

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 31-T1N-R67W

Sack 37N-6HZ

Plan A

Plan: Rev A0 Permit

Sperry Drilling Services

Proposal Report

27 December, 2013

Well Coordinates: 1,244,346.30 N, 3,159,537.51 E (40° 00' 09.76" N, 104° 55' 49.83" W)

Ground Level: 5,040.00 usft

Local Coordinate Origin:

Viewing Datum:

TVDs to System:

North Reference:

Unit System:

Geodetic Scale Factor Applied

Version: 5000.1 Build: 70

Centered on Well Sack 37N-6HZ

GL+RKB=17' @ 5057.00usft (Drilling Rig)

N

True

Dec-Deg - API - US Survey Feet - Custom

HALLIBURTON

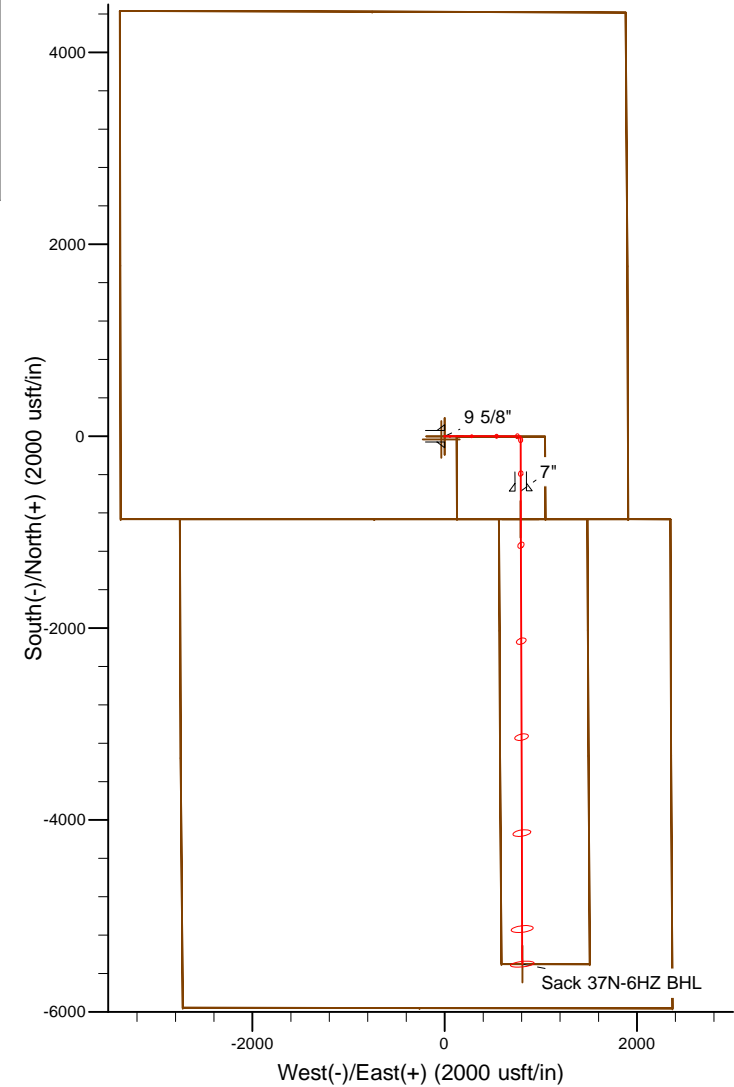
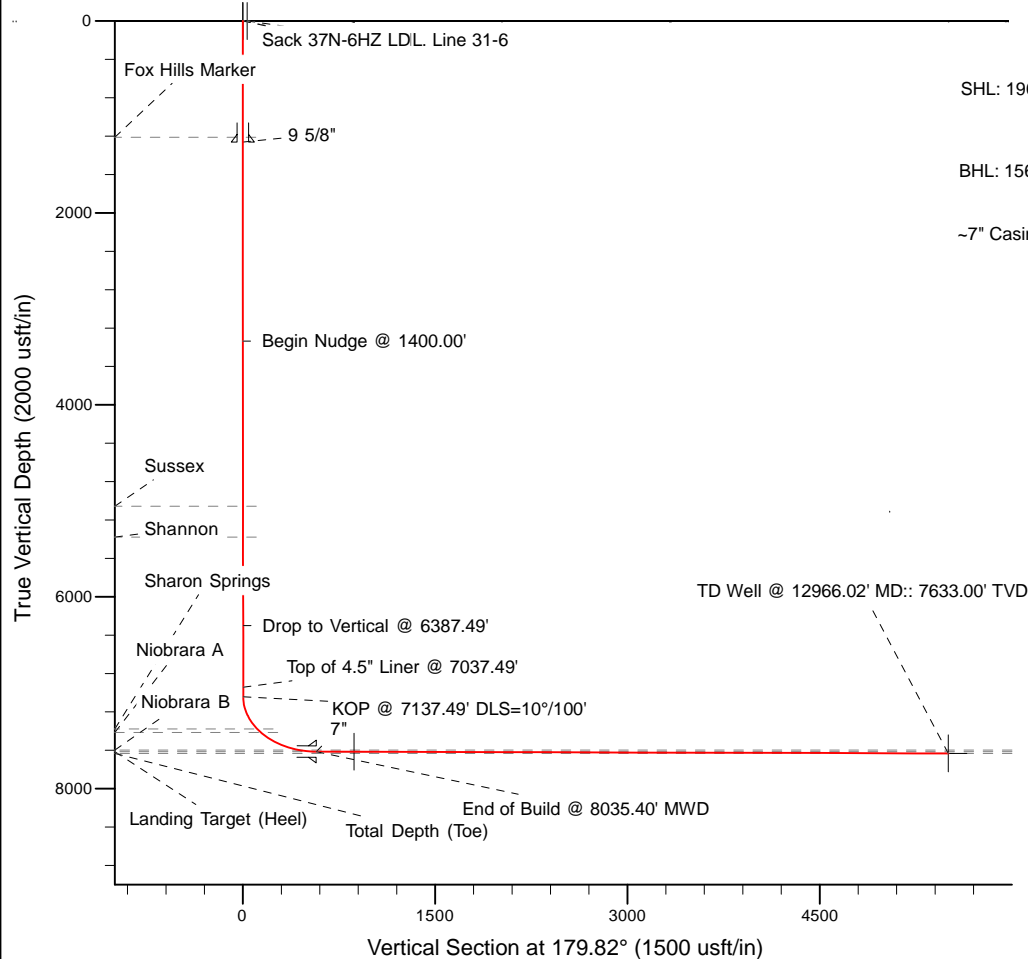
Project: Weld County, CO (NAD 83)
Site: Sec. 31-T1N-R67W
Well: Sack 37N-6HZ
Wellbore: Plan A
Design: Rev A0 Permit

