

VERDAD RESOURCES

WATTENBERG FIELD

9N-59W-17 TIMBRO 1717 PAD

TIMBRO 1717-12H

Wellbore #1

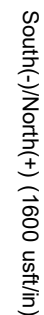
Plan: Design #1

Standard Planning Report

10 April, 2018

VERDAD RESOURCES

CASING DETAILS			
TVD	MD	Name	Size
1700.00	1704.50	9 5/8"	9-5/8



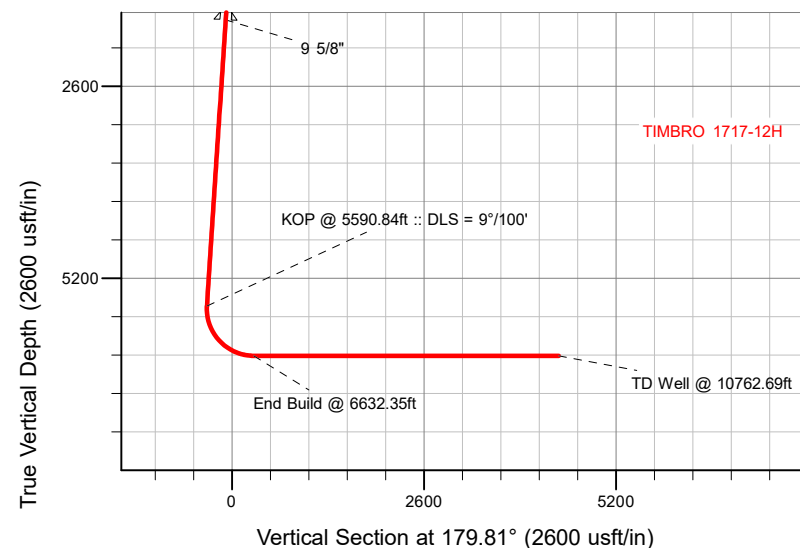
SHL
306 FNL
913' FEL


LP
600' FNL
1220' FEL

BHL
600' FSL
1211' FEL

SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	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	489.00	4.78	321.25	488.72	7.77	-6.24	0.00	321.25	-7.79	
4	5590.84	4.78	321.25	5572.82	339.33	-272.33	0.00	321.25	-340.23	
5	6632.35	90.00	179.81	6250.00	-296.05	-305.52	9.00	-141.34	295.04	
6	10762.69	90.00	179.81	6250.00	-4426.37	-291.78	0.00	0.00	4425.37	TIMBRO 1717-12H BHL

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
TIMBRO 1717-12H_SHL	0.00	0.00	0.00	40.756952	-103.995904
TIMBRO 1717-12H_BHL	6250.00	-4426.37	-291.78	40.744803	-103.996957



 <p> M Azimuths to True North Magnetic North: 7.74° Magnetic Field Strength: 52560.2snT Dip Angle: 67.23° Date: 4/9/2018 Model: IGRF2015 </p>	WELL DETAILS: TIMBRO 1717-12H	
	GL = 5011'	
	RKB = 20' @ 5031.00usft (RIG)	
	Plan: Design #1 (TIMBRO 1717-12H/Wellbore #1)	
Created By:		Date: 4/09/2018
Reviewed: _____		Date: _____

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Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well TIMBRO 1717-12H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 5031.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 5031.00usft (RIG)
Site:	9N-59W-17 TIMBRO 1717 PAD	North Reference:	True
Well:	TIMBRO 1717-12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #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		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 1717-12H					
Well Position	+N/-S	0.39 usft	Northing:	1,522,136.89 usft	Latitude:	40.756952
	+E/-W	74.00 usft	Easting:	3,416,680.53 usft	Longitude:	-103.995904
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	5,011.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	4/9/2018	7.73	67.23	52,560.16629534

Design	Design #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	179.81

Plan Survey Tool Program	Date	4/10/2018		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	1,700.00	Design #1 (Wellbore #1)	ISCWSA REV 2 MWD Fixed:v2:standard declination
2	1,700.00	10,762.69	Design #1 (Wellbore #1)	ISCWSA REV 2 MWD Fixed:v2:standard declination

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	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
489.00	4.78	321.25	488.72	7.77	-6.24	2.00	2.00	0.00	321.25	
5,590.84	4.78	321.25	5,572.82	339.33	-272.34	0.00	0.00	0.00	0.00	
6,632.35	90.00	179.81	6,250.00	-296.05	-305.52	9.00	8.18	-13.58	-141.34	
10,762.69	90.00	179.81	6,250.00	-4,426.37	-291.78	0.00	0.00	0.00	0.00	TIMBRO 1717-12H_E

