

# Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 26-T3N-R68W

DOUTHIT 41C-27HZ

## Plan A

Plan: Rev A0 Permit

## Sperry Drilling Services

## Proposal Report

08 April, 2014

Well Coordinates: 1,316,247.86 N, 3,150,327.47 E (40° 12' 00.88" N, 104° 57' 42.58" W)

Ground Level: 4,942.00 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 DOUTHIT 41C-27HZ

RKB = 17' @ 4959.00usft (Drilling Rig)

N

True

API - US Survey Feet - Custom

**HALLIBURTON**

Project: Weld County, CO (NAD 83)  
Site: Sec. 26-T3N-R68W  
Well: DOUTHIT 41C-27HZ  
Wellbore: Plan A  
Design: Rev A0 Permit

# Anadarko Petroleum Corp.

**HALLIBURTON**  
Sperry Drilling

## SECTION DETAILS

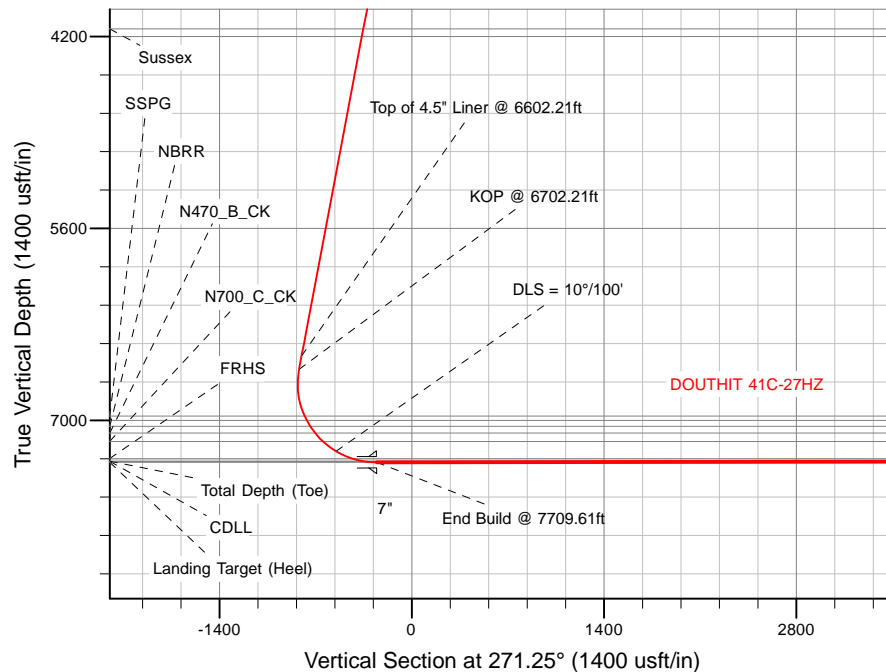
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00	
3	2533.31	10.67	88.90	2530.24	0.95	49.49	2.00	88.90	-49.46	
4	6702.21	10.67	88.90	6627.11	15.74	820.96	0.00	0.00	-820.42	
5	7709.61	90.08	271.25	7306.00	33.32	257.30	10.00	-177.61	-256.51	DOUTHIT 41C-27HZ_CP
6	13222.93	90.08	271.25	7298.00	153.88	-5254.70	0.00	0.00	5256.80	DOUTHIT 41C-27HZ_BHL

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Polygon
DOUTHIT 41C-27HZ_SEC	0.00	0.00	0.00	40° 12' 0.882 N	104° 57' 42.577 W	Polygon
DOUTHIT 41C-27HZ_SHL	0.00	0.00	0.00	40° 12' 0.882 N	104° 57' 42.577 W	Polygon
DOUTHIT 41C-27HZ_BHL	7298.00	153.88	-5254.70	40° 12' 2.397 N	104° 58' 50.297 W	Point
DOUTHIT 41C-27HZ_CP	7306.00	33.32	257.30	40° 12' 1.211 N	104° 57' 39.261 W	Point

West(-)/East(+) (1400 usft/in)

-4200 -3500 -2800 -2100 -1400 -700 0 700 1400



1315' FNL  
300' FEL

DOUTHIT 41C-27HZ

DOUTHIT 17-26 150'

1445' FNL  
50' FEL

WM. JOSEPH EDWARDS G.U. 2 150'

