

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 18-T3N-R67W

Sekich State 39C-17HZ

Plan A

Plan: Rev A0

Sperry Drilling Services

Proposal Report

10 December, 2013

Well Coordinates: 1,324,061.21 N, 3,156,448.37 E (40° 13' 17.72" N, 104° 56' 23.06" W)

Ground Level: 4,873.00 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 Sekich State 39C-17HZ

RKB = 17' @ 4890.00usft (Drilling Rig)

N

True

Dec-Deg - API - US Survey Feet - Custom

HALLIBURTON

Project: Weld County, CO (NAD 83)
Site: Sec. 18-T3N-R67W
Well: Sekich State 39C-17HZ
Wellbore: Plan A
Design: Rev A0

Anadarko Petroleum Corp.

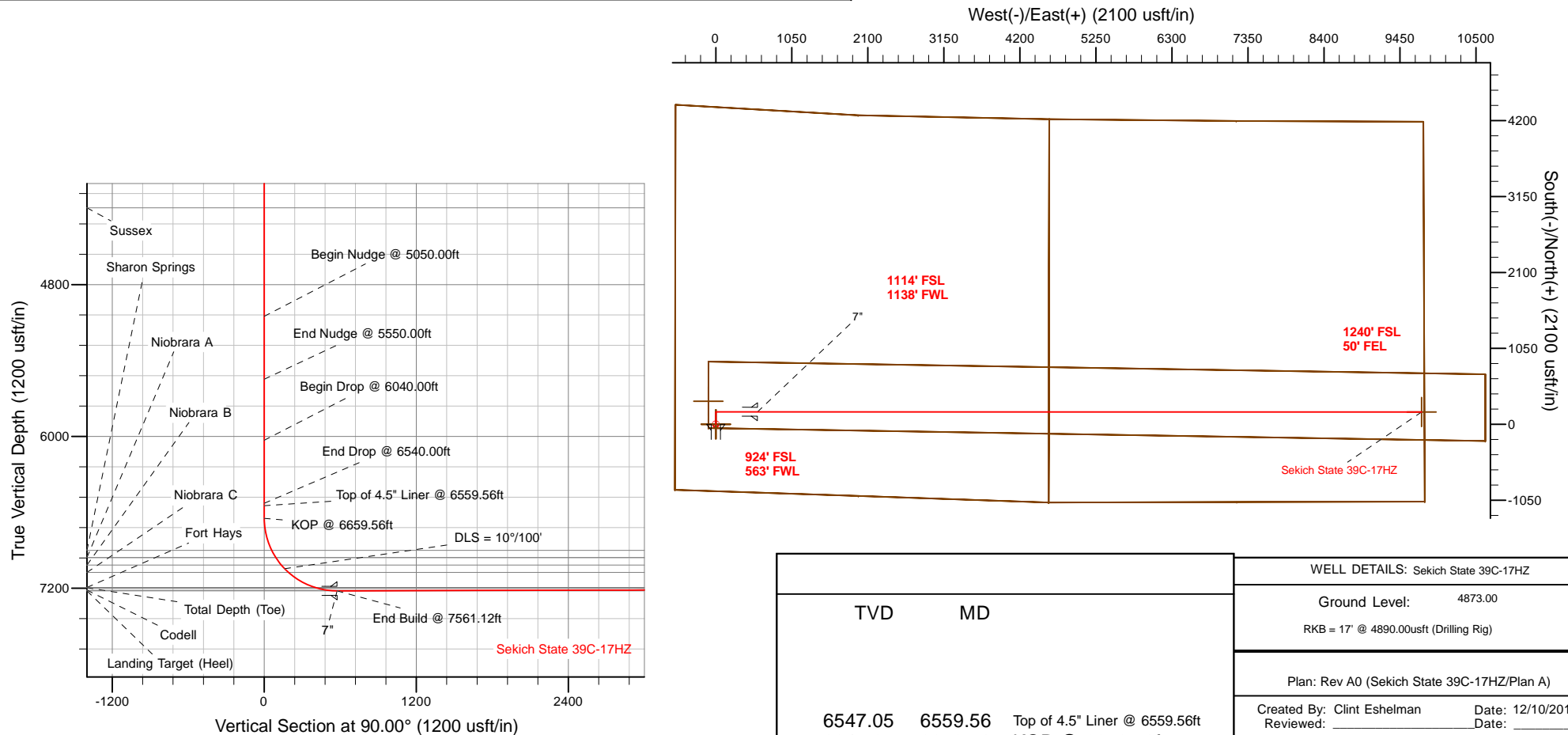
HALLIBURTON
Sperry Drilling

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	5050.00	0.00	0.00	5050.00	0.00	0.00	0.00	0.00	0.00	
3	5550.00	10.00	0.00	5547.47	43.52	0.00	2.00	0.00	0.00	
4	6040.00	10.00	0.00	6030.02	128.61	0.00	0.00	0.00	0.00	
5	6540.00	0.00	0.00	6527.49	172.13	0.00	2.00	180.00	0.00	
6	6659.56	0.00	0.00	6647.05	172.13	0.00	0.00	0.00	0.00	
7	7561.12	90.16	90.00	7220.00	172.13	574.52	10.00	90.00	574.52	
8	16733.98	90.16	90.00	7195.00	172.05	9747.34	0.00	0.00	9747.34	Sekich State 39C-17HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Polygon
Sekich State 39C-17HZ_LD	0.00	0.00	0.00	40.221589	-104.939738	Polygon
Sekich State 39C-17HZ_SEC	0.00	0.00	0.00	40.221589	-104.939738	Polygon
Sekich State 39C-17HZ_SHL	0.00	0.00	0.00	40.221589	-104.939738	Polygon
Sekich State 39C-17HZ_BHL	7195.00	172.05	9747.34	40.222056	-104.904833	Point
Sekich State 39C-17HZ_CP	7220.00	319.50	-102.76	40.222466	-104.940106	Point



Plan Report for Sekich State 39C-17HZ - Rev A0

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
Sekich State 39C-17HZ_SEC - Sekich State 39C-17HZ_SHL - Sekich State 39C-17HZ_LD										
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
1,017.00	0.00	0.00	1,017.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Marker										
1,067.00	0.00	0.00	1,067.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"										
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
1,600.00	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
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,593.00	0.00	0.00	3,593.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Parkman										
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,192.00	0.00	0.00	4,192.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sussex										
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Plan Report for Sekich State 39C-17HZ - Rev A0

