

VERDAD RESOURCES

WATTENBERG FIELD

1N-65W-12 SAFI 1224 PAD

SAFI 1224-04H

Wellbore #1

Plan: Design #1

Standard Planning Report

16 May, 2019

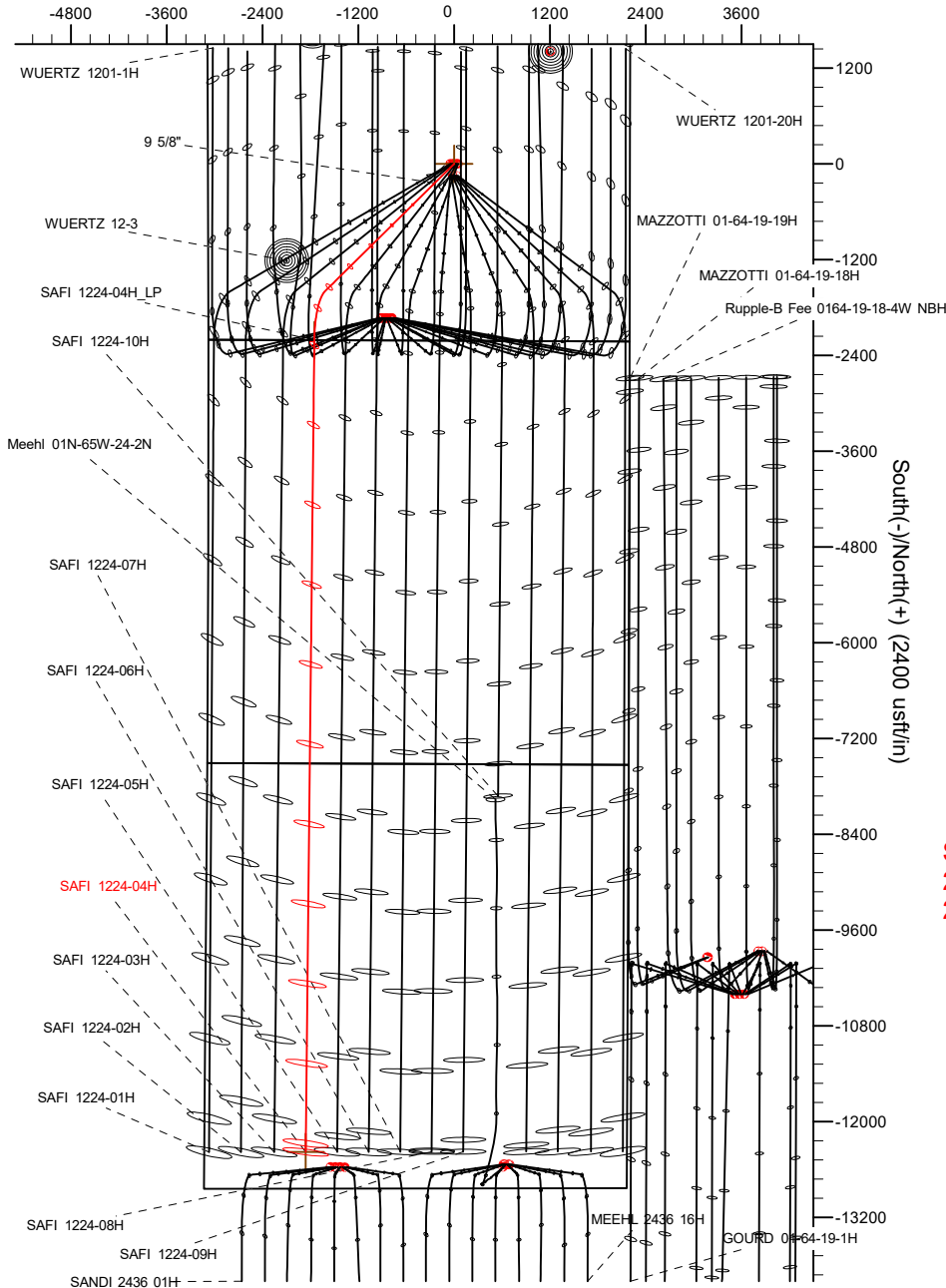
Project: WATTENBERG FIELD
Site: 1N-65W-12 SAFI 1224 PAD
Well: SAFI 1224-04H
Wellbore: Wellbore #1
Design: Design #1