Anadarko Petroleum Corp.

HALLIBURTON
Sperry Drilling

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Sack 37N-6HZ LD	0.00	0.00	0.00	1244346.30	3159537.51	40.002710	-104.930509
Sack 37N-6HZ Sec. Line 31-6	0.00	-32.41	-35.30	1244313.66	3159502.42	40.002621	-104.930635
Sack 37N-6HZ SHL	0.00	0.00	0.00	1244346.30	3159537.51	40.002710	-104.930509
Sack 37N-6HZ Heel	7615.00	-864.43	788.09	1243486.98	3160331.12	40.000337	-104.927696
Sack 37N-6HZ BHL	7633.00	-5501.43	808.14	1238850.36	3160380.94	39.987608	-104.927625

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3337.49	0.00	0.00	3337.49	0.00	0.00	0.00	0.00
4087.49	15.00	90.00	4078.95	0.00	97.62	2.00	0.31
6387.49	15.00	90.00	6300.58	0.00	692.90	0.00	2.18
7137.49	0.00	0.00	7042.04	0.00	790.51	2.00	2.48
8035.40	89.79	179.82	7615.00	-570.86	792.34	10.00	573.35
12966.02	89.79	179.82	7633.00	-5501.43	808.14	0.00	5503.94



WELL DETAILS: Sack 37N-6HZ

Ground Level: 5040.00
GL+RKB=17' @ 5057.00usft (Drilling Rig)

Plan: Rev A0 Permit (Sack 37N-6HZ/Plan A)

Created By: Pari Amanlou

Date: 12-23-2013

Plan Report for Sack 37N-6HZ - Rev A0 Permit

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
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
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
1,212.00	0.00	0.00	1,212.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Marker										
1,262.00	0.00	0.00	1,262.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"										
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
1,600.00	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
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,337.49	0.00	0.00	3,337.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 1400.00'										
3,400.00	1.25	90.00	3,400.00	0.00	0.68	0.00	2.00	2.00	0.00	90.00
3,500.00	3.25	90.00	3,499.91	0.00	4.61	0.01	2.00	2.00	0.00	0.00
3,600.00	5.25	90.00	3,599.63	0.00	12.02	0.04	2.00	2.00	0.00	0.00
3,700.00	7.25	90.00	3,699.03	0.00	22.91	0.07	2.00	2.00	0.00	0.00
3,800.00	9.25	90.00	3,797.99	0.00	37.25	0.12	2.00	2.00	0.00	0.00
3,900.00	11.25	90.00	3,896.39	0.00	55.05	0.17	2.00	2.00	0.00	0.00
4,000.00	13.25	90.00	3,994.11	0.00	76.27	0.24	2.00	2.00	0.00	0.00
4,087.49	15.00	90.00	4,078.95	0.00	97.62	0.31	2.00	2.00	0.00	0.00
4,100.00	15.00	90.00	4,091.04	0.00	100.85	0.32	0.00	0.00	0.00	0.00
4,200.00	15.00	90.00	4,187.63	0.00	126.74	0.40	0.00	0.00	0.00	0.00
4,300.00	15.00	90.00	4,284.22	0.00	152.62	0.48	0.00	0.00	0.00	0.00
4,400.00	15.00	90.00	4,380.81	0.00	178.50	0.56	0.00	0.00	0.00	0.00
4,500.00	15.00	90.00	4,477.41	0.00	204.38	0.64	0.00	0.00	0.00	0.00
4,600.00	15.00	90.00	4,574.00	0.00	230.26	0.72	0.00	0.00	0.00	0.00
4,700.00	15.00	90.00	4,670.59	0.00	256.14	0.80	0.00	0.00	0.00	0.00
4,800.00	15.00	90.00	4,767.18	0.00	282.03	0.89	0.00	0.00	0.00	0.00
4,900.00	15.00	90.00	4,863.78	0.00	307.91	0.97	0.00	0.00	0.00	0.00
5,000.00	15.00	90.00	4,960.37	0.00	333.79	1.05	0.00	0.00	0.00	0.00

