

VERDAD RESOURCES

**WATTENBERG FIELD
8N-59W-09 DELAND FED 0907 PAD
DELAND FED 0907-16H**

Wellbore #1

Plan: Design #1

Standard Planning Report

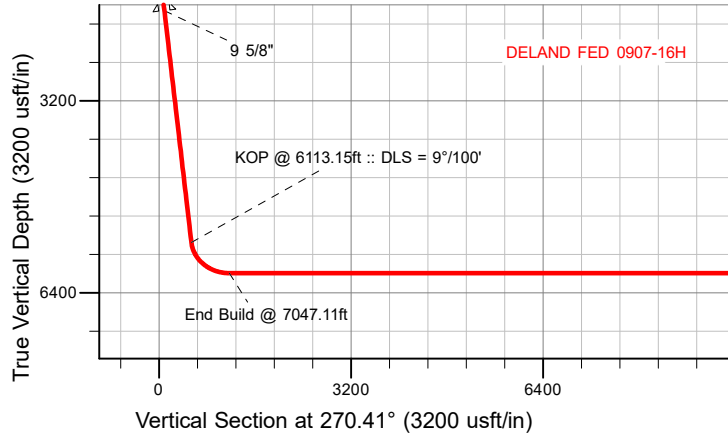
02 August, 2018

Project: WATTENBERG FIELD
 Site: 8N-59W-09 DELAND FED 0907 PAD
 Well: DELAND FED 0907-16H
 Wellbore: Wellbore #1
 Design: Design #1

VERDAD RESOURCES

CASING DETAILS

TVD	MD	Name	Size
1700.00	1767.98	9 5/8"	9-5/8

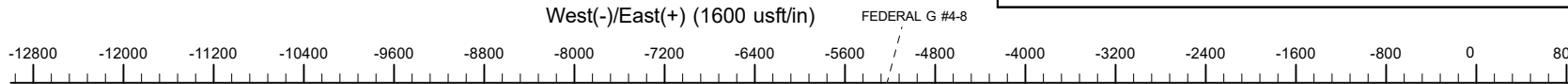


SECTION DETAILS

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	1610.00	27.20	193.50	1559.49	-308.05	-73.96	2.00	193.50	71.75	
4	6113.15	27.20	193.50	5564.66	-2309.55	-554.47	0.00	0.00	537.93	
5	7047.11	90.00	270.41	6075.00	-2560.50	-1189.47	9.00	78.31	1171.12	
6	17049.93	90.00	270.41	6075.00	-2489.41	-11192.03	0.00	0.00	11173.93	DELAND FED 0907-16H_BHL