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 (°)
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,050.00	0.00	0.00	5,050.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 5050.00ft										
5,100.00	1.00	0.00	5,100.00	0.44	0.00	0.00	2.00	2.00	0.00	0.00
5,200.00	3.00	0.00	5,199.93	3.93	0.00	0.00	2.00	2.00	0.00	0.00
5,300.00	5.00	0.00	5,299.68	10.90	0.00	0.00	2.00	2.00	0.00	0.00
5,400.00	7.00	0.00	5,399.13	21.35	0.00	0.00	2.00	2.00	0.00	0.00
5,500.00	9.00	0.00	5,498.15	35.27	0.00	0.00	2.00	2.00	0.00	0.00
5,550.00	10.00	0.00	5,547.47	43.52	0.00	0.00	2.00	2.00	0.00	0.00
End Nudge @ 5550.00ft										
5,600.00	10.00	0.00	5,596.71	52.20	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	10.00	0.00	5,695.19	69.57	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	10.00	0.00	5,793.67	86.93	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	10.00	0.00	5,892.15	104.30	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	10.00	0.00	5,990.63	121.66	0.00	0.00	0.00	0.00	0.00	0.00
6,040.00	10.00	0.00	6,030.02	128.61	0.00	0.00	0.00	0.00	0.00	0.00
Begin Drop @ 6040.00ft										
6,100.00	8.80	0.00	6,089.21	138.41	0.00	0.00	2.00	-2.00	0.00	180.00
6,200.00	6.80	0.00	6,188.28	151.98	0.00	0.00	2.00	-2.00	0.00	180.00
6,300.00	4.80	0.00	6,287.77	162.09	0.00	0.00	2.00	-2.00	0.00	180.00
6,400.00	2.80	0.00	6,387.54	168.71	0.00	0.00	2.00	-2.00	0.00	180.00
6,500.00	0.80	0.00	6,487.49	171.85	0.00	0.00	2.00	-2.00	0.00	180.00
6,540.00	0.00	0.00	6,527.49	172.13	0.00	0.00	2.00	-2.00	0.00	-180.00
End Drop @ 6540.00ft										
6,559.56	0.00	0.00	6,547.05	172.13	0.00	0.00	0.00	0.00	0.00	0.00
Top of 4.5" Liner @ 6559.56ft										
6,600.00	0.00	0.00	6,587.49	172.13	0.00	0.00	0.00	0.00	0.00	0.00
6,659.56	0.00	0.00	6,647.05	172.13	0.00	0.00	0.00	0.00	0.00	0.00
KOP @ 6659.56ft										
6,700.00	4.04	90.00	6,687.45	172.13	1.43	1.43	10.00	10.00	0.00	90.00
6,800.00	14.04	90.00	6,786.08	172.13	17.13	17.13	10.00	10.00	0.00	0.00
6,900.00	24.04	90.00	6,880.49	172.13	49.71	49.71	10.00	10.00	0.00	0.00
6,921.55	26.20	90.00	6,900.00	172.13	58.86	58.86	10.00	10.00	0.00	0.00
Sharon Springs										
6,985.87	32.63	90.00	6,956.00	172.13	90.43	90.43	10.00	10.00	0.00	0.00
Niobrara A										
7,000.00	34.04	90.00	6,967.81	172.13	98.20	98.20	10.00	10.00	0.00	0.00
7,060.43	40.09	90.00	7,016.00	172.13	134.60	134.60	10.00	10.00	0.00	0.00
Niobrara B - Sekich State 39C-17HZ_CP										
7,100.00	44.04	90.00	7,045.37	172.13	161.11	161.11	10.00	10.00	0.00	0.00
DLS = 10°/100'										
7,141.30	48.17	90.00	7,074.00	172.13	190.87	190.87	10.00	10.00	0.00	0.00
Niobrara C										
7,200.00	54.04	90.00	7,110.84	172.13	236.54	236.54	10.00	10.00	0.00	0.00
7,300.00	64.04	90.00	7,162.21	172.13	322.19	322.19	10.00	10.00	0.00	0.00
7,386.28	72.67	90.00	7,194.00	172.13	402.30	402.30	10.00	10.00	0.00	0.00
Fort Hays										
7,400.00	74.04	90.00	7,197.93	172.13	415.45	415.45	10.00	10.00	0.00	0.00
7,483.78	82.42	90.00	7,215.00	172.13	497.40	497.40	10.00	10.00	0.00	0.00
Codell										
7,500.00	84.04	90.00	7,216.91	172.13	513.51	513.51	10.00	10.00	0.00	0.00
7,561.12	90.16	90.00	7,220.00	172.13	574.52	574.52	10.00	10.00	0.00	0.00
End Build @ 7561.12ft - Landing Target (Heel) - 7"										
7,600.00	90.16	90.00	7,219.90	172.13	613.40	613.40	0.00	0.00	0.00	0.00
7,700.00	90.16	90.00	7,219.62	172.13	713.40	713.40	0.00	0.00	0.00	0.00
7,800.00	90.16	90.00	7,219.35	172.13	813.40	813.40	0.00	0.00	0.00	0.00
7,900.00	90.16	90.00	7,219.08	172.13	913.40	913.40	0.00	0.00	0.00	0.00

