

VERDAD RESOURCES

WATTENBERG FIELD

1N-65W-12 WUERTZ 1201 PAD

WUERTZ 1201-16H

Wellbore #1

Plan: Design #2

Standard Planning Report

19 June, 2019

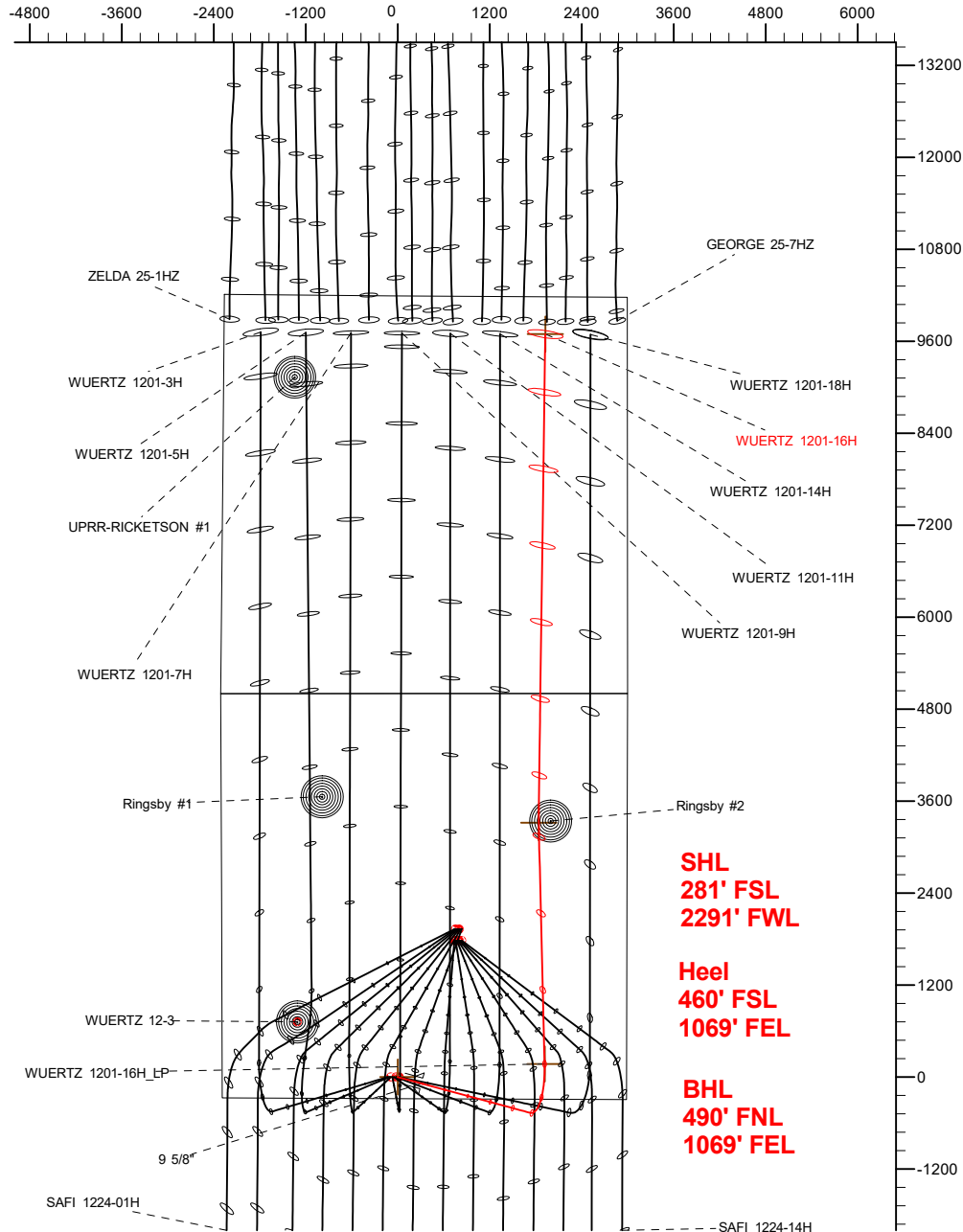
Project: WATTENBERG FIELD
Site: 1N-65W-12 WUERTZ 1201 PAD
Well: WUERTZ 1201-16H
Wellbore: Wellbore #1
Design: Design #2

