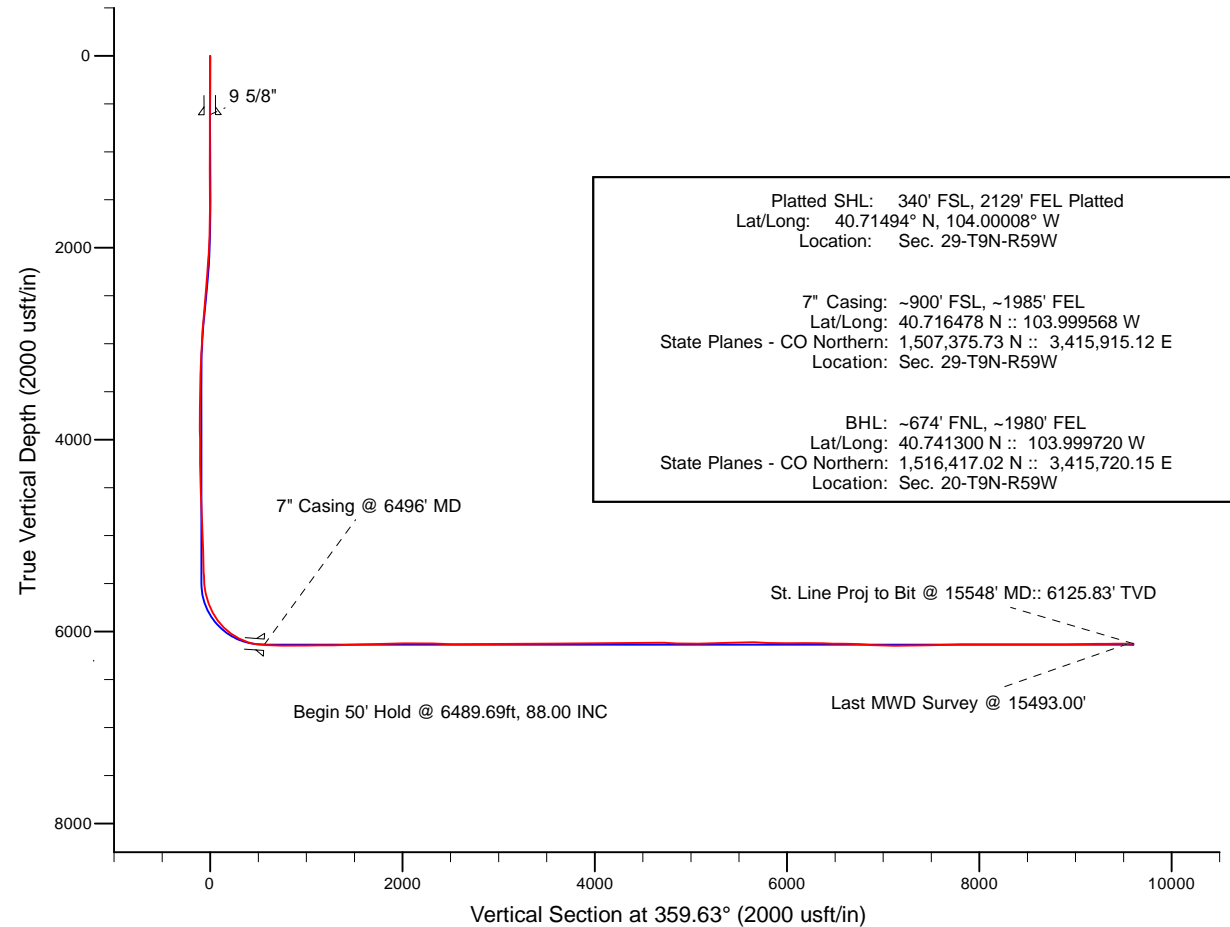
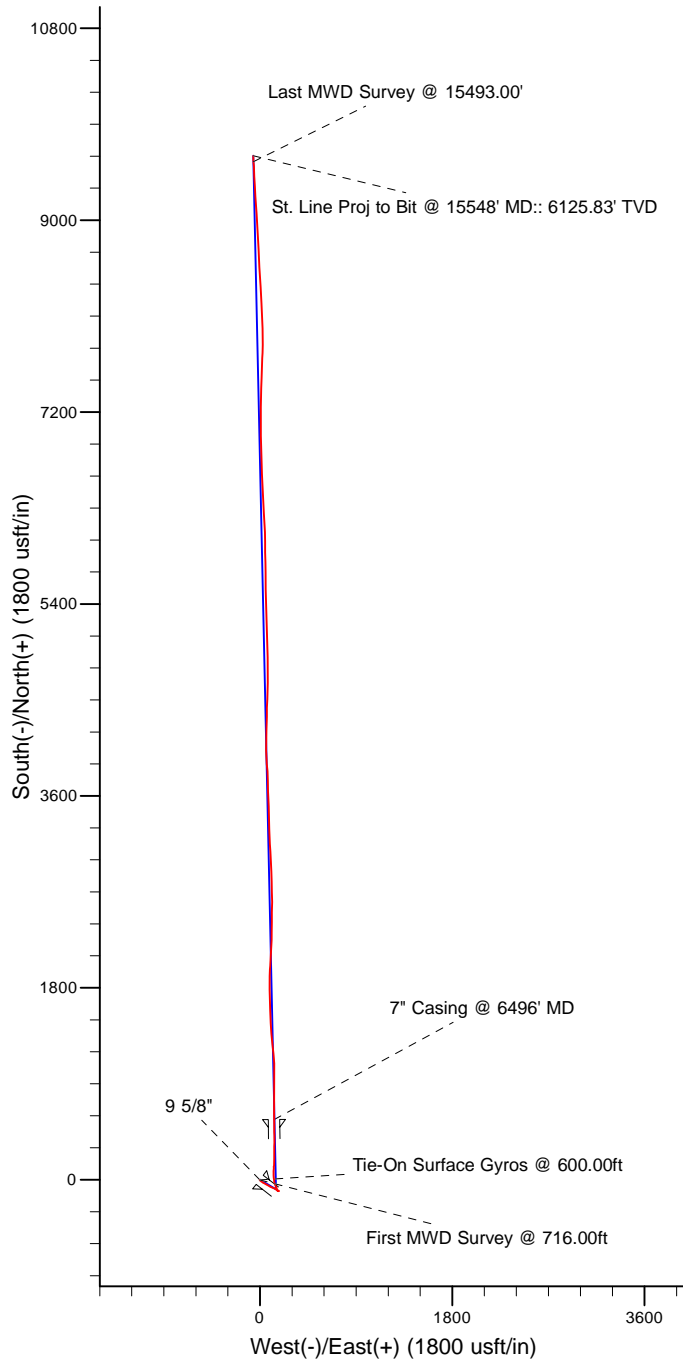


