77	90.00	180.33	7,050.00	-12,468.26	-3,548.82	0.00	0.00	0.00	0.00	RAMEN 1423-08H_B

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well RAMEN 1423-08H
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 1423-08H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
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
151.00	0.00	0.00	151.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 151.00ft									
200.00	0.98	185.00	200.00	-0.42	-0.04	0.42	2.00	2.00	0.00
301.00	3.00	185.00	300.93	-3.91	-0.34	3.92	2.00	2.00	0.00
Change Tangent @ 301.00ft									
400.00	4.45	206.25	399.72	-9.94	-2.27	9.98	2.00	1.47	21.46
500.00	6.22	216.43	499.29	-17.78	-7.20	17.90	2.00	1.77	10.18
600.00	8.10	222.02	598.51	-27.37	-15.13	27.63	2.00	1.88	5.59
700.00	10.02	225.50	697.25	-38.71	-26.06	39.15	2.00	1.92	3.48
800.00	11.97	227.86	795.41	-51.76	-39.95	52.45	2.00	1.95	2.36
900.00	13.93	229.56	892.87	-66.53	-56.81	67.52	2.00	1.96	1.71
1,000.00	15.91	230.85	989.49	-83.00	-76.60	84.32	2.00	1.97	1.29
1,100.00	17.89	231.87	1,085.17	-101.13	-99.31	102.85	2.00	1.98	1.01
1,200.00	19.87	232.68	1,179.78	-120.92	-124.91	123.08	2.00	1.98	0.82
1,300.00	21.85	233.36	1,273.23	-142.33	-153.36	144.98	2.00	1.99	0.67
1,400.00	23.84	233.92	1,365.37	-165.34	-184.63	168.54	2.00	1.99	0.57
1,500.00	25.83	234.41	1,456.12	-189.93	-218.68	193.71	2.00	1.99	0.48
1,600.00	27.82	234.83	1,545.35	-216.05	-255.48	220.48	2.00	1.99	0.42
1,700.00	29.81	235.19	1,632.97	-243.69	-294.97	248.80	2.00	1.99	0.37
1,800.00	31.81	235.52	1,718.85	-272.80	-337.11	278.64	2.00	1.99	0.33
1,900.00	33.80	235.81	1,802.90	-303.36	-381.84	309.98	2.00	1.99	0.29
1,934.04	34.48	235.90	1,831.07	-314.08	-397.65	320.97	2.00	1.99	0.27
Hold Tangent @ 1934.04ft									
2,000.00	34.48	235.90	1,885.44	-335.02	-428.57	342.44	0.00	0.00	0.00
2,100.00	34.48	235.90	1,967.87	-366.75	-475.45	375.00	0.00	0.00	0.00
2,163.23	34.48	235.90	2,020.00	-386.82	-505.09	395.58	0.00	0.00	0.00
9 5/8"									
2,200.00	34.48	235.90	2,050.31	-398.49	-522.33	407.55	0.00	0.00	0.00
2,300.00	34.48	235.90	2,132.74	-430.23	-569.21	440.10	0.00	0.00	0.00
2,400.00	34.48	235.90	2,215.17	-461.97	-616.09	472.65	0.00	0.00	0.00
2,500.00	34.48	235.90	2,297.60	-493.71	-662.96	505.20	0.00	0.00	0.00
2,600.00	34.48	235.90	2,380.04	-525.45	-709.84	537.76	0.00	0.00	0.00
2,700.00	34.48	235.90	2,462.47	-557.19	-756.72	570.31	0.00	0.00	0.00
2,800.00	34.48	235.90	2,544.90	-588.93	-803.60	602.86	0.00	0.00	0.00