VERDAD RESOURCES

CASING DETAILS

TVD	MD	Name	Size
1700.00	1742.75	9 5/8"	9-5/8

West(-)/East(+) (2400 usft/in)



SHL
281' FSL
2291' FWL

Heel
460' FSL
1069' FEL

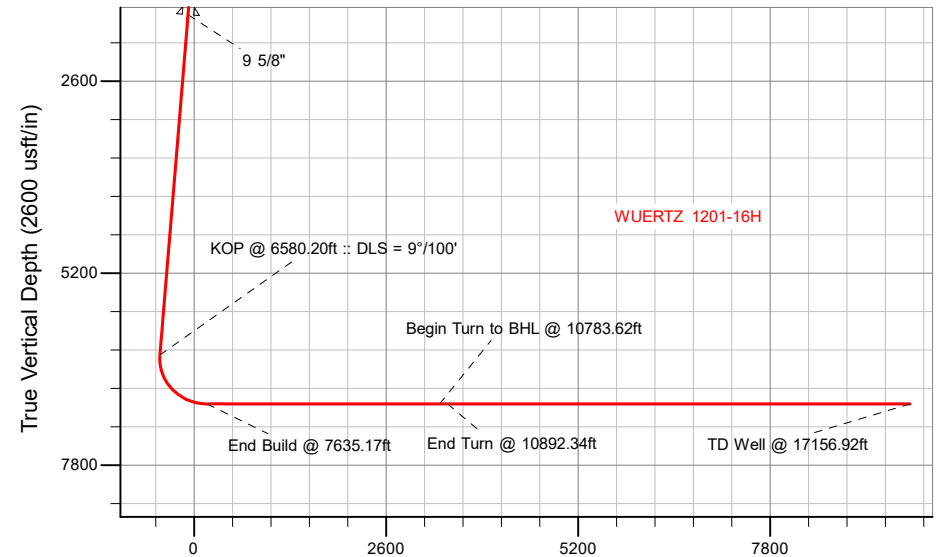
BHL
490' FNL
1069' FEL

SECTION DETAILS

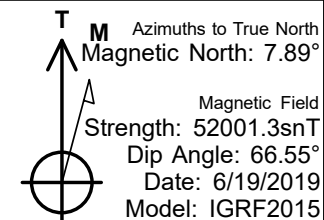
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	1134.50	17.69	105.10	1120.51	-35.29	130.79	2.00	105.10	-35.15	
4	6580.20	17.69	105.10	6308.71	-466.36	1728.42	0.00	0.00	-464.55	
5	7635.17	90.00	358.61	6970.00	172.60	1915.24	9.00	-105.75	174.60	
6	10783.62	90.00	358.61	6970.00	3320.12	1839.00	0.00	0.00	3322.05	WUERTZ 1201-16H_tgt
7	10892.34	90.00	0.79	6970.00	3428.84	1838.43	2.00	90.00	3430.76	
8	17156.92	90.00	0.79	6970.00	9692.82	1924.46	0.00	0.00	9694.83	WUERTZ 1201-16H_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
WUERTZ 1201-16H_SHL	0.00	0.00	0.00	40.059485	-104.613373
WUERTZ 1201-16H_BHL	6970.00	9692.82	1924.46	40.086093	-104.606495



Vertical Section at 0.06° (2600 usft/in)



WELL DETAILS: WUERTZ 1201-16H

GL = 4981'
RKB = 20' @ 5001.00usft (RIG)

Plan: Design #2 (WUERTZ 1201-16H/Wellbore #1)

Date: 6/19/2019

Hewlett-Packard

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well WUERTZ 1201-16H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 5001.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 5001.00usft (RIG)
Site:	1N-65W-12 WUERTZ 1201 PAD	North Reference:	True
Well:	WUERTZ 1201-16H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

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		1N-65W-12 WUERTZ 1201 PAD			
Site Position:		Northing:	1,265,754.92 usft	Latitude:	40.059485
From:	Lat/Long	Easting:	3,248,020.92 usft	Longitude:	-104.613909
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.57 °

