

VERDAD RESOURCES

**WATTENBERG FIELD
1N-65W-12 SAFI 1224 PAD
SAFI 1224-11H**

Wellbore #1

Plan: Design #1

Standard Planning Report

16 May, 2019

Project: WATTENBERG FIELD
Site: 1N-65W-12 SAFI 1224 PAD
Well: SAFI 1224-11H
Wellbore: Wellbore #1
Design: Design #1

VERDAD RESOURCES

CASING DETAILS

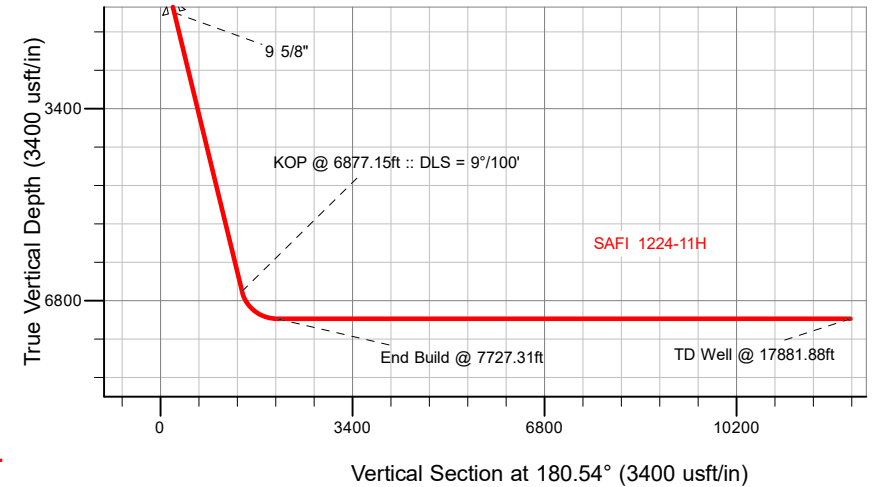
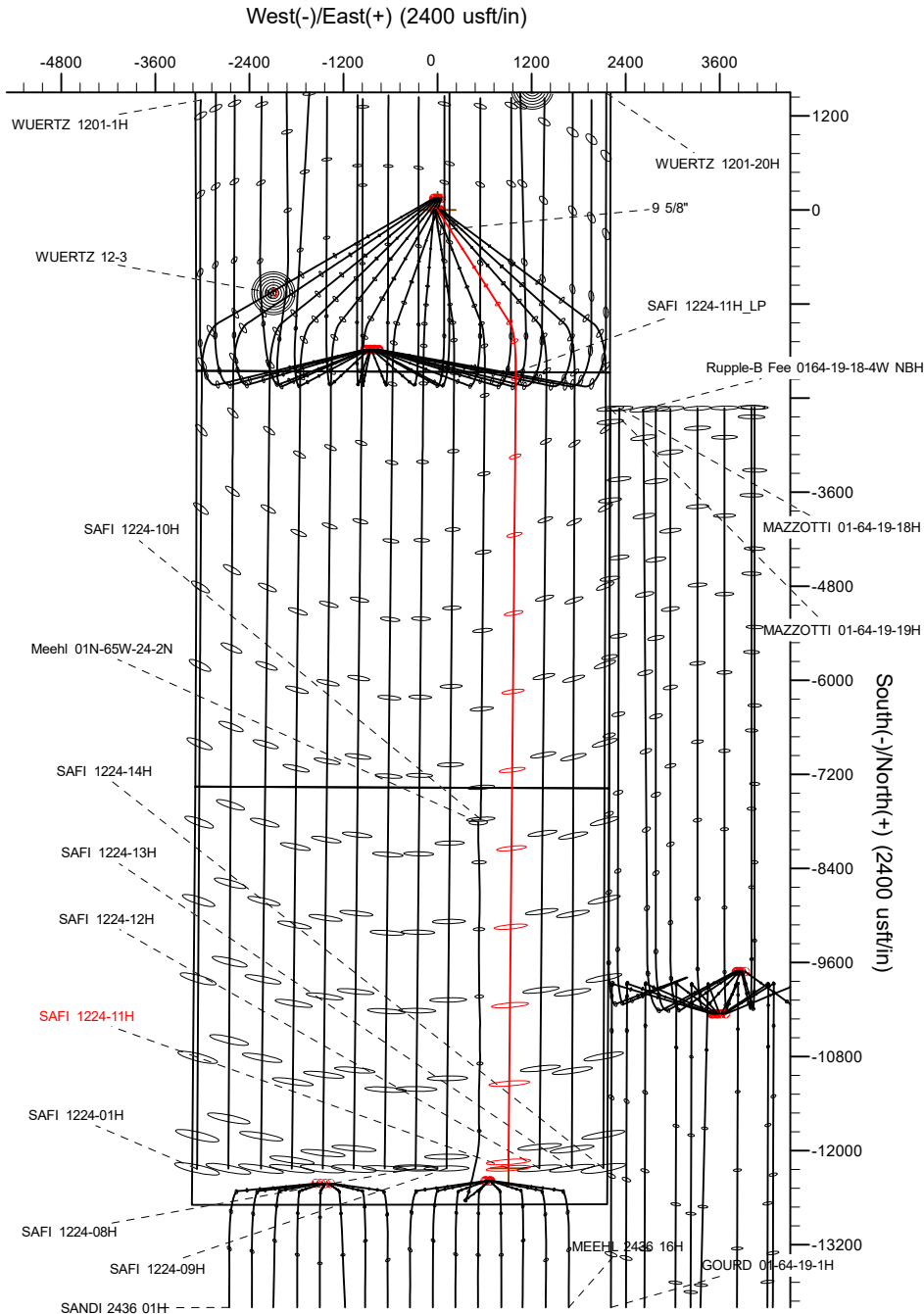
TVD	MD	Name	Size
1700.00	1735.91	9 5/8"	9-5/8