GLENS DOUTHIT 1

WM. JOSEPH EDWARDS G.U. 1

South(-)/North(+) (1400 usft/in)

1400  
700  
0  
-700  
-1400  
-2100  
-2800

TVD

MD

6528.83 6602.21 Top of 4.5" Liner @ 6602.21ft  
6627.10 6702.21 KOP @ 6702.21ft

WELL DETAILS: DOUTHIT 41C-27HZ

Ground Level: 4942.00

RKB = 17" @ 4959.00usft (Drilling Rig)

Plan: Rev A0 Permit (DOUTHIT 41C-27HZ/Plan A)

Created By: Clint Eshelman Date: 4/8/2014  
Reviewed: \_\_\_\_\_ Date: \_\_\_\_\_

**Plan Report for DOUTHIT 41C-27HZ - 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
<b>DOUTHIT 41C-27HZ_SEC - DOUTHIT 41C-27HZ_SHL</b>										
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
1,076.00	0.00	0.00	1,076.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Fox Hills Base</b>										
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,126.00	0.00	0.00	1,126.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>9 5/8"</b>										
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
1,600.00	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
<b>Begin Nudge @ 2000.00ft</b>										
2,100.00	2.00	88.90	2,099.98	0.03	1.74	-1.74	2.00	2.00	0.00	88.90
2,200.00	4.00	88.90	2,199.84	0.13	6.98	-6.97	2.00	2.00	0.00	0.00
2,300.00	6.00	88.90	2,299.45	0.30	15.69	-15.68	2.00	2.00	0.00	0.00
2,400.00	8.00	88.90	2,398.70	0.53	27.87	-27.86	2.00	2.00	0.00	0.00
2,500.00	10.00	88.90	2,497.47	0.83	43.51	-43.49	2.00	2.00	0.00	0.00
2,533.31	10.67	88.90	2,530.23	0.95	49.49	-49.46	2.00	2.00	0.00	0.00
<b>End Nudge @ 2533.31ft</b>										
2,600.00	10.67	88.90	2,595.77	1.19	61.83	-61.79	0.00	0.00	0.00	0.00
2,700.00	10.67	88.90	2,694.04	1.54	80.33	-80.28	0.00	0.00	0.00	0.00
2,800.00	10.67	88.90	2,792.32	1.89	98.84	-98.78	0.00	0.00	0.00	0.00
2,900.00	10.67	88.90	2,890.59	2.25	117.35	-117.27	0.00	0.00	0.00	0.00
3,000.00	10.67	88.90	2,988.86	2.60	135.85	-135.76	0.00	0.00	0.00	0.00
3,100.00	10.67	88.90	3,087.13	2.96	154.36	-154.26	0.00	0.00	0.00	0.00
3,200.00	10.67	88.90	3,185.41	3.31	172.86	-172.75	0.00	0.00	0.00	0.00
3,300.00	10.67	88.90	3,283.68	3.67	191.37	-191.24	0.00	0.00	0.00	0.00
3,400.00	10.67	88.90	3,381.95	4.02	209.87	-209.73	0.00	0.00	0.00	0.00
3,500.00	10.67	88.90	3,480.22	4.38	228.38	-228.23	0.00	0.00	0.00	0.00
3,600.00	10.67	88.90	3,578.49	4.73	246.88	-246.72	0.00	0.00	0.00	0.00
3,700.00	10.67	88.90	3,676.77	5.09	265.39	-265.21	0.00	0.00	0.00	0.00
3,726.69	10.67	88.90	3,703.00	5.18	270.33	-270.15	0.00	0.00	0.00	0.00
<b>Parkman</b>										
3,800.00	10.67	88.90	3,775.04	5.44	283.89	-283.71	0.00	0.00	0.00	0.00
3,900.00	10.67	88.90	3,873.31	5.80	302.40	-302.20	0.00	0.00	0.00	0.00
4,000.00	10.67	88.90	3,971.58	6.15	320.90	-320.69	0.00	0.00	0.00	0.00
4,100.00	10.67	88.90	4,069.86	6.51	339.41	-339.19	0.00	0.00	0.00	0.00
4,175.45	10.67	88.90	4,144.00	6.77	353.37	-353.14	0.00	0.00	0.00	0.00
<b>Sussex</b>										
4,200.00	10.67	88.90	4,168.13	6.86	357.92	-357.68	0.00	0.00	0.00	0.00
4,300.00	10.67	88.90	4,266.40	7.22	376.42	-376.17	0.00	0.00	0.00	0.00
4,400.00	10.67	88.90	4,364.67	7.57	394.93	-394.67	0.00	0.00	0.00	0.00

