

NM OIL CONSERVATION
ARTESIA DISTRICT

AUG 03 2018

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JDC 7

Chisholm Energy Holdings

Eddy County, NM (NAD 83) Salt Draw 10 State Com

API#

WCB 2H

30-015-44681

ST01

Design: ST01

Sperry Drilling Services Combo Report

20 June, 2018

Well Coordinates: 32° 09' 04.68" N
104° 04' 15.68" W

North American Datum 1983
New Mexico Eastern Zone
418,877.25 N
622,517.13 E

Ground Level: 2,974.60 usft

Local Coordinate Origin:

Viewing Datum:

TVDs to System:

North Reference:

Unit System:

Centered on Well WCB 2H
GE 2974.60 + 31 @ 3005.60usft (JDC 7)

N

Grid

API US Survey Feet

Version: 5000.1 Build: 81E

Report Version: Midcon Combo v1.12

HALLIBURTON

Design Report for WCB 2H - ST01

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)				
0.00	0.00	0.00	0.00	0.00 N	0.00 E	418,877.25	622,517.13	0.00	0.00	0.00	
195.00	0.28	195.00	195.00	0.46 S	0.12 W	418,876.79	622,517.01	0.14	0.47	195.00	
362.00	0.26	166.67	362.00	1.22 S	0.14 W	418,876.03	622,516.99	0.08	1.23	-112.51	
404.00	1.43	144.50	403.99	1.74 S	0.18 E	418,875.51	622,517.31	2.84	1.68	-26.89	
503.00	1.79	133.08	502.95	3.80 S	2.03 E	418,873.45	622,519.16	0.49	3.40	-47.51	
592.00	0.97	83.68	591.93	4.67 S	3.80 E	418,872.58	622,520.93	1.54	3.95	-147.56	
690.00	0.47	20.99	689.92	4.20 S	4.76 E	418,873.05	622,521.89	0.88	3.32	-151.03	
784.00	0.37	44.38	783.92	3.63 S	5.11 E	418,873.62	622,522.24	0.21	2.69	131.60	
879.00	0.73	63.04	878.92	3.13 S	5.87 E	418,874.12	622,523.00	0.42	2.08	35.99	
973.00	1.23	100.46	972.90	3.05 S	7.39 E	418,874.20	622,524.52	0.84	1.73	71.72	
1,067.00	1.64	111.64	1,066.87	3.72 S	9.64 E	418,873.53	622,526.77	0.53	2.01	40.00	
1,162.00	1.44	116.91	1,161.84	4.77 S	11.96 E	418,872.48	622,529.09	0.26	2.63	147.31	
1,257.00	1.35	139.82	1,256.81	6.16 S	13.75 E	418,871.09	622,530.88	0.59	3.70	110.50	
1,351.00	1.33	139.62	1,350.79	7.84 S	15.17 E	418,869.41	622,532.30	0.02	5.11	-166.94	