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	
1098.50	16.17	147.40	1087.81	-95.48	61.06	2.00	147.40	94.90	
6877.15	16.17	147.40	6637.85	-1451.22	928.10	0.00	0.00	1442.41	
7727.31	90.00	180.54	7120.00	-2070.98	998.72	9.00	34.20	2061.48	
17881.88	90.00	180.54	7120.00	-12225.11	903.65	0.00	0.00	12216.05	SAFI 1224-11H_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

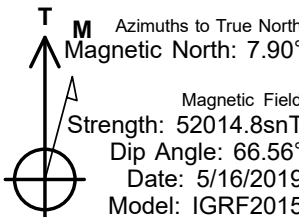
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
SAFI 1224-11H_SHL	0.00	0.00	0.00	40.064374	-104.610564
SAFI 1224-11H_BHL	7120.00	-12225.11	903.65	40.030814	-104.607337



SHL
2065' FSL
2203' FEL

LP
0' FNL
1203' FEL

BHL
460' FSL
1260' FEL

 <p>Azimuths to True North Magnetic North: 7.90° Magnetic Field Strength: 52014.8snT Dip Angle: 66.56° Date: 5/16/2019 Model: IGRF2015</p>	WELL DETAILS: SAFI 1224-11H	
	GL = 4971'	
	RKB = 24' @ 4995.00usft (RIG)	
	Plan: Design #1 (SAFI 1224-11H/Wellbore #1)	
	Date: 5/16/2019	

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Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well SAFI 1224-11H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4995.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4995.00usft (RIG)
Site:	1N-65W-12 SAFI 1224 PAD	North Reference:	True
Well:	SAFI 1224-11H	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 1224-11H					
Well Position	+N/-S	-252.77 usft	Northing:	1,267,545.04 usft	Latitude:	40.064374
	+E/-W	192.00 usft	Easting:	3,248,939.39 usft	Longitude:	-104.610564
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	4,971.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/16/2019	7.90	66.56	52,014.81090795