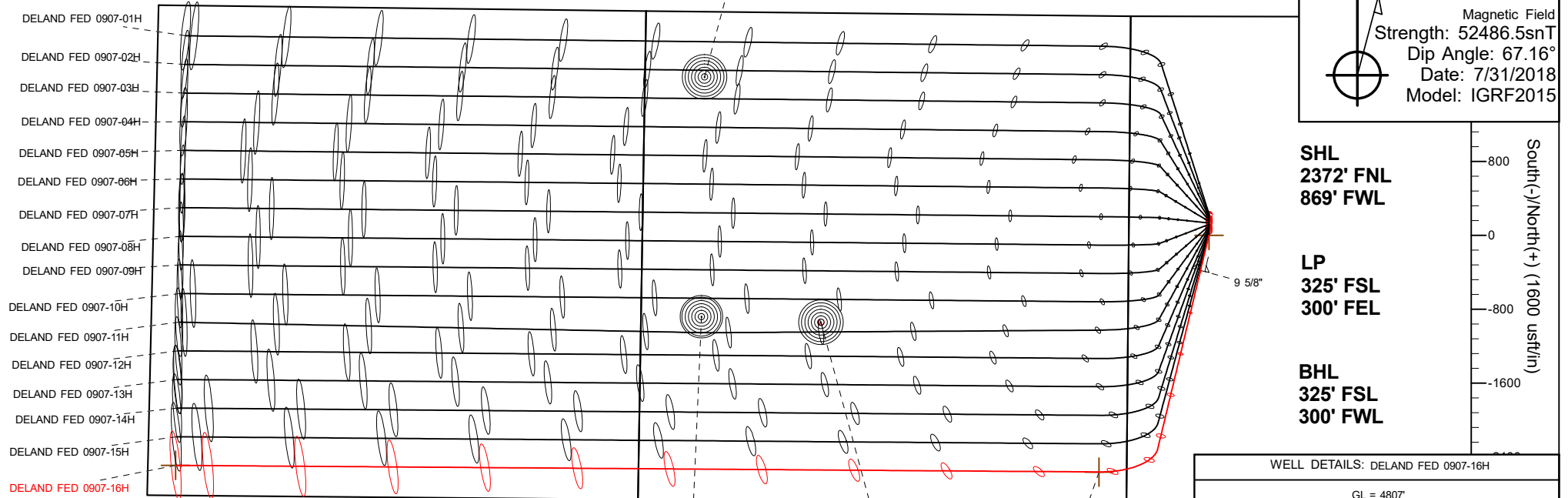
WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
DELAND FED 0907-16H_SHL	0.00	0.00	0.00	40.677614	-103.987751
DELAND FED 0907-16H_BHL	6075.00	-2489.41	-11192.03	40.670774	-104.028097



T Azimuths to True North
M Magnetic North: 7.69°

Magnetic Field
 Strength: 52486.5snT
 Dip Angle: 67.16°
 Date: 7/31/2018
 Model: IGRF2015



FEDERAL PC #LG08-12

WELD PAWNEE #11-8

DELAND FED 0907-16H_LP

WELL DETAILS: DELAND FED 0907-16H

GL = 4807'

RKB = 20' @ 4827.00usft (RIG)

Plan: Design #1 (DELAND FED 0907-16H/Wellbore #1)

Date: 8/2/2018

Hewlett-Packard

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well DELAND FED 0907-16H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 4827.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 4827.00usft (RIG)
Site:	8N-59W-09 DELAND FED 0907 PAD	North Reference:	True
Well:	DELAND FED 0907-16H	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	8N-59W-09 DELAND FED 0907 PAD				
Site Position:		Northing:	1,493,484.36 usft	Latitude:	40.678191
From:	Lat/Long	Easting:	3,419,432.00 usft	Longitude:	-103.987738
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.98 °

Well	DELAND FED 0907-16H					
Well Position	+N/-S	-209.97 usft	Northing:	1,493,274.36 usft	Latitude:	40.677614
	+E/-W	-3.58 usft	Easting:	3,419,432.00 usft	Longitude:	-103.987751
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	4,807.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	7/31/2018	7.69	67.16	52,486.49937213

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	270.41

Plan Survey Tool Program	Date	8/1/2018			
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	17,049.93	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	
1,610.00	27.20	193.50	1,559.49	-308.05	-73.96	2.00	2.00	0.00	193.50	
6,113.15	27.20	193.50	5,564.66	-2,309.55	-554.47	0.00	0.00	0.00	0.00	
7,047.11	90.00	270.41	6,075.00	-2,560.50	-1,189.47	9.00	6.72	8.23	78.31	
17,049.93	90.00	270.41	6,075.00	-2,489.41	-11,192.03	0.00	0.00	0.00	0.00	DELAND FED 0907-1

