

# **VERDAD RESOURCES**

**WATTENBERG FIELD**

**8N-60W-11 SONIC STAR 1101 PAD**

**SONIC STAR 1101-16H**

**Wellbore #1**

**Plan: Design #1**

## **Standard Planning Report**

**06 March, 2018**

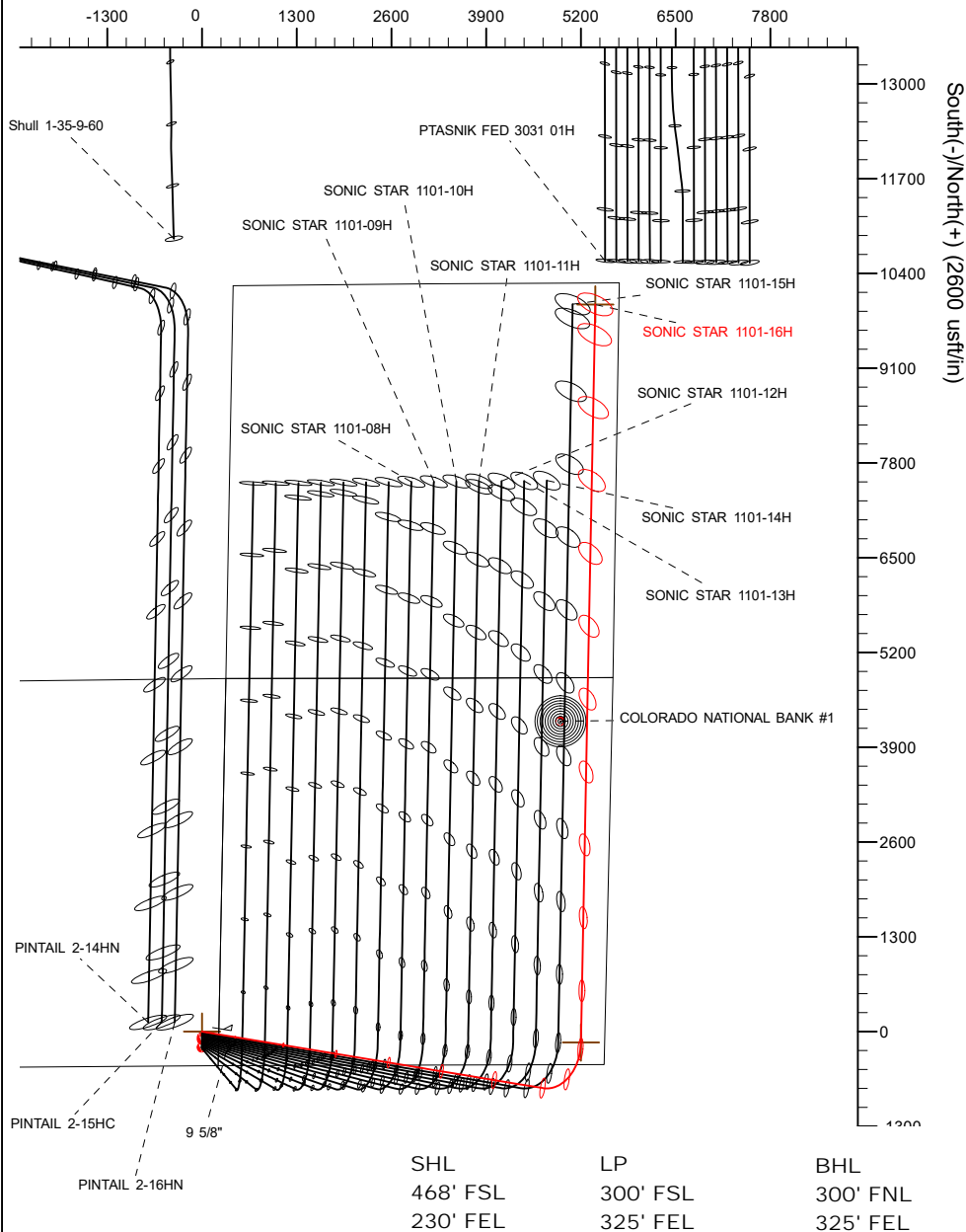
Project: WATTENBERG FIELD  
Site: 8N-60W-11 SONIC STAR 1101 PAD  
Well: SONIC STAR 1101-16H  
Wellbore: Wellbore #1  
Design: Design #1

# VERDAD RESOURCES

## CASING DETAILS

TVD	MD	Name	Size
1700.00	1770.37	9 5/8"	9-5/8

West(-)/East(+) (2600 usft/in)

