

VERDAD RESOURCES

WATTENBERG FIELD

1N-65W-12 RAMEN 1423 PAD

RAMEN 1423-07H

Plan B

Plan: Permit Rev-1

Standard Planning Report

17 August, 2023

Project: WATTENBERG FIELD
Site: 1N-65W-12 RAMEN 1423 PAD
Well: RAMEN 1423-07H
Wellbore: Plan B
Design: Permit Rev-1

VERDAD RESOURCES

CASING DETAILS

TVD	MD	Name	Size
2020.00	2130.49	9 5/8"	9-5/8

SHL
2215' FSL
2283' FEL

LP/TPZ
460' FNL
1097' FEL

BPZ
460' FSL
1097' FEL

BHL
370' FSL
1097' FEL

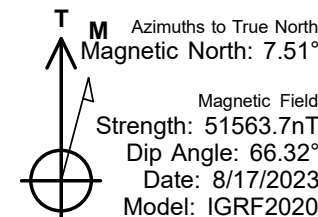
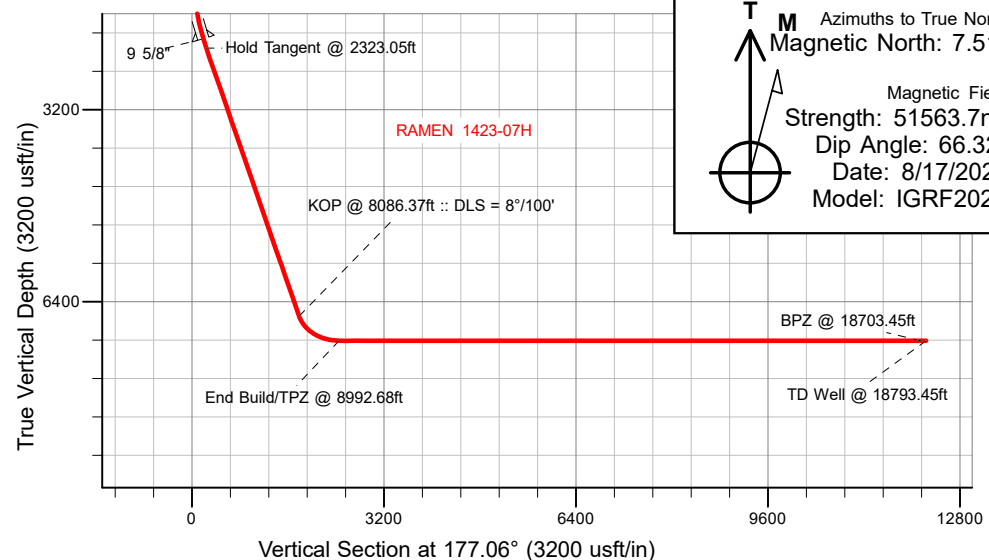
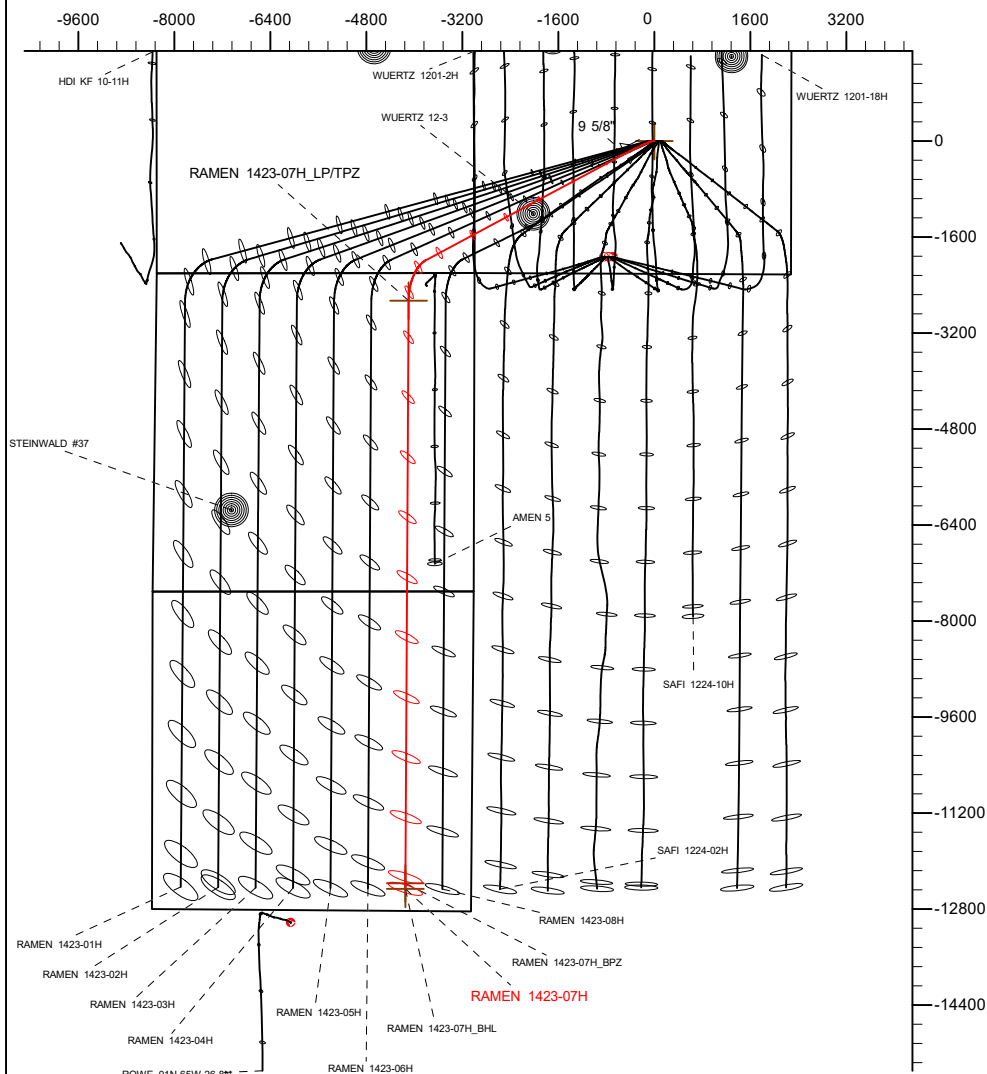
SECTION DETAILS