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Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well TIMBRO 1717-12H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 5031.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 5031.00usft (RIG)
Site:	9N-59W-17 TIMBRO 1717 PAD	North Reference:	True
Well:	TIMBRO 1717-12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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	321.25	300.00	0.34	-0.27	-0.34	2.00	2.00	0.00
400.00	3.00	321.25	399.93	3.06	-2.46	-3.07	2.00	2.00	0.00
489.00	4.78	321.25	488.72	7.77	-6.24	-7.79	2.00	2.00	0.00
End Tangent @ 489.00ft									
500.00	4.78	321.25	499.68	8.49	-6.81	-8.51	0.00	0.00	0.00
600.00	4.78	321.25	599.34	14.98	-12.03	-15.02	0.00	0.00	0.00
700.00	4.78	321.25	698.99	21.48	-17.24	-21.54	0.00	0.00	0.00
800.00	4.78	321.25	798.64	27.98	-22.46	-28.06	0.00	0.00	0.00
900.00	4.78	321.25	898.29	34.48	-27.67	-34.57	0.00	0.00	0.00
1,000.00	4.78	321.25	997.95	40.98	-32.89	-41.09	0.00	0.00	0.00
1,100.00	4.78	321.25	1,097.60	47.48	-38.11	-47.60	0.00	0.00	0.00
1,200.00	4.78	321.25	1,197.25	53.98	-43.32	-54.12	0.00	0.00	0.00
1,300.00	4.78	321.25	1,296.90	60.48	-48.54	-60.64	0.00	0.00	0.00
1,400.00	4.78	321.25	1,396.55	66.97	-53.75	-67.15	0.00	0.00	0.00
1,500.00	4.78	321.25	1,496.21	73.47	-58.97	-73.67	0.00	0.00	0.00
1,600.00	4.78	321.25	1,595.86	79.97	-64.18	-80.18	0.00	0.00	0.00
1,700.00	4.78	321.25	1,695.51	86.47	-69.40	-86.70	0.00	0.00	0.00
1,704.50	4.78	321.25	1,700.00	86.76	-69.64	-86.99	0.00	0.00	0.00
9 5/8"									
1,800.00	4.78	321.25	1,795.16	92.97	-74.62	-93.22	0.00	0.00	0.00
1,900.00	4.78	321.25	1,894.82	99.47	-79.83	-99.73	0.00	0.00	0.00
2,000.00	4.78	321.25	1,994.47	105.97	-85.05	-106.25	0.00	0.00	0.00
2,100.00	4.78	321.25	2,094.12	112.47	-90.26	-112.76	0.00	0.00	0.00
2,200.00	4.78	321.25	2,193.77	118.96	-95.48	-119.28	0.00	0.00	0.00
2,300.00	4.78	321.25	2,293.42	125.46	-100.70	-125.80	0.00	0.00	0.00
2,400.00	4.78	321.25	2,393.08	131.96	-105.91	-132.31	0.00	0.00	0.00
2,500.00	4.78	321.25	2,492.73	138.46	-111.13	-138.83	0.00	0.00	0.00
2,600.00	4.78	321.25	2,592.38	144.96	-116.34	-145.34	0.00	0.00	0.00
2,700.00	4.78	321.25	2,692.03	151.46	-121.56	-151.86	0.00	0.00	0.00
2,800.00	4.78	321.25	2,791.69	157.96	-126.77	-158.38	0.00	0.00	0.00
2,900.00	4.78	321.25	2,891.34	164.46	-131.99	-164.89	0.00	0.00	0.00
3,000.00	4.78	321.25	2,990.99	170.95	-137.21	-171.41	0.00	0.00	0.00
3,100.00	4.78	321.25	3,090.64	177.45	-142.42	-177.92	0.00	0.00	0.00
3,200.00	4.78	321.25	3,190.29	183.95	-147.64	-184.44	0.00	0.00	0.00
3,300.00	4.78	321.25	3,289.95	190.45	-152.85	-190.96	0.00	0.00	0.00
3,400.00	4.78	321.25	3,389.60	196.95	-158.07	-197.47	0.00	0.00	0.00
3,500.00	4.78	321.25	3,489.25	203.45	-163.28	-203.99	0.00	0.00	0.00
3,600.00	4.78	321.25	3,588.90	209.95	-168.50	-210.51	0.00	0.00	0.00
3,700.00	4.78	321.25	3,688.56	216.45	-173.72	-217.02	0.00	0.00	0.00
3,800.00	4.78	321.25	3,788.21	222.95	-178.93	-223.54	0.00	0.00	0.00
3,900.00	4.78	321.25	3,887.86	229.44	-184.15	-230.05	0.00	0.00	0.00
4,000.00	4.78	321.25	3,987.51	235.94	-189.36	-236.57	0.00	0.00	0.00
4,100.00	4.78	321.25	4,087.16	242.44	-194.58	-243.09	0.00	0.00	0.00
4,200.00	4.78	321.25	4,186.82	248.94	-199.80	-249.60	0.00	0.00	0.00
4,300.00	4.78	321.25	4,286.47	255.44	-205.01	-256.12	0.00	0.00	0.00
4,400.00	4.78	321.25	4,386.12	261.94	-210.23	-262.63	0.00	0.00	0.00
4,500.00	4.78	321.25	4,485.77	268.44	-215.44	-269.15	0.00	0.00	0.00
4,600.00	4.78	321.25	4,585.42	274.94	-220.66	-275.67	0.00	0.00	0.00

