

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

Bane Pad

BANE 27N2-9HZ

Plan A

Plan: Permit Rev-1

Sperry Drilling Services Proposal Report

28 October, 2014

Well Coordinates: 14,548,919.97 N, 1,734,224.92 E (40° 03' 37.59" N, 104° 39' 53.05" W)

Ground Level: 4,964.00 usft

Local Coordinate Origin:

Centered on Well BANE 27N2-9HZ

Viewing Datum:

RKB = 17' @ 4981.00usft (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: Bane Pad
Well: BANE 27N2-9HZ
Wellbore: Plan A
Design: Permit Rev-1

US ROCKIES WATTENBERG PLANNING

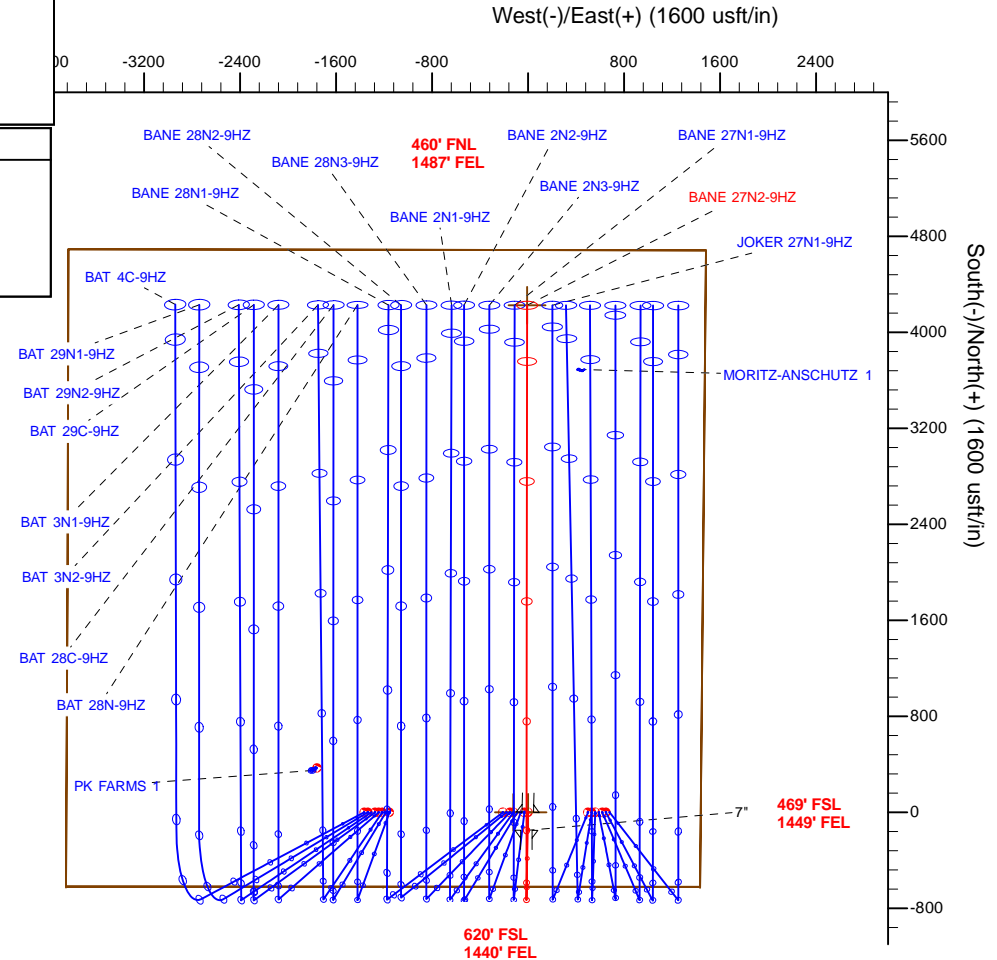
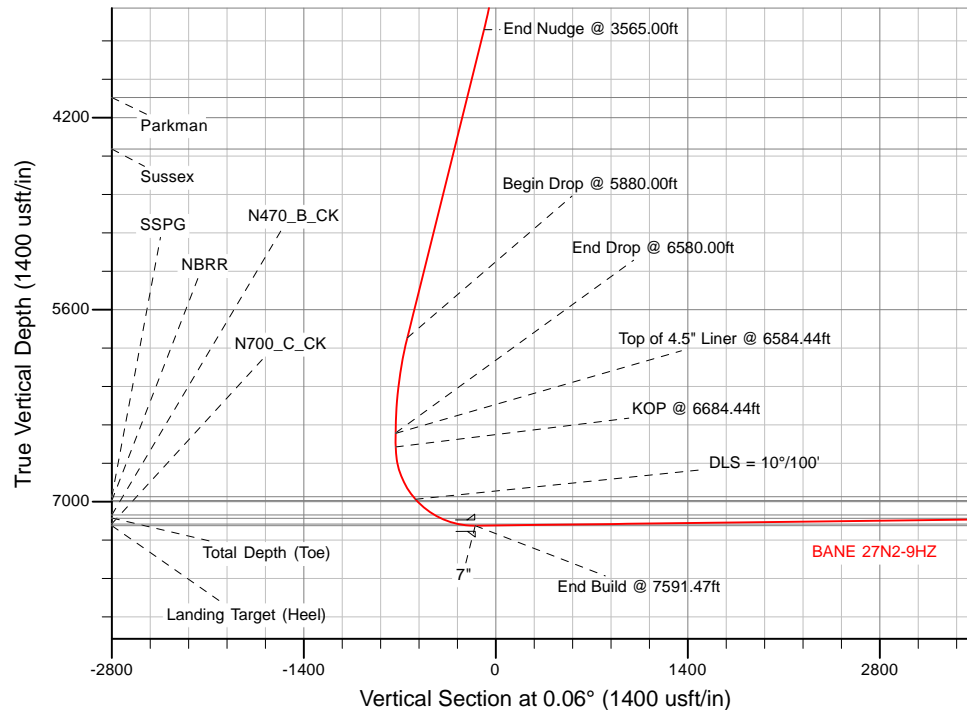
HALLIBURTON
Sperry Drilling