Hewlett-Packard

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well DELAND FED 0907-16H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 4827.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 4827.00usft (RIG)
Site:	8N-59W-09 DELAND FED 0907 PAD	North Reference:	True
Well:	DELAND FED 0907-16H	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	193.50	300.00	-0.42	-0.10	0.10	2.00	2.00	0.00
400.00	3.00	193.50	399.93	-3.82	-0.92	0.89	2.00	2.00	0.00
500.00	5.00	193.50	499.68	-10.60	-2.54	2.47	2.00	2.00	0.00
600.00	7.00	193.50	599.13	-20.76	-4.98	4.84	2.00	2.00	0.00
700.00	9.00	193.50	698.15	-34.30	-8.23	7.99	2.00	2.00	0.00
800.00	11.00	193.50	796.63	-51.18	-12.29	11.92	2.00	2.00	0.00
900.00	13.00	193.50	894.44	-71.40	-17.14	16.63	2.00	2.00	0.00
1,000.00	15.00	193.50	991.46	-94.92	-22.79	22.11	2.00	2.00	0.00
1,100.00	17.00	193.50	1,087.58	-121.72	-29.22	28.35	2.00	2.00	0.00
1,200.00	19.00	193.50	1,182.68	-151.77	-36.44	35.35	2.00	2.00	0.00
1,300.00	21.00	193.50	1,276.65	-185.02	-44.42	43.09	2.00	2.00	0.00
1,400.00	23.00	193.50	1,369.36	-221.44	-53.16	51.58	2.00	2.00	0.00
1,500.00	25.00	193.50	1,460.71	-260.99	-62.66	60.79	2.00	2.00	0.00
1,600.00	27.00	193.50	1,550.59	-303.62	-72.89	70.72	2.00	2.00	0.00
1,610.00	27.20	193.50	1,559.49	-308.05	-73.96	71.75	2.00	2.00	0.00
End Tangent @ 1610.00ft									
1,700.00	27.20	193.50	1,639.54	-348.05	-83.56	81.07	0.00	0.00	0.00
1,767.98	27.20	193.50	1,700.00	-378.26	-90.81	88.10	0.00	0.00	0.00
9 5/8"									
1,800.00	27.20	193.50	1,728.48	-392.49	-94.23	91.42	0.00	0.00	0.00
1,900.00	27.20	193.50	1,817.42	-436.94	-104.90	101.77	0.00	0.00	0.00
2,000.00	27.20	193.50	1,906.36	-481.39	-115.57	112.12	0.00	0.00	0.00
2,100.00	27.20	193.50	1,995.30	-525.84	-126.24	122.48	0.00	0.00	0.00
2,200.00	27.20	193.50	2,084.24	-570.28	-136.91	132.83	0.00	0.00	0.00
2,300.00	27.20	193.50	2,173.19	-614.73	-147.58	143.18	0.00	0.00	0.00
2,400.00	27.20	193.50	2,262.13	-659.18	-158.25	153.53	0.00	0.00	0.00
2,500.00	27.20	193.50	2,351.07	-703.62	-168.92	163.89	0.00	0.00	0.00
2,600.00	27.20	193.50	2,440.01	-748.07	-179.60	174.24	0.00	0.00	0.00
2,700.00	27.20	193.50	2,528.95	-792.52	-190.27	184.59	0.00	0.00	0.00
2,800.00	27.20	193.50	2,617.89	-836.96	-200.94	194.94	0.00	0.00	0.00
2,900.00	27.20	193.50	2,706.84	-881.41	-211.61	205.30	0.00	0.00	0.00
3,000.00	27.20	193.50	2,795.78	-925.86	-222.28	215.65	0.00	0.00	0.00
3,100.00	27.20	193.50	2,884.72	-970.30	-232.95	226.00	0.00	0.00	0.00
3,200.00	27.20	193.50	2,973.66	-1,014.75	-243.62	236.35	0.00	0.00	0.00
3,300.00	27.20	193.50	3,062.60	-1,059.20	-254.29	246.70	0.00	0.00	0.00
3,400.00	27.20	193.50	3,151.54	-1,103.64	-264.96	257.06	0.00	0.00	0.00
3,500.00	27.20	193.50	3,240.49	-1,148.09	-275.63	267.41	0.00	0.00	0.00
3,600.00	27.20	193.50	3,329.43	-1,192.54	-286.30	277.76	0.00	0.00	0.00
3,700.00	27.20	193.50	3,418.37	-1,236.98	-296.97	288.11	0.00	0.00	0.00
3,800.00	27.20	193.50	3,507.31	-1,281.43	-307.64	298.47	0.00	0.00	0.00
3,900.00	27.20	193.50	3,596.25	-1,325.88	-318.32	308.82	0.00	0.00	0.00
4,000.00	27.20	193.50	3,685.19	-1,370.32	-328.99	319.17	0.00	0.00	0.00
4,100.00	27.20	193.50	3,774.14	-1,414.77	-339.66	329.52	0.00	0.00	0.00
4,200.00	27.20	193.50	3,863.08	-1,459.22	-350.33	339.88	0.00	0.00	0.00
4,300.00	27.20	193.50	3,952.02	-1,503.67	-361.00	350.23	0.00	0.00	0.00
4,400.00	27.20	193.50	4,040.96	-1,548.11	-371.67	360.58	0.00	0.00	0.00
4,500.00	27.20	193.50	4,129.90	-1,592.56	-382.34	370.93	0.00	0.00	0.00
4,600.00	27.20	193.50	4,218.84	-1,637.01	-393.01	381.29	0.00	0.00	0.00