Well	WUERTZ 1201-16H					
Well Position	+N/-S	-0.07 usft	Northing:	1,265,756.35 usft	Latitude:	40.059485
	+E/-W	150.03 usft	Easting:	3,248,170.95 usft	Longitude:	-104.613373
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	4,981.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	6/19/2019	7.89	66.55	52,001.33071197

Design	Design #2				
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	0.06	

Plan Survey Tool Program	Date	6/19/2019			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	1,700.00	Design #2 (Wellbore #1)	ISCWSA REV 2 MWD	
				Fixed:v2:standard declination	
2	1,700.00	17,156.92	Design #2 (Wellbore #1)	ISCWSA REV 2 MWD	
				Fixed:v2:standard declination	

Hewlett-Packard

Planning Report

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Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 5001.00usft (RIG)
Site:	1N-65W-12 WUERTZ 1201 PAD	North Reference:	True
Well:	WUERTZ 1201-16H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

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	
1,134.50	17.69	105.10	1,120.51	-35.29	130.79	2.00	2.00	0.00	105.10	
6,580.20	17.69	105.10	6,308.71	-466.36	1,728.42	0.00	0.00	0.00	0.00	
7,635.17	90.00	358.61	6,970.00	172.60	1,915.24	9.00	6.85	-10.09	-105.75	
10,783.62	90.00	358.61	6,970.00	3,320.12	1,839.00	0.00	0.00	0.00	0.00	WUERTZ 1201-16H_1
10,892.35	90.00	0.79	6,970.00	3,428.84	1,838.43	2.00	0.00	2.00	90.00	
17,156.92	90.00	0.79	6,970.00	9,692.82	1,924.46	0.00	0.00	0.00	0.00	WUERTZ 1201-16H_1

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Planning Report

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Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 5001.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 5001.00usft (RIG)
Site:	1N-65W-12 WUERTZ 1201 PAD	North Reference:	True
Well:	WUERTZ 1201-16H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

