

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

3N-67W-12 DB FARMS 40-12HZ

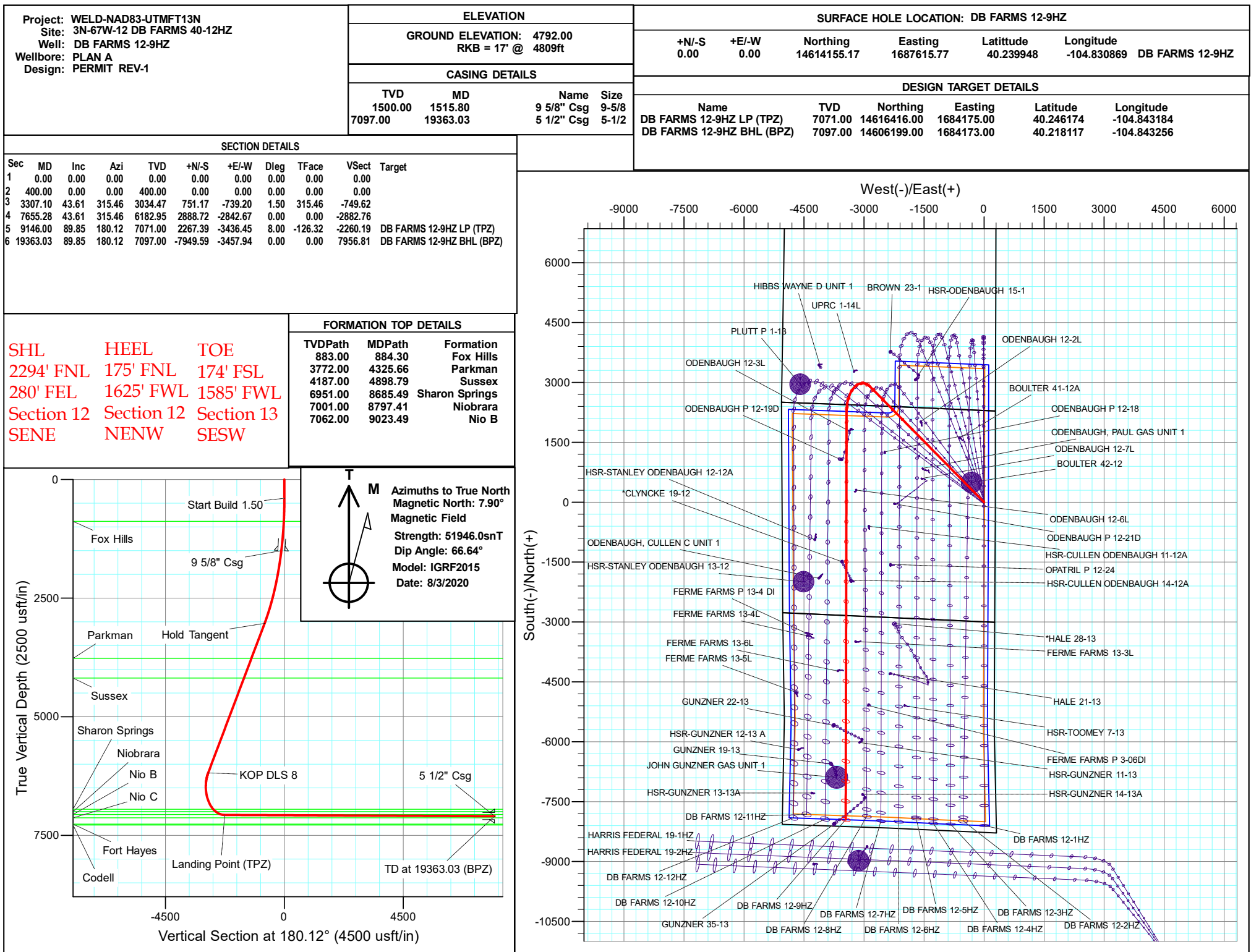
DB FARMS 12-9HZ - Slot DB FARMS 12-9HZ

PLAN A

Plan: PERMIT REV-1

Standard Planning Report

10 May, 2021



Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well DB FARMS 12-9HZ - Slot DB FARMS 12-9HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	17' RKB @ 4809.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	17' RKB @ 4809.00usft
Site:	3N-67W-12 DB FARMS 40-12HZ	North Reference:	True
Well:	DB FARMS 12-9HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	PERMIT REV-1		