2,900.00	34.48	235.90	2,627.33	-620.66	-850.48	635.41	0.00	0.00	0.00
3,000.00	34.48	235.90	2,709.77	-652.40	-897.35	667.97	0.00	0.00	0.00
3,100.00	34.48	235.90	2,792.20	-684.14	-944.23	700.52	0.00	0.00	0.00
3,200.00	34.48	235.90	2,874.63	-715.88	-991.11	733.07	0.00	0.00	0.00
3,300.00	34.48	235.90	2,957.06	-747.62	-1,037.99	765.62	0.00	0.00	0.00
3,400.00	34.48	235.90	3,039.50	-779.36	-1,084.87	798.17	0.00	0.00	0.00
3,500.00	34.48	235.90	3,121.93	-811.10	-1,131.74	830.73	0.00	0.00	0.00
3,600.00	34.48	235.90	3,204.36	-842.84	-1,178.62	863.28	0.00	0.00	0.00
3,700.00	34.48	235.90	3,286.79	-874.58	-1,225.50	895.83	0.00	0.00	0.00
3,800.00	34.48	235.90	3,369.23	-906.31	-1,272.38	928.38	0.00	0.00	0.00
3,900.00	34.48	235.90	3,451.66	-938.05	-1,319.26	960.93	0.00	0.00	0.00
4,000.00	34.48	235.90	3,534.09	-969.79	-1,366.13	993.49	0.00	0.00	0.00
4,100.00	34.48	235.90	3,616.52	-1,001.53	-1,413.01	1,026.04	0.00	0.00	0.00
4,200.00	34.48	235.90	3,698.95	-1,033.27	-1,459.89	1,058.59	0.00	0.00	0.00
4,300.00	34.48	235.90	3,781.39	-1,065.01	-1,506.77	1,091.14	0.00	0.00	0.00
4,400.00	34.48	235.90	3,863.82	-1,096.75	-1,553.65	1,123.69	0.00	0.00	0.00
4,500.00	34.48	235.90	3,946.25	-1,128.49	-1,600.52	1,156.25	0.00	0.00	0.00
4,600.00	34.48	235.90	4,028.68	-1,160.22	-1,647.40	1,188.80	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well RAMEN 1423-08H
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 1423-08H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
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	34.48	235.90	4,111.12	-1,191.96	-1,694.28	1,221.35	0.00	0.00	0.00
4,800.00	34.48	235.90	4,193.55	-1,223.70	-1,741.16	1,253.90	0.00	0.00	0.00
4,900.00	34.48	235.90	4,275.98	-1,255.44	-1,788.04	1,286.46	0.00	0.00	0.00
5,000.00	34.48	235.90	4,358.41	-1,287.18	-1,834.91	1,319.01	0.00	0.00	0.00
5,024.21	34.48	235.90	4,378.37	-1,294.86	-1,846.26	1,326.89	0.00	0.00	0.00
Change Tangent Direction @ 5024.21ft									
5,100.00	34.42	238.58	4,440.87	-1,318.06	-1,882.31	1,350.71	2.00	-0.08	3.53
5,200.00	34.43	242.12	4,523.36	-1,346.02	-1,931.42	1,379.52	2.00	0.01	3.54
5,251.38	34.48	243.93	4,565.73	-1,359.21	-1,957.33	1,393.16	2.00	0.09	3.53
Hold Tangent @ 5251.38ft									
5,300.00	34.48	243.93	4,605.81	-1,371.30	-1,982.05	1,405.69	0.00	0.00	0.00
5,400.00	34.48	243.93	4,688.24	-1,396.18	-2,032.90	1,431.45	0.00	0.00	0.00
5,500.00	34.48	243.93	4,770.67	-1,421.06	-2,083.76	1,457.21	0.00	0.00	0.00