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 Nudge @ 250.00ft									
300.00	1.00	105.10	300.00	-0.11	0.42	-0.11	2.00	2.00	0.00
400.00	3.00	105.10	399.93	-1.02	3.79	-1.02	2.00	2.00	0.00
500.00	5.00	105.10	499.68	-2.84	10.52	-2.83	2.00	2.00	0.00
600.00	7.00	105.10	599.13	-5.56	20.62	-5.54	2.00	2.00	0.00
700.00	9.00	105.10	698.15	-9.19	34.05	-9.15	2.00	2.00	0.00
800.00	11.00	105.10	796.63	-13.71	50.82	-13.66	2.00	2.00	0.00
900.00	13.00	105.10	894.44	-19.13	70.89	-19.05	2.00	2.00	0.00
1,000.00	15.00	105.10	991.46	-25.43	94.24	-25.33	2.00	2.00	0.00
1,100.00	17.00	105.10	1,087.58	-32.61	120.86	-32.48	2.00	2.00	0.00
1,134.50	17.69	105.10	1,120.51	-35.29	130.79	-35.15	2.00	2.00	0.00
Hold Tangent @ 1134.50ft									
1,200.00	17.69	105.10	1,182.92	-40.47	150.00	-40.32	0.00	0.00	0.00
1,300.00	17.69	105.10	1,278.19	-48.39	179.34	-48.20	0.00	0.00	0.00
1,400.00	17.69	105.10	1,373.46	-56.31	208.68	-56.09	0.00	0.00	0.00
1,500.00	17.69	105.10	1,468.73	-64.22	238.01	-63.97	0.00	0.00	0.00
1,600.00	17.69	105.10	1,564.00	-72.14	267.35	-71.86	0.00	0.00	0.00
1,700.00	17.69	105.10	1,659.27	-80.05	296.69	-79.74	0.00	0.00	0.00
1,742.75	17.69	105.10	1,700.00	-83.44	309.23	-83.11	0.00	0.00	0.00
9 5/8"									
1,800.00	17.69	105.10	1,754.55	-87.97	326.03	-87.63	0.00	0.00	0.00
1,900.00	17.69	105.10	1,849.82	-95.88	355.36	-95.51	0.00	0.00	0.00
2,000.00	17.69	105.10	1,945.09	-103.80	384.70	-103.40	0.00	0.00	0.00
2,100.00	17.69	105.10	2,040.36	-111.72	414.04	-111.28	0.00	0.00	0.00
2,200.00	17.69	105.10	2,135.63	-119.63	443.38	-119.17	0.00	0.00	0.00
2,300.00	17.69	105.10	2,230.90	-127.55	472.71	-127.05	0.00	0.00	0.00
2,400.00	17.69	105.10	2,326.17	-135.46	502.05	-134.94	0.00	0.00	0.00
2,500.00	17.69	105.10	2,421.45	-143.38	531.39	-142.82	0.00	0.00	0.00
2,600.00	17.69	105.10	2,516.72	-151.30	560.73	-150.71	0.00	0.00	0.00
2,700.00	17.69	105.10	2,611.99	-159.21	590.06	-158.59	0.00	0.00	0.00
2,800.00	17.69	105.10	2,707.26	-167.13	619.40	-166.48	0.00	0.00	0.00
2,900.00	17.69	105.10	2,802.53	-175.04	648.74	-174.36	0.00	0.00	0.00
3,000.00	17.69	105.10	2,897.80	-182.96	678.08	-182.25	0.00	0.00	0.00
3,100.00	17.69	105.10	2,993.07	-190.88	707.41	-190.13	0.00	0.00	0.00
3,200.00	17.69	105.10	3,088.35	-198.79	736.75	-198.02	0.00	0.00	0.00
3,300.00	17.69	105.10	3,183.62	-206.71	766.09	-205.90	0.00	0.00	0.00
3,400.00	17.69	105.10	3,278.89	-214.62	795.43	-213.79	0.00	0.00	0.00
3,500.00	17.69	105.10	3,374.16	-222.54	824.76	-221.67	0.00	0.00	0.00
3,600.00	17.69	105.10	3,469.43	-230.45	854.10	-229.56	0.00	0.00	0.00
3,700.00	17.69	105.10	3,564.70	-238.37	883.44	-237.44	0.00	0.00	0.00
3,800.00	17.69	105.10	3,659.97	-246.29	912.78	-245.33	0.00	0.00	0.00
3,900.00	17.69	105.10	3,755.25	-254.20	942.11	-253.22	0.00	0.00	0.00
4,000.00	17.69	105.10	3,850.52	-262.12	971.45	-261.10	0.00	0.00	0.00
4,100.00	17.69	105.10	3,945.79	-270.03	1,000.79	-268.99	0.00	0.00	0.00
4,200.00	17.69	105.10	4,041.06	-277.95	1,030.13	-276.87	0.00	0.00	0.00
4,300.00	17.69	105.10	4,136.33	-285.87	1,059.46	-284.76	0.00	0.00	0.00
4,400.00	17.69	105.10	4,231.60	-293.78	1,088.80	-292.64	0.00	0.00	0.00
4,500.00	17.69	105.10	4,326.88	-301.70	1,118.14	-300.53	0.00	0.00	0.00
4,600.00	17.69	105.10	4,422.15	-309.61	1,147.48	-308.41	0.00	0.00	0.00

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Planning Report

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Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 5001.00usft (RIG)
Site:	1N-65W-12 WUERTZ 1201 PAD	North Reference:	True
Well:	WUERTZ 1201-16H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