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	
332.70	0.00	0.00	332.70	0.00	0.00	0.00	0.00	0.00	
582.70	5.00	270.00	582.38	0.00	-10.90	2.00	270.00	-0.56	
2323.05	39.15	241.89	2173.29	-267.12	-589.22	2.00	-31.41	236.55	
8086.37	39.15	241.89	6642.72	-1981.54	-3798.71	0.00	0.00	1784.10	
8992.68	90.00	180.33	7050.00	-2662.95	-4094.15	8.00	-67.22	2449.45	
18793.45	90.00	180.33	7050.00	-12463.56	-4149.78	0.00	0.00	12234.31	RAMEN 1423-07H_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	Northing	Easting	Latitude	Longitude
RAMEN 1423-07H_SHL	0.00	1267694.56	3248858.43	40.064786	-104.610848
RAMEN 1423-07H_LP/TPZ	7050.00	1264990.51	3244791.24	40.057475	-104.625474
RAMEN 1423-07H_BPZ	7050.00	1255280.02	3244833.43	40.030818	-104.625665
RAMEN 1423-07H_BHL	7050.00	1255190.02	3244833.83	40.030571	-104.625667

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



WELL DETAILS: RAMEN 1423-07H

GL = 4971'

RKB = 24' @ 4995.00usft (RIG)

Plan: Permit Rev-1 (RAMEN 1423-07H/Plan B)

Date: 8/17/2023

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well RAMEN 1423-07H
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 1423-07H	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 1423-07H				
Well Position	+N/-S	0.00 usft	Northing:	1,267,694.56 usft	Latitude:	40.064786
	+E/-W	0.00 usft	Easting:	3,248,858.43 usft	Longitude:	-104.610848
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	51,563.66993474

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	177.06	

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	18,793.44	Permit Rev-1 (Plan B)	ISCWSA MWD	
				Fixed:v2:standard declination	

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well RAMEN 1423-07H
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 1423-07H	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	
332.70	0.00	0.00	332.70	0.00	0.00	0.00	0.00	0.00	0.00	
582.70	5.00	270.00	582.38	0.00	-10.90	2.00	2.00	0.00	270.00	
2,323.05	39.15	241.89	2,173.29	-267.12	-589.22	2.00	1.96	-1.62	-31.41	
8,086.37	39.15	241.89	6,642.72	-1,981.54	-3,798.71	0.00	0.00	0.00	0.00	
8,992.68	90.00	180.33	7,050.00	-2,662.95	-4,094.15	8.00	5.61	-6.79	-67.22	
18,793.45	90.00	180.33	7,050.00	-12,463.56	-4,149.78	0.00	0.00	0.00	0.00	RAMEN 1423-07H_B