1,445.00	1.49	138.81	1,444.76	9.59 S	16.68 E	418,867.66	622,533.81	0.17	6.57	-7.51	
1,548.00	1.84	138.25	1,547.71	11.83 S	18.67 E	418,865.42	622,535.80	0.34	8.44	-2.94	
1,635.00	1.52	129.55	1,634.68	13.61 S	20.49 E	418,863.64	622,537.62	0.47	9.87	-145.74	
1,729.00	1.78	121.76	1,728.64	15.17 S	22.69 E	418,862.08	622,539.82	0.36	11.03	-44.72	
1,824.00	2.46	105.92	1,823.57	16.51 S	25.90 E	418,860.74	622,543.03	0.94	11.79	-48.85	
1,919.00	4.51	100.48	1,918.39	17.74 S	31.54 E	418,859.51	622,548.67	2.18	12.04	-11.89	
2,018.00	3.90	98.81	2,017.12	18.97 S	38.69 E	418,858.28	622,555.82	0.63	12.02	-169.48	
2,112.00	0.63	87.97	2,111.04	19.44 S	42.37 E	418,857.81	622,559.50	3.49	11.85	-177.93	
2,207.00	0.77	101.92	2,206.03	19.55 S	43.52 E	418,857.70	622,560.65	0.23	11.76	57.71	
2,302.00	1.91	103.49	2,301.00	20.05 S	45.68 E	418,857.20	622,562.81	1.20	11.88	2.63	
2,396.00	1.31	100.26	2,394.97	20.61 S	48.26 E	418,856.64	622,565.39	0.65	11.99	-173.01	
2,491.00	1.75	282.40	2,489.95	20.49 S	47.91 E	418,856.76	622,565.04	3.22	11.93	-178.78	
2,585.00	0.94	2.47	2,583.93	19.41 S	46.54 E	418,857.84	622,563.67	1.96	11.10	149.75	
2,679.00	0.89	87.12	2,677.93	18.61 S	47.31 E	418,858.64	622,564.44	1.31	10.18	134.04	
2,774.00	3.43	323.95	2,772.87	16.27 S	46.37 E	418,860.98	622,563.50	4.20	8.04	-133.92	
2,868.00	5.80	277.01	2,866.59	13.42 S	40.00 E	418,863.83	622,557.13	4.54	6.32	-82.78	
2,963.00	5.46	275.81	2,961.13	12.37 S	30.74 E	418,864.88	622,547.87	0.38	6.89	-161.50	
3,057.00	4.41	266.91	3,054.79	12.12 S	22.68 E	418,865.13	622,539.81	1.38	8.03	-148.28	
3,152.00	3.12	266.85	3,149.58	12.45 S	16.45 E	418,864.80	622,533.58	1.36	9.43	-179.85	
3,246.00	1.13	233.07	3,243.51	13.15 S	13.16 E	418,864.10	622,530.29	2.41	10.69	-163.92	
3,341.00	1.03	224.36	3,338.50	14.33 S	11.81 E	418,862.92	622,528.94	0.20	12.08	-125.65	
3,435.00	1.26	228.93	3,432.48	15.61 S	10.44 E	418,861.64	622,527.57	0.26	13.58	23.95	

