

OCD - HOBBS
05/06/2020
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State of New Mexico, Lea County

I, Alex Bradley certify that I am employed by Halliburton Energy Services, Inc. (aka Sperry Drilling) and that on the dates of August 17, 2019 through November 27, 2019, I did conduct or supervise the taking of MWD directional surveys for the Frizzle Fry 15 WA Fed Com 2H well from a depth of 1129' MD to a depth of 22467' MD. This data is true, correct, complete and within the limitations of the tools as set forth by Halliburton Energy Services, Inc. (aka Sperry Drilling). I am authorized and qualified to make this report and these surveys were conducted at the request of Marathon Oil Company, for the Frizzle Fry 15 WA Fed Com 2H well in Lea County. I have reviewed this report and find that it confirms to the principles and procedures as set forth by Halliburton Energy Services, Inc. (aka Sperry Drilling.)



Alex Bradley
Field Engineer

Precision 601

Marathon Oil Permian LLC

Lea County, New Mexico (NAD27) Frizzle Fry 15 Pad (Grid)

API#

Frizzle Fry 15 WA Fed Com 2H

273' FNL, 762' FWL of Sec. 15

Wellbore #1

Design: Wellbore #1

Sperry Drilling Services

Combo Report

02 December, 2019

Well Coordinates: 32.39808253
-103.66817379

NAD 1927 (NADCON CONUS)
New Mexico East 3001
509,175.51 N
705,302.09 E

Ground Level: 3,790.00 usft

Local Coordinate Origin:

Centered on Well Frizzle Fry 15 WA Fed Com 2H

Viewing Datum:

GL: 3790' + KB: 25' @ 3815.00usft (Precision 601)

TVDs to System:

N

North Reference:

Grid

Unit System:

Midcon (2 decimal)

Version: 5000.15 Build: 91E

Report Version: Midcon Combo v1.14

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Design Report for Frizzle Fry 15 WA Fed Com 2H - Wellbore #1

Measured	Grid	Vertical	Local Coordinates		Map Coordinates		Dogleg	Vertical	Toolface	Comments	
Depth (usft)	Inclination (°)	Azimuth (°)	Depth (usft)	Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)	Rate (°/100usft)	Section (usft)		Angle (°)
0.00	0.00	0.00	0.00	0.00 N	0.00 E	509,175.51	705,302.09	0.00	0.00	0.00	First Invictus Survey @ 158'MD
158.00	0.70	262.75	158.00	0.12 S	0.96 W	509,175.39	705,301.13	0.44	0.12	262.75	
254.00	0.60	231.75	253.99	0.51 S	1.93 W	509,175.00	705,300.16	0.38	0.49	-121.00	
439.00	0.10	232.75	438.99	1.20 S	2.82 W	509,174.31	705,299.27	0.27	1.19	179.80	
531.00	0.10	3.75	530.99	1.17 S	2.88 W	509,174.34	705,299.21	0.20	1.15	155.50	
623.00	0.80	349.75	622.98	0.46 S	2.99 W	509,175.05	705,299.10	0.76	0.44	-15.97	
716.00	0.30	12.75	715.98	0.42 N	3.05 W	509,175.93	705,299.04	0.58	-0.44	167.39	
807.00	0.90	344.75	806.97	1.34 N	3.19 W	509,176.85	705,298.90	0.71	-1.36	-40.50	
897.00	0.80	348.75	896.96	2.64 N	3.50 W	509,178.15	705,298.59	0.13	-2.66	151.31	
987.00	1.20	324.75	986.95	4.02 N	4.16 W	509,179.53	705,297.93	0.63	-4.05	-58.74	
1,050.06	1.20	340.28	1,050.00	5.18 N	4.77 W	509,180.69	705,297.32	0.51	-5.21	98.00	13 3/8"
1,052.00	1.20	340.75	1,051.94	5.22 N	4.78 W	509,180.73	705,297.31	0.51	-5.25	82.47	Last Invictus Survey @ 1052'MD
1,129.00	0.80	318.73	1,128.92	6.39 N	5.40 W	509,181.90	705,296.69	0.71	-6.42	-146.80	First Hal MWD Survey @ 1129'MD
1,219.00	1.00	308.17	1,218.91	7.34 N	6.43 W	509,182.85	705,295.66	0.29	-7.39	-45.03	
1,308.00	0.96	297.16	1,307.90	8.16 N	7.71 W	509,183.67	705,294.38	0.22	-8.21	-107.46	
1,398.00	0.69	279.40	1,397.89	8.60 N	8.91 W	509,184.11	705,293.18	0.41	-8.65	-145.20	
1,488.00	0.94	267.81	1,487.88	8.66 N	10.18 W	509,184.17	705,291.91	0.33	-8.72	-39.29	
1,577.00	0.91	270.94	1,576.87	8.64 N	11.62 W	509,184.15	705,290.47	0.07	-8.72	122.26	
1,666.00	0.89	257.17	1,665.86	8.50 N	13.00 W	509,184.01	705,289.09	0.24	-8.58	-102.14	
1,756.00	0.79	255.20	1,755.85	8.18 N	14.28 W	509,183.69	705,287.81	0.12	-8.28	-164.87	
1,845.00	0.47	246.43	1,844.84	7.88 N	15.21 W	509,183.39	705,286.88	0.37	-7.98	-167.58	
1,935.00	0.32	173.80	1,934.84	7.48 N	15.52 W	509,182.99	705,286.57	0.54	-7.59	-140.80	
2,025.00	0.41	255.11	2,024.84	7.15 N	15.81 W	509,182.66	705,286.28	0.53	-7.26	122.48	
2,114.00	2.01	281.51	2,113.82	7.38 N	17.64 W	509,182.89	705,284.45	1.86	-7.50	32.73	
2,204.00	3.52	284.27	2,203.71	8.38 N	21.87 W	509,183.89	705,280.22	1.68	-8.52	6.42	
2,294.00	2.97	292.38	2,293.57	9.95 N	26.70 W	509,185.46	705,275.39	0.79	-10.12	144.15	
2,383.00	2.04	314.46	2,382.48	11.93 N	29.96 W	509,187.44	705,272.13	1.49	-12.13	144.61	
2,472.00	1.66	323.04	2,471.44	14.07 N	31.87 W	509,189.58	705,270.22	0.53	-14.28	148.15	
2,561.00	1.41	334.19	2,560.40	16.09 N	33.12 W	509,191.60	705,268.97	0.44	-16.31	135.41	
2,651.00	1.40	333.25	2,650.38	18.07 N	34.10 W	509,193.58	705,267.99	0.03	-18.29	-113.92	
2,740.00	2.14	303.56	2,739.34	19.96 N	35.97 W	509,195.47	705,266.12	1.30	-20.19	-66.57	
2,830.00	3.53	293.59	2,829.22	21.99 N	39.91 W	509,197.50	705,262.18	1.63	-22.26	-24.56	
2,919.00	3.65	298.27	2,918.05	24.43 N	44.92 W	509,199.94	705,257.17	0.36	-24.73	70.08	
3,009.00	2.57	314.64	3,007.92	27.21 N	48.88 W	509,202.72	705,253.21	1.54	-27.53	148.55	
3,098.00	3.06	298.93	3,096.81	29.76 N	52.38 W	509,205.27	705,249.71	1.02	-30.11	-65.59	
3,188.00	5.61	280.50	3,186.55	31.72 N	58.80 W	509,207.23	705,243.29	3.19	-32.11	-38.05	