Plan Report for Sack 37N-6HZ - Rev A0 Permit

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 (°)
5,100.00	15.00	90.00	5,056.96	0.00	359.67	1.13	0.00	0.00	0.00	0.00
5,100.04	15.00	90.00	5,057.00	0.00	359.68	1.13	0.00	0.00	0.00	0.00
Sussex										
5,200.00	15.00	90.00	5,153.55	0.00	385.55	1.21	0.00	0.00	0.00	0.00
5,300.00	15.00	90.00	5,250.15	0.00	411.44	1.29	0.00	0.00	0.00	0.00
5,400.00	15.00	90.00	5,346.74	0.00	437.32	1.37	0.00	0.00	0.00	0.00
5,432.36	15.00	90.00	5,378.00	0.00	445.69	1.40	0.00	0.00	0.00	0.00
Shannon										
5,500.00	15.00	90.00	5,443.33	0.00	463.20	1.46	0.00	0.00	0.00	0.00
5,600.00	15.00	90.00	5,539.92	0.00	489.08	1.54	0.00	0.00	0.00	0.00
5,700.00	15.00	90.00	5,636.52	0.00	514.96	1.62	0.00	0.00	0.00	0.00
5,800.00	15.00	90.00	5,733.11	0.00	540.85	1.70	0.00	0.00	0.00	0.00
5,900.00	15.00	90.00	5,829.70	0.00	566.73	1.78	0.00	0.00	0.00	0.00
6,000.00	15.00	90.00	5,926.29	0.00	592.61	1.86	0.00	0.00	0.00	0.00
6,100.00	15.00	90.00	6,022.89	0.00	618.49	1.94	0.00	0.00	0.00	0.00
6,200.00	15.00	90.00	6,119.48	0.00	644.37	2.02	0.00	0.00	0.00	0.00
6,300.00	15.00	90.00	6,216.07	0.00	670.26	2.11	0.00	0.00	0.00	0.00
6,387.49	15.00	90.00	6,300.58	0.00	692.90	2.18	0.00	0.00	0.00	0.00
Drop to Vertical @ 6387.49'										
6,400.00	14.75	90.00	6,312.67	0.00	696.11	2.19	2.00	-2.00	0.00	180.00
6,500.00	12.75	90.00	6,409.80	0.00	719.88	2.26	2.00	-2.00	0.00	180.00
6,600.00	10.75	90.00	6,507.70	0.00	740.24	2.33	2.00	-2.00	0.00	180.00
6,700.00	8.75	90.00	6,606.25	0.00	757.17	2.38	2.00	-2.00	0.00	180.00
6,800.00	6.75	90.00	6,705.33	0.00	770.66	2.42	2.00	-2.00	0.00	180.00
6,900.00	4.75	90.00	6,804.83	0.00	780.68	2.45	2.00	-2.00	0.00	180.00
7,000.00	2.75	90.00	6,904.61	0.00	787.22	2.47	2.00	-2.00	0.00	180.00
7,037.49	2.00	90.00	6,942.06	0.00	788.77	2.48	2.00	-2.00	0.00	180.00
Top of 4.5" Liner @ 7037.49'										
7,100.00	0.75	90.00	7,004.55	0.00	790.27	2.48	2.00	-2.00	0.00	180.00
7,137.49	0.00	0.00	7,042.04	0.00	790.51	2.48	2.00	-2.00	0.00	-180.00
