

Well Name: **Sekich P19-21D**

Surface Location: Sekich P19-18D Pad Sec.19-T3N-R67W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

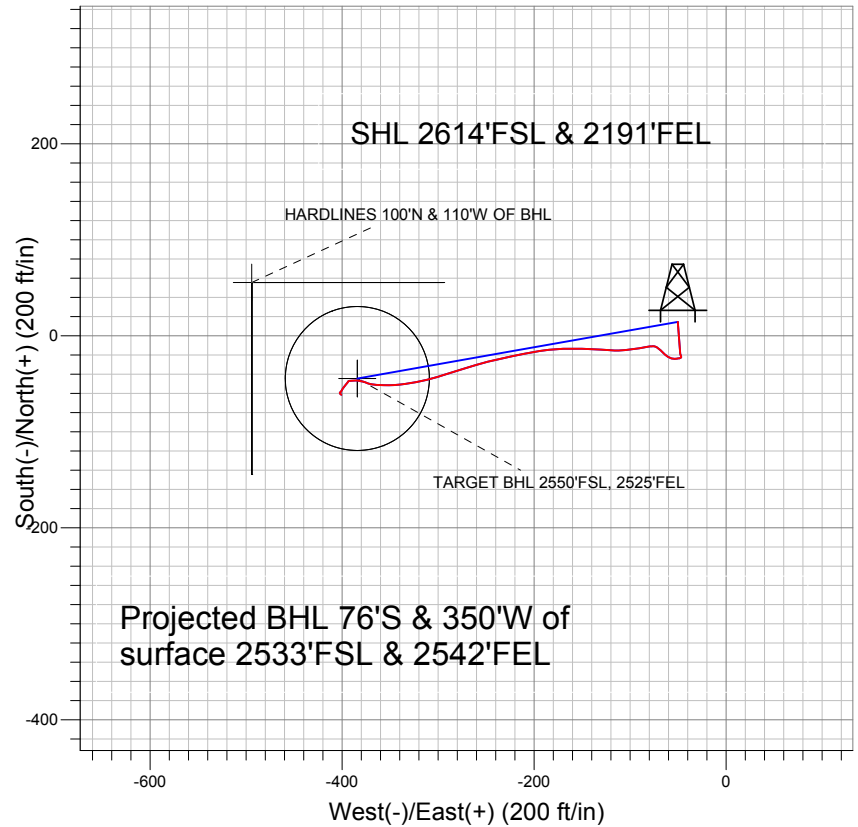
Ground Elevation: 4902.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
14.6	-50.3	1320408.63	3158878.37	40° 12' 41.472 N	104° 55' 52.032 W

Original Well Elev WELL @ 4915.0ft (Original Well Elev)