Design Report for Frizzle Fry 15 WA Fed Com 2H - Wellbore #1

Measured		Grid	Vertical	Local Coordinates		Map Coordinates		Dogleg	Vertical	Toolface	Comments
Depth	Inclination	Azimuth	Depth	Northing	Easting	Northing	Easting	Rate	Section	Angle	
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)	(°/100usft)	(usft)	(°)	
3,277.00	7.27	274.74	3,274.99	32.98 N	68.69 W	509,208.49	705,233.40	2.00	-33.44	-24.14	
3,366.00	5.76	286.18	3,363.41	34.69 N	78.60 W	509,210.20	705,223.49	2.23	-35.21	144.91	
3,455.00	4.63	295.10	3,452.05	37.46 N	86.14 W	509,212.97	705,215.95	1.56	-38.03	148.83	
3,545.00	4.41	303.87	3,541.77	40.93 N	92.30 W	509,216.44	705,209.79	0.80	-41.54	112.00	
3,634.00	3.83	314.13	3,630.54	44.91 N	97.28 W	509,220.42	705,204.81	1.05	-45.55	133.24	
3,745.00	3.65	318.62	3,741.30	50.14 N	102.27 W	509,225.65	705,199.82	0.31	-50.82	123.80	
3,829.00	4.50	320.79	3,825.09	54.70 N	106.12 W	509,230.21	705,195.97	1.03	-55.40	11.37	
3,918.00	5.01	324.71	3,913.78	60.58 N	110.58 W	509,236.09	705,191.51	0.68	-61.31	34.47	
4,008.00	4.24	328.90	4,003.49	66.63 N	114.57 W	509,242.14	705,187.52	0.93	-67.39	158.39	
4,098.00	3.12	314.58	4,093.31	71.20 N	118.03 W	509,246.71	705,184.06	1.60	-71.98	-147.62	
4,187.00	3.69	303.46	4,182.15	74.48 N	122.14 W	509,249.99	705,179.95	0.98	-75.29	-54.84	
4,277.00	4.38	294.45	4,271.93	77.50 N	127.69 W	509,253.01	705,174.40	1.04	-78.34	-47.13	
4,366.00	4.06	276.94	4,360.69	79.29 N	133.91 W	509,254.80	705,168.18	1.49	-80.17	-112.57	
4,456.00	3.74	261.82	4,450.48	79.25 N	139.98 W	509,254.76	705,162.11	1.19	-80.18	-114.73	
4,545.00	2.64	265.46	4,539.34	78.68 N	144.89 W	509,254.19	705,157.20	1.26	-79.64	171.38	
4,635.00	2.52	269.94	4,629.25	78.51 N	148.94 W	509,254.02	705,153.15	0.26	-79.50	122.98	
4,724.00	3.63	261.78	4,718.12	78.11 N	153.68 W	509,253.62	705,148.41	1.34	-79.12	-25.63	
4,814.00	4.95	258.49	4,807.87	76.92 N	160.31 W	509,252.43	705,141.78	1.49	-77.99	-12.20	
4,903.00	5.57	259.25	4,896.49	75.35 N	168.32 W	509,250.86	705,133.77	0.70	-76.47	6.79	
4,993.00	5.12	260.87	4,986.10	73.90 N	176.57 W	509,249.41	705,125.52	0.53	-75.07	162.27	
5,082.00	5.93	265.12	5,074.69	72.88 N	185.07 W	509,248.39	705,117.02	1.02	-74.11	28.93	
5,172.00	6.47	266.93	5,164.16	72.21 N	194.77 W	509,247.72	705,107.32	0.64	-73.50	20.80	
5,261.00	6.29	266.96	5,252.61	71.69 N	204.64 W	509,247.20	705,097.45	0.20	-73.04	178.95	
5,350.00	6.11	267.68	5,341.09	71.24 N	214.25 W	509,246.75	705,087.84	0.22	-72.65	156.99	
5,440.00	5.91	267.99	5,430.60	70.88 N	223.66 W	509,246.39	705,078.43	0.23	-72.36	170.94	
5,530.00	5.75	272.15	5,520.13	70.89 N	232.80 W	509,246.40	705,069.29	0.50	-72.43	112.80	
5,619.00	6.10	279.30	5,608.66	71.82 N	241.92 W	509,247.33	705,060.17	0.92	-73.42	68.21	
5,709.00	5.99	284.10	5,698.16	73.73 N	251.19 W	509,249.24	705,050.90	0.57	-75.40	104.66	
5,798.00	5.70	282.07	5,786.69	75.79 N	260.02 W	509,251.30	705,042.07	0.40	-77.51	-145.52	
5,888.00	5.54	287.74	5,876.26	78.05 N	268.53 W	509,253.56	705,033.56	0.64	-79.83	108.88	
5,977.00	5.99	295.84	5,964.81	81.38 N	276.80 W	509,256.89	705,025.29	1.04	-83.21	65.12	
6,067.00	5.78	298.45	6,054.34	85.59 N	285.01 W	509,261.10	705,017.08	0.38	-87.47	129.42	
6,156.00	5.49	300.60	6,142.91	89.89 N	292.62 W	509,265.40	705,009.47	0.40	-91.83	145.01	
6,246.00	5.44	301.52	6,232.50	94.31 N	299.96 W	509,269.82	705,002.13	0.11	-96.30	120.17	
6,335.00	5.43	301.00	6,321.10	98.68 N	307.16 W	509,274.19	704,994.93	0.06	-100.72	-101.74	
6,425.00	5.03	303.04	6,410.72	103.03 N	314.12 W	509,278.54	704,987.97	0.49	-105.11	156.08	
6,514.00	4.95	302.64	6,499.39	107.23 N	320.63 W	509,282.74	704,981.46	0.10	-109.35	-156.69	