KOP @ 7137.49' DLS=10°/100'										
7,150.00	1.25	179.82	7,054.55	-0.14	790.51	2.62	10.00	10.00	0.00	179.82
7,200.00	6.25	179.82	7,104.43	-3.41	790.53	5.89	10.00	10.00	0.00	0.00
7,250.00	11.25	179.82	7,153.83	-11.01	790.55	13.49	10.00	10.00	0.00	0.00
7,300.00	16.25	179.82	7,202.38	-22.89	790.59	25.38	10.00	10.00	0.00	0.00
7,350.00	21.25	179.82	7,249.71	-38.96	790.64	41.44	10.00	10.00	0.00	0.00
7,400.00	26.25	179.82	7,295.47	-59.09	790.70	61.58	10.00	10.00	0.00	0.00
7,450.00	31.25	179.82	7,339.29	-83.13	790.78	85.62	10.00	10.00	0.00	0.00
7,496.48	35.90	179.82	7,378.00	-108.83	790.86	111.31	10.00	10.00	0.00	0.00
Sharon Springs										
7,500.00	36.25	179.82	7,380.85	-110.90	790.87	113.39	10.00	10.00	0.00	0.00
7,542.29	40.48	179.82	7,414.00	-137.15	790.95	139.63	10.00	10.00	0.00	0.00
Niobrara A										
7,550.00	41.25	179.82	7,419.83	-142.19	790.97	144.68	10.00	10.00	0.00	0.00
7,600.00	46.25	179.82	7,455.93	-176.76	791.08	179.24	10.00	10.00	0.00	0.00
7,650.00	51.25	179.82	7,488.89	-214.34	791.20	216.82	10.00	10.00	0.00	0.00
7,700.00	56.25	179.82	7,518.45	-254.65	791.33	257.13	10.00	10.00	0.00	0.00
7,750.00	61.25	179.82	7,544.38	-297.38	791.47	299.86	10.00	10.00	0.00	0.00
7,800.00	66.25	179.82	7,566.48	-342.21	791.61	344.69	10.00	10.00	0.00	0.00
7,850.00	71.25	179.82	7,584.60	-388.79	791.76	391.28	10.00	10.00	0.00	0.00
7,897.57	76.01	179.82	7,598.00	-434.42	791.91	436.90	10.00	10.00	0.00	0.00
Niobrara B										
7,900.00	76.25	179.82	7,598.58	-436.78	791.91	439.27	10.00	10.00	0.00	0.00
7,950.00	81.25	179.82	7,608.33	-485.80	792.07	488.29	10.00	10.00	0.00	0.00
8,000.00	86.25	179.82	7,613.77	-535.49	792.23	537.98	10.00	10.00	0.00	0.00
8,035.40	89.79	179.82	7,615.00	-570.86	792.34	573.35	10.00	10.00	0.00	0.00
End of Build @ 8035.40' MWD - Landing Target (Heel) - 7"										
8,100.00	89.79	179.82	7,615.23	-635.46	792.55	637.95	0.00	0.00	0.00	0.00
8,200.00	89.79	179.82	7,615.60	-735.46	792.87	737.95	0.00	0.00	0.00	0.00

