

VERDAD RESOURCES

WATTENBERG FIELD

9N-59W-17 TIMBRO 1717 PAD

TIMBRO 1717-08H

Wellbore #1

Plan: Design #1

Standard Planning Report

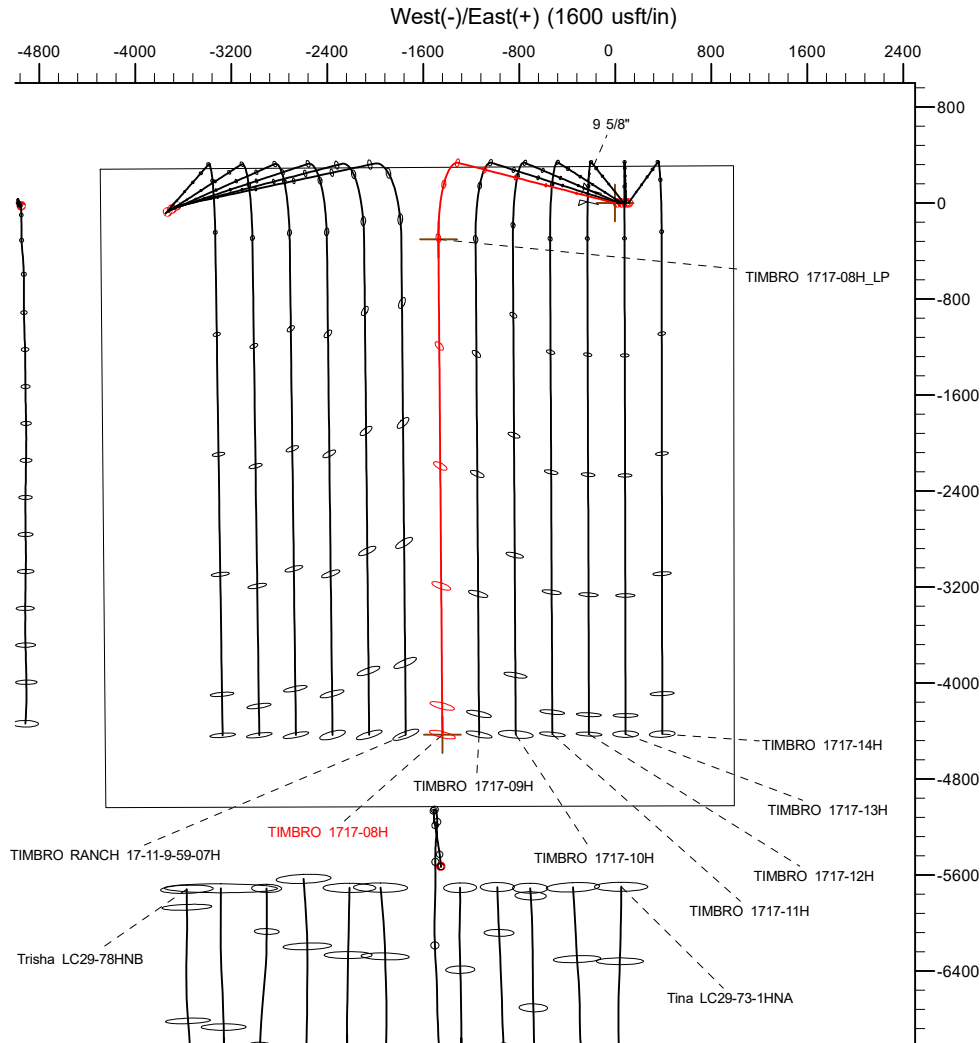
09 April, 2018

Project: WATTENBERG FIELD
 Site: 9N-59W-17 TIMBRO 1717 PAD
 Well: TIMBRO 1717-08H
 Wellbore: Wellbore #1
 Design: Design #1