Design Report for Frizzle Fry 15 WA Fed Com 2H - Wellbore #1

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toolface Angle (°)	Comments
6,604.00	4.56	303.55	6,589.08	111.30 N	326.88 W	509,286.81	704,975.21	0.44	-113.46	169.51	
6,693.00	4.24	306.43	6,677.81	115.21 N	332.47 W	509,290.72	704,969.62	0.44	-117.41	146.81	
6,783.00	4.13	311.75	6,767.57	119.34 N	337.57 W	509,294.85	704,964.52	0.45	-121.58	108.46	
6,872.00	4.00	307.21	6,856.35	123.35 N	342.43 W	509,298.86	704,959.66	0.39	-125.62	-114.25	
6,962.00	4.39	298.95	6,946.11	126.92 N	347.94 W	509,302.43	704,954.15	0.80	-129.22	-61.32	
7,052.00	4.42	299.14	7,035.84	130.27 N	353.99 W	509,305.78	704,948.10	0.04	-132.62	26.03	
7,141.00	4.13	294.12	7,124.60	133.25 N	359.91 W	509,308.76	704,942.18	0.53	-135.64	-130.26	
7,231.00	4.36	291.99	7,214.35	135.86 N	366.04 W	509,311.37	704,936.05	0.31	-138.28	-35.50	
7,321.00	5.22	290.51	7,304.04	138.58 N	373.05 W	509,314.09	704,929.04	0.97	-141.05	-8.92	
7,410.00	4.76	287.69	7,392.70	141.12 N	380.36 W	509,316.63	704,921.73	0.59	-143.64	-153.33	
7,499.00	4.68	286.87	7,481.40	143.29 N	387.35 W	509,318.80	704,914.74	0.12	-145.86	-140.26	
7,589.00	4.62	285.70	7,571.10	145.34 N	394.35 W	509,320.85	704,907.74	0.12	-147.95	-122.90	
7,679.00	4.59	284.28	7,660.81	147.21 N	401.33 W	509,322.72	704,900.76	0.13	-149.87	-105.45	
7,768.00	4.50	282.27	7,749.53	148.83 N	408.19 W	509,324.34	704,893.90	0.21	-151.53	-120.47	
7,858.00	4.23	281.40	7,839.27	150.23 N	414.90 W	509,325.74	704,887.19	0.31	-152.98	-166.65	
7,947.00	3.80	288.00	7,928.05	151.79 N	420.92 W	509,327.30	704,881.17	0.71	-154.58	136.20	
8,037.00	3.44	290.78	8,017.87	153.67 N	426.28 W	509,329.18	704,875.81	0.44	-156.50	155.39	
8,127.00	3.24	292.73	8,107.72	155.61 N	431.15 W	509,331.12	704,870.94	0.26	-158.47	151.37	
8,216.00	3.18	285.85	8,196.58	157.26 N	435.85 W	509,332.77	704,866.24	0.44	-160.15	-102.28	
8,306.00	3.06	282.82	8,286.45	158.47 N	440.59 W	509,333.98	704,861.50	0.23	-161.39	-127.55	
8,396.00	3.19	280.68	8,376.31	159.47 N	445.39 W	509,334.98	704,856.70	0.19	-162.42	-42.98	
8,485.00	3.24	281.93	8,465.17	160.45 N	450.29 W	509,335.96	704,851.80	0.10	-163.43	55.13	
8,575.00	3.09	277.26	8,555.03	161.28 N	455.18 W	509,336.79	704,846.91	0.33	-164.30	-122.51	
8,664.00	2.86	276.07	8,643.91	161.82 N	459.77 W	509,337.33	704,842.32	0.27	-164.87	-165.56	
8,754.00	2.76	267.65	8,733.81	161.97 N	464.17 W	509,337.48	704,837.92	0.47	-165.04	-107.80	
8,843.00	2.20	263.27	8,822.72	161.68 N	468.00 W	509,337.19	704,834.09	0.66	-164.78	-163.48	
8,851.00	2.12	266.34	8,830.72	161.65 N	468.30 W	509,337.16	704,833.79	1.76	-164.76	126.19	
8,998.00	1.40	240.21	8,977.65	160.59 N	472.58 W	509,336.10	704,829.51	0.72	-163.72	-144.46	
9,088.00	0.81	101.37	9,067.64	159.92 N	472.91 W	509,335.43	704,829.18	2.31	-163.05	-165.14	
9,177.00	3.16	90.20	9,156.58	159.78 N	469.84 W	509,335.29	704,832.25	2.66	-162.90	-14.96	
9,267.00	2.78	96.06	9,246.46	159.55 N	465.18 W	509,335.06	704,836.91	0.54	-162.63	144.28	
9,356.00	2.29	109.66	9,335.37	158.72 N	461.36 W	509,334.23	704,840.73	0.87	-161.78	135.83	
9,446.00	2.16	121.52	9,425.31	157.23 N	458.23 W	509,332.74	704,843.86	0.53	-160.26	111.64	
9,536.00	3.36	88.57	9,515.21	156.41 N	454.14 W	509,331.92	704,847.95	2.16	-159.41	-70.13	
9,625.00	3.25	93.98	9,604.06	156.30 N	449.02 W	509,331.81	704,853.07	0.37	-159.27	112.11	
9,715.00	3.07	39.14	9,693.94	157.99 N	444.95 W	509,333.50	704,857.14	3.24	-160.94	-120.53	
9,804.00	3.18	31.57	9,782.81	161.94 N	442.15 W	509,337.45	704,859.94	0.48	-164.87	-78.87	