VERDAD RESOURCES

CASING DETAILS

TVD	MD	Name	Size
1700.00	1752.16	9 5/8"	9-5/8

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

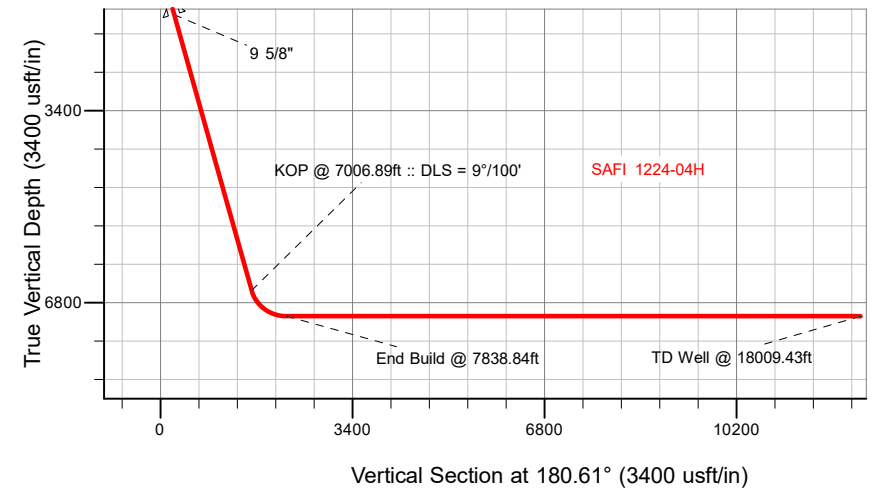


SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
290.00	0.00	0.00	290.00	0.00	0.00	0.00	0.00	0.00	
1368.50	21.57	225.40	1343.20	-140.87	-142.85	2.00	225.40	142.38	
7006.89	21.57	225.40	6586.73	-1596.35	-1618.80	0.00	0.00	1613.49	
7838.84	90.00	180.61	7040.00	-2209.54	-1751.58	9.00	-46.87	2228.06	
18009.43	90.00	180.61	7040.00	-12379.54	-1860.08	0.00	0.00	12398.65	SAFI 1224-04H_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

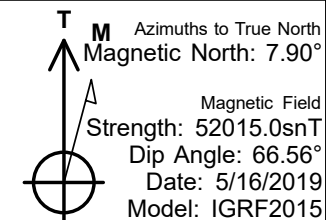
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
SAFI 1224-04H_SHL	0.00	0.00	0.00	40.064785	-104.610562
SAFI 1224-04H_BHL	7040.00	-12379.54	-1860.08	40.030801	-104.617204



SHL
2215' FSL
2203' FEL

LP
0' FNL
1325' FWL

BHL
460' FSL
1272' FWL



WELL DETAILS: SAFI 1224-04H

GL = 4970'

RKB = 24' @ 4994.00usft (RIG)

Plan: Design #1 (SAFI 1224-04H/Wellbore #1)

Date: 5/16/2019

Hewlett-Packard

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well SAFI 1224-04H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4994.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4994.00usft (RIG)
Site:	1N-65W-12 SAFI 1224 PAD	North Reference:	True
Well:	SAFI 1224-04H	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		1N-65W-12 SAFI 1224 PAD			
Site Position:		Northing:	1,267,795.88 usft	Latitude:	40.065068
From:	Lat/Long	Easting:	3,248,744.87 usft	Longitude:	-104.611250
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.57 °

Well	SAFI 1224-04H					
Well Position	+N/-S	-102.77 usft	Northing:	1,267,695.05 usft	Latitude:	40.064786
	+E/-W	192.62 usft	Easting:	3,248,938.50 usft	Longitude:	-104.610562
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	4,970.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/16/2019	7.90	66.56	52,015.03365156

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	180.61

Plan Survey Tool Program	Date	5/16/2019		
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	18,009.43	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	
290.00	0.00	0.00	290.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,368.50	21.57	225.40	1,343.20	-140.87	-142.85	2.00	2.00	0.00	225.40	
7,006.89	21.57	225.40	6,586.73	-1,596.35	-1,618.80	0.00	0.00	0.00	0.00	
7,838.84	90.00	180.61	7,040.00	-2,209.54	-1,751.58	9.00	8.23	-5.38	-46.87	
18,009.43	90.00	180.61	7,040.00	-12,379.54	-1,860.08	0.00	0.00	0.00	0.00	SAFI 1224-04H_BHL