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	17.69	105.10	4,517.42	-317.53	1,176.81	-316.30	0.00	0.00	0.00
4,800.00	17.69	105.10	4,612.69	-325.44	1,206.15	-324.18	0.00	0.00	0.00
4,900.00	17.69	105.10	4,707.96	-333.36	1,235.49	-332.07	0.00	0.00	0.00
5,000.00	17.69	105.10	4,803.23	-341.28	1,264.83	-339.95	0.00	0.00	0.00
5,100.00	17.69	105.10	4,898.50	-349.19	1,294.16	-347.84	0.00	0.00	0.00
5,200.00	17.69	105.10	4,993.78	-357.11	1,323.50	-355.72	0.00	0.00	0.00
5,300.00	17.69	105.10	5,089.05	-365.02	1,352.84	-363.61	0.00	0.00	0.00
5,400.00	17.69	105.10	5,184.32	-372.94	1,382.18	-371.49	0.00	0.00	0.00
5,500.00	17.69	105.10	5,279.59	-380.86	1,411.51	-379.38	0.00	0.00	0.00
5,600.00	17.69	105.10	5,374.86	-388.77	1,440.85	-387.26	0.00	0.00	0.00
5,700.00	17.69	105.10	5,470.13	-396.69	1,470.19	-395.15	0.00	0.00	0.00
5,800.00	17.69	105.10	5,565.40	-404.60	1,499.53	-403.03	0.00	0.00	0.00
5,900.00	17.69	105.10	5,660.68	-412.52	1,528.86	-410.92	0.00	0.00	0.00
6,000.00	17.69	105.10	5,755.95	-420.44	1,558.20	-418.80	0.00	0.00	0.00
6,100.00	17.69	105.10	5,851.22	-428.35	1,587.54	-426.69	0.00	0.00	0.00
6,200.00	17.69	105.10	5,946.49	-436.27	1,616.88	-434.57	0.00	0.00	0.00
6,300.00	17.69	105.10	6,041.76	-444.18	1,646.21	-442.46	0.00	0.00	0.00
6,400.00	17.69	105.10	6,137.03	-452.10	1,675.55	-450.34	0.00	0.00	0.00
6,500.00	17.69	105.10	6,232.30	-460.01	1,704.89	-458.23	0.00	0.00	0.00
6,580.20	17.69	105.10	6,308.71	-466.36	1,728.42	-464.55	0.00	0.00	0.00
KOP @ 6580.20ft :: DLS = 9°/100'									
6,600.00	17.29	99.32	6,327.60	-467.62	1,734.23	-465.81	9.00	-2.03	-29.19
6,700.00	17.95	69.35	6,423.10	-464.59	1,763.37	-462.74	9.00	0.66	-29.97
6,800.00	22.42	46.45	6,517.08	-445.98	1,791.67	-444.10	9.00	4.47	-22.90
6,900.00	28.99	32.12	6,607.22	-412.25	1,818.43	-410.34	9.00	6.57	-14.33
7,000.00	36.53	22.99	6,691.31	-364.22	1,842.99	-362.29	9.00	7.55	-9.12
7,100.00	44.56	16.70	6,767.26	-303.09	1,864.74	-301.14	9.00	8.03	-6.29
7,200.00	52.85	12.01	6,833.22	-230.36	1,883.16	-228.39	9.00	8.29	-4.69
7,300.00	61.28	8.26	6,887.56	-147.82	1,897.78	-145.83	9.00	8.43	-3.75
7,400.00	69.80	5.07	6,928.93	-57.50	1,908.25	-55.50	9.00	8.52	-3.19
7,500.00	78.37	2.22	6,956.33	38.38	1,914.31	40.38	9.00	8.57	-2.85
7,600.00	86.97	359.54	6,969.07	137.45	1,915.81	139.45	9.00	8.60	-2.68
7,635.17	90.00	358.61	6,970.00	172.60	1,915.24	174.60	9.00	8.61	-2.63
End Build @ 7635.17ft									
7,700.00	90.00	358.61	6,970.00	237.41	1,913.67	239.41	0.00	0.00	0.00
7,800.00	90.00	358.61	6,970.00	337.38	1,911.25	339.38	0.00	0.00	0.00
7,900.00	90.00	358.61	6,970.00	437.35	1,908.83	439.35	0.00	0.00	0.00
8,000.00	90.00	358.61	6,970.00	537.32	1,906.41	539.32	0.00	0.00	0.00
8,100.00	90.00	358.61	6,970.00	637.29	1,903.99	639.28	0.00	0.00	0.00
8,200.00	90.00	358.61	6,970.00	737.26	1,901.57	739.25	0.00	0.00	0.00
8,300.00	90.00	358.61	6,970.00	837.23	1,899.14	839.22	0.00	0.00	0.00
8,400.00	90.00	358.61	6,970.00	937.20	1,896.72	939.19	0.00	0.00	0.00
8,500.00	90.00	358.61	6,970.00	1,037.17	1,894.30	1,039.16	0.00	0.00	0.00
8,600.00	90.00	358.61	6,970.00	1,137.14	1,891.88	1,139.12	0.00	0.00	0.00
8,700.00	90.00	358.61	6,970.00	1,237.11	1,889.46	1,239.09	0.00	0.00	0.00
8,800.00	90.00	358.61	6,970.00	1,337.08	1,887.04	1,339.06	0.00	0.00	0.00
8,900.00	90.00	358.61	6,970.00	1,437.06	1,884.61	1,439.03	0.00	0.00	0.00
9,000.00	90.00	358.61	6,970.00	1,537.03	1,882.19	1,539.00	0.00	0.00	0.00
9,100.00	90.00	358.61	6,970.00	1,637.00	1,879.77	1,638.96	0.00	0.00	0.00
9,200.00	90.00	358.61	6,970.00	1,736.97	1,877.35	1,738.93	0.00	0.00	0.00
9,300.00	90.00	358.61	6,970.00	1,836.94	1,874.93	1,838.90	0.00	0.00	0.00
9,400.00	90.00	358.61	6,970.00	1,936.91	1,872.51	1,938.87	0.00	0.00	0.00
9,500.00	90.00	358.61	6,970.00	2,036.88	1,870.08	2,038.84	0.00	0.00	0.00
9,600.00	90.00	358.61	6,970.00	2,136.85	1,867.66	2,138.80	0.00	0.00	0.00

