

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

1N-65W-08 English Farms 34C-9HZ Pad

ENGLISH FARMS 34N-9HZ

Plan B

Plan: Permit Rev-1

Sperry Drilling Services

Proposal Report

06 January, 2015

Well Coordinates: 14,553,126.29 N, 1,730,078.41 E (40° 04' 19.33" N, 104° 40' 46.20" W)

Ground Level: 4,932.00 usft

Local Coordinate Origin:	Centered on Well ENGLISH FARMS 34N-9HZ
Viewing Datum:	RKB = 17' @ 4949.00usft (D Rig)
TVDs to System:	N
North Reference:	True
Unit System:	Dec-Deg - API - US Survey Feet - Custom

Version: 5000.1 Build: 70

HALLIBURTON

Project: WELD-NAD83-UTMFT13N
 Site: 1N-65W-08 English Farms 34C-9HZ Pad
 Well: ENGLISH FARMS 34N-9HZ
 Wellbore: Plan B
 Design: Permit Rev-1

US ROCKIES WATTENBERG PLANNING

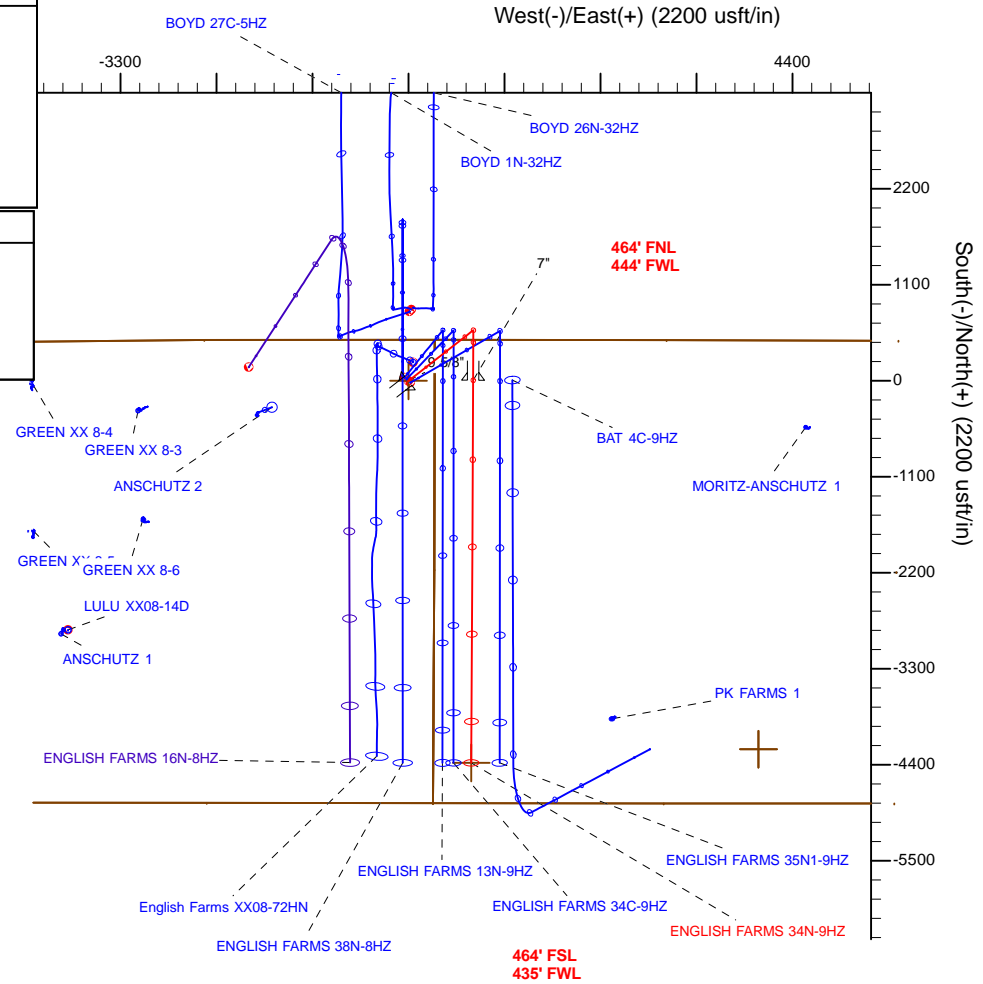
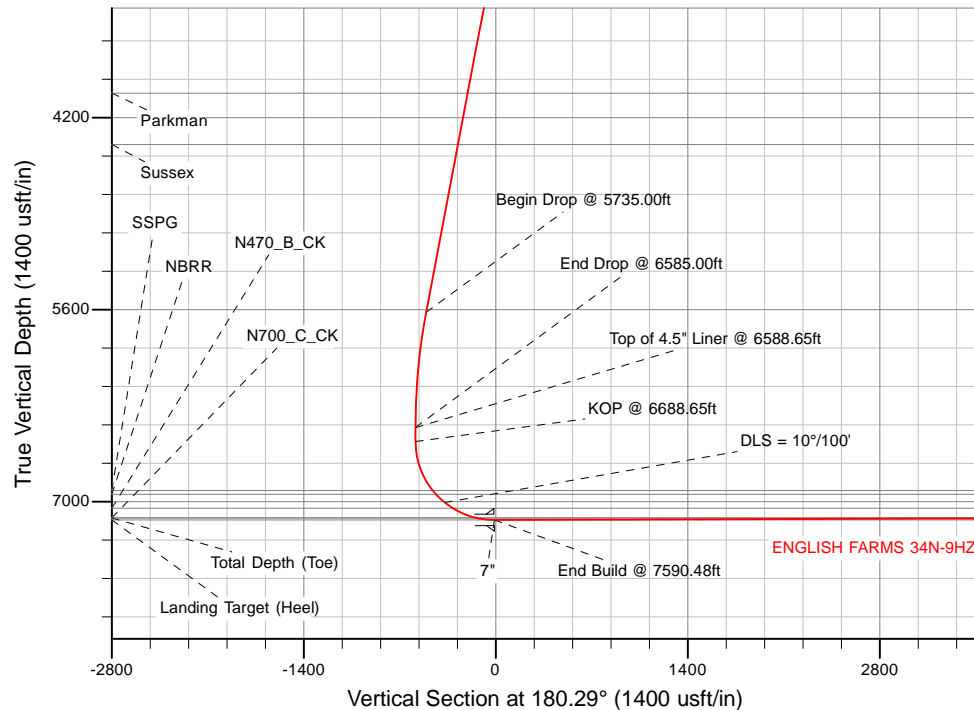


