

# **VERDAD RESOURCES**

**WATTENBERG FIELD**

**2N-64W-24 ARNOLD-BOYD PAD**

**BOYD 2413-05H**

**Plan A**

**Plan: Design #1**

## **Standard Planning Report**

**14 December, 2021**

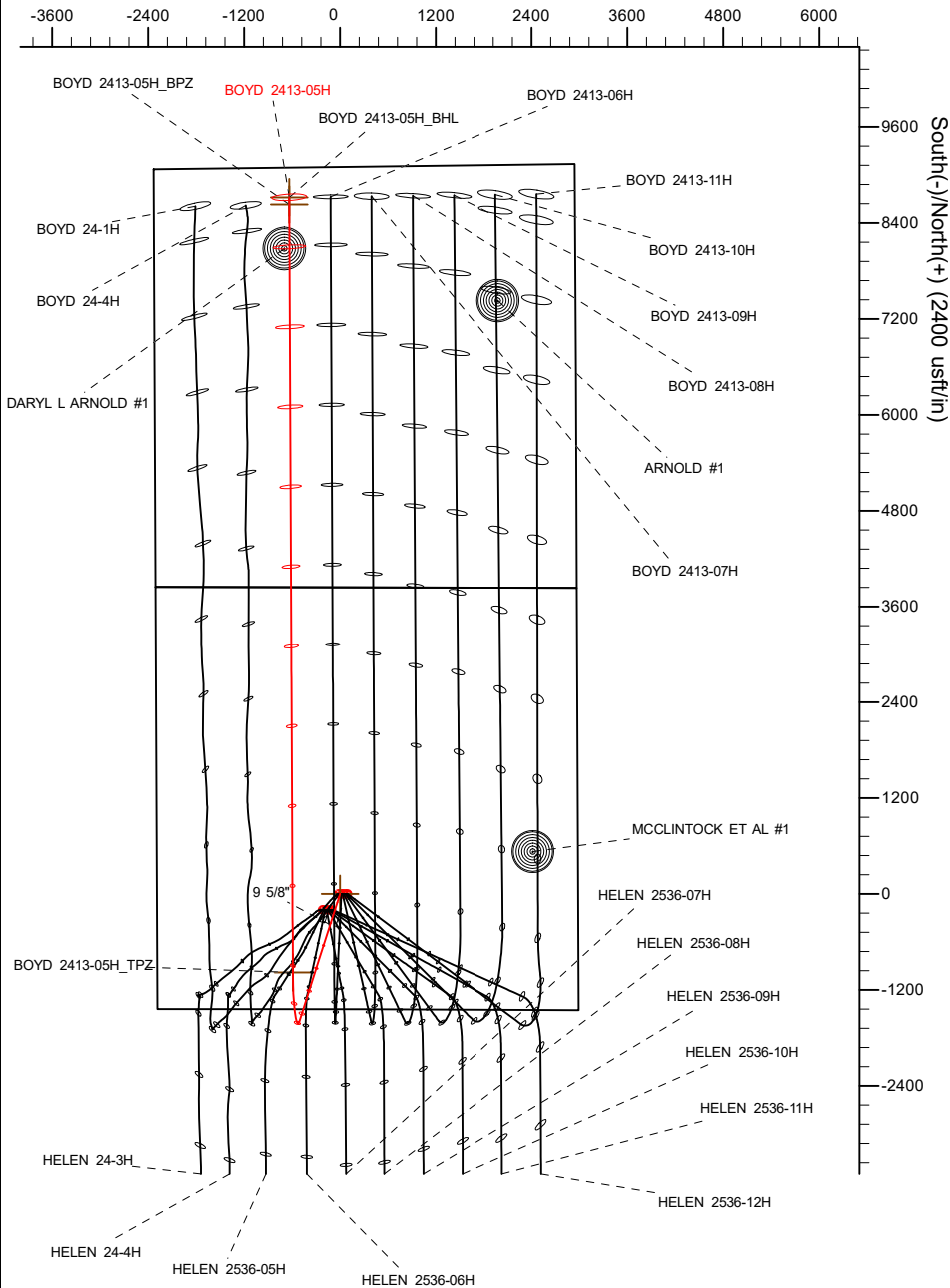
Project: WATTENBERG FIELD  
Site: 2N-64W-24 ARNOLD-BOYD PAD  
Well: BOYD 2413-05H  
Wellbore: Plan A  
Design: Design #1

# VERDAD RESOURCES

## CASING DETAILS

TVD	MD	Name	Size
1934.00	1989.04	9 5/8"	9-5/8

West(-)/East(+) (2400 usft/in)



