

Noble Energy

Weld County, CO (NAD 83)

Sec. 2-T9N-R58W (Sharpe State 2 /Davis State (PAD)

Tripucka State LD02-74-1AHN

05-123-39878

Original Wellbore

Design: Actual Surveys

Sperry Drilling Services

Standard Report

07 January, 2015

Surface UWI : 05-123-39878

Well Coordinates: 1,529,549.00 N, 3,462,941.14 E (40° 46' 30.07" N, 103° 49' 42.42" W)

Ground Level: 4,674.00 usft

Local Coordinate Origin:

Centered on Well Tripucka State LD02-74-1AHN

Viewing Datum:

KB @ 4704.00usft (HP 321)

TVDs to System:

N

North Reference:

Grid

Unit System:

Dec-Deg - API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 5000.1 Build: 70

HALLIBURTON

Project: Weld County, CO (NAD 83)
 Site: Sec. 2-T9N-R58W (Sharpe State 2 /Davis State (PAD))
 Well: Tripucka State LD02-74-1AHN
 Wellbore: Original Wellbore
 Design: Actual Surveys

Noble Energy

WALLBURTON

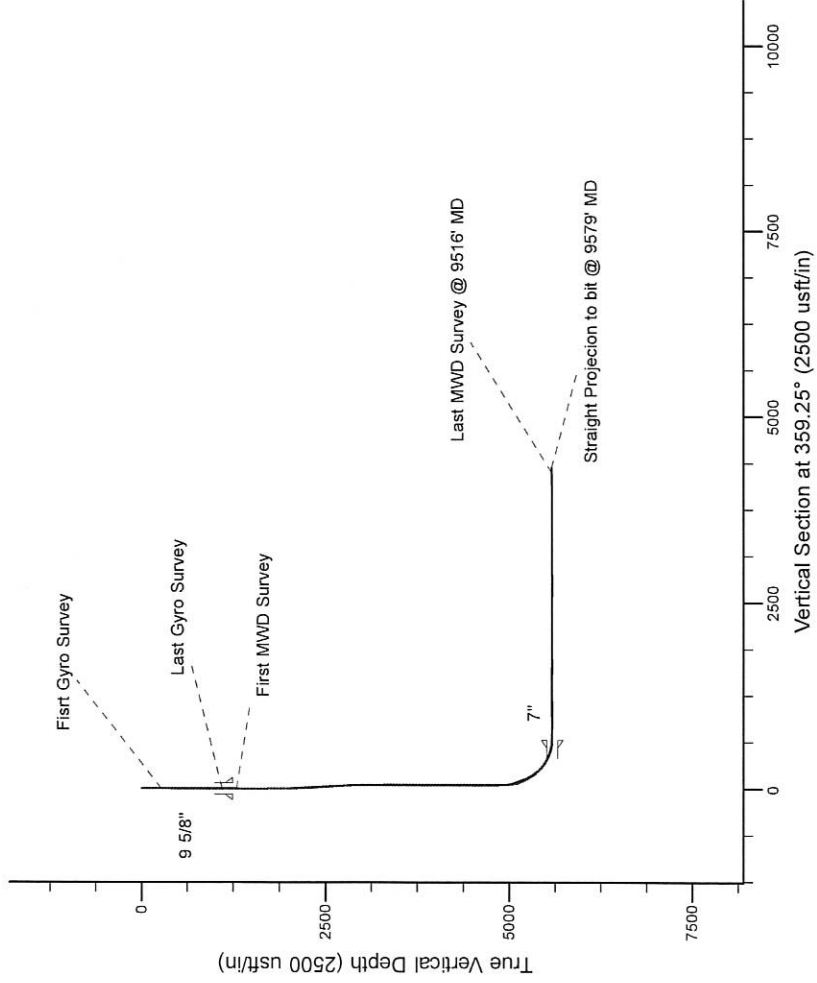
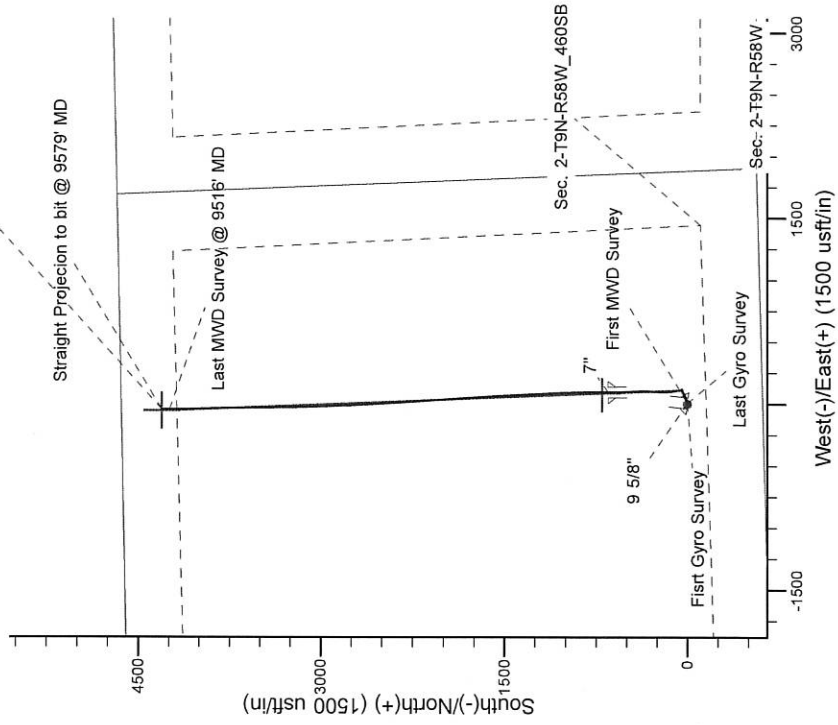
LEGEND