Project: Weld County, CO (NAD 83)
Site: Sec. 29-T9N-R59W (LC29-15-A)
Well: Trisha LC29-74HNB
Wellbore: Plan A
Design: Field Surveys

Noble Energy

HALLIBURTON
Sperry Drilling



LEGEND

- Trisha LC29-74HNB, Plan A, Rev A0 - PROPOSAL V0
- Field Surveys

Platted SHL: 340' FSL, 2129' FEL Platted
Lat/Long: 40.71494° N, 104.00008° W
Location: Sec. 29-T9N-R59W

7" Casing: ~900' FSL, ~1985' FEL
Lat/Long: 40.716478 N :: 103.999568 W
State Planes - CO Northern: 1,507,375.73 N :: 3,415,915.12 E
Location: Sec. 29-T9N-R59W

BHL: ~674' FNL, ~1980' FEL
Lat/Long: 40.741300 N :: 103.999720 W
State Planes - CO Northern: 1,516,417.02 N :: 3,415,720.15 E
Location: Sec. 20-T9N-R59W

WELL DETAILS: Trisha LC29-74HNB

Ground Level: 4872.00
RKB=24ft @ 4896.00usft (H&P 273)

Created By: Pari Amanlou
Created On: 06/20/2014

Noble Energy

Weld County, CO (NAD 83)

Sec. 29-T9N-R59W (LC29-15-A)

Trisha LC29-74HNB

901287195

Plan A

Design: Final Surveys

Sperry Drilling Services

Final Survey Report

23 June, 2014

Well Coordinates: 1,506,813.11 N, 3,415,782.68 E (40° 42' 53.78" N, 104° 00' 00.29" W)

Ground Level: 4,872.00 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 Trisha LC29-74HNB

RKB=24ft @ 4896.00usft (H&P 273)