VERDAD RESOURCES

CASING DETAILS

TVD	MD	Name	Size
1700.00	1734.22	9 5/8"	9-5/8

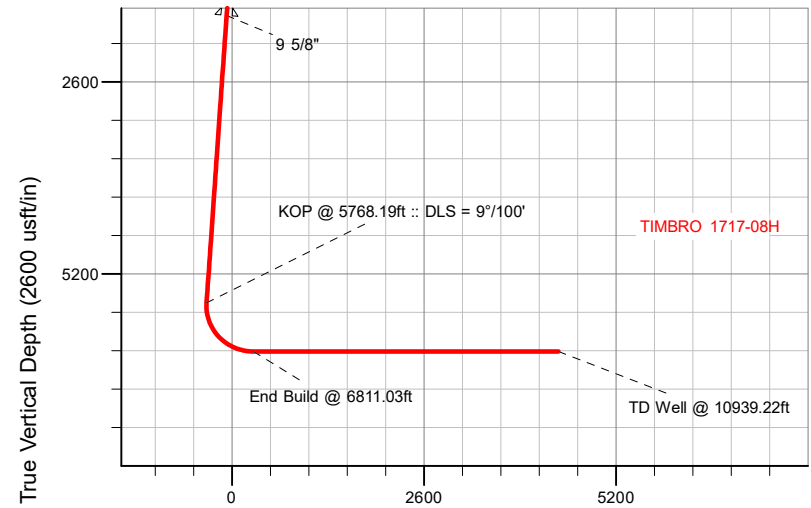


SECTION DETAILS

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	1010.00	15.20	284.39	1001.12	24.91	-97.08	2.00	284.39	-25.70	
4	5768.19	15.20	284.39	5592.85	334.95	-1305.48	0.00	0.00	-345.65	
5	6811.03	90.00	179.53	6250.00	-301.63	-1472.83	9.00	-104.36	289.54	
6	10939.22	90.00	179.53	6250.00	-4429.68	-1438.89	0.00	0.00	4417.73	TIMBRO 1717-08H_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

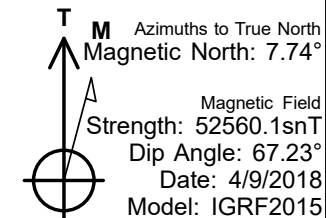
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
TIMBRO 1717-08H_SHL	0.00	0.00	0.00	40.756951	-103.996171
TIMBRO 1717-08H_BHL	6250.00	-4429.68	-1438.89	40.744793	-104.001364



SHL
306' FNL
987' FEL

LP
600' FNL
2460' FEL

BHL
600' FSL
2432' FEL



WELL DETAILS: TIMBRO 1717-08H

GL = 5010'

RKB = 20' @ 5030.00usft (RIG)

Plan: Design #1 (TIMBRO 1717-08H/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 1717-08H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 5030.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 5030.00usft (RIG)
Site:	9N-59W-17 TIMBRO 1717 PAD	North Reference:	True
Well:	TIMBRO 1717-08H	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 1717-08H				
Well Position	+N/-S	0.00 usft	Northing:	1,522,135.24 usft	Latitude:	40.756951
	+E/-W	0.00 usft	Easting:	3,416,606.55 usft	Longitude:	-103.996171
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	5,010.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	4/9/2018	7.73	67.23	52,560.14750165

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	179.53

Plan Survey Tool Program	Date	4/9/2018		
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	10,939.22	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	
1,010.00	15.20	284.39	1,001.12	24.91	-97.08	2.00	2.00	0.00	284.39	
5,768.19	15.20	284.39	5,592.85	334.95	-1,305.48	0.00	0.00	0.00	0.00	
6,811.03	90.00	179.53	6,250.00	-301.63	-1,472.83	9.00	7.17	-10.06	-104.36	
10,939.22	90.00	179.53	6,250.00	-4,429.68	-1,438.89	0.00	0.00	0.00	0.00	TIMBRO 1717-08H_E

