

**Provide Signature Page for
Directional Survey**

NM OIL CONSERVATION
ARTESIA DISTRICT



Survey Report

DEC 10 2018

RECEIVED

Service Company: Wellbenders Directional

Location: Eddy County

Well: South Boyd 20H

Rig: United Drilling 42

API or UWI: 30-015-44723

Job Number: NMDG2018-1210

State: New Mexico

Operating Company: Percussion Petroleum

County: Eddy

Magnetic Declination: 7.33

Country: United States

Proposed Azimuth: 359.12

Comment

North Reference: GRID

Latitude: 32.622546

Longitude: -104.470498

Tie-In Data

MD	Inclination	Azimuth	TVD	NS	EW
0.00	0.00	0.00	0.00	0.00	0.00

Survey Data

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
123.00	0.88	254.83	123.00	-0.25	-0.91	254.83	0.94	-0.23	0.72
306.00	0.97	277.59	305.97	-0.41	-3.80	263.84	3.83	-0.35	0.21
398.00	0.97	300.97	397.96	0.09	-5.24	271.02	5.24	0.17	0.43
490.00	0.97	306.25	489.95	0.95	-6.54	278.30	6.61	1.05	0.10
583.00	0.88	312.92	582.93	1.91	-7.70	283.91	7.93	2.02	0.15
674.00	0.92	311.96	673.92	2.87	-8.75	288.16	9.21	3.00	0.05
766.00	1.01	323.56	765.91	4.02	-9.78	292.32	10.57	4.17	0.23
857.00	1.05	324.53	856.89	5.34	-10.74	296.44	12.00	5.51	0.05
949.00	1.10	319.60	948.88	6.70	-11.80	299.58	13.57	6.88	0.11
1042.00	0.97	320.66	1041.86	7.99	-12.88	301.81	15.16	8.19	0.14
1148.00	0.97	321.98	1147.85	9.39	-14.00	303.84	16.86	9.60	0.02
1215.00	0.88	318.29	1214.84	10.22	-14.69	304.82	17.90	10.44	0.16
1338.00	1.32	296.40	1337.82	11.56	-16.59	304.85	20.22	11.81	0.49
1433.00	4.97	313.36	1432.66	14.87	-20.57	305.87	25.38	15.18	3.92
1528.00	7.03	316.18	1527.13	21.89	-27.58	308.43	35.21	22.31	2.19
1623.00	7.69	316.53	1621.35	30.70	-35.98	310.47	47.30	31.25	0.70