SECTION DETAILS

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	2510.00	0.00	0.00	2510.00	0.00	0.00	0.00	0.00	0.00	
3	3360.00	17.00	52.00	3347.58	77.07	98.64	2.00	52.00	-77.57	
4	5735.00	17.00	52.00	5618.81	504.57	645.82	0.00	0.00	-507.83	
5	6585.00	0.00	0.00	6456.39	581.64	744.46	2.00	180.00	-585.40	
6	6688.65	0.00	0.00	6560.04	581.64	744.46	0.00	0.00	-585.40	
7	7590.48	90.18	180.29	7133.00	6.86	741.52	10.00	180.29	-10.61	
8	11974.10	90.18	180.29	7119.00	-4376.68	719.10	0.00	0.00	4372.99	ENGLISH FARMS 34N-9HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
ENGLISH FARMS 34N-9HZ_SHL	0.00	0.00	0.00	40.072036	-104.679501
ENGLISH FARMS 34N-9HZ_BHL	7119.00	-4376.68	719.10	40.060017	-104.676931



TVD		MD		WELL DETAILS: ENGLISH FARMS 34N-9HZ	
6460.04		6588.65		Ground Level: 4932.00	
6560.04		6688.65		RKB = 17' @ 4949.00usft (D Rig)	
		Top of 4.5" Liner @ 6588.65ft		Plan: Permit Rev-1 (ENGLISH FARMS 34N-9HZ/Plan B)	
		KOP @ 6688.65ft		Created By: Clint Eshelman Date: 1/06/2014	
				Reviewed: _____ Date: _____	