N

Grid

Dec-Deg - API - US Survey Feet - Custom

HALLIBURTON

Design Report for Trisha LC29-74HNB - Field Surveys

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
Trisha LC29-74HNB_SHL - Trisha LC29-74HNB_SL - Trisha LC29-74HNB_600										
350.00	0.60	209.14	349.99	-1.60	-0.89	-1.59	0.17	0.17	0.00	209.14
600.00	0.20	317.14	599.99	-2.42	-1.83	-2.41	0.28	-0.16	43.20	163.96
Tie-On Surface Gyros @ 600.00ft										
616.00	0.22	307.99	615.99	-2.38	-1.87	-2.37	0.26	0.15	-57.18	-58.91
9 5/8"										
716.00	0.44	281.14	715.99	-2.19	-2.40	-2.17	0.26	0.22	-26.85	-49.76
First MWD Survey @ 716.00ft										
809.00	0.38	266.55	808.98	-2.14	-3.06	-2.12	0.13	-0.06	-15.69	-127.05
902.00	0.23	266.97	901.98	-2.17	-3.55	-2.14	0.16	-0.16	0.45	179.36
1,088.00	0.19	231.79	1,087.98	-2.38	-4.17	-2.35	0.07	-0.02	-18.91	-124.31
1,180.00	0.21	145.79	1,179.98	-2.61	-4.19	-2.58	0.30	0.02	-93.48	-129.93
1,366.00	0.15	122.93	1,365.98	-3.03	-3.80	-3.00	0.05	-0.03	-12.29	-140.93
1,459.00	0.40	92.48	1,458.98	-3.11	-3.37	-3.08	0.30	0.27	-32.74	-46.14
1,551.00	0.37	85.03	1,550.98	-3.09	-2.75	-3.08	0.06	-0.03	-8.10	-124.62
1,644.00	0.22	122.68	1,643.98	-3.16	-2.31	-3.15	0.26	-0.16	40.48	145.54
1,737.00	0.19	98.57	1,736.98	-3.28	-2.00	-3.27	0.10	-0.03	-25.92	-120.97
1,831.00	2.47	134.71	1,830.94	-4.73	-0.41	-4.73	2.47	2.43	38.45	38.91
1,926.00	4.21	137.56	1,925.78	-8.75	3.40	-8.77	1.84	1.83	3.00	6.88
2,021.00	4.72	121.55	2,020.50	-13.37	9.08	-13.42	1.41	0.54	-16.85	-75.86
2,115.00	6.25	125.53	2,114.06	-18.36	16.54	-18.47	1.68	1.63	4.23	15.95
2,210.00	7.66	126.51	2,208.36	-25.14	25.84	-25.30	1.49	1.48	1.03	5.30
2,305.00	8.91	118.64	2,302.37	-32.43	37.39	-32.67	1.77	1.32	-8.28	-46.16
2,399.00	7.91	115.71	2,395.36	-38.72	49.61	-39.05	1.16	-1.06	-3.12	-158.25
2,494.00	9.80	120.89	2,489.22	-45.71	62.43	-46.12	2.16	1.99	5.45	25.45
2,589.00	10.68	117.81	2,582.71	-53.97	77.16	-54.47	1.09	0.93	-3.24	-33.41
2,684.00	10.68	118.21	2,676.06	-62.24	92.70	-62.84	0.08	0.00	0.42	90.20
2,779.00	10.79	116.31	2,769.40	-70.34	108.43	-71.05	0.39	0.12	-2.00	-73.67
2,873.00	9.17	115.02	2,861.98	-77.41	123.11	-78.21	1.74	-1.72	-1.37	-172.78
2,968.00	7.59	114.18	2,955.96	-83.18	135.69	-84.06	1.67	-1.66	-0.88	-175.98
3,063.00	5.37	118.07	3,050.35	-87.84	145.34	-88.79	2.38	-2.34	4.09	170.74
3,158.00	4.65	126.35	3,144.99	-92.22	152.36	-93.21	1.07	-0.76	8.72	138.95
3,253.00	4.07	131.24	3,239.71	-96.72	158.00	-97.75	0.72	-0.61	5.15	149.76
3,348.00	2.53	127.85	3,334.55	-100.23	162.19	-101.29	1.63	-1.62	-3.57	-174.47
3,442.00	1.66	108.69	3,428.49	-101.94	165.12	-103.02	1.18	-0.93	-20.38	-150.47
3,537.00	2.04	109.46	3,523.44	-102.94	168.02	-104.04	0.40	0.40	0.81	4.13
3,632.00	2.32	108.66	3,618.37	-104.12	171.43	-105.24	0.30	0.29	-0.84	-6.60
3,727.00	2.48	110.73	3,713.29	-105.47	175.18	-106.61	0.19	0.17	2.18	29.48
3,822.00	0.87	90.20	3,808.24	-106.20	177.82	-107.35	1.78	-1.69	-21.61	-169.62
3,917.00	1.25	295.07	3,903.24	-105.76	177.60	-106.92	2.18	0.40	-163.29	-165.30
4,011.00	1.23	304.84	3,997.21	-104.75	175.85	-105.89	0.23	-0.02	10.39	100.27
4,106.00	1.75	291.90	4,092.18	-103.62	173.66	-104.76	0.65	0.55	-13.62	-39.48
4,201.00	2.16	279.63	4,187.13	-102.78	170.55	-103.90	0.61	0.43	-12.92	-51.83
4,296.00	2.19	284.63	4,282.06	-102.03	167.03	-103.11	0.20	0.03	5.26	83.52
4,391.00	2.15	294.48	4,376.99	-100.83	163.65	-101.90	0.39	-0.04	10.37	101.03
4,486.00	2.06	308.04	4,471.93	-99.04	160.69	-100.09	0.53	-0.09	14.27	106.97
4,581.00	2.47	332.93	4,566.86	-96.16	158.41	-97.20	1.11	0.43	26.20	80.13
4,676.00	2.82	344.08	4,661.75	-92.09	156.84	-93.12	0.65	0.37	11.74	61.43
4,770.00	3.27	4.19	4,755.62	-87.20	156.40	-88.21	1.22	0.48	21.39	77.41
4,865.00	2.26	358.11	4,850.51	-82.62	156.53	-83.64	1.11	-1.06	-6.40	-166.83
4,960.00	1.80	348.31	4,945.45	-79.29	156.17	-80.31	0.60	-0.48	-10.32	-147.79
5,055.00	2.19	340.20	5,040.40	-76.12	155.25	-77.13	0.51	0.41	-8.54	-40.00
5,150.00	1.95	338.58	5,135.33	-72.91	154.05	-73.91	0.26	-0.25	-1.71	-167.11
5,245.00	1.86	329.27	5,230.28	-70.08	152.67	-71.07	0.34	-0.09	-9.80	-110.83
5,339.00	1.81	329.45	5,324.23	-67.49	151.14	-68.47	0.05	-0.05	0.19	173.51
5,404.00	1.90	323.79	5,389.20	-65.73	149.98	-66.71	0.31	0.14	-8.71	-66.69
5,432.00	1.87	328.34	5,417.18	-64.97	149.46	-65.94	0.54	-0.11	16.25	103.60