**Plan Report for DOUTHIT 41C-27HZ - 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 (°)
4,500.00	10.67	88.90	4,462.94	7.93	413.43	-413.16	0.00	0.00	0.00	0.00
4,600.00	10.67	88.90	4,561.22	8.28	431.94	-431.65	0.00	0.00	0.00	0.00
4,700.00	10.67	88.90	4,659.49	8.63	450.44	-450.15	0.00	0.00	0.00	0.00
4,800.00	10.67	88.90	4,757.76	8.99	468.95	-468.64	0.00	0.00	0.00	0.00
4,900.00	10.67	88.90	4,856.03	9.34	487.45	-487.13	0.00	0.00	0.00	0.00
5,000.00	10.67	88.90	4,954.31	9.70	505.96	-505.63	0.00	0.00	0.00	0.00
5,100.00	10.67	88.90	5,052.58	10.05	524.46	-524.12	0.00	0.00	0.00	0.00
5,200.00	10.67	88.90	5,150.85	10.41	542.97	-542.61	0.00	0.00	0.00	0.00
5,300.00	10.67	88.90	5,249.12	10.76	561.47	-561.11	0.00	0.00	0.00	0.00
5,400.00	10.67	88.90	5,347.39	11.12	579.98	-579.60	0.00	0.00	0.00	0.00
5,500.00	10.67	88.90	5,445.67	11.47	598.48	-598.09	0.00	0.00	0.00	0.00
5,600.00	10.67	88.90	5,543.94	11.83	616.99	-616.59	0.00	0.00	0.00	0.00
5,700.00	10.67	88.90	5,642.21	12.18	635.50	-635.08	0.00	0.00	0.00	0.00
5,800.00	10.67	88.90	5,740.48	12.54	654.00	-653.57	0.00	0.00	0.00	0.00
5,900.00	10.67	88.90	5,838.76	12.89	672.51	-672.07	0.00	0.00	0.00	0.00
6,000.00	10.67	88.90	5,937.03	13.25	691.01	-690.56	0.00	0.00	0.00	0.00
6,100.00	10.67	88.90	6,035.30	13.60	709.52	-709.05	0.00	0.00	0.00	0.00
6,200.00	10.67	88.90	6,133.57	13.96	728.02	-727.54	0.00	0.00	0.00	0.00
6,300.00	10.67	88.90	6,231.84	14.31	746.53	-746.04	0.00	0.00	0.00	0.00
6,400.00	10.67	88.90	6,330.12	14.66	765.03	-764.53	0.00	0.00	0.00	0.00
6,500.00	10.67	88.90	6,428.39	15.02	783.54	-783.02	0.00	0.00	0.00	0.00
6,600.00	10.67	88.90	6,526.66	15.37	802.04	-801.52	0.00	0.00	0.00	0.00
6,602.21	10.67	88.90	6,528.83	15.38	802.45	-801.93	0.00	0.00	0.00	0.00
<b>Top of 4.5" Liner @ 6602.21ft</b>										
6,700.00	10.67	88.90	6,624.93	15.73	820.55	-820.01	0.00	0.00	0.00	0.00
6,702.21	10.67	88.90	6,627.10	15.74	820.96	-820.42	0.00	0.00	0.00	0.00
<b>KOP @ 6702.21ft</b>										
6,800.00	0.98	64.50	6,724.28	16.27	830.79	-830.24	10.00	-9.90	-24.96	-177.61