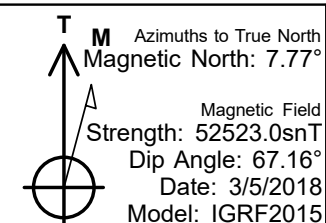
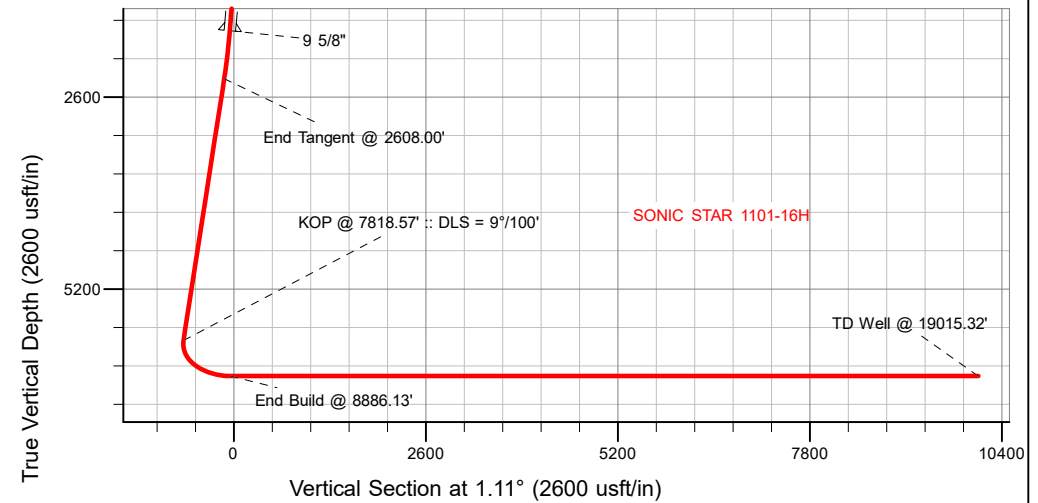


## SECTION DETAILS

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	2608.00	47.16	99.42	2350.62	-150.06	904.50	2.00	99.42	-132.51	
4	7818.57	47.16	99.42	5893.57	-775.40	4673.66	0.00	0.00	-684.71	
5	8886.13	90.00	1.11	6375.00	-152.47	5199.60	9.00	-95.67	-51.71	
6	19015.32	90.00	1.11	6375.00	9974.81	5396.56	0.00	0.00	10077.48	SONIC STAR 1101-16H_BHL

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
SONIC STAR 1101-16H_SHL	0.00	0.00	0.00	40.671124	-104.049098
SONIC STAR 1101-16H_BHL	6375.00	9974.81	5396.56	40.698501	-104.029636



## WELL DETAILS: SONIC STAR 1101-16H

GL = 4882'

RKB = 20' @ 4902.00usft (RIG)

Plan: Design #1 (SONIC STAR 1101-16H/Wellbore #1)

Created By:	Date: 3/6/2018
Reviewed:	Date:

# Hewlett-Packard

## Planning Report

<b>Database:</b>	EDM 5000.14 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SONIC STAR 1101-16H
<b>Company:</b>	VERDAD RESOURCES	<b>TVD Reference:</b>	RKB = 20' @ 4902.00usft (RIG)
<b>Project:</b>	WATTENBERG FIELD	<b>MD Reference:</b>	RKB = 20' @ 4902.00usft (RIG)
<b>Site:</b>	8N-60W-11 SONIC STAR 1101 PAD	<b>North Reference:</b>	True
<b>Well:</b>	SONIC STAR 1101-16H	<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		

<b>Site</b>	8N-60W-11 SONIC STAR 1101 PAD			
<b>Site Position:</b>		<b>Northing:</b>	1,490,400.68 usft	<b>Latitude:</b> 40.670506
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,402,456.42 usft	<b>Longitude:</b> -104.049114
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b> 0.94 °

<b>Well</b>	SONIC STAR 1101-16H			
<b>Well Position</b>	<b>+N/-S</b>	225.03 usft	<b>Northing:</b>	1,490,625.76 usft
	<b>+E/-W</b>	4.41 usft	<b>Easting:</b>	3,402,457.15 usft
<b>Position Uncertainty</b>		3.28 usft	<b>Wellhead Elevation:</b>	<b>Ground Level:</b> 4,882.00 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	3/5/2018	7.77	67.16	52,523.00983277

<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	1.11

<b>Plan Survey Tool Program</b>	<b>Date</b>	3/5/2018		
<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	19,015.32	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	
2,608.00	47.16	99.42	2,350.62	-150.06	904.50	2.00	2.00	0.00	99.42	
7,818.57	47.16	99.42	5,893.57	-775.40	4,673.66	0.00	0.00	0.00	0.00	
8,886.13	90.00	1.11	6,375.00	-152.47	5,199.60	9.00	4.01	-9.21	-95.67	
19,015.32	90.00	1.11	6,375.00	9,974.81	5,396.56	0.00	0.00	0.00	0.00	SONIC STAR 1101-16