Design Report for Trisha LC29-74HNB - Field Surveys

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 (°)
5,512.67	3.89	333.28	5,497.74	-61.41	147.54	-62.37	2.52	2.50	6.12	9.48
Trisha LC29-74HNB_KOP										
5,526.00	4.22	333.64	5,511.04	-60.57	147.12	-61.52	2.52	2.51	2.71	4.55
5,574.00	11.48	340.16	5,558.56	-54.48	144.71	-55.43	15.21	15.12	13.58	10.24
5,621.00	14.13	339.99	5,604.39	-44.69	141.16	-45.61	5.64	5.64	-0.36	-0.90
5,669.00	15.71	341.71	5,650.77	-33.01	137.12	-33.91	3.42	3.29	3.58	16.49
5,716.00	18.84	348.38	5,695.65	-19.53	133.59	-20.41	7.87	6.66	14.19	35.54
5,764.00	23.43	355.28	5,740.42	-2.42	131.24	-3.28	10.86	9.56	14.37	31.72
5,811.00	27.25	356.06	5,782.89	17.63	129.73	16.79	8.16	8.13	1.66	5.35
5,859.00	30.15	357.85	5,824.99	40.65	128.53	39.81	6.30	6.04	3.73	17.30
5,906.00	33.75	0.61	5,864.86	65.51	128.22	64.67	8.26	7.66	5.87	23.26
5,954.00	37.91	3.38	5,903.77	93.58	129.24	92.73	9.30	8.67	5.77	22.43
6,001.00	43.07	2.54	5,939.50	124.04	130.80	123.19	11.04	10.98	-1.79	-6.36
6,047.46	48.33	1.39	5,971.94	157.26	131.92	156.39	11.45	11.31	-2.49	-9.35
Trisha LC29-74HNB_Lateral										
6,049.00	48.50	1.35	5,972.97	158.41	131.95	157.55	11.45	11.32	-2.27	-8.54
6,096.00	51.53	1.30	6,003.16	194.41	132.78	193.54	6.45	6.45	-0.11	-0.74
6,144.00	54.38	1.05	6,032.08	232.71	133.57	231.83	5.95	5.94	-0.52	-4.08
6,190.00	59.51	0.72	6,057.16	271.25	134.16	270.37	11.17	11.15	-0.72	-3.18
6,238.00	65.03	359.94	6,079.49	313.72	134.39	312.83	11.59	11.50	-1.62	-7.31
6,285.00	68.92	0.23	6,097.87	356.96	134.46	356.08	8.30	8.28	0.62	3.98
6,333.00	72.35	359.76	6,113.78	402.24	134.45	401.36	7.21	7.15	-0.98	-7.45
6,380.00	77.36	359.14	6,126.05	447.59	134.02	446.71	10.74	10.66	-1.32	-6.90
6,452.00	85.68	359.19	6,136.66	518.74	132.98	517.86	11.56	11.56	0.07	0.34
6,496.00	86.42	359.40	6,139.70	562.63	132.44	561.75	1.74	1.67	0.48	15.98
7" Casing @ 6496' MD										
6,550.00	87.32	359.66	6,142.65	616.54	132.00	615.67	1.74	1.67	0.48	15.96
6,645.00	88.40	0.10	6,146.19	711.48	131.80	710.60	1.23	1.14	0.46	22.16
6,740.00	90.22	0.29	6,147.34	806.46	132.12	805.59	1.93	1.92	0.20	5.96
6,835.00	89.45	1.18	6,147.61	901.45	133.34	900.57	1.24	-0.81	0.94	130.87
6,930.00	91.14	359.96	6,147.12	996.44	134.29	995.55	2.19	1.78	-1.28	-35.82
