

VERDAD RESOURCES

WATTENBERG FIELD

9N-59W-17 TIMBRO 1717 PAD

TIMBRO 1717-10H

Wellbore #1

Plan: Design #1

Standard Planning Report

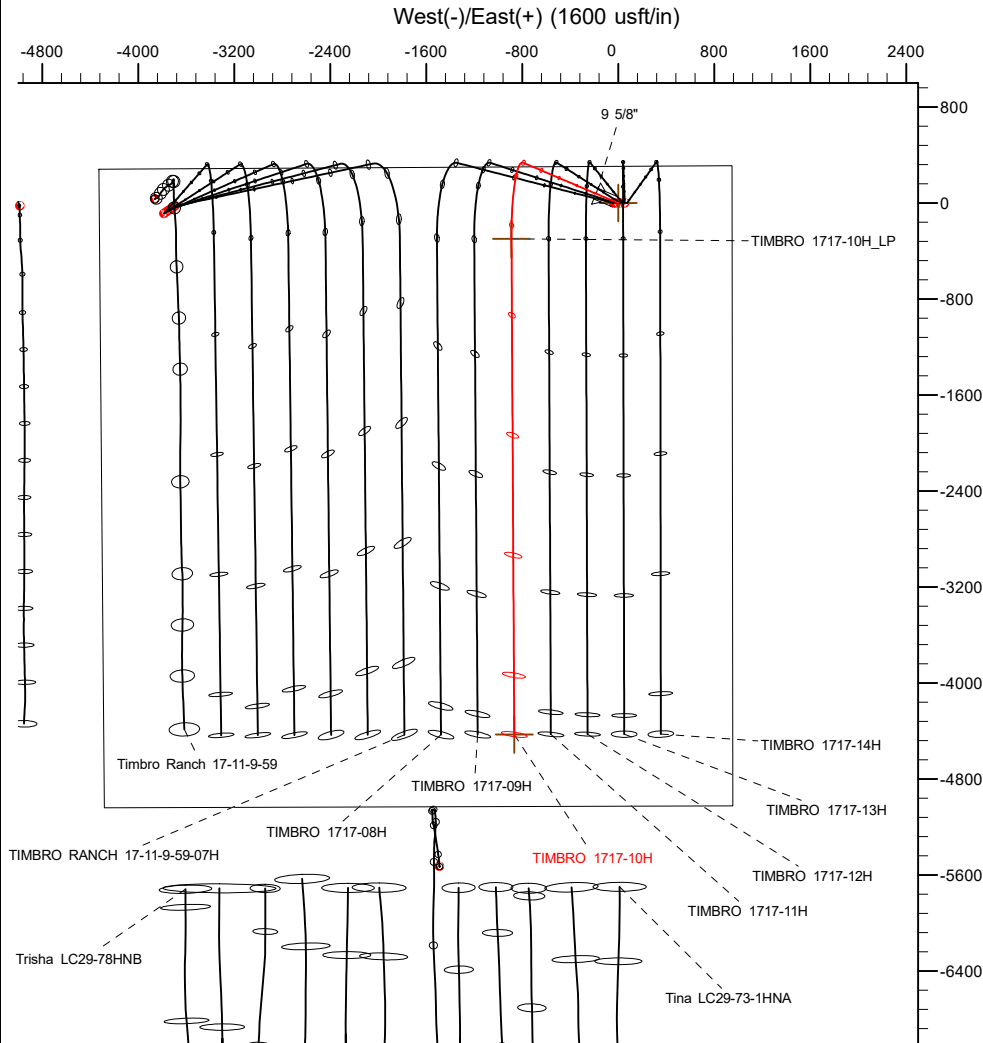
10 April, 2018

Project: WATTENBERG FIELD
Site: 9N-59W-17 TIMBRO 1717 PAD
Well: TIMBRO 1717-10H
Wellbore: Wellbore #1
Design: Design #1