Project	WELD-NAD83-UTMFT13N		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Zone 13N (108 W to 102 W)		

Site	3N-67W-12 DB FARMS 40-12HZ		
Site Position:		Northing:	14,614,275.12 usft
From:	Map	Easting:	1,687,616.45 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	40.240278
		Longitude:	-104.830866
		Grid Convergence:	0.11 °

Well	DB FARMS 12-9HZ - Slot DB FARMS 12-9HZ					
Well Position	+N/-S	-119.95 usft	Northing:	14,614,155.17 usft	Latitude:	40.239948
	+E/-W	-0.91 usft	Easting:	1,687,615.77 usft	Longitude:	-104.830869
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	4,792.00 usft

Wellbore	PLAN A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	8/3/2020	7.90	66.64	51,946.00787721

Design	PERMIT REV-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	180.12

Plan Survey Tool Program	Date	5/10/2021		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	2,000.00	PERMIT REV-1 (PLAN A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:crustal field declination
2	2,000.00	19,363.03	PERMIT REV-1 (PLAN A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:Rockies, crustal dec +

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well DB FARMS 12-9HZ - Slot DB FARMS 12-9HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	17' RKB @ 4809.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	17' RKB @ 4809.00usft
Site:	3N-67W-12 DB FARMS 40-12HZ	North Reference:	True
Well:	DB FARMS 12-9HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	PERMIT REV-1		

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	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,307.10	43.61	315.46	3,034.47	751.17	-739.20	1.50	1.50	0.00	315.46	
7,655.28	43.61	315.46	6,182.95	2,888.72	-2,842.67	0.00	0.00	0.00	0.00	
9,146.00	89.85	180.12	7,071.00	2,267.39	-3,436.45	8.00	3.10	-9.08	-126.32	DB FARMS 12-9HZ L
19,363.03	89.85	180.12	7,097.00	-7,949.59	-3,457.94	0.00	0.00	0.00	0.00	DB FARMS 12-9HZ B