Hewlett-Packard

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well SAFI 1224-04H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4994.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4994.00usft (RIG)
Site:	1N-65W-12 SAFI 1224 PAD	North Reference:	True
Well:	SAFI 1224-04H	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
290.00	0.00	0.00	290.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 290.00ft									
300.00	0.20	225.40	300.00	-0.01	-0.01	0.01	2.00	2.00	0.00
400.00	2.20	225.40	399.97	-1.48	-1.50	1.50	2.00	2.00	0.00
500.00	4.20	225.40	499.81	-5.40	-5.48	5.46	2.00	2.00	0.00
600.00	6.20	225.40	599.40	-11.77	-11.93	11.89	2.00	2.00	0.00
700.00	8.20	225.40	698.60	-20.57	-20.85	20.79	2.00	2.00	0.00
800.00	10.20	225.40	797.31	-31.79	-32.24	32.13	2.00	2.00	0.00
900.00	12.20	225.40	895.40	-45.43	-46.07	45.92	2.00	2.00	0.00
1,000.00	14.20	225.40	992.75	-61.46	-62.33	62.12	2.00	2.00	0.00
1,100.00	16.20	225.40	1,089.25	-79.87	-80.99	80.73	2.00	2.00	0.00
1,200.00	18.20	225.40	1,184.77	-100.63	-102.05	101.71	2.00	2.00	0.00
1,300.00	20.20	225.40	1,279.21	-123.72	-125.46	125.05	2.00	2.00	0.00
1,368.50	21.57	225.40	1,343.20	-140.87	-142.85	142.38	2.00	2.00	0.00
Hold Tangent @ 1368.50ft									
1,400.00	21.57	225.40	1,372.50	-149.00	-151.10	150.60	0.00	0.00	0.00
1,500.00	21.57	225.40	1,465.50	-174.81	-177.27	176.69	0.00	0.00	0.00
1,600.00	21.57	225.40	1,558.49	-200.63	-203.45	202.78	0.00	0.00	0.00
1,700.00	21.57	225.40	1,651.49	-226.44	-229.63	228.87	0.00	0.00	0.00
1,752.16	21.57	225.40	1,700.00	-239.91	-243.28	242.48	0.00	0.00	0.00
9 5/8"									
1,800.00	21.57	225.40	1,744.49	-252.26	-255.80	254.96	0.00	0.00	0.00
1,900.00	21.57	225.40	1,837.48	-278.07	-281.98	281.06	0.00	0.00	0.00
2,000.00	21.57	225.40	1,930.48	-303.88	-308.16	307.15	0.00	0.00	0.00
2,100.00	21.57	225.40	2,023.48	-329.70	-334.33	333.24	0.00	0.00	0.00
2,200.00	21.57	225.40	2,116.47	-355.51	-360.51	359.33	0.00	0.00	0.00
2,300.00	21.57	225.40	2,209.47	-381.32	-386.69	385.42	0.00	0.00	0.00
2,400.00	21.57	225.40	2,302.47	-407.14	-412.86	411.51	0.00	0.00	0.00
2,500.00	21.57	225.40	2,395.46	-432.95	-439.04	437.60	0.00	0.00	0.00
2,600.00	21.57	225.40	2,488.46	-458.77	-465.22	463.69	0.00	0.00	0.00
2,700.00	21.57	225.40	2,581.46	-484.58	-491.39	489.78	0.00	0.00	0.00
2,800.00	21.57	225.40	2,674.46	-510.39	-517.57	515.87	0.00	0.00	0.00
2,900.00	21.57	225.40	2,767.45	-536.21	-543.75	541.97	0.00	0.00	0.00
3,000.00	21.57	225.40	2,860.45	-562.02	-569.92	568.06	0.00	0.00	0.00
3,100.00	21.57	225.40	2,953.45	-587.83	-596.10	594.15	0.00	0.00	0.00
3,200.00	21.57	225.40	3,046.44	-613.65	-622.28	620.24	0.00	0.00	0.00
3,300.00	21.57	225.40	3,139.44	-639.46	-648.45	646.33	0.00	0.00	0.00
3,400.00	21.57	225.40	3,232.44	-665.28	-674.63	672.42	0.00	0.00	0.00
3,500.00	21.57	225.40	3,325.43	-691.09	-700.81	698.51	0.00	0.00	0.00
3,600.00	21.57	225.40	3,418.43	-716.90	-726.98	724.60	0.00	0.00	0.00
3,700.00	21.57	225.40	3,511.43	-742.72	-753.16	750.69	0.00	0.00	0.00
3,800.00	21.57	225.40	3,604.42	-768.53	-779.34	776.78	0.00	0.00	0.00
3,900.00	21.57	225.40	3,697.42	-794.34	-805.51	802.88	0.00	0.00	0.00
4,000.00	21.57	225.40	3,790.42	-820.16	-831.69	828.97	0.00	0.00	0.00
4,100.00	21.57	225.40	3,883.42	-845.97	-857.87	855.06	0.00	0.00	0.00
4,200.00	21.57	225.40	3,976.41	-871.79	-884.04	881.15	0.00	0.00	0.00
4,300.00	21.57	225.40	4,069.41	-897.60	-910.22	907.24	0.00	0.00	0.00
4,400.00	21.57	225.40	4,162.41	-923.41	-936.40	933.33	0.00	0.00	0.00
4,500.00	21.57	225.40	4,255.40	-949.23	-962.57	959.42	0.00	0.00	0.00
4,600.00	21.57	225.40	4,348.40	-975.04	-988.75	985.51	0.00	0.00	0.00

