

# **VERDAD RESOURCES**

**WATTENBERG FIELD**

**9N-59W-17 TIMBRO 1717 PAD**

**TIMBRO 1717-11H**

**Wellbore #1**

**Plan: Design #1**

## **Standard Planning Report**

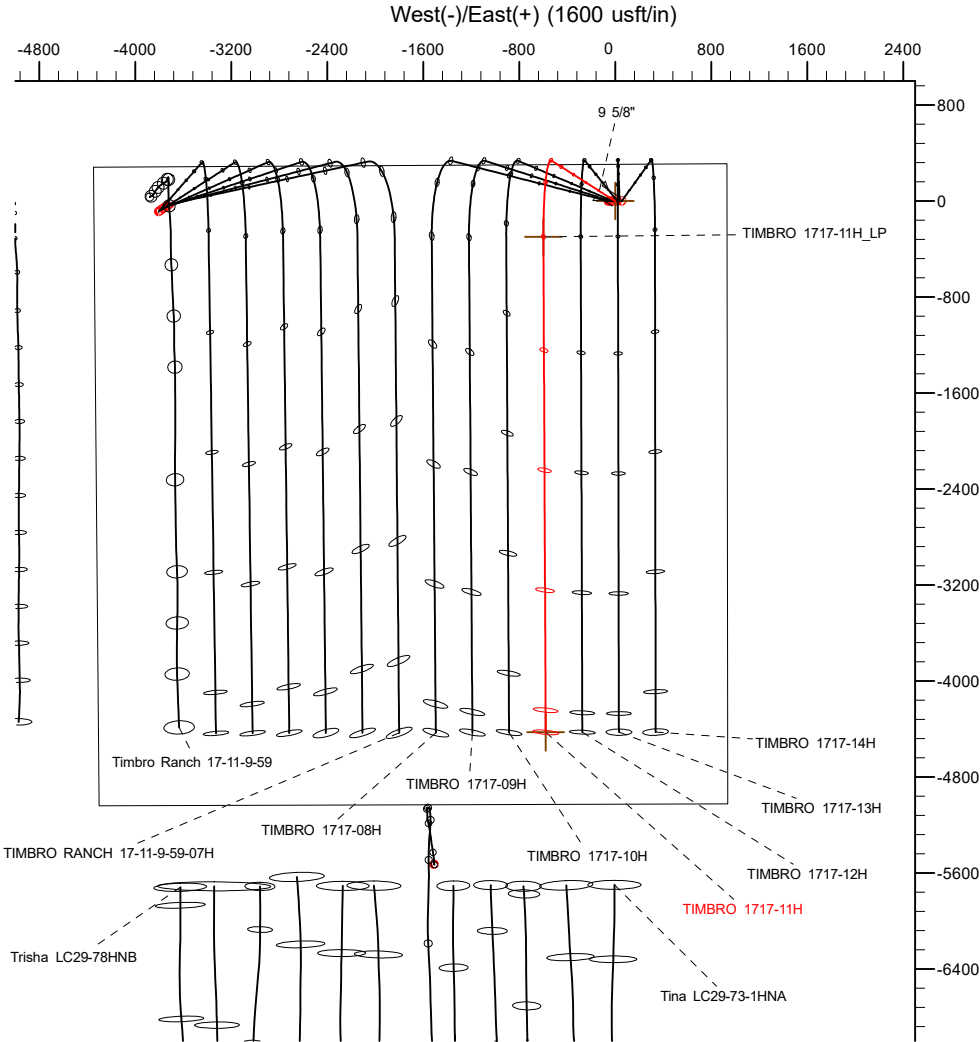
**10 April, 2018**

Project: WATTENBERG FIELD  
 Site: 9N-59W-17 TIMBRO 1717 PAD  
 Well: TIMBRO 1717-11H  
 Wellbore: Wellbore #1  
 Design: Design #1