5,600.00	34.48	243.93	4,853.11	-1,445.94	-2,134.61	1,482.97	0.00	0.00	0.00
5,700.00	34.48	243.93	4,935.54	-1,470.82	-2,185.46	1,508.74	0.00	0.00	0.00
5,800.00	34.48	243.93	5,017.97	-1,495.70	-2,236.31	1,534.50	0.00	0.00	0.00
5,900.00	34.48	243.93	5,100.40	-1,520.58	-2,287.16	1,560.26	0.00	0.00	0.00
6,000.00	34.48	243.93	5,182.84	-1,545.46	-2,338.02	1,586.03	0.00	0.00	0.00
6,100.00	34.48	243.93	5,265.27	-1,570.34	-2,388.87	1,611.79	0.00	0.00	0.00
6,200.00	34.48	243.93	5,347.70	-1,595.22	-2,439.72	1,637.55	0.00	0.00	0.00
6,300.00	34.48	243.93	5,430.13	-1,620.09	-2,490.57	1,663.31	0.00	0.00	0.00
6,400.00	34.48	243.93	5,512.57	-1,644.97	-2,541.42	1,689.08	0.00	0.00	0.00
6,500.00	34.48	243.93	5,595.00	-1,669.85	-2,592.28	1,714.84	0.00	0.00	0.00
6,600.00	34.48	243.93	5,677.43	-1,694.73	-2,643.13	1,740.60	0.00	0.00	0.00
6,700.00	34.48	243.93	5,759.86	-1,719.61	-2,693.98	1,766.37	0.00	0.00	0.00
6,800.00	34.48	243.93	5,842.29	-1,744.49	-2,744.83	1,792.13	0.00	0.00	0.00
6,900.00	34.48	243.93	5,924.73	-1,769.37	-2,795.68	1,817.89	0.00	0.00	0.00
7,000.00	34.48	243.93	6,007.16	-1,794.25	-2,846.54	1,843.65	0.00	0.00	0.00
7,100.00	34.48	243.93	6,089.59	-1,819.13	-2,897.39	1,869.42	0.00	0.00	0.00
7,200.00	34.48	243.93	6,172.02	-1,844.01	-2,948.24	1,895.18	0.00	0.00	0.00
7,300.00	34.48	243.93	6,254.46	-1,868.89	-2,999.09	1,920.94	0.00	0.00	0.00
7,400.00	34.48	243.93	6,336.89	-1,893.77	-3,049.95	1,946.71	0.00	0.00	0.00
7,500.00	34.48	243.93	6,419.32	-1,918.64	-3,100.80	1,972.47	0.00	0.00	0.00
7,600.00	34.48	243.93	6,501.75	-1,943.52	-3,151.65	1,998.23	0.00	0.00	0.00
7,700.00	34.48	243.93	6,584.19	-1,968.40	-3,202.50	2,023.99	0.00	0.00	0.00
7,711.32	34.48	243.93	6,593.52	-1,971.22	-3,208.26	2,026.91	0.00	0.00	0.00
KOP @ 7711.32ft :: DLS = 8°/100'									
7,750.00	35.75	239.02	6,625.16	-1,981.85	-3,227.79	2,037.88	8.00	3.29	-12.68
7,800.00	37.67	233.15	6,665.26	-1,998.54	-3,252.55	2,055.00	8.00	3.84	-11.75
7,850.00	39.86	227.79	6,704.25	-2,018.47	-3,276.65	2,075.35	8.00	4.37	-10.71
7,900.00	42.26	222.93	6,741.96	-2,041.55	-3,299.98	2,098.83	8.00	4.82	-9.73
7,950.00	44.86	218.51	6,778.20	-2,067.67	-3,322.42	2,125.34	8.00	5.19	-8.84
8,000.00	47.61	214.49	6,812.79	-2,096.70	-3,343.86	2,154.74	8.00	5.50	-8.05
8,050.00	50.49	210.81	6,845.56	-2,128.50	-3,364.20	2,186.89	8.00	5.76	-7.36
8,100.00	53.48	207.43	6,876.36	-2,162.91	-3,383.35	2,221.63	8.00	5.97	-6.76
8,150.00	56.55	204.31	6,905.03	-2,199.77	-3,401.19	2,258.79	8.00	6.15	-6.25
