



PHOENIX
TECHNOLOGY SERVICES

Centennial Resources Development, Inc.

**Lea County, NM (NAD83 - UTM Zone 13)
Duck Hunt 1 State Com
502H**

OH / 65513

Survey: Phoenix MWD Surveys

Standard Survey Report

14 November, 2019

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Survey Report



Company: Centennial Resources Development, Inc.
Project: Lea County, NM (NAD83 - UTM Zone 13)
Site: Duck Hunt 1 State Com
Well: 502H
Wellbore: OH / 65513
Design: Surveys (H&P 650)

Local Co-ordinate Reference: Well 502H
TVD Reference: RKB @ 3394.00usft (H&P 650)
MD Reference: RKB @ 3394.00usft (H&P 650)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA Compass

Project	Lea County, NM (NAD83 - UTM Zone 13)		
Map System:	Universal Transverse Mercator (US Survey Fee	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Zone 13N (108 W to 102 W)	Using geodetic scale factor	

Site Duck Hunt 1 State Com

Site Position: Northing: 11,740,221.78 usft Latitude: 32.332815
From: Map Easting: 2,129,032.10 usft Longitude: -103.417617
Position Uncertainty: 0.00 usft Slot Radius: 13-3/16 " Grid Convergence: 0.85 °

Well 502H

Well Position +N/-S 0.00 usft Northing: 11,740,202.40 usft Latitude: 32.332811
 +E/-W 0.00 usft Easting: 2,127,818.34 usft Longitude: -103.421548
Position Uncertainty 1.00 usft Wellhead Elevation: usft Ground Level: 3,367.50 usft

Wellbore OH / 65513

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	User Defined	10/18/2019	6.63	60.03	47,867.00000000

Design Surveys (H&P 650)

Audit Notes:

Version: 1.0 **Phase:** ACTUAL **Tie On Depth:** 0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	177.65

Survey Program Date 11/14/2019

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
26.50	1,826.50	Wildfire MWD Surveys (OH / 65513)	MWD	OWSG MWD - Standard
1,897.00	18,277.00	Phoenix MWD Surveys (OH / 65513)	MWD+IFR1+MS	OWSG MWD + IFR1 + Multi-Station Correction

Survey

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)
1,826.50	0.60	171.70	1,826.26	-16.48	-16.39	15.79	0.00	0.00	0.00
Tie In									
1,897.00	1.33	210.63	1,896.75	-17.55	-16.75	16.84	1.34	1.04	55.22
First Phoenix MWD Survey									
1,991.00	1.30	183.33	1,990.72	-19.55	-17.37	18.82	0.66	-0.03	-29.04
2,085.00	0.87	104.10	2,084.71	-20.79	-16.74	20.08	1.51	-0.46	-84.29
2,179.00	2.28	35.58	2,178.68	-19.44	-14.96	18.81	2.26	1.50	-72.89
2,273.00	4.79	30.38	2,272.49	-14.53	-11.88	14.03	2.69	2.67	-5.53
2,367.00	6.85	33.83	2,366.00	-6.49	-6.78	6.21	2.22	2.19	3.67