Corporate
Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well DB FARMS 12-9HZ - Slot DB FARMS 12-9HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	17' RKB @ 4809.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	17' RKB @ 4809.00usft
Site:	3N-67W-12 DB FARMS 40-12HZ	North Reference:	True
Well:	DB FARMS 12-9HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	PERMIT REV-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	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
Start Build 1.50										
500.00	1.50	315.46	499.99	0.93	-0.92	-0.93	1.50	1.50	0.00	
600.00	3.00	315.46	599.91	3.73	-3.67	-3.72	1.50	1.50	0.00	
700.00	4.50	315.46	699.69	8.39	-8.26	-8.38	1.50	1.50	0.00	
800.00	6.00	315.46	799.27	14.91	-14.68	-14.88	1.50	1.50	0.00	
884.30	7.26	315.46	883.00	21.85	-21.51	-21.81	1.50	1.50	0.00	
Fox Hills										
900.00	7.50	315.46	898.57	23.29	-22.92	-23.24	1.50	1.50	0.00	
1,000.00	9.00	315.46	997.54	33.52	-32.98	-33.45	1.50	1.50	0.00	
1,100.00	10.50	315.46	1,096.09	45.59	-44.86	-45.50	1.50	1.50	0.00	
1,200.00	12.00	315.46	1,194.16	59.49	-58.55	-59.37	1.50	1.50	0.00	
1,300.00	13.50	315.46	1,291.70	75.22	-74.03	-75.07	1.50	1.50	0.00	
1,400.00	15.00	315.46	1,388.62	92.77	-91.29	-92.58	1.50	1.50	0.00	
1,500.00	16.50	315.46	1,484.86	112.12	-110.33	-111.88	1.50	1.50	0.00	
1,515.80	16.74	315.46	1,500.00	115.34	-113.50	-115.10	1.50	1.50	0.00	
9 5/8" Csg										
1,600.00	18.00	315.46	1,580.36	133.25	-131.13	-132.98	1.50	1.50	0.00	
1,700.00	19.50	315.46	1,675.05	156.16	-153.67	-155.84	1.50	1.50	0.00	
1,800.00	21.00	315.46	1,768.86	180.83	-177.95	-180.46	1.50	1.50	0.00	
1,900.00	22.50	315.46	1,861.74	207.24	-203.94	-206.82	1.50	1.50	0.00	
2,000.00	24.00	315.46	1,953.62	235.38	-231.63	-234.89	1.50	1.50	0.00	
2,100.00	25.50	315.46	2,044.43	265.22	-260.99	-264.67	1.50	1.50	0.00	
2,200.00	27.00	315.46	2,134.12	296.74	-292.01	-296.13	1.50	1.50	0.00	
2,300.00	28.50	315.46	2,222.61	329.93	-324.67	-329.25	1.50	1.50	0.00	
2,400.00	30.00	315.46	2,309.86	364.75	-358.94	-364.00	1.50	1.50	0.00	
2,500.00	31.50	315.46	2,395.80	401.20	-394.80	-400.37	1.50	1.50	0.00	
2,600.00	33.00	315.46	2,480.37	439.23	-432.23	-438.32	1.50	1.50	0.00	
2,700.00	34.50	315.46	2,563.51	478.83	-471.19	-477.84	1.50	1.50	0.00	
2,800.00	36.00	315.46	2,645.17	519.96	-511.67	-518.89	1.50	1.50	0.00	
2,900.00	37.50	315.46	2,725.30	562.61	-553.64	-561.45	1.50	1.50	0.00	
3,000.00	39.00	315.46	2,803.83	606.73	-597.06	-605.48	1.50	1.50	0.00	
3,100.00	40.50	315.46	2,880.71	652.31	-641.91	-650.96	1.50	1.50	0.00	
3,200.00	42.00	315.46	2,955.89	699.30	-688.16	-697.86	1.50	1.50	0.00	
3,300.00	43.50	315.46	3,029.32	747.69	-735.77	-746.14	1.50	1.50	0.00	
3,307.10	43.61	315.46	3,034.47	751.17	-739.20	-749.62	1.50	1.50	0.00	
Hold Tangent										
3,400.00	43.61	315.46	3,101.73	796.84	-784.14	-795.20	0.00	0.00	0.00	
3,500.00	43.61	315.46	3,174.14	846.00	-832.51	-844.26	0.00	0.00	0.00	
3,600.00	43.61	315.46	3,246.55	895.16	-880.89	-893.31	0.00	0.00	0.00	
3,700.00	43.61	315.46	3,318.96	944.32	-929.27	-942.37	0.00	0.00	0.00	
3,800.00	43.61	315.46	3,391.37	993.48	-977.64	-991.43	0.00	0.00	0.00	
3,900.00	43.61	315.46	3,463.78	1,042.64	-1,026.02	-1,040.49	0.00	0.00	0.00	
4,000.00	43.61	315.46	3,536.19	1,091.80	-1,074.39	-1,089.55	0.00	0.00	0.00	
4,100.00	43.61	315.46	3,608.60	1,140.96	-1,122.77	-1,138.60	0.00	0.00	0.00	
4,200.00	43.61	315.46	3,681.01	1,190.12	-1,171.15	-1,187.66	0.00	0.00	0.00	
4,300.00	43.61	315.46	3,753.42	1,239.28	-1,219.52	-1,236.72	0.00	0.00	0.00	
4,325.66	43.61	315.46	3,772.00	1,251.89	-1,231.94	-1,249.31	0.00	0.00	0.00	

