

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

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

DB FARMS 12-10HZ - Slot DB FARMS 12-10HZ

PLAN A

Plan: PERMIT REV-1

Standard Planning Report

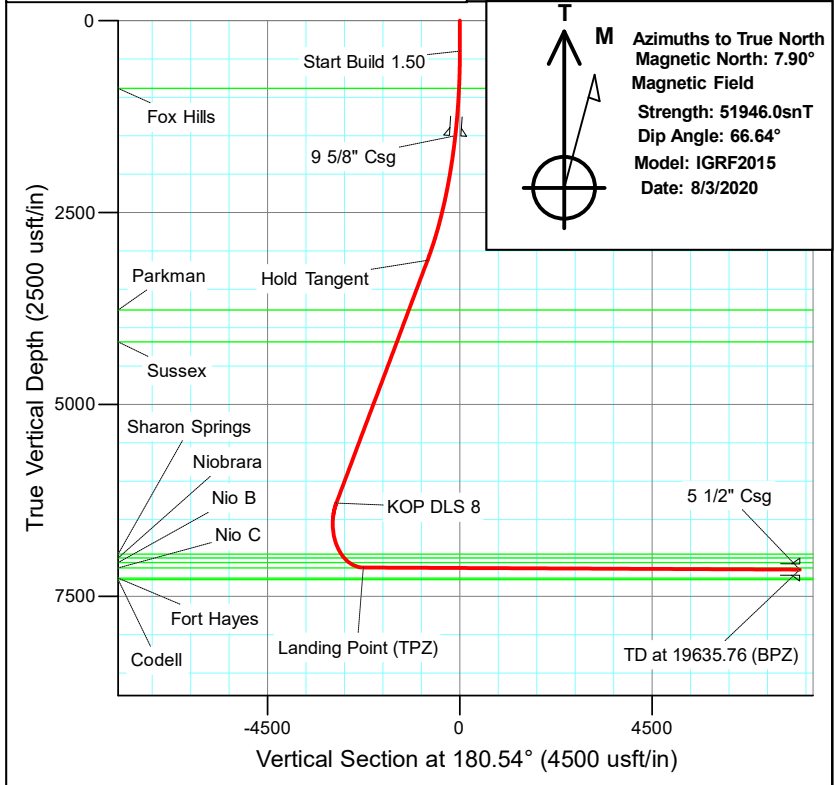
10 May, 2021

Project: WELD-NAD83-UTMFT13N Site: 3N-67W-12 DB FARMS 40-12HZ Well: DB FARMS 12-10HZ Wellbore: PLAN A Design: PERMIT REV-1	ELEVATION				SURFACE HOLE LOCATION: DB FARMS 12-10HZ						
	GROUND ELEVATION: 4792.00 RKB = 17' @ 4809ft				+N/-S 0.00	+E/-W 0.00	Northing 14614140.17	Easting 1687615.69	Latitude 40.239907	Longitude -104.830869	DB FARMS 12-10HZ
	CASING DETAILS										
	TVD MD Name Size 1500.00 1515.80 9 5/8" Csg 9-5/8 7153.00 19635.76 5 1/2" Csg 5-1/2										
					DESIGN TARGET DETAILS						
				Name		TVD	Northing	Easting	Latitude	Longitude	
				DB FARMS 12-10HZ LP (TPZ)		7126.00	14616431.00	1683735.00	40.246217	-104.844761	
				DB FARMS 12-10HZ BHL (BPZ)		7153.00	14606214.00	1683658.00	40.218161	-104.845101	
SECTION DETAILS											
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target	