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Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well TIMBRO 1717-12H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 5031.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 5031.00usft (RIG)
Site:	9N-59W-17 TIMBRO 1717 PAD	North Reference:	True
Well:	TIMBRO 1717-12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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	4.78	321.25	4,685.08	281.43	-225.87	-282.18	0.00	0.00	0.00
4,800.00	4.78	321.25	4,784.73	287.93	-231.09	-288.70	0.00	0.00	0.00
4,900.00	4.78	321.25	4,884.38	294.43	-236.31	-295.21	0.00	0.00	0.00
5,000.00	4.78	321.25	4,984.03	300.93	-241.52	-301.73	0.00	0.00	0.00
5,100.00	4.78	321.25	5,083.69	307.43	-246.74	-308.25	0.00	0.00	0.00
5,200.00	4.78	321.25	5,183.34	313.93	-251.95	-314.76	0.00	0.00	0.00
5,300.00	4.78	321.25	5,282.99	320.43	-257.17	-321.28	0.00	0.00	0.00
5,400.00	4.78	321.25	5,382.64	326.93	-262.39	-327.79	0.00	0.00	0.00
5,500.00	4.78	321.25	5,482.29	333.42	-267.60	-334.31	0.00	0.00	0.00
5,590.84	4.78	321.25	5,572.82	339.33	-272.34	-340.23	0.00	0.00	0.00
KOP @ 5590.84ft :: DLS = 9°/100'									
5,600.00	4.17	314.15	5,581.95	339.86	-272.82	-340.76	9.00	-6.68	-77.54
5,700.00	6.78	205.82	5,681.67	337.07	-278.01	-337.99	9.00	2.61	-108.32
5,800.00	15.37	190.74	5,779.74	318.70	-283.06	-319.63	9.00	8.60	-15.09
5,900.00	24.26	186.45	5,873.73	285.19	-287.84	-286.14	9.00	8.89	-4.29
6,000.00	33.21	184.38	5,961.32	237.37	-292.25	-238.34	9.00	8.95	-2.07
6,100.00	42.17	183.11	6,040.38	176.42	-296.17	-177.41	9.00	8.97	-1.27
6,200.00	51.15	182.22	6,108.94	103.84	-299.50	-104.84	9.00	8.98	-0.89
6,300.00	60.13	181.52	6,165.32	21.42	-302.16	-22.42	9.00	8.98	-0.69
6,400.00	69.12	180.95	6,208.13	-68.82	-304.10	67.81	9.00	8.99	-0.58
6,500.00	78.10	180.44	6,236.31	-164.65	-305.25	163.64	9.00	8.99	-0.51
6,600.00	87.09	179.96	6,249.18	-263.71	-305.59	262.70	9.00	8.99	-0.48
6,632.35	90.00	179.81	6,250.00	-296.05	-305.52	295.04	9.00	8.99	-0.47
End Build @ 6632.35ft									
6,700.00	90.00	179.81	6,250.00	-363.70	-305.30	362.69	0.00	0.00	0.00
6,800.00	90.00	179.81	6,250.00	-463.70	-304.96	462.69	0.00	0.00	0.00
6,900.00	90.00	179.81	6,250.00	-563.70	-304.63	562.69	0.00	0.00	0.00
7,000.00	90.00	179.81	6,250.00	-663.70	-304.30	662.69	0.00	0.00	0.00
7,100.00	90.00	179.81	6,250.00	-763.70	-303.97	762.69	0.00	0.00	0.00
7,200.00	90.00	179.81	6,250.00	-863.70	-303.63	862.69	0.00	0.00	0.00
7,300.00	90.00	179.81	6,250.00	-963.70	-303.30	962.69	0.00	0.00	0.00
7,400.00	90.00	179.81	6,250.00	-1,063.70	-302.97	1,062.69	0.00	0.00	0.00
7,500.00	90.00	179.81	6,250.00	-1,163.70	-302.64	1,162.69	0.00	0.00	0.00
7,600.00	90.00	179.81	6,250.00	-1,263.70	-302.30	1,262.69	0.00	0.00	0.00
7,700.00	90.00	179.81	6,250.00	-1,363.69	-301.97	1,362.69	0.00	0.00	0.00
7,800.00	90.00	179.81	6,250.00	-1,463.69	-301.64	1,462.69	0.00	0.00	0.00
7,900.00	90.00	179.81	6,250.00	-1,563.69	-301.30	1,562.69	0.00	0.00	0.00
8,000.00	90.00	179.81	6,250.00	-1,663.69	-300.97	1,662.69	0.00	0.00	0.00
8,100.00	90.00	179.81	6,250.00	-1,763.69	-300.64	1,762.69	0.00	0.00	0.00
8,200.00	90.00	179.81	6,250.00	-1,863.69	-300.31	1,862.69	0.00	0.00	0.00
8,300.00	90.00	179.81	6,250.00	-1,963.69	-299.97	1,962.69	0.00	0.00	0.00
8,400.00	90.00	179.81	6,250.00	-2,063.69	-299.64	2,062.69	0.00	0.00	0.00
8,500.00	90.00	179.81	6,250.00	-2,163.69	-299.31	2,162.69	0.00	0.00	0.00
8,600.00	90.00	179.81	6,250.00	-2,263.69	-298.98	2,262.69	0.00	0.00	0.00
8,700.00	90.00	179.81	6,250.00	-2,363.69	-298.64	2,362.69	0.00	0.00	0.00
8,800.00	90.00	179.81	6,250.00	-2,463.69	-298.31	2,462.69	0.00	0.00	0.00
8,900.00	90.00	179.81	6,250.00	-2,563.69	-297.98	2,562.69	0.00	0.00	0.00
9,000.00	90.00	179.81	6,250.00	-2,663.69	-297.64	2,662.69	0.00	0.00	0.00
9,100.00	90.00	179.81	6,250.00	-2,763.69	-297.31	2,762.69	0.00	0.00	0.00
9,200.00	90.00	179.81	6,250.00	-2,863.69	-296.98	2,862.69	0.00	0.00	0.00
9,300.00	90.00	179.81	6,250.00	-2,963.69	-296.65	2,962.69	0.00	0.00	0.00
9,400.00	90.00	179.81	6,250.00	-3,063.69	-296.31	3,062.69	0.00	0.00	0.00
9,500.00	90.00	179.81	6,250.00	-3,163.68	-295.98	3,162.69	0.00	0.00	0.00
9,600.00	90.00	179.81	6,250.00	-3,263.68	-295.65	3,262.69	0.00	0.00	0.00