Plan Report for ENGLISH FARMS 34N-9HZ - Permit Rev-1

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)	Toolface Azimuth (°)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1N-R65W-Sec. 9_Section lines - 1N-R65W-Sec. 8_Section lines - ENGLISH FARMS 34N-9HZ_SHL										
100.00	0.00	0.00	100.00	0.00	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	0.00
300.00	0.00	0.00	300.00	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	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
945.00	0.00	0.00	945.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Base Fox Hills										
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,477.00	0.00	0.00	1,477.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Surface Csg Setting Depth - 9 5/8"										
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,510.00	0.00	0.00	2,510.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 2510.00ft										
2,600.00	1.80	52.00	2,599.99	0.87	1.11	-0.88	2.00	2.00	0.00	52.00
2,700.00	3.80	52.00	2,699.86	3.88	4.96	-3.90	2.00	2.00	0.00	0.00
2,800.00	5.80	52.00	2,799.50	9.03	11.56	-9.09	2.00	2.00	0.00	0.00
2,900.00	7.80	52.00	2,898.80	16.32	20.89	-16.42	2.00	2.00	0.00	0.00
3,000.00	9.80	52.00	2,997.61	25.74	32.94	-25.90	2.00	2.00	0.00	0.00
3,100.00	11.80	52.00	3,095.84	37.27	47.71	-37.51	2.00	2.00	0.00	0.00
3,200.00	13.80	52.00	3,193.35	50.91	65.16	-51.24	2.00	2.00	0.00	0.00
3,300.00	15.80	52.00	3,290.03	66.64	85.29	-67.07	2.00	2.00	0.00	0.00
3,360.00	17.00	52.00	3,347.58	77.07	98.64	-77.57	2.00	2.00	0.00	0.00
End Nudge @ 3360.00ft										
3,400.00	17.00	52.00	3,385.84	84.27	107.86	-84.81	0.00	0.00	0.00	0.00
3,500.00	17.00	52.00	3,481.47	102.27	130.90	-102.93	0.00	0.00	0.00	0.00
3,600.00	17.00	52.00	3,577.10	120.27	153.94	-121.05	0.00	0.00	0.00	0.00
3,700.00	17.00	52.00	3,672.73	138.27	176.97	-139.16	0.00	0.00	0.00	0.00
3,800.00	17.00	52.00	3,768.36	156.27	200.01	-157.28	0.00	0.00	0.00	0.00
3,900.00	17.00	52.00	3,863.99	174.27	223.05	-175.39	0.00	0.00	0.00	0.00
4,000.00	17.00	52.00	3,959.62	192.27	246.09	-193.51	0.00	0.00	0.00	0.00
4,064.19	17.00	52.00	4,021.00	203.82	260.88	-205.14	0.00	0.00	0.00	0.00
Parkman										
4,100.00	17.00	52.00	4,055.25	210.27	269.13	-211.63	0.00	0.00	0.00	0.00
4,200.00	17.00	52.00	4,150.88	228.27	292.17	-229.74	0.00	0.00	0.00	0.00
4,300.00	17.00	52.00	4,246.51	246.27	315.21	-247.86	0.00	0.00	0.00	0.00
4,400.00	17.00	52.00	4,342.14	264.27	338.25	-265.98	0.00	0.00	0.00	0.00
4,456.32	17.00	52.00	4,396.00	274.41	351.22	-276.18	0.00	0.00	0.00	0.00