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well RAMEN 1423-07H
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 1423-07H	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
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
332.70	0.00	0.00	332.70	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 332.70ft									
400.00	1.35	270.00	399.99	0.00	-0.79	-0.04	2.00	2.00	0.00
500.00	3.35	270.00	499.90	0.00	-4.88	-0.25	2.00	2.00	0.00
582.70	5.00	270.00	582.38	0.00	-10.90	-0.56	2.00	2.00	0.00
Change Tangent @ 582.70ft									
600.00	5.30	268.05	599.61	-0.03	-12.45	-0.61	2.00	1.72	-11.29
700.00	7.11	260.07	699.03	-1.25	-23.16	0.06	2.00	1.81	-7.97
800.00	9.00	255.37	798.04	-4.29	-36.83	2.40	2.00	1.89	-4.70
900.00	10.93	252.31	896.52	-9.15	-53.42	6.40	2.00	1.93	-3.06
1,000.00	12.88	250.16	994.37	-15.81	-72.94	12.05	2.00	1.95	-2.15
1,100.00	14.84	248.57	1,091.45	-24.27	-95.34	19.35	2.00	1.96	-1.59
1,200.00	16.81	247.34	1,187.66	-34.53	-120.62	28.29	2.00	1.97	-1.23
1,300.00	18.79	246.37	1,282.87	-46.55	-148.72	38.87	2.00	1.98	-0.97
1,400.00	20.77	245.57	1,376.96	-60.35	-179.62	51.05	2.00	1.98	-0.80
1,500.00	22.76	244.91	1,469.83	-75.88	-213.29	64.84	2.00	1.98	-0.66
1,600.00	24.75	244.35	1,561.35	-93.14	-249.68	80.22	2.00	1.99	-0.56
1,700.00	26.73	243.87	1,651.43	-112.11	-288.74	97.16	2.00	1.99	-0.48
1,800.00	28.72	243.45	1,739.94	-132.76	-330.43	115.64	2.00	1.99	-0.42
1,900.00	30.72	243.08	1,826.78	-155.07	-374.71	135.65	2.00	1.99	-0.37
2,000.00	32.71	242.75	1,911.84	-179.01	-421.50	157.16	2.00	1.99	-0.33
2,100.00	34.70	242.45	1,995.03	-204.55	-470.76	180.13	2.00	1.99	-0.30
2,130.49	35.31	242.37	2,020.00	-212.65	-486.26	187.43	2.00	1.99	-0.28
9 5/8"									
2,200.00	36.70	242.19	2,076.23	-231.66	-522.43	204.56	2.00	1.99	-0.26
2,300.00	38.69	241.94	2,155.36	-260.30	-576.45	230.39	2.00	1.99	-0.24
2,323.05	39.15	241.89	2,173.29	-267.12	-589.22	236.55	2.00	1.99	-0.23
Hold Tangent @ 2323.05ft									
2,400.00	39.15	241.89	2,232.97	-290.01	-632.08	257.21	0.00	0.00	0.00
2,500.00	39.15	241.89	2,310.52	-319.76	-687.76	284.06	0.00	0.00	0.00
2,600.00	39.15	241.89	2,388.07	-349.50	-743.45	310.91	0.00	0.00	0.00
2,700.00	39.15	241.89	2,465.62	-379.25	-799.14	337.76	0.00	0.00	0.00
2,800.00	39.15	241.89	2,543.17	-409.00	-854.83	364.62	0.00	0.00	0.00
2,900.00	39.15	241.89	2,620.72	-438.75	-910.52	391.47	0.00	0.00	0.00
3,000.00	39.15	241.89	2,698.27	-468.49	-966.20	418.32	0.00	0.00	0.00
3,100.00	39.15	241.89	2,775.82	-498.24	-1,021.89	445.17	0.00	0.00	0.00
3,200.00	39.15	241.89	2,853.37	-527.99	-1,077.58	472.02	0.00	0.00	0.00
3,300.00	39.15	241.89	2,930.91	-557.73	-1,133.27	498.87	0.00	0.00	0.00
3,400.00	39.15	241.89	3,008.46	-587.48	-1,188.96	525.73	0.00	0.00	0.00
3,500.00	39.15	241.89	3,086.01	-617.23	-1,244.64	552.58	0.00	0.00	0.00
3,600.00	39.15	241.89	3,163.56	-646.98	-1,300.33	579.43	0.00	0.00	0.00
3,700.00	39.15	241.89	3,241.11	-676.72	-1,356.02	606.28	0.00	0.00	0.00
3,800.00	39.15	241.89	3,318.66	-706.47	-1,411.71	633.13	0.00	0.00	0.00
3,900.00	39.15	241.89	3,396.21	-736.22	-1,467.40	659.99	0.00	0.00	0.00
4,000.00	39.15	241.89	3,473.76	-765.96	-1,523.09	686.84	0.00	0.00	0.00
4,100.00	39.15	241.89	3,551.31	-795.71	-1,578.77	713.69	0.00	0.00	0.00
4,200.00	39.15	241.89	3,628.86	-825.46	-1,634.46	740.54	0.00	0.00	0.00
4,300.00	39.15	241.89	3,706.41	-855.21	-1,690.15	767.39	0.00	0.00	0.00
4,400.00	39.15	241.89	3,783.96	-884.95	-1,745.84	794.24	0.00	0.00	0.00
4,500.00	39.15	241.89	3,861.51	-914.70	-1,801.53	821.10	0.00	0.00	0.00