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Planning Report

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Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4994.00usft (RIG)
Site:	1N-65W-12 SAFI 1224 PAD	North Reference:	True
Well:	SAFI 1224-04H	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	21.57	225.40	4,441.40	-1,000.86	-1,014.93	1,011.60	0.00	0.00	0.00	
4,800.00	21.57	225.40	4,534.39	-1,026.67	-1,041.10	1,037.69	0.00	0.00	0.00	
4,900.00	21.57	225.40	4,627.39	-1,052.48	-1,067.28	1,063.79	0.00	0.00	0.00	
5,000.00	21.57	225.40	4,720.39	-1,078.30	-1,093.46	1,089.88	0.00	0.00	0.00	
5,100.00	21.57	225.40	4,813.38	-1,104.11	-1,119.64	1,115.97	0.00	0.00	0.00	
5,200.00	21.57	225.40	4,906.38	-1,129.92	-1,145.81	1,142.06	0.00	0.00	0.00	
5,300.00	21.57	225.40	4,999.38	-1,155.74	-1,171.99	1,168.15	0.00	0.00	0.00	
5,400.00	21.57	225.40	5,092.37	-1,181.55	-1,198.17	1,194.24	0.00	0.00	0.00	
5,500.00	21.57	225.40	5,185.37	-1,207.37	-1,224.34	1,220.33	0.00	0.00	0.00	
5,600.00	21.57	225.40	5,278.37	-1,233.18	-1,250.52	1,246.42	0.00	0.00	0.00	
5,700.00	21.57	225.40	5,371.37	-1,258.99	-1,276.70	1,272.51	0.00	0.00	0.00	
5,800.00	21.57	225.40	5,464.36	-1,284.81	-1,302.87	1,298.60	0.00	0.00	0.00	
5,900.00	21.57	225.40	5,557.36	-1,310.62	-1,329.05	1,324.70	0.00	0.00	0.00	
6,000.00	21.57	225.40	5,650.36	-1,336.43	-1,355.23	1,350.79	0.00	0.00	0.00	
6,100.00	21.57	225.40	5,743.35	-1,362.25	-1,381.40	1,376.88	0.00	0.00	0.00	
6,200.00	21.57	225.40	5,836.35	-1,388.06	-1,407.58	1,402.97	0.00	0.00	0.00	
6,300.00	21.57	225.40	5,929.35	-1,413.88	-1,433.76	1,429.06	0.00	0.00	0.00	
6,400.00	21.57	225.40	6,022.34	-1,439.69	-1,459.93	1,455.15	0.00	0.00	0.00	
6,500.00	21.57	225.40	6,115.34	-1,465.50	-1,486.11	1,481.24	0.00	0.00	0.00	
6,600.00	21.57	225.40	6,208.34	-1,491.32	-1,512.29	1,507.33	0.00	0.00	0.00	
6,700.00	21.57	225.40	6,301.33	-1,517.13	-1,538.46	1,533.42	0.00	0.00	0.00	
6,800.00	21.57	225.40	6,394.33	-1,542.94	-1,564.64	1,559.51	0.00	0.00	0.00	
6,900.00	21.57	225.40	6,487.33	-1,568.76	-1,590.82	1,585.61	0.00	0.00	0.00	
7,000.00	21.57	225.40	6,580.33	-1,594.57	-1,616.99	1,611.70	0.00	0.00	0.00	
7,006.89	21.57	225.40	6,586.73	-1,596.35	-1,618.80	1,613.49	0.00	0.00	0.00	