Plan Report for ENGLISH FARMS 34N-9HZ - Permit Rev-1

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)	Toolface Azimuth (°)
Sussex										
4,500.00	17.00	52.00	4,437.77	282.27	361.29	-284.09	0.00	0.00	0.00	0.00
4,600.00	17.00	52.00	4,533.40	300.27	384.33	-302.21	0.00	0.00	0.00	0.00
4,700.00	17.00	52.00	4,629.03	318.27	407.37	-320.33	0.00	0.00	0.00	0.00
4,800.00	17.00	52.00	4,724.66	336.27	430.41	-338.44	0.00	0.00	0.00	0.00
4,900.00	17.00	52.00	4,820.29	354.27	453.45	-356.56	0.00	0.00	0.00	0.00
5,000.00	17.00	52.00	4,915.92	372.27	476.48	-374.68	0.00	0.00	0.00	0.00
5,100.00	17.00	52.00	5,011.55	390.27	499.52	-392.79	0.00	0.00	0.00	0.00
5,200.00	17.00	52.00	5,107.18	408.27	522.56	-410.91	0.00	0.00	0.00	0.00
5,300.00	17.00	52.00	5,202.81	426.27	545.60	-429.03	0.00	0.00	0.00	0.00
5,400.00	17.00	52.00	5,298.44	444.27	568.64	-447.14	0.00	0.00	0.00	0.00
5,500.00	17.00	52.00	5,394.08	462.27	591.68	-465.26	0.00	0.00	0.00	0.00
5,600.00	17.00	52.00	5,489.71	480.27	614.72	-483.38	0.00	0.00	0.00	0.00
5,700.00	17.00	52.00	5,585.34	498.27	637.76	-501.49	0.00	0.00	0.00	0.00
5,735.00	17.00	52.00	5,618.81	504.57	645.82	-507.83	0.00	0.00	0.00	0.00
Begin Drop @ 5735.00ft										
5,800.00	15.70	52.00	5,681.18	515.84	660.24	-519.17	2.00	-2.00	0.00	180.00
5,900.00	13.70	52.00	5,777.90	531.46	680.24	-534.90	2.00	-2.00	0.00	180.00
6,000.00	11.70	52.00	5,875.45	544.99	697.56	-548.52	2.00	-2.00	0.00	180.00
6,100.00	9.70	52.00	5,973.70	556.42	712.19	-560.02	2.00	-2.00	0.00	180.00
6,200.00	7.70	52.00	6,072.55	565.74	724.11	-569.39	2.00	-2.00	0.00	180.00
6,300.00	5.70	52.00	6,171.86	572.92	733.30	-576.62	2.00	-2.00	0.00	180.00
6,400.00	3.70	52.00	6,271.52	577.96	739.76	-581.70	2.00	-2.00	0.00	180.00
6,500.00	1.70	52.00	6,371.40	580.86	743.47	-584.62	2.00	-2.00	0.00	180.00
6,585.00	0.00	0.00	6,456.39	581.64	744.46	-585.40	2.00	-2.00	-61.18	-180.00
End Drop @ 6585.00ft										
6,588.65	0.00	0.00	6,460.04	581.64	744.46	-585.40	0.00	0.00	0.00	180.00
Top of 4.5" Liner @ 6588.65ft										
6,600.00	0.00	0.00	6,471.39	581.64	744.46	-585.40	0.00	0.00	0.00	0.00
6,688.65	0.00	0.00	6,560.04	581.64	744.46	-585.40	0.00	0.00	0.00	0.00
KOP @ 6688.65ft										
6,700.00	1.13	180.29	6,571.39	581.53	744.46	-585.29	10.00	10.00	0.00	180.29
6,800.00	11.13	180.29	6,670.69	570.85	744.41	-574.61	10.00	10.00	0.00	0.00
6,900.00	21.13	180.29	6,766.63	543.10	744.27	-546.86	10.00	10.00	0.00	0.00
7,000.00	31.13	180.29	6,856.29	499.11	744.04	-502.87	10.00	10.00	0.00	0.00
7,074.01	38.54	180.29	6,917.00	456.86	743.83	-460.62	10.00	10.00	0.00	0.00
SSPG										
7,100.00	41.13	180.29	6,936.95	440.21	743.74	-443.97	10.00	10.00	0.00	0.00
7,110.77	42.21	180.29	6,945.00	433.05	743.70	-436.81	10.00	10.00	0.00	0.00
NBRR										
7,200.00	51.13	180.29	7,006.16	368.21	743.37	-371.97	10.00	10.00	0.00	0.00
DLS = 10°/100'										
7,272.57	58.39	180.29	7,048.00	308.98	743.07	-312.73	10.00	10.00	0.00	0.00
N470_B_CK										
7,300.00	61.13	180.29	7,061.81	285.28	742.95	-289.04	10.00	10.00	0.00	0.00
7,400.00	71.13	180.29	7,102.22	193.95	742.48	-197.70	10.00	10.00	0.00	0.00
7,452.94	76.43	180.29	7,117.00	143.14	742.22	-146.89	10.00	10.00	0.00	0.00
N700_C_CK										
7,500.00	81.13	180.29	7,126.15	96.98	741.98	-100.74	10.00	10.00	0.00	0.00
7,590.48	90.18	180.29	7,133.00	6.86	741.52	-10.61	10.00	10.00	0.00	0.00
End Build @ 7590.48ft - Landing Target (Heel) - 7"										
7,600.00	90.18	180.29	7,132.96	-2.66	741.48	-1.09	0.00	0.00	0.00	0.00
7,700.00	90.18	180.29	7,132.65	-102.66	740.96	98.91	0.00	0.00	0.00	0.00
7,800.00	90.18	180.29	7,132.33	-202.66	740.45	198.91	0.00	0.00	0.00	0.00
7,900.00	90.18	180.29	7,132.01	-302.66	739.94	298.91	0.00	0.00	0.00	0.00
8,000.00	90.18	180.29	7,131.69	-402.65	739.43	398.91	0.00	0.00	0.00	0.00
8,100.00	90.18	180.29	7,131.37	-502.65	738.92	498.91	0.00	0.00	0.00	0.00
8,200.00	90.18	180.29	7,131.05	-602.65	738.41	598.91	0.00	0.00	0.00	0.00