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2,461.00	7.59	33.93	2,459.26	3.32	-0.19	-3.32	0.79	0.79	0.11
2,555.00	7.73	34.58	2,552.42	13.67	6.86	-13.38	0.18	0.15	0.69
2,649.00	7.82	34.16	2,645.55	24.17	14.04	-23.57	0.11	0.10	-0.45
2,742.00	7.74	34.94	2,737.70	34.54	21.18	-33.64	0.14	-0.09	0.84
2,836.00	7.22	35.20	2,830.90	44.56	28.21	-43.36	0.55	-0.55	0.28
2,930.00	6.51	33.09	2,924.22	53.85	34.52	-52.39	0.80	-0.76	-2.24
3,025.00	6.39	33.15	3,018.62	62.78	40.35	-61.08	0.13	-0.13	0.06
3,119.00	6.28	33.12	3,112.05	71.47	46.02	-69.52	0.12	-0.12	-0.03
3,213.00	6.53	34.46	3,205.46	80.18	51.86	-77.99	0.31	0.27	1.43
3,307.00	6.94	37.99	3,298.81	89.07	58.38	-86.60	0.62	0.44	3.76
3,401.00	7.65	41.60	3,392.05	98.22	66.03	-95.43	0.90	0.76	3.84
3,495.00	7.57	43.10	3,485.22	107.42	74.41	-104.28	0.23	-0.09	1.60
3,590.00	7.20	43.07	3,579.44	116.34	82.75	-112.85	0.39	-0.39	-0.03
3,684.00	7.56	44.70	3,672.66	125.04	91.13	-121.20	0.44	0.38	1.73
3,778.00	7.45	44.60	3,765.85	133.77	99.75	-129.57	0.12	-0.12	-0.11
3,872.00	6.40	46.69	3,859.16	141.70	107.85	-137.16	1.15	-1.12	2.22
3,966.00	6.08	39.38	3,952.61	149.15	114.82	-144.31	0.91	-0.34	-7.78
4,060.00	5.73	28.00	4,046.11	157.14	120.18	-152.08	1.30	-0.37	-12.11
4,154.00	5.09	24.47	4,139.69	165.08	124.11	-159.85	0.77	-0.68	-3.76
4,248.00	5.39	27.98	4,233.30	172.77	127.91	-167.38	0.47	0.32	3.73
4,342.00	6.18	33.49	4,326.82	180.89	132.77	-175.29	1.03	0.84	5.86
4,436.00	5.83	33.01	4,420.31	189.11	138.16	-183.29	0.38	-0.37	-0.51
4,531.00	5.71	34.09	4,514.83	197.07	143.44	-191.02	0.17	-0.13	1.14
4,625.00	6.42	35.37	4,608.30	205.23	149.10	-198.94	0.77	0.76	1.36
4,719.00	7.82	35.36	4,701.57	214.73	155.85	-208.16	1.49	1.49	-0.01
4,813.00	7.78	34.26	4,794.70	225.21	163.13	-218.33	0.16	-0.04	-1.17
4,907.00	7.88	35.32	4,887.83	235.72	170.44	-228.53	0.19	0.11	1.13
5,001.00	7.79	37.66	4,980.95	246.02	178.05	-238.51	0.35	-0.10	2.49
5,095.00	8.07	39.77	5,074.05	256.14	186.17	-248.29	0.43	0.30	2.24
5,189.00	7.91	35.54	5,167.14	266.47	194.15	-258.29	0.65	-0.17	-4.50
5,283.00	7.75	30.37	5,260.26	277.20	201.11	-268.72	0.77	-0.17	-5.50
5,377.00	7.39	28.60	5,353.44	287.98	207.21	-279.24	0.46	-0.38	-1.88
5,386.00	7.37	28.59	5,362.37	288.99	207.76	-280.23	0.22	-0.22	-0.11
5,461.00	7.22	27.87	5,436.76	297.38	212.27	-288.43	0.23	-0.20	-0.96
5,555.00	7.17	28.89	5,530.02	307.74	217.86	-298.55	0.15	-0.05	1.09
5,649.00	7.07	29.46	5,623.30	317.91	223.54	-308.48	0.13	-0.11	0.61
5,743.00	6.95	29.55	5,716.59	327.90	229.19	-318.23	0.13	-0.13	0.10
5,837.00	7.17	29.48	5,809.88	337.95	234.88	-328.04	0.23	0.23	-0.07
5,932.00	7.55	29.49	5,904.10	348.55	240.87	-338.38	0.40	0.40	0.01
6,026.00	7.34	27.18	5,997.31	359.26	246.66	-348.85	0.39	-0.22	-2.46
6,120.00	7.12	26.76	6,090.56	369.81	252.02	-359.16	0.24	-0.23	-0.45
6,214.00	7.09	26.45	6,183.84	380.20	257.23	-369.34	0.05	-0.03	-0.33
6,308.00	7.53	24.75	6,277.07	390.99	262.39	-379.90	0.52	0.47	-1.81