VERDAD RESOURCES

CASING DETAILS

TVD	MD	Name	Size
1700.00	1715.10	9 5/8"	9-5/8

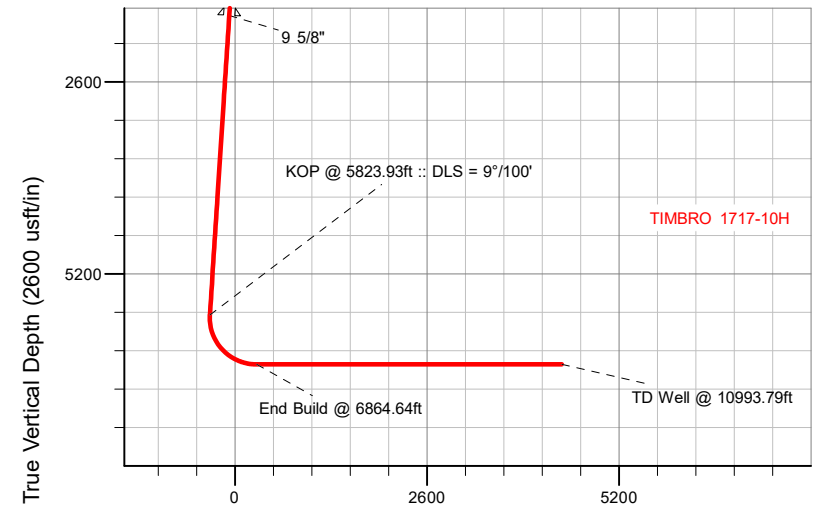


SECTION DETAILS

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	713.50	9.27	293.05	711.48	14.65	-34.43	2.00	293.05	-14.84	
4	5823.93	9.27	293.05	5755.17	336.97	-791.93	0.00	0.00	-341.39	
5	6864.64	90.00	179.68	6425.00	-298.91	-888.69	9.00	-113.10	293.94	
6	10993.79	90.00	179.68	6425.00	-4427.99	-865.31	0.00	0.00	4423.09	TIMBRO 1717-10H_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

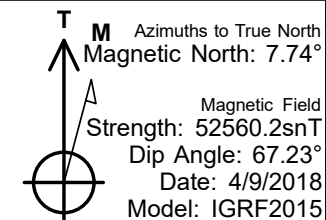
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
TIMBRO 1717-10H_SHL	0.00	0.00	0.00	40.756952	-103.996038
TIMBRO 1717-10H_BHL	6425.00	-4427.99	-865.31	40.744798	-103.999161



SHL
306' FNL
950' FEL

LP
600' FNL
1840' FEL

BHL
600' FSL
1821' FEL



WELL DETAILS: TIMBRO 1717-10H

GL = 5010'

RKB = 20' @ 5030.00usft (RIG)

Plan: Design #1 (TIMBRO 1717-10H/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 1717-10H
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 1717-10H	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 1717-10H					
Well Position	+N/-S	0.17 usft	Northing:	1,522,136.05 usft	Latitude:	40.756952
	+E/-W	36.99 usft	Easting:	3,416,643.52 usft	Longitude:	-103.996038
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	52,560.16092223

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	179.68

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	10,993.79	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	
713.50	9.27	293.05	711.48	14.65	-34.43	2.00	2.00	0.00	293.05	
5,823.93	9.27	293.05	5,755.17	336.97	-791.93	0.00	0.00	0.00	0.00	
6,864.64	90.00	179.68	6,425.00	-298.91	-888.69	9.00	7.76	-10.89	-113.10	
10,993.79	90.00	179.68	6,425.00	-4,427.99	-865.31	0.00	0.00	0.00	0.00	TIMBRO 1717-10H_E