# Hewlett-Packard

## Planning Report

<b>Database:</b>	EDM 5000.14 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SONIC STAR 1101-16H
<b>Company:</b>	VERDAD RESOURCES	<b>TVD Reference:</b>	RKB = 20' @ 4902.00usft (RIG)
<b>Project:</b>	WATTENBERG FIELD	<b>MD Reference:</b>	RKB = 20' @ 4902.00usft (RIG)
<b>Site:</b>	8N-60W-11 SONIC STAR 1101 PAD	<b>North Reference:</b>	True
<b>Well:</b>	SONIC STAR 1101-16H	<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 @ 250.00'									
300.00	1.00	99.42	300.00	-0.07	0.43	-0.06	2.00	2.00	0.00
400.00	3.00	99.42	399.93	-0.64	3.87	-0.57	2.00	2.00	0.00
500.00	5.00	99.42	499.68	-1.78	10.75	-1.58	2.00	2.00	0.00
600.00	7.00	99.42	599.13	-3.49	21.07	-3.09	2.00	2.00	0.00
700.00	9.00	99.42	698.15	-5.77	34.79	-5.10	2.00	2.00	0.00
800.00	11.00	99.42	796.63	-8.61	51.92	-7.61	2.00	2.00	0.00
900.00	13.00	99.42	894.44	-12.02	72.43	-10.61	2.00	2.00	0.00
1,000.00	15.00	99.42	991.46	-15.98	96.30	-14.11	2.00	2.00	0.00
1,100.00	17.00	99.42	1,087.58	-20.49	123.49	-18.09	2.00	2.00	0.00
1,200.00	19.00	99.42	1,182.68	-25.55	153.97	-22.56	2.00	2.00	0.00
1,300.00	21.00	99.42	1,276.65	-31.14	187.71	-27.50	2.00	2.00	0.00
1,400.00	23.00	99.42	1,369.36	-37.27	224.67	-32.91	2.00	2.00	0.00
1,500.00	25.00	99.42	1,460.71	-43.93	264.79	-38.79	2.00	2.00	0.00
1,600.00	27.00	99.42	1,550.59	-51.10	308.03	-45.13	2.00	2.00	0.00
1,700.00	29.00	99.42	1,638.88	-58.79	354.34	-51.91	2.00	2.00	0.00
1,770.37	30.41	99.42	1,700.00	-64.50	388.74	-56.95	2.00	2.00	0.00
9 5/8"									
1,800.00	31.00	99.42	1,725.48	-66.97	403.67	-59.14	2.00	2.00	0.00
1,900.00	33.00	99.42	1,810.28	-75.64	455.94	-66.80	2.00	2.00	0.00
2,000.00	35.00	99.42	1,893.18	-84.80	511.10	-74.88	2.00	2.00	0.00
2,100.00	37.00	99.42	1,974.07	-94.42	569.09	-83.37	2.00	2.00	0.00
2,200.00	39.00	99.42	2,052.87	-104.49	629.82	-92.27	2.00	2.00	0.00
2,300.00	41.00	99.42	2,129.47	-115.01	693.23	-101.56	2.00	2.00	0.00
2,400.00	43.00	99.42	2,203.78	-125.96	759.24	-111.23	2.00	2.00	0.00
2,500.00	45.00	99.42	2,275.71	-137.33	827.76	-121.27	2.00	2.00	0.00
2,608.00	47.16	99.42	2,350.62	-150.06	904.50	-132.51	2.00	2.00	0.00
End Tangent @ 2608.00'									
2,700.00	47.16	99.42	2,413.18	-161.10	971.05	-142.26	0.00	0.00	0.00
2,800.00	47.16	99.42	2,481.17	-173.11	1,043.39	-152.86	0.00	0.00	0.00
2,900.00	47.16	99.42	2,549.17	-185.11	1,115.73	-163.46	0.00	0.00	0.00
3,000.00	47.16	99.42	2,617.16	-197.11	1,188.06	-174.06	0.00	0.00	0.00
3,100.00	47.16	99.42	2,685.16	-209.11	1,260.40	-184.65	0.00	0.00	0.00
3,200.00	47.16	99.42	2,753.15	-221.11	1,332.74	-195.25	0.00	0.00	0.00
3,300.00	47.16	99.42	2,821.15	-233.11	1,405.07	-205.85	0.00	0.00	0.00