Design Report for Frizzle Fry 15 WA Fed Com 2H - Wellbore #1

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toolface Angle (°)	Comments
				Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)				
9,894.00	2.85	54.83	9,872.69	165.36 N	439.02 W	509,340.87	704,863.07	1.40	-168.26	116.51	
9,983.00	2.58	63.62	9,961.59	167.52 N	435.42 W	509,343.03	704,866.67	0.56	-170.40	127.30	
10,073.00	2.56	69.39	10,051.50	169.13 N	431.72 W	509,344.64	704,870.37	0.29	-171.99	97.30	
10,163.00	2.15	75.85	10,141.42	170.25 N	428.20 W	509,345.76	704,873.89	0.54	-173.08	150.28	
10,252.00	1.87	76.11	10,230.37	171.01 N	425.17 W	509,346.52	704,876.92	0.31	-173.82	178.26	
10,342.00	1.94	74.74	10,320.32	171.76 N	422.28 W	509,347.27	704,879.81	0.09	-174.56	-33.73	
10,431.00	1.82	72.32	10,409.27	172.58 N	419.48 W	509,348.09	704,882.61	0.16	-175.36	-147.72	
10,521.00	1.02	188.74	10,499.25	172.23 N	418.24 W	509,347.74	704,883.85	2.72	-175.00	158.11	
10,610.00	1.05	157.67	10,588.24	170.69 N	418.05 W	509,346.20	704,884.04	0.62	-173.46	-102.55	
10,700.00	1.12	154.34	10,678.22	169.13 N	417.35 W	509,344.64	704,884.74	0.10	-171.90	-43.69	
10,789.00	1.53	273.25	10,767.21	168.42 N	418.16 W	509,343.93	704,883.93	2.57	-171.19	144.23	
10,879.00	1.79	280.57	10,857.17	168.74 N	420.74 W	509,344.25	704,881.35	0.37	-171.53	42.90	
10,968.00	1.71	274.33	10,946.13	169.10 N	423.44 W	509,344.61	704,878.65	0.23	-171.90	-115.87	
11,058.00	1.32	280.76	11,036.10	169.39 N	425.79 W	509,344.90	704,876.30	0.47	-172.21	159.64	
11,147.00	1.31	285.54	11,125.08	169.86 N	427.78 W	509,345.37	704,874.31	0.12	-172.69	97.60	
11,237.00	1.44	266.72	11,215.05	170.07 N	429.90 W	509,345.58	704,872.19	0.52	-172.92	-83.49	
11,326.00	1.07	261.53	11,304.03	169.88 N	431.84 W	509,345.39	704,870.25	0.43	-172.74	-165.51	
11,416.00	0.28	265.87	11,394.02	169.74 N	432.89 W	509,345.25	704,869.20	0.88	-172.61	178.47	
11,505.00	0.39	228.39	11,483.02	169.53 N	433.33 W	509,345.04	704,868.76	0.27	-172.40	-82.92	
11,595.00	0.53	243.58	11,573.02	169.14 N	433.93 W	509,344.65	704,868.16	0.21	-172.01	48.82	
11,665.00	0.71	261.47	11,643.01	168.93 N	434.65 W	509,344.44	704,867.44	0.37	-171.81	56.26	
11,695.00	0.76	258.90	11,673.01	168.86 N	435.03 W	509,344.37	704,867.06	0.20	-171.74	-34.69	
11,730.00	3.29	194.71	11,707.99	167.85 N	435.51 W	509,343.36	704,866.58	8.67	-170.73	-77.20	KOP @ 11730'MD (99.78' FNL, 327.18' FWL of Sec. 15&22 W1/2)
11,785.00	8.01	186.98	11,762.71	162.51 N	436.38 W	509,338.02	704,865.71	8.67	-165.40	-13.03	
11,874.00	15.80	180.29	11,849.73	144.21 N	437.20 W	509,319.72	704,864.89	8.87	-147.11	-13.35	
11,964.00	19.73	163.53	11,935.48	117.36 N	432.95 W	509,292.87	704,869.14	7.12	-120.23	-60.65	
12,053.00	25.40	168.99	12,017.64	84.19 N	425.04 W	509,259.70	704,877.05	6.79	-87.01	22.83	
12,143.00	34.44	170.72	12,095.56	40.04 N	417.23 W	509,215.55	704,884.86	10.09	-42.80	6.21	
12,233.00	43.88	176.50	12,165.29	16.36 S	411.21 W	509,159.15	704,890.88	11.24	13.63	23.43	
12,322.00	52.53	176.91	12,224.55	82.54 S	407.41 W	509,092.97	704,894.68	9.73	79.84	2.16	
12,412.00	62.08	177.39	12,273.11	158.10 S	403.67 W	509,017.41	704,898.42	10.62	155.42	2.55	
12,481.00	73.04	179.77	12,299.41	221.75 S	402.14 W	508,953.76	704,899.95	16.20	219.08	11.82	
12,569.00	82.89	182.24	12,317.74	307.69 S	403.68 W	508,867.82	704,898.41	11.52	305.01	14.06	
12,591.00	83.58	182.38	12,320.33	329.52 S	404.56 W	508,845.99	704,897.53	3.20	326.83	11.40	
12,685.00	89.75	182.85	12,325.80	423.22 S	408.84 W	508,752.29	704,893.25	6.58	420.50	4.36	
12,779.00	90.59	182.76	12,325.52	517.11 S	413.44 W	508,658.40	704,888.65	0.90	514.35	-6.12	