7,025.00	91.51	358.12	6,144.92	1,091.40	132.70	1,090.51	1.98	0.39	-1.94	-78.61
7,119.00	88.24	353.91	6,145.13	1,185.14	126.17	1,184.29	5.67	-3.48	-4.48	-127.83
7,214.00	91.08	353.36	6,145.69	1,279.54	115.64	1,278.76	3.05	2.99	-0.58	-10.96
7,309.00	94.22	356.15	6,141.30	1,374.02	106.96	1,373.29	4.42	3.31	2.94	41.54
7,403.00	90.80	356.93	6,137.18	1,467.75	101.29	1,467.05	3.73	-3.64	0.83	167.15
7,498.00	91.60	358.36	6,135.19	1,562.64	97.39	1,561.97	1.72	0.84	1.51	60.76
7,593.00	92.31	357.39	6,131.95	1,657.52	93.87	1,656.87	1.26	0.75	-1.02	-53.77
7,687.00	89.66	359.05	6,130.34	1,751.45	90.95	1,750.82	3.33	-2.82	1.77	147.92
7,782.00	90.89	0.62	6,129.88	1,846.44	90.68	1,845.81	2.10	1.29	1.65	51.92
7,877.00	91.48	1.75	6,127.92	1,941.40	92.64	1,940.75	1.34	0.62	1.19	62.41
7,972.00	91.26	3.89	6,125.65	2,036.25	97.31	2,035.57	2.26	-0.23	2.25	95.85
8,067.00	92.25	3.15	6,122.74	2,131.03	103.14	2,130.31	1.30	1.04	-0.78	-36.75
8,162.00	88.12	2.04	6,122.43	2,225.91	107.44	2,225.16	4.50	-4.35	-1.17	-164.95
8,256.00	87.57	1.26	6,125.96	2,319.80	110.15	2,319.03	1.01	-0.59	-0.83	-125.22
8,351.00	87.60	0.39	6,129.97	2,414.70	111.52	2,413.93	0.92	0.03	-0.92	-88.04
8,446.00	88.74	1.11	6,133.00	2,509.65	112.76	2,508.86	1.42	1.20	0.76	32.27
8,541.00	90.28	359.38	6,133.81	2,604.63	113.17	2,603.84	2.44	1.62	-1.82	-48.33
8,636.00	90.59	359.16	6,133.09	2,699.62	111.95	2,698.84	0.40	0.33	-0.23	-35.36
8,730.00	90.25	358.30	6,132.40	2,793.60	109.87	2,792.82	0.98	-0.36	-0.91	-111.57
8,825.00	91.20	357.88	6,131.20	2,888.54	106.71	2,887.78	1.09	1.00	-0.44	-23.85
8,920.00	91.20	357.56	6,129.21	2,983.44	102.93	2,982.70	0.34	0.00	-0.34	-90.00
9,015.00	89.51	355.00	6,128.62	3,078.23	96.76	3,077.53	3.23	-1.78	-2.69	-123.42
9,110.00	89.91	356.68	6,129.10	3,172.97	89.87	3,172.32	1.82	0.42	1.77	76.61
9,205.00	91.08	359.63	6,128.28	3,267.91	86.81	3,267.27	3.34	1.23	3.11	68.36
9,300.00	91.26	359.18	6,126.34	3,362.88	85.83	3,362.25	0.51	0.19	-0.47	-68.19
9,395.00	87.38	356.50	6,127.47	3,457.78	82.25	3,457.17	4.96	-4.08	-2.82	-145.37
9,489.00	90.52	358.60	6,129.19	3,551.66	78.23	3,551.08	4.02	3.34	2.23	33.80
9,584.00	91.36	358.57	6,127.63	3,646.62	75.89	3,646.05	0.88	0.88	-0.03	-2.04