Corporate
Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well DB FARMS 12-9HZ - Slot DB FARMS 12-9HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	17' RKB @ 4809.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	17' RKB @ 4809.00usft
Site:	3N-67W-12 DB FARMS 40-12HZ	North Reference:	True
Well:	DB FARMS 12-9HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	PERMIT REV-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)
Parkman									
4,400.00	43.61	315.46	3,825.83	1,288.44	-1,267.90	-1,285.78	0.00	0.00	0.00
4,500.00	43.61	315.46	3,898.24	1,337.60	-1,316.27	-1,334.84	0.00	0.00	0.00
4,600.00	43.61	315.46	3,970.65	1,386.76	-1,364.65	-1,383.90	0.00	0.00	0.00
4,700.00	43.61	315.46	4,043.06	1,435.92	-1,413.02	-1,432.95	0.00	0.00	0.00
4,800.00	43.61	315.46	4,115.47	1,485.08	-1,461.40	-1,482.01	0.00	0.00	0.00
4,898.79	43.61	315.46	4,187.00	1,533.64	-1,509.19	-1,530.48	0.00	0.00	0.00
Sussex									
4,900.00	43.61	315.46	4,187.88	1,534.24	-1,509.78	-1,531.07	0.00	0.00	0.00
5,000.00	43.61	315.46	4,260.28	1,583.39	-1,558.15	-1,580.13	0.00	0.00	0.00
5,100.00	43.61	315.46	4,332.69	1,632.55	-1,606.53	-1,629.19	0.00	0.00	0.00
5,200.00	43.61	315.46	4,405.10	1,681.71	-1,654.90	-1,678.24	0.00	0.00	0.00
5,300.00	43.61	315.46	4,477.51	1,730.87	-1,703.28	-1,727.30	0.00	0.00	0.00
5,400.00	43.61	315.46	4,549.92	1,780.03	-1,751.66	-1,776.36	0.00	0.00	0.00
5,500.00	43.61	315.46	4,622.33	1,829.19	-1,800.03	-1,825.42	0.00	0.00	0.00
5,600.00	43.61	315.46	4,694.74	1,878.35	-1,848.41	-1,874.48	0.00	0.00	0.00
5,700.00	43.61	315.46	4,767.15	1,927.51	-1,896.78	-1,923.53	0.00	0.00	0.00
5,800.00	43.61	315.46	4,839.56	1,976.67	-1,945.16	-1,972.59	0.00	0.00	0.00
5,900.00	43.61	315.46	4,911.97	2,025.83	-1,993.53	-2,021.65	0.00	0.00	0.00
6,000.00	43.61	315.46	4,984.38	2,074.99	-2,041.91	-2,070.71	0.00	0.00	0.00
6,100.00	43.61	315.46	5,056.79	2,124.15	-2,090.29	-2,119.77	0.00	0.00	0.00
6,200.00	43.61	315.46	5,129.20	2,173.31	-2,138.66	-2,168.83	0.00	0.00	0.00
6,300.00	43.61	315.46	5,201.61	2,222.47	-2,187.04	-2,217.88	0.00	0.00	0.00
6,400.00	43.61	315.46	5,274.02	2,271.63	-2,235.41	-2,266.94	0.00	0.00	0.00
6,500.00	43.61	315.46	5,346.42	2,320.79	-2,283.79	-2,316.00	0.00	0.00	0.00
6,600.00	43.61	315.46	5,418.83	2,369.95	-2,332.17	-2,365.06	0.00	0.00	0.00
6,700.00	43.61	315.46	5,491.24	2,419.11	-2,380.54	-2,414.12	0.00	0.00	0.00
6,800.00	43.61	315.46	5,563.65	2,468.27	-2,428.92	-2,463.17	0.00	0.00	0.00
6,900.00	43.61	315.46	5,636.06	2,517.43	-2,477.29	-2,512.23	0.00	0.00	0.00
7,000.00	43.61	315.46	5,708.47	2,566.59	-2,525.67	-2,561.29	0.00	0.00	0.00
7,100.00	43.61	315.46	5,780.88	2,615.75	-2,574.05	-2,610.35	0.00	0.00	0.00
7,200.00	43.61	315.46	5,853.29	2,664.91	-2,622.42	-2,659.41	0.00	0.00	0.00
7,300.00	43.61	315.46	5,925.70	2,714.06	-2,670.80	-2,708.46	0.00	0.00	0.00
7,400.00	43.61	315.46	5,998.11	2,763.22	-2,719.17	-2,757.52	0.00	0.00	0.00
7,500.00	43.61	315.46	6,070.52	2,812.38	-2,767.55	-2,806.58	0.00	0.00	0.00
7,600.00	43.61	315.46	6,142.93	2,861.54	-2,815.92	-2,855.64	0.00	0.00	0.00
7,655.28	43.61	315.46	6,182.95	2,888.72	-2,842.67	-2,882.76	0.00	0.00	0.00
KOP DLS 8									
7,700.00	41.57	311.11	6,215.89	2,909.47	-2,864.67	-2,903.47	8.00	-4.56	-9.72
7,800.00	37.69	300.12	6,292.99	2,946.69	-2,916.18	-2,940.58	8.00	-3.88	-10.99
7,900.00	35.00	287.38	6,373.64	2,970.64	-2,970.08	-2,964.41	8.00	-2.69	-12.74
8,000.00	33.80	273.36	6,456.28	2,980.85	-3,025.31	-2,974.51	8.00	-1.20	-14.02
8,100.00	34.25	259.06	6,539.30	2,977.14	-3,080.80	-2,970.68	8.00	0.44	-14.30
8,200.00	36.27	245.63	6,621.07	2,959.56	-3,135.46	-2,952.98	8.00	2.03	-13.43
8,300.00	39.64	233.80	6,700.01	2,928.46	-3,188.23	-2,921.78	8.00	3.37	-11.82
8,400.00	44.03	223.76	6,774.58	2,884.45	-3,238.09	-2,877.67	8.00	4.39	-10.04
8,500.00	49.17	215.30	6,843.34	2,828.39	-3,284.06	-2,821.50	8.00	5.14	-8.46
8,600.00	54.83	208.12	6,904.93	2,761.36	-3,325.26	-2,754.39	8.00	5.66	-7.18
8,685.49	59.96	202.76	6,951.00	2,696.34	-3,356.08	-2,689.31	8.00	6.01	-6.28
Sharon Springs									
8,700.00	60.86	201.90	6,958.17	2,684.67	-3,360.87	-2,677.62	8.00	6.15	-5.88
8,797.41	66.98	196.52	7,001.00	2,602.10	-3,389.53	-2,595.00	8.00	6.28	-5.52