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	180.54

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	17,881.89	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	
1,098.50	16.17	147.40	1,087.81	-95.48	61.06	2.00	2.00	0.00	147.40	
6,877.15	16.17	147.40	6,637.85	-1,451.22	928.10	0.00	0.00	0.00	0.00	
7,727.31	90.00	180.54	7,120.00	-2,070.98	998.72	9.00	8.68	3.90	34.20	
17,881.89	90.00	180.54	7,120.00	-12,225.11	903.65	0.00	0.00	0.00	0.00	SAFI 1224-11H_BHL

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Planning Report

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Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4995.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4995.00usft (RIG)
Site:	1N-65W-12 SAFI 1224 PAD	North Reference:	True
Well:	SAFI 1224-11H	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	147.40	300.00	-0.01	0.01	0.01	2.00	2.00	0.00
400.00	2.20	147.40	399.97	-1.78	1.14	1.77	2.00	2.00	0.00
500.00	4.20	147.40	499.81	-6.48	4.15	6.44	2.00	2.00	0.00
600.00	6.20	147.40	599.40	-14.12	9.03	14.03	2.00	2.00	0.00
700.00	8.20	147.40	698.60	-24.67	15.78	24.52	2.00	2.00	0.00
800.00	10.20	147.40	797.31	-38.14	24.39	37.91	2.00	2.00	0.00
900.00	12.20	147.40	895.40	-54.51	34.86	54.17	2.00	2.00	0.00
1,000.00	14.20	147.40	992.75	-73.74	47.16	73.29	2.00	2.00	0.00
1,098.50	16.17	147.40	1,087.81	-95.48	61.06	94.90	2.00	2.00	0.00
Hold Tangent @ 1098.50ft									
1,100.00	16.17	147.40	1,089.25	-95.83	61.29	95.25	0.00	0.00	0.00
1,200.00	16.17	147.40	1,185.29	-119.29	76.29	118.57	0.00	0.00	0.00
1,300.00	16.17	147.40	1,281.34	-142.75	91.29	141.88	0.00	0.00	0.00
1,400.00	16.17	147.40	1,377.38	-166.21	106.30	165.20	0.00	0.00	0.00
1,500.00	16.17	147.40	1,473.43	-189.67	121.30	188.52	0.00	0.00	0.00
1,600.00	16.17	147.40	1,569.47	-213.14	136.31	211.84	0.00	0.00	0.00
1,700.00	16.17	147.40	1,665.51	-236.60	151.31	235.16	0.00	0.00	0.00
1,735.91	16.17	147.40	1,700.00	-245.02	156.70	243.53	0.00	0.00	0.00
9 5/8"									
1,800.00	16.17	147.40	1,761.56	-260.06	166.31	258.48	0.00	0.00	0.00
1,900.00	16.17	147.40	1,857.60	-283.52	181.32	281.80	0.00	0.00	0.00
2,000.00	16.17	147.40	1,953.65	-306.98	196.32	305.12	0.00	0.00	0.00
2,100.00	16.17	147.40	2,049.69	-330.44	211.33	328.44	0.00	0.00	0.00
2,200.00	16.17	147.40	2,145.73	-353.90	226.33	351.75	0.00	0.00	0.00
2,300.00	16.17	147.40	2,241.78	-377.36	241.33	375.07	0.00	0.00	0.00
2,400.00	16.17	147.40	2,337.82	-400.83	256.34	398.39	0.00	0.00	0.00
2,500.00	16.17	147.40	2,433.87	-424.29	271.34	421.71	0.00	0.00	0.00
2,600.00	16.17	147.40	2,529.91	-447.75	286.35	445.03	0.00	0.00	0.00
2,700.00	16.17	147.40	2,625.95	-471.21	301.35	468.35	0.00	0.00	0.00
2,800.00	16.17	147.40	2,722.00	-494.67	316.36	491.67	0.00	0.00	0.00
2,900.00	16.17	147.40	2,818.04	-518.13	331.36	514.99	0.00	0.00	0.00
3,000.00	16.17	147.40	2,914.09	-541.59	346.36	538.31	0.00	0.00	0.00
3,100.00	16.17	147.40	3,010.13	-565.06	361.37	561.62	0.00	0.00	0.00
3,200.00	16.17	147.40	3,106.17	-588.52	376.37	584.94	0.00	0.00	0.00
3,300.00	16.17	147.40	3,202.22	-611.98	391.38	608.26	0.00	0.00	0.00
3,400.00	16.17	147.40	3,298.26	-635.44	406.38	631.58	0.00	0.00	0.00
3,500.00	16.17	147.40	3,394.31	-658.90	421.38	654.90	0.00	0.00	0.00
3,600.00	16.17	147.40	3,490.35	-682.36	436.39	678.22	0.00	0.00	0.00
3,700.00	16.17	147.40	3,586.39	-705.82	451.39	701.54	0.00	0.00	0.00
3,800.00	16.17	147.40	3,682.44	-729.28	466.40	724.86	0.00	0.00	0.00
3,900.00	16.17	147.40	3,778.48	-752.75	481.40	748.18	0.00	0.00	0.00
4,000.00	16.17	147.40	3,874.53	-776.21	496.40	771.49	0.00	0.00	0.00
4,100.00	16.17	147.40	3,970.57	-799.67	511.41	794.81	0.00	0.00	0.00
4,200.00	16.17	147.40	4,066.61	-823.13	526.41	818.13	0.00	0.00	0.00
4,300.00	16.17	147.40	4,162.66	-846.59	541.42	841.45	0.00	0.00	0.00
4,400.00	16.17	147.40	4,258.70	-870.05	556.42	864.77	0.00	0.00	0.00
4,500.00	16.17	147.40	4,354.75	-893.51	571.43	888.09	0.00	0.00	0.00
4,600.00	16.17	147.40	4,450.79	-916.97	586.43	911.41	0.00	0.00	0.00