KOP @ 7006.89ft :: DLS = 9°/100'										
7,100.00	27.94	212.28	6,671.31	-1,626.87	-1,642.68	1,644.26	9.00	6.85	-14.09	
7,200.00	35.67	203.45	6,756.27	-1,673.52	-1,666.84	1,691.17	9.00	7.72	-8.84	
7,300.00	43.83	197.48	6,833.12	-1,733.41	-1,688.88	1,751.29	9.00	8.16	-5.97	
7,400.00	52.21	193.08	6,899.97	-1,805.07	-1,708.27	1,823.16	9.00	8.39	-4.40	
7,500.00	60.73	189.59	6,955.16	-1,886.74	-1,724.51	1,904.99	9.00	8.52	-3.49	
7,600.00	69.33	186.64	6,997.34	-1,976.40	-1,737.21	1,994.78	9.00	8.60	-2.95	
7,700.00	77.97	184.01	7,025.47	-2,071.85	-1,746.07	2,090.32	9.00	8.64	-2.63	
7,800.00	86.63	181.55	7,038.86	-2,170.73	-1,750.85	2,189.24	9.00	8.66	-2.46	
7,838.84	90.00	180.61	7,040.00	-2,209.54	-1,751.58	2,228.06	9.00	8.67	-2.42	
End Build @ 7838.84ft										
7,900.00	90.00	180.61	7,040.00	-2,270.69	-1,752.23	2,289.22	0.00	0.00	0.00	
8,000.00	90.00	180.61	7,040.00	-2,370.69	-1,753.30	2,389.22	0.00	0.00	0.00	
8,100.00	90.00	180.61	7,040.00	-2,470.68	-1,754.37	2,489.22	0.00	0.00	0.00	
8,200.00	90.00	180.61	7,040.00	-2,570.68	-1,755.43	2,589.22	0.00	0.00	0.00	
8,300.00	90.00	180.61	7,040.00	-2,670.67	-1,756.50	2,689.22	0.00	0.00	0.00	
8,400.00	90.00	180.61	7,040.00	-2,770.66	-1,757.57	2,789.22	0.00	0.00	0.00	
8,500.00	90.00	180.61	7,040.00	-2,870.66	-1,758.63	2,889.22	0.00	0.00	0.00	
8,600.00	90.00	180.61	7,040.00	-2,970.65	-1,759.70	2,989.22	0.00	0.00	0.00	
8,700.00	90.00	180.61	7,040.00	-3,070.65	-1,760.77	3,089.22	0.00	0.00	0.00	
8,800.00	90.00	180.61	7,040.00	-3,170.64	-1,761.84	3,189.22	0.00	0.00	0.00	
8,900.00	90.00	180.61	7,040.00	-3,270.64	-1,762.90	3,289.22	0.00	0.00	0.00	
9,000.00	90.00	180.61	7,040.00	-3,370.63	-1,763.97	3,389.22	0.00	0.00	0.00	
9,100.00	90.00	180.61	7,040.00	-3,470.62	-1,765.04	3,489.22	0.00	0.00	0.00	
9,200.00	90.00	180.61	7,040.00	-3,570.62	-1,766.10	3,589.22	0.00	0.00	0.00	
9,300.00	90.00	180.61	7,040.00	-3,670.61	-1,767.17	3,689.22	0.00	0.00	0.00	
9,400.00	90.00	180.61	7,040.00	-3,770.61	-1,768.24	3,789.22	0.00	0.00	0.00	
9,500.00	90.00	180.61	7,040.00	-3,870.60	-1,769.30	3,889.22	0.00	0.00	0.00	
9,600.00	90.00	180.61	7,040.00	-3,970.60	-1,770.37	3,989.22	0.00	0.00	0.00	