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Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well TIMBRO 1717-08H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 5030.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 5030.00usft (RIG)
Site:	9N-59W-17 TIMBRO 1717 PAD	North Reference:	True
Well:	TIMBRO 1717-08H	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	284.39	300.00	0.11	-0.42	-0.11	2.00	2.00	0.00
400.00	3.00	284.39	399.93	0.98	-3.80	-1.01	2.00	2.00	0.00
500.00	5.00	284.39	499.68	2.71	-10.56	-2.80	2.00	2.00	0.00
600.00	7.00	284.39	599.13	5.31	-20.68	-5.48	2.00	2.00	0.00
700.00	9.00	284.39	698.15	8.77	-34.16	-9.05	2.00	2.00	0.00
800.00	11.00	284.39	796.63	13.08	-50.98	-13.50	2.00	2.00	0.00
900.00	13.00	284.39	894.44	18.25	-71.12	-18.83	2.00	2.00	0.00
1,000.00	15.00	284.39	991.46	24.26	-94.55	-25.03	2.00	2.00	0.00
1,010.00	15.20	284.39	1,001.12	24.91	-97.08	-25.70	2.00	2.00	0.00
End Tangent @ 1010.00ft									
1,100.00	15.20	284.39	1,087.97	30.77	-119.93	-31.75	0.00	0.00	0.00
1,200.00	15.20	284.39	1,184.47	37.29	-145.33	-38.48	0.00	0.00	0.00
1,300.00	15.20	284.39	1,280.97	43.80	-170.73	-45.20	0.00	0.00	0.00
1,400.00	15.20	284.39	1,377.47	50.32	-196.12	-51.93	0.00	0.00	0.00
1,500.00	15.20	284.39	1,473.97	56.83	-221.52	-58.65	0.00	0.00	0.00
1,600.00	15.20	284.39	1,570.48	63.35	-246.91	-65.37	0.00	0.00	0.00
1,700.00	15.20	284.39	1,666.98	69.87	-272.31	-72.10	0.00	0.00	0.00
1,734.22	15.20	284.39	1,700.00	72.10	-281.00	-74.40	0.00	0.00	0.00
9 5/8"									
1,800.00	15.20	284.39	1,763.48	76.38	-297.71	-78.82	0.00	0.00	0.00
1,900.00	15.20	284.39	1,859.98	82.90	-323.10	-85.55	0.00	0.00	0.00
2,000.00	15.20	284.39	1,956.48	89.41	-348.50	-92.27	0.00	0.00	0.00
2,100.00	15.20	284.39	2,052.98	95.93	-373.90	-98.99	0.00	0.00	0.00
2,200.00	15.20	284.39	2,149.49	102.45	-399.29	-105.72	0.00	0.00	0.00
2,300.00	15.20	284.39	2,245.99	108.96	-424.69	-112.44	0.00	0.00	0.00
2,400.00	15.20	284.39	2,342.49	115.48	-450.09	-119.17	0.00	0.00	0.00
2,500.00	15.20	284.39	2,438.99	121.99	-475.48	-125.89	0.00	0.00	0.00
2,600.00	15.20	284.39	2,535.49	128.51	-500.88	-132.61	0.00	0.00	0.00
2,700.00	15.20	284.39	2,631.99	135.03	-526.27	-139.34	0.00	0.00	0.00
2,800.00	15.20	284.39	2,728.50	141.54	-551.67	-146.06	0.00	0.00	0.00
2,900.00	15.20	284.39	2,825.00	148.06	-577.07	-152.79	0.00	0.00	0.00
3,000.00	15.20	284.39	2,921.50	154.57	-602.46	-159.51	0.00	0.00	0.00
3,100.00	15.20	284.39	3,018.00	161.09	-627.86	-166.24	0.00	0.00	0.00
3,200.00	15.20	284.39	3,114.50	167.61	-653.26	-172.96	0.00	0.00	0.00
3,300.00	15.20	284.39	3,211.00	174.12	-678.65	-179.68	0.00	0.00	0.00
3,400.00	15.20	284.39	3,307.51	180.64	-704.05	-186.41	0.00	0.00	0.00
3,500.00	15.20	284.39	3,404.01	187.15	-729.44	-193.13	0.00	0.00	0.00
3,600.00	15.20	284.39	3,500.51	193.67	-754.84	-199.86	0.00	0.00	0.00
3,700.00	15.20	284.39	3,597.01	200.19	-780.24	-206.58	0.00	0.00	0.00
3,800.00	15.20	284.39	3,693.51	206.70	-805.63	-213.30	0.00	0.00	0.00
3,900.00	15.20	284.39	3,790.01	213.22	-831.03	-220.03	0.00	0.00	0.00
4,000.00	15.20	284.39	3,886.52	219.73	-856.43	-226.75	0.00	0.00	0.00
4,100.00	15.20	284.39	3,983.02	226.25	-881.82	-233.48	0.00	0.00	0.00
4,200.00	15.20	284.39	4,079.52	232.77	-907.22	-240.20	0.00	0.00	0.00
4,300.00	15.20	284.39	4,176.02	239.28	-932.62	-246.92	0.00	0.00	0.00
4,400.00	15.20	284.39	4,272.52	245.80	-958.01	-253.65	0.00	0.00	0.00
4,500.00	15.20	284.39	4,369.02	252.31	-983.41	-260.37	0.00	0.00	0.00
4,600.00	15.20	284.39	4,465.53	258.83	-1,008.80	-267.10	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 1717-08H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 5030.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 5030.00usft (RIG)
Site:	9N-59W-17 TIMBRO 1717 PAD	North Reference:	True
Well:	TIMBRO 1717-08H	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	15.20	284.39	4,562.03	265.35	-1,034.20	-273.82	0.00	0.00	0.00