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Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well DELAND FED 0907-16H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 4827.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 4827.00usft (RIG)
Site:	8N-59W-09 DELAND FED 0907 PAD	North Reference:	True
Well:	DELAND FED 0907-16H	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	27.20	193.50	4,307.79	-1,681.45	-403.68	391.64	0.00	0.00	0.00	
4,800.00	27.20	193.50	4,396.73	-1,725.90	-414.35	401.99	0.00	0.00	0.00	
4,900.00	27.20	193.50	4,485.67	-1,770.35	-425.02	412.34	0.00	0.00	0.00	
5,000.00	27.20	193.50	4,574.61	-1,814.79	-435.69	422.70	0.00	0.00	0.00	
5,100.00	27.20	193.50	4,663.55	-1,859.24	-446.36	433.05	0.00	0.00	0.00	
5,200.00	27.20	193.50	4,752.49	-1,903.69	-457.03	443.40	0.00	0.00	0.00	
5,300.00	27.20	193.50	4,841.44	-1,948.13	-467.71	453.75	0.00	0.00	0.00	
5,400.00	27.20	193.50	4,930.38	-1,992.58	-478.38	464.11	0.00	0.00	0.00	
5,500.00	27.20	193.50	5,019.32	-2,037.03	-489.05	474.46	0.00	0.00	0.00	
5,600.00	27.20	193.50	5,108.26	-2,081.47	-499.72	484.81	0.00	0.00	0.00	
5,700.00	27.20	193.50	5,197.20	-2,125.92	-510.39	495.16	0.00	0.00	0.00	
5,800.00	27.20	193.50	5,286.14	-2,170.37	-521.06	505.52	0.00	0.00	0.00	
5,900.00	27.20	193.50	5,375.09	-2,214.81	-531.73	515.87	0.00	0.00	0.00	
6,000.00	27.20	193.50	5,464.03	-2,259.26	-542.40	526.22	0.00	0.00	0.00	
6,100.00	27.20	193.50	5,552.97	-2,303.71	-553.07	536.57	0.00	0.00	0.00	
6,113.15	27.20	193.50	5,564.66	-2,309.55	-554.47	537.93	0.00	0.00	0.00	
KOP @ 6113.15ft :: DLS = 9°/100'										
6,200.00	29.71	209.09	5,641.12	-2,347.72	-569.59	552.78	9.00	2.89	17.95	
6,300.00	34.45	223.55	5,725.96	-2,389.96	-601.20	584.08	9.00	4.74	14.46	
6,400.00	40.51	234.54	5,805.36	-2,429.38	-647.23	629.83	9.00	6.05	10.99	
6,500.00	47.36	242.96	5,877.40	-2,465.02	-706.57	688.91	9.00	6.86	8.43	
6,600.00	54.71	249.66	5,940.27	-2,495.99	-777.75	759.87	9.00	7.35	6.70	
6,700.00	62.37	255.22	5,992.45	-2,521.53	-859.02	840.95	9.00	7.66	5.56	
6,800.00	70.22	260.03	6,032.65	-2,541.02	-948.37	930.17	9.00	7.85	4.82	
6,900.00	78.18	264.40	6,059.87	-2,553.97	-1,043.62	1,025.31	9.00	7.96	4.36	