# VERDAD RESOURCES

## CASING DETAILS

TVD	MD	Name	Size
1700.00	1709.07	9 5/8"	9-5/8

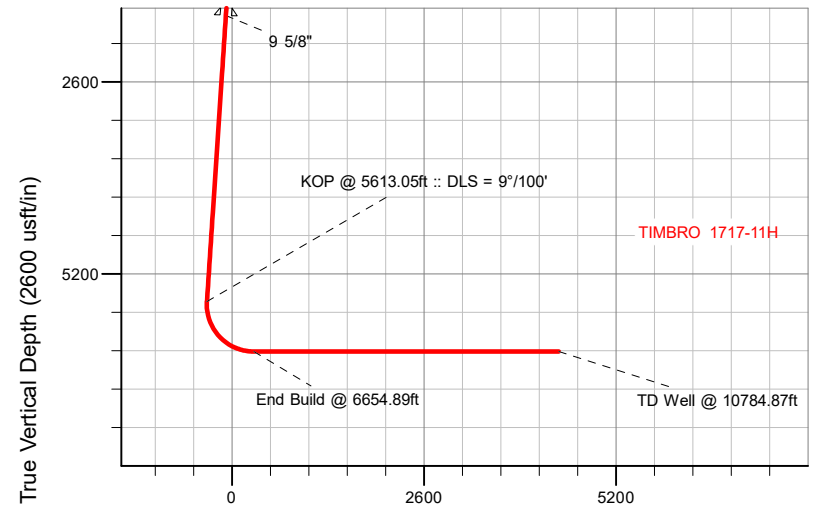


## SECTION DETAILS

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	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	598.50	6.97	302.50	597.84	11.38	-17.86	2.00	302.50	-11.46	
4	5613.05	6.97	302.50	5575.13	338.33	-531.07	0.00	0.00	-340.74	
5	6654.89	90.00	179.74	6250.00	-297.23	-597.53	9.00	-122.57	294.51	
6	10784.87	90.00	179.74	6250.00	-4427.16	-578.54	0.00	0.00	4424.49	TIMBRO 1717-11H_BHL

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
TIMBRO 1717-11H_SHL	0.00	0.00	0.00	40.756952	-103.995971
TIMBRO 1717-11H_BHL	6250.00	-4427.16	-578.54	40.744801	-103.998059

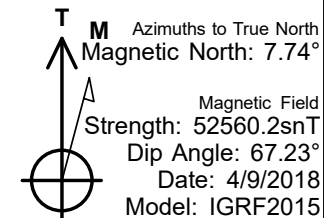


Vertical Section at 179.74° (2600 usft/in)

SHL  
306' FNL  
932' FEL

LP  
600' FNL  
1530' FEL

BHL  
600' FSL  
1516' FEL



## WELL DETAILS: TIMBRO 1717-11H

GL = 5011'

RKB = 20' @ 5031.00usft (RIG)

Plan: Design #1 (TIMBRO 1717-11H/Wellbore #1)

Created By: \_\_\_\_\_ Date: 4/09/2018  
 Reviewed: \_\_\_\_\_ Date: \_\_\_\_\_

# Hewlett-Packard

## Planning Report

<b>Database:</b>	EDM 5000.14 Single User Db	<b>Local Co-ordinate Reference:</b>	Well TIMBRO 1717-11H
<b>Company:</b>	VERDAD RESOURCES	<b>TVD Reference:</b>	RKB = 20' @ 5031.00usft (RIG)
<b>Project:</b>	WATTENBERG FIELD	<b>MD Reference:</b>	RKB = 20' @ 5031.00usft (RIG)
<b>Site:</b>	9N-59W-17 TIMBRO 1717 PAD	<b>North Reference:</b>	True
<b>Well:</b>	TIMBRO 1717-11H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<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		

Site		9N-59W-17 TIMBRO 1717 PAD			
Site Position:		Northing:	1,522,135.25 usft	Latitude:	40.756951
From:	Lat/Long	Easting:	3,416,606.55 usft	Longitude:	-103.996171
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.97 °

Well	TIMBRO 1717-11H					
Well Position	+N/-S	0.28 usft	Northing:	1,522,136.47 usft	Latitude:	40.756952
	+E/-W	55.49 usft	Easting:	3,416,662.03 usft	Longitude:	-103.995971
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	5,011.00 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	4/9/2018	7.73	67.23	52,560.15955185

