

VERDAD RESOURCES

WATTENBERG FIELD

9N-59W-17 TIMBRO 1717 PAD

TIMBRO 1717-14H

Wellbore #1

Plan: Design #1

Standard Planning Report

10 April, 2018

Project: WATTENBERG FIELD
Site: 9N-59W-17 TIMBRO 1717 PAD
Well: TIMBRO 1717-14H
Wellbore: Wellbore #1
Design: Design #1

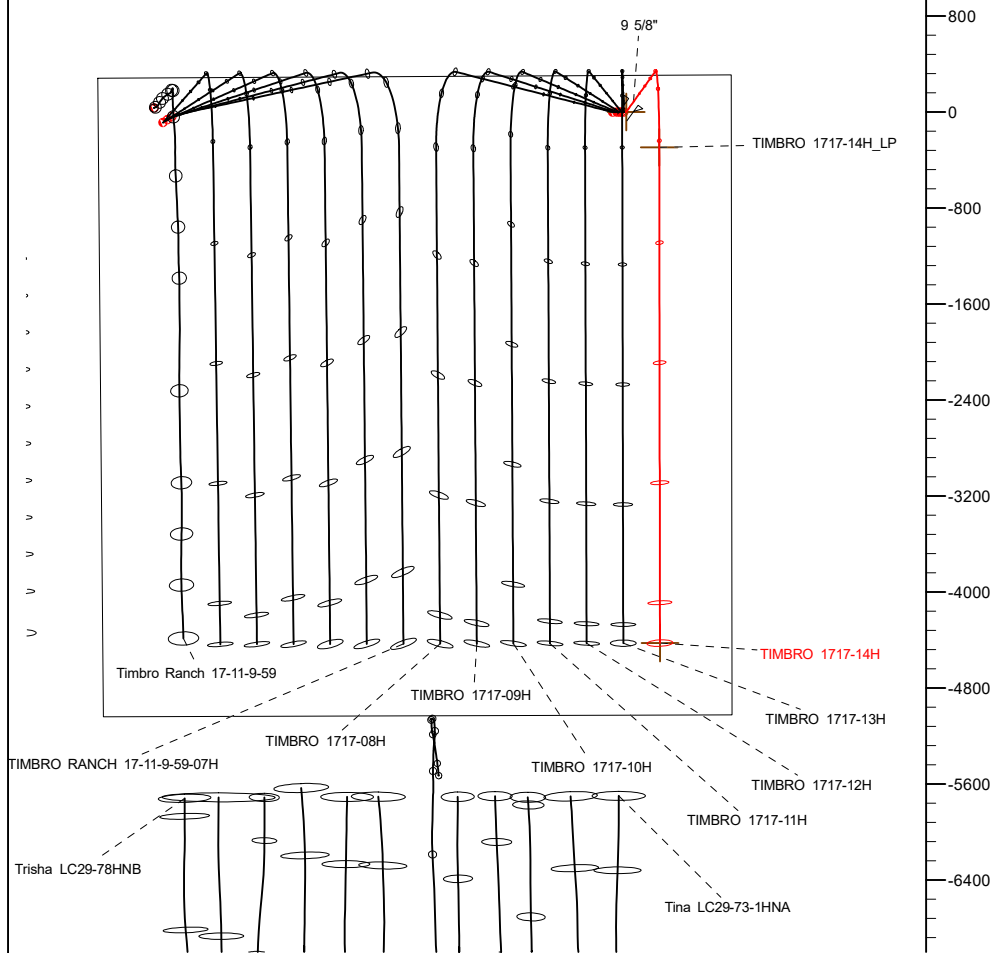
VERDAD RESOURCES

CASING DETAILS

TVD	MD	Name	Size
1700.00	1703.95	9 5/8"	9-5/8

West(-)/East(+) (1600 usft/in)