SHL  
1441' FSL  
2291' FWL

TPZ  
460' FSL  
1695' FWL

BPZ  
460' FNL  
1695' FWL

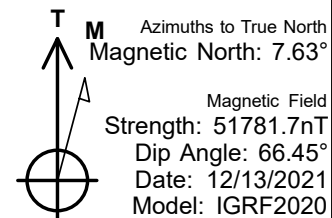
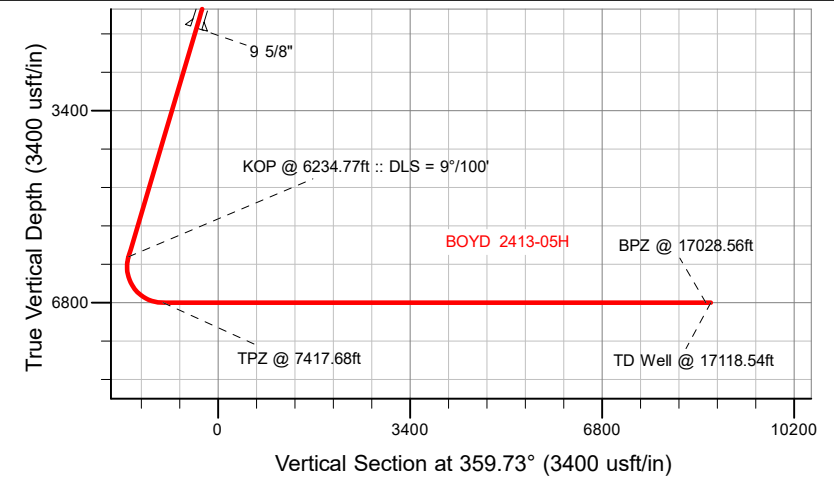
BHL  
370' FNL  
1695' FWL

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	200.75	0.00	0.00	200.75	0.00	0.00	0.00	0.00	0.00	
3	1067.75	17.34	197.78	1054.58	-123.98	-39.76	2.00	197.78	-123.79	
4	6234.77	17.34	197.78	5986.77	-1590.41	-510.01	0.00	0.00	-1587.99	
5	7417.68	90.00	359.73	6800.00	-980.26	-591.53	9.00	161.15	-977.46	
6	17118.54	90.00	359.73	6800.00	8720.50	-636.84	0.00	0.00	8723.40	BOYD 2413-05H_BHL

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
BOYD 2413-05H_SHL	0.00	0.00	0.00	40.120602	-104.500941
BOYD 2413-05H_TPZ	6800.00	-980.26	-591.53	40.117911	-104.503056
BOYD 2413-05H_BPZ	6800.00	8630.52	-636.56	40.144294	-104.503218
BOYD 2413-05H_BHL	6800.00	8720.50	-636.84	40.144541	-104.503219



WELL DETAILS: BOYD 2413-05H

GL = 4924'

RKB = 20' @ 4944.00usft (Drilling Rig)

Plan: Design #1 (BOYD 2413-05H/Plan A)

Date: 12/14/2021

## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well BOYD 2413-05H
<b>Company:</b>	VERDAD RESOURCES	<b>TVD Reference:</b>	RKB = 20' @ 4944.00usft (Drilling Rig)
<b>Project:</b>	WATTENBERG FIELD	<b>MD Reference:</b>	RKB = 20' @ 4944.00usft (Drilling Rig)
<b>Site:</b>	2N-64W-24 ARNOLD-BOYD PAD	<b>North Reference:</b>	True
<b>Well:</b>	BOYD 2413-05H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Design #1		

<b>Project</b>	WATTENBERG FIELD		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

<b>Site</b>	2N-64W-24 ARNOLD-BOYD PAD			
<b>Site Position:</b>		<b>Northing:</b>	1,288,353.17 usft	<b>Latitude:</b> 40.120602
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,279,389.09 usft	<b>Longitude:</b> -104.500941
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "	

<b>Well</b>	BOYD 2413-05H			
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	1,288,353.16 usft
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	3,279,389.09 usft
<b>Position Uncertainty</b>		3.28 usft	<b>Wellhead Elevation:</b>	usft
<b>Grid Convergence:</b>		0.65 °	<b>Ground Level:</b>	4,924.00 usft

<b>Wellbore</b>	Plan A				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF202013	12/13/2021	7.63	66.45	51,781.70191028

<b>Design</b>	Design #1				
<b>Audit Notes:</b>					
<b>Version:</b>		<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>		<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
		0.00	0.00	0.00	359.73