Design Report for WCB 2H - ST01

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)				
3,529.00	0.77	224.23	3,526.46	16.74 S	9.22 E	418,860.51	622,526.35	0.53	14.90	-172.70	
3,624.00	1.01	242.28	3,621.45	17.59 S	8.03 E	418,859.66	622,525.16	0.39	15.94	58.70	
3,718.00	1.16	224.72	3,715.43	18.65 S	6.63 E	418,858.60	622,523.76	0.39	17.23	-74.67	
3,813.00	1.33	240.79	3,810.41	19.87 S	4.99 E	418,857.38	622,522.12	0.41	18.71	72.22	
3,908.00	0.88	232.85	3,905.39	20.85 S	3.45 E	418,856.40	622,520.58	0.50	19.94	-165.15	
4,002.00	0.81	246.67	3,999.38	21.55 S	2.26 E	418,855.70	622,519.39	0.23	20.84	115.78	
4,096.00	0.94	241.71	4,093.37	22.18 S	0.97 E	418,855.07	622,518.10	0.16	21.68	-32.72	
4,191.00	0.52	254.05	4,188.36	22.66 S	0.13 W	418,854.59	622,517.00	0.47	22.35	165.57	
4,286.00	0.93	224.14	4,283.36	23.34 S	1.08 W	418,853.91	622,516.05	0.57	23.17	-58.32	
4,380.00	0.76	201.09	4,377.35	24.46 S	1.83 W	418,852.79	622,515.30	0.40	24.41	-127.78	
4,475.00	0.68	194.87	4,472.34	25.60 S	2.21 W	418,851.65	622,514.92	0.12	25.59	-138.75	
4,569.00	0.39	288.39	4,566.34	26.04 S	2.65 W	418,851.21	622,514.48	0.86	26.10	151.06	
4,664.00	0.90	266.14	4,661.33	25.98 S	3.70 W	418,851.27	622,513.43	0.59	26.23	-37.57	
4,758.00	0.55	308.75	4,755.32	25.75 S	4.79 W	418,851.50	622,512.34	0.66	26.19	143.06	
4,853.00	0.75	290.99	4,850.32	25.24 S	5.73 W	418,852.01	622,511.40	0.30	25.85	-54.32	
4,947.00	0.61	254.27	4,944.31	25.16 S	6.78 W	418,852.09	622,510.35	0.48	25.95	-125.59	
5,041.00	0.56	261.87	5,038.31	25.36 S	7.72 W	418,851.89	622,509.41	0.10	26.31	126.56	
5,136.00	0.90	245.82	5,133.30	25.73 S	8.86 W	418,851.52	622,508.27	0.41	26.87	-39.21	
5,231.00	0.78	309.75	5,228.29	25.62 S	10.04 W	418,851.63	622,507.09	0.94	26.97	128.49	
5,325.00	0.47	359.29	5,322.28	24.83 S	10.54 W	418,852.42	622,506.59	0.63	26.27	143.03	
5,420.00	0.53	318.08	5,417.28	24.11 S	10.83 W	418,853.14	622,506.30	0.38	25.62	-101.54	
5,514.00	0.47	232.86	5,511.28	24.02 S	11.43 W	418,853.23	622,505.70	0.72	25.63	-136.34	
5,608.00	0.17	312.62	5,605.28	24.16 S	11.84 W	418,853.09	622,505.29	0.50	25.84	159.17	
5,703.00	0.31	247.95	5,700.28	24.16 S	12.18 W	418,853.09	622,504.95	0.30	25.90	-97.60	
5,797.00	0.34	343.92	5,794.28	23.99 S	12.50 W	418,853.26	622,504.63	0.51	25.78	135.60	
5,891.00	0.07	25.08	5,888.28	23.67 S	12.55 W	418,853.58	622,504.58	0.31	25.48	170.89	
5,986.00	0.52	205.14	5,983.27	24.00 S	12.71 W	418,853.25	622,504.42	0.62	25.84	-179.95	
6,080.00	0.26	234.85	6,077.27	24.51 S	13.06 W	418,852.74	622,504.07	0.34	26.40	156.35	
6,175.00	0.24	192.67	6,172.27	24.83 S	13.28 W	418,852.42	622,503.85	0.19	26.75	-117.01	
6,269.00	0.44	144.53	6,266.27	25.32 S	13.12 W	418,851.93	622,504.01	0.35	27.20	-80.71	
6,364.00	0.56	201.76	6,361.27	26.05 S	13.08 W	418,851.20	622,504.05	0.52	27.91	106.21	
6,458.00	0.93	202.65	6,455.26	27.18 S	13.54 W	418,850.07	622,503.59	0.39	29.10	2.24	
6,552.00	0.66	207.52	6,549.25	28.36 S	14.09 W	418,848.89	622,503.04	0.30	30.36	168.38	
6,647.00	0.88	265.60	6,644.24	28.90 S	15.07 W	418,848.35	622,502.06	0.81	31.07	104.61	
6,741.00	0.52	278.76	6,738.24	28.89 S	16.21 W	418,848.36	622,500.92	0.42	31.25	162.42	
6,836.00	0.77	205.76	6,833.23	29.40 S	16.91 W	418,847.85	622,500.22	0.83	31.88	-111.82	
6,930.00	0.97	221.55	6,927.22	30.57 S	17.71 W	418,846.68	622,499.42	0.33	33.16	58.24	