-4800 -4000 -3200 -2400 -1600 -800 0 800 1600 2400

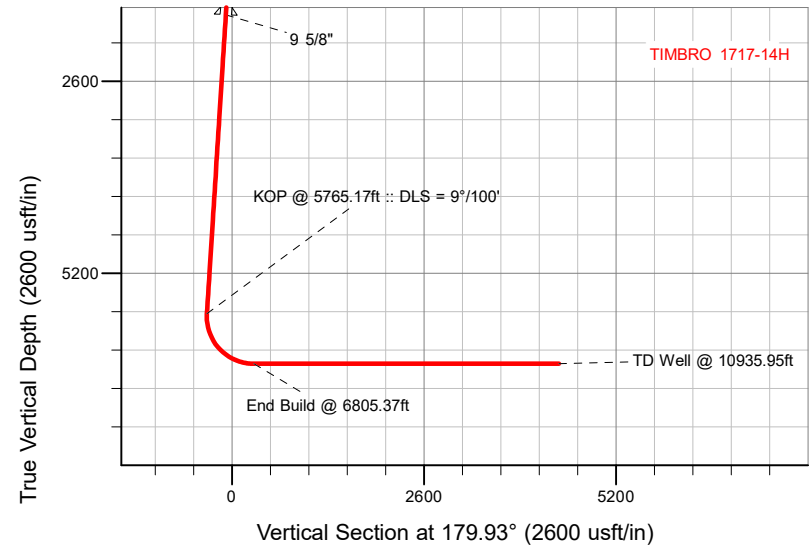


SECTION DETAILS

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	473.00	4.46	35.70	472.77	7.04	5.06	2.00	35.70	-7.04	
4	5765.17	4.46	35.70	5748.92	341.25	245.21	0.00	0.00	-340.95	
5	6805.37	90.00	179.93	6425.00	-294.07	276.80	9.00	144.15	294.41	
6	10935.95	90.00	179.93	6425.00	-4424.65	281.78	0.00	0.00	4424.99	TIMBRO 1717-14H_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

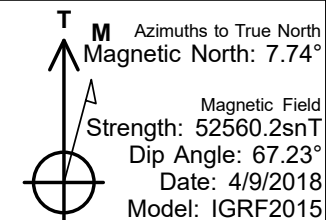
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
TIMBRO 1717-14H_SHL	0.00	0.00	0.00	40.756953	-103.995771
TIMBRO 1717-14H_BHL	6425.00	-4424.65	281.78	40.744808	-103.994754



SHL
306' FNL
876' FEL

LP
600' FNL
600' FEL

BHL
600' FSL
600' FEL



WELL DETAILS: TIMBRO 1717-14H

GL = 5011'

RKB = 20' @ 5031.00usft (RIG)

Plan: Design #1 (TIMBRO 1717-14H/Wellbore #1)

Created By: _____ Date: 4/10/2018
Reviewed: _____ Date: _____

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Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well TIMBRO 1717-14H
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 1717-14H	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 1717-14H					
Well Position	+N/-S	0.58 usft	Northing:	1,522,137.70 usft	Latitude:	40.756953
	+E/-W	110.98 usft	Easting:	3,416,717.51 usft	Longitude:	-103.995771
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	52,560.17972125

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	179.93

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	10,935.95	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	
473.00	4.46	35.70	472.77	7.04	5.06	2.00	2.00	0.00	35.70	
5,765.17	4.46	35.70	5,748.92	341.25	245.21	0.00	0.00	0.00	0.00	
6,805.37	90.00	179.93	6,425.00	-294.07	276.80	9.00	8.22	13.87	144.15	
10,935.95	90.00	179.93	6,425.00	-4,424.65	281.78	0.00	0.00	0.00	0.00	TIMBRO 1717-14H_E