Planning Report

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Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4995.00usft (RIG)
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Well:	RAMEN 1423-07H	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)
4,600.00	39.15	241.89	3,939.06	-944.45	-1,857.21	847.95	0.00	0.00	0.00
4,700.00	39.15	241.89	4,016.61	-974.19	-1,912.90	874.80	0.00	0.00	0.00
4,800.00	39.15	241.89	4,094.16	-1,003.94	-1,968.59	901.65	0.00	0.00	0.00
4,900.00	39.15	241.89	4,171.71	-1,033.69	-2,024.28	928.50	0.00	0.00	0.00
5,000.00	39.15	241.89	4,249.26	-1,063.44	-2,079.97	955.35	0.00	0.00	0.00
5,100.00	39.15	241.89	4,326.81	-1,093.18	-2,135.66	982.21	0.00	0.00	0.00
5,200.00	39.15	241.89	4,404.36	-1,122.93	-2,191.34	1,009.06	0.00	0.00	0.00
5,300.00	39.15	241.89	4,481.91	-1,152.68	-2,247.03	1,035.91	0.00	0.00	0.00
5,400.00	39.15	241.89	4,559.46	-1,182.43	-2,302.72	1,062.76	0.00	0.00	0.00
5,500.00	39.15	241.89	4,637.01	-1,212.17	-2,358.41	1,089.61	0.00	0.00	0.00
5,600.00	39.15	241.89	4,714.55	-1,241.92	-2,414.10	1,116.47	0.00	0.00	0.00
5,700.00	39.15	241.89	4,792.10	-1,271.67	-2,469.78	1,143.32	0.00	0.00	0.00
5,800.00	39.15	241.89	4,869.65	-1,301.41	-2,525.47	1,170.17	0.00	0.00	0.00
5,900.00	39.15	241.89	4,947.20	-1,331.16	-2,581.16	1,197.02	0.00	0.00	0.00
6,000.00	39.15	241.89	5,024.75	-1,360.91	-2,636.85	1,223.87	0.00	0.00	0.00
6,100.00	39.15	241.89	5,102.30	-1,390.66	-2,692.54	1,250.72	0.00	0.00	0.00
6,200.00	39.15	241.89	5,179.85	-1,420.40	-2,748.22	1,277.58	0.00	0.00	0.00
6,300.00	39.15	241.89	5,257.40	-1,450.15	-2,803.91	1,304.43	0.00	0.00	0.00
6,400.00	39.15	241.89	5,334.95	-1,479.90	-2,859.60	1,331.28	0.00	0.00	0.00
6,500.00	39.15	241.89	5,412.50	-1,509.64	-2,915.29	1,358.13	0.00	0.00	0.00
6,600.00	39.15	241.89	5,490.05	-1,539.39	-2,970.98	1,384.98	0.00	0.00	0.00
6,700.00	39.15	241.89	5,567.60	-1,569.14	-3,026.67	1,411.84	0.00	0.00	0.00
6,800.00	39.15	241.89	5,645.15	-1,598.89	-3,082.35	1,438.69	0.00	0.00	0.00
6,900.00	39.15	241.89	5,722.70	-1,628.63	-3,138.04	1,465.54	0.00	0.00	0.00
7,000.00	39.15	241.89	5,800.25	-1,658.38	-3,193.73	1,492.39	0.00	0.00	0.00