Corporate
Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well DB FARMS 12-9HZ - Slot DB FARMS 12-9HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	17' RKB @ 4809.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	17' RKB @ 4809.00usft
Site:	3N-67W-12 DB FARMS 40-12HZ	North Reference:	True
Well:	DB FARMS 12-9HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	PERMIT REV-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)
Niobrara									
8,800.00	67.14	196.39	7,002.01	2,599.81	-3,390.21	-2,592.70	8.00	6.38	-5.24
8,900.00	73.60	191.37	7,035.61	2,508.44	-3,412.70	-2,501.28	8.00	6.46	-5.02
9,000.00	80.17	186.68	7,058.30	2,412.33	-3,427.91	-2,405.14	8.00	6.57	-4.69
9,023.49	81.72	185.61	7,062.00	2,389.26	-3,430.39	-2,382.08	8.00	6.61	-4.56
Nio B									
9,100.00	86.80	182.17	7,069.66	2,313.35	-3,435.54	-2,306.15	8.00	6.64	-4.49
9,146.00	89.85	180.12	7,071.00	2,267.39	-3,436.45	-2,260.19	8.00	6.65	-4.45
Landing Point (TPZ)									
9,200.00	89.85	180.12	7,071.14	2,213.38	-3,436.57	-2,206.18	0.00	0.00	0.00
9,300.00	89.85	180.12	7,071.39	2,113.39	-3,436.78	-2,106.18	0.00	0.00	0.00
9,400.00	89.85	180.12	7,071.65	2,013.39	-3,436.99	-2,006.18	0.00	0.00	0.00
9,500.00	89.85	180.12	7,071.90	1,913.39	-3,437.20	-1,906.18	0.00	0.00	0.00
9,600.00	89.85	180.12	7,072.15	1,813.39	-3,437.41	-1,806.18	0.00	0.00	0.00
9,700.00	89.85	180.12	7,072.41	1,713.39	-3,437.62	-1,706.18	0.00	0.00	0.00
9,800.00	89.85	180.12	7,072.66	1,613.39	-3,437.83	-1,606.18	0.00	0.00	0.00
9,900.00	89.85	180.12	7,072.92	1,513.39	-3,438.04	-1,506.18	0.00	0.00	0.00
10,000.00	89.85	180.12	7,073.17	1,413.39	-3,438.25	-1,406.18	0.00	0.00	0.00
10,100.00	89.85	180.12	7,073.43	1,313.39	-3,438.46	-1,306.19	0.00	0.00	0.00
10,200.00	89.85	180.12	7,073.68	1,213.39	-3,438.67	-1,206.19	0.00	0.00	0.00
10,300.00	89.85	180.12	7,073.93	1,113.39	-3,438.88	-1,106.19	0.00	0.00	0.00
10,400.00	89.85	180.12	7,074.19	1,013.39	-3,439.09	-1,006.19	0.00	0.00	0.00
10,500.00	89.85	180.12	7,074.44	913.39	-3,439.30	-906.19	0.00	0.00	0.00
10,600.00	89.85	180.12	7,074.70	813.39	-3,439.51	-806.19	0.00	0.00	0.00
10,700.00	89.85	180.12	7,074.95	713.39	-3,439.72	-706.19	0.00	0.00	0.00
10,800.00	89.85	180.12	7,075.21	613.39	-3,439.93	-606.19	0.00	0.00	0.00
10,900.00	89.85	180.12	7,075.46	513.39	-3,440.14	-506.19	0.00	0.00	0.00
11,000.00	89.85	180.12	7,075.71	413.39	-3,440.35	-406.19	0.00	0.00	0.00
11,100.00	89.85	180.12	7,075.97	313.39	-3,440.56	-306.19	0.00	0.00	0.00
11,200.00	89.85	180.12	7,076.22	213.40	-3,440.77	-206.19	0.00	0.00	0.00
11,300.00	89.85	180.12	7,076.48	113.40	-3,440.98	-106.19	0.00	0.00	0.00
11,400.00	89.85	180.12	7,076.73	13.40	-3,441.19	-6.19	0.00	0.00	0.00
11,500.00	89.85	180.12	7,076.99	-86.60	-3,441.40	93.81	0.00	0.00	0.00
11,600.00	89.85	180.12	7,077.24	-186.60	-3,441.61	193.81	0.00	0.00	0.00
11,700.00	89.85	180.12	7,077.49	-286.60	-3,441.82	293.81	0.00	0.00	0.00
11,800.00	89.85	180.12	7,077.75	-386.60	-3,442.03	393.81	0.00	0.00	0.00
11,900.00	89.85	180.12	7,078.00	-486.60	-3,442.24	493.81	0.00	0.00	0.00
12,000.00	89.85	180.12	7,078.26	-586.60	-3,442.45	593.81	0.00	0.00	0.00
12,100.00	89.85	180.12	7,078.51	-686.60	-3,442.66	693.81	0.00	0.00	0.00
12,200.00	89.85	180.12	7,078.77	-786.60	-3,442.87	793.81	0.00	0.00	0.00
12,300.00	89.85	180.12	7,079.02	-886.60	-3,443.08	893.81	0.00	0.00	0.00
12,400.00	89.85	180.12	7,079.27	-986.60	-3,443.29	993.81	0.00	0.00	0.00
12,500.00	89.85	180.12	7,079.53	-1,086.60	-3,443.50	1,093.81	0.00	0.00	0.00
12,600.00	89.85	180.12	7,079.78	-1,186.60	-3,443.71	1,193.81	0.00	0.00	0.00
12,700.00	89.85	180.12	7,080.04	-1,286.60	-3,443.93	1,293.81	0.00	0.00	0.00
12,800.00	89.85	180.12	7,080.29	-1,386.60	-3,444.14	1,393.81	0.00	0.00	0.00
12,900.00	89.85	180.12	7,080.55	-1,486.60	-3,444.35	1,493.81	0.00	0.00	0.00
13,000.00	89.85	180.12	7,080.80	-1,586.59	-3,444.56	1,593.81	0.00	0.00	0.00
13,100.00	89.85	180.12	7,081.05	-1,686.59	-3,444.77	1,693.81	0.00	0.00	0.00
13,200.00	89.85	180.12	7,081.31	-1,786.59	-3,444.98	1,793.80	0.00	0.00	0.00
13,300.00	89.85	180.12	7,081.56	-1,886.59	-3,445.19	1,893.80	0.00	0.00	0.00
13,400.00	89.85	180.12	7,081.82	-1,986.59	-3,445.40	1,993.80	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well DB FARMS 12-9HZ - Slot DB FARMS 12-9HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	17' RKB @ 4809.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	17' RKB @ 4809.00usft