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Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well SAFI 1224-11H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4995.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4995.00usft (RIG)
Site:	1N-65W-12 SAFI 1224 PAD	North Reference:	True
Well:	SAFI 1224-11H	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	16.17	147.40	4,546.83	-940.44	601.43	934.73	0.00	0.00	0.00
4,800.00	16.17	147.40	4,642.88	-963.90	616.44	958.04	0.00	0.00	0.00
4,900.00	16.17	147.40	4,738.92	-987.36	631.44	981.36	0.00	0.00	0.00
5,000.00	16.17	147.40	4,834.97	-1,010.82	646.45	1,004.68	0.00	0.00	0.00
5,100.00	16.17	147.40	4,931.01	-1,034.28	661.45	1,028.00	0.00	0.00	0.00
5,200.00	16.17	147.40	5,027.05	-1,057.74	676.45	1,051.32	0.00	0.00	0.00
5,300.00	16.17	147.40	5,123.10	-1,081.20	691.46	1,074.64	0.00	0.00	0.00
5,400.00	16.17	147.40	5,219.14	-1,104.67	706.46	1,097.96	0.00	0.00	0.00
5,500.00	16.17	147.40	5,315.19	-1,128.13	721.47	1,121.28	0.00	0.00	0.00
5,600.00	16.17	147.40	5,411.23	-1,151.59	736.47	1,144.60	0.00	0.00	0.00
5,700.00	16.17	147.40	5,507.27	-1,175.05	751.48	1,167.91	0.00	0.00	0.00
5,800.00	16.17	147.40	5,603.32	-1,198.51	766.48	1,191.23	0.00	0.00	0.00
5,900.00	16.17	147.40	5,699.36	-1,221.97	781.48	1,214.55	0.00	0.00	0.00
6,000.00	16.17	147.40	5,795.41	-1,245.43	796.49	1,237.87	0.00	0.00	0.00
6,100.00	16.17	147.40	5,891.45	-1,268.89	811.49	1,261.19	0.00	0.00	0.00
6,200.00	16.17	147.40	5,987.49	-1,292.36	826.50	1,284.51	0.00	0.00	0.00
6,300.00	16.17	147.40	6,083.54	-1,315.82	841.50	1,307.83	0.00	0.00	0.00
6,400.00	16.17	147.40	6,179.58	-1,339.28	856.50	1,331.15	0.00	0.00	0.00
6,500.00	16.17	147.40	6,275.62	-1,362.74	871.51	1,354.47	0.00	0.00	0.00
6,600.00	16.17	147.40	6,371.67	-1,386.20	886.51	1,377.78	0.00	0.00	0.00
6,700.00	16.17	147.40	6,467.71	-1,409.66	901.52	1,401.10	0.00	0.00	0.00
6,800.00	16.17	147.40	6,563.76	-1,433.12	916.52	1,424.42	0.00	0.00	0.00
6,877.15	16.17	147.40	6,637.85	-1,451.22	928.10	1,442.41	0.00	0.00	0.00
KOP @ 6877.15ft :: DLS = 9°/100'									