<b>Plan Survey Tool Program</b>		<b>Date</b>	12/14/2021		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.00	1,934.00	Design #1 (Plan A)	ISCWSA MWD	
				Fixed:v2:standard declination	
2	1,934.00	17,118.54	Design #1 (Plan A)	ISCWSA MWD	
				Fixed:v2:standard declination	

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well BOYD 2413-05H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 4944.00usft (Drilling Rig)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 4944.00usft (Drilling Rig)
Site:	2N-64W-24 ARNOLD-BOYD PAD	North Reference:	True
Well:	BOYD 2413-05H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Design #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	
200.75	0.00	0.00	200.75	0.00	0.00	0.00	0.00	0.00	0.00	
1,067.75	17.34	197.78	1,054.58	-123.98	-39.76	2.00	2.00	0.00	197.78	
6,234.77	17.34	197.78	5,986.77	-1,590.41	-510.01	0.00	0.00	0.00	0.00	
7,417.68	90.00	359.73	6,800.00	-980.26	-591.53	9.00	6.14	13.69	161.15	
17,118.54	90.00	359.73	6,800.00	8,720.50	-636.84	0.00	0.00	0.00	0.00	BOYD 2413-05H_BHI

## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well BOYD 2413-05H
<b>Company:</b>	VERDAD RESOURCES	<b>TVD Reference:</b>	RKB = 20' @ 4944.00usft (Drilling Rig)
<b>Project:</b>	WATTENBERG FIELD	<b>MD Reference:</b>	RKB = 20' @ 4944.00usft (Drilling Rig)
<b>Site:</b>	2N-64W-24 ARNOLD-BOYD PAD	<b>North Reference:</b>	True
<b>Well:</b>	BOYD 2413-05H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Design #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
200.75	0.00	0.00	200.75	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 200.75ft									
300.00	1.98	197.78	299.98	-1.64	-0.52	-1.63	2.00	2.00	0.00
400.00	3.98	197.78	399.84	-6.60	-2.12	-6.59	2.00	2.00	0.00
500.00	5.98	197.78	499.46	-14.87	-4.77	-14.85	2.00	2.00	0.00
600.00	7.98	197.78	598.71	-26.45	-8.48	-26.41	2.00	2.00	0.00
700.00	9.98	197.78	697.48	-41.32	-13.25	-41.26	2.00	2.00	0.00
800.00	11.98	197.78	795.64	-59.46	-19.07	-59.37	2.00	2.00	0.00
900.00	13.98	197.78	893.08	-80.86	-25.93	-80.74	2.00	2.00	0.00
1,000.00	15.98	197.78	989.67	-105.48	-33.83	-105.32	2.00	2.00	0.00
1,067.75	17.34	197.78	1,054.58	-123.98	-39.76	-123.79	2.00	2.00	0.00
Hold Tangent @ 1067.75ft									
1,100.00	17.34	197.78	1,085.36	-133.13	-42.69	-132.93	0.00	0.00	0.00
1,200.00	17.34	197.78	1,180.82	-161.51	-51.79	-161.26	0.00	0.00	0.00
1,300.00	17.34	197.78	1,276.27	-189.89	-60.89	-189.60	0.00	0.00	0.00