7,000.00	86.21	268.51	6,073.44	-2,560.06	-1,142.40	1,124.05	9.00	8.03	4.11	
7,047.11	90.00	270.41	6,075.00	-2,560.50	-1,189.47	1,171.12	9.00	8.05	4.03	
End Build @ 7047.11ft										
7,100.00	90.00	270.41	6,075.00	-2,560.13	-1,242.36	1,224.01	0.00	0.00	0.00	
7,200.00	90.00	270.41	6,075.00	-2,559.42	-1,342.36	1,324.01	0.00	0.00	0.00	
7,300.00	90.00	270.41	6,075.00	-2,558.71	-1,442.35	1,424.01	0.00	0.00	0.00	
7,400.00	90.00	270.41	6,075.00	-2,558.00	-1,542.35	1,524.01	0.00	0.00	0.00	
7,500.00	90.00	270.41	6,075.00	-2,557.29	-1,642.35	1,624.01	0.00	0.00	0.00	
7,600.00	90.00	270.41	6,075.00	-2,556.57	-1,742.35	1,724.01	0.00	0.00	0.00	
7,700.00	90.00	270.41	6,075.00	-2,555.86	-1,842.34	1,824.01	0.00	0.00	0.00	
7,800.00	90.00	270.41	6,075.00	-2,555.15	-1,942.34	1,924.01	0.00	0.00	0.00	
7,900.00	90.00	270.41	6,075.00	-2,554.44	-2,042.34	2,024.01	0.00	0.00	0.00	
8,000.00	90.00	270.41	6,075.00	-2,553.73	-2,142.34	2,124.01	0.00	0.00	0.00	
8,100.00	90.00	270.41	6,075.00	-2,553.02	-2,242.33	2,224.01	0.00	0.00	0.00	
8,200.00	90.00	270.41	6,075.00	-2,552.31	-2,342.33	2,324.01	0.00	0.00	0.00	
8,300.00	90.00	270.41	6,075.00	-2,551.60	-2,442.33	2,424.01	0.00	0.00	0.00	
8,400.00	90.00	270.41	6,075.00	-2,550.89	-2,542.33	2,524.01	0.00	0.00	0.00	
8,500.00	90.00	270.41	6,075.00	-2,550.18	-2,642.32	2,624.01	0.00	0.00	0.00	
8,600.00	90.00	270.41	6,075.00	-2,549.47	-2,742.32	2,724.01	0.00	0.00	0.00	
8,700.00	90.00	270.41	6,075.00	-2,548.76	-2,842.32	2,824.01	0.00	0.00	0.00	
8,800.00	90.00	270.41	6,075.00	-2,548.05	-2,942.32	2,924.01	0.00	0.00	0.00	
8,900.00	90.00	270.41	6,075.00	-2,547.34	-3,042.31	3,024.01	0.00	0.00	0.00	
9,000.00	90.00	270.41	6,075.00	-2,546.63	-3,142.31	3,124.01	0.00	0.00	0.00	
9,100.00	90.00	270.41	6,075.00	-2,545.91	-3,242.31	3,224.01	0.00	0.00	0.00	
9,200.00	90.00	270.41	6,075.00	-2,545.20	-3,342.31	3,324.01	0.00	0.00	0.00	
9,300.00	90.00	270.41	6,075.00	-2,544.49	-3,442.30	3,424.01	0.00	0.00	0.00	
9,400.00	90.00	270.41	6,075.00	-2,543.78	-3,542.30	3,524.01	0.00	0.00	0.00	
9,500.00	90.00	270.41	6,075.00	-2,543.07	-3,642.30	3,624.01	0.00	0.00	0.00	
9,600.00	90.00	270.41	6,075.00	-2,542.36	-3,742.30	3,724.01	0.00	0.00	0.00	