6,900.00	17.91	151.16	6,659.70	-1,456.98	931.51	1,448.14	9.00	7.60	16.46
7,000.00	26.05	161.61	6,752.39	-1,491.35	945.88	1,482.37	9.00	8.14	10.45
7,100.00	34.59	167.25	6,838.65	-1,539.97	959.09	1,530.87	9.00	8.55	5.64
7,200.00	43.31	170.86	6,916.36	-1,601.65	970.83	1,592.43	9.00	8.71	3.61
7,300.00	52.10	173.45	6,983.59	-1,674.85	980.81	1,665.54	9.00	8.79	2.59
7,400.00	60.94	175.48	7,038.71	-1,757.79	988.76	1,748.40	9.00	8.84	2.03
7,500.00	69.81	177.19	7,080.34	-1,848.42	994.52	1,838.96	9.00	8.87	1.71
7,600.00	78.69	178.72	7,107.47	-1,944.50	997.92	1,935.01	9.00	8.88	1.52
7,700.00	87.57	180.15	7,119.42	-2,043.68	998.88	2,034.17	9.00	8.89	1.43
7,727.31	90.00	180.54	7,120.00	-2,070.98	998.72	2,061.48	9.00	8.89	1.41
End Build @ 7727.31ft									
7,800.00	90.00	180.54	7,120.00	-2,143.66	998.04	2,134.16	0.00	0.00	0.00
7,900.00	90.00	180.54	7,120.00	-2,243.66	997.10	2,234.16	0.00	0.00	0.00
8,000.00	90.00	180.54	7,120.00	-2,343.66	996.16	2,334.16	0.00	0.00	0.00
8,100.00	90.00	180.54	7,120.00	-2,443.65	995.23	2,434.16	0.00	0.00	0.00
8,200.00	90.00	180.54	7,120.00	-2,543.65	994.29	2,534.16	0.00	0.00	0.00
8,300.00	90.00	180.54	7,120.00	-2,643.64	993.36	2,634.16	0.00	0.00	0.00
8,400.00	90.00	180.54	7,120.00	-2,743.64	992.42	2,734.16	0.00	0.00	0.00
8,500.00	90.00	180.54	7,120.00	-2,843.63	991.48	2,834.16	0.00	0.00	0.00
8,600.00	90.00	180.54	7,120.00	-2,943.63	990.55	2,934.16	0.00	0.00	0.00
8,700.00	90.00	180.54	7,120.00	-3,043.63	989.61	3,034.16	0.00	0.00	0.00
8,800.00	90.00	180.54	7,120.00	-3,143.62	988.67	3,134.16	0.00	0.00	0.00
8,900.00	90.00	180.54	7,120.00	-3,243.62	987.74	3,234.16	0.00	0.00	0.00
9,000.00	90.00	180.54	7,120.00	-3,343.61	986.80	3,334.16	0.00	0.00	0.00
9,100.00	90.00	180.54	7,120.00	-3,443.61	985.87	3,434.16	0.00	0.00	0.00
9,200.00	90.00	180.54	7,120.00	-3,543.60	984.93	3,534.16	0.00	0.00	0.00
9,300.00	90.00	180.54	7,120.00	-3,643.60	983.99	3,634.16	0.00	0.00	0.00
9,400.00	90.00	180.54	7,120.00	-3,743.59	983.06	3,734.16	0.00	0.00	0.00
9,500.00	90.00	180.54	7,120.00	-3,843.59	982.12	3,834.16	0.00	0.00	0.00
9,600.00	90.00	180.54	7,120.00	-3,943.59	981.18	3,934.16	0.00	0.00	0.00