Design Report for Trisha LC29-74HNB - Field Surveys

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 (°)
9,677.00	92.49	359.31	6,124.51	3,739.55	74.17	3,738.98	1.45	1.22	0.80	33.19
9,770.00	90.34	355.52	6,122.21	3,832.40	69.98	3,831.86	4.68	-2.31	-4.08	-119.52
9,863.00	89.94	356.27	6,121.99	3,925.16	63.32	3,924.67	0.91	-0.43	0.81	118.07
9,956.00	90.18	357.95	6,121.89	4,018.04	58.63	4,017.57	1.82	0.26	1.81	81.87
10,049.00	90.03	1.58	6,121.72	4,111.03	58.25	4,110.56	3.91	-0.16	3.90	92.36
10,141.00	90.37	1.55	6,121.40	4,202.99	60.76	4,202.50	0.37	0.37	-0.03	-5.04
10,234.00	91.48	1.83	6,119.90	4,295.94	63.50	4,295.43	1.23	1.19	0.30	14.15
10,327.00	88.09	359.73	6,120.24	4,388.91	64.77	4,388.39	4.29	-3.65	-2.26	-148.22
10,420.00	91.17	3.37	6,120.85	4,481.85	67.28	4,481.31	5.13	3.31	3.91	49.79
10,512.00	91.48	2.13	6,118.72	4,573.71	71.70	4,573.15	1.39	0.34	-1.35	-75.95
10,605.00	90.37	2.68	6,117.22	4,666.62	75.60	4,666.02	1.33	-1.19	0.59	153.64
10,698.00	87.81	356.90	6,118.69	4,759.56	75.26	4,758.96	6.80	-2.75	-6.22	-113.92
10,791.00	87.32	357.97	6,122.65	4,852.38	71.10	4,851.81	1.26	-0.53	1.15	114.65
10,883.00	88.37	358.90	6,126.11	4,944.28	68.59	4,943.72	1.52	1.14	1.01	41.53
10,976.00	89.91	359.75	6,127.50	5,037.26	67.50	5,036.71	1.89	1.66	0.91	28.90
11,069.00	91.05	358.38	6,126.72	5,130.24	65.98	5,129.70	1.92	1.23	-1.47	-50.23
11,162.00	92.03	358.81	6,124.22	5,223.17	63.70	5,222.65	1.15	1.05	0.46	23.68
11,255.00	92.09	358.48	6,120.88	5,316.09	61.50	5,315.57	0.36	0.06	-0.35	-79.68
11,350.00	92.25	357.23	6,117.28	5,410.95	57.95	5,410.46	1.33	0.17	-1.32	-82.68
11,445.00	91.63	358.12	6,114.07	5,505.82	54.10	5,505.35	1.14	-0.65	0.94	124.86
11,539.00	89.91	359.69	6,112.80	5,599.79	52.30	5,599.32	2.48	-1.83	1.67	137.60
11,634.00	87.66	359.49	6,114.82	5,694.76	51.62	5,694.30	2.38	-2.37	-0.21	-174.92
11,729.00	86.98	359.04	6,119.26	5,789.64	50.40	5,789.19	0.86	-0.72	-0.47	-146.54
11,824.00	87.97	358.91	6,123.45	5,884.53	48.71	5,884.09	1.05	1.04	-0.14	-7.48
11,919.00	91.57	0.57	6,123.83	5,979.51	48.28	5,979.07	4.17	3.79	1.75	24.76
12,013.00	90.43	358.45	6,122.19	6,073.49	47.47	6,073.05	2.56	-1.21	-2.26	-118.25
12,108.00	91.02	356.37	6,120.98	6,168.38	43.18	6,167.97	2.28	0.62	-2.19	-74.15
12,203.00	88.21	355.50	6,121.62	6,263.13	36.45	6,262.76	3.10	-2.96	-0.92	-162.80
12,298.00	88.06	355.96	6,124.71	6,357.81	29.38	6,357.49	0.51	-0.16	0.48	108.08
