

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 8-T1N-R67W

NRC 29N-32HZ

Plan A

Plan: Rev A0 Permit

Sperry Drilling Services

Proposal Report

10 January, 2014

Well Coordinates: 1,269,308.22 N, 3,163,259.23 E (40° 04' 16.20" N, 104° 54' 59.90" W)

Ground Level: 5,035.00 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 NRC 29N-32HZ

RKB = 17' @ 5052.00usft (Drilling Rig)

N

True

API - US Survey Feet - Custom

HALLIBURTON

Project: Weld County, CO (NAD 83)
Site: Sec. 8-T1N-R67W
Well: NRC 29N-32HZ
Wellbore: Plan A
Design: Rev A0 Permit

Anadarko Petroleum Corp.

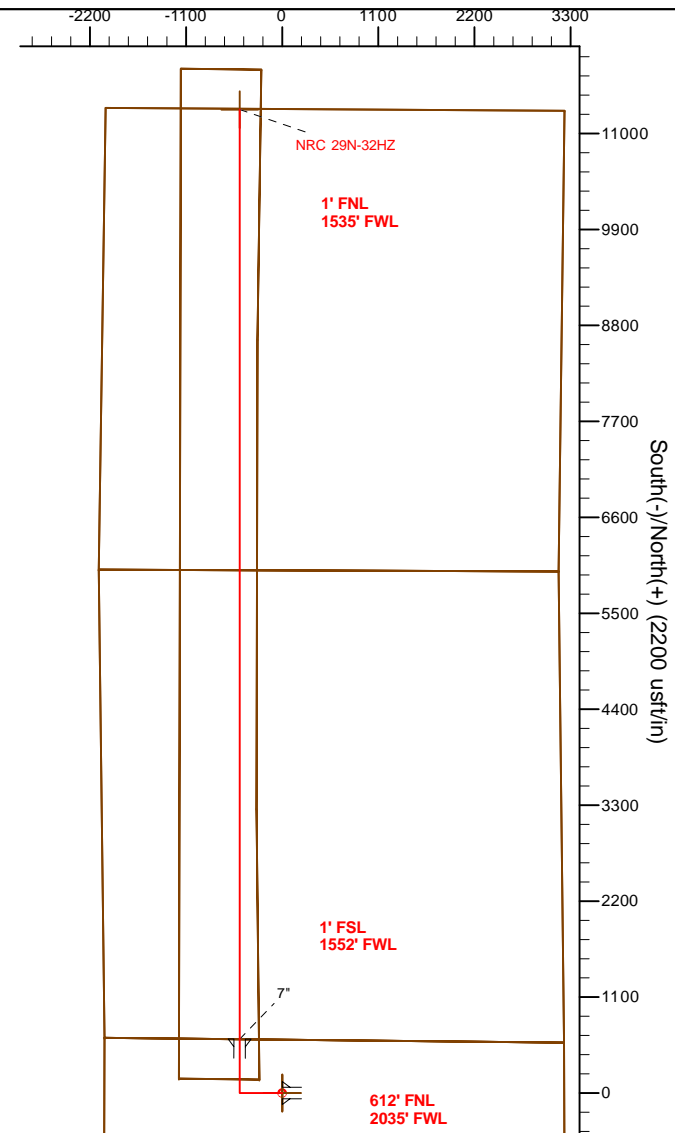
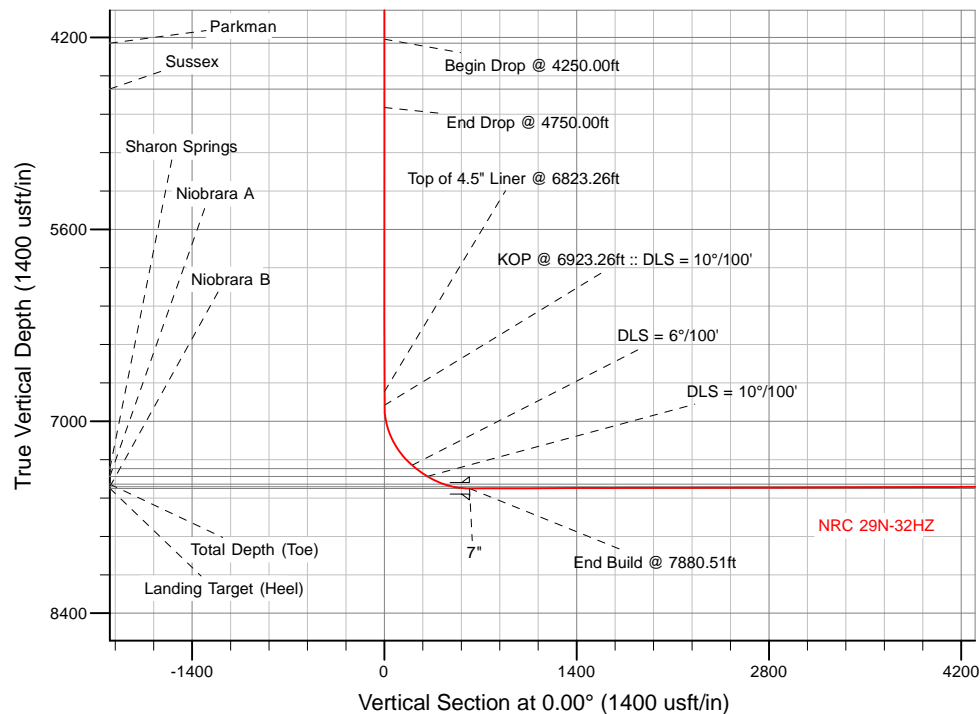
HALLIBURTON
Sperry Drilling