Plan Report for ENGLISH FARMS 34N-9HZ - Permit Rev-1

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)	Tooface Azimuth (°)
8,300.00	90.18	180.29	7,130.73	-702.65	737.90	698.90	0.00	0.00	0.00	0.00
8,400.00	90.18	180.29	7,130.41	-802.65	737.38	798.90	0.00	0.00	0.00	0.00
8,500.00	90.18	180.29	7,130.09	-902.64	736.87	898.90	0.00	0.00	0.00	0.00
8,600.00	90.18	180.29	7,129.77	-1,002.64	736.36	998.90	0.00	0.00	0.00	0.00
8,700.00	90.18	180.29	7,129.45	-1,102.64	735.85	1,098.90	0.00	0.00	0.00	0.00
8,800.00	90.18	180.29	7,129.13	-1,202.64	735.34	1,198.90	0.00	0.00	0.00	0.00
8,900.00	90.18	180.29	7,128.81	-1,302.64	734.83	1,298.90	0.00	0.00	0.00	0.00
9,000.00	90.18	180.29	7,128.50	-1,402.64	734.32	1,398.90	0.00	0.00	0.00	0.00
9,100.00	90.18	180.29	7,128.18	-1,502.63	733.80	1,498.90	0.00	0.00	0.00	0.00
9,200.00	90.18	180.29	7,127.86	-1,602.63	733.29	1,598.90	0.00	0.00	0.00	0.00
9,300.00	90.18	180.29	7,127.54	-1,702.63	732.78	1,698.90	0.00	0.00	0.00	0.00
9,400.00	90.18	180.29	7,127.22	-1,802.63	732.27	1,798.90	0.00	0.00	0.00	0.00
9,500.00	90.18	180.29	7,126.90	-1,902.63	731.76	1,898.90	0.00	0.00	0.00	0.00
9,600.00	90.18	180.29	7,126.58	-2,002.62	731.25	1,998.90	0.00	0.00	0.00	0.00
9,700.00	90.18	180.29	7,126.26	-2,102.62	730.73	2,098.90	0.00	0.00	0.00	0.00
9,800.00	90.18	180.29	7,125.94	-2,202.62	730.22	2,198.90	0.00	0.00	0.00	0.00
9,900.00	90.18	180.29	7,125.62	-2,302.62	729.71	2,298.90	0.00	0.00	0.00	0.00
10,000.00	90.18	180.29	7,125.30	-2,402.62	729.20	2,398.90	0.00	0.00	0.00	0.00
10,100.00	90.18	180.29	7,124.98	-2,502.62	728.69	2,498.90	0.00	0.00	0.00	0.00
10,200.00	90.18	180.29	7,124.66	-2,602.61	728.18	2,598.89	0.00	0.00	0.00	0.00
10,300.00	90.18	180.29	7,124.34	-2,702.61	727.67	2,698.89	0.00	0.00	0.00	0.00
10,400.00	90.18	180.29	7,124.03	-2,802.61	727.15	2,798.89	0.00	0.00	0.00	0.00
10,500.00	90.18	180.29	7,123.71	-2,902.61	726.64	2,898.89	0.00	0.00	0.00	0.00
10,600.00	90.18	180.29	7,123.39	-3,002.61	726.13	2,998.89	0.00	0.00	0.00	0.00
10,700.00	90.18	180.29	7,123.07	-3,102.60	725.62	3,098.89	0.00	0.00	0.00	0.00
10,800.00	90.18	180.29	7,122.75	-3,202.60	725.11	3,198.89	0.00	0.00	0.00	0.00
10,900.00	90.18	180.29	7,122.43	-3,302.60	724.60	3,298.89	0.00	0.00	0.00	0.00
11,000.00	90.18	180.29	7,122.11	-3,402.60	724.09	3,398.89	0.00	0.00	0.00	0.00
11,100.00	90.18	180.29	7,121.79	-3,502.60	723.57	3,498.89	0.00	0.00	0.00	0.00
11,200.00	90.18	180.29	7,121.47	-3,602.60	723.06	3,598.89	0.00	0.00	0.00	0.00
11,300.00	90.18	180.29	7,121.15	-3,702.59	722.55	3,698.89	0.00	0.00	0.00	0.00
11,400.00	90.18	180.29	7,120.83	-3,802.59	722.04	3,798.89	0.00	0.00	0.00	0.00
11,500.00	90.18	180.29	7,120.51	-3,902.59	721.53	3,898.89	0.00	0.00	0.00	0.00
11,600.00	90.18	180.29	7,120.19	-4,002.59	721.02	3,998.89	0.00	0.00	0.00	0.00
11,700.00	90.18	180.29	7,119.88	-4,102.59	720.51	4,098.89	0.00	0.00	0.00	0.00
11,800.00	90.18	180.29	7,119.56	-4,202.58	719.99	4,198.89	0.00	0.00	0.00	0.00
11,900.00	90.18	180.29	7,119.24	-4,302.58	719.48	4,298.89	0.00	0.00	0.00	0.00
11,974.10	90.18	180.29	7,119.00	-4,376.68	719.10	4,372.99	0.00	0.00	0.00	0.00