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	2865.00	0.00	0.00	2865.00	0.00	0.00	0.00	0.00	0.00	
3	3565.00	14.00	181.00	3558.06	-85.08	-1.49	2.00	181.00	-85.09	
4	5880.00	14.00	181.00	5804.29	-645.05	-11.26	0.00	0.00	-645.06	
5	6580.00	0.00	0.00	6497.35	-730.13	-12.74	2.00	180.00	-730.14	
6	6684.44	0.00	0.00	6601.79	-730.13	-12.74	0.00	0.00	-730.14	
7	7591.47	90.70	0.06	7174.70	-150.14	-12.14	10.00	0.06	-150.16	
8	11967.52	90.70	0.06	7121.00	4225.58	-7.55	0.00	0.00	4225.57	BANE 27N2-9HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Polygon
1N-R65W-Sec. 9 Section lines	0.00	0.00	-120.88	40.060443	-104.665168	
BANE 27N2-9HZ_SHL	0.00	0.00	0.00	40.060443	-104.664736	
BANE 27N2-9HZ_BHL	7121.00	4225.58	-7.55	40.072047	-104.664763	
	-	-	-	-	-	



TVD MD

6501.78 6584.44 Top of 4.5" Liner @ 6584.44ft
6601.78 6684.44 KOP @ 6684.44ft

WELL DETAILS: BANE 27N2-9HZ

Ground Level: 4964.00

RKB = 17' @ 4981.00usft (D Rig)

Plan: Permit Rev-1 (BANE 27N2-9HZ/Plan A)

Created By: Clint Eshelman

Reviewed:

Date: 10/28/2014

Date:

Plan Report for BANE 27N2-9HZ - 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 - BANE 27N2-9HZ_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
977.00	0.00	0.00	977.00	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
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,509.00	0.00	0.00	1,509.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Surface Csg Setting Depth - 9 5/8"										
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
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,865.00	0.00	0.00	2,865.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 2865.00ft										
2,900.00	0.70	181.00	2,900.00	-0.21	0.00	-0.21	2.00	2.00	0.00	181.00
3,000.00	2.70	181.00	2,999.95	-3.18	-0.06	-3.18	2.00	2.00	0.00	0.00
3,100.00	4.70	181.00	3,099.74	-9.63	-0.17	-9.63	2.00	2.00	0.00	0.00
3,200.00	6.70	181.00	3,199.24	-19.56	-0.34	-19.56	2.00	2.00	0.00	0.00
3,300.00	8.70	181.00	3,298.33	-32.96	-0.58	-32.96	2.00	2.00	0.00	0.00
3,400.00	10.70	181.00	3,396.90	-49.80	-0.87	-49.80	2.00	2.00	0.00	0.00
3,500.00	12.70	181.00	3,494.81	-70.08	-1.22	-70.08	2.00	2.00	0.00	0.00
3,565.00	14.00	181.00	3,558.06	-85.08	-1.49	-85.09	2.00	2.00	0.00	0.00
End Nudge @ 3565.00ft										
3,600.00	14.00	181.00	3,592.02	-93.55	-1.63	-93.55	0.00	0.00	0.00	0.00
3,700.00	14.00	181.00	3,689.05	-117.74	-2.06	-117.74	0.00	0.00	0.00	0.00
3,800.00	14.00	181.00	3,786.07	-141.93	-2.48	-141.93	0.00	0.00	0.00	0.00
3,900.00	14.00	181.00	3,883.10	-166.12	-2.90	-166.12	0.00	0.00	0.00	0.00
4,000.00	14.00	181.00	3,980.13	-190.30	-3.32	-190.31	0.00	0.00	0.00	0.00
4,075.10	14.00	181.00	4,053.00	-208.47	-3.64	-208.47	0.00	0.00	0.00	0.00
Parkman										
4,100.00	14.00	181.00	4,077.16	-214.49	-3.74	-214.50	0.00	0.00	0.00	0.00
4,200.00	14.00	181.00	4,174.19	-238.68	-4.17	-238.68	0.00	0.00	0.00	0.00
4,300.00	14.00	181.00	4,271.22	-262.87	-4.59	-262.87	0.00	0.00	0.00	0.00
4,400.00	14.00	181.00	4,368.25	-287.06	-5.01	-287.06	0.00	0.00	0.00	0.00
4,461.58	14.00	181.00	4,428.00	-301.95	-5.27	-301.96	0.00	0.00	0.00	0.00