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
1718.00	9.23	299.39	1715.33	39.05	-47.00	309.72	61.10	39.77	3.09
1813.00	7.65	292.01	1809.30	45.16	-59.50	307.20	74.69	46.07	2.01
1908.00	7.74	291.48	1903.44	49.87	-71.31	304.97	87.02	50.96	0.12
2003.00	7.82	292.18	1997.57	54.65	-83.25	303.29	99.59	55.93	0.13
2098.00	8.04	292.01	2091.66	59.58	-95.39	301.99	112.47	61.04	0.23
2193.00	6.64	292.89	2185.88	64.21	-106.61	301.06	124.46	65.84	1.48
2288.00	6.59	292.18	2280.25	68.40	-116.72	300.37	135.29	70.19	0.10
2383.00	6.55	292.80	2374.62	72.56	-126.76	299.79	146.06	74.50	0.09
2478.00	6.55	293.33	2469.00	76.81	-136.74	299.32	156.83	78.90	0.06
2573.00	6.29	294.47	2563.41	81.11	-146.45	298.98	167.41	83.35	0.30
2668.00	6.24	295.00	2657.84	85.45	-155.86	298.73	177.75	87.83	0.08
2763.00	6.33	305.01	2752.27	90.63	-164.83	298.80	188.11	93.15	1.16
2859.00	6.42	304.75	2847.68	96.73	-173.58	299.13	198.71	99.38	0.10
2953.00	6.33	304.58	2941.10	102.67	-182.16	299.41	209.10	105.45	0.10
3048.00	6.90	311.52	3035.47	109.42	-190.75	299.84	219.90	112.34	1.03
3096.00	11.69	335.07	3082.84	115.75	-194.96	300.70	226.73	118.73	12.55
3143.00	17.54	347.91	3128.31	127.00	-198.45	302.62	235.61	130.04	14.16
3191.00	22.33	354.15	3173.43	143.16	-200.90	305.47	246.69	146.23	10.91
3239.00	26.20	356.17	3217.18	162.81	-202.54	308.79	259.86	165.90	8.24
3287.00	29.14	357.31	3259.68	185.06	-203.79	312.24	275.28	188.17	6.22
3334.00	31.69	357.92	3300.21	208.83	-204.78	315.56	292.48	211.95	5.47
3382.00	35.78	359.16	3340.12	235.47	-205.44	318.90	312.50	238.60	8.64
3429.00	41.89	359.95	3376.72	264.93	-205.66	322.18	335.39	268.06	13.04
3477.00	46.64	0.47	3411.08	298.42	-205.53	325.44	362.35	301.55	9.92
3524.00	47.08	1.26	3443.22	332.72	-205.01	328.36	390.80	335.82	1.54
3572.00	47.43	1.88	3475.80	367.95	-204.04	330.99	420.74	371.04	1.20
3619.00	45.54	2.14	3508.16	402.01	-202.85	333.23	450.29	405.08	4.04
3667.00	47.96	1.97	3541.04	436.95	-201.60	335.23	481.21	439.99	5.05
3715.00	52.84	2.06	3571.63	473.90	-200.30	337.09	514.49	476.92	10.17
3763.00	55.96	2.06	3599.57	512.90	-198.89	338.80	550.11	515.89	6.50
3810.00	61.63	1.18	3623.91	553.07	-197.77	340.32	587.36	556.04	12.17
3858.00	66.55	359.33	3644.88	596.23	-197.59	341.66	628.11	599.19	10.82
3905.00	72.09	359.24	3661.47	640.18	-198.14	342.80	670.14	643.14	11.79
3953.00	77.36	359.51	3674.11	686.46	-198.64	343.86	714.62	689.43	10.99
4000.00	82.99	359.59	3682.13	732.75	-199.00	344.81	759.29	735.72	11.98
4048.00	88.88	359.77	3685.53	780.61	-199.27	345.68	805.64	783.58	12.28
4095.00	91.38	0.12	3685.42	827.61	-199.32	346.46	851.27	830.57	5.37