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	1450.00	0.00	0.00	1450.00	0.00	0.00	0.00	0.00	0.00	
3	1950.00	10.00	270.00	1947.47	0.00	-43.52	2.00	270.00	0.00	
4	4250.00	10.00	270.00	4212.52	0.00	-442.91	0.00	0.00	0.00	
5	4750.00	0.00	0.00	4709.99	0.00	-486.44	2.00	180.00	0.00	
6	6923.26	0.00	0.00	6883.25	0.00	-486.44	0.00	0.00	0.00	
7	7419.91	49.67	0.00	7320.00	202.11	-486.44	10.00	0.00	202.11	
8	7559.00	58.01	0.00	7402.00	314.30	-486.44	6.00	0.00	314.30	
9	7880.51	90.16	0.00	7489.00	619.45	-486.42	10.00	0.01	619.45	
10	18535.20	90.16	0.00	7459.00	11274.10	-485.64	0.00	0.00	11274.10	NRC 29N-32HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Polygon
NRC 29N-32HZ_LD	0.00	0.00	0.00	40° 4' 16.201 N	104° 54' 59.897 W	Polygon
NRC 29N-32HZ_SEC	0.00	0.00	0.00	40° 4' 16.201 N	104° 54' 59.897 W	Polygon
NRC 29N-32HZ_SHL	0.00	0.00	0.00	40° 4' 16.201 N	104° 54' 59.897 W	Polygon
NRC 29N-32HZ_BHL	7459.00	11274.10	-485.64	40° 6' 7.614 N	104° 55' 6.146 W	



TVD MD

6783.25	6823.26	Top of 4.5" Liner @ 6823.26ft
6883.25	6923.26	KOP @ 6923.26ft :: DLS = 10°/100'

WELL DETAILS: NRC 29N-32HZ

Ground Level: 5035.00

RKB = 17' @ 5052.00usft (Drilling Rig)

Plan: Rev A0 Permit (NRC 29N-32HZ/Plan A)