7,100.00	39.15	241.89	5,877.80	-1,688.13	-3,249.42	1,519.24	0.00	0.00	0.00
7,200.00	39.15	241.89	5,955.35	-1,717.87	-3,305.11	1,546.09	0.00	0.00	0.00
7,300.00	39.15	241.89	6,032.90	-1,747.62	-3,360.79	1,572.95	0.00	0.00	0.00
7,400.00	39.15	241.89	6,110.45	-1,777.37	-3,416.48	1,599.80	0.00	0.00	0.00
7,500.00	39.15	241.89	6,188.00	-1,807.12	-3,472.17	1,626.65	0.00	0.00	0.00
7,600.00	39.15	241.89	6,265.55	-1,836.86	-3,527.86	1,653.50	0.00	0.00	0.00
7,700.00	39.15	241.89	6,343.10	-1,866.61	-3,583.55	1,680.35	0.00	0.00	0.00
7,800.00	39.15	241.89	6,420.65	-1,896.36	-3,639.23	1,707.20	0.00	0.00	0.00
7,900.00	39.15	241.89	6,498.20	-1,926.10	-3,694.92	1,734.06	0.00	0.00	0.00
8,000.00	39.15	241.89	6,575.74	-1,955.85	-3,750.61	1,760.91	0.00	0.00	0.00
8,086.37	39.15	241.89	6,642.72	-1,981.54	-3,798.71	1,784.10	0.00	0.00	0.00
KOP @ 8086.37ft :: DLS = 8°/100'									
8,100.00	39.58	240.31	6,653.26	-1,985.72	-3,806.28	1,787.88	8.00	3.18	-11.58
8,150.00	41.34	234.78	6,691.31	-2,003.14	-3,833.62	1,803.88	8.00	3.52	-11.07
8,200.00	43.35	229.64	6,728.28	-2,023.79	-3,860.20	1,823.14	8.00	4.02	-10.27
8,250.00	45.57	224.89	6,763.97	-2,047.57	-3,885.88	1,845.56	8.00	4.44	-9.50
8,300.00	47.98	220.50	6,798.22	-2,074.35	-3,910.56	1,871.05	8.00	4.81	-8.78
8,350.00	50.54	216.44	6,830.86	-2,104.01	-3,934.09	1,899.46	8.00	5.12	-8.12
8,400.00	53.23	212.67	6,861.72	-2,136.41	-3,956.37	1,930.67	8.00	5.38	-7.53
8,450.00	56.03	209.17	6,890.67	-2,171.38	-3,977.30	1,964.53	8.00	5.60	-7.01
8,500.00	58.92	205.89	6,917.56	-2,208.76	-3,996.76	2,000.86	8.00	5.79	-6.56
8,550.00	61.89	202.81	6,942.26	-2,248.37	-4,014.67	2,039.49	8.00	5.94	-6.16
8,600.00	64.92	199.90	6,964.64	-2,290.00	-4,030.93	2,080.24	8.00	6.07	-5.83
8,650.00	68.01	197.13	6,984.60	-2,333.46	-4,045.46	2,122.90	8.00	6.18	-5.54
8,700.00	71.15	194.47	7,002.05	-2,378.55	-4,058.21	2,167.27	8.00	6.27	-5.30
8,750.00	74.32	191.92	7,016.89	-2,425.02	-4,069.10	2,213.13	8.00	6.34	-5.11
8,800.00	77.52	189.44	7,029.05	-2,472.67	-4,078.08	2,260.25	8.00	6.40	-4.95
8,850.00	80.74	187.03	7,038.48	-2,521.26	-4,085.10	2,308.41	8.00	6.44	-4.83