- ◊ Tripucka State LD02-74-1AHN, Original Wellbore, Rev A0 V0
- ▣ Actual Surveys

1953 FEL
 Platted SHL: 615 FSL, 1759 FEL
 Lat/Long: 40.77502 N, 103.82845 W
 Location: Sec. 2-T9N-R59W

~7" Casing: 1268 FSL, 1759 FEL
 Lat/Long: 40.776799 N, 103.828066 W
 State Planes - CO Northern: 1530199.21 N, 3463035.23 E
 Location: Sec. 2-T9N-R59W

Platted BHL: 330' FNL, 1760' FEL
 Lat/Long: 40.78685 N, 103.82836 W
 State Planes - CO Northern: 1533858.81 N, 3462884.81 E
 Location: Sec. 2-T9N-R59W



WELL DETAILS: Tripucka State LD02-74-1AHN	
Ground Level:	4674.00
KB @ 4704.00usft (HP 321)	
Created By:	Amanda Marchand
Created On:	1/7/2015

Design Report for Tripucka State LD02-74-1AHN - Actual Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
272.00	0.40	95.92	272.00	-0.10	0.94	-0.11	0.15
First Gyro Survey							
547.00	0.40	36.42	546.99	0.58	2.47	0.54	0.14
822.00	0.40	90.82	821.99	1.33	4.00	1.28	0.13
1,098.00	0.60	158.22	1,097.98	-0.02	5.50	-0.09	0.21
Last Gyro Survey							
1,297.00	0.25	213.76	1,296.97	-1.35	5.64	-1.42	0.25
First MWD Survey							
1,388.00	0.37	302.35	1,387.97	-1.36	5.29	-1.43	0.49
1,481.00	0.34	290.29	1,480.97	-1.10	4.77	-1.16	0.09
1,573.00	0.19	102.88	1,572.97	-1.04	4.67	-1.10	0.57
1,757.00	0.71	141.98	1,756.96	-2.01	5.66	-2.08	0.31
1,849.00	3.06	80.64	1,848.91	-2.06	8.44	-2.17	3.03
1,940.00	4.05	87.83	1,939.74	-1.54	14.05	-1.72	1.19
2,032.00	6.17	69.82	2,031.37	0.29	21.94	0.00	2.86
2,217.00	5.95	60.83	2,215.34	8.39	39.64	7.87	0.53
2,309.00	7.29	62.31	2,306.73	13.43	48.97	12.79	1.47
2,401.00	7.45	64.45	2,397.97	18.71	59.52	17.93	0.35
2,493.00	7.72	63.38	2,489.16	24.06	70.43	23.13	0.33
2,585.00	6.18	60.46	2,580.48	29.27	80.26	28.21	1.72
2,772.00	5.73	60.48	2,766.47	38.83	97.14	37.56	0.24
2,866.00	4.43	66.35	2,860.10	42.60	104.55	41.23	1.49
2,962.00	3.10	87.71	2,955.90	44.19	110.54	42.74	1.99
3,056.00	1.51	101.42	3,049.82	44.04	114.30	42.55	1.78
3,151.00	0.30	6.62	3,144.81	44.04	115.55	42.53	1.65
3,340.00	0.15	303.16	3,333.81	44.67	115.40	43.16	0.14
3,435.00	0.37	344.18	3,428.81	45.03	115.21	43.52	0.29
3,530.00	0.62	2.25	3,523.80	45.84	115.15	44.33	0.31
3,624.00	0.64	349.62	3,617.80	46.87	115.07	45.36	0.15
3,718.00	0.65	349.33	3,711.79	47.91	114.88	46.40	0.01
3,813.00	0.99	346.31	3,806.78	49.23	114.59	47.73	0.36
3,907.00	1.15	134.79	3,900.77	49.36	115.06	47.85	2.19
4,002.00	1.09	103.71	3,995.76	48.47	116.62	46.94	0.63
4,096.00	1.24	77.13	4,089.74	48.49	118.48	46.93	0.59
4,191.00	1.26	75.01	4,184.72	48.99	120.49	47.41	0.05
4,285.00	0.39	308.19	4,278.71	49.45	121.24	47.86	1.62
4,475.00	0.52	299.88	4,468.70	50.28	119.98	48.71	0.08
4,569.00	1.29	216.79	4,562.69	49.65	118.98	48.09	1.42
4,664.00	1.33	234.28	4,657.67	48.15	117.44	46.61	0.42
4,759.00	0.94	235.05	4,752.65	47.06	115.91	45.54	0.41
4,854.00	0.90	251.21	4,847.64	46.37	114.56	44.87	0.28
4,948.00	4.12	349.30	4,941.56	49.45	113.24	47.97	4.62
5,043.00	16.72	349.33	5,034.80	66.30	110.06	64.86	13.26
5,137.00	20.70	350.21	5,123.82	95.97	104.73	94.60	4.24
5,232.00	21.90	353.07	5,212.33	130.11	99.74	128.79	1.67
5,327.00	29.05	357.07	5,298.04	170.79	96.42	169.51	7.74
5,422.00	36.71	1.30	5,377.77	222.29	95.88	221.02	8.41
5,516.00	47.85	4.27	5,447.22	285.33	99.12	284.01	12.04
5,611.00	58.84	0.94	5,503.86	361.34	102.42	359.97	11.90