Hewlett-Packard

Planning Report

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Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4995.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4995.00usft (RIG)
Site:	1N-65W-12 SAFI 1224 PAD	North Reference:	True
Well:	SAFI 1224-11H	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	180.54	7,120.00	-4,043.58	980.25	4,034.16	0.00	0.00	0.00	
9,800.00	90.00	180.54	7,120.00	-4,143.58	979.31	4,134.16	0.00	0.00	0.00	
9,900.00	90.00	180.54	7,120.00	-4,243.57	978.38	4,234.16	0.00	0.00	0.00	
10,000.00	90.00	180.54	7,120.00	-4,343.57	977.44	4,334.16	0.00	0.00	0.00	
10,100.00	90.00	180.54	7,120.00	-4,443.56	976.50	4,434.16	0.00	0.00	0.00	
10,200.00	90.00	180.54	7,120.00	-4,543.56	975.57	4,534.16	0.00	0.00	0.00	
10,300.00	90.00	180.54	7,120.00	-4,643.56	974.63	4,634.16	0.00	0.00	0.00	
10,400.00	90.00	180.54	7,120.00	-4,743.55	973.69	4,734.16	0.00	0.00	0.00	
10,500.00	90.00	180.54	7,120.00	-4,843.55	972.76	4,834.16	0.00	0.00	0.00	
10,600.00	90.00	180.54	7,120.00	-4,943.54	971.82	4,934.16	0.00	0.00	0.00	
10,700.00	90.00	180.54	7,120.00	-5,043.54	970.89	5,034.16	0.00	0.00	0.00	
10,800.00	90.00	180.54	7,120.00	-5,143.53	969.95	5,134.16	0.00	0.00	0.00	
10,900.00	90.00	180.54	7,120.00	-5,243.53	969.01	5,234.16	0.00	0.00	0.00	
11,000.00	90.00	180.54	7,120.00	-5,343.52	968.08	5,334.16	0.00	0.00	0.00	
11,100.00	90.00	180.54	7,120.00	-5,443.52	967.14	5,434.16	0.00	0.00	0.00	
11,200.00	90.00	180.54	7,120.00	-5,543.52	966.21	5,534.16	0.00	0.00	0.00	
11,300.00	90.00	180.54	7,120.00	-5,643.51	965.27	5,634.16	0.00	0.00	0.00	
11,400.00	90.00	180.54	7,120.00	-5,743.51	964.33	5,734.16	0.00	0.00	0.00	
11,500.00	90.00	180.54	7,120.00	-5,843.50	963.40	5,834.16	0.00	0.00	0.00	
11,600.00	90.00	180.54	7,120.00	-5,943.50	962.46	5,934.16	0.00	0.00	0.00	
11,700.00	90.00	180.54	7,120.00	-6,043.49	961.52	6,034.16	0.00	0.00	0.00	
11,800.00	90.00	180.54	7,120.00	-6,143.49	960.59	6,134.16	0.00	0.00	0.00	
11,900.00	90.00	180.54	7,120.00	-6,243.49	959.65	6,234.16	0.00	0.00	0.00	
12,000.00	90.00	180.54	7,120.00	-6,343.48	958.72	6,334.16	0.00	0.00	0.00	