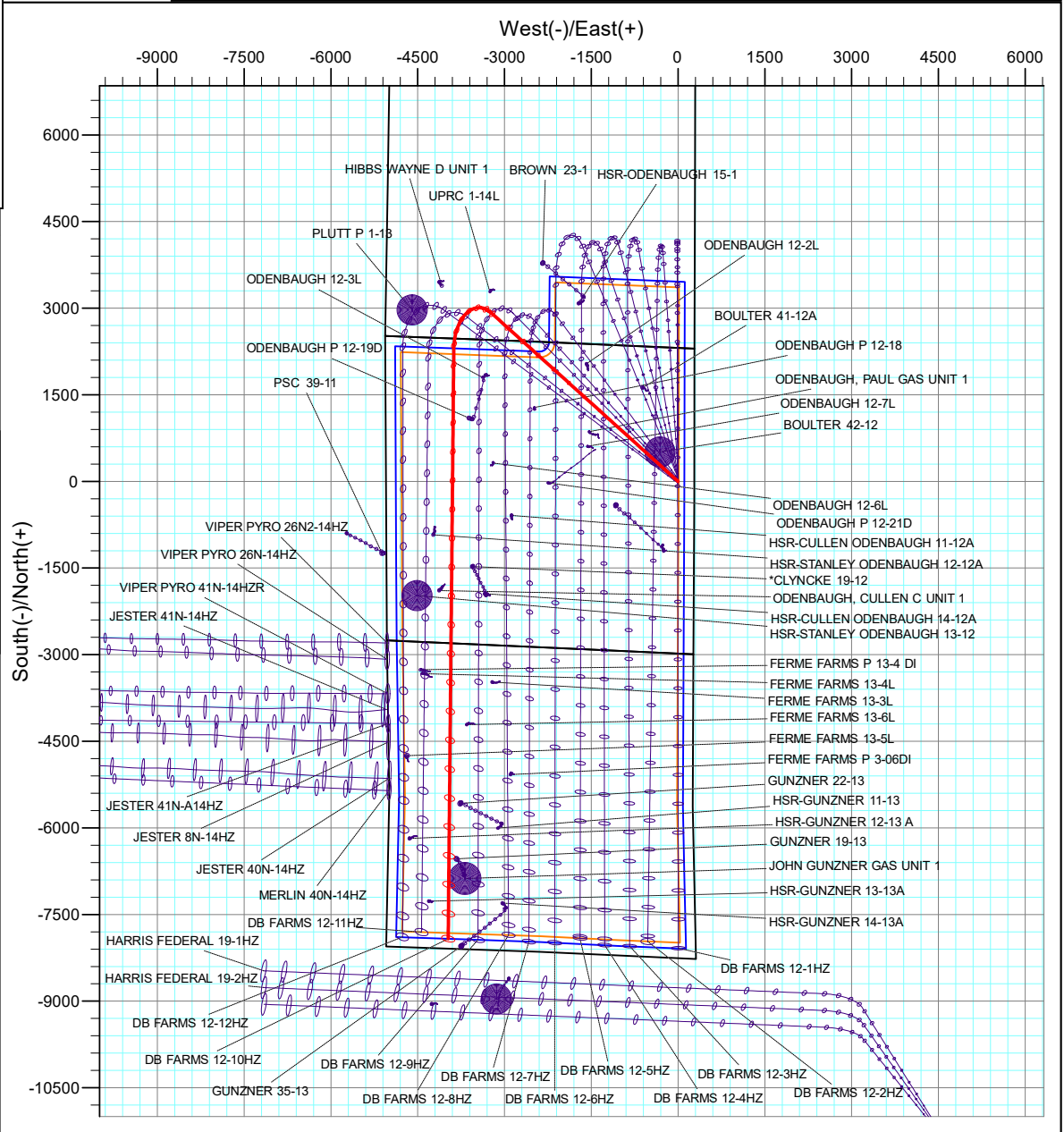
SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	
3	3432.48	45.49	312.10	3123.82	765.58	-847.16	1.50	312.10	-757.56	
4	7942.00	45.49	312.10	6285.30	2921.65	-3232.98	0.00	0.00	-2891.05	
5	9418.43	89.85	180.54	7126.00	2298.23	-3876.31	8.00	-121.97	-2261.59	DB FARMS 12-10HZ LP (TPZ)
6	19635.76	89.85	180.54	7153.00	-7918.61	-3972.80	0.00	0.00	7955.70	DB FARMS 12-10HZ BHL (BPZ)

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
883.00	884.30	Fox Hills
3772.00	4357.04	Parkman
4187.00	4949.00	Sussex
6951.00	8844.29	Sharon Springs
7001.00	8937.49	Niobrara
7062.00	9078.24	Nio B
7131.00	11310.53	Nio C

SHL HEEL TOE
 2309' FNL 176' FNL 172' FSL
 280' FEL 1185' FWL 1070' FWL
 Section 12 Section 12 Section 13
 SENE NWNW SWSW



Azimuths to True North
 Magnetic North: 7.90°
 Magnetic Field
 Strength: 51946.0snT
 Dip Angle: 66.64°
 Model: IGRF2015
 Date: 8/3/2020



Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well DB FARMS 12-10HZ - Slot DB FARMS 12-10HZ
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 12-10HZ	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 12-10HZ - Slot DB FARMS 12-10HZ		
Well Position	+N/-S	-134.95 usft	Northing:
	+E/-W	-1.02 usft	Easting:
Position Uncertainty		3.28 usft	Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	PLAN A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	8/3/2020	7.90	66.64	51,945.98650946

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	180.54

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	19,635.76	PERMIT REV-1 (PLAN A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:Rockies, crustal dec +