8,200.00	59.70	201.40	6,931.44	-2,238.89	-3,417.66	2,298.19	8.00	6.29	-5.82
8,250.00	62.90	198.67	6,955.45	-2,280.09	-3,432.67	2,339.65	8.00	6.41	-5.45
8,300.00	66.16	196.10	6,976.95	-2,323.16	-3,446.14	2,382.95	8.00	6.51	-5.15
8,350.00	69.46	193.65	6,995.83	-2,367.90	-3,458.01	2,427.89	8.00	6.60	-4.89
8,400.00	72.79	191.31	7,012.01	-2,414.08	-3,468.22	2,474.24	8.00	6.66	-4.68
8,450.00	76.15	189.05	7,025.40	-2,461.49	-3,476.73	2,521.79	8.00	6.71	-4.52
8,500.00	79.52	186.86	7,035.94	-2,509.88	-3,483.49	2,570.30	8.00	6.75	-4.39

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well RAMEN 1423-08H
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 1423-08H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
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)
8,550.00	82.91	184.71	7,043.57	-2,559.04	-3,488.46	2,619.53	8.00	6.78	-4.29
8,600.00	86.31	182.60	7,048.26	-2,608.70	-3,491.63	2,669.24	8.00	6.80	-4.23
8,654.11	90.00	180.33	7,050.00	-2,662.75	-3,493.01	2,723.31	8.00	6.81	-4.20
End Build/TPZ @ 8654.11ft									
8,700.00	90.00	180.33	7,050.00	-2,708.64	-3,493.27	2,769.20	0.00	0.00	0.00
8,800.00	90.00	180.33	7,050.00	-2,808.64	-3,493.84	2,869.19	0.00	0.00	0.00
8,900.00	90.00	180.33	7,050.00	-2,908.64	-3,494.41	2,969.18	0.00	0.00	0.00
9,000.00	90.00	180.33	7,050.00	-3,008.64	-3,494.98	3,069.18	0.00	0.00	0.00
9,100.00	90.00	180.33	7,050.00	-3,108.64	-3,495.55	3,169.17	0.00	0.00	0.00
9,200.00	90.00	180.33	7,050.00	-3,208.64	-3,496.12	3,269.16	0.00	0.00	0.00
9,300.00	90.00	180.33	7,050.00	-3,308.64	-3,496.69	3,369.16	0.00	0.00	0.00
9,400.00	90.00	180.33	7,050.00	-3,408.63	-3,497.26	3,469.15	0.00	0.00	0.00
9,500.00	90.00	180.33	7,050.00	-3,508.63	-3,497.83	3,569.14	0.00	0.00	0.00
9,600.00	90.00	180.33	7,050.00	-3,608.63	-3,498.40	3,669.14	0.00	0.00	0.00
9,700.00	90.00	180.33	7,050.00	-3,708.63	-3,498.96	3,769.13	0.00	0.00	0.00
9,800.00	90.00	180.33	7,050.00	-3,808.63	-3,499.53	3,869.12	0.00	0.00	0.00
9,900.00	90.00	180.33	7,050.00	-3,908.63	-3,500.10	3,969.12	0.00	0.00	0.00
10,000.00	90.00	180.33	7,050.00	-4,008.62	-3,500.67	4,069.11	0.00	0.00	0.00
10,100.00	90.00	180.33	7,050.00	-4,108.62	-3,501.24	4,169.10	0.00	0.00	0.00
10,200.00	90.00	180.33	7,050.00	-4,208.62	-3,501.81	4,269.09	0.00	0.00	0.00
10,300.00	90.00	180.33	7,050.00	-4,308.62	-3,502.38	4,369.09	0.00	0.00	0.00
10,400.00	90.00	180.33	7,050.00	-4,408.62	-3,502.95	4,469.08	0.00	0.00	0.00
10,500.00	90.00	180.33	7,050.00	-4,508.62	-3,503.52	4,569.07	0.00	0.00	0.00