<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	179.74

<b>Plan Survey Tool Program</b>	<b>Date</b>	4/10/2018		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	1,700.00	Design #1 (Wellbore #1)	ISCWSA REV 2 MWD Fixed:v2:standard declination
2	1,700.00	10,784.87	Design #1 (Wellbore #1)	ISCWSA REV 2 MWD Fixed:v2:standard declination

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
598.50	6.97	302.50	597.64	11.38	-17.86	2.00	2.00	0.00	302.50	
5,613.05	6.97	302.50	5,575.13	338.33	-531.07	0.00	0.00	0.00	0.00	
6,654.89	90.00	179.74	6,250.00	-297.23	-597.53	9.00	7.97	-11.78	-122.57	
10,784.87	90.00	179.74	6,250.00	-4,427.16	-578.54	0.00	0.00	0.00	0.00	TIMBRO 1717-11H_B

# Hewlett-Packard

## Planning Report

<b>Database:</b>	EDM 5000.14 Single User Db	<b>Local Co-ordinate Reference:</b>	Well TIMBRO 1717-11H
<b>Company:</b>	VERDAD RESOURCES	<b>TVD Reference:</b>	RKB = 20' @ 5031.00usft (RIG)
<b>Project:</b>	WATTENBERG FIELD	<b>MD Reference:</b>	RKB = 20' @ 5031.00usft (RIG)
<b>Site:</b>	9N-59W-17 TIMBRO 1717 PAD	<b>North Reference:</b>	True
<b>Well:</b>	TIMBRO 1717-11H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<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
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Tangent @ 250.00ft									
300.00	1.00	302.50	300.00	0.23	-0.37	-0.24	2.00	2.00	0.00
400.00	3.00	302.50	399.93	2.11	-3.31	-2.12	2.00	2.00	0.00
500.00	5.00	302.50	499.68	5.86	-9.19	-5.90	2.00	2.00	0.00
598.50	6.97	302.50	597.64	11.38	-17.86	-11.46	2.00	2.00	0.00
End Tangent @ 598.50ft									
600.00	6.97	302.50	599.13	11.47	-18.01	-11.55	0.00	0.00	0.00
700.00	6.97	302.50	698.39	17.99	-28.24	-18.12	0.00	0.00	0.00
800.00	6.97	302.50	797.65	24.51	-38.48	-24.69	0.00	0.00	0.00
900.00	6.97	302.50	896.91	31.03	-48.71	-31.25	0.00	0.00	0.00
1,000.00	6.97	302.50	996.17	37.55	-58.95	-37.82	0.00	0.00	0.00
1,100.00	6.97	302.50	1,095.43	44.07	-69.18	-44.39	0.00	0.00	0.00
1,200.00	6.97	302.50	1,194.70	50.59	-79.42	-50.95	0.00	0.00	0.00
1,300.00	6.97	302.50	1,293.96	57.11	-89.65	-57.52	0.00	0.00	0.00
1,400.00	6.97	302.50	1,393.22	63.63	-99.89	-64.09	0.00	0.00	0.00
1,500.00	6.97	302.50	1,492.48	70.15	-110.12	-70.65	0.00	0.00	0.00
1,600.00	6.97	302.50	1,591.74	76.67	-120.35	-77.22	0.00	0.00	0.00
1,700.00	6.97	302.50	1,691.00	83.19	-130.59	-83.79	0.00	0.00	0.00
1,709.07	6.97	302.50	1,700.00	83.79	-131.52	-84.38	0.00	0.00	0.00
9 5/8"									
1,800.00	6.97	302.50	1,790.26	89.71	-140.82	-90.35	0.00	0.00	0.00
1,900.00	6.97	302.50	1,889.52	96.23	-151.06	-96.92	0.00	0.00	0.00
2,000.00	6.97	302.50	1,988.78	102.75	-161.29	-103.49	0.00	0.00	0.00
2,100.00	6.97	302.50	2,088.04	109.27	-171.53	-110.05	0.00	0.00	0.00
2,200.00	6.97	302.50	2,187.31	115.79	-181.76	-116.62	0.00	0.00	0.00
2,300.00	6.97	302.50	2,286.57	122.32	-192.00	-123.19	0.00	0.00	0.00
2,400.00	6.97	302.50	2,385.83	128.84	-202.23	-129.75	0.00	0.00	0.00
2,500.00	6.97	302.50	2,485.09	135.36	-212.47	-136.32	0.00	0.00	0.00
2,600.00	6.97	302.50	2,584.35	141.88	-222.70	-142.88	0.00	0.00	0.00
2,700.00	6.97	302.50	2,683.61	148.40	-232.93	-149.45	0.00	0.00	0.00
2,800.00	6.97	302.50	2,782.87	154.92	-243.17	-156.02	0.00	0.00	0.00
2,900.00	6.97	302.50	2,882.13	161.44	-253.40	-162.58	0.00	0.00	0.00
3,000.00	6.97	302.50	2,981.39	167.96	-263.64	-169.15	0.00	0.00	0.00
3,100.00	6.97	302.50	3,080.65	174.48	-273.87	-175.72	0.00	0.00	0.00
3,200.00	6.97	302.50	3,179.92	181.00	-284.11	-182.28	0.00	0.00	0.00
3,300.00	6.97	302.50	3,279.18	187.52	-294.34	-188.85	0.00	0.00	0.00
3,400.00	6.97	302.50	3,378.44	194.04	-304.58	-195.42	0.00	0.00	0.00
3,500.00	6.97	302.50	3,477.70	200.56	-314.81	-201.98	0.00	0.00	0.00
3,600.00	6.97	302.50	3,576.96	207.08	-325.04	-208.55	0.00	0.00	0.00
3,700.00	6.97	302.50	3,676.22	213.60	-335.28	-215.12	0.00	0.00	0.00
3,800.00	6.97	302.50	3,775.48	220.12	-345.51	-221.68	0.00	0.00	0.00
3,900.00	6.97	302.50	3,874.74	226.64	-355.75	-228.25	0.00	0.00	0.00
4,000.00	6.97	302.50	3,974.00	233.16	-365.98	-234.82	0.00	0.00	0.00
4,100.00	6.97	302.50	4,073.26	239.68	-376.22	-241.38	0.00	0.00	0.00
4,200.00	6.97	302.50	4,172.53	246.20	-386.45	-247.95	0.00	0.00	0.00
4,300.00	6.97	302.50	4,271.79	252.72	-396.69	-254.51	0.00	0.00	0.00
4,400.00	6.97	302.50	4,371.05	259.24	-406.92	-261.08	0.00	0.00	0.00
4,500.00	6.97	302.50	4,470.31	265.76	-417.16	-267.65	0.00	0.00	0.00
4,600.00	6.97	302.50	4,569.57	272.28	-427.39	-274.21	0.00	0.00	0.00