Design Report for Frizzle Fry 15 WA Fed Com 2H - Wellbore #1

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toolface Angle (°)	Comments
12,873.00	93.70	181.93	12,322.00	610.95 S	417.29 W	508,564.56	704,884.80	3.42	608.17	-14.92	
12,967.00	94.01	180.76	12,315.68	704.71 S	419.49 W	508,470.80	704,882.60	1.28	701.91	-75.09	
13,061.00	92.90	180.06	12,310.02	798.53 S	420.16 W	508,376.98	704,881.93	1.40	795.73	-147.79	
13,155.00	93.18	180.46	12,305.03	892.40 S	420.59 W	508,283.11	704,881.50	0.52	889.59	54.96	
13,249.00	92.10	179.98	12,300.70	986.30 S	420.95 W	508,189.21	704,881.14	1.26	983.48	-156.05	
13,343.00	91.79	178.86	12,297.51	1,080.24 S	420.00 W	508,095.27	704,882.09	1.24	1,077.43	-105.46	
13,437.00	89.04	180.58	12,296.83	1,174.22 S	419.54 W	508,001.29	704,882.55	3.45	1,171.41	147.97	
13,531.00	88.52	180.88	12,298.83	1,268.19 S	420.73 W	507,907.32	704,881.36	0.64	1,265.37	150.03	
13,625.00	92.96	181.04	12,297.62	1,362.15 S	422.31 W	507,813.36	704,879.78	4.73	1,359.32	2.06	
13,719.00	93.48	181.34	12,292.34	1,455.98 S	424.26 W	507,719.53	704,877.83	0.64	1,453.13	29.93	
13,813.00	92.96	181.58	12,287.06	1,549.80 S	426.65 W	507,625.71	704,875.44	0.61	1,546.94	155.25	
13,906.00	91.79	181.55	12,283.21	1,642.68 S	429.19 W	507,532.83	704,872.90	1.26	1,639.80	-178.53	
14,000.00	91.91	181.04	12,280.17	1,736.61 S	431.31 W	507,438.90	704,870.78	0.56	1,733.71	-76.74	
14,094.00	88.98	182.20	12,279.44	1,830.56 S	433.97 W	507,344.95	704,868.12	3.35	1,827.64	158.39	
14,188.00	91.42	181.32	12,279.11	1,924.50 S	436.85 W	507,251.01	704,865.24	2.76	1,921.56	-19.83	
14,283.00	89.66	179.75	12,278.22	2,019.49 S	437.74 W	507,156.02	704,864.35	2.48	2,016.54	-138.26	
14,377.00	88.74	178.06	12,279.53	2,113.46 S	435.95 W	507,062.05	704,866.14	2.05	2,110.52	-118.58	
14,472.00	90.77	179.09	12,279.94	2,208.42 S	433.58 W	506,967.09	704,868.51	2.40	2,205.50	26.91	
14,566.00	91.14	177.74	12,278.37	2,302.37 S	430.98 W	506,873.14	704,871.11	1.49	2,299.46	-74.66	
14,661.00	91.26	176.79	12,276.38	2,397.24 S	426.45 W	506,778.27	704,875.64	1.01	2,394.36	-82.79	
14,754.00	90.37	175.02	12,275.06	2,489.99 S	419.81 W	506,685.52	704,882.28	2.13	2,487.15	-116.68	
14,849.00	89.54	175.38	12,275.13	2,584.65 S	411.86 W	506,590.86	704,890.23	0.95	2,581.87	156.55	
14,943.00	90.40	177.52	12,275.18	2,678.47 S	406.04 W	506,497.04	704,896.05	2.45	2,675.72	68.11	
15,037.00	89.45	175.89	12,275.30	2,772.31 S	400.64 W	506,403.20	704,901.45	2.01	2,769.59	-120.23	
15,132.00	91.08	176.66	12,274.86	2,867.10 S	394.47 W	506,308.41	704,907.62	1.90	2,864.42	25.28	
15,226.00	90.92	179.03	12,273.22	2,961.02 S	390.93 W	506,214.49	704,911.16	2.53	2,958.36	93.84	
15,321.00	88.61	175.85	12,273.61	3,055.90 S	386.69 W	506,119.61	704,915.40	4.14	3,053.27	-125.99	
15,415.00	89.23	175.61	12,275.39	3,149.62 S	379.69 W	506,025.89	704,922.40	0.71	3,147.04	-21.16	
15,509.00	90.65	180.05	12,275.48	3,243.53 S	376.14 W	505,931.98	704,925.95	4.96	3,240.96	72.28	
15,602.00	89.01	178.31	12,275.76	3,336.51 S	374.80 W	505,839.00	704,927.29	2.57	3,333.95	-133.30	
15,695.00	89.38	177.89	12,277.07	3,429.45 S	371.72 W	505,746.06	704,930.37	0.60	3,426.91	-48.62	
15,790.00	89.35	177.53	12,278.12	3,524.37 S	367.93 W	505,651.14	704,934.16	0.38	3,521.85	-94.77	
15,883.00	90.72	180.11	12,278.06	3,617.34 S	366.01 W	505,558.17	704,936.08	3.14	3,614.83	62.04	
15,978.00	92.60	181.75	12,275.31	3,712.28 S	367.55 W	505,463.23	704,934.54	2.63	3,709.76	41.07	
16,071.00	92.42	182.27	12,271.24	3,805.13 S	370.81 W	505,370.38	704,931.28	0.59	3,802.59	109.10	
16,165.00	92.05	181.95	12,267.57	3,899.00 S	374.27 W	505,276.51	704,927.82	0.52	3,896.43	-139.16	
16,260.00	92.31	181.96	12,263.96	3,993.87 S	377.51 W	505,181.64	704,924.58	0.27	3,991.28	2.20	