3,400.00	47.16	99.42	2,889.14	-245.11	1,477.41	-216.45	0.00	0.00	0.00
3,500.00	47.16	99.42	2,957.14	-257.11	1,549.75	-227.04	0.00	0.00	0.00
3,600.00	47.16	99.42	3,025.14	-269.12	1,622.08	-237.64	0.00	0.00	0.00
3,700.00	47.16	99.42	3,093.13	-281.12	1,694.42	-248.24	0.00	0.00	0.00
3,800.00	47.16	99.42	3,161.13	-293.12	1,766.76	-258.84	0.00	0.00	0.00
3,900.00	47.16	99.42	3,229.12	-305.12	1,839.09	-269.44	0.00	0.00	0.00
4,000.00	47.16	99.42	3,297.12	-317.12	1,911.43	-280.03	0.00	0.00	0.00
4,100.00	47.16	99.42	3,365.11	-329.12	1,983.77	-290.63	0.00	0.00	0.00
4,200.00	47.16	99.42	3,433.11	-341.12	2,056.10	-301.23	0.00	0.00	0.00
4,300.00	47.16	99.42	3,501.10	-353.12	2,128.44	-311.83	0.00	0.00	0.00
4,400.00	47.16	99.42	3,569.10	-365.13	2,200.78	-322.42	0.00	0.00	0.00
4,500.00	47.16	99.42	3,637.09	-377.13	2,273.11	-333.02	0.00	0.00	0.00
4,600.00	47.16	99.42	3,705.09	-389.13	2,345.45	-343.62	0.00	0.00	0.00
4,700.00	47.16	99.42	3,773.08	-401.13	2,417.79	-354.22	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 SONIC STAR 1101-16H
<b>Company:</b>	VERDAD RESOURCES	<b>TVD Reference:</b>	RKB = 20' @ 4902.00usft (RIG)
<b>Project:</b>	WATTENBERG FIELD	<b>MD Reference:</b>	RKB = 20' @ 4902.00usft (RIG)
<b>Site:</b>	8N-60W-11 SONIC STAR 1101 PAD	<b>North Reference:</b>	True
<b>Well:</b>	SONIC STAR 1101-16H	<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)
4,800.00	47.16	99.42	3,841.08	-413.13	2,490.12	-364.81	0.00	0.00	0.00
4,900.00	47.16	99.42	3,909.08	-425.13	2,562.46	-375.41	0.00	0.00	0.00
5,000.00	47.16	99.42	3,977.07	-437.13	2,634.80	-386.01	0.00	0.00	0.00
5,100.00	47.16	99.42	4,045.07	-449.13	2,707.13	-396.61	0.00	0.00	0.00
5,200.00	47.16	99.42	4,113.06	-461.14	2,779.47	-407.20	0.00	0.00	0.00
5,300.00	47.16	99.42	4,181.06	-473.14	2,851.81	-417.80	0.00	0.00	0.00
5,400.00	47.16	99.42	4,249.05	-485.14	2,924.14	-428.40	0.00	0.00	0.00
5,500.00	47.16	99.42	4,317.05	-497.14	2,996.48	-439.00	0.00	0.00	0.00
5,600.00	47.16	99.42	4,385.04	-509.14	3,068.82	-449.60	0.00	0.00	0.00
5,700.00	47.16	99.42	4,453.04	-521.14	3,141.15	-460.19	0.00	0.00	0.00
5,800.00	47.16	99.42	4,521.03	-533.14	3,213.49	-470.79	0.00	0.00	0.00
5,900.00	47.16	99.42	4,589.03	-545.14	3,285.83	-481.39	0.00	0.00	0.00
6,000.00	47.16	99.42	4,657.02	-557.14	3,358.16	-491.99	0.00	0.00	0.00
6,100.00	47.16	99.42	4,725.02	-569.15	3,430.50	-502.58	0.00	0.00	0.00
6,200.00	47.16	99.42	4,793.01	-581.15	3,502.84	-513.18	0.00	0.00	0.00
6,300.00	47.16	99.42	4,861.01	-593.15	3,575.17	-523.78	0.00	0.00	0.00
6,400.00	47.16	99.42	4,929.01	-605.15	3,647.51	-534.38	0.00	0.00	0.00