4,800.00	15.20	284.39	4,658.53	271.86	-1,059.60	-280.54	0.00	0.00	0.00
4,900.00	15.20	284.39	4,755.03	278.38	-1,084.99	-287.27	0.00	0.00	0.00
5,000.00	15.20	284.39	4,851.53	284.89	-1,110.39	-293.99	0.00	0.00	0.00
5,100.00	15.20	284.39	4,948.03	291.41	-1,135.79	-300.72	0.00	0.00	0.00
5,200.00	15.20	284.39	5,044.54	297.93	-1,161.18	-307.44	0.00	0.00	0.00
5,300.00	15.20	284.39	5,141.04	304.44	-1,186.58	-314.16	0.00	0.00	0.00
5,400.00	15.20	284.39	5,237.54	310.96	-1,211.98	-320.89	0.00	0.00	0.00
5,500.00	15.20	284.39	5,334.04	317.47	-1,237.37	-327.61	0.00	0.00	0.00
5,600.00	15.20	284.39	5,430.54	323.99	-1,262.77	-334.34	0.00	0.00	0.00
5,700.00	15.20	284.39	5,527.04	330.50	-1,288.16	-341.06	0.00	0.00	0.00
5,768.19	15.20	284.39	5,592.85	334.95	-1,305.48	-345.65	0.00	0.00	0.00
KOP @ 5768.19ft :: DLS = 9°/100'									
5,800.00	14.75	273.43	5,623.58	336.23	-1,313.56	-346.99	9.00	-1.42	-34.45
5,900.00	16.71	240.55	5,720.02	329.91	-1,338.84	-340.88	9.00	1.96	-32.88
6,000.00	22.35	219.24	5,814.35	308.07	-1,363.43	-319.25	9.00	5.64	-21.31
6,100.00	29.63	207.03	5,904.25	271.25	-1,386.74	-282.62	9.00	7.28	-12.20
6,200.00	37.61	199.46	5,987.49	220.36	-1,408.18	-231.91	9.00	7.98	-7.57
6,300.00	45.92	194.26	6,062.04	156.65	-1,427.23	-168.36	9.00	8.31	-5.20
6,400.00	54.41	190.36	6,126.05	81.69	-1,443.43	-93.53	9.00	8.49	-3.90
6,500.00	63.00	187.22	6,177.96	-2.68	-1,456.37	-9.27	9.00	8.59	-3.14
6,600.00	71.65	184.53	6,216.47	-94.37	-1,465.73	82.35	9.00	8.65	-2.69
6,700.00	80.34	182.09	6,240.66	-191.14	-1,471.28	179.07	9.00	8.69	-2.43
6,800.00	89.04	179.78	6,249.90	-290.60	-1,472.89	278.51	9.00	8.70	-2.31
6,811.03	90.00	179.53	6,250.00	-301.63	-1,472.83	289.54	9.00	8.70	-2.29
End Build @ 6811.03ft									
6,900.00	90.00	179.53	6,250.00	-390.59	-1,472.09	378.50	0.00	0.00	0.00
7,000.00	90.00	179.53	6,250.00	-490.59	-1,471.27	478.50	0.00	0.00	0.00
7,100.00	90.00	179.53	6,250.00	-590.59	-1,470.45	578.50	0.00	0.00	0.00
7,200.00	90.00	179.53	6,250.00	-690.58	-1,469.63	678.50	0.00	0.00	0.00
7,300.00	90.00	179.53	6,250.00	-790.58	-1,468.81	778.50	0.00	0.00	0.00
7,400.00	90.00	179.53	6,250.00	-890.58	-1,467.98	878.50	0.00	0.00	0.00
7,500.00	90.00	179.53	6,250.00	-990.57	-1,467.16	978.50	0.00	0.00	0.00
7,600.00	90.00	179.53	6,250.00	-1,090.57	-1,466.34	1,078.50	0.00	0.00	0.00
7,700.00	90.00	179.53	6,250.00	-1,190.57	-1,465.52	1,178.50	0.00	0.00	0.00
7,800.00	90.00	179.53	6,250.00	-1,290.56	-1,464.70	1,278.50	0.00	0.00	0.00
7,900.00	90.00	179.53	6,250.00	-1,390.56	-1,463.87	1,378.50	0.00	0.00	0.00
8,000.00	90.00	179.53	6,250.00	-1,490.56	-1,463.05	1,478.50	0.00	0.00	0.00
8,100.00	90.00	179.53	6,250.00	-1,590.55	-1,462.23	1,578.50	0.00	0.00	0.00
8,200.00	90.00	179.53	6,250.00	-1,690.55	-1,461.41	1,678.50	0.00	0.00	0.00
8,300.00	90.00	179.53	6,250.00	-1,790.55	-1,460.59	1,778.50	0.00	0.00	0.00
8,400.00	90.00	179.53	6,250.00	-1,890.54	-1,459.76	1,878.50	0.00	0.00	0.00
8,500.00	90.00	179.53	6,250.00	-1,990.54	-1,458.94	1,978.50	0.00	0.00	0.00
8,600.00	90.00	179.53	6,250.00	-2,090.54	-1,458.12	2,078.50	0.00	0.00	0.00
8,700.00	90.00	179.53	6,250.00	-2,190.53	-1,457.30	2,178.50	0.00	0.00	0.00
8,800.00	90.00	179.53	6,250.00	-2,290.53	-1,456.48	2,278.50	0.00	0.00	0.00
8,900.00	90.00	179.53	6,250.00	-2,390.53	-1,455.66	2,378.50	0.00	0.00	0.00
9,000.00	90.00	179.53	6,250.00	-2,490.52	-1,454.83	2,478.50	0.00	0.00	0.00
9,100.00	90.00	179.53	6,250.00	-2,590.52	-1,454.01	2,578.50	0.00	0.00	0.00
9,200.00	90.00	179.53	6,250.00	-2,690.52	-1,453.19	2,678.50	0.00	0.00	0.00
9,300.00	90.00	179.53	6,250.00	-2,790.51	-1,452.37	2,778.50	0.00	0.00	0.00
9,400.00	90.00	179.53	6,250.00	-2,890.51	-1,451.55	2,878.50	0.00	0.00	0.00
9,500.00	90.00	179.53	6,250.00	-2,990.51	-1,450.72	2,978.50	0.00	0.00	0.00
9,600.00	90.00	179.53	6,250.00	-3,090.50	-1,449.90	3,078.50	0.00	0.00	0.00