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Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well WUERTZ 1201-16H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 5001.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 5001.00usft (RIG)
Site:	1N-65W-12 WUERTZ 1201 PAD	North Reference:	True
Well:	WUERTZ 1201-16H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

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	358.61	6,970.00	2,236.82	1,865.24	2,238.77	0.00	0.00	0.00
9,800.00	90.00	358.61	6,970.00	2,336.79	1,862.82	2,338.74	0.00	0.00	0.00
9,900.00	90.00	358.61	6,970.00	2,436.76	1,860.40	2,438.71	0.00	0.00	0.00
10,000.00	90.00	358.61	6,970.00	2,536.73	1,857.98	2,538.68	0.00	0.00	0.00
10,100.00	90.00	358.61	6,970.00	2,636.70	1,855.55	2,638.65	0.00	0.00	0.00
10,200.00	90.00	358.61	6,970.00	2,736.67	1,853.13	2,738.61	0.00	0.00	0.00
10,300.00	90.00	358.61	6,970.00	2,836.64	1,850.71	2,838.58	0.00	0.00	0.00
10,400.00	90.00	358.61	6,970.00	2,936.62	1,848.29	2,938.55	0.00	0.00	0.00
10,500.00	90.00	358.61	6,970.00	3,036.59	1,845.87	3,038.52	0.00	0.00	0.00
10,600.00	90.00	358.61	6,970.00	3,136.56	1,843.45	3,138.49	0.00	0.00	0.00
10,700.00	90.00	358.61	6,970.00	3,236.53	1,841.02	3,238.45	0.00	0.00	0.00
10,783.62	90.00	358.61	6,970.00	3,320.12	1,839.00	3,322.05	0.00	0.00	0.00
Begin Turn to BHL @ 10783.62ft									
10,800.00	90.00	358.94	6,970.00	3,336.50	1,838.65	3,338.42	2.00	0.00	2.00
10,892.35	90.00	0.79	6,970.00	3,428.84	1,838.43	3,430.76	2.00	0.00	2.00
End Turn @ 10892.34ft									
10,900.00	90.00	0.79	6,970.00	3,436.49	1,838.54	3,438.42	0.00	0.00	0.00
11,000.00	90.00	0.79	6,970.00	3,536.48	1,839.91	3,538.41	0.00	0.00	0.00
11,100.00	90.00	0.79	6,970.00	3,636.48	1,841.28	3,638.40	0.00	0.00	0.00
11,200.00	90.00	0.79	6,970.00	3,736.47	1,842.66	3,738.39	0.00	0.00	0.00
11,300.00	90.00	0.79	6,970.00	3,836.46	1,844.03	3,838.39	0.00	0.00	0.00
11,400.00	90.00	0.79	6,970.00	3,936.45	1,845.40	3,938.38	0.00	0.00	0.00
11,500.00	90.00	0.79	6,970.00	4,036.44	1,846.78	4,038.37	0.00	0.00	0.00
11,600.00	90.00	0.79	6,970.00	4,136.43	1,848.15	4,138.36	0.00	0.00	0.00