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Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well TIMBRO 1717-14H
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 1717-14H	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	35.70	300.00	0.35	0.25	-0.35	2.00	2.00	0.00
400.00	3.00	35.70	399.93	3.19	2.29	-3.19	2.00	2.00	0.00
473.00	4.46	35.70	472.77	7.04	5.06	-7.04	2.00	2.00	0.00
End Tangent @ 473.00ft									
500.00	4.46	35.70	499.69	8.75	6.29	-8.74	0.00	0.00	0.00
600.00	4.46	35.70	599.39	15.06	10.83	-15.05	0.00	0.00	0.00
700.00	4.46	35.70	699.09	21.38	15.36	-21.36	0.00	0.00	0.00
800.00	4.46	35.70	798.78	27.69	19.90	-27.67	0.00	0.00	0.00
900.00	4.46	35.70	898.48	34.01	24.44	-33.98	0.00	0.00	0.00
1,000.00	4.46	35.70	998.18	40.32	28.98	-40.29	0.00	0.00	0.00
1,100.00	4.46	35.70	1,097.88	46.64	33.51	-46.60	0.00	0.00	0.00
1,200.00	4.46	35.70	1,197.57	52.95	38.05	-52.91	0.00	0.00	0.00
1,300.00	4.46	35.70	1,297.27	59.27	42.59	-59.22	0.00	0.00	0.00
1,400.00	4.46	35.70	1,396.97	65.58	47.13	-65.53	0.00	0.00	0.00
1,500.00	4.46	35.70	1,496.67	71.90	51.67	-71.84	0.00	0.00	0.00
1,600.00	4.46	35.70	1,596.36	78.21	56.20	-78.15	0.00	0.00	0.00
1,700.00	4.46	35.70	1,696.06	84.53	60.74	-84.46	0.00	0.00	0.00
1,703.95	4.46	35.70	1,700.00	84.78	60.92	-84.71	0.00	0.00	0.00
9 5/8"									
1,800.00	4.46	35.70	1,795.76	90.85	65.28	-90.77	0.00	0.00	0.00
1,900.00	4.46	35.70	1,895.45	97.16	69.82	-97.07	0.00	0.00	0.00
2,000.00	4.46	35.70	1,995.15	103.48	74.35	-103.38	0.00	0.00	0.00
2,100.00	4.46	35.70	2,094.85	109.79	78.89	-109.69	0.00	0.00	0.00
2,200.00	4.46	35.70	2,194.55	116.11	83.43	-116.00	0.00	0.00	0.00
2,300.00	4.46	35.70	2,294.24	122.42	87.97	-122.31	0.00	0.00	0.00
2,400.00	4.46	35.70	2,393.94	128.74	92.51	-128.62	0.00	0.00	0.00
2,500.00	4.46	35.70	2,493.64	135.05	97.04	-134.93	0.00	0.00	0.00
2,600.00	4.46	35.70	2,593.33	141.37	101.58	-141.24	0.00	0.00	0.00
2,700.00	4.46	35.70	2,693.03	147.68	106.12	-147.55	0.00	0.00	0.00
2,800.00	4.46	35.70	2,792.73	154.00	110.66	-153.86	0.00	0.00	0.00
2,900.00	4.46	35.70	2,892.43	160.31	115.19	-160.17	0.00	0.00	0.00
3,000.00	4.46	35.70	2,992.12	166.63	119.73	-166.48	0.00	0.00	0.00
3,100.00	4.46	35.70	3,091.82	172.94	124.27	-172.79	0.00	0.00	0.00
3,200.00	4.46	35.70	3,191.52	179.26	128.81	-179.10	0.00	0.00	0.00
3,300.00	4.46	35.70	3,291.21	185.57	133.35	-185.41	0.00	0.00	0.00
3,400.00	4.46	35.70	3,390.91	191.89	137.88	-191.72	0.00	0.00	0.00
3,500.00	4.46	35.70	3,490.61	198.20	142.42	-198.03	0.00	0.00	0.00
3,600.00	4.46	35.70	3,590.31	204.52	146.96	-204.34	0.00	0.00	0.00
3,700.00	4.46	35.70	3,690.00	210.83	151.50	-210.65	0.00	0.00	0.00
3,800.00	4.46	35.70	3,789.70	217.15	156.03	-216.95	0.00	0.00	0.00
3,900.00	4.46	35.70	3,889.40	223.46	160.57	-223.26	0.00	0.00	0.00
4,000.00	4.46	35.70	3,989.09	229.78	165.11	-229.57	0.00	0.00	0.00
4,100.00	4.46	35.70	4,088.79	236.09	169.65	-235.88	0.00	0.00	0.00
4,200.00	4.46	35.70	4,188.49	242.41	174.19	-242.19	0.00	0.00	0.00
4,300.00	4.46	35.70	4,288.19	248.72	178.72	-248.50	0.00	0.00	0.00
4,400.00	4.46	35.70	4,387.88	255.04	183.26	-254.81	0.00	0.00	0.00
4,500.00	4.46	35.70	4,487.58	261.35	187.80	-261.12	0.00	0.00	0.00
4,600.00	4.46	35.70	4,587.28	267.67	192.34	-267.43	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 1717-14H
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 1717-14H	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	4.46	35.70	4,686.98	273.98	196.87	-273.74	0.00	0.00	0.00
4,800.00	4.46	35.70	4,786.67	280.30	201.41	-280.05	0.00	0.00	0.00