Plan Report for Sekich State 39C-17HZ - Rev A0

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 (°)
8,000.00	90.16	90.00	7,218.81	172.12	1,013.40	1,013.40	0.00	0.00	0.00	0.00
8,100.00	90.16	90.00	7,218.53	172.12	1,113.40	1,113.40	0.00	0.00	0.00	0.00
8,200.00	90.16	90.00	7,218.26	172.12	1,213.40	1,213.40	0.00	0.00	0.00	0.00
8,300.00	90.16	90.00	7,217.99	172.12	1,313.40	1,313.40	0.00	0.00	0.00	0.00
8,400.00	90.16	90.00	7,217.72	172.12	1,413.39	1,413.39	0.00	0.00	0.00	0.00
8,500.00	90.16	90.00	7,217.44	172.12	1,513.39	1,513.39	0.00	0.00	0.00	0.00
8,600.00	90.16	90.00	7,217.17	172.12	1,613.39	1,613.39	0.00	0.00	0.00	0.00
8,700.00	90.16	90.00	7,216.90	172.12	1,713.39	1,713.39	0.00	0.00	0.00	0.00
8,800.00	90.16	90.00	7,216.63	172.12	1,813.39	1,813.39	0.00	0.00	0.00	0.00
8,900.00	90.16	90.00	7,216.35	172.12	1,913.39	1,913.39	0.00	0.00	0.00	0.00
9,000.00	90.16	90.00	7,216.08	172.12	2,013.39	2,013.39	0.00	0.00	0.00	0.00
9,100.00	90.16	90.00	7,215.81	172.12	2,113.39	2,113.39	0.00	0.00	0.00	0.00
9,200.00	90.16	90.00	7,215.54	172.12	2,213.39	2,213.39	0.00	0.00	0.00	0.00
9,300.00	90.16	90.00	7,215.26	172.11	2,313.39	2,313.39	0.00	0.00	0.00	0.00
9,400.00	90.16	90.00	7,214.99	172.11	2,413.39	2,413.39	0.00	0.00	0.00	0.00
9,500.00	90.16	90.00	7,214.72	172.11	2,513.39	2,513.39	0.00	0.00	0.00	0.00
9,600.00	90.16	90.00	7,214.44	172.11	2,613.39	2,613.39	0.00	0.00	0.00	0.00
9,700.00	90.16	90.00	7,214.17	172.11	2,713.39	2,713.39	0.00	0.00	0.00	0.00
9,800.00	90.16	90.00	7,213.90	172.11	2,813.39	2,813.39	0.00	0.00	0.00	0.00
9,900.00	90.16	90.00	7,213.63	172.11	2,913.39	2,913.39	0.00	0.00	0.00	0.00
10,000.00	90.16	90.00	7,213.35	172.11	3,013.39	3,013.39	0.00	0.00	0.00	0.00
10,100.00	90.16	90.00	7,213.08	172.11	3,113.39	3,113.39	0.00	0.00	0.00	0.00
10,200.00	90.16	90.00	7,212.81	172.11	3,213.39	3,213.39	0.00	0.00	0.00	0.00
10,300.00	90.16	90.00	7,212.54	172.11	3,313.39	3,313.39	0.00	0.00	0.00	0.00
10,400.00	90.16	90.00	7,212.26	172.11	3,413.39	3,413.39	0.00	0.00	0.00	0.00
10,500.00	90.16	90.00	7,211.99	172.10	3,513.39	3,513.39	0.00	0.00	0.00	0.00
10,600.00	90.16	90.00	7,211.72	172.10	3,613.39	3,613.39	0.00	0.00	0.00	0.00
10,700.00	90.16	90.00	7,211.45	172.10	3,713.39	3,713.39	0.00	0.00	0.00	0.00
10,800.00	90.16	90.00	7,211.17	172.10	3,813.39	3,813.39	0.00	0.00	0.00	0.00
10,900.00	90.16	90.00	7,210.90	172.10	3,913.39	3,913.39	0.00	0.00	0.00	0.00