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Project:	WELD-NAD83-UTMFT13N	MD Reference:	17' RKB @ 4809.00usft
Site:	3N-67W-12 DB FARMS 40-12HZ	North Reference:	True
Well:	DB FARMS 12-10HZ	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	
3,432.48	45.49	312.10	3,123.82	765.58	-847.16	1.50	1.50	0.00	312.10	
7,942.00	45.49	312.10	6,285.30	2,921.65	-3,232.98	0.00	0.00	0.00	0.00	
9,418.43	89.85	180.54	7,126.00	2,298.23	-3,876.31	8.00	3.00	-8.91	-121.97	DB FARMS 12-10HZ
19,635.76	89.85	180.54	7,153.00	-7,918.61	-3,972.80	0.00	0.00	0.00	0.00	DB FARMS 12-10HZ

Corporate
Planning Report

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Project:	WELD-NAD83-UTMFT13N	MD Reference:	17' RKB @ 4809.00usft
Site:	3N-67W-12 DB FARMS 40-12HZ	North Reference:	True
Well:	DB FARMS 12-10HZ	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	312.10	499.99	0.88	-0.97	-0.87	1.50	1.50	0.00
600.00	3.00	312.10	599.91	3.51	-3.88	-3.47	1.50	1.50	0.00
700.00	4.50	312.10	699.69	7.89	-8.74	-7.81	1.50	1.50	0.00
800.00	6.00	312.10	799.27	14.03	-15.52	-13.88	1.50	1.50	0.00
884.30	7.26	312.10	883.00	20.56	-22.75	-20.34	1.50	1.50	0.00
Fox Hills									
900.00	7.50	312.10	898.57	21.91	-24.24	-21.68	1.50	1.50	0.00
1,000.00	9.00	312.10	997.54	31.53	-34.89	-31.20	1.50	1.50	0.00
1,100.00	10.50	312.10	1,096.09	42.88	-47.45	-42.44	1.50	1.50	0.00
1,200.00	12.00	312.10	1,194.16	55.97	-61.93	-55.38	1.50	1.50	0.00
1,300.00	13.50	312.10	1,291.70	70.76	-78.30	-70.02	1.50	1.50	0.00
1,400.00	15.00	312.10	1,388.62	87.27	-96.56	-86.35	1.50	1.50	0.00
1,500.00	16.50	312.10	1,484.86	105.46	-116.70	-104.36	1.50	1.50	0.00
1,515.80	16.74	312.10	1,500.00	108.49	-120.06	-107.36	1.50	1.50	0.00
9 5/8" Csg									
1,600.00	18.00	312.10	1,580.36	125.35	-138.70	-124.03	1.50	1.50	0.00
1,700.00	19.50	312.10	1,675.05	146.90	-162.55	-145.36	1.50	1.50	0.00
1,800.00	21.00	312.10	1,768.86	170.10	-188.23	-168.32	1.50	1.50	0.00
1,900.00	22.50	312.10	1,861.74	194.95	-215.72	-192.91	1.50	1.50	0.00
2,000.00	24.00	312.10	1,953.62	221.41	-245.01	-219.10	1.50	1.50	0.00
2,100.00	25.50	312.10	2,044.43	249.48	-276.07	-246.87	1.50	1.50	0.00
2,200.00	27.00	312.10	2,134.12	279.14	-308.88	-276.21	1.50	1.50	0.00
2,300.00	28.50	312.10	2,222.61	310.36	-343.43	-307.10	1.50	1.50	0.00
2,400.00	30.00	312.10	2,309.86	343.12	-379.68	-339.52	1.50	1.50	0.00
2,500.00	31.50	312.10	2,395.80	377.40	-417.61	-373.44	1.50	1.50	0.00
2,600.00	33.00	312.10	2,480.37	413.17	-457.20	-408.85	1.50	1.50	0.00
2,700.00	34.50	312.10	2,563.51	450.42	-498.42	-445.70	1.50	1.50	0.00
2,800.00	36.00	312.10	2,645.17	489.12	-541.24	-483.99	1.50	1.50	0.00
2,900.00	37.50	312.10	2,725.30	529.23	-585.63	-523.69	1.50	1.50	0.00
3,000.00	39.00	312.10	2,803.83	570.74	-631.56	-564.76	1.50	1.50	0.00
3,100.00	40.50	312.10	2,880.71	613.61	-679.00	-607.19	1.50	1.50	0.00
3,200.00	42.00	312.10	2,955.89	657.82	-727.92	-650.93	1.50	1.50	0.00
3,300.00	43.50	312.10	3,029.32	703.33	-778.28	-695.96	1.50	1.50	0.00
3,400.00	45.00	312.10	3,100.95	750.11	-830.05	-742.26	1.50	1.50	0.00
3,432.48	45.49	312.10	3,123.82	765.58	-847.16	-757.56	1.50	1.50	0.00
Hold Tangent									
3,500.00	45.49	312.10	3,171.15	797.86	-882.88	-789.50	0.00	0.00	0.00
3,600.00	45.49	312.10	3,241.26	845.67	-935.79	-836.81	0.00	0.00	0.00
3,700.00	45.49	312.10	3,311.37	893.48	-988.69	-884.13	0.00	0.00	0.00
3,800.00	45.49	312.10	3,381.47	941.29	-1,041.60	-931.44	0.00	0.00	0.00
3,900.00	45.49	312.10	3,451.58	989.11	-1,094.51	-978.75	0.00	0.00	0.00
4,000.00	45.49	312.10	3,521.69	1,036.92	-1,147.41	-1,026.06	0.00	0.00	0.00
4,100.00	45.49	312.10	3,591.80	1,084.73	-1,200.32	-1,073.37	0.00	0.00	0.00
4,200.00	45.49	312.10	3,661.90	1,132.54	-1,253.22	-1,120.68	0.00	0.00	0.00
4,300.00	45.49	312.10	3,732.01	1,180.35	-1,306.13	-1,167.99	0.00	0.00	0.00
4,357.04	45.49	312.10	3,772.00	1,207.63	-1,336.31	-1,194.98	0.00	0.00	0.00