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Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well TIMBRO 1717-10H
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 1717-10H	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	293.05	300.00	0.17	-0.40	-0.17	2.00	2.00	0.00
400.00	3.00	293.05	399.93	1.54	-3.61	-1.56	2.00	2.00	0.00
500.00	5.00	293.05	499.68	4.27	-10.03	-4.32	2.00	2.00	0.00
600.00	7.00	293.05	599.13	8.36	-19.65	-8.47	2.00	2.00	0.00
700.00	9.00	293.05	698.15	13.81	-32.45	-13.99	2.00	2.00	0.00
713.50	9.27	293.05	711.48	14.65	-34.43	-14.84	2.00	2.00	0.00
End Tangent @ 713.50ft									
800.00	9.27	293.05	796.85	20.10	-47.25	-20.37	0.00	0.00	0.00
900.00	9.27	293.05	895.54	26.41	-62.07	-26.76	0.00	0.00	0.00
1,000.00	9.27	293.05	994.24	32.72	-76.89	-33.15	0.00	0.00	0.00
1,100.00	9.27	293.05	1,092.93	39.03	-91.72	-39.54	0.00	0.00	0.00
1,200.00	9.27	293.05	1,191.63	45.33	-106.54	-45.93	0.00	0.00	0.00
1,300.00	9.27	293.05	1,290.32	51.64	-121.36	-52.32	0.00	0.00	0.00
1,400.00	9.27	293.05	1,389.01	57.95	-136.18	-58.71	0.00	0.00	0.00
1,500.00	9.27	293.05	1,487.71	64.25	-151.01	-65.10	0.00	0.00	0.00
1,600.00	9.27	293.05	1,586.40	70.56	-165.83	-71.49	0.00	0.00	0.00
1,700.00	9.27	293.05	1,685.10	76.87	-180.65	-77.88	0.00	0.00	0.00
1,715.10	9.27	293.05	1,700.00	77.82	-182.89	-78.84	0.00	0.00	0.00
9 5/8"									
1,800.00	9.27	293.05	1,783.79	83.18	-195.47	-84.27	0.00	0.00	0.00
1,900.00	9.27	293.05	1,882.49	89.48	-210.30	-90.66	0.00	0.00	0.00
2,000.00	9.27	293.05	1,981.18	95.79	-225.12	-97.05	0.00	0.00	0.00
2,100.00	9.27	293.05	2,079.87	102.10	-239.94	-103.44	0.00	0.00	0.00
2,200.00	9.27	293.05	2,178.57	108.40	-254.77	-109.83	0.00	0.00	0.00
2,300.00	9.27	293.05	2,277.26	114.71	-269.59	-116.21	0.00	0.00	0.00
2,400.00	9.27	293.05	2,375.96	121.02	-284.41	-122.60	0.00	0.00	0.00
2,500.00	9.27	293.05	2,474.65	127.33	-299.23	-128.99	0.00	0.00	0.00
2,600.00	9.27	293.05	2,573.34	133.63	-314.06	-135.38	0.00	0.00	0.00
2,700.00	9.27	293.05	2,672.04	139.94	-328.88	-141.77	0.00	0.00	0.00
2,800.00	9.27	293.05	2,770.73	146.25	-343.70	-148.16	0.00	0.00	0.00
2,900.00	9.27	293.05	2,869.43	152.55	-358.52	-154.55	0.00	0.00	0.00
3,000.00	9.27	293.05	2,968.12	158.86	-373.35	-160.94	0.00	0.00	0.00
3,100.00	9.27	293.05	3,066.81	165.17	-388.17	-167.33	0.00	0.00	0.00
3,200.00	9.27	293.05	3,165.51	171.48	-402.99	-173.72	0.00	0.00	0.00
3,300.00	9.27	293.05	3,264.20	177.78	-417.81	-180.11	0.00	0.00	0.00
3,400.00	9.27	293.05	3,362.90	184.09	-432.64	-186.50	0.00	0.00	0.00
3,500.00	9.27	293.05	3,461.59	190.40	-447.46	-192.89	0.00	0.00	0.00
3,600.00	9.27	293.05	3,560.28	196.70	-462.28	-199.28	0.00	0.00	0.00
3,700.00	9.27	293.05	3,658.98	203.01	-477.10	-205.67	0.00	0.00	0.00
3,800.00	9.27	293.05	3,757.67	209.32	-491.93	-212.06	0.00	0.00	0.00
3,900.00	9.27	293.05	3,856.37	215.62	-506.75	-218.45	0.00	0.00	0.00
4,000.00	9.27	293.05	3,955.06	221.93	-521.57	-224.84	0.00	0.00	0.00
4,100.00	9.27	293.05	4,053.75	228.24	-536.40	-231.23	0.00	0.00	0.00
4,200.00	9.27	293.05	4,152.45	234.55	-551.22	-237.62	0.00	0.00	0.00
4,300.00	9.27	293.05	4,251.14	240.85	-566.04	-244.01	0.00	0.00	0.00
4,400.00	9.27	293.05	4,349.84	247.16	-580.86	-250.40	0.00	0.00	0.00
4,500.00	9.27	293.05	4,448.53	253.47	-595.69	-256.79	0.00	0.00	0.00
4,600.00	9.27	293.05	4,547.22	259.77	-610.51	-263.18	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 1717-10H
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 1717-10H	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	9.27	293.05	4,645.92	266.08	-625.33	-269.57	0.00	0.00	0.00
4,800.00	9.27	293.05	4,744.61	272.39	-640.15	-275.96	0.00	0.00	0.00