12,100.00	90.00	180.54	7,120.00	-6,443.48	957.78	6,434.16	0.00	0.00	0.00	
12,200.00	90.00	180.54	7,120.00	-6,543.47	956.84	6,534.16	0.00	0.00	0.00	
12,300.00	90.00	180.54	7,120.00	-6,643.47	955.91	6,634.16	0.00	0.00	0.00	
12,400.00	90.00	180.54	7,120.00	-6,743.46	954.97	6,734.16	0.00	0.00	0.00	
12,500.00	90.00	180.54	7,120.00	-6,843.46	954.03	6,834.16	0.00	0.00	0.00	
12,600.00	90.00	180.54	7,120.00	-6,943.45	953.10	6,934.16	0.00	0.00	0.00	
12,700.00	90.00	180.54	7,120.00	-7,043.45	952.16	7,034.16	0.00	0.00	0.00	
12,800.00	90.00	180.54	7,120.00	-7,143.45	951.23	7,134.16	0.00	0.00	0.00	
12,900.00	90.00	180.54	7,120.00	-7,243.44	950.29	7,234.16	0.00	0.00	0.00	
13,000.00	90.00	180.54	7,120.00	-7,343.44	949.35	7,334.16	0.00	0.00	0.00	
13,100.00	90.00	180.54	7,120.00	-7,443.43	948.42	7,434.16	0.00	0.00	0.00	
13,200.00	90.00	180.54	7,120.00	-7,543.43	947.48	7,534.16	0.00	0.00	0.00	
13,300.00	90.00	180.54	7,120.00	-7,643.42	946.54	7,634.16	0.00	0.00	0.00	
13,400.00	90.00	180.54	7,120.00	-7,743.42	945.61	7,734.16	0.00	0.00	0.00	
13,500.00	90.00	180.54	7,120.00	-7,843.42	944.67	7,834.16	0.00	0.00	0.00	
13,600.00	90.00	180.54	7,120.00	-7,943.41	943.74	7,934.16	0.00	0.00	0.00	
13,700.00	90.00	180.54	7,120.00	-8,043.41	942.80	8,034.16	0.00	0.00	0.00	
13,800.00	90.00	180.54	7,120.00	-8,143.40	941.86	8,134.16	0.00	0.00	0.00	
13,900.00	90.00	180.54	7,120.00	-8,243.40	940.93	8,234.16	0.00	0.00	0.00	
14,000.00	90.00	180.54	7,120.00	-8,343.39	939.99	8,334.16	0.00	0.00	0.00	
14,100.00	90.00	180.54	7,120.00	-8,443.39	939.05	8,434.16	0.00	0.00	0.00	
14,200.00	90.00	180.54	7,120.00	-8,543.38	938.12	8,534.16	0.00	0.00	0.00	
14,300.00	90.00	180.54	7,120.00	-8,643.38	937.18	8,634.16	0.00	0.00	0.00	
14,400.00	90.00	180.54	7,120.00	-8,743.38	936.25	8,734.16	0.00	0.00	0.00	
14,500.00	90.00	180.54	7,120.00	-8,843.37	935.31	8,834.16	0.00	0.00	0.00	
14,600.00	90.00	180.54	7,120.00	-8,943.37	934.37	8,934.16	0.00	0.00	0.00	
14,700.00	90.00	180.54	7,120.00	-9,043.36	933.44	9,034.16	0.00	0.00	0.00	
14,800.00	90.00	180.54	7,120.00	-9,143.36	932.50	9,134.16	0.00	0.00	0.00	
14,900.00	90.00	180.54	7,120.00	-9,243.35	931.56	9,234.16	0.00	0.00	0.00	