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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)
6,402.00	7.97	23.22	6,370.21	402.57	267.54	-391.26	0.52	0.47	-1.63
6,496.00	7.48	24.69	6,463.36	414.12	272.67	-402.59	0.56	-0.52	1.56
6,590.00	6.50	30.25	6,556.66	424.28	277.90	-412.52	1.27	-1.04	5.91
6,684.00	5.45	33.63	6,650.15	432.59	283.05	-420.62	1.18	-1.12	3.60
6,778.00	4.04	36.28	6,743.83	438.98	287.49	-426.82	1.52	-1.50	2.82
6,872.00	2.59	39.16	6,837.67	443.29	290.79	-431.00	1.55	-1.54	3.06
6,966.00	1.48	60.26	6,931.61	445.54	293.18	-433.14	1.41	-1.18	22.45
7,061.00	1.23	84.55	7,026.58	446.25	295.26	-433.76	0.65	-0.26	25.57
7,155.00	1.27	85.19	7,120.56	446.43	297.30	-433.86	0.05	0.04	0.68
7,250.00	1.27	91.10	7,215.54	446.50	299.41	-433.85	0.14	0.00	6.22
7,344.00	1.08	94.68	7,309.52	446.41	301.33	-433.67	0.22	-0.20	3.81
7,438.00	0.92	92.30	7,403.50	446.30	302.97	-433.50	0.18	-0.17	-2.53
7,532.00	0.52	107.63	7,497.49	446.14	304.13	-433.30	0.47	-0.43	16.31
7,626.00	0.37	124.54	7,591.49	445.84	304.79	-432.97	0.21	-0.16	17.99
7,720.00	0.20	142.57	7,685.49	445.54	305.13	-432.65	0.20	-0.18	19.18
7,814.00	0.08	250.64	7,779.49	445.39	305.17	-432.50	0.25	-0.13	114.97
7,908.00	0.31	290.88	7,873.49	445.46	304.87	-432.58	0.27	0.24	42.81
8,002.00	0.57	292.40	7,967.49	445.73	304.20	-432.88	0.28	0.28	1.62
8,096.00	0.82	287.41	8,061.48	446.10	303.13	-433.30	0.27	0.27	-5.31
8,190.00	1.02	292.56	8,155.47	446.63	301.71	-433.88	0.23	0.21	5.48
8,284.00	1.13	295.95	8,249.45	447.35	300.11	-434.67	0.14	0.12	3.61
8,378.00	1.07	300.95	8,343.43	448.21	298.52	-435.59	0.12	-0.06	5.32
8,472.00	1.06	310.22	8,437.42	449.22	297.11	-436.66	0.18	-0.01	9.86
8,566.00	1.10	320.79	8,531.40	450.48	295.87	-437.97	0.22	0.04	11.24
8,660.00	1.11	327.31	8,625.38	451.95	294.81	-439.48	0.13	0.01	6.94
8,754.00	0.97	322.35	8,719.37	453.35	293.83	-440.92	0.18	-0.15	-5.28
8,847.00	0.93	287.66	8,812.36	454.20	292.63	-441.82	0.61	-0.04	-37.30
8,941.00	1.05	264.45	8,906.34	454.35	291.05	-442.03	0.44	0.13	-24.69
9,036.00	1.08	258.11	9,001.33	454.08	289.30	-441.83	0.13	0.03	-6.67
9,130.00	1.24	272.17	9,095.31	453.93	287.42	-441.77	0.35	0.17	14.96
9,224.00	0.21	311.44	9,189.30	454.09	286.28	-441.97	1.15	-1.10	41.78
9,318.00	0.88	34.56	9,283.29	454.79	286.56	-442.66	0.94	0.71	88.43
9,412.00	1.79	9.76	9,377.27	456.84	287.21	-444.67	1.13	0.97	-26.38
9,506.00	2.09	12.24	9,471.21	459.96	287.83	-447.77	0.33	0.32	2.64
9,600.00	0.76	344.03	9,565.18	462.23	288.02	-450.03	1.56	-1.41	-30.01
9,694.00	0.50	260.12	9,659.18	462.76	287.44	-450.59	0.92	-0.28	-89.27
9,788.00	0.51	255.46	9,753.18	462.59	286.63	-450.44	0.04	0.01	-4.96
9,881.00	0.49	236.65	9,826.17	462.33	286.06	-450.21	0.23	-0.03	-25.77
9,869.00	0.48	234.57	9,834.17	462.29	286.00	-450.18	0.25	-0.13	-26.00
9,963.00	3.54	179.34	9,928.11	459.16	285.72	-447.06	3.50	3.26	-58.76
10,010.00	8.64	176.41	9,974.83	454.19	285.95	-442.08	10.87	10.85	-6.23
10,057.00	12.69	176.34	10,021.01	445.51	286.50	-433.38	8.62	8.62	-0.15
10,104.00	17.59	177.35	10,066.36	433.25	287.16	-421.11	10.44	10.43	2.15
10,152.00	21.06	178.33	10,111.65	417.38	287.75	-405.23	7.26	7.23	2.04