11,000.00	90.16	90.00	7,210.63	172.10	4,013.39	4,013.39	0.00	0.00	0.00	0.00
11,100.00	90.16	90.00	7,210.36	172.10	4,113.38	4,113.38	0.00	0.00	0.00	0.00
11,200.00	90.16	90.00	7,210.08	172.10	4,213.38	4,213.38	0.00	0.00	0.00	0.00
11,300.00	90.16	90.00	7,209.81	172.10	4,313.38	4,313.38	0.00	0.00	0.00	0.00
11,400.00	90.16	90.00	7,209.54	172.10	4,413.38	4,413.38	0.00	0.00	0.00	0.00
11,500.00	90.16	90.00	7,209.27	172.10	4,513.38	4,513.38	0.00	0.00	0.00	0.00
11,600.00	90.16	90.00	7,208.99	172.10	4,613.38	4,613.38	0.00	0.00	0.00	0.00
11,700.00	90.16	90.00	7,208.72	172.10	4,713.38	4,713.38	0.00	0.00	0.00	0.00
11,800.00	90.16	90.00	7,208.45	172.09	4,813.38	4,813.38	0.00	0.00	0.00	0.00
11,900.00	90.16	90.00	7,208.18	172.09	4,913.38	4,913.38	0.00	0.00	0.00	0.00
12,000.00	90.16	90.00	7,207.90	172.09	5,013.38	5,013.38	0.00	0.00	0.00	0.00
12,100.00	90.16	90.00	7,207.63	172.09	5,113.38	5,113.38	0.00	0.00	0.00	0.00
12,200.00	90.16	90.00	7,207.36	172.09	5,213.38	5,213.38	0.00	0.00	0.00	0.00
12,300.00	90.16	90.00	7,207.09	172.09	5,313.38	5,313.38	0.00	0.00	0.00	0.00
12,400.00	90.16	90.00	7,206.81	172.09	5,413.38	5,413.38	0.00	0.00	0.00	0.00
12,500.00	90.16	90.00	7,206.54	172.09	5,513.38	5,513.38	0.00	0.00	0.00	0.00
12,600.00	90.16	90.00	7,206.27	172.09	5,613.38	5,613.38	0.00	0.00	0.00	0.00
12,700.00	90.16	90.00	7,206.00	172.09	5,713.38	5,713.38	0.00	0.00	0.00	0.00
12,800.00	90.16	90.00	7,205.72	172.09	5,813.38	5,813.38	0.00	0.00	0.00	0.00
12,900.00	90.16	90.00	7,205.45	172.09	5,913.38	5,913.38	0.00	0.00	0.00	0.00
13,000.00	90.16	90.00	7,205.18	172.08	6,013.38	6,013.38	0.00	0.00	0.00	0.00
13,100.00	90.16	90.00	7,204.91	172.08	6,113.38	6,113.38	0.00	0.00	0.00	0.00
13,200.00	90.16	90.00	7,204.63	172.08	6,213.38	6,213.38	0.00	0.00	0.00	0.00
13,300.00	90.16	90.00	7,204.36	172.08	6,313.38	6,313.38	0.00	0.00	0.00	0.00
13,400.00	90.16	90.00	7,204.09	172.08	6,413.38	6,413.38	0.00	0.00	0.00	0.00
13,500.00	90.16	90.00	7,203.81	172.08	6,513.38	6,513.38	0.00	0.00	0.00	0.00
13,600.00	90.16	90.00	7,203.54	172.08	6,613.38	6,613.38	0.00	0.00	0.00	0.00
13,700.00	90.16	90.00	7,203.27	172.08	6,713.37	6,713.37	0.00	0.00	0.00	0.00
13,800.00	90.16	90.00	7,203.00	172.08	6,813.37	6,813.37	0.00	0.00	0.00	0.00
13,900.00	90.16	90.00	7,202.72	172.08	6,913.37	6,913.37	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 (°)