Created By: Clint Eshelman	Date: 1/10/2013
Reviewed: _____	Date: _____

Plan Report for NRC 29N-32HZ - 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
NRC 29N-32HZ_SEC - NRC 29N-32HZ_LD - NRC 29N-32HZ_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
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
1,256.00	0.00	0.00	1,256.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Marker										
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,306.00	0.00	0.00	1,306.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"										
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,450.00	0.00	0.00	1,450.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 1450.00ft										
1,500.00	1.00	270.00	1,500.00	0.00	-0.44	0.00	2.00	2.00	0.00	270.00
1,600.00	3.00	270.00	1,599.93	0.00	-3.93	0.00	2.00	2.00	0.00	0.00
1,700.00	5.00	270.00	1,699.68	0.00	-10.90	0.00	2.00	2.00	0.00	0.00
1,800.00	7.00	270.00	1,799.13	0.00	-21.35	0.00	2.00	2.00	0.00	0.00
1,900.00	9.00	270.00	1,898.15	0.00	-35.27	0.00	2.00	2.00	0.00	0.00
1,950.00	10.00	270.00	1,947.47	0.00	-43.52	0.00	2.00	2.00	0.00	0.00
End Nudge @ 1950.00ft										
2,000.00	10.00	270.00	1,996.71	0.00	-52.20	0.00	0.00	0.00	0.00	0.00
2,100.00	10.00	270.00	2,095.19	0.00	-69.57	0.00	0.00	0.00	0.00	0.00
2,200.00	10.00	270.00	2,193.67	0.00	-86.93	0.00	0.00	0.00	0.00	0.00
2,300.00	10.00	270.00	2,292.15	0.00	-104.30	0.00	0.00	0.00	0.00	0.00
2,400.00	10.00	270.00	2,390.63	0.00	-121.66	0.00	0.00	0.00	0.00	0.00
2,500.00	10.00	270.00	2,489.11	0.00	-139.03	0.00	0.00	0.00	0.00	0.00
2,600.00	10.00	270.00	2,587.59	0.00	-156.39	0.00	0.00	0.00	0.00	0.00
2,700.00	10.00	270.00	2,686.07	0.00	-173.76	0.00	0.00	0.00	0.00	0.00
2,800.00	10.00	270.00	2,784.55	0.00	-191.12	0.00	0.00	0.00	0.00	0.00
2,900.00	10.00	270.00	2,883.03	0.00	-208.49	0.00	0.00	0.00	0.00	0.00
3,000.00	10.00	270.00	2,981.51	0.00	-225.85	0.00	0.00	0.00	0.00	0.00
3,100.00	10.00	270.00	3,079.99	0.00	-243.22	0.00	0.00	0.00	0.00	0.00
3,200.00	10.00	270.00	3,178.48	0.00	-260.58	0.00	0.00	0.00	0.00	0.00
3,300.00	10.00	270.00	3,276.96	0.00	-277.95	0.00	0.00	0.00	0.00	0.00
3,400.00	10.00	270.00	3,375.44	0.00	-295.31	0.00	0.00	0.00	0.00	0.00
3,500.00	10.00	270.00	3,473.92	0.00	-312.68	0.00	0.00	0.00	0.00	0.00
3,600.00	10.00	270.00	3,572.40	0.00	-330.04	0.00	0.00	0.00	0.00	0.00
3,700.00	10.00	270.00	3,670.88	0.00	-347.41	0.00	0.00	0.00	0.00	0.00
3,800.00	10.00	270.00	3,769.36	0.00	-364.77	0.00	0.00	0.00	0.00	0.00
3,900.00	10.00	270.00	3,867.84	0.00	-382.14	0.00	0.00	0.00	0.00	0.00
4,000.00	10.00	270.00	3,966.32	0.00	-399.50	0.00	0.00	0.00	0.00	0.00
4,100.00	10.00	270.00	4,064.80	0.00	-416.87	0.00	0.00	0.00	0.00	0.00
4,200.00	10.00	270.00	4,163.28	0.00	-434.23	0.00	0.00	0.00	0.00	0.00
4,250.00	10.00	270.00	4,212.52	0.00	-442.91	0.00	0.00	0.00	0.00	0.00
Begin Drop @ 4250.00ft										
4,278.89	9.42	270.00	4,241.00	0.00	-447.79	0.00	2.00	-2.00	0.00	180.00
Parkman										
4,300.00	9.00	270.00	4,261.84	0.00	-451.17	0.00	2.00	-2.00	0.00	180.00