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10,199.00	25.42	179.06	10,154.82	398.85	288.16	-386.70	9.30	9.28	1.55
10,246.00	28.75	177.56	10,196.67	377.46	288.81	-365.30	7.23	7.09	-3.19
10,293.00	33.94	177.05	10,236.79	353.05	289.97	-340.86	11.06	11.04	-1.09
10,340.00	37.93	178.85	10,274.84	325.49	290.93	-313.29	8.78	8.49	3.83
10,387.00	41.96	180.64	10,310.87	295.32	291.05	-283.14	8.92	8.57	3.81
10,434.00	46.43	181.98	10,344.56	262.58	290.28	-250.45	9.72	9.51	2.85
10,481.00	51.50	182.69	10,375.40	227.17	288.83	-215.13	10.85	10.79	1.51
10,529.00	55.57	184.17	10,403.93	188.64	286.51	-176.74	8.83	8.48	3.08
10,576.00	61.29	183.17	10,428.52	148.70	283.96	-136.93	12.30	12.17	-2.13
10,623.00	65.76	181.23	10,449.47	106.67	282.36	-95.01	10.20	9.51	-4.13
10,670.00	70.67	180.50	10,466.91	63.05	281.70	-51.44	10.55	10.45	-1.55
10,717.00	74.69	180.49	10,480.90	18.19	281.31	-6.64	8.55	8.55	-0.02
10,764.00	78.53	179.98	10,491.78	-27.52	281.13	39.03	8.24	8.17	-1.09
10,811.00	81.29	178.72	10,500.02	-73.79	281.65	85.28	6.44	5.87	-2.68
10,858.00	82.00	178.81	10,506.84	-120.28	282.66	131.77	1.52	1.51	0.19
10,905.00	85.49	179.12	10,511.96	-166.98	283.50	178.47	7.45	7.43	0.66
10,955.00	87.28	179.56	10,515.12	-216.88	284.07	228.34	3.69	3.58	0.88
11,050.00	88.46	179.60	10,518.65	-311.81	284.77	323.22	1.24	1.24	0.04
11,144.00	88.54	179.32	10,521.11	-405.77	285.66	417.14	0.31	0.09	-0.30
11,237.00	88.85	178.97	10,523.23	-498.74	287.04	510.09	0.50	0.33	-0.38
11,331.00	89.13	177.93	10,524.88	-592.69	289.59	604.06	1.15	0.30	-1.11
11,425.00	89.05	177.40	10,526.38	-686.60	293.42	698.05	0.57	-0.09	-0.56
11,519.00	88.88	177.77	10,528.07	-780.50	297.38	792.04	0.43	-0.18	0.39
11,613.00	88.99	178.15	10,529.82	-874.42	300.72	886.02	0.42	0.12	0.40
11,707.00	88.99	178.44	10,531.48	-968.37	303.52	980.00	0.31	0.00	0.31
11,801.00	88.94	178.77	10,533.18	-1,062.32	305.81	1,073.97	0.36	-0.05	0.35
11,895.00	88.96	179.25	10,534.90	-1,156.29	307.43	1,167.93	0.51	0.02	0.51
11,989.00	88.91	179.79	10,536.65	-1,250.27	308.22	1,261.86	0.58	-0.05	0.57
12,083.00	89.02	180.04	10,538.34	-1,344.26	308.36	1,355.77	0.29	0.12	0.27
12,177.00	89.02	180.27	10,539.95	-1,438.24	308.10	1,449.67	0.24	0.00	0.24
12,271.00	89.02	180.65	10,541.56	-1,532.23	307.35	1,543.54	0.40	0.00	0.40
12,365.00	88.96	180.74	10,543.22	-1,626.20	306.21	1,637.39	0.12	-0.06	0.10
12,459.00	88.94	181.30	10,544.94	-1,720.17	304.53	1,731.21	0.60	-0.02	0.60
12,553.00	88.88	181.19	10,546.73	-1,814.13	302.49	1,825.01	0.13	-0.06	-0.12
12,647.00	88.57	181.05	10,548.82	-1,908.09	300.66	1,918.82	0.36	-0.33	-0.15
12,741.00	89.58	181.95	10,550.34	-2,002.05	298.20	2,012.59	1.44	1.07	0.96
12,836.00	89.55	182.46	10,551.06	-2,096.97	294.54	2,107.29	0.54	-0.03	0.54
12,930.00	90.17	182.16	10,551.29	-2,190.90	290.75	2,200.97	0.73	0.66	-0.32
13,024.00	90.36	182.50	10,550.85	-2,284.82	286.93	2,294.66	0.41	0.20	0.36
13,118.00	90.48	183.04	10,550.16	-2,378.70	282.39	2,388.28	0.59	0.13	0.57
13,212.00	89.75	181.11	10,549.97	-2,472.64	278.98	2,482.00	2.20	-0.78	-2.05
13,306.00	89.02	179.19	10,550.98	-2,566.63	278.74	2,575.90	2.19	-0.78	-2.04
13,400.00	89.22	177.29	10,552.43	-2,660.57	281.62	2,669.88	2.03	0.21	-2.02