Slot

NOBLE ENERGY INC WELD COUNTY CO

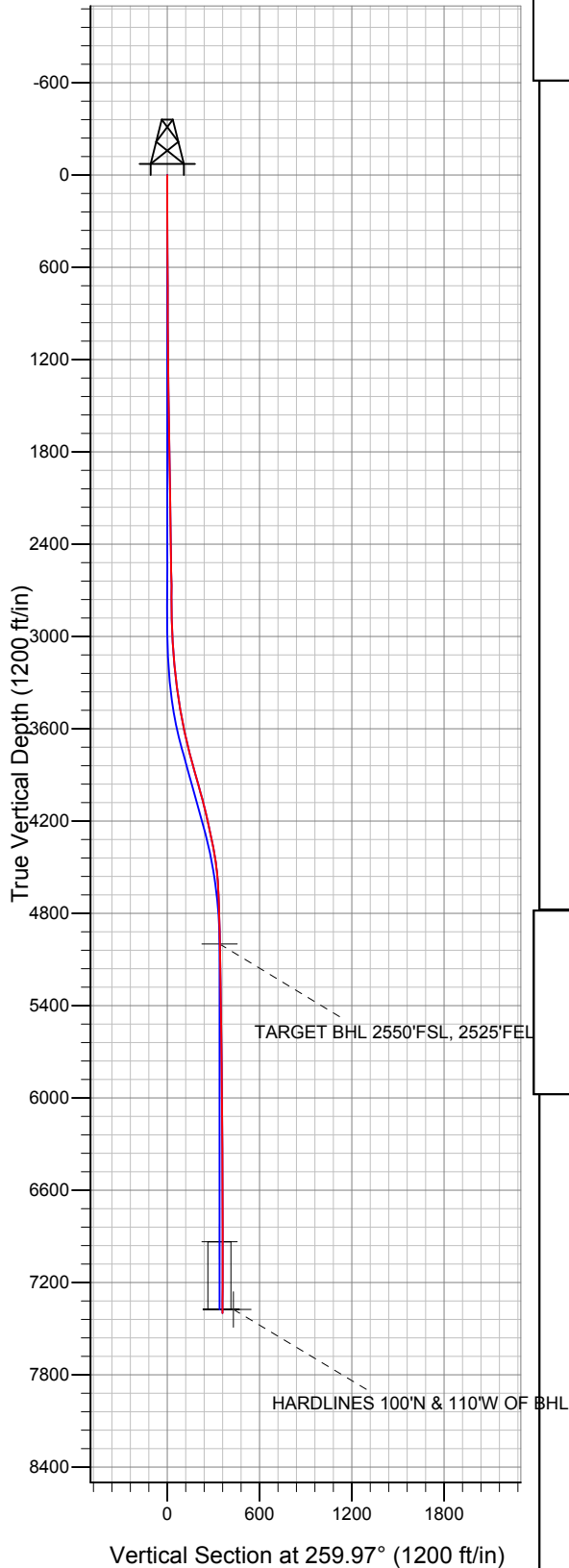


LEGEND

- ◆ Sekich P19-21D, Wellbore #1, Noble Sekich P19-21D Plan #1 (03-25-10) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
7433'MD & 7400'TVD @ 358' VS
0.4 deg Inc 132.3 deg AZ



Project: SEC.19-T3N-R67W
Site: Sekich P19-18D Pad Sec.19-T3N-R67W
Well: Sekich P19-21D
Plan: Wellbore #1



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.19-T3N-R67W

Sekich P19-18D Pad Sec.19-T3N-R67W

Sekich P19-21D

Wellbore #1

Survey: Survey #1

Standard Survey Report

02 February, 2011



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Site Sekich P19-18D Pad Sec.19-T3N-R67W
Project:	SEC.19-T3N-R67W	TVD Reference:	WELL @ 4915.0ft (Original Well Elev)
Site:	Sekich P19-18D Pad Sec.19-T3N-R67W	MD Reference:	WELL @ 4915.0ft (Original Well Elev)
Well:	Sekich P19-21D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.19-T3N-R67W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Sekich P19-18D Pad Sec.19-T3N-R67W		
Site Position:		Northing:	1,320,394.39 ft
From:	Lat/Long	Easting:	3,158,928.73 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40° 12' 41.328 N
		Longitude:	104° 55' 51.384 W
		Grid Convergence:	0.37 °

Well	Sekich P19-21D		
Well Position	+N/-S	14.6 ft	Northing:
	+E/-W	-50.3 ft	Easting:
Position Uncertainty		0.0 ft	Wellhead Elevation:
			ft
			Latitude:
			40° 12' 41.472 N
			Longitude:
			104° 55' 52.032 W
			Ground Level:
			4,902.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	9.10	66.93	53,186