Hewlett-Packard

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well SAFI 1224-04H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4994.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4994.00usft (RIG)
Site:	1N-65W-12 SAFI 1224 PAD	North Reference:	True
Well:	SAFI 1224-04H	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	180.61	7,040.00	-4,070.59	-1,771.44	4,089.22	0.00	0.00	0.00	
9,800.00	90.00	180.61	7,040.00	-4,170.58	-1,772.50	4,189.22	0.00	0.00	0.00	
9,900.00	90.00	180.61	7,040.00	-4,270.58	-1,773.57	4,289.22	0.00	0.00	0.00	
10,000.00	90.00	180.61	7,040.00	-4,370.57	-1,774.64	4,389.22	0.00	0.00	0.00	
10,100.00	90.00	180.61	7,040.00	-4,470.57	-1,775.70	4,489.22	0.00	0.00	0.00	
10,200.00	90.00	180.61	7,040.00	-4,570.56	-1,776.77	4,589.22	0.00	0.00	0.00	
10,300.00	90.00	180.61	7,040.00	-4,670.56	-1,777.84	4,689.22	0.00	0.00	0.00	
10,400.00	90.00	180.61	7,040.00	-4,770.55	-1,778.90	4,789.22	0.00	0.00	0.00	
10,500.00	90.00	180.61	7,040.00	-4,870.55	-1,779.97	4,889.22	0.00	0.00	0.00	
10,600.00	90.00	180.61	7,040.00	-4,970.54	-1,781.04	4,989.22	0.00	0.00	0.00	
10,700.00	90.00	180.61	7,040.00	-5,070.53	-1,782.10	5,089.22	0.00	0.00	0.00	
10,800.00	90.00	180.61	7,040.00	-5,170.53	-1,783.17	5,189.22	0.00	0.00	0.00	
10,900.00	90.00	180.61	7,040.00	-5,270.52	-1,784.24	5,289.22	0.00	0.00	0.00	
11,000.00	90.00	180.61	7,040.00	-5,370.52	-1,785.30	5,389.22	0.00	0.00	0.00	
11,100.00	90.00	180.61	7,040.00	-5,470.51	-1,786.37	5,489.22	0.00	0.00	0.00	
11,200.00	90.00	180.61	7,040.00	-5,570.51	-1,787.44	5,589.22	0.00	0.00	0.00	
11,300.00	90.00	180.61	7,040.00	-5,670.50	-1,788.50	5,689.22	0.00	0.00	0.00	
11,400.00	90.00	180.61	7,040.00	-5,770.49	-1,789.57	5,789.22	0.00	0.00	0.00	
11,500.00	90.00	180.61	7,040.00	-5,870.49	-1,790.64	5,889.22	0.00	0.00	0.00	
11,600.00	90.00	180.61	7,040.00	-5,970.48	-1,791.71	5,989.22	0.00	0.00	0.00	
11,700.00	90.00	180.61	7,040.00	-6,070.48	-1,792.77	6,089.22	0.00	0.00	0.00	
11,800.00	90.00	180.61	7,040.00	-6,170.47	-1,793.84	6,189.22	0.00	0.00	0.00	
11,900.00	90.00	180.61	7,040.00	-6,270.47	-1,794.91	6,289.22	0.00	0.00	0.00	
12,000.00	90.00	180.61	7,040.00	-6,370.46	-1,795.97	6,389.22	0.00	0.00	0.00	