4,900.00	9.27	293.05	4,843.31	278.70	-654.98	-282.35	0.00	0.00	0.00
5,000.00	9.27	293.05	4,942.00	285.00	-669.80	-288.74	0.00	0.00	0.00
5,100.00	9.27	293.05	5,040.69	291.31	-684.62	-295.13	0.00	0.00	0.00
5,200.00	9.27	293.05	5,139.39	297.62	-699.44	-301.52	0.00	0.00	0.00
5,300.00	9.27	293.05	5,238.08	303.92	-714.27	-307.91	0.00	0.00	0.00
5,400.00	9.27	293.05	5,336.78	310.23	-729.09	-314.30	0.00	0.00	0.00
5,500.00	9.27	293.05	5,435.47	316.54	-743.91	-320.69	0.00	0.00	0.00
5,600.00	9.27	293.05	5,534.16	322.85	-758.74	-327.08	0.00	0.00	0.00
5,700.00	9.27	293.05	5,632.86	329.15	-773.56	-333.47	0.00	0.00	0.00
5,800.00	9.27	293.05	5,731.55	335.46	-788.38	-339.86	0.00	0.00	0.00
5,823.93	9.27	293.05	5,755.17	336.97	-791.93	-341.39	0.00	0.00	0.00
KOP @ 5823.93ft :: DLS = 9°/100'									
5,900.00	9.09	249.11	5,830.35	337.23	-803.19	-341.71	9.00	-0.23	-57.76
6,000.00	14.83	214.14	5,928.26	323.79	-817.79	-328.35	9.00	5.74	-34.97
6,100.00	22.76	200.60	6,022.90	295.03	-831.80	-299.67	9.00	7.93	-13.54
6,200.00	31.25	193.97	6,111.93	251.66	-844.90	-256.38	9.00	8.49	-6.63
6,300.00	39.95	189.98	6,193.17	194.75	-856.75	-199.53	9.00	8.70	-3.99
6,400.00	48.75	187.23	6,264.62	125.70	-867.06	-130.54	9.00	8.79	-2.75
6,500.00	57.59	185.13	6,324.51	46.20	-875.58	-51.09	9.00	8.84	-2.09
6,600.00	66.46	183.42	6,371.38	-41.78	-882.11	36.85	9.00	8.87	-1.72
6,700.00	75.35	181.92	6,404.06	-136.08	-886.47	131.12	9.00	8.89	-1.50
6,800.00	84.25	180.54	6,421.76	-234.37	-888.56	229.41	9.00	8.90	-1.38
6,864.64	90.00	179.68	6,425.00	-298.91	-888.69	293.94	9.00	8.90	-1.34
End Build @ 6864.64ft									
6,900.00	90.00	179.68	6,425.00	-334.26	-888.49	329.30	0.00	0.00	0.00
7,000.00	90.00	179.68	6,425.00	-434.26	-887.92	429.30	0.00	0.00	0.00
7,100.00	90.00	179.68	6,425.00	-534.26	-887.35	529.30	0.00	0.00	0.00
7,200.00	90.00	179.68	6,425.00	-634.26	-886.79	629.30	0.00	0.00	0.00
7,300.00	90.00	179.68	6,425.00	-734.26	-886.22	729.30	0.00	0.00	0.00
7,400.00	90.00	179.68	6,425.00	-834.25	-885.65	829.30	0.00	0.00	0.00
7,500.00	90.00	179.68	6,425.00	-934.25	-885.09	929.30	0.00	0.00	0.00
7,600.00	90.00	179.68	6,425.00	-1,034.25	-884.52	1,029.30	0.00	0.00	0.00
7,700.00	90.00	179.68	6,425.00	-1,134.25	-883.96	1,129.30	0.00	0.00	0.00
7,800.00	90.00	179.68	6,425.00	-1,234.25	-883.39	1,229.30	0.00	0.00	0.00
7,900.00	90.00	179.68	6,425.00	-1,334.25	-882.82	1,329.30	0.00	0.00	0.00
8,000.00	90.00	179.68	6,425.00	-1,434.25	-882.26	1,429.30	0.00	0.00	0.00
8,100.00	90.00	179.68	6,425.00	-1,534.24	-881.69	1,529.30	0.00	0.00	0.00
8,200.00	90.00	179.68	6,425.00	-1,634.24	-881.13	1,629.30	0.00	0.00	0.00
8,300.00	90.00	179.68	6,425.00	-1,734.24	-880.56	1,729.30	0.00	0.00	0.00
8,400.00	90.00	179.68	6,425.00	-1,834.24	-879.99	1,829.30	0.00	0.00	0.00
8,500.00	90.00	179.68	6,425.00	-1,934.24	-879.43	1,929.30	0.00	0.00	0.00
8,600.00	90.00	179.68	6,425.00	-2,034.24	-878.86	2,029.30	0.00	0.00	0.00
8,700.00	90.00	179.68	6,425.00	-2,134.23	-878.29	2,129.30	0.00	0.00	0.00
8,800.00	90.00	179.68	6,425.00	-2,234.23	-877.73	2,229.30	0.00	0.00	0.00
8,900.00	90.00	179.68	6,425.00	-2,334.23	-877.16	2,329.30	0.00	0.00	0.00
9,000.00	90.00	179.68	6,425.00	-2,434.23	-876.60	2,429.30	0.00	0.00	0.00
9,100.00	90.00	179.68	6,425.00	-2,534.23	-876.03	2,529.30	0.00	0.00	0.00
9,200.00	90.00	179.68	6,425.00	-2,634.23	-875.46	2,629.30	0.00	0.00	0.00
9,300.00	90.00	179.68	6,425.00	-2,734.22	-874.90	2,729.30	0.00	0.00	0.00
9,400.00	90.00	179.68	6,425.00	-2,834.22	-874.33	2,829.30	0.00	0.00	0.00
9,500.00	90.00	179.68	6,425.00	-2,934.22	-873.77	2,929.30	0.00	0.00	0.00
9,600.00	90.00	179.68	6,425.00	-3,034.22	-873.20	3,029.30	0.00	0.00	0.00