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well RAMEN 1423-07H
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 1423-07H	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)
8,900.00	83.98	184.66	7,045.13	-2,570.55	-4,090.14	2,357.38	8.00	6.47	-4.74
8,950.00	87.22	182.31	7,048.97	-2,620.30	-4,093.17	2,406.91	8.00	6.49	-4.69
8,992.68	90.00	180.33	7,050.00	-2,662.95	-4,094.15	2,449.45	8.00	6.50	-4.66
End Build/TPZ @ 8992.68ft									
9,000.00	90.00	180.33	7,050.00	-2,670.27	-4,094.20	2,456.76	0.00	0.00	0.00
9,100.00	90.00	180.33	7,050.00	-2,770.27	-4,094.76	2,556.60	0.00	0.00	0.00
9,200.00	90.00	180.33	7,050.00	-2,870.26	-4,095.33	2,656.44	0.00	0.00	0.00
9,300.00	90.00	180.33	7,050.00	-2,970.26	-4,095.90	2,756.27	0.00	0.00	0.00
9,400.00	90.00	180.33	7,050.00	-3,070.26	-4,096.47	2,856.11	0.00	0.00	0.00
9,500.00	90.00	180.33	7,050.00	-3,170.26	-4,097.03	2,955.95	0.00	0.00	0.00
9,600.00	90.00	180.33	7,050.00	-3,270.26	-4,097.60	3,055.79	0.00	0.00	0.00
9,700.00	90.00	180.33	7,050.00	-3,370.26	-4,098.17	3,155.62	0.00	0.00	0.00
9,800.00	90.00	180.33	7,050.00	-3,470.25	-4,098.74	3,255.46	0.00	0.00	0.00
9,900.00	90.00	180.33	7,050.00	-3,570.25	-4,099.30	3,355.30	0.00	0.00	0.00
10,000.00	90.00	180.33	7,050.00	-3,670.25	-4,099.87	3,455.14	0.00	0.00	0.00
10,100.00	90.00	180.33	7,050.00	-3,770.25	-4,100.44	3,554.97	0.00	0.00	0.00
10,200.00	90.00	180.33	7,050.00	-3,870.25	-4,101.01	3,654.81	0.00	0.00	0.00
10,300.00	90.00	180.33	7,050.00	-3,970.25	-4,101.57	3,754.65	0.00	0.00	0.00
10,400.00	90.00	180.33	7,050.00	-4,070.24	-4,102.14	3,854.49	0.00	0.00	0.00
10,500.00	90.00	180.33	7,050.00	-4,170.24	-4,102.71	3,954.33	0.00	0.00	0.00
10,600.00	90.00	180.33	7,050.00	-4,270.24	-4,103.28	4,054.16	0.00	0.00	0.00
10,700.00	90.00	180.33	7,050.00	-4,370.24	-4,103.84	4,154.00	0.00	0.00	0.00
10,800.00	90.00	180.33	7,050.00	-4,470.24	-4,104.41	4,253.84	0.00	0.00	0.00
10,900.00	90.00	180.33	7,050.00	-4,570.24	-4,104.98	4,353.68	0.00	0.00	0.00
11,000.00	90.00	180.33	7,050.00	-4,670.23	-4,105.55	4,453.51	0.00	0.00	0.00
11,100.00	90.00	180.33	7,050.00	-4,770.23	-4,106.11	4,553.35	0.00	0.00	0.00
11,200.00	90.00	180.33	7,050.00	-4,870.23	-4,106.68	4,653.19	0.00	0.00	0.00
11,300.00	90.00	180.33	7,050.00	-4,970.23	-4,107.25	4,753.03	0.00	0.00	0.00
11,400.00	90.00	180.33	7,050.00	-5,070.23	-4,107.82	4,852.86	0.00	0.00	0.00
11,500.00	90.00	180.33	7,050.00	-5,170.23	-4,108.38	4,952.70	0.00	0.00	0.00
11,600.00	90.00	180.33	7,050.00	-5,270.23	-4,108.95	5,052.54	0.00	0.00	0.00
11,700.00	90.00	180.33	7,050.00	-5,370.22	-4,109.52	5,152.38	0.00	0.00	0.00
11,800.00	90.00	180.33	7,050.00	-5,470.22	-4,110.09	5,252.22	0.00	0.00	0.00
11,900.00	90.00	180.33	7,050.00	-5,570.22	-4,110.66	5,352.05	0.00	0.00	0.00
12,000.00	90.00	180.33	7,050.00	-5,670.22	-4,111.22	5,451.89	0.00	0.00	0.00
12,100.00	90.00	180.33	7,050.00	-5,770.22	-4,111.79	5,551.73	0.00	0.00	0.00
12,200.00	90.00	180.33	7,050.00	-5,870.22	-4,112.36	5,651.57	0.00	0.00	0.00
12,300.00	90.00	180.33	7,050.00	-5,970.21	-4,112.93	5,751.40	0.00	0.00	0.00