1,400.00	17.34	197.78	1,371.73	-218.27	-70.00	-217.94	0.00	0.00	0.00
1,500.00	17.34	197.78	1,467.18	-246.65	-79.10	-246.28	0.00	0.00	0.00
1,600.00	17.34	197.78	1,562.64	-275.03	-88.20	-274.61	0.00	0.00	0.00
1,700.00	17.34	197.78	1,658.09	-303.41	-97.30	-302.95	0.00	0.00	0.00
1,800.00	17.34	197.78	1,753.55	-331.79	-106.40	-331.29	0.00	0.00	0.00
1,900.00	17.34	197.78	1,849.00	-360.17	-115.50	-359.63	0.00	0.00	0.00
1,989.04	17.34	197.78	1,934.00	-385.45	-123.60	-384.86	0.00	0.00	0.00
9 5/8"									
2,000.00	17.34	197.78	1,944.46	-388.56	-124.60	-387.96	0.00	0.00	0.00
2,100.00	17.34	197.78	2,039.91	-416.94	-133.70	-416.30	0.00	0.00	0.00
2,200.00	17.34	197.78	2,135.37	-445.32	-142.80	-444.64	0.00	0.00	0.00
2,300.00	17.34	197.78	2,230.82	-473.70	-151.91	-472.98	0.00	0.00	0.00
2,400.00	17.34	197.78	2,326.28	-502.08	-161.01	-501.31	0.00	0.00	0.00
2,500.00	17.34	197.78	2,421.73	-530.46	-170.11	-529.65	0.00	0.00	0.00
2,600.00	17.34	197.78	2,517.19	-558.84	-179.21	-557.99	0.00	0.00	0.00
2,700.00	17.34	197.78	2,612.64	-587.22	-188.31	-586.33	0.00	0.00	0.00
2,800.00	17.34	197.78	2,708.10	-615.60	-197.41	-614.66	0.00	0.00	0.00
2,900.00	17.34	197.78	2,803.56	-643.98	-206.51	-643.00	0.00	0.00	0.00
3,000.00	17.34	197.78	2,899.01	-672.36	-215.61	-671.34	0.00	0.00	0.00
3,100.00	17.34	197.78	2,994.47	-700.74	-224.71	-699.67	0.00	0.00	0.00
3,200.00	17.34	197.78	3,089.92	-729.12	-233.81	-728.01	0.00	0.00	0.00
3,300.00	17.34	197.78	3,185.38	-757.50	-242.92	-756.35	0.00	0.00	0.00
3,400.00	17.34	197.78	3,280.83	-785.88	-252.02	-784.69	0.00	0.00	0.00
3,500.00	17.34	197.78	3,376.29	-814.26	-261.12	-813.02	0.00	0.00	0.00
3,600.00	17.34	197.78	3,471.74	-842.64	-270.22	-841.36	0.00	0.00	0.00
3,700.00	17.34	197.78	3,567.20	-871.03	-279.32	-869.70	0.00	0.00	0.00
3,800.00	17.34	197.78	3,662.65	-899.41	-288.42	-898.04	0.00	0.00	0.00
3,900.00	17.34	197.78	3,758.11	-927.79	-297.52	-926.37	0.00	0.00	0.00
4,000.00	17.34	197.78	3,853.56	-956.17	-306.62	-954.71	0.00	0.00	0.00
4,100.00	17.34	197.78	3,949.02	-984.55	-315.72	-983.05	0.00	0.00	0.00
4,200.00	17.34	197.78	4,044.47	-1,012.93	-324.83	-1,011.39	0.00	0.00	0.00
4,300.00	17.34	197.78	4,139.93	-1,041.31	-333.93	-1,039.72	0.00	0.00	0.00
4,400.00	17.34	197.78	4,235.38	-1,069.69	-343.03	-1,068.06	0.00	0.00	0.00
4,500.00	17.34	197.78	4,330.84	-1,098.07	-352.13	-1,096.40	0.00	0.00	0.00
4,600.00	17.34	197.78	4,426.30	-1,126.45	-361.23	-1,124.74	0.00	0.00	0.00
4,700.00	17.34	197.78	4,521.75	-1,154.83	-370.33	-1,153.07	0.00	0.00	0.00