Site:	3N-67W-12 DB FARMS 40-12HZ	North Reference:	True
Well:	DB FARMS 12-9HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	PERMIT REV-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)	
13,500.00	89.85	180.12	7,082.07	-2,086.59	-3,445.61	2,093.80	0.00	0.00	0.00	
13,600.00	89.85	180.12	7,082.33	-2,186.59	-3,445.82	2,193.80	0.00	0.00	0.00	
13,700.00	89.85	180.12	7,082.58	-2,286.59	-3,446.03	2,293.80	0.00	0.00	0.00	
13,800.00	89.85	180.12	7,082.83	-2,386.59	-3,446.24	2,393.80	0.00	0.00	0.00	
13,900.00	89.85	180.12	7,083.09	-2,486.59	-3,446.45	2,493.80	0.00	0.00	0.00	
14,000.00	89.85	180.12	7,083.34	-2,586.59	-3,446.66	2,593.80	0.00	0.00	0.00	
14,100.00	89.85	180.12	7,083.60	-2,686.59	-3,446.87	2,693.80	0.00	0.00	0.00	
14,200.00	89.85	180.12	7,083.85	-2,786.59	-3,447.08	2,793.80	0.00	0.00	0.00	
14,300.00	89.85	180.12	7,084.11	-2,886.59	-3,447.29	2,893.80	0.00	0.00	0.00	
14,400.00	89.85	180.12	7,084.36	-2,986.59	-3,447.50	2,993.80	0.00	0.00	0.00	
14,500.00	89.85	180.12	7,084.61	-3,086.59	-3,447.71	3,093.80	0.00	0.00	0.00	
14,600.00	89.85	180.12	7,084.87	-3,186.59	-3,447.92	3,193.80	0.00	0.00	0.00	
14,700.00	89.85	180.12	7,085.12	-3,286.59	-3,448.13	3,293.80	0.00	0.00	0.00	
14,800.00	89.85	180.12	7,085.38	-3,386.58	-3,448.34	3,393.80	0.00	0.00	0.00	
14,900.00	89.85	180.12	7,085.63	-3,486.58	-3,448.55	3,493.80	0.00	0.00	0.00	
15,000.00	89.85	180.12	7,085.89	-3,586.58	-3,448.76	3,593.80	0.00	0.00	0.00	
15,100.00	89.85	180.12	7,086.14	-3,686.58	-3,448.97	3,693.80	0.00	0.00	0.00	
15,200.00	89.85	180.12	7,086.39	-3,786.58	-3,449.18	3,793.80	0.00	0.00	0.00	
15,300.00	89.85	180.12	7,086.65	-3,886.58	-3,449.39	3,893.80	0.00	0.00	0.00	
15,400.00	89.85	180.12	7,086.90	-3,986.58	-3,449.60	3,993.80	0.00	0.00	0.00	
15,500.00	89.85	180.12	7,087.16	-4,086.58	-3,449.81	4,093.80	0.00	0.00	0.00	
15,600.00	89.85	180.12	7,087.41	-4,186.58	-3,450.02	4,193.80	0.00	0.00	0.00	
15,700.00	89.85	180.12	7,087.67	-4,286.58	-3,450.23	4,293.80	0.00	0.00	0.00	
15,800.00	89.85	180.12	7,087.92	-4,386.58	-3,450.44	4,393.80	0.00	0.00	0.00	
15,900.00	89.85	180.12	7,088.17	-4,486.58	-3,450.65	4,493.80	0.00	0.00	0.00	
16,000.00	89.85	180.12	7,088.43	-4,586.58	-3,450.86	4,593.80	0.00	0.00	0.00	
16,100.00	89.85	180.12	7,088.68	-4,686.58	-3,451.07	4,693.80	0.00	0.00	0.00	
16,200.00	89.85	180.12	7,088.94	-4,786.58	-3,451.28	4,793.80	0.00	0.00	0.00	
16,300.00	89.85	180.12	7,089.19	-4,886.58	-3,451.49	4,893.79	0.00	0.00	0.00	
16,400.00	89.85	180.12	7,089.45	-4,986.58	-3,451.70	4,993.79	0.00	0.00	0.00	
16,500.00	89.85	180.12	7,089.70	-5,086.58	-3,451.91	5,093.79	0.00	0.00	0.00	
16,600.00	89.85	180.12	7,089.95	-5,186.58	-3,452.13	5,193.79	0.00	0.00	0.00	
16,700.00	89.85	180.12	7,090.21	-5,286.57	-3,452.34	5,293.79	0.00	0.00	0.00	
16,800.00	89.85	180.12	7,090.46	-5,386.57	-3,452.55	5,393.79	0.00	0.00	0.00	
16,900.00	89.85	180.12	7,090.72	-5,486.57	-3,452.76	5,493.79	0.00	0.00	0.00	
17,000.00	89.85	180.12	7,090.97	-5,586.57	-3,452.97	5,593.79	0.00	0.00	0.00	
17,100.00	89.85	180.12	7,091.23	-5,686.57	-3,453.18	5,693.79	0.00	0.00	0.00	
17,200.00	89.85	180.12	7,091.48	-5,786.57	-3,453.39	5,793.79	0.00	0.00	0.00	
17,300.00	89.85	180.12	7,091.73	-5,886.57	-3,453.60	5,893.79	0.00	0.00	0.00	
17,400.00	89.85	180.12	7,091.99	-5,986.57	-3,453.81	5,993.79	0.00	0.00	0.00	
17,500.00	89.85	180.12	7,092.24	-6,086.57	-3,454.02	6,093.79	0.00	0.00	0.00	
17,600.00	89.85	180.12	7,092.50	-6,186.57	-3,454.23	6,193.79	0.00	0.00	0.00	
17,700.00	89.85	180.12	7,092.75	-6,286.57	-3,454.44	6,293.79	0.00	0.00	0.00	
17,800.00	89.85	180.12	7,093.01	-6,386.57	-3,454.65	6,393.79	0.00	0.00	0.00	
17,900.00	89.85	180.12	7,093.26	-6,486.57	-3,454.86	6,493.79	0.00	0.00	0.00	
18,000.00	89.85	180.12	7,093.51	-6,586.57	-3,455.07	6,593.79	0.00	0.00	0.00	
18,100.00	89.85	180.12	7,093.77	-6,686.57	-3,455.28	6,693.79	0.00	0.00	0.00	
18,200.00	89.85	180.12	7,094.02	-6,786.57	-3,455.49	6,793.79	0.00	0.00	0.00	
18,300.00	89.85	180.12	7,094.28	-6,886.57	-3,455.70	6,893.79	0.00	0.00	0.00	
18,400.00	89.85	180.12	7,094.53	-6,986.57	-3,455.91	6,993.79	0.00	0.00	0.00	
18,500.00	89.85	180.12	7,094.79	-7,086.56	-3,456.12	7,093.79	0.00	0.00	0.00	
18,600.00	89.85	180.12	7,095.04	-7,186.56	-3,456.33	7,193.79	0.00	0.00	0.00	
18,700.00	89.85	180.12	7,095.29	-7,286.56	-3,456.54	7,293.79	0.00	0.00	0.00	