6,500.00	47.16	99.42	4,997.00	-617.15	3,719.85	-544.97	0.00	0.00	0.00
6,600.00	47.16	99.42	5,065.00	-629.15	3,792.19	-555.57	0.00	0.00	0.00
6,700.00	47.16	99.42	5,132.99	-641.15	3,864.52	-566.17	0.00	0.00	0.00
6,800.00	47.16	99.42	5,200.99	-653.15	3,936.86	-576.77	0.00	0.00	0.00
6,900.00	47.16	99.42	5,268.98	-665.16	4,009.20	-587.37	0.00	0.00	0.00
7,000.00	47.16	99.42	5,336.98	-677.16	4,081.53	-597.96	0.00	0.00	0.00
7,100.00	47.16	99.42	5,404.97	-689.16	4,153.87	-608.56	0.00	0.00	0.00
7,200.00	47.16	99.42	5,472.97	-701.16	4,226.21	-619.16	0.00	0.00	0.00
7,300.00	47.16	99.42	5,540.96	-713.16	4,298.54	-629.76	0.00	0.00	0.00
7,400.00	47.16	99.42	5,608.96	-725.16	4,370.88	-640.35	0.00	0.00	0.00
7,500.00	47.16	99.42	5,676.95	-737.16	4,443.22	-650.95	0.00	0.00	0.00
7,600.00	47.16	99.42	5,744.95	-749.16	4,515.55	-661.55	0.00	0.00	0.00
7,700.00	47.16	99.42	5,812.94	-761.17	4,587.89	-672.15	0.00	0.00	0.00
7,800.00	47.16	99.42	5,880.94	-773.17	4,660.23	-682.74	0.00	0.00	0.00
7,818.57	47.16	99.42	5,893.57	-775.40	4,673.66	-684.71	0.00	0.00	0.00
KOP @ 7818.57' :: DLS = 9°/100'									
7,850.00	46.95	95.57	5,914.99	-778.40	4,696.46	-687.27	9.00	-0.68	-12.26
7,900.00	46.87	89.40	5,949.16	-779.98	4,732.90	-688.15	9.00	-0.15	-12.33
7,950.00	47.13	83.26	5,983.28	-777.64	4,769.36	-685.10	9.00	0.51	-12.29
8,000.00	47.71	77.20	6,017.13	-771.39	4,805.61	-678.15	9.00	1.16	-12.12
8,050.00	48.60	71.28	6,050.50	-761.26	4,841.42	-667.33	9.00	1.79	-11.84
8,100.00	49.79	65.54	6,083.19	-747.33	4,876.58	-652.72	9.00	2.38	-11.47
8,150.00	51.25	60.03	6,114.99	-729.67	4,910.87	-634.40	9.00	2.92	-11.03
8,200.00	52.96	54.75	6,145.71	-708.40	4,944.07	-612.49	9.00	3.42	-10.55
8,250.00	54.89	49.72	6,175.16	-683.65	4,975.99	-587.13	9.00	3.86	-10.06
8,300.00	57.02	44.93	6,203.16	-655.57	5,006.42	-558.46	9.00	4.26	-9.57
8,350.00	59.32	40.38	6,229.54	-624.33	5,035.18	-526.67	9.00	4.61	-9.10
8,400.00	61.78	36.05	6,254.13	-590.12	5,062.08	-491.95	9.00	4.91	-8.66
8,450.00	64.36	31.92	6,276.78	-553.16	5,086.98	-454.51	9.00	5.17	-8.27
8,500.00	67.06	27.96	6,297.35	-513.67	5,109.70	-414.59	9.00	5.39	-7.91
8,550.00	69.85	24.17	6,315.72	-471.90	5,130.11	-372.44	9.00	5.58	-7.59
8,600.00	72.72	20.51	6,331.76	-428.11	5,148.09	-328.30	9.00	5.74	-7.32
8,650.00	75.65	16.96	6,345.40	-382.56	5,163.53	-282.46	9.00	5.86	-7.10
8,700.00	78.63	13.50	6,356.52	-335.54	5,176.32	-235.20	9.00	5.97	-6.91
8,750.00	81.66	10.12	6,365.08	-287.33	5,186.39	-186.81	9.00	6.05	-6.77
8,800.00	84.71	6.79	6,371.02	-238.23	5,193.68	-137.58	9.00	6.10	-6.66
8,850.00	87.78	3.49	6,374.30	-188.56	5,198.15	-87.82	9.00	6.14	-6.60