Plan Report for NRC 29N-32HZ - 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 (°)
4,400.00	7.00	270.00	4,360.86	0.00	-465.08	0.00	2.00	-2.00	0.00	180.00
4,500.00	5.00	270.00	4,460.31	0.00	-475.53	0.00	2.00	-2.00	0.00	180.00
4,600.00	3.00	270.00	4,560.06	0.00	-482.51	0.00	2.00	-2.00	0.00	180.00
4,615.96	2.68	270.00	4,576.00	0.00	-483.30	0.00	2.00	-2.00	0.00	180.00
Sussex										
4,700.00	1.00	270.00	4,659.99	0.00	-486.00	0.00	2.00	-2.00	0.00	180.00
4,750.00	0.00	0.00	4,709.99	0.00	-486.44	0.00	2.00	-2.00	0.00	180.00
End Drop @ 4750.00ft										
4,800.00	0.00	0.00	4,759.99	0.00	-486.44	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,859.99	0.00	-486.44	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	4,959.99	0.00	-486.44	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,059.99	0.00	-486.44	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,159.99	0.00	-486.44	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,259.99	0.00	-486.44	0.00	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,359.99	0.00	-486.44	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,459.99	0.00	-486.44	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,559.99	0.00	-486.44	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,659.99	0.00	-486.44	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,759.99	0.00	-486.44	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,859.99	0.00	-486.44	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	5,959.99	0.00	-486.44	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,059.99	0.00	-486.44	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,159.99	0.00	-486.44	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,259.99	0.00	-486.44	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,359.99	0.00	-486.44	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,459.99	0.00	-486.44	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,559.99	0.00	-486.44	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,659.99	0.00	-486.44	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,759.99	0.00	-486.44	0.00	0.00	0.00	0.00	0.00
6,823.26	0.00	0.00	6,783.25	0.00	-486.44	0.00	0.00	0.00	0.00	0.00
Top of 4.5" Liner @ 6823.26ft										
6,900.00	0.00	0.00	6,859.99	0.00	-486.44	0.00	0.00	0.00	0.00	0.00
6,923.26	0.00	0.00	6,883.25	0.00	-486.44	0.00	0.00	0.00	0.00	0.00
KOP @ 6923.26ft :: DLS = 10°/100'										
7,000.00	7.67	0.00	6,959.76	5.13	-486.44	5.13	10.00	10.00	0.00	0.00
7,100.00	17.67	0.00	7,057.20	27.04	-486.44	27.04	10.00	10.00	0.00	0.00
7,200.00	27.67	0.00	7,149.35	65.54	-486.44	65.54	10.00	10.00	0.00	0.00
7,300.00	37.67	0.00	7,233.42	119.46	-486.44	119.46	10.00	10.00	0.00	0.00
7,400.00	47.67	0.00	7,306.85	187.16	-486.44	187.16	10.00	10.00	0.00	0.00
7,419.91	49.67	0.00	7,320.00	202.11	-486.44	202.11	10.00	10.00	0.00	0.00
DLS = 6°/100'										
7,459.51	52.04	0.00	7,345.00	232.82	-486.44	232.82	6.00	6.00	0.00	0.00
Sharon Springs										
7,500.00	54.47	0.00	7,369.22	265.26	-486.44	265.26	6.00	6.00	0.00	0.00
7,559.00	58.01	0.00	7,402.00	314.30	-486.44	314.30	6.00	6.00	0.00	0.00
DLS = 10°/100' - Niobrara A										
7,600.00	62.11	0.00	7,422.46	349.82	-486.44	349.82	10.00	10.00	0.00	0.01
7,700.00	72.11	0.00	7,461.30	441.83	-486.43	441.83	10.00	10.00	0.00	0.01
7,761.39	78.25	0.00	7,477.00	501.16	-486.43	501.16	10.00	10.00	0.00	0.01
Niobrara B										
7,800.00	82.11	0.00	7,483.58	539.19	-486.43	539.19	10.00	10.00	0.00	0.01
7,880.51	90.16	0.00	7,489.00	619.45	-486.42	619.45	10.00	10.00	0.00	0.01
End Build @ 7880.51ft - Landing Target (Heel) - 7"										
7,900.00	90.16	0.00	7,488.95	638.94	-486.42	638.94	0.00	0.00	0.00	0.00
8,000.00	90.16	0.00	7,488.67	738.94	-486.41	738.94	0.00	0.00	0.00	0.00
8,100.00	90.16	0.00	7,488.39	838.94	-486.41	838.94	0.00	0.00	0.00	0.00
8,200.00	90.16	0.00	7,488.10	938.94	-486.40	938.94	0.00	0.00	0.00	0.00
8,300.00	90.16	0.00	7,487.82	1,038.94	-486.39	1,038.94	0.00	0.00	0.00	0.00
8,400.00	90.16	0.00	7,487.54	1,138.94	-486.39	1,138.94	0.00	0.00	0.00	0.00