6,900.00	9.13	274.01	6,823.89	17.20	823.63	-823.06	10.00	8.15	-150.49	-153.24
7,000.00	19.13	272.53	6,920.74	18.48	799.28	-798.69	10.00	9.99	-1.48	-2.79
7,051.96	24.32	272.23	6,969.00	19.27	780.07	-779.47	10.00	10.00	-0.57	-1.35
<b>SSPG</b>										
7,100.00	29.12	272.05	7,011.89	20.08	758.49	-757.87	10.00	10.00	-0.39	-1.08
7,136.27	32.75	271.94	7,043.00	20.73	739.86	-739.23	10.00	10.00	-0.29	-0.91
<b>NBRR</b>										
7,196.70	38.79	271.80	7,092.00	21.88	704.57	-703.93	10.00	10.00	-0.23	-0.82
<b>N470_B_CK</b>										
7,200.00	39.12	271.80	7,094.57	21.94	702.49	-701.85	10.00	10.00	-0.20	-0.71
7,280.13	47.14	271.66	7,153.00	23.59	647.78	-647.11	10.00	10.00	-0.17	-0.70
<b>N700_C_CK</b>										
7,300.00	49.12	271.64	7,166.26	24.02	632.99	-632.32	10.00	10.00	-0.14	-0.60
7,400.00	59.12	271.52	7,224.79	26.24	552.10	-551.40	10.00	10.00	-0.12	-0.59
<b>DLS = 10°/100'</b>										
7,500.00	69.12	271.42	7,268.38	28.54	462.27	-461.54	10.00	10.00	-0.10	-0.52
7,535.51	72.67	271.39	7,280.00	29.37	428.73	-427.99	10.00	10.00	-0.09	-0.47
<b>FRHS</b>										
7,600.00	79.12	271.34	7,295.71	30.86	366.23	-365.47	10.00	10.00	-0.08	-0.46
7,619.12	81.03	271.32	7,299.00	31.29	347.40	-346.64	10.00	10.00	-0.08	-0.45
<b>CDLL</b>										
7,700.00	89.12	271.26	7,305.93	33.11	266.91	-266.13	10.00	10.00	-0.08	-0.45
7,709.61	90.08	271.25	7,306.00	33.32	257.30	-256.51	10.00	10.00	-0.08	-0.44
<b>End Build @ 7709.61ft - Landing Target (Heel) - 7" - DOUTHIT 41C-27HZ_CP</b>										
7,800.00	90.08	271.25	7,305.87	35.30	166.94	-166.13	0.00	0.00	0.00	-0.44
7,900.00	90.08	271.25	7,305.72	37.48	66.96	-66.13	0.00	0.00	0.00	0.00
8,000.00	90.08	271.25	7,305.58	39.67	-33.02	33.87	0.00	0.00	0.00	0.00
8,100.00	90.08	271.25	7,305.43	41.86	-132.99	133.87	0.00	0.00	0.00	0.00
8,200.00	90.08	271.25	7,305.29	44.04	-232.97	233.87	0.00	0.00	0.00	0.00
8,300.00	90.08	271.25	7,305.14	46.23	-332.94	333.87	0.00	0.00	0.00	0.00
8,400.00	90.08	271.25	7,305.00	48.42	-432.92	433.87	0.00	0.00	0.00	0.00