# Planning Report

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<b>Company:</b>	VERDAD RESOURCES	<b>TVD Reference:</b>	RKB = 20' @ 4944.00usft (Drilling Rig)
<b>Project:</b>	WATTENBERG FIELD	<b>MD Reference:</b>	RKB = 20' @ 4944.00usft (Drilling Rig)
<b>Site:</b>	2N-64W-24 ARNOLD-BOYD PAD	<b>North Reference:</b>	True
<b>Well:</b>	BOYD 2413-05H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Design #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	17.34	197.78	4,617.21	-1,183.21	-379.43	-1,181.41	0.00	0.00	0.00
4,900.00	17.34	197.78	4,712.66	-1,211.59	-388.53	-1,209.75	0.00	0.00	0.00
5,000.00	17.34	197.78	4,808.12	-1,239.97	-397.63	-1,238.08	0.00	0.00	0.00
5,100.00	17.34	197.78	4,903.57	-1,268.35	-406.74	-1,266.42	0.00	0.00	0.00
5,200.00	17.34	197.78	4,999.03	-1,296.73	-415.84	-1,294.76	0.00	0.00	0.00
5,300.00	17.34	197.78	5,094.48	-1,325.11	-424.94	-1,323.10	0.00	0.00	0.00
5,400.00	17.34	197.78	5,189.94	-1,353.49	-434.04	-1,351.43	0.00	0.00	0.00
5,500.00	17.34	197.78	5,285.39	-1,381.88	-443.14	-1,379.77	0.00	0.00	0.00
5,600.00	17.34	197.78	5,380.85	-1,410.26	-452.24	-1,408.11	0.00	0.00	0.00
5,700.00	17.34	197.78	5,476.30	-1,438.64	-461.34	-1,436.45	0.00	0.00	0.00
5,800.00	17.34	197.78	5,571.76	-1,467.02	-470.44	-1,464.78	0.00	0.00	0.00
5,900.00	17.34	197.78	5,667.21	-1,495.40	-479.54	-1,493.12	0.00	0.00	0.00
6,000.00	17.34	197.78	5,762.67	-1,523.78	-488.65	-1,521.46	0.00	0.00	0.00
6,100.00	17.34	197.78	5,858.12	-1,552.16	-497.75	-1,549.80	0.00	0.00	0.00
6,200.00	17.34	197.78	5,953.58	-1,580.54	-506.85	-1,578.13	0.00	0.00	0.00
6,234.77	17.34	197.78	5,986.77	-1,590.41	-510.01	-1,587.99	0.00	0.00	0.00
KOP @ 6234.77ft :: DLS = 9°/100'									
6,250.00	16.05	199.38	6,001.36	-1,594.55	-511.40	-1,592.13	9.00	-8.48	10.52
6,300.00	11.93	206.98	6,049.87	-1,605.69	-516.04	-1,603.24	9.00	-8.24	15.19
6,350.00	8.22	221.79	6,099.10	-1,612.96	-520.77	-1,610.49	9.00	-7.43	29.63
6,400.00	5.75	253.64	6,148.74	-1,616.33	-525.56	-1,613.84	9.00	-4.94	63.70
6,450.00	6.24	297.55	6,198.49	-1,615.78	-530.37	-1,613.26	9.00	0.99	87.83
6,500.00	9.23	323.21	6,248.05	-1,611.31	-535.19	-1,608.77	9.00	5.98	51.32
6,550.00	13.11	335.19	6,297.09	-1,602.94	-539.97	-1,600.38	9.00	7.76	23.96
6,600.00	17.29	341.63	6,345.34	-1,590.74	-544.70	-1,588.15	9.00	8.36	12.87
6,650.00	21.59	345.59	6,392.48	-1,574.77	-549.33	-1,572.16	9.00	8.61	7.92
6,700.00	25.96	348.27	6,438.22	-1,555.13	-553.85	-1,552.50	9.00	8.74	5.37
6,750.00	30.37	350.23	6,482.29	-1,531.94	-558.22	-1,529.30	9.00	8.81	3.91
6,800.00	34.80	351.73	6,524.41	-1,505.36	-562.42	-1,502.69	9.00	8.85	3.00
6,850.00	39.24	352.93	6,564.33	-1,475.53	-566.42	-1,472.84	9.00	8.88	2.40
6,900.00	43.69	353.92	6,601.79	-1,442.65	-570.19	-1,439.94	9.00	8.90	1.98
6,950.00	48.15	354.76	6,636.56	-1,406.91	-573.72	-1,404.19	9.00	8.92	1.68
7,000.00	52.61	355.49	6,668.44	-1,368.55	-576.99	-1,365.81	9.00	8.93	1.46
7,050.00	57.08	356.14	6,697.22	-1,327.78	-579.96	-1,325.04	9.00	8.94	1.30
7,100.00	61.55	356.73	6,722.73	-1,284.88	-582.63	-1,282.12	9.00	8.94	1.17
7,150.00	66.03	357.27	6,744.80	-1,240.09	-584.97	-1,237.32	9.00	8.95	1.08
7,200.00	70.50	357.77	6,763.31	-1,193.70	-586.98	-1,190.92	9.00	8.95	1.01
7,250.00	74.98	358.25	6,778.14	-1,145.99	-588.64	-1,143.21	9.00	8.95	0.95
7,300.00	79.46	358.70	6,789.20	-1,097.26	-589.94	-1,094.47	9.00	8.96	0.91
7,350.00	83.94	359.14	6,796.42	-1,047.81	-590.87	-1,045.01	9.00	8.96	0.89
7,400.00	88.42	359.58	6,799.75	-997.93	-591.42	-995.14	9.00	8.96	0.87
7,417.68	90.00	359.73	6,800.00	-980.26	-591.53	-977.46	9.00	8.96	0.87
TPZ @ 7417.68ft									
7,500.00	90.00	359.73	6,800.00	-897.94	-591.91	-895.14	0.00	0.00	0.00
7,600.00	90.00	359.73	6,800.00	-797.94	-592.38	-795.14	0.00	0.00	0.00
7,700.00	90.00	359.73	6,800.00	-697.94	-592.85	-695.14	0.00	0.00	0.00
7,800.00	90.00	359.73	6,800.00	-597.94	-593.31	-595.14	0.00	0.00	0.00
7,900.00	90.00	359.73	6,800.00	-497.94	-593.78	-495.14	0.00	0.00	0.00
8,000.00	90.00	359.73	6,800.00	-397.94	-594.25	-395.14	0.00	0.00	0.00
8,100.00	90.00	359.73	6,800.00	-297.95	-594.71	-295.14	0.00	0.00	0.00
8,200.00	90.00	359.73	6,800.00	-197.95	-595.18	-195.14	0.00	0.00	0.00
8,300.00	90.00	359.73	6,800.00	-97.95	-595.65	-95.14	0.00	0.00	0.00
8,400.00	90.00	359.73	6,800.00	2.05	-596.12	4.86	0.00	0.00	0.00
8,500.00	90.00	359.73	6,800.00	102.05	-596.58	104.86	0.00	0.00	0.00

## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well BOYD 2413-05H
<b>Company:</b>	VERDAD RESOURCES	<b>TVD Reference:</b>	RKB = 20' @ 4944.00usft (Drilling Rig)
<b>Project:</b>	WATTENBERG FIELD	<b>MD Reference:</b>	RKB = 20' @ 4944.00usft (Drilling Rig)
<b>Site:</b>	2N-64W-24 ARNOLD-BOYD PAD	<b>North Reference:</b>	True
<b>Well:</b>	BOYD 2413-05H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Design #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)	
8,600.00	90.00	359.73	6,800.00	202.05	-597.05	204.86	0.00	0.00	0.00	
8,700.00	90.00	359.73	6,800.00	302.05	-597.52	304.86	0.00	0.00	0.00	
8,800.00	90.00	359.73	6,800.00	402.05	-597.98	404.86	0.00	0.00	0.00	
8,900.00	90.00	359.73	6,800.00	502.05	-598.45	504.86	0.00	0.00	0.00	
9,000.00	90.00	359.73	6,800.00	602.05	-598.92	604.86	0.00	0.00	0.00	
9,100.00	90.00	359.73	6,800.00	702.04	-599.38	704.86	0.00	0.00	0.00	
9,200.00	90.00	359.73	6,800.00	802.04	-599.85	804.86	0.00	0.00	0.00	
9,300.00	90.00	359.73	6,800.00	902.04	-600.32	904.86	0.00	0.00	0.00	
9,400.00	90.00	359.73	6,800.00	1,002.04	-600.79	1,004.86	0.00	0.00	0.00	
9,500.00	90.00	359.73	6,800.00	1,102.04	-601.25	1,104.86	0.00	0.00	0.00	
9,600.00	90.00	359.73	6,800.00	1,202.04	-601.72	1,204.86	0.00	0.00	0.00	
9,700.00	90.00	359.73	6,800.00	1,302.04	-602.19	1,304.86	0.00	0.00	0.00	
9,800.00	90.00	359.73	6,800.00	1,402.04	-602.65	1,404.86	0.00	0.00	0.00	
9,900.00	90.00	359.73	6,800.00	1,502.04	-603.12	1,504.86	0.00	0.00	0.00	
10,000.00	90.00	359.73	6,800.00	1,602.03	-603.59	1,604.86	0.00	0.00	0.00	
10,100.00	90.00	359.73	6,800.00	1,702.03	-604.06	1,704.86	0.00	0.00	0.00	
10,200.00	90.00	359.73	6,800.00	1,802.03	-604.52	1,804.86	0.00	0.00	0.00	
10,300.00	90.00	359.73	6,800.00	1,902.03	-604.99	1,904.86	0.00	0.00	0.00	
10,400.00	90.00	359.73	6,800.00	2,002.03	-605.46	2,004.86	0.00	0.00	0.00	
10,500.00	90.00	359.73	6,800.00	2,102.03	-605.92	2,104.86	0.00	0.00	0.00	
10,600.00	90.00	359.73	6,800.00	2,202.03	-606.39	2,204.86	0.00	0.00	0.00	
10,700.00	90.00	359.73	6,800.00	2,302.03	-606.86	2,304.86	0.00	0.00	0.00	
10,800.00	90.00	359.73	6,800.00	2,402.03	-607.33	2,404.86	0.00	0.00	0.00	
10,900.00	90.00	359.73	6,800.00	2,502.02	-607.79	2,504.86	0.00	0.00	0.00	