Design Report for Tripucka State LD02-74-1AHN - Actual Surveys

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)
5,659.00	63.14	357.98	5,527.13	403.30	102.00	401.93	10.46
5,706.00	67.38	356.78	5,546.80	445.93	100.05	444.58	9.31
5,754.00	72.01	357.07	5,563.45	490.87	97.63	489.55	9.66
5,801.00	77.24	358.32	5,575.91	536.13	95.82	534.83	11.42
5,866.00	84.78	359.41	5,586.06	600.27	94.55	598.99	11.72
5,942.00	93.09	359.61	5,587.47	676.19	93.90	674.91	10.94
6,034.00	91.88	0.70	5,583.48	768.10	94.15	766.81	1.77
6,126.00	90.65	359.97	5,581.45	860.08	94.69	858.76	1.55
6,221.00	89.85	357.42	5,581.04	955.04	92.53	953.75	2.81
6,316.00	90.65	357.89	5,580.62	1,049.96	88.64	1,048.71	0.98
6,410.00	89.97	356.89	5,580.11	1,143.86	84.36	1,142.66	1.29
6,505.00	89.60	357.08	5,580.47	1,238.73	79.36	1,237.58	0.44
6,600.00	90.52	356.92	5,580.37	1,333.60	74.39	1,332.51	0.98
6,695.00	89.04	357.33	5,580.73	1,428.47	69.63	1,427.44	1.62
6,790.00	89.29	357.12	5,582.12	1,523.35	65.03	1,522.37	0.34
6,885.00	90.62	357.09	5,582.19	1,618.23	60.23	1,617.30	1.40
6,979.00	89.08	356.00	5,582.44	1,712.05	54.57	1,711.19	2.01
7,074.00	89.41	356.24	5,583.69	1,806.83	48.14	1,806.04	0.43
7,169.00	89.41	355.97	5,584.67	1,901.60	41.68	1,900.89	0.28
7,264.00	89.78	356.49	5,585.34	1,996.39	35.44	1,995.76	0.67
7,359.00	91.54	356.72	5,584.25	2,091.22	29.81	2,090.65	1.87
7,454.00	88.40	355.61	5,584.30	2,185.99	23.46	2,185.50	3.51
7,548.00	88.03	355.65	5,587.23	2,279.67	16.30	2,279.26	0.40
7,643.00	89.01	356.26	5,589.68	2,374.40	9.60	2,374.07	1.21
7,738.00	89.54	356.06	5,590.88	2,469.18	3.24	2,468.93	0.60
7,833.00	91.48	357.25	5,590.04	2,564.01	-2.30	2,563.82	2.40
7,927.00	90.89	357.54	5,588.09	2,657.89	-6.57	2,657.75	0.70
8,022.00	90.06	357.99	5,587.30	2,752.81	-10.28	2,752.71	0.99
8,117.00	89.94	357.01	5,587.30	2,847.72	-14.42	2,847.67	1.04
8,211.00	90.22	357.72	5,587.17	2,941.62	-18.74	2,941.62	0.81
8,306.00	89.29	356.91	5,587.58	3,036.51	-23.19	3,036.56	1.30
8,401.00	89.94	358.40	5,588.22	3,131.43	-27.08	3,131.52	1.71
8,496.00	90.71	359.43	5,587.68	3,226.41	-28.88	3,226.51	1.35
8,591.00	91.08	359.94	5,586.19	3,321.40	-29.40	3,321.50	0.66
8,685.00	90.28	359.59	5,585.08	3,415.39	-29.79	3,415.49	0.93
8,780.00	89.91	0.49	5,584.92	3,510.39	-29.72	3,510.47	1.02