Hewlett-Packard

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well TIMBRO 1717-10H
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 1717-10H	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	179.68	6,425.00	-3,134.22	-872.63	3,129.30	0.00	0.00	0.00	
9,800.00	90.00	179.68	6,425.00	-3,234.22	-872.07	3,229.30	0.00	0.00	0.00	
9,900.00	90.00	179.68	6,425.00	-3,334.21	-871.50	3,329.30	0.00	0.00	0.00	
10,000.00	90.00	179.68	6,425.00	-3,434.21	-870.93	3,429.30	0.00	0.00	0.00	
10,100.00	90.00	179.68	6,425.00	-3,534.21	-870.37	3,529.30	0.00	0.00	0.00	
10,200.00	90.00	179.68	6,425.00	-3,634.21	-869.80	3,629.30	0.00	0.00	0.00	
10,300.00	90.00	179.68	6,425.00	-3,734.21	-869.24	3,729.30	0.00	0.00	0.00	
10,400.00	90.00	179.68	6,425.00	-3,834.21	-868.67	3,829.30	0.00	0.00	0.00	
10,500.00	90.00	179.68	6,425.00	-3,934.21	-868.10	3,929.30	0.00	0.00	0.00	
10,600.00	90.00	179.68	6,425.00	-4,034.20	-867.54	4,029.30	0.00	0.00	0.00	
10,700.00	90.00	179.68	6,425.00	-4,134.20	-866.97	4,129.30	0.00	0.00	0.00	
10,800.00	90.00	179.68	6,425.00	-4,234.20	-866.41	4,229.30	0.00	0.00	0.00	
10,900.00	90.00	179.68	6,425.00	-4,334.20	-865.84	4,329.30	0.00	0.00	0.00	
10,993.79	90.00	179.68	6,425.00	-4,427.99	-865.31	4,423.09	0.00	0.00	0.00	
TD Well @ 10993.79ft										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,715.10	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	
713.50	711.48	14.65	-34.43	End Tangent @ 713.50ft	
5,823.93	5,755.17	336.97	-791.93	KOP @ 5823.93ft :: DLS = 9°/100'	
6,864.64	6,425.00	-298.91	-888.69	End Build @ 6864.64ft	
10,993.79	6,425.00	-4,427.99	-865.31	TD Well @ 10993.79ft	