# Hewlett-Packard

## Planning Report

<b>Database:</b>	EDM 5000.14 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SONIC STAR 1101-16H
<b>Company:</b>	VERDAD RESOURCES	<b>TVD Reference:</b>	RKB = 20' @ 4902.00usft (RIG)
<b>Project:</b>	WATTENBERG FIELD	<b>MD Reference:</b>	RKB = 20' @ 4902.00usft (RIG)
<b>Site:</b>	8N-60W-11 SONIC STAR 1101 PAD	<b>North Reference:</b>	True
<b>Well:</b>	SONIC STAR 1101-16H	<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)	
8,886.13	90.00	1.11	6,375.00	-152.47	5,199.60	-51.71	9.00	6.15	-6.57	
End Build @ 8886.13'										
8,900.00	90.00	1.11	6,375.00	-138.60	5,199.87	-37.84	0.00	0.00	0.00	
9,000.00	90.00	1.11	6,375.00	-38.62	5,201.81	62.16	0.00	0.00	0.00	
9,100.00	90.00	1.11	6,375.00	61.36	5,203.76	162.16	0.00	0.00	0.00	
9,200.00	90.00	1.11	6,375.00	161.34	5,205.70	262.16	0.00	0.00	0.00	
9,300.00	90.00	1.11	6,375.00	261.33	5,207.64	362.16	0.00	0.00	0.00	
9,400.00	90.00	1.11	6,375.00	361.31	5,209.59	462.16	0.00	0.00	0.00	
9,500.00	90.00	1.11	6,375.00	461.29	5,211.53	562.16	0.00	0.00	0.00	
9,600.00	90.00	1.11	6,375.00	561.27	5,213.48	662.16	0.00	0.00	0.00	
9,700.00	90.00	1.11	6,375.00	661.25	5,215.42	762.16	0.00	0.00	0.00	
9,800.00	90.00	1.11	6,375.00	761.23	5,217.37	862.16	0.00	0.00	0.00	
9,900.00	90.00	1.11	6,375.00	861.21	5,219.31	962.16	0.00	0.00	0.00	
10,000.00	90.00	1.11	6,375.00	961.19	5,221.26	1,062.16	0.00	0.00	0.00	
10,100.00	90.00	1.11	6,375.00	1,061.17	5,223.20	1,162.16	0.00	0.00	0.00	
10,200.00	90.00	1.11	6,375.00	1,161.16	5,225.14	1,262.16	0.00	0.00	0.00	
10,300.00	90.00	1.11	6,375.00	1,261.14	5,227.09	1,362.16	0.00	0.00	0.00	
10,400.00	90.00	1.11	6,375.00	1,361.12	5,229.03	1,462.16	0.00	0.00	0.00	
10,500.00	90.00	1.11	6,375.00	1,461.10	5,230.98	1,562.16	0.00	0.00	0.00	
10,600.00	90.00	1.11	6,375.00	1,561.08	5,232.92	1,662.16	0.00	0.00	0.00	
10,700.00	90.00	1.11	6,375.00	1,661.06	5,234.87	1,762.16	0.00	0.00	0.00	
10,800.00	90.00	1.11	6,375.00	1,761.04	5,236.81	1,862.16	0.00	0.00	0.00	
10,900.00	90.00	1.11	6,375.00	1,861.02	5,238.76	1,962.16	0.00	0.00	0.00	
11,000.00	90.00	1.11	6,375.00	1,961.00	5,240.70	2,062.16	0.00	0.00	0.00	
11,100.00	90.00	1.11	6,375.00	2,060.99	5,242.65	2,162.16	0.00	0.00	0.00	
11,200.00	90.00	1.11	6,375.00	2,160.97	5,244.59	2,262.16	0.00	0.00	0.00	
11,300.00	90.00	1.11	6,375.00	2,260.95	5,246.53	2,362.16	0.00	0.00	0.00	
11,400.00	90.00	1.11	6,375.00	2,360.93	5,248.48	2,462.16	0.00	0.00	0.00	
11,500.00	90.00	1.11	6,375.00	2,460.91	5,250.42	2,562.16	0.00	0.00	0.00	
11,600.00	90.00	1.11	6,375.00	2,560.89	5,252.37	2,662.16	0.00	0.00	0.00	
11,700.00	90.00	1.11	6,375.00	2,660.87	5,254.31	2,762.16	0.00	0.00	0.00	
11,800.00	90.00	1.11	6,375.00	2,760.85	5,256.26	2,862.16	0.00	0.00	0.00	
11,900.00	90.00	1.11	6,375.00	2,860.83	5,258.20	2,962.16	0.00	0.00	0.00	
12,000.00	90.00	1.11	6,375.00	2,960.82	5,260.15	3,062.16	0.00	0.00	0.00	
12,100.00	90.00	1.11	6,375.00	3,060.80	5,262.09	3,162.16	0.00	0.00	0.00	
12,200.00	90.00	1.11	6,375.00	3,160.78	5,264.03	3,262.16	0.00	0.00	0.00	
12,300.00	90.00	1.11	6,375.00	3,260.76	5,265.98	3,362.16	0.00	0.00	0.00	
12,400.00	90.00	1.11	6,375.00	3,360.74	5,267.92	3,462.16	0.00	0.00	0.00	
12,500.00	90.00	1.11	6,375.00	3,460.72	5,269.87	3,562.16	0.00	0.00	0.00	
12,600.00	90.00	1.11	6,375.00	3,560.70	5,271.81	3,662.16	0.00	0.00	0.00	
12,700.00	90.00	1.11	6,375.00	3,660.68	5,273.76	3,762.16	0.00	0.00	0.00	
12,800.00	90.00	1.11	6,375.00	3,760.66	5,275.70	3,862.16	0.00	0.00	0.00	
12,900.00	90.00	1.11	6,375.00	3,860.65	5,277.65	3,962.16	0.00	0.00	0.00	
13,000.00	90.00	1.11	6,375.00	3,960.63	5,279.59	4,062.16	0.00	0.00	0.00	
13,100.00	90.00	1.11	6,375.00	4,060.61	5,281.53	4,162.16	0.00	0.00	0.00	
13,200.00	90.00	1.11	6,375.00	4,160.59	5,283.48	4,262.16	0.00	0.00	0.00	
13,300.00	90.00	1.11	6,375.00	4,260.57	5,285.42	4,362.16	0.00	0.00	0.00	
13,400.00	90.00	1.11	6,375.00	4,360.55	5,287.37	4,462.16	0.00	0.00	0.00	
13,500.00	90.00	1.11	6,375.00	4,460.53	5,289.31	4,562.16	0.00	0.00	0.00	
13,600.00	90.00	1.11	6,375.00	4,560.51	5,291.26	4,662.16	0.00	0.00	0.00	
13,700.00	90.00	1.11	6,375.00	4,660.49	5,293.20	4,762.16	0.00	0.00	0.00	
13,800.00	90.00	1.11	6,375.00	4,760.47	5,295.15	4,862.16	0.00	0.00	0.00	
13,900.00	90.00	1.11	6,375.00	4,860.46	5,297.09	4,962.16	0.00	0.00	0.00	