Hewlett-Packard

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well TIMBRO 1717-08H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 5030.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 5030.00usft (RIG)
Site:	9N-59W-17 TIMBRO 1717 PAD	North Reference:	True
Well:	TIMBRO 1717-08H	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	179.53	6,250.00	-3,190.50	-1,449.08	3,178.50	0.00	0.00	0.00	
9,800.00	90.00	179.53	6,250.00	-3,290.50	-1,448.26	3,278.50	0.00	0.00	0.00	
9,900.00	90.00	179.53	6,250.00	-3,390.49	-1,447.44	3,378.50	0.00	0.00	0.00	
10,000.00	90.00	179.53	6,250.00	-3,490.49	-1,446.61	3,478.50	0.00	0.00	0.00	
10,100.00	90.00	179.53	6,250.00	-3,590.49	-1,445.79	3,578.50	0.00	0.00	0.00	
10,200.00	90.00	179.53	6,250.00	-3,690.48	-1,444.97	3,678.50	0.00	0.00	0.00	
10,300.00	90.00	179.53	6,250.00	-3,790.48	-1,444.15	3,778.50	0.00	0.00	0.00	
10,400.00	90.00	179.53	6,250.00	-3,890.47	-1,443.33	3,878.50	0.00	0.00	0.00	
10,500.00	90.00	179.53	6,250.00	-3,990.47	-1,442.50	3,978.50	0.00	0.00	0.00	
10,600.00	90.00	179.53	6,250.00	-4,090.47	-1,441.68	4,078.50	0.00	0.00	0.00	
10,700.00	90.00	179.53	6,250.00	-4,190.46	-1,440.86	4,178.50	0.00	0.00	0.00	
10,800.00	90.00	179.53	6,250.00	-4,290.46	-1,440.04	4,278.50	0.00	0.00	0.00	
10,900.00	90.00	179.53	6,250.00	-4,390.46	-1,439.22	4,378.50	0.00	0.00	0.00	
10,939.22	90.00	179.53	6,250.00	-4,429.68	-1,438.89	4,417.73	0.00	0.00	0.00	
TD Well @ 10939.22ft										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,734.22	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	
1,010.00	1,001.12	24.91	-97.08	End Tangent @ 1010.00ft	
5,768.19	5,592.85	334.95	-1,305.48	KOP @ 5768.19ft :: DLS = 9°/100'	
6,811.03	6,250.00	-301.63	-1,472.83	End Build @ 6811.03ft	
10,939.22	6,250.00	-4,429.68	-1,438.89	TD Well @ 10939.22ft	