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	5,000.0	14.6	-50.3	259.97	

Survey Program	Date	2/2/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
978.0	7,433.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.0	0.00	0.00	0.0	14.6	-50.3	0.0	0.00	0.00	0.00	
978.0	3.60	175.70	977.4	-16.1	-48.0	3.1	0.37	0.37	0.00	
1,072.0	2.20	157.50	1,071.2	-20.7	-47.1	3.0	1.76	-1.49	-19.36	
1,176.0	1.10	246.80	1,175.2	-22.9	-47.2	3.5	2.35	-1.06	85.87	
1,260.0	0.70	254.00	1,259.2	-23.4	-48.4	4.8	0.49	-0.48	8.57	
1,354.0	0.80	272.10	1,353.2	-23.5	-49.7	6.0	0.27	0.11	19.26	
1,448.0	1.20	260.40	1,447.2	-23.6	-51.3	7.6	0.48	0.43	-12.45	
1,542.0	1.10	269.20	1,541.2	-23.8	-53.2	9.5	0.22	-0.11	9.36	
1,636.0	1.10	271.90	1,635.1	-23.8	-55.0	11.3	0.06	0.00	2.87	
1,730.0	1.10	279.90	1,729.1	-23.6	-56.7	13.0	0.16	0.00	8.51	
1,824.0	1.00	304.90	1,823.1	-23.0	-58.3	14.5	0.49	-0.11	26.60	
1,918.0	0.70	292.10	1,917.1	-22.3	-59.5	15.5	0.38	-0.32	-13.62	
2,012.0	0.80	298.40	2,011.1	-21.8	-60.6	16.5	0.14	0.11	6.70	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Site Sekich P19-18D Pad Sec.19-T3N-R67W
Project:	SEC.19-T3N-R67W	TVD Reference:	WELL @ 4915.0ft (Original Well Elev)
Site:	Sekich P19-18D Pad Sec.19-T3N-R67W	MD Reference:	WELL @ 4915.0ft (Original Well Elev)
Well:	Sekich P19-21D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
2,106.0	1.40	300.80	2,105.1	-20.9	-62.2	17.9	0.64	0.64	2.55
2,205.0	1.40	324.00	2,204.0	-19.3	-63.9	19.3	0.57	0.00	23.43
2,294.0	1.50	313.90	2,293.0	-17.6	-65.4	20.5	0.31	0.11	-11.35
2,388.0	1.40	309.00	2,387.0	-16.0	-67.2	22.0	0.17	-0.11	-5.21
2,482.0	1.40	311.60	2,481.0	-14.5	-68.9	23.5	0.07	0.00	2.77
2,576.0	1.70	308.30	2,574.9	-12.9	-70.9	25.1	0.33	0.32	-3.51
2,670.0	1.50	303.90	2,668.9	-11.4	-73.0	26.9	0.25	-0.21	-4.68
2,764.0	0.70	270.80	2,762.9	-10.7	-74.6	28.4	1.05	-0.85	-35.21
2,854.0	0.60	256.80	2,852.9	-10.8	-75.6	29.4	0.21	-0.11	-15.56
2,952.0	1.50	267.60	2,950.8	-10.9	-77.4	31.2	0.94	0.92	11.02
3,046.0	3.10	262.80	3,044.8	-11.3	-81.1	34.9	1.71	1.70	-5.11
3,140.0	5.20	258.00	3,138.5	-12.5	-87.8	41.7	2.26	2.23	-5.11
3,234.0	6.30	263.90	3,232.0	-13.9	-97.1	51.1	1.33	1.17	6.28
3,328.0	6.80	265.10	3,325.4	-15.0	-107.8	61.8	0.55	0.53	1.28
3,422.0	9.10	273.10	3,418.5	-15.0	-120.8	74.6	2.71	2.45	8.51
3,516.0	11.00	273.50	3,511.1	-14.1	-137.2	90.5	2.02	2.02	0.43
3,610.0	11.90	271.20	3,603.2	-13.3	-155.8	108.8	1.07	0.96	-2.45
3,704.0	13.50	266.00	3,694.9	-13.9	-176.4	129.2	2.09	1.70	-5.53
3,797.0	14.50	260.20	3,785.1	-16.6	-198.7	151.6	1.85	1.08	-6.24
3,892.0	15.80	258.40	3,876.8	-21.3	-223.1	176.4	1.46	1.37	-1.89
3,986.0	16.20	255.60	3,967.2	-27.1	-248.4	202.3	0.92	0.43	-2.98
4,080.0	14.70	251.90	4,057.8	-34.1	-272.4	227.2	1.91	-1.60	-3.94