12,369.00	89.35	357.79	6,126.32	6,428.68	25.51	6,428.38	3.15	1.82	2.58	54.84
12,416.00	89.97	358.89	6,126.60	6,475.66	24.15	6,475.37	2.69	1.32	2.34	60.60
12,511.00	88.92	357.80	6,127.52	6,570.62	21.40	6,570.34	1.59	-1.11	-1.15	-133.93
12,606.00	88.15	357.98	6,129.95	6,665.52	17.91	6,665.26	0.83	-0.81	0.19	166.85
12,700.00	87.35	357.74	6,133.64	6,759.38	14.40	6,759.14	0.89	-0.85	-0.26	-163.32
12,795.00	86.98	358.64	6,138.34	6,854.22	11.40	6,854.00	1.02	-0.39	0.95	112.39
12,890.00	87.07	358.51	6,143.27	6,949.06	9.04	6,948.85	0.17	0.09	-0.14	-55.27
12,985.00	88.09	358.99	6,147.28	7,043.95	6.97	7,043.75	1.19	1.07	0.51	25.19
13,080.00	89.88	0.25	6,148.96	7,138.93	6.34	7,138.73	2.30	1.88	1.33	35.15
13,175.00	91.11	1.52	6,148.14	7,233.91	7.81	7,233.70	1.86	1.29	1.34	45.91
13,270.00	90.93	0.98	6,146.45	7,328.87	9.88	7,328.65	0.60	-0.19	-0.57	-108.43
13,365.00	91.63	1.85	6,144.33	7,423.82	12.23	7,423.58	1.18	0.74	0.92	51.16
13,459.00	91.91	2.05	6,141.42	7,517.72	15.42	7,517.46	0.37	0.30	0.21	35.52
13,554.00	91.79	2.36	6,138.36	7,612.60	19.08	7,612.31	0.35	-0.13	0.33	111.17
13,649.00	90.46	1.87	6,136.49	7,707.51	22.58	7,707.20	1.49	-1.40	-0.52	-159.77
13,744.00	90.25	0.85	6,135.90	7,802.48	24.84	7,802.15	1.10	-0.22	-1.07	-101.63
13,839.00	89.91	0.12	6,135.77	7,897.48	25.64	7,897.14	0.85	-0.36	-0.77	-114.97
13,933.00	90.15	358.30	6,135.72	7,991.46	24.34	7,991.14	1.95	0.26	-1.94	-82.49
14,028.00	90.15	357.25	6,135.47	8,086.39	20.66	8,086.08	1.11	0.00	-1.11	-90.00
14,123.00	90.06	357.18	6,135.30	8,181.28	16.04	8,181.00	0.12	-0.09	-0.07	-142.12
14,218.00	90.09	357.16	6,135.17	8,276.16	11.35	8,275.91	0.04	0.03	-0.02	-33.69
14,313.00	89.78	356.59	6,135.28	8,371.02	6.17	8,370.80	0.68	-0.33	-0.60	-118.54
14,408.00	89.41	356.52	6,135.95	8,465.85	0.46	8,465.66	0.40	-0.39	-0.07	-169.29
14,502.00	90.28	357.23	6,136.21	8,559.71	-4.66	8,559.55	1.19	0.93	0.76	39.22
14,597.00	90.80	357.53	6,135.31	8,654.60	-9.00	8,654.48	0.63	0.55	0.32	29.98
14,692.00	89.82	356.58	6,134.80	8,749.47	-13.88	8,749.38	1.44	-1.03	-1.00	-135.89
14,787.00	90.34	357.06	6,134.66	8,844.33	-19.15	8,844.26	0.74	0.55	0.51	42.71
14,882.00	90.68	356.85	6,133.82	8,939.19	-24.20	8,939.15	0.42	0.36	-0.22	-31.70
14,976.00	91.26	356.51	6,132.23	9,033.02	-29.64	9,033.02	0.72	0.62	-0.36	-30.37
15,071.00	90.74	355.97	6,130.57	9,127.80	-35.87	9,127.84	0.79	-0.55	-0.57	-133.92
15,166.00	90.77	356.38	6,129.32	9,222.58	-42.21	9,222.65	0.43	0.03	0.43	85.81