Plan Report for BANE 27N2-9HZ - 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	14.00	181.00	4,465.28	-311.25	-5.43	-311.25	0.00	0.00	0.00	0.00
4,600.00	14.00	181.00	4,562.31	-335.43	-5.86	-335.44	0.00	0.00	0.00	0.00
4,700.00	14.00	181.00	4,659.34	-359.62	-6.28	-359.63	0.00	0.00	0.00	0.00
4,800.00	14.00	181.00	4,756.37	-383.81	-6.70	-383.82	0.00	0.00	0.00	0.00
4,900.00	14.00	181.00	4,853.40	-408.00	-7.12	-408.01	0.00	0.00	0.00	0.00
5,000.00	14.00	181.00	4,950.43	-432.19	-7.54	-432.20	0.00	0.00	0.00	0.00
5,100.00	14.00	181.00	5,047.46	-456.38	-7.97	-456.39	0.00	0.00	0.00	0.00
5,200.00	14.00	181.00	5,144.49	-480.57	-8.39	-480.57	0.00	0.00	0.00	0.00
5,300.00	14.00	181.00	5,241.52	-504.75	-8.81	-504.76	0.00	0.00	0.00	0.00
5,400.00	14.00	181.00	5,338.55	-528.94	-9.23	-528.95	0.00	0.00	0.00	0.00
5,500.00	14.00	181.00	5,435.58	-553.13	-9.65	-553.14	0.00	0.00	0.00	0.00
5,600.00	14.00	181.00	5,532.61	-577.32	-10.08	-577.33	0.00	0.00	0.00	0.00
5,700.00	14.00	181.00	5,629.64	-601.51	-10.50	-601.52	0.00	0.00	0.00	0.00
5,800.00	14.00	181.00	5,726.67	-625.70	-10.92	-625.71	0.00	0.00	0.00	0.00
5,880.00	14.00	181.00	5,804.29	-645.05	-11.26	-645.06	0.00	0.00	0.00	0.00
Begin Drop @ 5880.00ft										
5,900.00	13.60	181.00	5,823.71	-649.82	-11.34	-649.83	2.00	-2.00	0.00	-180.00
6,000.00	11.60	181.00	5,921.30	-671.63	-11.72	-671.64	2.00	-2.00	0.00	180.00
6,100.00	9.60	181.00	6,019.59	-690.02	-12.04	-690.03	2.00	-2.00	0.00	180.00
6,200.00	7.60	181.00	6,118.46	-704.97	-12.31	-704.98	2.00	-2.00	0.00	180.00
6,300.00	5.60	181.00	6,217.79	-716.46	-12.51	-716.47	2.00	-2.00	0.00	180.00
6,400.00	3.60	181.00	6,317.46	-724.48	-12.65	-724.49	2.00	-2.00	0.00	180.00
6,500.00	1.60	181.00	6,417.36	-729.01	-12.72	-729.03	2.00	-2.00	0.00	180.00
6,580.00	0.00	0.00	6,497.34	-730.13	-12.74	-730.14	2.00	-2.00	223.75	180.00
End Drop @ 6580.00ft										
6,584.44	0.00	0.00	6,501.78	-730.13	-12.74	-730.14	0.00	0.00	0.00	180.00
Top of 4.5" Liner @ 6584.44ft										
6,600.00	0.00	0.00	6,517.34	-730.13	-12.74	-730.14	0.00	0.00	0.00	0.00
6,684.44	0.00	0.00	6,601.78	-730.13	-12.74	-730.14	0.00	0.00	0.00	0.00
KOP @ 6684.44ft										
6,700.00	1.56	0.06	6,617.34	-729.92	-12.74	-729.93	10.00	10.00	0.00	0.06
6,800.00	11.56	0.06	6,716.56	-718.52	-12.73	-718.53	10.00	10.00	0.00	0.00
6,900.00	21.56	0.06	6,812.30	-690.06	-12.70	-690.07	10.00	10.00	0.00	0.00
7,000.00	31.56	0.06	6,901.63	-645.41	-12.66	-645.42	10.00	10.00	0.00	0.00
7,075.27	39.08	0.06	6,963.00	-601.93	-12.61	-601.94	10.00	10.00	0.00	0.00
SSPG										
7,100.00	41.56	0.06	6,981.86	-585.92	-12.59	-585.93	10.00	10.00	0.00	0.00
DLS = 10°/100'										
7,112.34	42.79	0.06	6,991.00	-577.64	-12.58	-577.65	10.00	10.00	0.00	0.00
NBRR										
7,200.00	51.56	0.06	7,050.53	-513.41	-12.52	-513.42	10.00	10.00	0.00	0.00
7,280.50	59.61	0.06	7,096.00	-447.06	-12.45	-447.07	10.00	10.00	0.00	0.00
N470_B_CK										
7,300.00	61.56	0.06	7,105.58	-430.07	-12.43	-430.09	10.00	10.00	0.00	0.00
7,400.00	71.56	0.06	7,145.31	-338.44	-12.33	-338.46	10.00	10.00	0.00	0.00
7,468.24	78.38	0.06	7,163.00	-272.58	-12.27	-272.59	10.00	10.00	0.00	0.00
N700_C_CK										
7,500.00	81.56	0.06	7,168.53	-241.31	-12.23	-241.32	10.00	10.00	0.00	0.00
7,591.47	90.70	0.06	7,174.70	-150.14	-12.14	-150.16	10.00	10.00	0.00	0.00
End Build @ 7591.47ft - Landing Target (Heel) - 7"										
7,600.00	90.70	0.06	7,174.59	-141.61	-12.13	-141.63	0.00	0.00	0.00	0.00
7,700.00	90.70	0.06	7,173.37	-41.62	-12.02	-41.63	0.00	0.00	0.00	0.00
7,800.00	90.70	0.06	7,172.14	58.37	-11.92	58.36	0.00	0.00	0.00	0.00
7,900.00	90.70	0.06	7,170.91	158.36	-11.81	158.35	0.00	0.00	0.00	0.00
8,000.00	90.70	0.06	7,169.69	258.36	-11.71	258.34	0.00	0.00	0.00	0.00
8,100.00	90.70	0.06	7,168.46	358.35	-11.60	358.34	0.00	0.00	0.00	0.00
8,200.00	90.70	0.06	7,167.23	458.34	-11.50	458.33	0.00	0.00	0.00	0.00