Design Report for WCB 2H - ST01

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toothface Angle (°)	Comments
				Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)				
7,025.00	0.69	197.78	7,022.21	31.71 S	18.42 W	418,845.54	622,498.71	0.46	34.41	-140.60	
7,120.00	0.18	144.47	7,117.21	32.38 S	18.51 W	418,844.87	622,498.62	0.63	35.08	-166.08	
7,214.00	0.53	209.28	7,211.21	32.88 S	18.64 W	418,844.37	622,498.49	0.51	35.60	84.57	
7,309.00	0.59	260.52	7,306.20	33.34 S	19.33 W	418,843.91	622,497.80	0.51	36.17	109.24	
7,404.00	0.31	293.73	7,401.20	33.32 S	20.05 W	418,843.93	622,497.08	0.39	36.28	152.82	
7,485.00	0.66	234.14	7,482.20	33.50 S	20.63 W	418,843.75	622,496.50	0.70	36.56	-87.58	
7,580.00	0.83	208.94	7,577.19	34.44 S	21.38 W	418,842.81	622,495.75	0.41	37.61	-78.35	
7,674.00	0.89	204.34	7,671.18	35.71 S	21.99 W	418,841.54	622,495.14	0.08	38.97	-34.34	
7,769.00	0.83	165.68	7,766.17	37.05 S	22.13 W	418,840.20	622,495.00	0.60	40.31	-115.01	
7,863.00	0.32	224.36	7,860.16	37.90 S	22.14 W	418,839.35	622,494.99	0.76	41.15	157.61	
7,958.00	0.88	270.23	7,955.16	38.08 S	23.06 W	418,839.17	622,494.07	0.73	41.49	65.13	
8,052.00	0.04	49.86	8,049.15	38.06 S	23.75 W	418,839.19	622,493.38	0.97	41.58	178.37	
8,147.00	1.07	108.26	8,144.15	38.32 S	22.89 W	418,838.93	622,494.24	1.10	41.69	60.26	
8,241.00	1.49	122.11	8,238.13	39.24 S	21.02 W	418,838.01	622,496.11	0.55	42.28	43.43	
8,336.00	1.42	145.53	8,333.10	40.87 S	19.31 W	418,836.38	622,497.82	0.63	43.58	108.33	
8,431.00	1.35	158.18	8,428.07	42.88 S	18.22 W	418,834.37	622,498.91	0.33	45.38	109.17	
8,525.00	1.30	181.05	8,522.04	44.97 S	17.83 W	418,832.28	622,499.30	0.56	47.37	106.76	
8,620.00	1.04	209.25	8,617.02	46.80 S	18.27 W	418,830.45	622,498.86	0.66	49.25	127.96	
8,715.00	0.52	245.88	8,712.02	47.73 S	19.09 W	418,829.52	622,498.04	0.73	50.30	153.51	
8,809.00	0.72	147.14	8,806.01	48.40 S	19.16 W	418,828.85	622,497.97	1.01	50.98	-131.49	
8,903.00	1.46	162.94	8,899.99	50.04 S	18.48 W	418,827.21	622,498.65	0.84	52.48	30.13	
8,968.00	1.93	176.28	8,964.97	51.92 S	18.17 W	418,825.33	622,498.96	0.94	54.28	46.81	
9,102.00	2.27	192.47	9,098.88	56.77 S	18.60 W	418,820.48	622,498.53	0.51	59.12	68.44	
9,197.00	2.08	194.48	9,193.81	60.27 S	19.43 W	418,816.98	622,497.70	0.22	62.72	159.13	
9,291.00	2.11	190.62	9,287.75	63.63 S	20.18 W	418,813.62	622,496.95	0.15	66.15	-79.93	
9,385.00	1.51	201.54	9,381.70	66.48 S	20.95 W	418,810.77	622,496.18	0.73	69.10	155.49	
9,480.00	1.70	199.68	9,476.66	68.97 S	21.89 W	418,808.28	622,495.24	0.21	71.71	-16.26	
9,574.00	1.79	188.49	9,570.62	71.73 S	22.57 W	418,805.52	622,494.56	0.37	74.55	-80.84	
9,668.00	1.80	199.97	9,664.57	74.57 S	23.30 W	418,802.68	622,493.83	0.38	77.47	94.15	
9,763.00	1.67	204.37	9,759.53	77.24 S	24.38 W	418,800.01	622,492.75	0.20	80.28	136.48	
9,857.00	1.22	216.75	9,853.50	79.29 S	25.54 W	418,797.96	622,491.59	0.58	82.50	151.33	
9,952.00	1.21	237.72	9,948.48	80.63 S	26.99 W	418,796.62	622,490.14	0.47	84.08	101.76	
10,002.00	1.18	241.83	9,998.47	81.16 S	27.89 W	418,796.09	622,489.24	0.18	84.75	111.34	
10,033.00	0.93	265.99	10,029.46	81.33 S	28.43 W	418,795.92	622,488.70	1.63	85.01	131.05	
10,065.00	2.74	263.17	10,061.44	81.44 S	29.44 W	418,795.81	622,487.69	5.66	85.29	-4.27	
10,096.00	7.46	271.70	10,092.31	81.46 S	32.19 W	418,795.79	622,484.94	15.38	85.79	13.40	
10,128.00	10.77	273.83	10,123.91	81.20 S	37.25 W	418,796.05	622,479.88	10.40	86.41	6.87	