Hewlett-Packard

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well SAFI 1224-11H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 24' @ 4995.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 24' @ 4995.00usft (RIG)
Site:	1N-65W-12 SAFI 1224 PAD	North Reference:	True
Well:	SAFI 1224-11H	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	180.54	7,120.00	-9,343.35	930.63	9,334.16	0.00	0.00	0.00	
15,100.00	90.00	180.54	7,120.00	-9,443.35	929.69	9,434.16	0.00	0.00	0.00	
15,200.00	90.00	180.54	7,120.00	-9,543.34	928.76	9,534.16	0.00	0.00	0.00	
15,300.00	90.00	180.54	7,120.00	-9,643.34	927.82	9,634.16	0.00	0.00	0.00	
15,400.00	90.00	180.54	7,120.00	-9,743.33	926.88	9,734.16	0.00	0.00	0.00	
15,500.00	90.00	180.54	7,120.00	-9,843.33	925.95	9,834.16	0.00	0.00	0.00	
15,600.00	90.00	180.54	7,120.00	-9,943.32	925.01	9,934.16	0.00	0.00	0.00	
15,700.00	90.00	180.54	7,120.00	-10,043.32	924.07	10,034.16	0.00	0.00	0.00	
15,800.00	90.00	180.54	7,120.00	-10,143.31	923.14	10,134.16	0.00	0.00	0.00	
15,900.00	90.00	180.54	7,120.00	-10,243.31	922.20	10,234.16	0.00	0.00	0.00	
16,000.00	90.00	180.54	7,120.00	-10,343.31	921.27	10,334.16	0.00	0.00	0.00	
16,100.00	90.00	180.54	7,120.00	-10,443.30	920.33	10,434.16	0.00	0.00	0.00	
16,200.00	90.00	180.54	7,120.00	-10,543.30	919.39	10,534.16	0.00	0.00	0.00	
16,300.00	90.00	180.54	7,120.00	-10,643.29	918.46	10,634.16	0.00	0.00	0.00	
16,400.00	90.00	180.54	7,120.00	-10,743.29	917.52	10,734.16	0.00	0.00	0.00	
16,500.00	90.00	180.54	7,120.00	-10,843.28	916.58	10,834.16	0.00	0.00	0.00	
16,600.00	90.00	180.54	7,120.00	-10,943.28	915.65	10,934.16	0.00	0.00	0.00	
16,700.00	90.00	180.54	7,120.00	-11,043.28	914.71	11,034.16	0.00	0.00	0.00	
16,800.00	90.00	180.54	7,120.00	-11,143.27	913.78	11,134.16	0.00	0.00	0.00	
16,900.00	90.00	180.54	7,120.00	-11,243.27	912.84	11,234.16	0.00	0.00	0.00	
17,000.00	90.00	180.54	7,120.00	-11,343.26	911.90	11,334.16	0.00	0.00	0.00	
17,100.00	90.00	180.54	7,120.00	-11,443.26	910.97	11,434.16	0.00	0.00	0.00	
17,200.00	90.00	180.54	7,120.00	-11,543.25	910.03	11,534.16	0.00	0.00	0.00	
17,300.00	90.00	180.54	7,120.00	-11,643.25	909.09	11,634.16	0.00	0.00	0.00	
17,400.00	90.00	180.54	7,120.00	-11,743.24	908.16	11,734.16	0.00	0.00	0.00	
17,500.00	90.00	180.54	7,120.00	-11,843.24	907.22	11,834.16	0.00	0.00	0.00	
17,600.00	90.00	180.54	7,120.00	-11,943.24	906.29	11,934.16	0.00	0.00	0.00	
17,700.00	90.00	180.54	7,120.00	-12,043.23	905.35	12,034.16	0.00	0.00	0.00	
17,800.00	90.00	180.54	7,120.00	-12,143.23	904.41	12,134.16	0.00	0.00	0.00	
17,881.89	90.00	180.54	7,120.00	-12,225.11	903.65	12,216.05	0.00	0.00	0.00	
TD Well @ 17881.88ft										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,735.91	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	
290.00	290.00	0.00	0.00	Begin Nudge @ 290.00ft	
1,098.50	1,087.81	-95.48	61.06	Hold Tangent @ 1098.50ft	
6,877.15	6,637.85	-1,451.22	928.10	KOP @ 6877.15ft :: DLS = 9°/100'	
7,727.31	7,120.00	-2,070.98	998.72	End Build @ 7727.31ft	
17,881.89	7,120.00	-12,225.11	903.65	TD Well @ 17881.88ft	