Hewlett-Packard

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well DELAND FED 0907-16H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 4827.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 4827.00usft (RIG)
Site:	8N-59W-09 DELAND FED 0907 PAD	North Reference:	True
Well:	DELAND FED 0907-16H	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	270.41	6,075.00	-2,541.65	-3,842.29	3,824.01	0.00	0.00	0.00
9,800.00	90.00	270.41	6,075.00	-2,540.94	-3,942.29	3,924.01	0.00	0.00	0.00
9,900.00	90.00	270.41	6,075.00	-2,540.23	-4,042.29	4,024.01	0.00	0.00	0.00
10,000.00	90.00	270.41	6,075.00	-2,539.52	-4,142.29	4,124.01	0.00	0.00	0.00
10,100.00	90.00	270.41	6,075.00	-2,538.81	-4,242.28	4,224.01	0.00	0.00	0.00
10,200.00	90.00	270.41	6,075.00	-2,538.10	-4,342.28	4,324.01	0.00	0.00	0.00
10,300.00	90.00	270.41	6,075.00	-2,537.39	-4,442.28	4,424.01	0.00	0.00	0.00
10,400.00	90.00	270.41	6,075.00	-2,536.68	-4,542.27	4,524.01	0.00	0.00	0.00
10,500.00	90.00	270.41	6,075.00	-2,535.96	-4,642.27	4,624.01	0.00	0.00	0.00
10,600.00	90.00	270.41	6,075.00	-2,535.25	-4,742.27	4,724.01	0.00	0.00	0.00
10,700.00	90.00	270.41	6,075.00	-2,534.54	-4,842.27	4,824.01	0.00	0.00	0.00
10,800.00	90.00	270.41	6,075.00	-2,533.83	-4,942.26	4,924.01	0.00	0.00	0.00
10,900.00	90.00	270.41	6,075.00	-2,533.12	-5,042.26	5,024.01	0.00	0.00	0.00
11,000.00	90.00	270.41	6,075.00	-2,532.41	-5,142.26	5,124.01	0.00	0.00	0.00
11,100.00	90.00	270.41	6,075.00	-2,531.70	-5,242.26	5,224.01	0.00	0.00	0.00
11,200.00	90.00	270.41	6,075.00	-2,530.99	-5,342.25	5,324.01	0.00	0.00	0.00
11,300.00	90.00	270.41	6,075.00	-2,530.28	-5,442.25	5,424.01	0.00	0.00	0.00
11,400.00	90.00	270.41	6,075.00	-2,529.57	-5,542.25	5,524.01	0.00	0.00	0.00
11,500.00	90.00	270.41	6,075.00	-2,528.86	-5,642.25	5,624.01	0.00	0.00	0.00
11,600.00	90.00	270.41	6,075.00	-2,528.15	-5,742.24	5,724.01	0.00	0.00	0.00
11,700.00	90.00	270.41	6,075.00	-2,527.44	-5,842.24	5,824.01	0.00	0.00	0.00
11,800.00	90.00	270.41	6,075.00	-2,526.73	-5,942.24	5,924.01	0.00	0.00	0.00
11,900.00	90.00	270.41	6,075.00	-2,526.01	-6,042.24	6,024.01	0.00	0.00	0.00
12,000.00	90.00	270.41	6,075.00	-2,525.30	-6,142.23	6,124.01	0.00	0.00	0.00
12,100.00	90.00	270.41	6,075.00	-2,524.59	-6,242.23	6,224.01	0.00	0.00	0.00