10,600.00	90.00	180.33	7,050.00	-4,608.61	-3,504.09	4,669.07	0.00	0.00	0.00
10,700.00	90.00	180.33	7,050.00	-4,708.61	-3,504.66	4,769.06	0.00	0.00	0.00
10,800.00	90.00	180.33	7,050.00	-4,808.61	-3,505.22	4,869.05	0.00	0.00	0.00
10,900.00	90.00	180.33	7,050.00	-4,908.61	-3,505.79	4,969.05	0.00	0.00	0.00
11,000.00	90.00	180.33	7,050.00	-5,008.61	-3,506.36	5,069.04	0.00	0.00	0.00
11,100.00	90.00	180.33	7,050.00	-5,108.61	-3,506.93	5,169.03	0.00	0.00	0.00
11,200.00	90.00	180.33	7,050.00	-5,208.60	-3,507.50	5,269.03	0.00	0.00	0.00
11,300.00	90.00	180.33	7,050.00	-5,308.60	-3,508.07	5,369.02	0.00	0.00	0.00
11,400.00	90.00	180.33	7,050.00	-5,408.60	-3,508.64	5,469.01	0.00	0.00	0.00
11,500.00	90.00	180.33	7,050.00	-5,508.60	-3,509.21	5,569.00	0.00	0.00	0.00
11,600.00	90.00	180.33	7,050.00	-5,608.60	-3,509.78	5,669.00	0.00	0.00	0.00
11,700.00	90.00	180.33	7,050.00	-5,708.60	-3,510.35	5,768.99	0.00	0.00	0.00
11,800.00	90.00	180.33	7,050.00	-5,808.59	-3,510.92	5,868.98	0.00	0.00	0.00
11,900.00	90.00	180.33	7,050.00	-5,908.59	-3,511.48	5,968.98	0.00	0.00	0.00
12,000.00	90.00	180.33	7,050.00	-6,008.59	-3,512.05	6,068.97	0.00	0.00	0.00
12,100.00	90.00	180.33	7,050.00	-6,108.59	-3,512.62	6,168.96	0.00	0.00	0.00
12,200.00	90.00	180.33	7,050.00	-6,208.59	-3,513.19	6,268.96	0.00	0.00	0.00
12,300.00	90.00	180.33	7,050.00	-6,308.59	-3,513.76	6,368.95	0.00	0.00	0.00
12,400.00	90.00	180.33	7,050.00	-6,408.58	-3,514.33	6,468.94	0.00	0.00	0.00
12,500.00	90.00	180.33	7,050.00	-6,508.58	-3,514.90	6,568.94	0.00	0.00	0.00
12,600.00	90.00	180.33	7,050.00	-6,608.58	-3,515.47	6,668.93	0.00	0.00	0.00
12,700.00	90.00	180.33	7,050.00	-6,708.58	-3,516.04	6,768.92	0.00	0.00	0.00
12,800.00	90.00	180.33	7,050.00	-6,808.58	-3,516.61	6,868.91	0.00	0.00	0.00
12,900.00	90.00	180.33	7,050.00	-6,908.58	-3,517.18	6,968.91	0.00	0.00	0.00
13,000.00	90.00	180.33	7,050.00	-7,008.58	-3,517.74	7,068.90	0.00	0.00	0.00
13,100.00	90.00	180.33	7,050.00	-7,108.57	-3,518.31	7,168.89	0.00	0.00	0.00
13,200.00	90.00	180.33	7,050.00	-7,208.57	-3,518.88	7,268.89	0.00	0.00	0.00
13,300.00	90.00	180.33	7,050.00	-7,308.57	-3,519.45	7,368.88	0.00	0.00	0.00
13,400.00	90.00	180.33	7,050.00	-7,408.57	-3,520.02	7,468.87	0.00	0.00	0.00
13,500.00	90.00	180.33	7,050.00	-7,508.57	-3,520.59	7,568.87	0.00	0.00	0.00
13,600.00	90.00	180.33	7,050.00	-7,608.57	-3,521.16	7,668.86	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well RAMEN 1423-08H