4,900.00	4.46	35.70	4,886.37	286.61	205.95	-286.36	0.00	0.00	0.00
5,000.00	4.46	35.70	4,986.07	292.93	210.49	-292.67	0.00	0.00	0.00
5,100.00	4.46	35.70	5,085.76	299.24	215.03	-298.98	0.00	0.00	0.00
5,200.00	4.46	35.70	5,185.46	305.56	219.56	-305.29	0.00	0.00	0.00
5,300.00	4.46	35.70	5,285.16	311.87	224.10	-311.60	0.00	0.00	0.00
5,400.00	4.46	35.70	5,384.86	318.19	228.64	-317.91	0.00	0.00	0.00
5,500.00	4.46	35.70	5,484.55	324.50	233.18	-324.22	0.00	0.00	0.00
5,600.00	4.46	35.70	5,584.25	330.82	237.72	-330.52	0.00	0.00	0.00
5,700.00	4.46	35.70	5,683.95	337.13	242.25	-336.83	0.00	0.00	0.00
5,765.17	4.46	35.70	5,748.92	341.25	245.21	-340.95	0.00	0.00	0.00
KOP @ 5765.17ft :: DLS = 9°/100'									
5,800.00	2.65	79.45	5,783.69	342.49	246.79	-342.19	9.00	-5.18	125.61
5,900.00	8.91	163.02	5,883.24	335.50	251.34	-335.19	9.00	6.25	83.57
6,000.00	17.70	171.72	5,980.46	313.01	255.80	-312.69	9.00	8.80	8.70
6,100.00	26.64	174.72	6,072.98	275.56	260.06	-275.24	9.00	8.93	3.00
6,200.00	35.60	176.28	6,158.50	224.09	264.03	-223.77	9.00	8.96	1.56
6,300.00	44.58	177.28	6,234.93	159.86	267.59	-159.53	9.00	8.98	1.00
6,400.00	53.56	178.00	6,300.38	84.45	270.66	-84.12	9.00	8.98	0.72
6,500.00	62.55	178.57	6,353.24	-0.28	273.17	0.62	9.00	8.99	0.57
6,600.00	71.54	179.06	6,392.20	-92.25	275.06	92.58	9.00	8.99	0.48
6,700.00	80.53	179.50	6,416.31	-189.18	276.28	189.52	9.00	8.99	0.44
6,800.00	89.52	179.91	6,424.98	-288.70	276.79	289.04	9.00	8.99	0.41
6,805.37	90.00	179.93	6,425.00	-294.07	276.80	294.41	9.00	8.99	0.41
End Build @ 6805.37ft									
6,900.00	90.00	179.93	6,425.00	-388.70	276.91	389.04	0.00	0.00	0.00
7,000.00	90.00	179.93	6,425.00	-488.70	277.03	489.04	0.00	0.00	0.00
7,100.00	90.00	179.93	6,425.00	-588.70	277.15	589.04	0.00	0.00	0.00
7,200.00	90.00	179.93	6,425.00	-688.70	277.28	689.04	0.00	0.00	0.00
7,300.00	90.00	179.93	6,425.00	-788.70	277.40	789.04	0.00	0.00	0.00
7,400.00	90.00	179.93	6,425.00	-888.70	277.52	889.04	0.00	0.00	0.00
7,500.00	90.00	179.93	6,425.00	-988.70	277.64	989.04	0.00	0.00	0.00
7,600.00	90.00	179.93	6,425.00	-1,088.70	277.76	1,089.04	0.00	0.00	0.00
7,700.00	90.00	179.93	6,425.00	-1,188.70	277.88	1,189.04	0.00	0.00	0.00
7,800.00	90.00	179.93	6,425.00	-1,288.70	278.00	1,289.04	0.00	0.00	0.00
7,900.00	90.00	179.93	6,425.00	-1,388.70	278.12	1,389.04	0.00	0.00	0.00
8,000.00	90.00	179.93	6,425.00	-1,488.70	278.24	1,489.04	0.00	0.00	0.00
8,100.00	90.00	179.93	6,425.00	-1,588.70	278.36	1,589.04	0.00	0.00	0.00
8,200.00	90.00	179.93	6,425.00	-1,688.70	278.48	1,689.04	0.00	0.00	0.00
8,300.00	90.00	179.93	6,425.00	-1,788.70	278.60	1,789.04	0.00	0.00	0.00
8,400.00	90.00	179.93	6,425.00	-1,888.70	278.72	1,889.04	0.00	0.00	0.00
8,500.00	90.00	179.93	6,425.00	-1,988.70	278.84	1,989.04	0.00	0.00	0.00
8,600.00	90.00	179.93	6,425.00	-2,088.70	278.96	2,089.04	0.00	0.00	0.00
8,700.00	90.00	179.93	6,425.00	-2,188.70	279.08	2,189.04	0.00	0.00	0.00
8,800.00	90.00	179.93	6,425.00	-2,288.70	279.20	2,289.04	0.00	0.00	0.00
8,900.00	90.00	179.93	6,425.00	-2,388.70	279.32	2,389.04	0.00	0.00	0.00
9,000.00	90.00	179.93	6,425.00	-2,488.70	279.44	2,489.04	0.00	0.00	0.00
9,100.00	90.00	179.93	6,425.00	-2,588.70	279.56	2,589.04	0.00	0.00	0.00
9,200.00	90.00	179.93	6,425.00	-2,688.70	279.69	2,689.04	0.00	0.00	0.00
9,300.00	90.00	179.93	6,425.00	-2,788.70	279.81	2,789.04	0.00	0.00	0.00
9,400.00	90.00	179.93	6,425.00	-2,888.70	279.93	2,889.04	0.00	0.00	0.00
9,500.00	90.00	179.93	6,425.00	-2,988.70	280.05	2,989.04	0.00	0.00	0.00
9,600.00	90.00	179.93	6,425.00	-3,088.70	280.17	3,089.04	0.00	0.00	0.00