Plan Report for NRC 29N-32HZ - 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	90.16	0.00	7,487.26	1,238.94	-486.38	1,238.94	0.00	0.00	0.00	0.00
8,600.00	90.16	0.00	7,486.98	1,338.94	-486.37	1,338.94	0.00	0.00	0.00	0.00
8,700.00	90.16	0.00	7,486.70	1,438.94	-486.36	1,438.94	0.00	0.00	0.00	0.00
8,800.00	90.16	0.00	7,486.41	1,538.94	-486.36	1,538.94	0.00	0.00	0.00	0.00
8,900.00	90.16	0.00	7,486.13	1,638.94	-486.35	1,638.94	0.00	0.00	0.00	0.00
9,000.00	90.16	0.00	7,485.85	1,738.94	-486.34	1,738.94	0.00	0.00	0.00	0.00
9,100.00	90.16	0.00	7,485.57	1,838.94	-486.33	1,838.94	0.00	0.00	0.00	0.00
9,200.00	90.16	0.00	7,485.29	1,938.93	-486.33	1,938.93	0.00	0.00	0.00	0.00
9,300.00	90.16	0.00	7,485.01	2,038.93	-486.32	2,038.93	0.00	0.00	0.00	0.00
9,400.00	90.16	0.00	7,484.73	2,138.93	-486.31	2,138.93	0.00	0.00	0.00	0.00
9,500.00	90.16	0.00	7,484.44	2,238.93	-486.30	2,238.93	0.00	0.00	0.00	0.00
9,600.00	90.16	0.00	7,484.16	2,338.93	-486.30	2,338.93	0.00	0.00	0.00	0.00
9,700.00	90.16	0.00	7,483.88	2,438.93	-486.29	2,438.93	0.00	0.00	0.00	0.00
9,800.00	90.16	0.00	7,483.60	2,538.93	-486.28	2,538.93	0.00	0.00	0.00	0.00
9,900.00	90.16	0.00	7,483.32	2,638.93	-486.27	2,638.93	0.00	0.00	0.00	0.00
10,000.00	90.16	0.00	7,483.04	2,738.93	-486.27	2,738.93	0.00	0.00	0.00	0.00
10,100.00	90.16	0.00	7,482.75	2,838.93	-486.26	2,838.93	0.00	0.00	0.00	0.00
10,200.00	90.16	0.00	7,482.47	2,938.93	-486.25	2,938.93	0.00	0.00	0.00	0.00
10,300.00	90.16	0.00	7,482.19	3,038.93	-486.25	3,038.93	0.00	0.00	0.00	0.00
10,400.00	90.16	0.00	7,481.91	3,138.93	-486.24	3,138.93	0.00	0.00	0.00	0.00
10,500.00	90.16	0.00	7,481.63	3,238.93	-486.23	3,238.93	0.00	0.00	0.00	0.00
10,600.00	90.16	0.00	7,481.35	3,338.93	-486.22	3,338.93	0.00	0.00	0.00	0.00
10,700.00	90.16	0.00	7,481.06	3,438.93	-486.22	3,438.93	0.00	0.00	0.00	0.00
10,800.00	90.16	0.00	7,480.78	3,538.93	-486.21	3,538.93	0.00	0.00	0.00	0.00
10,900.00	90.16	0.00	7,480.50	3,638.93	-486.20	3,638.93	0.00	0.00	0.00	0.00
11,000.00	90.16	0.00	7,480.22	3,738.93	-486.19	3,738.93	0.00	0.00	0.00	0.00
11,100.00	90.16	0.00	7,479.94	3,838.93	-486.19	3,838.93	0.00	0.00	0.00	0.00
11,200.00	90.16	0.00	7,479.66	3,938.93	-486.18	3,938.93	0.00	0.00	0.00	0.00
11,300.00	90.16	0.00	7,479.37	4,038.93	-486.17	4,038.93	0.00	0.00	0.00	0.00
11,400.00	90.16	0.00	7,479.09	4,138.93	-486.16	4,138.93	0.00	0.00	0.00	0.00