Design Report for WCB 2H - ST01

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Tooface Angle (°)	Comments
				Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)				
10,160.00	14.54	262.45	10,155.13	81.53 S	44.22 W	418,795.72	622,472.91	14.07	87.93	-39.12	
10,191.00	18.77	256.94	10,184.82	83.17 S	52.94 W	418,794.08	622,464.19	14.55	91.05	-23.13	
10,222.00	22.97	262.13	10,213.78	85.13 S	63.80 W	418,792.12	622,453.33	14.79	94.85	26.21	
10,254.00	26.85	258.73	10,242.80	87.39 S	77.08 W	418,789.86	622,440.05	12.92	99.37	-21.81	
10,286.00	30.76	259.67	10,270.84	90.28 S	92.22 W	418,786.97	622,424.91	12.30	104.82	7.02	
10,317.00	34.42	255.64	10,296.96	93.87 S	108.52 W	418,783.38	622,408.61	13.72	111.17	-32.38	
10,349.00	38.14	253.75	10,322.75	98.88 S	126.77 W	418,778.37	622,390.36	12.14	119.25	-17.50	Tie in to OH - 10349.00' MD
10,376.00	37.20	259.70	10,344.13	102.68 S	142.81 W	418,774.57	622,374.32	13.91	125.75	106.84	
10,407.00	37.10	265.47	10,368.84	105.09 S	161.36 W	418,772.16	622,355.77	11.24	131.32	93.94	
10,439.00	37.82	270.93	10,394.25	105.69 S	180.79 W	418,771.56	622,336.34	10.62	135.27	79.94	
10,470.00	40.86	274.04	10,418.23	104.82 S	200.42 W	418,772.43	622,316.71	11.69	137.79	34.18	
10,502.00	43.80	270.33	10,441.88	104.02 S	221.94 W	418,773.23	622,295.19	12.05	140.71	-41.74	
10,533.00	45.25	266.17	10,463.99	104.70 S	243.66 W	418,772.55	622,273.47	10.51	145.12	-65.06	
10,565.00	45.98	261.52	10,486.38	107.15 S	266.38 W	418,770.10	622,250.75	10.63	151.45	-79.24	
10,596.00	47.63	256.49	10,507.60	111.47 S	288.55 W	418,765.78	622,228.58	12.97	159.53	-67.51	
10,628.00	50.25	250.98	10,528.63	118.25 S	311.69 W	418,759.00	622,205.44	15.34	170.19	-59.60	
10,659.00	52.54	246.21	10,547.98	127.10 S	334.22 W	418,750.15	622,182.91	14.11	182.79	-59.94	
10,691.00	55.11	240.86	10,566.87	138.62 S	357.32 W	418,738.63	622,159.81	15.70	198.12	-60.84	
10,722.00	57.85	237.27	10,584.00	151.91 S	379.48 W	418,725.34	622,137.65	13.09	215.03	-48.53	
10,753.00	60.50	235.13	10,599.88	166.72 S	401.59 W	418,710.53	622,115.54	10.40	233.44	-35.29	
10,785.00	62.72	231.53	10,615.10	183.54 S	424.16 W	418,693.71	622,092.97	12.09	253.89	-55.84	
10,816.00	63.76	227.39	10,629.06	201.53 S	445.18 W	418,675.72	622,071.95	12.39	275.23	-75.23	
10,848.00	65.21	224.70	10,642.85	221.57 S	465.97 W	418,655.68	622,051.16	8.84	298.56	-59.74	
10,881.00	67.06	220.62	10,656.20	243.76 S	486.41 W	418,633.49	622,030.72	12.62	323.94	-64.46	
10,912.00	70.04	217.81	10,667.54	266.12 S	504.64 W	418,611.13	622,012.49	12.79	349.10	-41.79	
10,944.00	74.19	214.09	10,677.37	290.77 S	522.50 W	418,586.48	621,994.63	17.04	376.46	-41.05	
10,975.00	77.37	211.67	10,684.98	316.00 S	538.81 W	418,561.25	621,978.32	12.75	404.12	-36.72	
11,007.00	77.02	206.57	10,692.08	343.25 S	553.99 W	418,534.00	621,963.14	15.58	433.58	-94.59	
11,038.00	77.34	201.75	10,698.96	370.82 S	566.35 W	418,506.43	621,950.78	15.20	462.87	-86.64	
11,070.00	77.98	198.17	10,705.80	400.20 S	577.02 W	418,477.05	621,940.11	11.11	493.65	-80.02	
11,102.00	79.88	195.60	10,711.95	430.25 S	586.14 W	418,447.00	621,930.99	9.87	524.82	-53.26	
11,134.00	82.09	194.28	10,716.96	460.78 S	594.29 W	418,416.47	621,922.84	8.02	556.30	-30.64	
11,165.00	83.03	192.93	10,720.98	490.66 S	601.52 W	418,386.59	621,915.61	5.28	586.97	-55.01	
11,197.00	83.82	190.86	10,724.64	521.76 S	608.07 W	418,355.49	621,909.06	6.88	618.74	-69.11	
11,228.00	85.06	188.98	10,727.64	552.15 S	613.38 W	418,325.10	621,903.75	7.24	649.59	-56.56	
11,260.00	87.19	187.58	10,729.81	583.74 S	617.98 W	418,293.51	621,899.15	7.96	681.51	-33.31	