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## Planning Report

<b>Database:</b>	EDM 5000.14 Single User Db	<b>Local Co-ordinate Reference:</b>	Well TIMBRO 1717-11H
<b>Company:</b>	VERDAD RESOURCES	<b>TVD Reference:</b>	RKB = 20' @ 5031.00usft (RIG)
<b>Project:</b>	WATTENBERG FIELD	<b>MD Reference:</b>	RKB = 20' @ 5031.00usft (RIG)
<b>Site:</b>	9N-59W-17 TIMBRO 1717 PAD	<b>North Reference:</b>	True
<b>Well:</b>	TIMBRO 1717-11H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<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)	
4,700.00	6.97	302.50	4,668.83	278.80	-437.62	-280.78	0.00	0.00	0.00	
4,800.00	6.97	302.50	4,768.09	285.32	-447.86	-287.35	0.00	0.00	0.00	
4,900.00	6.97	302.50	4,867.35	291.84	-458.09	-293.91	0.00	0.00	0.00	
5,000.00	6.97	302.50	4,966.61	298.36	-468.33	-300.48	0.00	0.00	0.00	
5,100.00	6.97	302.50	5,065.87	304.88	-478.56	-307.05	0.00	0.00	0.00	
5,200.00	6.97	302.50	5,165.14	311.40	-488.80	-313.61	0.00	0.00	0.00	
5,300.00	6.97	302.50	5,264.40	317.92	-499.03	-320.18	0.00	0.00	0.00	
5,400.00	6.97	302.50	5,363.66	324.44	-509.27	-326.75	0.00	0.00	0.00	
5,500.00	6.97	302.50	5,462.92	330.96	-519.50	-333.31	0.00	0.00	0.00	
5,600.00	6.97	302.50	5,562.18	337.48	-529.74	-339.88	0.00	0.00	0.00	
5,613.05	6.97	302.50	5,575.13	338.33	-531.07	-340.74	0.00	0.00	0.00	
KOP @ 5613.05ft :: DLS = 9°/100'										
5,700.00	7.13	234.97	5,661.56	338.07	-539.95	-340.51	9.00	0.19	-77.66	
5,800.00	14.30	203.53	5,759.83	323.15	-549.99	-325.64	9.00	7.16	-31.45	
5,900.00	22.79	193.90	5,854.57	292.97	-559.59	-295.50	9.00	8.49	-9.63	
6,000.00	31.56	189.37	5,943.45	248.26	-568.52	-250.83	9.00	8.77	-4.53	
6,100.00	40.42	186.67	6,024.30	190.12	-576.57	-192.74	9.00	8.86	-2.70	
6,200.00	49.32	184.81	6,095.10	120.00	-583.52	-122.64	9.00	8.90	-1.86	
6,300.00	58.25	183.38	6,154.13	39.60	-589.22	-42.28	9.00	8.93	-1.42	
6,400.00	67.19	182.21	6,199.92	-49.08	-593.52	46.38	9.00	8.94	-1.17	
6,500.00	76.13	181.19	6,231.35	-143.86	-596.32	141.15	9.00	8.95	-1.02	
6,600.00	85.09	180.24	6,247.65	-242.41	-597.54	239.69	9.00	8.95	-0.95	
6,654.89	90.00	179.74	6,250.00	-297.23	-597.53	294.51	9.00	8.95	-0.92	
End Build @ 6654.89ft										