11,500.00	90.16	0.00	7,478.81	4,238.93	-486.16	4,238.93	0.00	0.00	0.00	0.00
11,600.00	90.16	0.00	7,478.53	4,338.93	-486.15	4,338.93	0.00	0.00	0.00	0.00
11,700.00	90.16	0.00	7,478.25	4,438.92	-486.14	4,438.92	0.00	0.00	0.00	0.00
11,800.00	90.16	0.00	7,477.97	4,538.92	-486.13	4,538.92	0.00	0.00	0.00	0.00
11,900.00	90.16	0.00	7,477.69	4,638.92	-486.13	4,638.92	0.00	0.00	0.00	0.00
12,000.00	90.16	0.00	7,477.40	4,738.92	-486.12	4,738.92	0.00	0.00	0.00	0.00
12,100.00	90.16	0.00	7,477.12	4,838.92	-486.11	4,838.92	0.00	0.00	0.00	0.00
12,200.00	90.16	0.00	7,476.84	4,938.92	-486.10	4,938.92	0.00	0.00	0.00	0.00
12,300.00	90.16	0.00	7,476.56	5,038.92	-486.10	5,038.92	0.00	0.00	0.00	0.00
12,400.00	90.16	0.00	7,476.28	5,138.92	-486.09	5,138.92	0.00	0.00	0.00	0.00
12,500.00	90.16	0.00	7,476.00	5,238.92	-486.08	5,238.92	0.00	0.00	0.00	0.00
12,600.00	90.16	0.00	7,475.71	5,338.92	-486.08	5,338.92	0.00	0.00	0.00	0.00
12,700.00	90.16	0.00	7,475.43	5,438.92	-486.07	5,438.92	0.00	0.00	0.00	0.00
12,800.00	90.16	0.00	7,475.15	5,538.92	-486.06	5,538.92	0.00	0.00	0.00	0.00
12,900.00	90.16	0.00	7,474.87	5,638.92	-486.05	5,638.92	0.00	0.00	0.00	0.00
13,000.00	90.16	0.00	7,474.59	5,738.92	-486.05	5,738.92	0.00	0.00	0.00	0.00
13,100.00	90.16	0.00	7,474.31	5,838.92	-486.04	5,838.92	0.00	0.00	0.00	0.00
13,200.00	90.16	0.00	7,474.02	5,938.92	-486.03	5,938.92	0.00	0.00	0.00	0.00
13,300.00	90.16	0.00	7,473.74	6,038.92	-486.02	6,038.92	0.00	0.00	0.00	0.00
13,400.00	90.16	0.00	7,473.46	6,138.92	-486.02	6,138.92	0.00	0.00	0.00	0.00
13,500.00	90.16	0.00	7,473.18	6,238.92	-486.01	6,238.92	0.00	0.00	0.00	0.00
13,600.00	90.16	0.00	7,472.90	6,338.92	-486.00	6,338.92	0.00	0.00	0.00	0.00
13,700.00	90.16	0.00	7,472.62	6,438.92	-485.99	6,438.92	0.00	0.00	0.00	0.00
13,800.00	90.16	0.00	7,472.33	6,538.92	-485.99	6,538.92	0.00	0.00	0.00	0.00
13,900.00	90.16	0.00	7,472.05	6,638.92	-485.98	6,638.92	0.00	0.00	0.00	0.00
14,000.00	90.16	0.00	7,471.77	6,738.92	-485.97	6,738.92	0.00	0.00	0.00	0.00
14,100.00	90.16	0.00	7,471.49	6,838.92	-485.96	6,838.92	0.00	0.00	0.00	0.00
14,200.00	90.16	0.00	7,471.21	6,938.91	-485.96	6,938.91	0.00	0.00	0.00	0.00
14,300.00	90.16	0.00	7,470.93	7,038.91	-485.95	7,038.91	0.00	0.00	0.00	0.00
14,400.00	90.16	0.00	7,470.64	7,138.91	-485.94	7,138.91	0.00	0.00	0.00	0.00