11,700.00	90.00	0.79	6,970.00	4,236.42	1,849.52	4,238.35	0.00	0.00	0.00
11,800.00	90.00	0.79	6,970.00	4,336.41	1,850.90	4,338.35	0.00	0.00	0.00
11,900.00	90.00	0.79	6,970.00	4,436.40	1,852.27	4,438.34	0.00	0.00	0.00
12,000.00	90.00	0.79	6,970.00	4,536.39	1,853.64	4,538.33	0.00	0.00	0.00
12,100.00	90.00	0.79	6,970.00	4,636.38	1,855.02	4,638.32	0.00	0.00	0.00
12,200.00	90.00	0.79	6,970.00	4,736.37	1,856.39	4,738.31	0.00	0.00	0.00
12,300.00	90.00	0.79	6,970.00	4,836.36	1,857.76	4,838.31	0.00	0.00	0.00
12,400.00	90.00	0.79	6,970.00	4,936.35	1,859.14	4,938.30	0.00	0.00	0.00
12,500.00	90.00	0.79	6,970.00	5,036.34	1,860.51	5,038.29	0.00	0.00	0.00
12,600.00	90.00	0.79	6,970.00	5,136.33	1,861.88	5,138.28	0.00	0.00	0.00
12,700.00	90.00	0.79	6,970.00	5,236.32	1,863.26	5,238.27	0.00	0.00	0.00
12,800.00	90.00	0.79	6,970.00	5,336.32	1,864.63	5,338.26	0.00	0.00	0.00
12,900.00	90.00	0.79	6,970.00	5,436.31	1,866.00	5,438.26	0.00	0.00	0.00
13,000.00	90.00	0.79	6,970.00	5,536.30	1,867.38	5,538.25	0.00	0.00	0.00
13,100.00	90.00	0.79	6,970.00	5,636.29	1,868.75	5,638.24	0.00	0.00	0.00
13,200.00	90.00	0.79	6,970.00	5,736.28	1,870.12	5,738.23	0.00	0.00	0.00
13,300.00	90.00	0.79	6,970.00	5,836.27	1,871.50	5,838.22	0.00	0.00	0.00
13,400.00	90.00	0.79	6,970.00	5,936.26	1,872.87	5,938.22	0.00	0.00	0.00
13,500.00	90.00	0.79	6,970.00	6,036.25	1,874.24	6,038.21	0.00	0.00	0.00
13,600.00	90.00	0.79	6,970.00	6,136.24	1,875.62	6,138.20	0.00	0.00	0.00
13,700.00	90.00	0.79	6,970.00	6,236.23	1,876.99	6,238.19	0.00	0.00	0.00
13,800.00	90.00	0.79	6,970.00	6,336.22	1,878.36	6,338.18	0.00	0.00	0.00
13,900.00	90.00	0.79	6,970.00	6,436.21	1,879.74	6,438.18	0.00	0.00	0.00
14,000.00	90.00	0.79	6,970.00	6,536.20	1,881.11	6,538.17	0.00	0.00	0.00
14,100.00	90.00	0.79	6,970.00	6,636.19	1,882.48	6,638.16	0.00	0.00	0.00
14,200.00	90.00	0.79	6,970.00	6,736.18	1,883.86	6,738.15	0.00	0.00	0.00
14,300.00	90.00	0.79	6,970.00	6,836.17	1,885.23	6,838.14	0.00	0.00	0.00
14,400.00	90.00	0.79	6,970.00	6,936.16	1,886.60	6,938.14	0.00	0.00	0.00
14,500.00	90.00	0.79	6,970.00	7,036.15	1,887.98	7,038.13	0.00	0.00	0.00
14,600.00	90.00	0.79	6,970.00	7,136.15	1,889.35	7,138.12	0.00	0.00	0.00