14,000.00	90.16	90.00	7,202.45	172.08	7,013.37	7,013.37	0.00	0.00	0.00	0.00
14,100.00	90.16	90.00	7,202.18	172.08	7,113.37	7,113.37	0.00	0.00	0.00	0.00
14,200.00	90.16	90.00	7,201.91	172.08	7,213.37	7,213.37	0.00	0.00	0.00	0.00
14,300.00	90.16	90.00	7,201.63	172.07	7,313.37	7,313.37	0.00	0.00	0.00	0.00
14,400.00	90.16	90.00	7,201.36	172.07	7,413.37	7,413.37	0.00	0.00	0.00	0.00
14,500.00	90.16	90.00	7,201.09	172.07	7,513.37	7,513.37	0.00	0.00	0.00	0.00
14,600.00	90.16	90.00	7,200.82	172.07	7,613.37	7,613.37	0.00	0.00	0.00	0.00
14,700.00	90.16	90.00	7,200.54	172.07	7,713.37	7,713.37	0.00	0.00	0.00	0.00
14,800.00	90.16	90.00	7,200.27	172.07	7,813.37	7,813.37	0.00	0.00	0.00	0.00
14,900.00	90.16	90.00	7,200.00	172.07	7,913.37	7,913.37	0.00	0.00	0.00	0.00
15,000.00	90.16	90.00	7,199.73	172.07	8,013.37	8,013.37	0.00	0.00	0.00	0.00
15,100.00	90.16	90.00	7,199.45	172.07	8,113.37	8,113.37	0.00	0.00	0.00	0.00
15,200.00	90.16	90.00	7,199.18	172.07	8,213.37	8,213.37	0.00	0.00	0.00	0.00
15,300.00	90.16	90.00	7,198.91	172.07	8,313.37	8,313.37	0.00	0.00	0.00	0.00
15,400.00	90.16	90.00	7,198.64	172.07	8,413.37	8,413.37	0.00	0.00	0.00	0.00
15,500.00	90.16	90.00	7,198.36	172.06	8,513.37	8,513.37	0.00	0.00	0.00	0.00
15,600.00	90.16	90.00	7,198.09	172.06	8,613.37	8,613.37	0.00	0.00	0.00	0.00
15,700.00	90.16	90.00	7,197.82	172.06	8,713.37	8,713.37	0.00	0.00	0.00	0.00
15,800.00	90.16	90.00	7,197.55	172.06	8,813.37	8,813.37	0.00	0.00	0.00	0.00
15,900.00	90.16	90.00	7,197.27	172.06	8,913.37	8,913.37	0.00	0.00	0.00	0.00
16,000.00	90.16	90.00	7,197.00	172.06	9,013.37	9,013.37	0.00	0.00	0.00	0.00
16,100.00	90.16	90.00	7,196.73	172.06	9,113.37	9,113.37	0.00	0.00	0.00	0.00
16,200.00	90.16	90.00	7,196.46	172.06	9,213.37	9,213.37	0.00	0.00	0.00	0.00
16,300.00	90.16	90.00	7,196.18	172.06	9,313.37	9,313.37	0.00	0.00	0.00	0.00
16,400.00	90.16	90.00	7,195.91	172.06	9,413.36	9,413.36	0.00	0.00	0.00	0.00
16,500.00	90.16	90.00	7,195.64	172.06	9,513.36	9,513.36	0.00	0.00	0.00	0.00
16,600.00	90.16	90.00	7,195.37	172.06	9,613.36	9,613.36	0.00	0.00	0.00	0.00
16,700.00	90.16	90.00	7,195.09	172.06	9,713.36	9,713.36	0.00	0.00	0.00	0.00
16,733.97	90.16	90.00	7,195.00	172.05	9,747.33	9,747.33	0.00	0.00	0.00	0.00
Total Depth (Toe)										
16,733.98	90.16	90.00	7,195.00	172.05	9,747.34	9,747.34	0.01	0.00	0.00	0.00
TD Well @ 16733.98ft - Sekich State 39C-17HZ_BHL										