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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 (°)
14,500.00	90.16	0.00	7,470.36	7,238.91	-485.93	7,238.91	0.00	0.00	0.00	0.00
14,600.00	90.16	0.00	7,470.08	7,338.91	-485.93	7,338.91	0.00	0.00	0.00	0.00
14,700.00	90.16	0.00	7,469.80	7,438.91	-485.92	7,438.91	0.00	0.00	0.00	0.00
14,800.00	90.16	0.00	7,469.52	7,538.91	-485.91	7,538.91	0.00	0.00	0.00	0.00
14,900.00	90.16	0.00	7,469.24	7,638.91	-485.91	7,638.91	0.00	0.00	0.00	0.00
15,000.00	90.16	0.00	7,468.96	7,738.91	-485.90	7,738.91	0.00	0.00	0.00	0.00
15,100.00	90.16	0.00	7,468.67	7,838.91	-485.89	7,838.91	0.00	0.00	0.00	0.00
15,200.00	90.16	0.00	7,468.39	7,938.91	-485.88	7,938.91	0.00	0.00	0.00	0.00
15,300.00	90.16	0.00	7,468.11	8,038.91	-485.88	8,038.91	0.00	0.00	0.00	0.00
15,400.00	90.16	0.00	7,467.83	8,138.91	-485.87	8,138.91	0.00	0.00	0.00	0.00
15,500.00	90.16	0.00	7,467.55	8,238.91	-485.86	8,238.91	0.00	0.00	0.00	0.00
15,600.00	90.16	0.00	7,467.27	8,338.91	-485.85	8,338.91	0.00	0.00	0.00	0.00
15,700.00	90.16	0.00	7,466.98	8,438.91	-485.85	8,438.91	0.00	0.00	0.00	0.00
15,800.00	90.16	0.00	7,466.70	8,538.91	-485.84	8,538.91	0.00	0.00	0.00	0.00
15,900.00	90.16	0.00	7,466.42	8,638.91	-485.83	8,638.91	0.00	0.00	0.00	0.00
16,000.00	90.16	0.00	7,466.14	8,738.91	-485.82	8,738.91	0.00	0.00	0.00	0.00
16,100.00	90.16	0.00	7,465.86	8,838.91	-485.82	8,838.91	0.00	0.00	0.00	0.00
16,200.00	90.16	0.00	7,465.58	8,938.91	-485.81	8,938.91	0.00	0.00	0.00	0.00
16,300.00	90.16	0.00	7,465.29	9,038.91	-485.80	9,038.91	0.00	0.00	0.00	0.00
16,400.00	90.16	0.00	7,465.01	9,138.91	-485.79	9,138.91	0.00	0.00	0.00	0.00
16,500.00	90.16	0.00	7,464.73	9,238.91	-485.79	9,238.91	0.00	0.00	0.00	0.00
16,600.00	90.16	0.00	7,464.45	9,338.91	-485.78	9,338.91	0.00	0.00	0.00	0.00
16,700.00	90.16	0.00	7,464.17	9,438.90	-485.77	9,438.90	0.00	0.00	0.00	0.00
16,800.00	90.16	0.00	7,463.89	9,538.90	-485.77	9,538.90	0.00	0.00	0.00	0.00
16,900.00	90.16	0.00	7,463.60	9,638.90	-485.76	9,638.90	0.00	0.00	0.00	0.00
17,000.00	90.16	0.00	7,463.32	9,738.90	-485.75	9,738.90	0.00	0.00	0.00	0.00
17,100.00	90.16	0.00	7,463.04	9,838.90	-485.74	9,838.90	0.00	0.00	0.00	0.00
17,200.00	90.16	0.00	7,462.76	9,938.90	-485.74	9,938.90	0.00	0.00	0.00	0.00
17,300.00	90.16	0.00	7,462.48	10,038.90	-485.73	10,038.90	0.00	0.00	0.00	0.00
17,400.00	90.16	0.00	7,462.20	10,138.90	-485.72	10,138.90	0.00	0.00	0.00	0.00
17,500.00	90.16	0.00	7,461.92	10,238.90	-485.71	10,238.90	0.00	0.00	0.00	0.00
17,600.00	90.16	0.00	7,461.63	10,338.90	-485.71	10,338.90	0.00	0.00	0.00	0.00
17,700.00	90.16	0.00	7,461.35	10,438.90	-485.70	10,438.90	0.00	0.00	0.00	0.00
17,800.00	90.16	0.00	7,461.07	10,538.90	-485.69	10,538.90	0.00	0.00	0.00	0.00
17,900.00	90.16	0.00	7,460.79	10,638.90	-485.68	10,638.90	0.00	0.00	0.00	0.00
18,000.00	90.16	0.00	7,460.51	10,738.90	-485.68	10,738.90	0.00	0.00	0.00	0.00
18,100.00	90.16	0.00	7,460.23	10,838.90	-485.67	10,838.90	0.00	0.00	0.00	0.00
18,200.00	90.16	0.00	7,459.94	10,938.90	-485.66	10,938.90	0.00	0.00	0.00	0.00
18,300.00	90.16	0.00	7,459.66	11,038.90	-485.65	11,038.90	0.00	0.00	0.00	0.00
18,400.00	90.16	0.00	7,459.38	11,138.90	-485.65	11,138.90	0.00	0.00	0.00	0.00
18,500.00	90.16	0.00	7,459.10	11,238.90	-485.64	11,238.90	0.00	0.00	0.00	0.00
18,535.20	90.16	0.00	7,459.00	11,274.10	-485.64	11,274.10	0.00	0.00	0.00	0.00