Corporate
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Well:	DB FARMS 12-10HZ	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	45.49	312.10	3,802.12	1,228.16	-1,359.04	-1,215.30	0.00	0.00	0.00
4,500.00	45.49	312.10	3,872.22	1,275.98	-1,411.94	-1,262.61	0.00	0.00	0.00
4,600.00	45.49	312.10	3,942.33	1,323.79	-1,464.85	-1,309.92	0.00	0.00	0.00
4,700.00	45.49	312.10	4,012.44	1,371.60	-1,517.76	-1,357.23	0.00	0.00	0.00
4,800.00	45.49	312.10	4,082.54	1,419.41	-1,570.66	-1,404.54	0.00	0.00	0.00
4,900.00	45.49	312.10	4,152.65	1,467.22	-1,623.57	-1,451.86	0.00	0.00	0.00
4,949.00	45.49	312.10	4,187.00	1,490.65	-1,649.49	-1,475.04	0.00	0.00	0.00
Sussex									
5,000.00	45.49	312.10	4,222.76	1,515.03	-1,676.47	-1,499.17	0.00	0.00	0.00
5,100.00	45.49	312.10	4,292.86	1,562.84	-1,729.38	-1,546.48	0.00	0.00	0.00
5,200.00	45.49	312.10	4,362.97	1,610.66	-1,782.29	-1,593.79	0.00	0.00	0.00
5,300.00	45.49	312.10	4,433.08	1,658.47	-1,835.19	-1,641.10	0.00	0.00	0.00
5,400.00	45.49	312.10	4,503.18	1,706.28	-1,888.10	-1,688.41	0.00	0.00	0.00
5,500.00	45.49	312.10	4,573.29	1,754.09	-1,941.01	-1,735.72	0.00	0.00	0.00
5,600.00	45.49	312.10	4,643.40	1,801.90	-1,993.91	-1,783.03	0.00	0.00	0.00
5,700.00	45.49	312.10	4,713.51	1,849.71	-2,046.82	-1,830.34	0.00	0.00	0.00
5,800.00	45.49	312.10	4,783.61	1,897.53	-2,099.73	-1,877.65	0.00	0.00	0.00
5,900.00	45.49	312.10	4,853.72	1,945.34	-2,152.63	-1,924.96	0.00	0.00	0.00
6,000.00	45.49	312.10	4,923.83	1,993.15	-2,205.54	-1,972.27	0.00	0.00	0.00
6,100.00	45.49	312.10	4,993.93	2,040.96	-2,258.44	-2,019.58	0.00	0.00	0.00
6,200.00	45.49	312.10	5,064.04	2,088.77	-2,311.35	-2,066.90	0.00	0.00	0.00
6,300.00	45.49	312.10	5,134.15	2,136.58	-2,364.26	-2,114.21	0.00	0.00	0.00
6,400.00	45.49	312.10	5,204.25	2,184.40	-2,417.16	-2,161.52	0.00	0.00	0.00
6,500.00	45.49	312.10	5,274.36	2,232.21	-2,470.07	-2,208.83	0.00	0.00	0.00
6,600.00	45.49	312.10	5,344.47	2,280.02	-2,522.98	-2,256.14	0.00	0.00	0.00
6,700.00	45.49	312.10	5,414.57	2,327.83	-2,575.88	-2,303.45	0.00	0.00	0.00
6,800.00	45.49	312.10	5,484.68	2,375.64	-2,628.79	-2,350.76	0.00	0.00	0.00
6,900.00	45.49	312.10	5,554.79	2,423.45	-2,681.70	-2,398.07	0.00	0.00	0.00
7,000.00	45.49	312.10	5,624.89	2,471.26	-2,734.60	-2,445.38	0.00	0.00	0.00
7,100.00	45.49	312.10	5,695.00	2,519.08	-2,787.51	-2,492.69	0.00	0.00	0.00
7,200.00	45.49	312.10	5,765.11	2,566.89	-2,840.41	-2,540.00	0.00	0.00	0.00
7,300.00	45.49	312.10	5,835.22	2,614.70	-2,893.32	-2,587.31	0.00	0.00	0.00
7,400.00	45.49	312.10	5,905.32	2,662.51	-2,946.23	-2,634.63	0.00	0.00	0.00
7,500.00	45.49	312.10	5,975.43	2,710.32	-2,999.13	-2,681.94	0.00	0.00	0.00
7,600.00	45.49	312.10	6,045.54	2,758.13	-3,052.04	-2,729.25	0.00	0.00	0.00
7,700.00	45.49	312.10	6,115.64	2,805.95	-3,104.95	-2,776.56	0.00	0.00	0.00
7,800.00	45.49	312.10	6,185.75	2,853.76	-3,157.85	-2,823.87	0.00	0.00	0.00
7,900.00	45.49	312.10	6,255.86	2,901.57	-3,210.76	-2,871.18	0.00	0.00	0.00
7,942.00	45.49	312.10	6,285.30	2,921.65	-3,232.98	-2,891.05	0.00	0.00	0.00
KOP DLS 8									
8,000.00	43.17	306.35	6,326.81	2,947.29	-3,264.32	-2,916.39	8.00	-3.99	-9.93
8,100.00	39.94	295.30	6,401.73	2,981.33	-3,320.99	-2,949.90	8.00	-3.23	-11.05
8,200.00	37.89	282.97	6,479.65	3,001.98	-3,380.03	-2,969.99	8.00	-2.05	-12.33
8,300.00	37.23	269.87	6,559.05	3,008.81	-3,440.30	-2,976.25	8.00	-0.67	-13.10
8,400.00	38.01	256.81	6,638.38	3,001.71	-3,500.63	-2,968.58	8.00	0.79	-13.06
8,500.00	40.17	244.58	6,716.11	2,980.80	-3,559.83	-2,947.12	8.00	2.16	-12.24
8,600.00	43.49	233.64	6,790.71	2,946.50	-3,616.77	-2,912.28	8.00	3.32	-10.93
8,700.00	47.72	224.13	6,860.74	2,899.47	-3,670.32	-2,864.75	8.00	4.23	-9.52
8,800.00	52.63	215.89	6,924.84	2,840.64	-3,719.45	-2,805.45	8.00	4.91	-8.23
8,844.29	54.97	212.60	6,951.00	2,811.09	-3,739.55	-2,775.72	8.00	5.29	-7.44
Sharon Springs									