12,200.00	90.00	270.41	6,075.00	-2,523.88	-6,342.23	6,324.01	0.00	0.00	0.00
12,300.00	90.00	270.41	6,075.00	-2,523.17	-6,442.23	6,424.01	0.00	0.00	0.00
12,400.00	90.00	270.41	6,075.00	-2,522.46	-6,542.22	6,524.01	0.00	0.00	0.00
12,500.00	90.00	270.41	6,075.00	-2,521.75	-6,642.22	6,624.01	0.00	0.00	0.00
12,600.00	90.00	270.41	6,075.00	-2,521.04	-6,742.22	6,724.01	0.00	0.00	0.00
12,700.00	90.00	270.41	6,075.00	-2,520.33	-6,842.22	6,824.01	0.00	0.00	0.00
12,800.00	90.00	270.41	6,075.00	-2,519.62	-6,942.21	6,924.01	0.00	0.00	0.00
12,900.00	90.00	270.41	6,075.00	-2,518.91	-7,042.21	7,024.01	0.00	0.00	0.00
13,000.00	90.00	270.41	6,075.00	-2,518.20	-7,142.21	7,124.01	0.00	0.00	0.00
13,100.00	90.00	270.41	6,075.00	-2,517.49	-7,242.21	7,224.01	0.00	0.00	0.00
13,200.00	90.00	270.41	6,075.00	-2,516.78	-7,342.20	7,324.01	0.00	0.00	0.00
13,300.00	90.00	270.41	6,075.00	-2,516.07	-7,442.20	7,424.01	0.00	0.00	0.00
13,400.00	90.00	270.41	6,075.00	-2,515.35	-7,542.20	7,524.01	0.00	0.00	0.00
13,500.00	90.00	270.41	6,075.00	-2,514.64	-7,642.20	7,624.01	0.00	0.00	0.00
13,600.00	90.00	270.41	6,075.00	-2,513.93	-7,742.19	7,724.01	0.00	0.00	0.00
13,700.00	90.00	270.41	6,075.00	-2,513.22	-7,842.19	7,824.01	0.00	0.00	0.00
13,800.00	90.00	270.41	6,075.00	-2,512.51	-7,942.19	7,924.01	0.00	0.00	0.00
13,900.00	90.00	270.41	6,075.00	-2,511.80	-8,042.19	8,024.01	0.00	0.00	0.00
14,000.00	90.00	270.41	6,075.00	-2,511.09	-8,142.18	8,124.01	0.00	0.00	0.00
14,100.00	90.00	270.41	6,075.00	-2,510.38	-8,242.18	8,224.01	0.00	0.00	0.00
14,200.00	90.00	270.41	6,075.00	-2,509.67	-8,342.18	8,324.01	0.00	0.00	0.00
14,300.00	90.00	270.41	6,075.00	-2,508.96	-8,442.18	8,424.01	0.00	0.00	0.00
14,400.00	90.00	270.41	6,075.00	-2,508.25	-8,542.17	8,524.01	0.00	0.00	0.00
14,500.00	90.00	270.41	6,075.00	-2,507.54	-8,642.17	8,624.01	0.00	0.00	0.00
14,600.00	90.00	270.41	6,075.00	-2,506.83	-8,742.17	8,724.01	0.00	0.00	0.00
14,700.00	90.00	270.41	6,075.00	-2,506.12	-8,842.17	8,824.01	0.00	0.00	0.00
14,800.00	90.00	270.41	6,075.00	-2,505.40	-8,942.16	8,924.01	0.00	0.00	0.00
14,900.00	90.00	270.41	6,075.00	-2,504.69	-9,042.16	9,024.01	0.00	0.00	0.00
15,000.00	90.00	270.41	6,075.00	-2,503.98	-9,142.16	9,124.01	0.00	0.00	0.00