Design Report for Frizzle Fry 15 WA Fed Com 2H - Wellbore #1

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toolface Angle (°)	Comments
16,353.00	92.62	182.75	12,259.96	4,086.71 S	381.32 W	505,088.80	704,920.77	0.91	4,084.09	68.54	
16,447.00	90.29	179.49	12,257.57	4,180.64 S	383.16 W	504,994.87	704,918.93	4.26	4,178.01	-125.51	
16,542.00	91.33	181.52	12,256.23	4,275.62 S	384.00 W	504,899.89	704,918.09	2.40	4,272.98	62.86	
16,683.00	91.36	180.58	12,252.92	4,416.56 S	386.58 W	504,758.95	704,915.51	0.67	4,413.90	-88.16	
16,777.00	93.73	180.42	12,248.74	4,510.45 S	387.40 W	504,665.06	704,914.69	2.53	4,507.79	-3.86	
16,871.00	93.82	180.71	12,242.56	4,604.25 S	388.32 W	504,571.26	704,913.77	0.32	4,601.57	72.71	
16,964.00	93.79	180.53	12,236.38	4,697.04 S	389.33 W	504,478.47	704,912.76	0.20	4,694.35	-99.48	
17,058.00	90.80	178.91	12,232.62	4,790.95 S	388.87 W	504,384.56	704,913.22	3.62	4,788.26	-151.53	
17,152.00	92.99	180.21	12,229.51	4,884.88 S	388.15 W	504,290.63	704,913.94	2.71	4,882.20	30.66	
17,246.00	92.22	180.09	12,225.24	4,978.79 S	388.39 W	504,196.72	704,913.70	0.83	4,976.10	-171.15	
17,341.00	91.14	179.06	12,222.45	5,073.74 S	387.69 W	504,101.77	704,914.40	1.57	5,071.06	-136.35	
17,434.00	92.25	180.05	12,219.70	5,166.69 S	386.96 W	504,008.82	704,915.13	1.60	5,164.01	41.70	
17,528.00	92.10	180.20	12,216.14	5,260.63 S	387.17 W	503,914.88	704,914.92	0.23	5,257.94	135.02	
17,623.00	91.51	180.02	12,213.14	5,355.58 S	387.35 W	503,819.93	704,914.74	0.65	5,352.89	-163.04	
17,716.00	92.40	182.02	12,209.97	5,448.50 S	389.01 W	503,727.01	704,913.08	2.35	5,445.80	65.97	
17,810.00	87.65	177.95	12,209.93	5,542.46 S	388.98 W	503,633.05	704,913.11	6.65	5,539.75	-139.39	
17,905.00	91.79	177.80	12,210.39	5,637.37 S	385.46 W	503,538.14	704,916.63	4.36	5,634.69	-2.08	
17,998.00	92.81	179.50	12,206.66	5,730.26 S	383.27 W	503,445.25	704,918.82	2.13	5,727.60	58.98	
18,092.00	93.68	178.46	12,201.34	5,824.10 S	381.60 W	503,351.41	704,920.49	1.44	5,821.44	-50.01	
18,186.00	94.25	180.46	12,194.84	5,917.86 S	380.72 W	503,257.65	704,921.37	2.21	5,915.21	73.99	
18,280.00	94.21	179.88	12,187.91	6,011.60 S	380.99 W	503,163.91	704,921.10	0.62	6,008.95	-93.93	
18,373.00	93.57	179.33	12,181.60	6,104.39 S	380.35 W	503,071.12	704,921.74	0.91	6,101.73	-139.37	
18,468.00	93.74	180.53	12,175.54	6,199.19 S	380.24 W	502,976.32	704,921.85	1.27	6,196.53	81.88	
18,561.00	92.37	180.02	12,170.58	6,292.06 S	380.68 W	502,883.45	704,921.41	1.57	6,289.39	-159.59	
18,656.00	91.82	180.60	12,167.11	6,386.99 S	381.20 W	502,788.52	704,920.89	0.84	6,384.32	133.49	
18,749.00	91.82	180.53	12,164.16	6,479.94 S	382.11 W	502,695.57	704,919.98	0.08	6,477.26	-90.00	
18,843.00	90.99	180.13	12,161.85	6,573.91 S	382.65 W	502,601.60	704,919.44	0.98	6,571.23	-154.27	
18,937.00	88.89	178.43	12,161.95	6,667.89 S	381.47 W	502,507.62	704,920.62	2.87	6,665.22	-141.01	
19,031.00	90.71	180.66	12,162.28	6,761.88 S	380.73 W	502,413.63	704,921.36	3.06	6,759.21	50.79	
19,124.00	92.50	179.33	12,159.67	6,854.84 S	380.72 W	502,320.67	704,921.37	2.40	6,852.16	-36.59	
19,218.00	94.04	179.58	12,154.31	6,948.68 S	379.83 W	502,226.83	704,922.26	1.66	6,946.00	9.20	
19,311.00	93.79	179.50	12,147.96	7,041.46 S	379.08 W	502,134.05	704,923.01	0.28	7,038.79	-162.29	
19,405.00	93.12	179.67	12,142.30	7,135.28 S	378.40 W	502,040.23	704,923.69	0.74	7,132.62	165.78	
19,499.00	94.10	179.70	12,136.38	7,229.09 S	377.89 W	501,946.42	704,924.20	1.04	7,226.43	1.75	
19,593.00	94.23	180.29	12,129.55	7,322.84 S	377.88 W	501,852.67	704,924.21	0.64	7,320.18	77.52	
19,686.00	94.32	180.37	12,122.62	7,415.58 S	378.41 W	501,759.93	704,923.68	0.13	7,412.91	41.55	
19,780.00	94.41	181.09	12,115.47	7,509.30 S	379.61 W	501,666.21	704,922.48	0.77	7,506.62	82.83	