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well DB FARMS 12-9HZ - Slot DB FARMS 12-9HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	17' RKB @ 4809.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	17' RKB @ 4809.00usft
Site:	3N-67W-12 DB FARMS 40-12HZ	North Reference:	True
Well:	DB FARMS 12-9HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	PERMIT REV-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)	
18,800.00	89.85	180.12	7,095.55	-7,386.56	-3,456.75	7,393.79	0.00	0.00	0.00	
18,900.00	89.85	180.12	7,095.80	-7,486.56	-3,456.96	7,493.79	0.00	0.00	0.00	
19,000.00	89.85	180.12	7,096.06	-7,586.56	-3,457.17	7,593.79	0.00	0.00	0.00	
19,100.00	89.85	180.12	7,096.31	-7,686.56	-3,457.38	7,693.79	0.00	0.00	0.00	
19,200.00	89.85	180.12	7,096.57	-7,786.56	-3,457.59	7,793.79	0.00	0.00	0.00	
19,300.00	89.85	180.12	7,096.82	-7,886.56	-3,457.80	7,893.79	0.00	0.00	0.00	
19,363.03	89.85	180.12	7,097.00	-7,949.59	-3,457.94	7,956.82	0.00	0.00	0.00	
TD at 19363.03 (BPZ) - 5 1/2" Csg										