4,174.0	14.10	253.20	4,148.8	-41.1	-294.7	250.4	0.73	-0.64	1.38
4,268.0	12.00	256.90	4,240.4	-46.6	-315.2	271.5	2.40	-2.23	3.94
4,362.0	11.40	262.20	4,332.5	-50.1	-333.9	290.6	1.31	-0.64	5.64
4,456.0	9.90	269.70	4,424.8	-51.4	-351.2	307.8	2.17	-1.60	7.98
4,550.0	6.70	274.00	4,517.8	-51.0	-364.7	321.1	3.47	-3.40	4.57
4,644.0	4.00	293.80	4,611.4	-49.3	-373.2	329.1	3.44	-2.87	21.06
4,738.0	2.70	281.30	4,705.3	-47.6	-378.4	333.9	1.58	-1.38	-13.30
4,832.0	1.60	277.60	4,799.2	-47.0	-381.9	337.2	1.18	-1.17	-3.94
4,926.0	1.50	282.00	4,893.2	-46.5	-384.4	339.6	0.17	-0.11	4.68
5,020.0	1.20	263.40	4,987.1	-46.4	-386.5	341.7	0.56	-0.32	-19.79
5,032.8	1.17	262.92	4,999.9	-46.4	-386.8	342.0	0.23	-0.22	-3.72
TARGET BHL 2550'FSL, 2525'FEL									
5,114.0	1.00	259.30	5,081.1	-46.7	-388.3	343.6	0.23	-0.21	-4.46
5,208.0	0.90	262.90	5,175.1	-46.9	-389.9	345.1	0.12	-0.11	3.83
5,302.0	0.80	273.00	5,269.1	-47.0	-391.3	346.5	0.19	-0.11	10.74
5,396.0	0.70	258.30	5,363.1	-47.1	-392.5	347.7	0.23	-0.11	-15.64
5,490.0	0.70	236.70	5,457.1	-47.5	-393.5	348.8	0.28	0.00	-22.98
5,584.0	1.00	205.30	5,551.1	-48.5	-394.3	349.8	0.58	0.32	-33.40
5,803.0	1.00	227.40	5,770.1	-51.6	-396.6	352.5	0.18	0.00	10.09
5,897.0	1.00	218.00	5,864.0	-52.8	-397.7	353.8	0.17	0.00	-10.00
5,991.0	0.80	216.40	5,958.0	-53.9	-398.6	354.9	0.21	-0.21	-1.70
6,135.0	0.60	206.60	6,102.0	-55.4	-399.5	356.1	0.16	-0.14	-6.81
6,229.0	0.70	203.90	6,196.0	-56.4	-400.0	356.7	0.11	0.11	-2.87
6,323.0	0.60	219.10	6,290.0	-57.3	-400.5	357.4	0.21	-0.11	16.17
6,417.0	0.10	212.10	6,384.0	-57.7	-400.9	357.8	0.53	-0.53	-7.45
6,511.0	0.50	205.90	6,478.0	-58.2	-401.1	358.1	0.43	0.43	-6.60
6,604.0	0.40	235.30	6,571.0	-58.7	-401.5	358.6	0.27	-0.11	31.61
6,698.0	0.40	264.40	6,665.0	-59.0	-402.1	359.3	0.21	0.00	30.96
6,792.0	0.10	104.60	6,759.0	-59.0	-402.4	359.5	0.53	-0.32	-170.00
6,886.0	0.20	169.70	6,853.0	-59.2	-402.3	359.4	0.19	0.11	69.26
6,968.0	0.11	187.85	6,935.0	-59.4	-402.2	359.5	0.12	-0.11	22.15
TARGET CIRCLE 2550'FSL, 2525'FEL									

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Design:	Wellbore #1	Database:	Landmark

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,980.0	0.10	193.10	6,947.0	-59.4	-402.2	359.5	0.12	-0.09	43.62
7,075.0	0.10	138.30	7,042.0	-59.6	-402.2	359.5	0.10	0.00	-57.68
7,171.0	0.40	155.40	7,138.0	-59.9	-402.0	359.3	0.32	0.31	17.81
7,266.0	0.40	167.30	7,233.0	-60.6	-401.8	359.2	0.09	0.00	12.53
7,361.0	0.70	113.30	7,328.0	-61.1	-401.2	358.7	0.60	0.32	-56.84
7,406.7	0.50	122.76	7,373.7	-61.3	-400.8	358.4	0.48	-0.43	20.71
HARDLINES 100'N & 110'W OF BHL									
7,433.0	0.40	132.30	7,400.0	-61.5	-400.6	358.2	0.48	-0.39	36.25

Checked By: _____	Approved By: _____	Date: _____
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