Survey Report



Company: Centennial Resources Development, Inc.
Project: Lea County, NM (NAD83 - UTM Zone 13)
Site: Duck Hunt 1 State Com
Well: 502H
Wellbore: OH / 65513
Design: Surveys (H&P 650)

Local Co-ordinate Reference: Well 502H
TVD Reference: RKB @ 3394.00usft (H&P 650)
MD Reference: RKB @ 3394.00usft (H&P 650)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA Compass

Survey

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)
13,494.00	87.34	175.32	10,555.25	-2,754.32	287.68	2,763.80	2.90	-2.00	-2.10
13,570.00	87.53	174.94	10,558.65	-2,829.97	294.12	2,839.65	0.56	0.25	-0.50
13,588.00	86.95	174.65	10,559.52	-2,847.87	295.75	2,857.61	3.60	-3.22	-1.61
13,682.00	89.55	175.04	10,562.39	-2,941.44	304.20	2,951.44	2.80	2.77	0.41
13,776.00	90.14	175.61	10,562.64	-3,035.13	311.86	3,045.36	0.87	0.63	0.61
13,871.00	90.39	175.75	10,562.20	-3,129.86	319.01	3,140.31	0.30	0.26	0.15
13,965.00	90.17	176.23	10,561.74	-3,223.63	325.59	3,234.26	0.56	-0.23	0.51
14,058.00	90.03	176.59	10,561.58	-3,316.44	331.41	3,327.24	0.42	-0.15	0.39
14,153.00	90.03	177.22	10,561.53	-3,411.30	336.54	3,422.23	0.66	0.00	0.66
14,247.00	90.08	178.93	10,561.44	-3,505.25	339.70	3,516.23	1.82	0.05	1.82
14,341.00	90.08	180.55	10,561.31	-3,599.24	340.12	3,610.16	1.72	0.00	1.72
14,435.00	89.66	180.75	10,561.52	-3,693.24	339.06	3,704.03	0.49	-0.45	0.21
14,528.00	89.92	181.00	10,561.86	-3,786.22	337.64	3,796.89	0.39	0.28	0.27
14,623.00	89.92	181.45	10,562.00	-3,881.20	335.61	3,891.70	0.47	0.00	0.47
14,717.00	90.22	182.06	10,561.88	-3,975.16	332.73	3,985.46	0.72	0.32	0.65
14,811.00	90.06	182.40	10,561.65	-4,069.09	329.07	4,079.16	0.40	-0.17	0.36
14,905.00	89.44	182.36	10,562.06	-4,163.00	325.17	4,172.84	0.66	-0.66	-0.04
14,999.00	89.36	182.23	10,563.05	-4,256.92	321.40	4,266.52	0.16	-0.09	-0.14
15,093.00	89.30	182.16	10,564.15	-4,350.85	317.80	4,360.22	0.10	-0.06	-0.07