**Plan Report for DOUTHIT 41C-27HZ - 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 (°)
8,500.00	90.08	271.25	7,304.85	50.60	-532.90	533.87	0.00	0.00	0.00	0.00
8,600.00	90.08	271.25	7,304.71	52.79	-632.87	633.87	0.00	0.00	0.00	0.00
8,700.00	90.08	271.25	7,304.56	54.98	-732.85	733.87	0.00	0.00	0.00	0.00
8,800.00	90.08	271.25	7,304.42	57.16	-832.82	833.87	0.00	0.00	0.00	0.00
8,900.00	90.08	271.25	7,304.27	59.35	-932.80	933.87	0.00	0.00	0.00	0.00
9,000.00	90.08	271.25	7,304.13	61.54	-1,032.78	1,033.87	0.00	0.00	0.00	0.00
9,100.00	90.08	271.25	7,303.98	63.72	-1,132.75	1,133.87	0.00	0.00	0.00	0.00
9,200.00	90.08	271.25	7,303.84	65.91	-1,232.73	1,233.87	0.00	0.00	0.00	0.00
9,300.00	90.08	271.25	7,303.69	68.10	-1,332.70	1,333.87	0.00	0.00	0.00	0.00
9,400.00	90.08	271.25	7,303.55	70.28	-1,432.68	1,433.87	0.00	0.00	0.00	0.00
9,500.00	90.08	271.25	7,303.40	72.47	-1,532.66	1,533.87	0.00	0.00	0.00	0.00
9,600.00	90.08	271.25	7,303.26	74.66	-1,632.63	1,633.87	0.00	0.00	0.00	0.00
9,700.00	90.08	271.25	7,303.11	76.84	-1,732.61	1,733.87	0.00	0.00	0.00	0.00
9,800.00	90.08	271.25	7,302.97	79.03	-1,832.58	1,833.87	0.00	0.00	0.00	0.00
9,900.00	90.08	271.25	7,302.82	81.22	-1,932.56	1,933.87	0.00	0.00	0.00	0.00
10,000.00	90.08	271.25	7,302.68	83.40	-2,032.54	2,033.87	0.00	0.00	0.00	0.00
10,100.00	90.08	271.25	7,302.53	85.59	-2,132.51	2,133.87	0.00	0.00	0.00	0.00
10,200.00	90.08	271.25	7,302.39	87.78	-2,232.49	2,233.87	0.00	0.00	0.00	0.00
10,300.00	90.08	271.25	7,302.24	89.96	-2,332.46	2,333.87	0.00	0.00	0.00	0.00
10,400.00	90.08	271.25	7,302.10	92.15	-2,432.44	2,433.87	0.00	0.00	0.00	0.00
10,500.00	90.08	271.25	7,301.95	94.34	-2,532.42	2,533.87	0.00	0.00	0.00	0.00
10,600.00	90.08	271.25	7,301.81	96.52	-2,632.39	2,633.87	0.00	0.00	0.00	0.00
10,700.00	90.08	271.25	7,301.66	98.71	-2,732.37	2,733.87	0.00	0.00	0.00	0.00
10,800.00	90.08	271.25	7,301.52	100.90	-2,832.34	2,833.87	0.00	0.00	0.00	0.00
10,900.00	90.08	271.25	7,301.37	103.08	-2,932.32	2,933.87	0.00	0.00	0.00	0.00
11,000.00	90.08	271.25	7,301.23	105.27	-3,032.30	3,033.87	0.00	0.00	0.00	0.00
11,100.00	90.08	271.25	7,301.08	107.46	-3,132.27	3,133.87	0.00	0.00	0.00	0.00
11,200.00	90.08	271.25	7,300.94	109.64	-3,232.25	3,233.87	0.00	0.00	0.00	0.00
11,300.00	90.08	271.25	7,300.79	111.83	-3,332.22	3,333.87	0.00	0.00	0.00	0.00
11,400.00	90.08	271.25	7,300.65	114.02	-3,432.20	3,433.87	0.00	0.00	0.00	0.00
11,500.00	90.08	271.25	7,300.50	116.20	-3,532.17	3,533.87	0.00	0.00	0.00	0.00
11,600.00	90.08	271.25	7,300.35	118.39	-3,632.15	3,633.87	0.00	0.00	0.00	0.00
11,700.00	90.08	271.25	7,300.21	120.58	-3,732.13	3,733.87	0.00	0.00	0.00	0.00
11,800.00	90.08	271.25	7,300.06	122.76	-3,832.10	3,833.87	0.00	0.00	0.00	0.00
11,900.00	90.08	271.25	7,299.92	124.95	-3,932.08	3,933.87	0.00	0.00	0.00	0.00
12,000.00	90.08	271.25	7,299.77	127.14	-4,032.05	4,033.87	0.00	0.00	0.00	0.00
12,100.00	90.08	271.25	7,299.63	129.32	-4,132.03	4,133.87	0.00	0.00	0.00	0.00
12,200.00	90.08	271.25	7,299.48	131.51	-4,232.01	4,233.87	0.00	0.00	0.00	0.00
12,300.00	90.08	271.25	7,299.34	133.70	-4,331.98	4,333.87	0.00	0.00	0.00	0.00
12,400.00	90.08	271.25	7,299.19	135.88	-4,431.96	4,433.87	0.00	0.00	0.00	0.00
12,500.00	90.08	271.25	7,299.05	138.07	-4,531.93	4,533.87	0.00	0.00	0.00	0.00
12,600.00	90.08	271.25	7,298.90	140.26	-4,631.91	4,633.87	0.00	0.00	0.00	0.00
12,700.00	90.08	271.25	7,298.76	142.44	-4,731.89	4,733.87	0.00	0.00	0.00	0.00
12,800.00	90.08	271.25	7,298.61	144.63	-4,831.86	4,833.87	0.00	0.00	0.00	0.00
12,900.00	90.08	271.25	7,298.47	146.82	-4,931.84	4,933.87	0.00	0.00	0.00	0.00
13,000.00	90.08	271.25	7,298.32	149.01	-5,031.81	5,033.87	0.00	0.00	0.00	0.00
13,100.00	90.08	271.25	7,298.18	151.19	-5,131.79	5,133.87	0.00	0.00	0.00	0.00
13,200.00	90.08	271.25	7,298.03	153.38	-5,231.77	5,233.87	0.00	0.00	0.00	0.00
13,222.93	90.08	271.25	7,298.00	153.88	-5,254.69	5,256.80	0.00	0.00	0.00	0.00