Hewlett-Packard

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well WUERTZ 1201-16H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 5001.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 5001.00usft (RIG)
Site:	1N-65W-12 WUERTZ 1201 PAD	North Reference:	True
Well:	WUERTZ 1201-16H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

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)	
14,700.00	90.00	0.79	6,970.00	7,236.14	1,890.72	7,238.11	0.00	0.00	0.00	
14,800.00	90.00	0.79	6,970.00	7,336.13	1,892.10	7,338.10	0.00	0.00	0.00	
14,900.00	90.00	0.79	6,970.00	7,436.12	1,893.47	7,438.10	0.00	0.00	0.00	
15,000.00	90.00	0.79	6,970.00	7,536.11	1,894.84	7,538.09	0.00	0.00	0.00	
15,100.00	90.00	0.79	6,970.00	7,636.10	1,896.22	7,638.08	0.00	0.00	0.00	
15,200.00	90.00	0.79	6,970.00	7,736.09	1,897.59	7,738.07	0.00	0.00	0.00	
15,300.00	90.00	0.79	6,970.00	7,836.08	1,898.96	7,838.06	0.00	0.00	0.00	
15,400.00	90.00	0.79	6,970.00	7,936.07	1,900.34	7,938.06	0.00	0.00	0.00	
15,500.00	90.00	0.79	6,970.00	8,036.06	1,901.71	8,038.05	0.00	0.00	0.00	
15,600.00	90.00	0.79	6,970.00	8,136.05	1,903.08	8,138.04	0.00	0.00	0.00	
15,700.00	90.00	0.79	6,970.00	8,236.04	1,904.46	8,238.03	0.00	0.00	0.00	
15,800.00	90.00	0.79	6,970.00	8,336.03	1,905.83	8,338.02	0.00	0.00	0.00	
15,900.00	90.00	0.79	6,970.00	8,436.02	1,907.20	8,438.02	0.00	0.00	0.00	
16,000.00	90.00	0.79	6,970.00	8,536.01	1,908.58	8,538.01	0.00	0.00	0.00	
16,100.00	90.00	0.79	6,970.00	8,636.00	1,909.95	8,638.00	0.00	0.00	0.00	
16,200.00	90.00	0.79	6,970.00	8,735.99	1,911.32	8,737.99	0.00	0.00	0.00	
16,300.00	90.00	0.79	6,970.00	8,835.99	1,912.70	8,837.98	0.00	0.00	0.00	
16,400.00	90.00	0.79	6,970.00	8,935.98	1,914.07	8,937.98	0.00	0.00	0.00	
16,500.00	90.00	0.79	6,970.00	9,035.97	1,915.44	9,037.97	0.00	0.00	0.00	
16,600.00	90.00	0.79	6,970.00	9,135.96	1,916.82	9,137.96	0.00	0.00	0.00	
16,700.00	90.00	0.79	6,970.00	9,235.95	1,918.19	9,237.95	0.00	0.00	0.00	
16,800.00	90.00	0.79	6,970.00	9,335.94	1,919.56	9,337.94	0.00	0.00	0.00	
16,900.00	90.00	0.79	6,970.00	9,435.93	1,920.94	9,437.93	0.00	0.00	0.00	
17,000.00	90.00	0.79	6,970.00	9,535.92	1,922.31	9,537.93	0.00	0.00	0.00	
17,100.00	90.00	0.79	6,970.00	9,635.91	1,923.68	9,637.92	0.00	0.00	0.00	
17,156.92	90.00	0.79	6,970.00	9,692.82	1,924.46	9,694.83	0.00	0.00	0.00	
TD Well @ 17156.92ft										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,742.75	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 Nudge @ 250.00ft	
1,134.50	1,120.51	-35.29	130.79	Hold Tangent @ 1134.50ft	
6,580.20	6,308.71	-466.36	1,728.42	KOP @ 6580.20ft :: DLS = 9°/100'	
7,635.17	6,970.00	172.60	1,915.24	End Build @ 7635.17ft	
10,783.62	6,970.00	3,320.12	1,839.00	Begin Turn to BHL @ 10783.62ft	
10,892.35	6,970.00	3,428.84	1,838.43	End Turn @ 10892.34ft	
17,156.92	6,970.00	9,692.82	1,924.46	TD Well @ 17156.92ft	