TD Well @ 18535.20ft - NRC 29N-32HZ_BHL

Plan Report for NRC 29N-32HZ - Rev A0 Permit

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,450.00	1,450.00	0.00	0.00	Begin Nudge @ 1450.00ft
1,950.00	1,947.47	0.00	-43.52	End Nudge @ 1950.00ft
4,250.00	4,212.52	0.00	-442.91	Begin Drop @ 4250.00ft
4,750.00	4,709.99	0.00	-486.44	End Drop @ 4750.00ft
6,823.26	6,783.25	0.00	-486.44	Top of 4.5" Liner @ 6823.26ft
6,923.26	6,883.25	0.00	-486.44	KOP @ 6923.26ft :: DLS = 10°/100'
7,419.91	7,320.00	202.11	-486.44	DLS = 6°/100'
7,559.00	7,402.00	314.30	-486.44	DLS = 10°/100'
7,880.51	7,489.00	619.45	-486.42	End Build @ 7880.51ft
18,535.20	7,459.00	11,274.10	-485.64	TD Well @ 18535.20ft

Vertical Section Information

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

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	7,880.51	Rev A0 Permit	MWD
7,880.51	18,535.20	Rev A0 Permit	MWD

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,306.00	1,306.00	9 5/8"	9-5/8	13-1/2
7,880.51	7,489.00	7"	7	8-3/4

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,256.00	1,256.00	Fox Hills Marker		0.00	
4,278.89	4,241.00	Parkman		0.00	
4,615.96	4,576.00	Sussex		0.00	
7,459.51	7,345.00	Sharon Springs		0.00	
7,559.00	7,402.00	Niobrara A		0.00	
7,761.39	7,477.00	Niobrara B		0.00	
7,880.51	7,489.00	Landing Target (Heel)		0.00	
18,535.20	7,459.00	Total Depth (Toe)		0.00	

Plan Report for NRC 29N-32HZ - Rev A0 Permit

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
NRC 29N-32HZ_SEC	0.00	0.00	0.00	Polygon
NRC 29N-32HZ_LD	0.00	0.00	0.00	Polygon
NRC 29N-32HZ_SHL	0.00	0.00	0.00	Point
NRC 29N-32HZ_BHL	7,459.00	11,274.10	-485.64	Point

Directional Difficulty Index

Average Dogleg over Survey:	0.59 °/100usft	Maximum Dogleg over Survey:	10.00 °/100usft at 7,880.51 usft
Net Tortousity applicable to Plans:	0.59 °/100usft	Directional Difficulty Index:	6.609

Audit Info

North Reference Sheet for Sec. 8-T1N-R67W - NRC 29N-32HZ - 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' @ 5052.00usft (Drilling Rig). Northing and Easting are relative to NRC 29N-32HZ
 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: 0.99996173

Grid Coordinates of Well: 1,269,308.22 usft N, 3,163,259.23 usft E
 Geographical Coordinates of Well: 40° 04' 16.20" N, 104° 54' 59.90" W
 Grid Convergence at Surface is: 0.38°

Based upon Minimum Curvature type calculations, at a Measured Depth of 18,535.20usft
 the Bottom Hole Displacement is 11,284.55usft in the Direction of 357.53° (True).

Magnetic Convergence at surface is: -8.24° (7 January 2014, , BGGM2013)