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
4190.00	87.69	0.74	3686.19	922.58	-198.60	347.85	943.72	925.52	3.94
4286.00	83.16	0.47	3693.85	1018.25	-197.59	349.02	1037.24	1021.16	4.73
4381.00	84.53	0.03	3704.04	1112.70	-197.18	349.95	1130.03	1115.59	1.51
4476.00	87.43	359.42	3710.70	1207.45	-197.64	350.70	1223.52	1210.34	3.12
4571.00	89.67	359.33	3713.10	1302.41	-198.67	351.33	1317.47	1305.31	2.36
4666.00	90.24	359.33	3713.17	1397.40	-199.78	351.86	1411.61	1400.31	0.60
4761.00	90.29	359.68	3712.73	1492.40	-200.60	352.34	1505.82	1495.30	0.37
4856.00	90.46	0.30	3712.11	1587.39	-200.62	352.80	1600.02	1590.29	0.68
4951.00	89.89	359.59	3711.82	1682.39	-200.71	353.20	1694.32	1685.28	0.96
5046.00	88.48	358.54	3713.17	1777.37	-202.26	353.51	1788.84	1780.26	1.85
5078.00	88.26	358.80	3714.08	1809.35	-203.00	353.60	1820.70	1812.25	1.06
5170.00	88.48	358.10	3716.70	1901.27	-205.49	353.83	1912.35	1904.21	0.80
5262.00	90.20	356.25	3717.76	1993.15	-210.03	353.98	2004.18	1996.14	2.75
5357.00	91.21	356.96	3716.59	2087.97	-215.65	354.10	2099.08	2091.04	1.30
5452.00	92.18	357.75	3713.78	2182.83	-220.03	354.24	2193.89	2185.95	1.32
5547.00	93.67	358.28	3708.93	2277.64	-223.32	354.40	2288.57	2280.81	1.66
5642.00	95.56	359.07	3701.29	2372.31	-225.51	354.57	2383.00	2375.49	2.16
5737.00	94.95	358.54	3692.59	2466.89	-227.48	354.73	2477.35	2470.09	0.85
5833.00	95.43	358.80	3683.91	2562.47	-229.70	354.88	2572.74	2565.69	0.57
5928.00	94.42	359.33	3675.75	2657.10	-231.25	355.03	2667.14	2660.34	1.20
6023.00	92.79	359.24	3669.78	2751.90	-232.43	355.17	2761.70	2755.15	1.72
6118.00	91.03	359.51	3666.61	2846.84	-233.47	355.31	2856.40	2850.09	1.87
6213.00	92.00	0.21	3664.10	2941.80	-233.70	355.46	2951.07	2945.05	1.26
6308.00	91.38	359.33	3661.30	3036.76	-234.08	355.59	3045.77	3040.00	1.13
6403.00	90.55	358.45	3659.70	3131.73	-235.92	355.69	3140.60	3134.98	1.27
6498.00	90.81	357.13	3658.57	3226.65	-239.58	355.75	3235.53	3229.95	1.42
6593.00	92.57	356.61	3655.77	3321.46	-244.77	355.79	3330.47	3324.83	1.93
6688.00	93.58	356.43	3650.67	3416.15	-250.52	355.81	3425.32	3419.59	1.08
6787.00	94.15	356.34	3644.00	3514.73	-256.75	355.82	3524.09	3518.26	0.58
6879.00	93.85	356.34	3637.58	3606.31	-262.61	355.84	3615.86	3609.92	0.33
6974.00	93.58	358.72	3631.42	3701.02	-266.70	355.88	3710.62	3704.68	2.52
7069.00	93.27	358.45	3625.75	3795.82	-269.04	355.95	3805.34	3799.51	0.43
7165.00	93.80	359.68	3619.83	3891.62	-270.60	356.02	3901.02	3895.32	1.39
7260.00	93.45	0.03	3613.82	3986.43	-270.84	356.11	3995.62	3990.12	0.52
7354.00	91.91	359.68	3609.43	4080.33	-271.08	356.20	4089.32	4084.01	1.68
7450.00	89.54	359.24	3608.21	4176.31	-271.98	356.27	4185.16	4179.99	2.51
7545.00	88.88	359.16	3609.52	4271.29	-273.31	356.34	4280.02	4274.98	0.70

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
7640.00	88.44	359.24	3611.74	4366.25	-274.64	356.40	4374.88	4369.96	0.47
7735.00	88.57	359.51	3614.22	4461.22	-275.67	356.46	4469.72	4464.92	0.32
7830.00	89.41	359.95	3615.90	4556.20	-276.12	356.53	4564.56	4559.90	1.00
7893.00	89.32	0.21	3616.60	4619.19	-276.03	356.58	4627.43	4622.89	0.44
8020.00	89.05	359.95	3618.40	4746.18	-275.85	356.67	4754.19	4749.86	0.30
8115.00	90.33	359.42	3618.92	4841.18	-276.38	356.73	4849.06	4844.85	1.46
8213.00	91.69	359.77	3617.19	4939.16	-277.07	356.79	4946.92	4942.83	1.43
8305.00	91.25	359.24	3614.83	5031.12	-277.86	356.84	5038.79	5034.80	0.75
8397.00	90.64	359.16	3613.31	5123.10	-279.15	356.88	5130.70	5126.78	0.67
8515.00	91.38	359.59	3611.23	5241.07	-280.44	356.94	5248.57	5244.76	0.73
8608.00	93.32	359.77	3607.42	5333.99	-280.95	356.98	5341.38	5337.68	2.09
8703.00	93.27	359.33	3601.96	5428.83	-281.70	357.03	5436.13	5432.52	0.47
8798.00	93.49	359.95	3596.36	5523.66	-282.29	357.07	5530.87	5527.35	0.69
8893.00	93.54	0.30	3590.53	5618.48	-282.09	357.13	5625.56	5622.15	0.37
8988.00	93.32	0.30	3584.85	5713.31	-281.59	357.18	5720.25	5716.96	0.23
9083.00	93.63	0.65	3579.09	5808.13	-280.81	357.23	5814.92	5811.76	0.49
9134.00	93.58	1.00	3575.88	5859.03	-280.07	357.26	5865.72	5862.64	0.69

Projected Survey

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
9191.00	93.58	1.00	3572.32	5915.91	-279.08	357.30	5922.49	5919.50	0.00