8,875.00	89.72	358.79	5,585.23	3,605.38	-30.32	3,605.47	1.80
8,969.00	88.98	358.54	5,586.29	3,699.35	-32.51	3,699.46	0.83
9,064.00	90.83	358.67	5,586.45	3,794.32	-34.82	3,794.45	1.95
9,159.00	89.85	357.53	5,585.89	3,889.26	-37.97	3,889.42	1.58
9,253.00	90.62	358.91	5,585.50	3,983.21	-40.89	3,983.40	1.68
9,348.00	91.23	358.45	5,583.97	4,078.17	-43.08	4,078.39	0.80
9,443.00	91.36	359.22	5,581.82	4,173.13	-45.01	4,173.36	0.82
9,516.00	90.99	359.27	5,580.32	4,246.11	-45.97	4,246.34	0.51
Last MWD Survey @ 9516' MD							
9,579.00	90.99	359.27	5,579.24	4,309.09	-46.77	4,309.33	0.00
Straight Projecion to bit @ 9579' MD							

Design Report for Tripucka State LD02-74-1AHN - Actual Surveys

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
272.00	272.00	-0.10	0.94	Fisrt Gyro Survey
1,098.00	1,097.98	-0.02	5.50	Last Gyro Survey
1,297.00	1,296.97	-1.35	5.64	First MWD Survey
9,516.00	5,580.32	4,246.11	-45.97	Last MWD Survey @ 9516' MD
9,579.00	5,579.24	4,309.09	-46.77	Straight Projecion to bit @ 9579' MD

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (usft)	Origin +E/-W (usft)	Start TVD (usft)
Target	Tripucka State LD02-74-1AHN_BHL	359.25	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
272.00	1,098.00	Surface Surveys	Flexi-Shot
1,297.00	5,866.00	Intermediate Surveys	MWD
5,866.00	9,579.00	Production Surveys	MWD

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,241.00	1,240.97	9 5/8"	9-5/8	13-3/4
5,916.00	5,588.23	7"	7	8-3/4

Wellbore Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Tripucka State LD02-7	0.00	0.00	5,582.48	4,309.81	-56.32	1,533,858.81	3,462,884.81	40.786850	-103.828360
- actual wellpath misses target center by 10.11usft at 9579.00usft MD (5579.24 TVD, 4309.09 N, -46.77 E)									
- Point									
Tripucka State LD02-7	0.00	0.00	5,585.00	703.30	84.50	1,530,252.31	3,463,025.64	40.776946	-103.828097
- actual wellpath misses target center by 9.36usft at 5969.17usft MD (5586.09 TVD, 703.33 N, 93.80 E)									
- Point									

Directional Difficulty Index

Average Dogleg over Survey:	1.78 °/100usft	Maximum Dogleg over Survey:	13.26 °/100usft at 5,043.00 usft
Net Tortousity applicable to Plans:	0.69 °/100usft	Directional Difficulty Index:	6.112

Audit Info