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well DB FARMS 12-10HZ - Slot DB FARMS 12-10HZ
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 12-10HZ	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)
8,900.00	58.04	208.72	6,981.75	2,771.13	-3,763.20	-2,735.54	8.00	5.50	-6.96
8,937.49	60.17	206.26	7,001.00	2,742.59	-3,778.04	-2,706.86	8.00	5.67	-6.57
Niobrara									
9,000.00	63.81	202.37	7,030.36	2,692.31	-3,800.73	-2,656.37	8.00	5.82	-6.21
9,078.24	68.50	197.84	7,062.00	2,625.13	-3,825.26	-2,588.97	8.00	6.00	-5.79
Nio B									
9,100.00	69.83	196.63	7,069.74	2,605.71	-3,831.29	-2,569.49	8.00	6.10	-5.54
9,200.00	76.02	191.33	7,099.11	2,513.02	-3,854.29	-2,476.58	8.00	6.19	-5.30
9,300.00	82.32	186.31	7,117.91	2,416.04	-3,869.29	-2,379.47	8.00	6.30	-5.02
9,400.00	88.67	181.43	7,125.76	2,316.66	-3,876.00	-2,280.02	8.00	6.36	-4.87
9,418.43	89.85	180.54	7,126.00	2,298.23	-3,876.31	-2,261.59	8.00	6.37	-4.84
Landing Point (TPZ)									
9,500.00	89.85	180.54	7,126.22	2,216.66	-3,877.08	-2,180.03	0.00	0.00	0.00
9,600.00	89.85	180.54	7,126.48	2,116.67	-3,878.03	-2,080.03	0.00	0.00	0.00
9,700.00	89.85	180.54	7,126.74	2,016.67	-3,878.97	-1,980.03	0.00	0.00	0.00
9,800.00	89.85	180.54	7,127.01	1,916.68	-3,879.92	-1,880.03	0.00	0.00	0.00
9,900.00	89.85	180.54	7,127.27	1,816.68	-3,880.86	-1,780.03	0.00	0.00	0.00
10,000.00	89.85	180.54	7,127.54	1,716.69	-3,881.81	-1,680.03	0.00	0.00	0.00
10,100.00	89.85	180.54	7,127.80	1,616.69	-3,882.75	-1,580.03	0.00	0.00	0.00
10,200.00	89.85	180.54	7,128.07	1,516.70	-3,883.69	-1,480.03	0.00	0.00	0.00
10,300.00	89.85	180.54	7,128.33	1,416.70	-3,884.64	-1,380.03	0.00	0.00	0.00
10,400.00	89.85	180.54	7,128.59	1,316.71	-3,885.58	-1,280.03	0.00	0.00	0.00
10,500.00	89.85	180.54	7,128.86	1,216.71	-3,886.53	-1,180.03	0.00	0.00	0.00
10,600.00	89.85	180.54	7,129.12	1,116.72	-3,887.47	-1,080.03	0.00	0.00	0.00
10,700.00	89.85	180.54	7,129.39	1,016.72	-3,888.42	-980.03	0.00	0.00	0.00
10,800.00	89.85	180.54	7,129.65	916.73	-3,889.36	-880.03	0.00	0.00	0.00
10,900.00	89.85	180.54	7,129.92	816.73	-3,890.31	-780.03	0.00	0.00	0.00
11,000.00	89.85	180.54	7,130.18	716.74	-3,891.25	-680.03	0.00	0.00	0.00
11,100.00	89.85	180.54	7,130.44	616.74	-3,892.19	-580.03	0.00	0.00	0.00
11,200.00	89.85	180.54	7,130.71	516.75	-3,893.14	-480.03	0.00	0.00	0.00
11,300.00	89.85	180.54	7,130.97	416.75	-3,894.08	-380.03	0.00	0.00	0.00
11,310.53	89.85	180.54	7,131.00	406.22	-3,894.18	-369.50	0.00	0.00	0.00
Nio C									
11,400.00	89.85	180.54	7,131.24	316.76	-3,895.03	-280.03	0.00	0.00	0.00
11,500.00	89.85	180.54	7,131.50	216.76	-3,895.97	-180.03	0.00	0.00	0.00