12,100.00	90.00	180.61	7,040.00	-6,470.45	-1,797.04	6,489.22	0.00	0.00	0.00	
12,200.00	90.00	180.61	7,040.00	-6,570.45	-1,798.11	6,589.22	0.00	0.00	0.00	
12,300.00	90.00	180.61	7,040.00	-6,670.44	-1,799.17	6,689.22	0.00	0.00	0.00	
12,400.00	90.00	180.61	7,040.00	-6,770.44	-1,800.24	6,789.22	0.00	0.00	0.00	
12,500.00	90.00	180.61	7,040.00	-6,870.43	-1,801.31	6,889.22	0.00	0.00	0.00	
12,600.00	90.00	180.61	7,040.00	-6,970.43	-1,802.37	6,989.22	0.00	0.00	0.00	
12,700.00	90.00	180.61	7,040.00	-7,070.42	-1,803.44	7,089.22	0.00	0.00	0.00	
12,800.00	90.00	180.61	7,040.00	-7,170.41	-1,804.51	7,189.22	0.00	0.00	0.00	
12,900.00	90.00	180.61	7,040.00	-7,270.41	-1,805.57	7,289.22	0.00	0.00	0.00	
13,000.00	90.00	180.61	7,040.00	-7,370.40	-1,806.64	7,389.22	0.00	0.00	0.00	
13,100.00	90.00	180.61	7,040.00	-7,470.40	-1,807.71	7,489.22	0.00	0.00	0.00	
13,200.00	90.00	180.61	7,040.00	-7,570.39	-1,808.77	7,589.22	0.00	0.00	0.00	
13,300.00	90.00	180.61	7,040.00	-7,670.39	-1,809.84	7,689.22	0.00	0.00	0.00	
13,400.00	90.00	180.61	7,040.00	-7,770.38	-1,810.91	7,789.22	0.00	0.00	0.00	
13,500.00	90.00	180.61	7,040.00	-7,870.37	-1,811.97	7,889.22	0.00	0.00	0.00	
13,600.00	90.00	180.61	7,040.00	-7,970.37	-1,813.04	7,989.22	0.00	0.00	0.00	
13,700.00	90.00	180.61	7,040.00	-8,070.36	-1,814.11	8,089.22	0.00	0.00	0.00	
13,800.00	90.00	180.61	7,040.00	-8,170.36	-1,815.17	8,189.22	0.00	0.00	0.00	
13,900.00	90.00	180.61	7,040.00	-8,270.35	-1,816.24	8,289.22	0.00	0.00	0.00	
14,000.00	90.00	180.61	7,040.00	-8,370.35	-1,817.31	8,389.22	0.00	0.00	0.00	
14,100.00	90.00	180.61	7,040.00	-8,470.34	-1,818.37	8,489.22	0.00	0.00	0.00	
14,200.00	90.00	180.61	7,040.00	-8,570.33	-1,819.44	8,589.22	0.00	0.00	0.00	
14,300.00	90.00	180.61	7,040.00	-8,670.33	-1,820.51	8,689.22	0.00	0.00	0.00	
14,400.00	90.00	180.61	7,040.00	-8,770.32	-1,821.58	8,789.22	0.00	0.00	0.00	
14,500.00	90.00	180.61	7,040.00	-8,870.32	-1,822.64	8,889.22	0.00	0.00	0.00	
14,600.00	90.00	180.61	7,040.00	-8,970.31	-1,823.71	8,989.22	0.00	0.00	0.00	
14,700.00	90.00	180.61	7,040.00	-9,070.31	-1,824.78	9,089.22	0.00	0.00	0.00	
14,800.00	90.00	180.61	7,040.00	-9,170.30	-1,825.84	9,189.22	0.00	0.00	0.00	
14,900.00	90.00	180.61	7,040.00	-9,270.29	-1,826.91	9,289.22	0.00	0.00	0.00	