## Planning Report

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)
14,000.00	90.00	1.11	6,375.00	4,960.44	5,299.03	5,062.16	0.00	0.00	0.00
14,100.00	90.00	1.11	6,375.00	5,060.42	5,300.98	5,162.16	0.00	0.00	0.00
14,200.00	90.00	1.11	6,375.00	5,160.40	5,302.92	5,262.16	0.00	0.00	0.00
14,300.00	90.00	1.11	6,375.00	5,260.38	5,304.87	5,362.16	0.00	0.00	0.00
14,400.00	90.00	1.11	6,375.00	5,360.36	5,306.81	5,462.16	0.00	0.00	0.00
14,500.00	90.00	1.11	6,375.00	5,460.34	5,308.76	5,562.16	0.00	0.00	0.00
14,600.00	90.00	1.11	6,375.00	5,560.32	5,310.70	5,662.16	0.00	0.00	0.00
14,700.00	90.00	1.11	6,375.00	5,660.30	5,312.65	5,762.16	0.00	0.00	0.00
14,800.00	90.00	1.11	6,375.00	5,760.29	5,314.59	5,862.16	0.00	0.00	0.00
14,900.00	90.00	1.11	6,375.00	5,860.27	5,316.54	5,962.16	0.00	0.00	0.00
15,000.00	90.00	1.11	6,375.00	5,960.25	5,318.48	6,062.16	0.00	0.00	0.00
15,100.00	90.00	1.11	6,375.00	6,060.23	5,320.42	6,162.16	0.00	0.00	0.00
15,200.00	90.00	1.11	6,375.00	6,160.21	5,322.37	6,262.16	0.00	0.00	0.00
15,300.00	90.00	1.11	6,375.00	6,260.19	5,324.31	6,362.16	0.00	0.00	0.00
15,400.00	90.00	1.11	6,375.00	6,360.17	5,326.26	6,462.16	0.00	0.00	0.00
15,500.00	90.00	1.11	6,375.00	6,460.15	5,328.20	6,562.16	0.00	0.00	0.00
15,600.00	90.00	1.11	6,375.00	6,560.13	5,330.15	6,662.16	0.00	0.00	0.00
15,700.00	90.00	1.11	6,375.00	6,660.12	5,332.09	6,762.16	0.00	0.00	0.00
15,800.00	90.00	1.11	6,375.00	6,760.10	5,334.04	6,862.16	0.00	0.00	0.00
15,900.00	90.00	1.11	6,375.00	6,860.08	5,335.98	6,962.16	0.00	0.00	0.00
16,000.00	90.00	1.11	6,375.00	6,960.06	5,337.92	7,062.16	0.00	0.00	0.00
16,100.00	90.00	1.11	6,375.00	7,060.04	5,339.87	7,162.16	0.00	0.00	0.00
16,200.00	90.00	1.11	6,375.00	7,160.02	5,341.81	7,262.16	0.00	0.00	0.00
16,300.00	90.00	1.11	6,375.00	7,260.00	5,343.76	7,362.16	0.00	0.00	0.00
16,400.00	90.00	1.11	6,375.00	7,359.98	5,345.70	7,462.16	0.00	0.00	0.00
16,500.00	90.00	1.11	6,375.00	7,459.96	5,347.65	7,562.16	0.00	0.00	0.00
16,600.00	90.00	1.11	6,375.00	7,559.95	5,349.59	7,662.16	0.00	0.00	0.00
16,700.00	90.00	1.11	6,375.00	7,659.93	5,351.54	7,762.16	0.00	0.00	0.00
16,800.00	90.00	1.11	6,375.00	7,759.91	5,353.48	7,862.16	0.00	0.00	0.00
16,900.00	90.00	1.11	6,375.00	7,859.89	5,355.42	7,962.16	0.00	0.00	0.00
17,000.00	90.00	1.11	6,375.00	7,959.87	5,357.37	8,062.16	0.00	0.00	0.00
17,100.00	90.00	1.11	6,375.00	8,059.85	5,359.31	8,162.16	0.00	0.00	0.00