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
5,050.00	5,050.00	0.00	0.00	Begin Nudge @ 5050.00ft
5,550.00	5,547.47	43.52	0.00	End Nudge @ 5550.00ft
6,040.00	6,030.02	128.61	0.00	Begin Drop @ 6040.00ft
6,540.00	6,527.49	172.13	0.00	End Drop @ 6540.00ft
6,559.56	6,547.05	172.13	0.00	Top of 4.5" Liner @ 6559.56ft
6,659.56	6,647.05	172.13	0.00	KOP @ 6659.56ft
7,100.00	7,045.37	172.13	161.11	DLS = 10°/100'
7,561.12	7,220.00	172.13	574.52	End Build @ 7561.12ft
16,733.98	7,195.00	172.05	9,747.34	TD Well @ 16733.98ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (usft)	Origin +E/-W (usft)	Start TVD (usft)
User	No Target (Freehand)	90.00	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
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Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	7,561.12	Rev A0	MWD
7,561.12	16,733.98	Rev A0	MWD

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,067.00	1,067.00	9 5/8"	9-5/8	13-1/2
7,561.12	7,220.00	7"	7	8-3/4

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,017.00	1,017.00	Fox Hills Marker		0.00	
3,593.00	3,593.00	Parkman		0.00	
4,192.00	4,192.00	Sussex		0.00	
6,921.55	6,900.00	Sharon Springs		0.00	
6,985.87	6,956.00	Niobrara A		0.00	
7,060.43	7,016.00	Niobrara B		0.00	
7,141.30	7,074.00	Niobrara C		0.00	
7,386.28	7,194.00	Fort Hays		0.00	
7,483.78	7,215.00	Codell		0.00	
7,561.12	7,220.00	Landing Target (Heel)		0.00	
16,733.97	7,195.00	Total Depth (Toe)		0.00	

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
Sekich State 39C-17HZ_SEC	0.00	0.00	0.00	Polygon
Sekich State 39C-17HZ_SHL	0.00	0.00	0.00	Point
Sekich State 39C-17HZ_LD	0.00	0.00	0.00	Polygon
Sekich State 39C-17HZ_BHL	7,195.00	172.05	9,747.34	Point
Sekich State 39C-17HZ_CP	7,220.00	319.50	-102.76	Point

Directional Difficulty Index

Average Dogleg over Survey:	1.37 °/100usft	Maximum Dogleg over Survey:	10.00 °/100usft at 7,610.19 usft
Net Tortousity applicable to Plans:	1.37 °/100usft	Directional Difficulty Index:	6.503

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Audit Info

North Reference Sheet for Sec. 18-T3N-R67W - Sekich State 39C-17HZ - 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' @ 4890.00usft (Drilling Rig). Northing and Easting are relative to Sekich State 39C-17HZ
 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: 0.99995697

Grid Coordinates of Well: 1,324,061.21 usft N, 3,156,448.37 usft E
 Geographical Coordinates of Well: 40° 13' 17.72" N, 104° 56' 23.06" W
 Grid Convergence at Surface is: 0.36°

Based upon Minimum Curvature type calculations, at a Measured Depth of 16,733.98usft
 the Bottom Hole Displacement is 9,748.86usft in the Direction of 88.99° (True).
 Magnetic Convergence at surface is: -8.28° (10 December 2013, , BGGM2013)