Design Report for WCB 2H - ST01

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates (usft)		Map Coordinates (usft)		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toolface Angle (°)	Comments
				Northing	Easting	Northing	Easting				
11,291.00	88.34	185.26	10,731.02	614.52 S	621.44 W	418,262.73	621,895.69	8.35	712.42	-63.66	
11,323.00	89.23	183.74	10,731.69	646.42 S	623.95 W	418,230.83	621,893.18	5.50	744.27	-59.66	
11,386.00	90.55	183.00	10,731.82	709.30 S	627.66 W	418,167.95	621,889.47	2.40	806.88	-29.28	
11,480.00	92.65	182.23	10,729.19	803.16 S	631.94 W	418,074.09	621,885.19	2.38	900.05	-20.12	
11,575.00	92.80	181.88	10,724.67	898.00 S	635.35 W	417,979.25	621,881.78	0.40	994.05	-66.77	
11,669.00	88.52	180.55	10,723.59	991.94 S	637.34 W	417,885.31	621,879.79	4.77	1,086.94	-162.73	
11,764.00	91.11	182.30	10,723.90	1,086.90 S	639.70 W	417,790.35	621,877.43	3.29	1,180.88	34.05	
11,858.00	86.83	184.75	10,725.59	1,180.68 S	645.47 W	417,696.57	621,871.66	5.25	1,274.25	150.23	
11,953.00	85.93	184.21	10,731.59	1,275.20 S	652.88 W	417,602.05	621,864.25	1.10	1,368.63	-149.10	
12,047.00	87.47	183.33	10,737.00	1,368.84 S	659.05 W	417,508.41	621,858.08	1.89	1,461.93	-29.73	
12,140.00	89.20	183.64	10,739.70	1,461.62 S	664.70 W	417,415.63	621,852.43	1.89	1,554.30	10.16	
12,235.00	90.00	181.74	10,740.36	1,556.51 S	669.16 W	417,320.74	621,847.97	2.17	1,648.54	-67.17	
12,329.00	91.54	179.35	10,739.10	1,650.49 S	670.05 W	417,226.76	621,847.08	3.02	1,741.27	-57.19	
12,424.00	91.33	180.29	10,736.72	1,745.46 S	669.76 W	417,131.79	621,847.37	1.01	1,834.76	102.59	
12,518.00	89.97	178.07	10,735.65	1,839.43 S	668.41 W	417,037.82	621,848.72	2.77	1,927.10	-121.48	
12,612.00	90.83	179.39	10,735.00	1,933.40 S	666.33 W	416,943.85	621,850.80	1.68	2,019.31	56.91	
12,707.00	90.34	177.48	10,734.03	2,028.36 S	663.73 W	416,848.89	621,853.40	2.08	2,112.39	-104.38	