Design Report for Trisha LC29-74HNB - Field Surveys

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 (°)
15,261.00	90.18	356.83	6,128.53	9,317.41	-47.84	9,317.52	0.78	-0.62	0.47	142.67
15,356.00	90.71	356.79	6,127.79	9,412.25	-53.12	9,412.40	0.56	0.56	-0.04	-4.32
15,450.00	90.37	357.22	6,126.91	9,506.12	-58.03	9,506.30	0.58	-0.36	0.46	128.33
15,493.00	90.49	357.41	6,126.58	9,549.07	-60.05	9,549.26	0.52	0.28	0.44	57.72
Last MWD Survey @ 15493.00'										
15,548.00	90.49	357.41	6,126.11	9,604.02	-62.53	9,604.22	0.00	0.00	0.00	0.00
St. Line Proj to Bit @ 15548' MD:: 6125.83' TVD - Trisha LC29-74HNB_BHL										

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
600.00	599.99	-2.42	-1.83	Tie-On Surface Gyros @ 600.00ft
716.00	715.99	-2.19	-2.40	First MWD Survey @ 716.00ft
15,493.00	6,126.58	9,549.07	-60.05	Last MWD Survey @ 15493.00'
15,548.00	6,126.11	9,604.02	-62.53	St. Line Proj to Bit @ 15548' MD:: 6125.83' TVD

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/-S (usft)	+E/-W (usft)	
Target	Trisha LC29-74HNB_BHL	359.63	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
350.00	600.00	Surface Gyros	Flexi-Shot
600.00	6452.00	MWD Surveys - Intermediate	MWD+IFR1+MS_WY
6,550.00	15,493.00	MWD Surveys - Production	MWD+IFR1+MS_WY

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
616.00		9 5/8"	9-5/8	13-3/4
6,496.00	6,139.41	7" Casing @ 6496' MD	7	8-3/4

Design Report for Trisha LC29-74HNB - Field Surveys

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
Trisha LC29-74HNB_SL	0.00	0.00	0.00	Polygon
Trisha LC29-74HNB_SHL	0.00	0.00	0.00	Point
Trisha LC29-74HNB_600	0.00	0.00	0.00	Polygon
Trisha LC29-74HNB_KOP	5,499.15	-90.00	150.13	Circle
Trisha LC29-74HNB_Lateral	6,138.00	0.00	0.00	Polygon
Trisha LC29-74HNB_BHL	6,138.00	9,604.14	-62.69	Point

Directional Difficulty Index

Average Dogleg over Survey:	1.83 °/100usft	Maximum Dogleg over Survey:	15.21 °/100usft at 5,574.00 usft
Net Tortousity applicable to Plans:	1.12 °/100usft	Directional Difficulty Index:	6.856

Audit Info

North Reference Sheet for Sec. 29-T9N-R59W (LC29-15-A) - Trisha LC29-74HNB - Plan A

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to RKB=24ft @ 4896.00usft (H&P 273). Northing and Easting are relative to Trisha LC29-74HNB

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: 0.99998962

Grid Coordinates of Well: 1,506,813.11 usft N, 3,415,782.68 usft E

Geographical Coordinates of Well: 40° 42' 53.78" N, 104° 00' 00.29" W

Grid Convergence at Surface is: 0.97°

Based upon Minimum Curvature type calculations, at a Measured Depth of 15,548.00usft the Bottom Hole Displacement is 9,604.22usft in the Direction of 359.63° (Grid).

Magnetic Convergence at surface is: -7.15° (15 May 2014, , BGGM2013)