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 1423-08H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
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)
13,700.00	90.00	180.33	7,050.00	-7,708.56	-3,521.73	7,768.85	0.00	0.00	0.00
13,800.00	90.00	180.33	7,050.00	-7,808.56	-3,522.30	7,868.85	0.00	0.00	0.00
13,900.00	90.00	180.33	7,050.00	-7,908.56	-3,522.87	7,968.84	0.00	0.00	0.00
14,000.00	90.00	180.33	7,050.00	-8,008.56	-3,523.44	8,068.83	0.00	0.00	0.00
14,100.00	90.00	180.33	7,050.00	-8,108.56	-3,524.00	8,168.82	0.00	0.00	0.00
14,200.00	90.00	180.33	7,050.00	-8,208.56	-3,524.57	8,268.82	0.00	0.00	0.00
14,300.00	90.00	180.33	7,050.00	-8,308.55	-3,525.14	8,368.81	0.00	0.00	0.00
14,400.00	90.00	180.33	7,050.00	-8,408.55	-3,525.71	8,468.80	0.00	0.00	0.00
14,500.00	90.00	180.33	7,050.00	-8,508.55	-3,526.28	8,568.80	0.00	0.00	0.00
14,600.00	90.00	180.33	7,050.00	-8,608.55	-3,526.85	8,668.79	0.00	0.00	0.00
14,700.00	90.00	180.33	7,050.00	-8,708.55	-3,527.42	8,768.78	0.00	0.00	0.00
14,800.00	90.00	180.33	7,050.00	-8,808.55	-3,527.99	8,868.78	0.00	0.00	0.00
14,900.00	90.00	180.33	7,050.00	-8,908.54	-3,528.56	8,968.77	0.00	0.00	0.00
15,000.00	90.00	180.33	7,050.00	-9,008.54	-3,529.13	9,068.76	0.00	0.00	0.00
15,100.00	90.00	180.33	7,050.00	-9,108.54	-3,529.70	9,168.76	0.00	0.00	0.00
15,200.00	90.00	180.33	7,050.00	-9,208.54	-3,530.26	9,268.75	0.00	0.00	0.00
15,300.00	90.00	180.33	7,050.00	-9,308.54	-3,530.83	9,368.74	0.00	0.00	0.00
15,400.00	90.00	180.33	7,050.00	-9,408.54	-3,531.40	9,468.73	0.00	0.00	0.00
15,500.00	90.00	180.33	7,050.00	-9,508.53	-3,531.97	9,568.73	0.00	0.00	0.00
15,600.00	90.00	180.33	7,050.00	-9,608.53	-3,532.54	9,668.72	0.00	0.00	0.00
15,700.00	90.00	180.33	7,050.00	-9,708.53	-3,533.11	9,768.71	0.00	0.00	0.00
15,800.00	90.00	180.33	7,050.00	-9,808.53	-3,533.68	9,868.71	0.00	0.00	0.00
15,900.00	90.00	180.33	7,050.00	-9,908.53	-3,534.25	9,968.70	0.00	0.00	0.00
16,000.00	90.00	180.33	7,050.00	-10,008.53	-3,534.82	10,068.69	0.00	0.00	0.00
16,100.00	90.00	180.33	7,050.00	-10,108.53	-3,535.39	10,168.69	0.00	0.00	0.00
16,200.00	90.00	180.33	7,050.00	-10,208.52	-3,535.96	10,268.68	0.00	0.00	0.00
16,300.00	90.00	180.33	7,050.00	-10,308.52	-3,536.52	10,368.67	0.00	0.00	0.00
16,400.00	90.00	180.33	7,050.00	-10,408.52	-3,537.09	10,468.67	0.00	0.00	0.00
16,500.00	90.00	180.33	7,050.00	-10,508.52	-3,537.66	10,568.66	0.00	0.00	0.00
16,600.00	90.00	180.33	7,050.00	-10,608.52	-3,538.23	10,668.65	0.00	0.00	0.00