Hewlett-Packard

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well SAFI 1224-04H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4994.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4994.00usft (RIG)
Site:	1N-65W-12 SAFI 1224 PAD	North Reference:	True
Well:	SAFI 1224-04H	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)	
15,000.00	90.00	180.61	7,040.00	-9,370.29	-1,827.98	9,389.22	0.00	0.00	0.00	
15,100.00	90.00	180.61	7,040.00	-9,470.28	-1,829.04	9,489.22	0.00	0.00	0.00	
15,200.00	90.00	180.61	7,040.00	-9,570.28	-1,830.11	9,589.22	0.00	0.00	0.00	
15,300.00	90.00	180.61	7,040.00	-9,670.27	-1,831.18	9,689.22	0.00	0.00	0.00	
15,400.00	90.00	180.61	7,040.00	-9,770.27	-1,832.24	9,789.22	0.00	0.00	0.00	
15,500.00	90.00	180.61	7,040.00	-9,870.26	-1,833.31	9,889.22	0.00	0.00	0.00	
15,600.00	90.00	180.61	7,040.00	-9,970.25	-1,834.38	9,989.22	0.00	0.00	0.00	
15,700.00	90.00	180.61	7,040.00	-10,070.25	-1,835.44	10,089.22	0.00	0.00	0.00	
15,800.00	90.00	180.61	7,040.00	-10,170.24	-1,836.51	10,189.22	0.00	0.00	0.00	
15,900.00	90.00	180.61	7,040.00	-10,270.24	-1,837.58	10,289.22	0.00	0.00	0.00	
16,000.00	90.00	180.61	7,040.00	-10,370.23	-1,838.64	10,389.22	0.00	0.00	0.00	
16,100.00	90.00	180.61	7,040.00	-10,470.23	-1,839.71	10,489.22	0.00	0.00	0.00	
16,200.00	90.00	180.61	7,040.00	-10,570.22	-1,840.78	10,589.22	0.00	0.00	0.00	
16,300.00	90.00	180.61	7,040.00	-10,670.22	-1,841.84	10,689.22	0.00	0.00	0.00	
16,400.00	90.00	180.61	7,040.00	-10,770.21	-1,842.91	10,789.22	0.00	0.00	0.00	
16,500.00	90.00	180.61	7,040.00	-10,870.20	-1,843.98	10,889.22	0.00	0.00	0.00	
16,600.00	90.00	180.61	7,040.00	-10,970.20	-1,845.04	10,989.22	0.00	0.00	0.00	
16,700.00	90.00	180.61	7,040.00	-11,070.19	-1,846.11	11,089.22	0.00	0.00	0.00	
16,800.00	90.00	180.61	7,040.00	-11,170.19	-1,847.18	11,189.22	0.00	0.00	0.00	
16,900.00	90.00	180.61	7,040.00	-11,270.18	-1,848.24	11,289.22	0.00	0.00	0.00	
17,000.00	90.00	180.61	7,040.00	-11,370.18	-1,849.31	11,389.22	0.00	0.00	0.00	
17,100.00	90.00	180.61	7,040.00	-11,470.17	-1,850.38	11,489.22	0.00	0.00	0.00	
17,200.00	90.00	180.61	7,040.00	-11,570.16	-1,851.44	11,589.22	0.00	0.00	0.00	
17,300.00	90.00	180.61	7,040.00	-11,670.16	-1,852.51	11,689.22	0.00	0.00	0.00	
17,400.00	90.00	180.61	7,040.00	-11,770.15	-1,853.58	11,789.22	0.00	0.00	0.00	
17,500.00	90.00	180.61	7,040.00	-11,870.15	-1,854.65	11,889.22	0.00	0.00	0.00	
17,600.00	90.00	180.61	7,040.00	-11,970.14	-1,855.71	11,989.22	0.00	0.00	0.00	
17,700.00	90.00	180.61	7,040.00	-12,070.14	-1,856.78	12,089.22	0.00	0.00	0.00	
17,800.00	90.00	180.61	7,040.00	-12,170.13	-1,857.85	12,189.22	0.00	0.00	0.00	
17,900.00	90.00	180.61	7,040.00	-12,270.12	-1,858.91	12,289.22	0.00	0.00	0.00	
18,000.00	90.00	180.61	7,040.00	-12,370.12	-1,859.98	12,389.22	0.00	0.00	0.00	
18,009.43	90.00	180.61	7,040.00	-12,379.54	-1,860.08	12,398.65	0.00	0.00	0.00	
TD Well @ 18009.43ft										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (")	Hole Diameter (")
1,752.16	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)		
290.00	290.00	0.00	0.00	Begin Nudge @ 290.00ft	
1,368.50	1,343.20	-140.87	-142.85	Hold Tangent @ 1368.50ft	
7,006.89	6,586.73	-1,596.35	-1,618.80	KOP @ 7006.89ft :: DLS = 9°/100'	
7,838.84	7,040.00	-2,209.54	-1,751.58	End Build @ 7838.84ft	
18,009.43	7,040.00	-12,379.54	-1,860.08	TD Well @ 18009.43ft	