TD Well @ 11974.10ft - Total Depth (Toe) - ENGLISH FARMS 34N-9HZ_BHL

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,510.00	2,510.00	0.00	0.00	Begin Nudge @ 2510.00ft
3,360.00	3,347.58	77.07	98.64	End Nudge @ 3360.00ft
5,735.00	5,618.81	504.57	645.82	Begin Drop @ 5735.00ft
6,585.00	6,456.39	581.64	744.46	End Drop @ 6585.00ft
6,588.65	6,460.04	581.64	744.46	Top of 4.5" Liner @ 6588.65ft
6,688.65	6,560.04	581.64	744.46	KOP @ 6688.65ft
7,200.00	7,006.16	368.21	743.37	DLS = 10°/100'
7,590.48	7,133.00	6.86	741.52	End Build @ 7590.48ft
11,974.10	7,119.00	-4,376.68	719.10	TD Well @ 11974.10ft

Plan Report for ENGLISH FARMS 34N-9HZ - Permit Rev-1

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (usft)	Origin +E/-W (usft)	Start TVD (usft)
User	No Target (Freehand)	180.29	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	7,590.48	Permit Rev-1	MWD+IFR1
7,590.48	11,974.10	Permit Rev-1	MWD+IFR1

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,477.00	1,477.00	9 5/8"	9-5/8	13-1/2
7,590.48	7,133.00	7"	7	8-3/4

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
945.00	945.00	Base Fox Hills		0.00	
1,477.00	1,477.00	Surface Csg Setting Depth		0.00	
4,064.19	4,021.00	Parkman		0.00	
4,456.32	4,396.00	Sussex		0.00	
7,074.01	6,917.00	SSPG		0.00	
7,110.77	6,945.00	NBRR		0.00	
7,272.57	7,048.00	N470_B_CK		0.00	
7,452.94	7,117.00	N700_C_CK		0.00	
7,590.48	7,133.00	Landing Target (Heel)		0.00	
11,974.10	7,119.00	Total Depth (Toe)		0.00	

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
1N-R65W-Sec. 9_Section lines	-32.00	-4,221.25	4,010.46	Polygon
ENGLISH FARMS 34N-9HZ_BHL	7,119.00	-4,376.68	719.10	Point
1N-R65W-Sec. 8_Section lines	-32.00	-4,221.25	4,010.46	Polygon
ENGLISH FARMS 34N-9HZ_SHL	0.00	0.00	0.00	Point

North Reference Sheet for 1N-65W-08 English Farms 34C-9HZ Pad - ENGLISH FARMS 34N-9HZ - Plan B

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference .

Vertical Depths are relative to RKB = 17' @ 4949.00usft (D Rig). Northing and Easting are relative to ENGLISH FARMS 34N-9HZ

Coordinate System is Universal Transverse Mercator (US Survey Feet), Zone 13N (108 W to 102 W) using datum North American Datum 1983, ellipsoid

Projection method is Transverse Mercator (Gauss-Kruger)

Central Meridian is -105.00°, Longitude Origin:0.000000°, Latitude Origin:0.000000°

False Easting: 1,640,416.67usft, False Northing: 0.00usft, Scale Reduction: 0.99960919

Grid Coordinates of Well: 14,553,126.29 usft N, 1,730,078.41 usft E

Geographical Coordinates of Well: 40° 04' 19.33" N, 104° 40' 46.20" W

Grid Convergence at Surface is: 0.21°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,974.10usft the Bottom Hole Displacement is 4,435.36usft in the Direction of 170.67° (True).

Magnetic Convergence at surface is: -8.13° (22 October 2014, , IGRF2010)