Hewlett-Packard

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well TIMBRO 1717-14H
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 1717-14H	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	179.93	6,425.00	-3,188.70	280.29	3,189.04	0.00	0.00	0.00	
9,800.00	90.00	179.93	6,425.00	-3,288.70	280.41	3,289.04	0.00	0.00	0.00	
9,900.00	90.00	179.93	6,425.00	-3,388.70	280.53	3,389.04	0.00	0.00	0.00	
10,000.00	90.00	179.93	6,425.00	-3,488.70	280.65	3,489.04	0.00	0.00	0.00	
10,100.00	90.00	179.93	6,425.00	-3,588.70	280.77	3,589.04	0.00	0.00	0.00	
10,200.00	90.00	179.93	6,425.00	-3,688.70	280.89	3,689.04	0.00	0.00	0.00	
10,300.00	90.00	179.93	6,425.00	-3,788.70	281.01	3,789.04	0.00	0.00	0.00	
10,400.00	90.00	179.93	6,425.00	-3,888.70	281.13	3,889.04	0.00	0.00	0.00	
10,500.00	90.00	179.93	6,425.00	-3,988.70	281.25	3,989.04	0.00	0.00	0.00	
10,600.00	90.00	179.93	6,425.00	-4,088.70	281.37	4,089.04	0.00	0.00	0.00	
10,700.00	90.00	179.93	6,425.00	-4,188.70	281.49	4,189.04	0.00	0.00	0.00	
10,800.00	90.00	179.93	6,425.00	-4,288.70	281.61	4,289.04	0.00	0.00	0.00	
10,900.00	90.00	179.93	6,425.00	-4,388.70	281.73	4,389.04	0.00	0.00	0.00	
10,935.95	90.00	179.93	6,425.00	-4,424.65	281.78	4,424.99	0.00	0.00	0.00	
TD Well @ 10935.95ft										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,703.95	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	
473.00	472.77	7.04	5.06	End Tangent @ 473.00ft	
5,765.17	5,748.92	341.25	245.21	KOP @ 5765.17ft :: DLS = 9°/100'	
6,805.37	6,425.00	-294.07	276.80	End Build @ 6805.37ft	
10,935.95	6,425.00	-4,424.65	281.78	TD Well @ 10935.95ft	