Design Targets										
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
DB FARMS 12-9HZ LP (- plan hits target center - Point	0.00	0.00	7,071.00	2,267.39	-3,436.45	14,616,416.00	1,684,175.00	40.246174	-104.843184	
DB FARMS 12-9HZ BHL - plan hits target center - Point	0.00	0.00	7,097.00	-7,949.59	-3,457.94	14,606,199.00	1,684,173.00	40.218118	-104.843256	

Casing Points						
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")		
1,515.80	1,500.00	9 5/8" Csg	9-5/8	13-1/2		
19,363.03	7,097.00	5 1/2" Csg	5-1/2	7-7/8		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
884.30	883.00	Fox Hills				
4,325.66	3,772.00	Parkman				
4,898.79	4,187.00	Sussex				
8,685.49	6,951.00	Sharon Springs				
8,797.41	7,001.00	Niobrara				
9,023.49	7,062.00	Nio B				

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well DB FARMS 12-9HZ - Slot DB FARMS 12-9HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	17' RKB @ 4809.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	17' RKB @ 4809.00usft
Site:	3N-67W-12 DB FARMS 40-12HZ	North Reference:	True
Well:	DB FARMS 12-9HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	PERMIT REV-1		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
400.00	400.00	0.00	0.00	Start Build 1.50
3,307.10	3,034.47	751.17	-739.20	Hold Tangent
7,655.28	6,182.95	2,888.72	-2,842.67	KOP DLS 8
9,146.00	7,071.00	2,267.39	-3,436.45	Landing Point (TPZ)
19,363.03	7,097.00	-7,949.59	-3,457.94	TD at 19363.03 (BPZ)