12,400.00	90.00	180.33	7,050.00	-6,070.21	-4,113.49	5,851.24	0.00	0.00	0.00
12,500.00	90.00	180.33	7,050.00	-6,170.21	-4,114.06	5,951.08	0.00	0.00	0.00
12,600.00	90.00	180.33	7,050.00	-6,270.21	-4,114.63	6,050.92	0.00	0.00	0.00
12,700.00	90.00	180.33	7,050.00	-6,370.21	-4,115.20	6,150.75	0.00	0.00	0.00
12,800.00	90.00	180.33	7,050.00	-6,470.21	-4,115.76	6,250.59	0.00	0.00	0.00
12,900.00	90.00	180.33	7,050.00	-6,570.20	-4,116.33	6,350.43	0.00	0.00	0.00
13,000.00	90.00	180.33	7,050.00	-6,670.20	-4,116.90	6,450.27	0.00	0.00	0.00
13,100.00	90.00	180.33	7,050.00	-6,770.20	-4,117.47	6,550.10	0.00	0.00	0.00
13,200.00	90.00	180.33	7,050.00	-6,870.20	-4,118.03	6,649.94	0.00	0.00	0.00
13,300.00	90.00	180.33	7,050.00	-6,970.20	-4,118.60	6,749.78	0.00	0.00	0.00
13,400.00	90.00	180.33	7,050.00	-7,070.20	-4,119.17	6,849.62	0.00	0.00	0.00
13,500.00	90.00	180.33	7,050.00	-7,170.19	-4,119.74	6,949.46	0.00	0.00	0.00
13,600.00	90.00	180.33	7,050.00	-7,270.19	-4,120.30	7,049.29	0.00	0.00	0.00
13,700.00	90.00	180.33	7,050.00	-7,370.19	-4,120.87	7,149.13	0.00	0.00	0.00
13,800.00	90.00	180.33	7,050.00	-7,470.19	-4,121.44	7,248.97	0.00	0.00	0.00
13,900.00	90.00	180.33	7,050.00	-7,570.19	-4,122.01	7,348.81	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well RAMEN 1423-07H
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 1423-07H	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)
14,000.00	90.00	180.33	7,050.00	-7,670.19	-4,122.57	7,448.64	0.00	0.00	0.00
14,100.00	90.00	180.33	7,050.00	-7,770.19	-4,123.14	7,548.48	0.00	0.00	0.00
14,200.00	90.00	180.33	7,050.00	-7,870.18	-4,123.71	7,648.32	0.00	0.00	0.00
14,300.00	90.00	180.33	7,050.00	-7,970.18	-4,124.28	7,748.16	0.00	0.00	0.00
14,400.00	90.00	180.33	7,050.00	-8,070.18	-4,124.84	7,847.99	0.00	0.00	0.00
14,500.00	90.00	180.33	7,050.00	-8,170.18	-4,125.41	7,947.83	0.00	0.00	0.00
14,600.00	90.00	180.33	7,050.00	-8,270.18	-4,125.98	8,047.67	0.00	0.00	0.00
14,700.00	90.00	180.33	7,050.00	-8,370.18	-4,126.55	8,147.51	0.00	0.00	0.00
14,800.00	90.00	180.33	7,050.00	-8,470.17	-4,127.11	8,247.34	0.00	0.00	0.00
14,900.00	90.00	180.33	7,050.00	-8,570.17	-4,127.68	8,347.18	0.00	0.00	0.00
15,000.00	90.00	180.33	7,050.00	-8,670.17	-4,128.25	8,447.02	0.00	0.00	0.00
15,100.00	90.00	180.33	7,050.00	-8,770.17	-4,128.82	8,546.86	0.00	0.00	0.00
15,200.00	90.00	180.33	7,050.00	-8,870.17	-4,129.38	8,646.70	0.00	0.00	0.00
15,300.00	90.00	180.33	7,050.00	-8,970.17	-4,129.95	8,746.53	0.00	0.00	0.00
15,400.00	90.00	180.33	7,050.00	-9,070.16	-4,130.52	8,846.37	0.00	0.00	0.00
15,500.00	90.00	180.33	7,050.00	-9,170.16	-4,131.09	8,946.21	0.00	0.00	0.00
15,600.00	90.00	180.33	7,050.00	-9,270.16	-4,131.66	9,046.05	0.00	0.00	0.00
15,700.00	90.00	180.33	7,050.00	-9,370.16	-4,132.22	9,145.88	0.00	0.00	0.00
15,800.00	90.00	180.33	7,050.00	-9,470.16	-4,132.79	9,245.72	0.00	0.00	0.00
15,900.00	90.00	180.33	7,050.00	-9,570.16	-4,133.36	9,345.56	0.00	0.00	0.00
16,000.00	90.00	180.33	7,050.00	-9,670.15	-4,133.93	9,445.40	0.00	0.00	0.00
16,100.00	90.00	180.33	7,050.00	-9,770.15	-4,134.49	9,545.23	0.00	0.00	0.00