Design Report for Frizzle Fry 15 WA Fed Com 2H - Wellbore #1

Measured	Grid	Vertical	Local Coordinates			Map Coordinates		Dogleg	Vertical	Toolface	Comments
Depth (usft)	Inclination (°)	Azimuth (°)	Depth (usft)	Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)	Rate (°/100usft)	Section (usft)	Angle (°)	
19,874.00	90.25	181.67	12,111.65	7,603.18 S	381.87 W	501,572.33	704,920.22	4.47	7,600.48	172.06	
19,968.00	90.28	181.29	12,111.21	7,697.15 S	384.30 W	501,478.36	704,917.79	0.41	7,694.43	-85.49	
20,062.00	89.75	182.12	12,111.19	7,791.10 S	387.09 W	501,384.41	704,915.00	1.05	7,788.36	122.56	
20,157.00	90.28	182.82	12,111.16	7,886.01 S	391.19 W	501,289.50	704,910.90	0.92	7,883.25	52.87	
20,251.00	89.72	179.10	12,111.16	7,979.98 S	392.76 W	501,195.53	704,909.33	4.00	7,977.20	-98.56	
20,345.00	90.89	180.21	12,110.66	8,073.98 S	392.20 W	501,101.53	704,909.89	1.72	8,071.20	43.49	
20,439.00	91.79	180.40	12,108.46	8,167.95 S	392.70 W	501,007.56	704,909.39	0.98	8,165.16	11.92	
20,534.00	88.55	178.66	12,108.18	8,262.93 S	391.92 W	500,912.58	704,910.17	3.87	8,260.15	-151.76	
20,627.00	88.67	179.22	12,110.44	8,355.89 S	390.20 W	500,819.62	704,911.89	0.62	8,353.11	77.91	
20,720.00	89.63	180.76	12,111.82	8,448.87 S	390.18 W	500,726.64	704,911.91	1.95	8,446.10	58.07	
20,814.00	87.90	176.59	12,113.84	8,542.80 S	388.01 W	500,632.71	704,914.08	4.80	8,540.04	-112.57	
20,908.00	86.95	176.61	12,118.07	8,636.54 S	382.44 W	500,538.97	704,919.65	1.01	8,633.81	178.80	
21,002.00	87.47	176.69	12,122.64	8,730.27 S	376.95 W	500,445.24	704,925.14	0.56	8,727.57	8.74	
21,094.00	89.41	177.40	12,125.15	8,822.10 S	372.21 W	500,353.41	704,929.88	2.25	8,819.44	20.11	
21,188.00	89.82	178.54	12,125.78	8,916.04 S	368.88 W	500,259.47	704,933.21	1.29	8,913.40	70.22	
21,282.00	89.26	178.36	12,126.53	9,010.00 S	366.34 W	500,165.51	704,935.75	0.63	9,007.38	-162.18	
21,376.00	89.85	179.98	12,127.26	9,103.99 S	364.98 W	500,071.52	704,937.11	1.83	9,101.37	70.00	
21,470.00	90.15	180.35	12,127.26	9,197.99 S	365.25 W	499,977.52	704,936.84	0.51	9,195.36	50.96	
21,565.00	90.65	179.78	12,126.60	9,292.98 S	365.36 W	499,882.53	704,936.73	0.80	9,290.36	-48.74	
21,659.00	91.20	179.52	12,125.08	9,386.97 S	364.78 W	499,788.54	704,937.31	0.65	9,384.34	-25.30	
21,753.00	90.86	180.30	12,123.39	9,480.95 S	364.64 W	499,694.56	704,937.45	0.91	9,478.33	113.55	
21,847.00	91.48	180.10	12,121.47	9,574.93 S	364.97 W	499,600.58	704,937.12	0.69	9,572.30	-17.87	
21,941.00	91.33	180.13	12,119.17	9,668.90 S	365.15 W	499,506.61	704,936.94	0.16	9,666.27	168.69	
22,035.00	90.80	179.81	12,117.42	9,762.89 S	365.10 W	499,412.62	704,936.99	0.66	9,760.25	-148.88	
22,129.00	89.94	179.28	12,116.81	9,856.88 S	364.36 W	499,318.63	704,937.73	1.07	9,854.25	-148.35	
22,222.00	90.22	179.64	12,116.68	9,949.88 S	363.48 W	499,225.63	704,938.61	0.49	9,947.25	52.12	
22,316.00	90.49	179.42	12,116.10	10,043.87 S	362.71 W	499,131.64	704,939.38	0.37	10,041.25	-39.17	
22,409.00	90.40	179.76	12,115.38	10,136.87 S	362.05 W	499,038.64	704,940.04	0.38	10,134.24	104.83	Last Hal MWD Survey @ 22409'MD
22,467.00	90.40	179.76	12,114.97	10,194.86 S	361.80 W	498,980.65	704,940.29	0.00	10,192.24	0.00	Proj. to TD @ 22467'MD (100.28' FSL, 332.55' FWL of Sec. 15&22 W1/2)