11,600.00	89.85	180.54	7,131.77	116.77	-3,896.92	-80.03	0.00	0.00	0.00
11,700.00	89.85	180.54	7,132.03	16.77	-3,897.86	19.97	0.00	0.00	0.00
11,800.00	89.85	180.54	7,132.29	-83.22	-3,898.80	119.97	0.00	0.00	0.00
11,900.00	89.85	180.54	7,132.56	-183.22	-3,899.75	219.97	0.00	0.00	0.00
12,000.00	89.85	180.54	7,132.82	-283.21	-3,900.69	319.96	0.00	0.00	0.00
12,100.00	89.85	180.54	7,133.09	-383.21	-3,901.64	419.96	0.00	0.00	0.00
12,200.00	89.85	180.54	7,133.35	-483.21	-3,902.58	519.96	0.00	0.00	0.00
12,300.00	89.85	180.54	7,133.61	-583.20	-3,903.53	619.96	0.00	0.00	0.00
12,400.00	89.85	180.54	7,133.88	-683.20	-3,904.47	719.96	0.00	0.00	0.00
12,500.00	89.85	180.54	7,134.14	-783.19	-3,905.41	819.96	0.00	0.00	0.00
12,600.00	89.85	180.54	7,134.41	-883.19	-3,906.36	919.96	0.00	0.00	0.00
12,700.00	89.85	180.54	7,134.67	-983.18	-3,907.30	1,019.96	0.00	0.00	0.00
12,800.00	89.85	180.54	7,134.94	-1,083.18	-3,908.25	1,119.96	0.00	0.00	0.00
12,900.00	89.85	180.54	7,135.20	-1,183.17	-3,909.19	1,219.96	0.00	0.00	0.00
13,000.00	89.85	180.54	7,135.46	-1,283.17	-3,910.14	1,319.96	0.00	0.00	0.00
13,100.00	89.85	180.54	7,135.73	-1,383.16	-3,911.08	1,419.96	0.00	0.00	0.00
13,200.00	89.85	180.54	7,135.99	-1,483.16	-3,912.02	1,519.96	0.00	0.00	0.00
13,300.00	89.85	180.54	7,136.26	-1,583.15	-3,912.97	1,619.96	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well DB FARMS 12-10HZ - Slot DB FARMS 12-10HZ
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 12-10HZ	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)
13,400.00	89.85	180.54	7,136.52	-1,683.15	-3,913.91	1,719.96	0.00	0.00	0.00
13,500.00	89.85	180.54	7,136.79	-1,783.14	-3,914.86	1,819.96	0.00	0.00	0.00
13,600.00	89.85	180.54	7,137.05	-1,883.14	-3,915.80	1,919.96	0.00	0.00	0.00
13,700.00	89.85	180.54	7,137.31	-1,983.13	-3,916.75	2,019.96	0.00	0.00	0.00
13,800.00	89.85	180.54	7,137.58	-2,083.13	-3,917.69	2,119.96	0.00	0.00	0.00
13,900.00	89.85	180.54	7,137.84	-2,183.12	-3,918.63	2,219.96	0.00	0.00	0.00
14,000.00	89.85	180.54	7,138.11	-2,283.12	-3,919.58	2,319.96	0.00	0.00	0.00
14,100.00	89.85	180.54	7,138.37	-2,383.11	-3,920.52	2,419.96	0.00	0.00	0.00
14,200.00	89.85	180.54	7,138.64	-2,483.11	-3,921.47	2,519.96	0.00	0.00	0.00
14,300.00	89.85	180.54	7,138.90	-2,583.10	-3,922.41	2,619.96	0.00	0.00	0.00
14,400.00	89.85	180.54	7,139.16	-2,683.10	-3,923.36	2,719.96	0.00	0.00	0.00
14,500.00	89.85	180.54	7,139.43	-2,783.09	-3,924.30	2,819.96	0.00	0.00	0.00
14,600.00	89.85	180.54	7,139.69	-2,883.09	-3,925.24	2,919.96	0.00	0.00	0.00