17,200.00	90.00	1.11	6,375.00	8,159.83	5,361.26	8,262.16	0.00	0.00	0.00
17,300.00	90.00	1.11	6,375.00	8,259.81	5,363.20	8,362.16	0.00	0.00	0.00
17,400.00	90.00	1.11	6,375.00	8,359.79	5,365.15	8,462.16	0.00	0.00	0.00
17,500.00	90.00	1.11	6,375.00	8,459.78	5,367.09	8,562.16	0.00	0.00	0.00
17,600.00	90.00	1.11	6,375.00	8,559.76	5,369.04	8,662.16	0.00	0.00	0.00
17,700.00	90.00	1.11	6,375.00	8,659.74	5,370.98	8,762.16	0.00	0.00	0.00
17,800.00	90.00	1.11	6,375.00	8,759.72	5,372.93	8,862.16	0.00	0.00	0.00
17,900.00	90.00	1.11	6,375.00	8,859.70	5,374.87	8,962.16	0.00	0.00	0.00
18,000.00	90.00	1.11	6,375.00	8,959.68	5,376.81	9,062.16	0.00	0.00	0.00
18,100.00	90.00	1.11	6,375.00	9,059.66	5,378.76	9,162.16	0.00	0.00	0.00
18,200.00	90.00	1.11	6,375.00	9,159.64	5,380.70	9,262.16	0.00	0.00	0.00
18,300.00	90.00	1.11	6,375.00	9,259.62	5,382.65	9,362.16	0.00	0.00	0.00
18,400.00	90.00	1.11	6,375.00	9,359.61	5,384.59	9,462.16	0.00	0.00	0.00
18,500.00	90.00	1.11	6,375.00	9,459.59	5,386.54	9,562.16	0.00	0.00	0.00
18,600.00	90.00	1.11	6,375.00	9,559.57	5,388.48	9,662.16	0.00	0.00	0.00
18,700.00	90.00	1.11	6,375.00	9,659.55	5,390.43	9,762.16	0.00	0.00	0.00
18,800.00	90.00	1.11	6,375.00	9,759.53	5,392.37	9,862.16	0.00	0.00	0.00
18,900.00	90.00	1.11	6,375.00	9,859.51	5,394.31	9,962.16	0.00	0.00	0.00
19,000.00	90.00	1.11	6,375.00	9,959.49	5,396.26	10,062.16	0.00	0.00	0.00
19,015.32	90.00	1.11	6,375.00	9,974.81	5,396.56	10,077.48	0.00	0.00	0.00
TD Well @ 19015.32'									

# Hewlett-Packard

## Planning Report

<b>Database:</b>	EDM 5000.14 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SONIC STAR 1101-16H
<b>Company:</b>	VERDAD RESOURCES	<b>TVD Reference:</b>	RKB = 20' @ 4902.00usft (RIG)
<b>Project:</b>	WATTENBERG FIELD	<b>MD Reference:</b>	RKB = 20' @ 4902.00usft (RIG)
<b>Site:</b>	8N-60W-11 SONIC STAR 1101 PAD	<b>North Reference:</b>	True
<b>Well:</b>	SONIC STAR 1101-16H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (")	Hole Diameter (")
1,770.37	1,700.00	9 5/8"		9-5/8	13-1/2

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
250.00	250.00	0.00	0.00	Begin Tangent @ 250.00'
2,608.00	2,350.62	-150.06	904.50	End Tangent @ 2608.00'
7,818.57	5,893.57	-775.40	4,673.66	KOP @ 7818.57' :: DLS = 9°/100'
8,886.13	6,375.00	-152.47	5,199.60	End Build @ 8886.13'
19,015.32	6,375.00	9,974.81	5,396.56	TD Well @ 19015.32'