TD Well @ 13222.93ft - Total Depth (Toe) - DOUTHIT 41C-27HZ\_BHL

**Plan Report for DOUTHIT 41C-27HZ - Rev A0 Permit****Plan Annotations**

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,000.00	2,000.00	0.00	0.00	Begin Nudge @ 2000.00ft
2,533.31	2,530.23	0.95	49.49	End Nudge @ 2533.31ft
6,602.21	6,528.83	15.38	802.45	Top of 4.5" Liner @ 6602.21ft
6,702.21	6,627.10	15.74	820.96	KOP @ 6702.21ft
7,400.00	7,224.79	26.24	552.10	DLS = 10°/100'
7,709.61	7,306.00	33.32	257.30	End Build @ 7709.61ft
13,222.93	7,298.00	153.88	-5,254.69	TD Well @ 13222.93ft

**Vertical Section Information**

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/_S (usft)	+E/-W (usft)	
User	No Target (Freehand)	271.25	Slot	0.00	0.00	0.00

**Survey tool program**

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	7,709.61	Rev A0 Permit	MWD
7,709.61	13,222.93	Rev A0 Permit	MWD

**Casing Details**

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,126.00	1,126.00	9 5/8"	9-5/8	13-1/2
7,709.61	7,306.00	7"	7	8-3/4

**Formation Details**

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,076.00	1,076.00	Fox Hills Base		0.00	
3,726.69	3,703.00	Parkman		0.00	
4,175.45	4,144.00	Sussex		0.00	
7,051.96	6,969.00	SSPG		0.00	
7,136.27	7,043.00	NBRR		0.00	
7,196.70	7,092.00	N470_B_CK		0.00	
7,280.13	7,153.00	N700_C_CK		0.00	
7,535.51	7,280.00	FRHS		0.00	
7,619.12	7,299.00	CDLL		0.00	
7,709.61	7,306.00	Landing Target (Heel)		0.00	
13,222.93	7,298.00	Total Depth (Toe)		0.00	

## Plan Report for DOUTHIT 41C-27HZ - Rev A0 Permit

### *Targets associated with this wellbore*

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
DOUTHIT 41C-27HZ_SEC	0.00	0.00	0.00	Polygon
DOUTHIT 41C-27HZ_SHL	0.00	0.00	0.00	Point
DOUTHIT 41C-27HZ_BHL	7,298.00	153.88	-5,254.70	Point
DOUTHIT 41C-27HZ_CP	7,306.00	33.32	257.30	Point

### Directional Difficulty Index

Average Dogleg over Survey:	0.00 °/100usft	Maximum Dogleg over Survey:	0.00 °/100usft at -1.00 usft
Net Tortousity applicable to Plans:	0.00 °/100usft	Directional Difficulty Index:	6.328

### Audit Info

**North Reference Sheet for Sec. 26-T3N-R68W - DOUTHIT 41C-27HZ - 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' @ 4959.00usft (Drilling Rig). Northing and Easting are relative to DOUTHIT 41C-27HZ

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° 0' 0.000 E°, Latitude Origin: 40° 47' 0.000 N°

False Easting: 3,000,000.00usft, False Northing: 1,000,000.00usft, Scale Reduction: 0.99995723

Grid Coordinates of Well: 1,316,247.86 usft N, 3,150,327.47 usft E

Geographical Coordinates of Well: 40° 12' 00.88" N, 104° 57' 42.58" W

Grid Convergence at Surface is: 0.35°

Based upon Minimum Curvature type calculations, at a Measured Depth of 13,222.93usft  
the Bottom Hole Displacement is 5,256.94usft in the Direction of 271.68° ( True).

Magnetic Convergence at surface is: -8.27° ( 8 April 2014, , BGGM2013)