14,700.00	89.85	180.54	7,139.96	-2,983.09	-3,926.19	3,019.96	0.00	0.00	0.00
14,800.00	89.85	180.54	7,140.22	-3,083.08	-3,927.13	3,119.96	0.00	0.00	0.00
14,900.00	89.85	180.54	7,140.49	-3,183.08	-3,928.08	3,219.95	0.00	0.00	0.00
15,000.00	89.85	180.54	7,140.75	-3,283.07	-3,929.02	3,319.95	0.00	0.00	0.00
15,100.00	89.85	180.54	7,141.01	-3,383.07	-3,929.97	3,419.95	0.00	0.00	0.00
15,200.00	89.85	180.54	7,141.28	-3,483.06	-3,930.91	3,519.95	0.00	0.00	0.00
15,300.00	89.85	180.54	7,141.54	-3,583.06	-3,931.85	3,619.95	0.00	0.00	0.00
15,400.00	89.85	180.54	7,141.81	-3,683.05	-3,932.80	3,719.95	0.00	0.00	0.00
15,500.00	89.85	180.54	7,142.07	-3,783.05	-3,933.74	3,819.95	0.00	0.00	0.00
15,600.00	89.85	180.54	7,142.34	-3,883.04	-3,934.69	3,919.95	0.00	0.00	0.00
15,700.00	89.85	180.54	7,142.60	-3,983.04	-3,935.63	4,019.95	0.00	0.00	0.00
15,800.00	89.85	180.54	7,142.86	-4,083.03	-3,936.58	4,119.95	0.00	0.00	0.00
15,900.00	89.85	180.54	7,143.13	-4,183.03	-3,937.52	4,219.95	0.00	0.00	0.00
16,000.00	89.85	180.54	7,143.39	-4,283.02	-3,938.47	4,319.95	0.00	0.00	0.00
16,100.00	89.85	180.54	7,143.66	-4,383.02	-3,939.41	4,419.95	0.00	0.00	0.00
16,200.00	89.85	180.54	7,143.92	-4,483.01	-3,940.35	4,519.95	0.00	0.00	0.00
16,300.00	89.85	180.54	7,144.19	-4,583.01	-3,941.30	4,619.95	0.00	0.00	0.00
16,400.00	89.85	180.54	7,144.45	-4,683.00	-3,942.24	4,719.95	0.00	0.00	0.00
16,500.00	89.85	180.54	7,144.71	-4,783.00	-3,943.19	4,819.95	0.00	0.00	0.00
16,600.00	89.85	180.54	7,144.98	-4,882.99	-3,944.13	4,919.95	0.00	0.00	0.00
16,700.00	89.85	180.54	7,145.24	-4,982.99	-3,945.08	5,019.95	0.00	0.00	0.00
16,800.00	89.85	180.54	7,145.51	-5,082.98	-3,946.02	5,119.95	0.00	0.00	0.00
16,900.00	89.85	180.54	7,145.77	-5,182.98	-3,946.96	5,219.95	0.00	0.00	0.00
17,000.00	89.85	180.54	7,146.03	-5,282.97	-3,947.91	5,319.95	0.00	0.00	0.00
17,100.00	89.85	180.54	7,146.30	-5,382.97	-3,948.85	5,419.95	0.00	0.00	0.00
17,200.00	89.85	180.54	7,146.56	-5,482.97	-3,949.80	5,519.95	0.00	0.00	0.00
17,300.00	89.85	180.54	7,146.83	-5,582.96	-3,950.74	5,619.95	0.00	0.00	0.00
17,400.00	89.85	180.54	7,147.09	-5,682.96	-3,951.69	5,719.95	0.00	0.00	0.00
17,500.00	89.85	180.54	7,147.36	-5,782.95	-3,952.63	5,819.95	0.00	0.00	0.00
17,600.00	89.85	180.54	7,147.62	-5,882.95	-3,953.57	5,919.95	0.00	0.00	0.00
17,700.00	89.85	180.54	7,147.88	-5,982.94	-3,954.52	6,019.95	0.00	0.00	0.00
17,800.00	89.85	180.54	7,148.15	-6,082.94	-3,955.46	6,119.94	0.00	0.00	0.00
17,900.00	89.85	180.54	7,148.41	-6,182.93	-3,956.41	6,219.94	0.00	0.00	0.00
18,000.00	89.85	180.54	7,148.68	-6,282.93	-3,957.35	6,319.94	0.00	0.00	0.00