16,200.00	90.00	180.33	7,050.00	-9,870.15	-4,135.06	9,645.07	0.00	0.00	0.00
16,300.00	90.00	180.33	7,050.00	-9,970.15	-4,135.63	9,744.91	0.00	0.00	0.00
16,400.00	90.00	180.33	7,050.00	-10,070.15	-4,136.20	9,844.75	0.00	0.00	0.00
16,500.00	90.00	180.33	7,050.00	-10,170.15	-4,136.76	9,944.59	0.00	0.00	0.00
16,600.00	90.00	180.33	7,050.00	-10,270.14	-4,137.33	10,044.42	0.00	0.00	0.00
16,700.00	90.00	180.33	7,050.00	-10,370.14	-4,137.90	10,144.26	0.00	0.00	0.00
16,800.00	90.00	180.33	7,050.00	-10,470.14	-4,138.47	10,244.10	0.00	0.00	0.00
16,900.00	90.00	180.33	7,050.00	-10,570.14	-4,139.03	10,343.94	0.00	0.00	0.00
17,000.00	90.00	180.33	7,050.00	-10,670.14	-4,139.60	10,443.77	0.00	0.00	0.00
17,100.00	90.00	180.33	7,050.00	-10,770.14	-4,140.17	10,543.61	0.00	0.00	0.00
17,200.00	90.00	180.33	7,050.00	-10,870.14	-4,140.74	10,643.45	0.00	0.00	0.00
17,300.00	90.00	180.33	7,050.00	-10,970.13	-4,141.30	10,743.29	0.00	0.00	0.00
17,400.00	90.00	180.33	7,050.00	-11,070.13	-4,141.87	10,843.12	0.00	0.00	0.00
17,500.00	90.00	180.33	7,050.00	-11,170.13	-4,142.44	10,942.96	0.00	0.00	0.00
17,600.00	90.00	180.33	7,050.00	-11,270.13	-4,143.01	11,042.80	0.00	0.00	0.00
17,700.00	90.00	180.33	7,050.00	-11,370.13	-4,143.57	11,142.64	0.00	0.00	0.00
17,800.00	90.00	180.33	7,050.00	-11,470.13	-4,144.14	11,242.47	0.00	0.00	0.00
17,900.00	90.00	180.33	7,050.00	-11,570.12	-4,144.71	11,342.31	0.00	0.00	0.00
18,000.00	90.00	180.33	7,050.00	-11,670.12	-4,145.28	11,442.15	0.00	0.00	0.00
18,100.00	90.00	180.33	7,050.00	-11,770.12	-4,145.84	11,541.99	0.00	0.00	0.00
18,200.00	90.00	180.33	7,050.00	-11,870.12	-4,146.41	11,641.83	0.00	0.00	0.00
18,300.00	90.00	180.33	7,050.00	-11,970.12	-4,146.98	11,741.66	0.00	0.00	0.00
18,400.00	90.00	180.33	7,050.00	-12,070.12	-4,147.55	11,841.50	0.00	0.00	0.00
18,500.00	90.00	180.33	7,050.00	-12,170.11	-4,148.11	11,941.34	0.00	0.00	0.00
18,600.00	90.00	180.33	7,050.00	-12,270.11	-4,148.68	12,041.18	0.00	0.00	0.00
18,700.00	90.00	180.33	7,050.00	-12,370.11	-4,149.25	12,141.01	0.00	0.00	0.00
18,703.45	90.00	180.33	7,050.00	-12,373.56	-4,149.27	12,144.46	0.00	0.00	0.00
BPZ @ 18703.45ft									
18,793.45	90.00	180.33	7,050.00	-12,463.56	-4,149.78	12,234.31	0.00	0.00	0.00
TD Well @ 18793.45ft									

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well RAMEN 1423-07H
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 1423-07H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
Design:	Permit Rev-1		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (")	Hole Diameter (")
2,130.49	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)		
332.70	332.70	0.00	0.00	Begin Nudge @ 332.70ft	
582.70	582.38	0.00	-10.90	Change Tangent @ 582.70ft	
2,323.05	2,173.29	-267.12	-589.22	Hold Tangent @ 2323.05ft	
8,086.37	6,642.72	-1,981.54	-3,798.71	KOP @ 8086.37ft :: DLS = 8"/100'	
8,992.68	7,050.00	-2,662.95	-4,094.15	End Build/TPZ @ 8992.68ft	
18,703.45	7,050.00	-12,373.56	-4,149.27	BPZ @ 18703.45ft	
18,793.45	7,050.00	-12,463.56	-4,149.78	TD Well @ 18793.45ft	