Hewlett-Packard

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well TIMBRO 1717-12H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 5031.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 5031.00usft (RIG)
Site:	9N-59W-17 TIMBRO 1717 PAD	North Reference:	True
Well:	TIMBRO 1717-12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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	179.81	6,250.00	-3,363.68	-295.32	3,362.69	0.00	0.00	0.00	
9,800.00	90.00	179.81	6,250.00	-3,463.68	-294.98	3,462.69	0.00	0.00	0.00	
9,900.00	90.00	179.81	6,250.00	-3,563.68	-294.65	3,562.69	0.00	0.00	0.00	
10,000.00	90.00	179.81	6,250.00	-3,663.68	-294.32	3,662.69	0.00	0.00	0.00	
10,100.00	90.00	179.81	6,250.00	-3,763.68	-293.98	3,762.69	0.00	0.00	0.00	
10,200.00	90.00	179.81	6,250.00	-3,863.68	-293.65	3,862.69	0.00	0.00	0.00	
10,300.00	90.00	179.81	6,250.00	-3,963.68	-293.32	3,962.69	0.00	0.00	0.00	
10,400.00	90.00	179.81	6,250.00	-4,063.68	-292.99	4,062.69	0.00	0.00	0.00	
10,500.00	90.00	179.81	6,250.00	-4,163.68	-292.65	4,162.69	0.00	0.00	0.00	
10,600.00	90.00	179.81	6,250.00	-4,263.68	-292.32	4,262.69	0.00	0.00	0.00	
10,700.00	90.00	179.81	6,250.00	-4,363.68	-291.99	4,362.69	0.00	0.00	0.00	
10,762.69	90.00	179.81	6,250.00	-4,426.37	-291.78	4,425.37	0.00	0.00	0.00	
TD Well @ 10762.69ft										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,704.50	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	
489.00	488.72	7.77	-6.24	End Tangent @ 489.00ft	
5,590.84	5,572.82	339.33	-272.34	KOP @ 5590.84ft :: DLS = 9°/100'	
6,632.35	6,250.00	-296.05	-305.52	End Build @ 6632.35ft	
10,762.69	6,250.00	-4,426.37	-291.78	TD Well @ 10762.69ft	