Plan Report for Sack 37N-6HZ - Rev A0 Permit

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	89.79	179.82	7,615.96	-835.46	793.19	837.95	0.00	0.00	0.00	0.00
8,400.00	89.79	179.82	7,616.33	-935.46	793.51	937.95	0.00	0.00	0.00	0.00
8,500.00	89.79	179.82	7,616.69	-1,035.46	793.83	1,037.95	0.00	0.00	0.00	0.00
8,600.00	89.79	179.82	7,617.06	-1,135.46	794.15	1,137.95	0.00	0.00	0.00	0.00
8,700.00	89.79	179.82	7,617.42	-1,235.46	794.47	1,237.95	0.00	0.00	0.00	0.00
8,800.00	89.79	179.82	7,617.79	-1,335.46	794.79	1,337.95	0.00	0.00	0.00	0.00
8,900.00	89.79	179.82	7,618.15	-1,435.45	795.11	1,437.95	0.00	0.00	0.00	0.00
9,000.00	89.79	179.82	7,618.52	-1,535.45	795.43	1,537.94	0.00	0.00	0.00	0.00
9,100.00	89.79	179.82	7,618.88	-1,635.45	795.75	1,637.94	0.00	0.00	0.00	0.00
9,200.00	89.79	179.82	7,619.25	-1,735.45	796.07	1,737.94	0.00	0.00	0.00	0.00
9,300.00	89.79	179.82	7,619.61	-1,835.45	796.39	1,837.94	0.00	0.00	0.00	0.00
9,400.00	89.79	179.82	7,619.98	-1,935.45	796.71	1,937.94	0.00	0.00	0.00	0.00
9,500.00	89.79	179.82	7,620.34	-2,035.45	797.03	2,037.94	0.00	0.00	0.00	0.00
9,600.00	89.79	179.82	7,620.71	-2,135.45	797.35	2,137.94	0.00	0.00	0.00	0.00
9,700.00	89.79	179.82	7,621.08	-2,235.45	797.68	2,237.94	0.00	0.00	0.00	0.00
9,800.00	89.79	179.82	7,621.44	-2,335.44	798.00	2,337.94	0.00	0.00	0.00	0.00
9,900.00	89.79	179.82	7,621.81	-2,435.44	798.32	2,437.94	0.00	0.00	0.00	0.00
10,000.00	89.79	179.82	7,622.17	-2,535.44	798.64	2,537.94	0.00	0.00	0.00	0.00
10,100.00	89.79	179.82	7,622.54	-2,635.44	798.96	2,637.94	0.00	0.00	0.00	0.00
10,200.00	89.79	179.82	7,622.90	-2,735.44	799.28	2,737.94	0.00	0.00	0.00	0.00
10,300.00	89.79	179.82	7,623.27	-2,835.44	799.60	2,837.94	0.00	0.00	0.00	0.00
10,400.00	89.79	179.82	7,623.63	-2,935.44	799.92	2,937.94	0.00	0.00	0.00	0.00
10,500.00	89.79	179.82	7,624.00	-3,035.44	800.24	3,037.93	0.00	0.00	0.00	0.00
10,600.00	89.79	179.82	7,624.36	-3,135.43	800.56	3,137.93	0.00	0.00	0.00	0.00
10,700.00	89.79	179.82	7,624.73	-3,235.43	800.88	3,237.93	0.00	0.00	0.00	0.00
10,800.00	89.79	179.82	7,625.09	-3,335.43	801.20	3,337.93	0.00	0.00	0.00	0.00
10,900.00	89.79	179.82	7,625.46	-3,435.43	801.52	3,437.93	0.00	0.00	0.00	0.00
11,000.00	89.79	179.82	7,625.82	-3,535.43	801.84	3,537.93	0.00	0.00	0.00	0.00
11,100.00	89.79	179.82	7,626.19	-3,635.43	802.16	3,637.93	0.00	0.00	0.00	0.00
11,200.00	89.79	179.82	7,626.55	-3,735.43	802.48	3,737.93	0.00	0.00	0.00	0.00
11,300.00	89.79	179.82	7,626.92	-3,835.43	802.80	3,837.93	0.00	0.00	0.00	0.00
11,400.00	89.79	179.82	7,627.28	-3,935.43	803.12	3,937.93	0.00	0.00	0.00	0.00
11,500.00	89.79	179.82	7,627.65	-4,035.42	803.44	4,037.93	0.00	0.00	0.00	0.00
11,600.00	89.79	179.82	7,628.01	-4,135.42	803.76	4,137.93	0.00	0.00	0.00	0.00
11,700.00	89.79	179.82	7,628.38	-4,235.42	804.08	4,237.93	0.00	0.00	0.00	0.00
11,800.00	89.79	179.82	7,628.74	-4,335.42	804.40	4,337.93	0.00	0.00	0.00	0.00
11,900.00	89.79	179.82	7,629.11	-4,435.42	804.72	4,437.93	0.00	0.00	0.00	0.00
12,000.00	89.79	179.82	7,629.47	-4,535.42	805.04	4,537.92	0.00	0.00	0.00	0.00
12,100.00	89.79	179.82	7,629.84	-4,635.42	805.36	4,637.92	0.00	0.00	0.00	0.00
12,200.00	89.79	179.82	7,630.20	-4,735.42	805.68	4,737.92	0.00	0.00	0.00	0.00
12,300.00	89.79	179.82	7,630.57	-4,835.41	806.00	4,837.92	0.00	0.00	0.00	0.00
12,400.00	89.79	179.82	7,630.93	-4,935.41	806.32	4,937.92	0.00	0.00	0.00	0.00
12,500.00	89.79	179.82	7,631.30	-5,035.41	806.64	5,037.92	0.00	0.00	0.00	0.00
12,600.00	89.79	179.82	7,631.66	-5,135.41	806.96	5,137.92	0.00	0.00	0.00	0.00
12,700.00	89.79	179.82	7,632.03	-5,235.41	807.28	5,237.92	0.00	0.00	0.00	0.00
12,800.00	89.79	179.82	7,632.39	-5,335.41	807.61	5,337.92	0.00	0.00	0.00	0.00
12,900.00	89.79	179.82	7,632.76	-5,435.41	807.93	5,437.92	0.00	0.00	0.00	0.00
12,966.02	89.79	179.82	7,633.00	-5,501.43	808.14	5,503.94	0.00	0.00	0.00	0.00