Plan Report for BANE 27N2-9HZ - 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 (°)
8,300.00	90.70	0.06	7,166.01	558.33	-11.40	558.32	0.00	0.00	0.00	0.00
8,400.00	90.70	0.06	7,164.78	658.33	-11.29	658.31	0.00	0.00	0.00	0.00
8,500.00	90.70	0.06	7,163.55	758.32	-11.19	758.31	0.00	0.00	0.00	0.00
8,600.00	90.70	0.06	7,162.32	858.31	-11.08	858.30	0.00	0.00	0.00	0.00
8,700.00	90.70	0.06	7,161.10	958.30	-10.98	958.29	0.00	0.00	0.00	0.00
8,800.00	90.70	0.06	7,159.87	1,058.29	-10.87	1,058.28	0.00	0.00	0.00	0.00
8,900.00	90.70	0.06	7,158.64	1,158.29	-10.77	1,158.28	0.00	0.00	0.00	0.00
9,000.00	90.70	0.06	7,157.42	1,258.28	-10.66	1,258.27	0.00	0.00	0.00	0.00
9,100.00	90.70	0.06	7,156.19	1,358.27	-10.56	1,358.26	0.00	0.00	0.00	0.00
9,200.00	90.70	0.06	7,154.96	1,458.26	-10.45	1,458.25	0.00	0.00	0.00	0.00
9,300.00	90.70	0.06	7,153.73	1,558.26	-10.35	1,558.25	0.00	0.00	0.00	0.00
9,400.00	90.70	0.06	7,152.51	1,658.25	-10.24	1,658.24	0.00	0.00	0.00	0.00
9,500.00	90.70	0.06	7,151.28	1,758.24	-10.14	1,758.23	0.00	0.00	0.00	0.00
9,600.00	90.70	0.06	7,150.05	1,858.23	-10.03	1,858.22	0.00	0.00	0.00	0.00
9,700.00	90.70	0.06	7,148.83	1,958.23	-9.93	1,958.21	0.00	0.00	0.00	0.00
9,800.00	90.70	0.06	7,147.60	2,058.22	-9.82	2,058.21	0.00	0.00	0.00	0.00
9,900.00	90.70	0.06	7,146.37	2,158.21	-9.72	2,158.20	0.00	0.00	0.00	0.00
10,000.00	90.70	0.06	7,145.14	2,258.20	-9.61	2,258.19	0.00	0.00	0.00	0.00
10,100.00	90.70	0.06	7,143.92	2,358.20	-9.51	2,358.18	0.00	0.00	0.00	0.00
10,200.00	90.70	0.06	7,142.69	2,458.19	-9.41	2,458.18	0.00	0.00	0.00	0.00
10,300.00	90.70	0.06	7,141.46	2,558.18	-9.30	2,558.17	0.00	0.00	0.00	0.00
10,400.00	90.70	0.06	7,140.24	2,658.17	-9.20	2,658.16	0.00	0.00	0.00	0.00
10,500.00	90.70	0.06	7,139.01	2,758.17	-9.09	2,758.15	0.00	0.00	0.00	0.00
10,600.00	90.70	0.06	7,137.78	2,858.16	-8.99	2,858.15	0.00	0.00	0.00	0.00
10,700.00	90.70	0.06	7,136.55	2,958.15	-8.88	2,958.14	0.00	0.00	0.00	0.00
10,800.00	90.70	0.06	7,135.33	3,058.14	-8.78	3,058.13	0.00	0.00	0.00	0.00
10,900.00	90.70	0.06	7,134.10	3,158.14	-8.67	3,158.12	0.00	0.00	0.00	0.00
11,000.00	90.70	0.06	7,132.87	3,258.13	-8.57	3,258.12	0.00	0.00	0.00	0.00
11,100.00	90.70	0.06	7,131.65	3,358.12	-8.46	3,358.11	0.00	0.00	0.00	0.00
11,200.00	90.70	0.06	7,130.42	3,458.11	-8.36	3,458.10	0.00	0.00	0.00	0.00
11,300.00	90.70	0.06	7,129.19	3,558.11	-8.25	3,558.09	0.00	0.00	0.00	0.00
11,400.00	90.70	0.06	7,127.96	3,658.10	-8.15	3,658.09	0.00	0.00	0.00	0.00
11,500.00	90.70	0.06	7,126.74	3,758.09	-8.04	3,758.08	0.00	0.00	0.00	0.00
11,600.00	90.70	0.06	7,125.51	3,858.08	-7.94	3,858.07	0.00	0.00	0.00	0.00
11,700.00	90.70	0.06	7,124.28	3,958.07	-7.83	3,958.06	0.00	0.00	0.00	0.00
11,800.00	90.70	0.06	7,123.06	4,058.07	-7.73	4,058.06	0.00	0.00	0.00	0.00
11,900.00	90.70	0.06	7,121.83	4,158.06	-7.63	4,158.05	0.00	0.00	0.00	0.00
11,967.52	90.70	0.06	7,121.00	4,225.57	-7.55	4,225.56	0.00	0.00	0.00	0.00