12,801.00	91.14	179.16	10,732.81	2,122.31 S	660.98 W	416,754.94	621,856.15	1.98	2,204.46	64.53	
12,896.00	91.63	181.45	10,730.52	2,217.27 S	661.48 W	416,659.98	621,855.65	2.46	2,298.09	77.89	
12,991.00	91.05	182.10	10,728.29	2,312.20 S	664.42 W	416,565.05	621,852.71	0.92	2,392.11	131.74	
13,085.00	90.12	183.69	10,727.33	2,406.07 S	669.17 W	416,471.18	621,847.96	1.96	2,485.39	120.31	
13,180.00	90.09	182.54	10,727.16	2,500.93 S	674.33 W	416,376.32	621,842.80	1.21	2,579.72	-91.49	
13,275.00	88.09	183.55	10,728.67	2,595.78 S	679.38 W	416,281.47	621,837.75	2.36	2,674.02	153.22	
13,369.00	89.85	181.49	10,730.36	2,689.66 S	683.51 W	416,187.59	621,833.62	2.88	2,767.21	-49.51	
13,463.00	91.14	179.85	10,729.55	2,783.65 S	684.61 W	416,093.60	621,832.52	2.22	2,859.98	-51.81	
13,558.00	91.30	181.20	10,727.52	2,878.62 S	685.48 W	415,998.63	621,831.65	1.43	2,953.68	83.23	
13,652.00	90.37	181.05	10,726.15	2,972.59 S	687.32 W	415,904.66	621,829.81	1.00	3,046.56	-170.84	
13,747.00	91.11	185.28	10,724.93	3,067.41 S	692.57 W	415,809.84	621,824.56	4.52	3,140.87	80.05	
13,841.00	91.79	184.06	10,722.55	3,161.07 S	700.22 W	415,716.18	621,816.91	1.49	3,234.45	-60.84	
13,936.00	91.20	183.21	10,720.07	3,255.85 S	706.24 W	415,621.40	621,810.89	1.09	3,328.84	-124.76	
14,030.00	91.05	183.94	10,718.22	3,349.64 S	712.10 W	415,527.61	621,805.03	0.79	3,422.25	101.81	
14,125.00	91.30	183.97	10,716.28	3,444.40 S	718.65 W	415,432.85	621,798.48	0.27	3,516.71	6.84	
14,219.00	89.63	182.04	10,715.51	3,538.26 S	723.58 W	415,338.99	621,793.55	2.72	3,610.02	-130.86	
14,314.00	89.11	182.34	10,716.56	3,633.18 S	727.21 W	415,244.07	621,789.92	0.63	3,704.15	150.02	
14,408.00	90.43	183.83	10,716.94	3,727.04 S	732.27 W	415,150.21	621,784.86	2.12	3,797.47	48.47	
14,504.00	92.62	185.26	10,714.38	3,822.70 S	739.87 W	415,054.55	621,777.26	2.72	3,893.01	33.12	
14,598.00	91.82	184.51	10,710.74	3,916.28 S	747.87 W	414,960.97	621,769.26	1.17	3,986.57	-136.85	