Design Report for Frizzle Fry 15 WA Fed Com 2H - Wellbore #1

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
158.00	158.00	-0.12	-0.96	First Invictus Survey @ 158'MD
1,052.00	1,051.94	5.22	-4.78	Last Invictus Survey @ 1052'MD
1,129.00	1,128.92	6.39	-5.40	First Hal MWD Survey @ 1129'MD
11,730.00	11,707.99	167.85	-435.51	KOP @ 11730'MD (99.78' FNL, 327.18' FWL of Sec. 15&22 W1/2)
22,409.00	12,115.38	-10,136.87	-362.05	Last Hal MWD Survey @ 22409'MD
22,467.00	12,114.97	-10,194.86	-361.80	Proj. to TD @ 22467'MD (100.28' FSL, 332.55' FWL of Sec. 15&22 W1/2)

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/-S (usft)	+E/-W (usft)	
User	No Target (Freehand)	179.62	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
158.00	1,052.00	Invictus Surface Surveys	3_MWD+IGRF
1,129.00	3,277.00	BHA #1 MWD Surveys	3_MWD+HRGM+AX
3,366.00	3,745.00	BHA #2 MWD Surveys	3_MWD+HRGM+AX
3,829.00	8,851.00	BHA #3 MWD Surveys	3_MWD+HRGM+AX
8,998.00	11,665.00	BHA #4 MWD Surveys	3_MWD+HRGM+AX
11,695.00	12,322.00	BHA #5 MWD Surveys	3_MWD+HRGM+AX
12,412.00	12,481.00	BHA #6 MWD Surveys	3_MWD+HRGM+AX
12,569.00	15,790.00	BHA #7 MWD Surveys	3_MWD+HRGM+AX
15,883.00	16,542.00	BHA #8 MWD Surveys	3_MWD+HRGM+AX
16,683.00	19,031.00	BHA #11 MWD Surveys	3_MWD+HRGM+AX
19,124.00	22,409.00	BHA #12 MWD Surveys	3_MWD+HRGM+AX
22,467.00	22,467.00	Projection to TD	3_Blind

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,050.06	1,050.00	13 3/8"	13-3/8	17-1/2

Design Report for Frizzle Fry 15 WA Fed Com 2H - Wellbore #1

Design Targets

Target Name - hit/miss target - Shape	Dip Angle ()	Dip Dir. ()	TVD ()	+N/-S ()	+E/-W ()	Northing ()	Easting ()	Latitude	Longitude
()									

Directional Difficulty Index

Average Dogleg over Survey:	1.50 °/100usft	Maximum Dogleg over Survey:	16.20 °/100usft at 12,481.00 usft
Net Tortousity applicable to Plans:	0.11 °/100usft	Directional Difficulty Index:	6.830

Audit Info

North Reference Sheet for Frizzle Fry 15 Pad (Grid) - Frizzle Fry 15 WA Fed Com 2H - Wellbore #1

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

Vertical Depths are relative to GL: 3790' + KB: 25' @ 3815.00usft (Precision 601). Northing and Easting are relative to Frizzle Fry 15 WA Fed Com 2H

Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 3001 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866

Projection method is Transverse Mercator (Gauss-Kruger)

Central Meridian is -104.33333333°, Longitude Origin:0.00000000°, Latitude Origin:0.00000000°

False Easting: 500,000.00usft, False Northing: 0.00usft, Scale Reduction: 0.99995736

Grid Coordinates of Well: 509,175.51 usft N, 705,302.09 usft E

Geographical Coordinates of Well: 32.39808253, -103.66817379

Grid Convergence at Surface is: 0.36°

Based upon Minimum Curvature type calculations, at a Measured Depth of 22,467.00usft
the Bottom Hole Displacement is 10,201.28usft in the Direction of 182.03° (Grid).

Magnetic Convergence at surface is: -6.39° (26 July 2019, , HDGM_2019)