15,187.00	89.41	182.12	10,565.20	-4,444.78	314.29	4,453.93	0.12	0.12	-0.04
15,281.00	89.41	182.57	10,566.17	-4,538.69	310.45	4,547.61	0.48	0.00	0.48
15,375.00	89.50	182.40	10,567.07	-4,632.60	306.37	4,641.27	0.20	0.10	-0.18
15,469.00	89.27	182.20	10,568.07	-4,726.52	302.60	4,734.95	0.32	-0.24	-0.21
15,563.00	88.99	181.78	10,569.50	-4,820.45	299.33	4,828.67	0.54	-0.30	-0.45
15,657.00	89.44	182.46	10,570.79	-4,914.38	295.86	4,922.38	0.87	0.48	0.72
15,751.00	89.36	181.55	10,571.77	-5,008.31	292.57	5,016.10	0.97	-0.09	-0.97
15,845.00	89.33	181.46	10,572.85	-5,102.27	290.10	5,109.88	0.10	-0.03	-0.10
15,939.00	89.86	181.69	10,573.51	-5,196.24	287.52	5,203.66	0.61	0.56	0.24
16,033.00	89.58	180.90	10,573.97	-5,290.21	285.39	5,297.46	0.89	-0.30	-0.84
16,127.00	89.94	180.01	10,574.37	-5,384.21	284.65	5,391.35	1.02	0.38	-0.95
16,221.00	89.89	178.63	10,574.51	-5,478.20	285.76	5,485.31	1.47	-0.05	-1.47
16,315.00	89.92	177.91	10,574.66	-5,572.15	288.60	5,579.30	0.77	0.03	-0.77
16,409.00	89.92	177.59	10,574.79	-5,666.08	292.29	5,673.30	0.34	0.00	-0.34
16,503.00	89.52	177.06	10,575.25	-5,759.98	296.68	5,767.30	0.71	-0.43	-0.56
16,597.00	90.00	176.95	10,575.65	-5,853.85	301.59	5,861.29	0.52	0.51	-0.12
16,691.00	89.94	176.35	10,575.70	-5,947.69	307.08	5,955.28	0.64	-0.06	-0.64
16,785.00	89.72	176.35	10,575.97	-6,041.49	313.06	6,049.25	0.23	-0.23	0.00
16,879.00	89.61	175.76	10,576.52	-6,135.27	319.53	6,143.21	0.64	-0.12	-0.63
16,972.00	89.50	175.73	10,577.25	-6,228.01	326.43	6,236.16	0.12	-0.12	-0.03
17,067.00	89.05	176.90	10,578.45	-6,322.80	332.54	6,331.12	1.32	-0.47	1.23
17,114.00	89.02	177.37	10,579.24	-6,369.74	334.89	6,378.11	1.00	-0.06	1.00
17,161.00	89.05	177.97	10,580.03	-6,416.69	336.80	6,425.11	1.28	0.06	1.28
17,255.00	88.96	178.73	10,581.66	-6,510.64	339.50	6,519.08	0.81	-0.10	0.81