18,100.00	89.85	180.54	7,148.94	-6,382.92	-3,958.30	6,419.94	0.00	0.00	0.00
18,200.00	89.85	180.54	7,149.21	-6,482.92	-3,959.24	6,519.94	0.00	0.00	0.00
18,300.00	89.85	180.54	7,149.47	-6,582.91	-3,960.18	6,619.94	0.00	0.00	0.00
18,400.00	89.85	180.54	7,149.73	-6,682.91	-3,961.13	6,719.94	0.00	0.00	0.00
18,500.00	89.85	180.54	7,150.00	-6,782.90	-3,962.07	6,819.94	0.00	0.00	0.00
18,600.00	89.85	180.54	7,150.26	-6,882.90	-3,963.02	6,919.94	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well DB FARMS 12-10HZ - Slot DB FARMS 12-10HZ
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 12-10HZ	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)	
18,700.00	89.85	180.54	7,150.53	-6,982.89	-3,963.96	7,019.94	0.00	0.00	0.00	
18,800.00	89.85	180.54	7,150.79	-7,082.89	-3,964.91	7,119.94	0.00	0.00	0.00	
18,900.00	89.85	180.54	7,151.06	-7,182.88	-3,965.85	7,219.94	0.00	0.00	0.00	
19,000.00	89.85	180.54	7,151.32	-7,282.88	-3,966.79	7,319.94	0.00	0.00	0.00	
19,100.00	89.85	180.54	7,151.58	-7,382.87	-3,967.74	7,419.94	0.00	0.00	0.00	
19,200.00	89.85	180.54	7,151.85	-7,482.87	-3,968.68	7,519.94	0.00	0.00	0.00	
19,300.00	89.85	180.54	7,152.11	-7,582.86	-3,969.63	7,619.94	0.00	0.00	0.00	
19,400.00	89.85	180.54	7,152.38	-7,682.86	-3,970.57	7,719.94	0.00	0.00	0.00	
19,500.00	89.85	180.54	7,152.64	-7,782.85	-3,971.52	7,819.94	0.00	0.00	0.00	
19,600.00	89.85	180.54	7,152.91	-7,882.85	-3,972.46	7,919.94	0.00	0.00	0.00	
19,635.76	89.85	180.54	7,153.00	-7,918.61	-3,972.80	7,955.70	0.00	0.00	0.00	
TD at 19635.76 (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 12-10HZ LP - plan hits target center - Point	0.00	0.00	7,126.00	2,298.23	-3,876.31	14,616,431.00	1,683,735.00	40.246217	-104.844761
DB FARMS 12-10HZ BI - plan hits target center - Point	0.00	0.00	7,153.00	-7,918.61	-3,972.80	14,606,214.00	1,683,658.00	40.218161	-104.845101

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	
19,635.76	7,153.00	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				
4,357.04	3,772.00	Parkman				
4,949.00	4,187.00	Sussex				
8,844.29	6,951.00	Sharon Springs				
8,937.49	7,001.00	Niobrara				
9,078.24	7,062.00	Nio B				
11,310.53	7,131.00	Nio C				

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well DB FARMS 12-10HZ - Slot DB FARMS 12-10HZ
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 12-10HZ	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
3,432.48	3,123.82	765.58	-847.16	Hold Tangent
7,942.00	6,285.30	2,921.65	-3,232.98	KOP DLS 8
9,418.43	7,126.00	2,298.23	-3,876.31	Landing Point (TPZ)
19,635.76	7,153.00	-7,918.61	-3,972.80	TD at 19635.76 (BPZ)