6,700.00	90.00	179.74	6,250.00	-342.34	-597.32	339.63	0.00	0.00	0.00	
6,800.00	90.00	179.74	6,250.00	-442.34	-596.86	439.63	0.00	0.00	0.00	
6,900.00	90.00	179.74	6,250.00	-542.34	-596.40	539.63	0.00	0.00	0.00	
7,000.00	90.00	179.74	6,250.00	-642.34	-595.94	639.63	0.00	0.00	0.00	
7,100.00	90.00	179.74	6,250.00	-742.34	-595.48	739.63	0.00	0.00	0.00	
7,200.00	90.00	179.74	6,250.00	-842.33	-595.02	839.63	0.00	0.00	0.00	
7,300.00	90.00	179.74	6,250.00	-942.33	-594.56	939.63	0.00	0.00	0.00	
7,400.00	90.00	179.74	6,250.00	-1,042.33	-594.10	1,039.63	0.00	0.00	0.00	
7,500.00	90.00	179.74	6,250.00	-1,142.33	-593.64	1,139.63	0.00	0.00	0.00	
7,600.00	90.00	179.74	6,250.00	-1,242.33	-593.18	1,239.63	0.00	0.00	0.00	
7,700.00	90.00	179.74	6,250.00	-1,342.33	-592.73	1,339.63	0.00	0.00	0.00	
7,800.00	90.00	179.74	6,250.00	-1,442.33	-592.27	1,439.63	0.00	0.00	0.00	
7,900.00	90.00	179.74	6,250.00	-1,542.33	-591.81	1,539.63	0.00	0.00	0.00	
8,000.00	90.00	179.74	6,250.00	-1,642.33	-591.35	1,639.63	0.00	0.00	0.00	
8,100.00	90.00	179.74	6,250.00	-1,742.33	-590.89	1,739.63	0.00	0.00	0.00	
8,200.00	90.00	179.74	6,250.00	-1,842.32	-590.43	1,839.63	0.00	0.00	0.00	
8,300.00	90.00	179.74	6,250.00	-1,942.32	-589.97	1,939.63	0.00	0.00	0.00	
8,400.00	90.00	179.74	6,250.00	-2,042.32	-589.51	2,039.63	0.00	0.00	0.00	
8,500.00	90.00	179.74	6,250.00	-2,142.32	-589.05	2,139.63	0.00	0.00	0.00	
8,600.00	90.00	179.74	6,250.00	-2,242.32	-588.59	2,239.63	0.00	0.00	0.00	
8,700.00	90.00	179.74	6,250.00	-2,342.32	-588.13	2,339.63	0.00	0.00	0.00	
8,800.00	90.00	179.74	6,250.00	-2,442.32	-587.67	2,439.63	0.00	0.00	0.00	
8,900.00	90.00	179.74	6,250.00	-2,542.32	-587.21	2,539.63	0.00	0.00	0.00	
9,000.00	90.00	179.74	6,250.00	-2,642.32	-586.75	2,639.63	0.00	0.00	0.00	
9,100.00	90.00	179.74	6,250.00	-2,742.31	-586.29	2,739.63	0.00	0.00	0.00	
9,200.00	90.00	179.74	6,250.00	-2,842.31	-585.83	2,839.63	0.00	0.00	0.00	
9,300.00	90.00	179.74	6,250.00	-2,942.31	-585.37	2,939.63	0.00	0.00	0.00	
9,400.00	90.00	179.74	6,250.00	-3,042.31	-584.91	3,039.63	0.00	0.00	0.00	
9,500.00	90.00	179.74	6,250.00	-3,142.31	-584.45	3,139.63	0.00	0.00	0.00	
9,600.00	90.00	179.74	6,250.00	-3,242.31	-583.99	3,239.63	0.00	0.00	0.00	