TD Well @ 11967.52ft - Total Depth (Toe) - BANE 27N2-9HZ_BHL

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,865.00	2,865.00	0.00	0.00	Begin Nudge @ 2865.00ft
3,565.00	3,558.06	-85.08	-1.49	End Nudge @ 3565.00ft
5,880.00	5,804.29	-645.05	-11.26	Begin Drop @ 5880.00ft
6,580.00	6,497.34	-730.13	-12.74	End Drop @ 6580.00ft
6,584.44	6,501.78	-730.13	-12.74	Top of 4.5" Liner @ 6584.44ft
6,684.44	6,601.78	-730.13	-12.74	KOP @ 6684.44ft
7,100.00	6,981.86	-585.92	-12.59	DLS = 10°/100'
7,591.47	7,174.70	-150.14	-12.14	End Build @ 7591.47ft
11,967.52	7,121.00	4,225.57	-7.55	TD Well @ 11967.52ft

Plan Report for BANE 27N2-9HZ - 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)	0.06	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	7,591.47	Permit Rev-1	MWD+IFR1
7,591.47	11,967.52	Permit Rev-1	MWD+IFR1

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,509.00	1,509.00	9 5/8"	9-5/8	13-1/2
7,591.47	7,174.70	7"	7	8-3/4

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
977.00	977.00	Base Fox Hills		0.00	
1,509.00	1,509.00	Surface Csg Setting Depth		0.00	
4,075.10	4,053.00	Parkman		0.00	
4,461.58	4,428.00	Sussex		0.00	
7,075.27	6,963.00	SSPG		0.00	
7,112.34	6,991.00	NBRR		0.00	
7,280.50	7,096.00	N470_B_CK		0.00	
7,468.24	7,163.00	N700_C_CK		0.00	
7,591.47	7,174.70	Landing Target (Heel)		0.00	
11,967.52	7,121.00	Total Depth (Toe)		0.00	

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
BANE 27N2-9HZ_BHL	7,121.00	4,225.58	-7.55	Point
1N-R65W-Sec. 9_Section lines	0.00	0.00	-120.88	Polygon
BANE 27N2-9HZ_SHL	0.00	0.00	0.00	Point

North Reference Sheet for Bane Pad - BANE 27N2-9HZ - Plan A

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' @ 4981.00usft (D Rig). Northing and Easting are relative to BANE 27N2-9HZ

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: 0.99961006

Grid Coordinates of Well: 14,548,919.97 usft N, 1,734,224.92 usft E

Geographical Coordinates of Well: 40° 03' 37.59" N, 104° 39' 53.05" W

Grid Convergence at Surface is: 0.22°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,967.52usft the Bottom Hole Displacement is 4,225.58usft in the Direction of 359.90° (True).

Magnetic Convergence at surface is: -8.12° (20 October 2014, , IGRF2010)