Hewlett-Packard

Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well DELAND FED 0907-16H
Company:	VERDAD RESOURCES	TVD Reference:	RKB = 20' @ 4827.00usft (RIG)
Project:	WATTENBERG FIELD	MD Reference:	RKB = 20' @ 4827.00usft (RIG)
Site:	8N-59W-09 DELAND FED 0907 PAD	North Reference:	True
Well:	DELAND FED 0907-16H	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)	
15,100.00	90.00	270.41	6,075.00	-2,503.27	-9,242.16	9,224.01	0.00	0.00	0.00	
15,200.00	90.00	270.41	6,075.00	-2,502.56	-9,342.15	9,324.01	0.00	0.00	0.00	
15,300.00	90.00	270.41	6,075.00	-2,501.85	-9,442.15	9,424.01	0.00	0.00	0.00	
15,400.00	90.00	270.41	6,075.00	-2,501.14	-9,542.15	9,524.01	0.00	0.00	0.00	
15,500.00	90.00	270.41	6,075.00	-2,500.43	-9,642.15	9,624.01	0.00	0.00	0.00	
15,600.00	90.00	270.41	6,075.00	-2,499.72	-9,742.14	9,724.01	0.00	0.00	0.00	
15,700.00	90.00	270.41	6,075.00	-2,499.01	-9,842.14	9,824.01	0.00	0.00	0.00	
15,800.00	90.00	270.41	6,075.00	-2,498.30	-9,942.14	9,924.01	0.00	0.00	0.00	
15,900.00	90.00	270.41	6,075.00	-2,497.59	-10,042.14	10,024.01	0.00	0.00	0.00	
16,000.00	90.00	270.41	6,075.00	-2,496.88	-10,142.13	10,124.01	0.00	0.00	0.00	
16,100.00	90.00	270.41	6,075.00	-2,496.17	-10,242.13	10,224.01	0.00	0.00	0.00	
16,200.00	90.00	270.41	6,075.00	-2,495.46	-10,342.13	10,324.01	0.00	0.00	0.00	
16,300.00	90.00	270.41	6,075.00	-2,494.74	-10,442.13	10,424.01	0.00	0.00	0.00	
16,400.00	90.00	270.41	6,075.00	-2,494.03	-10,542.12	10,524.01	0.00	0.00	0.00	
16,500.00	90.00	270.41	6,075.00	-2,493.32	-10,642.12	10,624.01	0.00	0.00	0.00	
16,600.00	90.00	270.41	6,075.00	-2,492.61	-10,742.12	10,724.01	0.00	0.00	0.00	
16,700.00	90.00	270.41	6,075.00	-2,491.90	-10,842.12	10,824.01	0.00	0.00	0.00	
16,800.00	90.00	270.41	6,075.00	-2,491.19	-10,942.11	10,924.01	0.00	0.00	0.00	
16,900.00	90.00	270.41	6,075.00	-2,490.48	-11,042.11	11,024.01	0.00	0.00	0.00	
17,000.00	90.00	270.41	6,075.00	-2,489.77	-11,142.11	11,124.01	0.00	0.00	0.00	
17,049.93	90.00	270.41	6,075.00	-2,489.41	-11,192.03	11,173.93	0.00	0.00	0.00	
TD Well @ 17049.93ft										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,767.98	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 @ 250.00ft	
1,610.00	1,559.49	-308.05	-73.96	End Tangent @ 1610.00ft	
6,113.15	5,564.66	-2,309.55	-554.47	KOP @ 6113.15ft :: DLS = 9°/100'	
7,047.11	6,075.00	-2,560.50	-1,189.47	End Build @ 7047.11ft	
17,049.93	6,075.00	-2,489.41	-11,192.03	TD Well @ 17049.93ft	