TD Well @ 12966.02' MD:: 7633.00' TVD - Total Depth (Toe)

Plan Report for Sack 37N-6HZ - Rev A0 Permit

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
3,337.49	3,337.49	0.00	0.00	Begin Nudge @ 1400.00'
6,387.49	6,300.58	0.00	692.90	Drop to Vertical @ 6387.49'
7,037.49	6,942.06	0.00	788.77	Top of 4.5" Liner @ 7037.49'
7,137.49	7,042.04	0.00	790.51	KOP @ 7137.49' DLS=10"/100'
8,035.40	7,615.00	-570.86	792.34	End of Build @ 8035.40' MWD
12,966.02	7,633.00	-5,501.43	808.14	TD Well @ 12966.02' MD:: 7633.00' TVD

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/_S (usft)	+E/-W (usft)	
User	No Target (Freehand)	179.82	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	1,262.00	Rev A0 Permit	MWD
1,262.00	8,035.40	Rev A0 Permit	MWD
8,035.40	12,966.02	Rev A0 Permit	MWD

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,262.00	1,262.00	9 5/8"	9-5/8	12-3/4
8,035.40	7,615.00	7"	7	8-3/4

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,212.00	1,212.00	Fox Hills Marker		0.00	
5,100.04	5,057.00	Sussex		0.00	
5,432.36	5,378.00	Shannon		0.00	
7,496.48	7,378.00	Sharon Springs		0.00	
7,542.29	7,414.00	Niobrara A		0.00	
7,897.57	7,598.00	Niobrara B		0.00	
8,035.40	7,615.00	Landing Target (Heel)		0.00	
12,966.02	7,633.00	Total Depth (Toe)		0.00	

Plan Report for Sack 37N-6HZ - Rev A0 Permit

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
Sack 37N-6HZ LD	0.00	0.00	0.00	Polygon
Sack 37N-6HZ SHL	0.00	0.00	0.00	Point
Sack 37N-6HZ Sec. Line 31-6	0.00	-32.41	-35.30	Polygon
Sack 37N-6HZ Heel	7,615.00	-864.43	788.09	Point
Sack 37N-6HZ BHL	7,633.00	-5,501.43	808.14	Point

Directional Difficulty Index

Average Dogleg over Survey:	0.92 °/100usft	Maximum Dogleg over Survey:	10.00 °/100usft at 8,035.40 usft
Net Tortousity applicable to Plans:	0.92 °/100usft	Directional Difficulty Index:	6.266

Audit Info

North Reference Sheet for Sec. 31-T1N-R67W - Sack 37N-6HZ - 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 GL+RKB=17' @ 5057.00usft (Drilling Rig). Northing and Easting are relative to Sack 37N-6HZ
 Coordinate System is US State Plane 1983, Colorado Northern Zone using datum North American Datum 1983, ellipsoid GRS 1980
 Projection method is Lambert Conformal Conic (2 parallel)
 Central Meridian is -105.50°, Longitude Origin:0.000000°, Latitude Origin:40.783333°
 False Easting: 3,000,000.00usft, False Northing: 1,000,000.00usft, Scale Reduction: 0.99996617

Grid Coordinates of Well: 1,244,346.30 usft N, 3,159,537.51 usft E
 Geographical Coordinates of Well: 40° 00' 09.76" N, 104° 55' 49.83" W
 Grid Convergence at Surface is: 0.37°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,966.02usft
 the Bottom Hole Displacement is 5,560.47usft in the Direction of 171.64° (True).
 Magnetic Convergence at surface is: -8.25° (19 December 2013, , BGGM2013)