16,700.00	90.00	180.33	7,050.00	-10,708.52	-3,538.80	10,768.65	0.00	0.00	0.00
16,800.00	90.00	180.33	7,050.00	-10,808.51	-3,539.37	10,868.64	0.00	0.00	0.00
16,900.00	90.00	180.33	7,050.00	-10,908.51	-3,539.94	10,968.63	0.00	0.00	0.00
17,000.00	90.00	180.33	7,050.00	-11,008.51	-3,540.51	11,068.62	0.00	0.00	0.00
17,100.00	90.00	180.33	7,050.00	-11,108.51	-3,541.08	11,168.62	0.00	0.00	0.00
17,200.00	90.00	180.33	7,050.00	-11,208.51	-3,541.65	11,268.61	0.00	0.00	0.00
17,300.00	90.00	180.33	7,050.00	-11,308.51	-3,542.21	11,368.60	0.00	0.00	0.00
17,400.00	90.00	180.33	7,050.00	-11,408.50	-3,542.78	11,468.60	0.00	0.00	0.00
17,500.00	90.00	180.33	7,050.00	-11,508.50	-3,543.35	11,568.59	0.00	0.00	0.00
17,600.00	90.00	180.33	7,050.00	-11,608.50	-3,543.92	11,668.58	0.00	0.00	0.00
17,700.00	90.00	180.33	7,050.00	-11,708.50	-3,544.49	11,768.58	0.00	0.00	0.00
17,800.00	90.00	180.33	7,050.00	-11,808.50	-3,545.06	11,868.57	0.00	0.00	0.00
17,900.00	90.00	180.33	7,050.00	-11,908.50	-3,545.63	11,968.56	0.00	0.00	0.00
18,000.00	90.00	180.33	7,050.00	-12,008.49	-3,546.20	12,068.56	0.00	0.00	0.00
18,100.00	90.00	180.33	7,050.00	-12,108.49	-3,546.77	12,168.55	0.00	0.00	0.00
18,200.00	90.00	180.33	7,050.00	-12,208.49	-3,547.34	12,268.54	0.00	0.00	0.00
18,300.00	90.00	180.33	7,050.00	-12,308.49	-3,547.91	12,368.53	0.00	0.00	0.00
18,369.77	90.00	180.33	7,050.00	-12,378.26	-3,548.30	12,438.30	0.00	0.00	0.00
BPZ @ 18369.77ft									
18,400.00	90.00	180.33	7,050.00	-12,408.49	-3,548.47	12,468.53	0.00	0.00	0.00
18,459.77	90.00	180.33	7,050.00	-12,468.26	-3,548.82	12,528.30	0.00	0.00	0.00
TD Well @ 18459.77ft									

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well RAMEN 1423-08H
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 1423-08H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (")	Hole Diameter (")
2,163.23	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)		
151.00	151.00	0.00	0.00	Begin Nudge @ 151.00ft	
301.00	300.93	-3.91	-0.34	Change Tangent @ 301.00ft	
1,934.04	1,831.07	-314.08	-397.65	Hold Tangent @ 1934.04ft	
5,024.21	4,378.37	-1,294.86	-1,846.26	Change Tangent Direction @ 5024.21ft	
5,251.38	4,565.73	-1,359.21	-1,957.33	Hold Tangent @ 5251.38ft	
7,711.32	6,593.52	-1,971.22	-3,208.26	KOP @ 7711.32ft :: DLS = 8°/100'	
8,654.11	7,050.00	-2,662.75	-3,493.01	End Build/TPZ @ 8654.11ft	
18,369.77	7,050.00	-12,378.26	-3,548.30	BPZ @ 18369.77ft	
18,459.77	7,050.00	-12,468.26	-3,548.82	TD Well @ 18459.77ft	