Design Report for WCB 2H - ST01

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Tooface Angle (°)	Comments
				Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)				
14,693.00	91.14	184.22	10,708.29	4,010.97 S	755.10 W	414,866.28	621,762.03	0.78	4,081.09	-156.91	
14,788.00	91.08	184.69	10,706.45	4,105.67 S	762.47 W	414,771.58	621,754.66	0.50	4,175.64	97.27	
14,883.00	89.14	182.26	10,706.26	4,200.48 S	768.23 W	414,676.77	621,748.90	3.27	4,270.03	-128.59	
14,978.00	90.28	183.13	10,706.74	4,295.37 S	772.70 W	414,581.88	621,744.43	1.51	4,364.27	37.35	
15,072.00	90.28	183.53	10,706.28	4,389.21 S	778.16 W	414,488.04	621,738.97	0.43	4,457.65	90.00	
15,167.00	90.18	184.07	10,705.90	4,484.00 S	784.45 W	414,393.25	621,732.68	0.58	4,552.11	100.49	
15,261.00	90.22	183.62	10,705.57	4,577.79 S	790.76 W	414,299.46	621,726.37	0.48	4,645.58	-84.92	
15,356.00	90.59	185.05	10,704.90	4,672.52 S	797.94 W	414,204.73	621,719.19	1.55	4,740.12	75.49	Last HAL MWD ST01 - 15356.00' MD
15,435.00	90.59	185.05	10,704.09	4,751.20 S	804.89 W	414,126.05	621,712.24	0.00	4,818.83	0.00	Projection to TD - 15435.00' MD

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
10,349.00	10,322.75	-98.88	-126.77	Tie in to OH - 10349.00' MD
15,356.00	10,704.90	-4,672.52	-797.94	Last HAL MWD ST01 - 15356.00' MD

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	+N/-S (usft)	+E/-W (usft)	Start TVD (usft)
User	No Target (Freehand)	189.92	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
195.00	10,349.00	MWD	MWD
10,376.00	15,356.00	Survey #1	MWD
15,435.00	15,435.00	Projection to TD	Blind (OWSG)

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
9,028.00	9,024.93	9 5/8"	9-5/8	12-1/4

Design Report for WCB 2H - ST01

Design Targets

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

Directional Difficulty Index

Average Dogleg over Survey:	1.92 */100usft	Maximum Dogleg over Survey:	17.04 */100usft at 10,944.00 usft
Net Tortosity applicable to Plans:	0.49 */100usft	Directional Difficulty Index:	6.350

Audit Info

HALLIBURTON

North Reference Sheet for Salt Draw 10 State Com - WCB 2H - ST01

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.
Vertical Depths are relative to GE 2974.60 + 31 @ 3005.60usft (JDC 7). Northing and Easting are relative to WCB 2H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone using datum North American Datum 1983, ellipsoid GRS 1980
Projection method is Transverse Mercator (Gauss-Kruger)
Central Meridian is 104° 20' 0.000 W*, Longitude Origin:0° 0' 0.000 E*, Latitude Origin:0° 0' 0.000 N*
False Easting: 541,337.50usft, False Northing: 0.00usft, Scale Reduction: 0.99991664

Grid Coordinates of Well: 418,877.25 usft N, 622,517.13 usft E
Geographical Coordinates of Well: 32° 09' 04.68" N, 104° 04' 15.68" W
Grid Convergence at Surface is: 0.14°

Based upon Minimum Curvature type calculations, at a Measured Depth of 15,435.00usft
the Bottom Hole Displacement is 4,818.90usft in the Direction of 189.62° (Grid).

Magnetic Convergence at surface is: -7.01° (3 June 2018, , BGGM2018)