# Hewlett-Packard

## Planning Report

<b>Database:</b>	EDM 5000.14 Single User Db	<b>Local Co-ordinate Reference:</b>	Well TIMBRO 1717-11H
<b>Company:</b>	VERDAD RESOURCES	<b>TVD Reference:</b>	RKB = 20' @ 5031.00usft (RIG)
<b>Project:</b>	WATTENBERG FIELD	<b>MD Reference:</b>	RKB = 20' @ 5031.00usft (RIG)
<b>Site:</b>	9N-59W-17 TIMBRO 1717 PAD	<b>North Reference:</b>	True
<b>Well:</b>	TIMBRO 1717-11H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<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)	
9,700.00	90.00	179.74	6,250.00	-3,342.31	-583.53	3,339.63	0.00	0.00	0.00	
9,800.00	90.00	179.74	6,250.00	-3,442.31	-583.07	3,439.63	0.00	0.00	0.00	
9,900.00	90.00	179.74	6,250.00	-3,542.31	-582.61	3,539.63	0.00	0.00	0.00	
10,000.00	90.00	179.74	6,250.00	-3,642.31	-582.15	3,639.63	0.00	0.00	0.00	
10,100.00	90.00	179.74	6,250.00	-3,742.30	-581.69	3,739.63	0.00	0.00	0.00	
10,200.00	90.00	179.74	6,250.00	-3,842.30	-581.23	3,839.63	0.00	0.00	0.00	
10,300.00	90.00	179.74	6,250.00	-3,942.30	-580.77	3,939.63	0.00	0.00	0.00	
10,400.00	90.00	179.74	6,250.00	-4,042.30	-580.31	4,039.63	0.00	0.00	0.00	
10,500.00	90.00	179.74	6,250.00	-4,142.30	-579.85	4,139.63	0.00	0.00	0.00	
10,600.00	90.00	179.74	6,250.00	-4,242.30	-579.39	4,239.63	0.00	0.00	0.00	
10,700.00	90.00	179.74	6,250.00	-4,342.30	-578.93	4,339.63	0.00	0.00	0.00	
10,784.87	90.00	179.74	6,250.00	-4,427.16	-578.54	4,424.49	0.00	0.00	0.00	
TD Well @ 10784.87ft										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,709.07	1,700.00	9 5/8"	9-5/8	13-1/2	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
250.00	250.00	0.00	0.00	Begin Tangent @ 250.00ft	
598.50	597.64	11.38	-17.86	End Tangent @ 598.50ft	
5,613.05	5,575.13	338.33	-531.07	KOP @ 5613.05ft :: DLS = 9°/100'	
6,654.89	6,250.00	-297.23	-597.53	End Build @ 6654.89ft	
10,784.87	6,250.00	-4,427.16	-578.54	TD Well @ 10784.87ft	