Survey Report



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Survey Calculation Method: Minimum Curvature
Database: USA Compass

Survey

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)
17,349.00	88.82	178.77	10,583.48	-6,604.60	341.55	6,613.05	0.15	-0.15	0.04
17,443.00	88.94	179.00	10,585.32	-6,698.56	343.38	6,707.01	0.28	0.13	0.24
17,537.00	89.05	179.55	10,586.97	-6,792.54	344.57	6,800.96	0.60	0.12	0.59
17,631.00	89.16	180.31	10,588.44	-6,886.53	344.69	6,894.87	0.82	0.12	0.81
17,725.00	88.60	180.76	10,590.28	-6,980.51	343.81	6,988.73	0.76	-0.60	0.48
17,819.00	88.94	181.15	10,592.29	-7,074.47	342.24	7,082.55	0.55	0.36	0.41
17,913.00	88.91	181.48	10,594.06	-7,168.43	340.08	7,176.35	0.35	-0.03	0.35
18,007.00	89.02	181.62	10,595.76	-7,262.38	337.54	7,270.11	0.19	0.12	0.15
18,101.00	89.05	182.17	10,597.34	-7,356.32	334.43	7,363.84	0.59	0.03	0.59
18,195.00	89.78	183.01	10,598.30	-7,450.21	330.19	7,457.49	1.18	0.78	0.89
18,235.00	89.52	183.27	10,598.54	-7,490.16	327.99	7,497.30	0.92	-0.65	0.65
Final Phoenix MWD Survey									
18,277.00	89.52	183.27	10,598.90	-7,532.09	325.60	7,539.10	0.00	0.00	0.00
Projection to TD									

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,826.50	1,826.26	-16.48	-16.39	Tie In
1,897.00	1,896.75	-17.55	-16.75	First Phoenix MWD Survey
18,235.00	10,598.55	-7,490.16	327.99	Final Phoenix MWD Survey
18,277.00	10,598.90	-7,532.09	325.60	Projection to TD

SURVEY DATA CERTIFICATION



PHOENIX
TECHNOLOGY SERVICES

Job #: 65513
 Client: Centennial Resources
 County & State: Lea County, New Mexico
 Well: Duck Hunt 1 State Com 502H
 API No: 30-025-46346
 Proposed Direction: 177.65°

TIE-IN DATA

MD	TVD	INC	AZM	N/-S	E/-W	DATA SOURCE
1826.50 ft	1826.26 ft	0.60°	171.70°	16.48 S	16.39 W	Well Plan
Data Source Company:						Centennial

SURVEY DATA

First Survey Date	First Survey Depth	INC	AZM
5-Nov-19	1,897 ft	1.33°	210.63°

Last Survey Date	Last Survey Depth	INC	AZM
14-Nov-19	18,235 ft	89.52°	183.27°

Survey Instrument Type
Phoenix MWD

Projected TD Survey Date	Projected TD Survey Depth	INC	AZM
14-Nov-19	18,277 ft	89.52°	183.27°

CORRECTION INFORMATION

Magnetic Declination Used	6.63 degrees
Grid Convergence Used	0.00 degrees
Total Correction	6.63 degrees

Corrected to True/Grid North
True North

Freddy Hicks

TO THE BEST OF MY KNOWLEDGE, I
CERTIFY THIS SURVEY DATA TO BE
TRUE AND CORRECT.

Signature

14-Nov-19

Date