11,000.00	90.00	359.73	6,800.00	2,602.02	-608.26	2,604.86	0.00	0.00	0.00	
11,100.00	90.00	359.73	6,800.00	2,702.02	-608.73	2,704.86	0.00	0.00	0.00	
11,200.00	90.00	359.73	6,800.00	2,802.02	-609.19	2,804.86	0.00	0.00	0.00	
11,300.00	90.00	359.73	6,800.00	2,902.02	-609.66	2,904.86	0.00	0.00	0.00	
11,400.00	90.00	359.73	6,800.00	3,002.02	-610.13	3,004.86	0.00	0.00	0.00	
11,500.00	90.00	359.73	6,800.00	3,102.02	-610.59	3,104.86	0.00	0.00	0.00	
11,600.00	90.00	359.73	6,800.00	3,202.02	-611.06	3,204.86	0.00	0.00	0.00	
11,700.00	90.00	359.73	6,800.00	3,302.02	-611.53	3,304.86	0.00	0.00	0.00	
11,800.00	90.00	359.73	6,800.00	3,402.01	-612.00	3,404.86	0.00	0.00	0.00	
11,900.00	90.00	359.73	6,800.00	3,502.01	-612.46	3,504.86	0.00	0.00	0.00	
12,000.00	90.00	359.73	6,800.00	3,602.01	-612.93	3,604.86	0.00	0.00	0.00	
12,100.00	90.00	359.73	6,800.00	3,702.01	-613.40	3,704.86	0.00	0.00	0.00	
12,200.00	90.00	359.73	6,800.00	3,802.01	-613.86	3,804.86	0.00	0.00	0.00	
12,300.00	90.00	359.73	6,800.00	3,902.01	-614.33	3,904.86	0.00	0.00	0.00	
12,400.00	90.00	359.73	6,800.00	4,002.01	-614.80	4,004.86	0.00	0.00	0.00	
12,500.00	90.00	359.73	6,800.00	4,102.01	-615.27	4,104.86	0.00	0.00	0.00	
12,600.00	90.00	359.73	6,800.00	4,202.01	-615.73	4,204.86	0.00	0.00	0.00	
12,700.00	90.00	359.73	6,800.00	4,302.00	-616.20	4,304.86	0.00	0.00	0.00	
12,800.00	90.00	359.73	6,800.00	4,402.00	-616.67	4,404.86	0.00	0.00	0.00	
12,900.00	90.00	359.73	6,800.00	4,502.00	-617.13	4,504.86	0.00	0.00	0.00	
13,000.00	90.00	359.73	6,800.00	4,602.00	-617.60	4,604.86	0.00	0.00	0.00	
13,100.00	90.00	359.73	6,800.00	4,702.00	-618.07	4,704.86	0.00	0.00	0.00	
13,200.00	90.00	359.73	6,800.00	4,802.00	-618.53	4,804.86	0.00	0.00	0.00	
13,300.00	90.00	359.73	6,800.00	4,902.00	-619.00	4,904.86	0.00	0.00	0.00	
13,400.00	90.00	359.73	6,800.00	5,002.00	-619.47	5,004.86	0.00	0.00	0.00	
13,500.00	90.00	359.73	6,800.00	5,102.00	-619.94	5,104.86	0.00	0.00	0.00	
13,600.00	90.00	359.73	6,800.00	5,202.00	-620.40	5,204.86	0.00	0.00	0.00	
13,700.00	90.00	359.73	6,800.00	5,301.99	-620.87	5,304.86	0.00	0.00	0.00	
13,800.00	90.00	359.73	6,800.00	5,401.99	-621.34	5,404.86	0.00	0.00	0.00	
13,900.00	90.00	359.73	6,800.00	5,501.99	-621.80	5,504.86	0.00	0.00	0.00	

## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well BOYD 2413-05H
<b>Company:</b>	VERDAD RESOURCES	<b>TVD Reference:</b>	RKB = 20' @ 4944.00usft (Drilling Rig)
<b>Project:</b>	WATTENBERG FIELD	<b>MD Reference:</b>	RKB = 20' @ 4944.00usft (Drilling Rig)
<b>Site:</b>	2N-64W-24 ARNOLD-BOYD PAD	<b>North Reference:</b>	True
<b>Well:</b>	BOYD 2413-05H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Design #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	359.73	6,800.00	5,601.99	-622.27	5,604.86	0.00	0.00	0.00	
14,100.00	90.00	359.73	6,800.00	5,701.99	-622.74	5,704.86	0.00	0.00	0.00	
14,200.00	90.00	359.73	6,800.00	5,801.99	-623.21	5,804.86	0.00	0.00	0.00	
14,300.00	90.00	359.73	6,800.00	5,901.99	-623.67	5,904.86	0.00	0.00	0.00	
14,400.00	90.00	359.73	6,800.00	6,001.99	-624.14	6,004.86	0.00	0.00	0.00	
14,500.00	90.00	359.73	6,800.00	6,101.99	-624.61	6,104.86	0.00	0.00	0.00	
14,600.00	90.00	359.73	6,800.00	6,201.98	-625.07	6,204.86	0.00	0.00	0.00	
14,700.00	90.00	359.73	6,800.00	6,301.98	-625.54	6,304.86	0.00	0.00	0.00	
14,800.00	90.00	359.73	6,800.00	6,401.98	-626.01	6,404.86	0.00	0.00	0.00	
14,900.00	90.00	359.73	6,800.00	6,501.98	-626.48	6,504.86	0.00	0.00	0.00	
15,000.00	90.00	359.73	6,800.00	6,601.98	-626.94	6,604.86	0.00	0.00	0.00	
15,100.00	90.00	359.73	6,800.00	6,701.98	-627.41	6,704.86	0.00	0.00	0.00	
15,200.00	90.00	359.73	6,800.00	6,801.98	-627.88	6,804.86	0.00	0.00	0.00	
15,300.00	90.00	359.73	6,800.00	6,901.98	-628.34	6,904.86	0.00	0.00	0.00	
15,400.00	90.00	359.73	6,800.00	7,001.98	-628.81	7,004.86	0.00	0.00	0.00	
15,500.00	90.00	359.73	6,800.00	7,101.97	-629.28	7,104.86	0.00	0.00	0.00	
15,600.00	90.00	359.73	6,800.00	7,201.97	-629.74	7,204.86	0.00	0.00	0.00	
15,700.00	90.00	359.73	6,800.00	7,301.97	-630.21	7,304.86	0.00	0.00	0.00	
15,800.00	90.00	359.73	6,800.00	7,401.97	-630.68	7,404.86	0.00	0.00	0.00	
15,900.00	90.00	359.73	6,800.00	7,501.97	-631.15	7,504.86	0.00	0.00	0.00	
16,000.00	90.00	359.73	6,800.00	7,601.97	-631.61	7,604.86	0.00	0.00	0.00	
16,100.00	90.00	359.73	6,800.00	7,701.97	-632.08	7,704.86	0.00	0.00	0.00	
16,200.00	90.00	359.73	6,800.00	7,801.97	-632.55	7,804.86	0.00	0.00	0.00	
16,300.00	90.00	359.73	6,800.00	7,901.97	-633.01	7,904.86	0.00	0.00	0.00	
16,400.00	90.00	359.73	6,800.00	8,001.96	-633.48	8,004.86	0.00	0.00	0.00	
16,500.00	90.00	359.73	6,800.00	8,101.96	-633.95	8,104.86	0.00	0.00	0.00	
16,600.00	90.00	359.73	6,800.00	8,201.96	-634.42	8,204.86	0.00	0.00	0.00	
16,700.00	90.00	359.73	6,800.00	8,301.96	-634.88	8,304.86	0.00	0.00	0.00	
16,800.00	90.00	359.73	6,800.00	8,401.96	-635.35	8,404.86	0.00	0.00	0.00	
16,900.00	90.00	359.73	6,800.00	8,501.96	-635.82	8,504.86	0.00	0.00	0.00	
17,000.00	90.00	359.73	6,800.00	8,601.96	-636.28	8,604.86	0.00	0.00	0.00	
17,028.56	90.00	359.73	6,800.00	8,630.52	-636.42	8,633.42	0.00	0.00	0.00	
BPZ @ 17028.56ft										
17,100.00	90.00	359.73	6,800.00	8,701.96	-636.75	8,704.86	0.00	0.00	0.00	
17,118.54	90.00	359.73	6,800.00	8,720.50	-636.84	8,723.40	0.00	0.00	0.00	
TD Well @ 17118.54ft										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (")	Hole Diameter (")
1,989.04	1,934.00	9 5/8"		9-5/8	13-1/2



Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well BOYD 2413-05H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 4944.00usft (Drilling Rig)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 4944.00usft (Drilling Rig)
Site:	2N-64W-24 ARNOLD-BOYD PAD	North Reference:	True
Well:	BOYD 2413-05H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Design #1		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
200.75	200.75	0.00	0.00	Begin Nudge @ 200.75ft
1,067.75	1,054.58	-123.98	-39.76	Hold Tangent @ 1067.75ft
6,234.77	5,986.77	-1,590.41	-510.01	KOP @ 6234.77ft :: DLS = 9°/100'
7,417.68	6,800.00	-980.26	-591.53	TPZ @ 7417.68ft
17,028.56	6,800.00	8,630.52	-636.42	BPZ @ 17028.56ft
17,118.54	6,800.00	8,720.50	-636.84	TD Well @ 17118.54ft