

HOBBS OCD
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**CENTENNIAL RESOURCE
DEVELOPMENT, LLC**

LEA COUNTY, NM (NAD 83 - UTM ZONE 13 - TRUE)
NE SE SEC. 1 T23S R34E
DUCK HUNT 1 STATE COM #601H
22 April, 2019

Survey: FINAL SURVEYS



Survey Report



Company:	CENTENNIAL RESOURCE DEVELOPME	Local Co-ordinate Reference:	Well DUCK HUNT 1 STATE COM #601H
Project:	LEA COUNTY, NM (NAD 83 - UTM ZONE	TVD Reference:	KB 26.5' @ 3392.00usft (H&P 650)
Site:	NE SE SEC. 1 T23S R34E	MD Reference:	KB 26.5' @ 3392.00usft (H&P 650)
Well:	DUCK HUNT 1 STATE COM #601H	North Reference:	True
Wellbore:	JOB # 2019-242-650	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEYS	Database:	Database 1

Project	LEA COUNTY, NM (NAD 83 - UTM ZONE 13 - TRUE)		
Map System:	Universal Transverse Mercator (US Survey Feet)	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	NE SE SEC. 1 T23S R34E				
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:	1.10 ft	Grid Convergence:	0.85 °

Well	DUCK HUNT 1 STATE COM #601H					
Well Position	+N/-S	0.00 usft	Northing:	11,740,220.80 usft	Latitude:	32.332814
	+E/-W	0.00 usft	Easting:	2,128,972.13 usft	Longitude:	-103.417811
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,365.50 usft	

Wellbore	JOB # 2019-242-650				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	19/03/2019	6.70	60.16	47,838

Design	FINAL SURVEYS				
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	176.40	

Survey Program	Date 22/04/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
139.50	18,905.00	FINAL SURVEYS (JOB # 2019-242-650)	MWD+IFR1+MS	OWSG MWD + IFR1 + Multi-Station Correction

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	3,392.00	0.00	0.00	0.00	0.00	0.00	0.00
139.50	0.50	17.75	139.50	3,252.50	0.58	0.19	-0.57	0.36	0.36	0.00
226.50	0.70	210.75	226.50	3,165.50	0.48	0.03	-0.48	1.37	0.23	-191.95
311.50	1.10	215.75	311.49	3,080.51	-0.62	-0.71	0.58	0.48	0.47	5.88
398.50	1.10	208.75	398.47	2,993.53	-2.03	-1.60	1.93	0.15	0.00	-8.05
517.50	1.40	264.75	517.45	2,874.55	-3.17	-3.60	2.94	1.01	0.25	47.06
607.50	0.60	198.75	607.43	2,784.57	-3.72	-4.85	3.40	1.42	-0.89	-73.33
697.50	0.40	213.75	697.43	2,694.57	-4.42	-5.17	4.09	0.26	-0.22	16.67
787.50	1.20	217.75	787.42	2,604.58	-5.43	-5.92	5.05	0.89	0.89	4.44
877.50	0.60	200.75	877.41	2,514.59	-6.61	-6.67	6.18	0.72	-0.67	-18.89
966.50	0.60	204.75	966.40	2,425.60	-7.47	-7.03	7.02	0.05	0.00	4.49
1,056.50	1.00	165.75	1,056.40	2,335.60	-8.66	-7.03	8.20	0.73	0.44	-43.33
1,147.50	0.70	147.75	1,147.39	2,244.61	-9.90	-6.54	9.47	0.44	-0.33	-19.78

Survey Report



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Project: LEA COUNTY, NM (NAD 83 - UTM ZONE)
Site: NE SE SEC. 1 T23S R34E
Well: DUCK HUNT 1 STATE COM #601H
Wellbore: JOB # 2019-242-650
Design: FINAL SURVEYS

Local Co-ordinate Reference: Well DUCK HUNT 1 STATE COM #601H
TVD Reference: KB 26.5' @ 3392.00usft (H&P 650)
MD Reference: KB 26.5' @ 3392.00usft (H&P 650)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Database 1

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,237.50	0.40	180.75	1,237.38	2,154.62	-10.68	-6.25	10.27	0.47	-0.33	36.67
1,327.50	0.70	238.75	1,327.38	2,064.62	-11.28	-6.72	10.84	0.66	0.33	64.44
1,416.50	1.20	234.75	1,416.37	1,975.63	-12.10	-7.95	11.58	0.57	0.56	-4.49
1,505.50	1.70	231.75	1,505.34	1,886.66	-13.46	-9.75	12.82	0.57	0.56	-3.37
1,595.50	1.40	192.75	1,595.31	1,796.69	-15.35	-11.04	14.63	1.19	-0.33	-43.33
1,685.50	0.60	38.75	1,685.30	1,706.70	-16.06	-10.99	15.34	2.17	-0.89	-171.11
1,775.50	0.90	187.75	1,775.30	1,616.70	-16.39	-10.79	15.68	1.61	0.33	165.56
TIE ON TO SURFACE SURVEYS										
1,839.50	0.90	211.75	1,839.29	1,552.71	-17.32	-11.12	16.59	0.58	0.00	37.50
1,910.00	1.18	203.34	1,909.78	1,482.22	-18.46	-11.70	17.68	0.45	0.40	-11.93
2,005.00	0.96	201.82	2,004.76	1,387.24	-20.09	-12.38	19.28	0.23	-0.23	-1.60
2,099.00	0.94	200.92	2,098.75	1,293.25	-21.54	-12.95	20.69	0.03	-0.02	-0.96
2,193.00	0.86	199.23	2,192.74	1,199.26	-22.93	-13.46	22.04	0.09	-0.09	-1.80
2,287.00	0.98	201.81	2,286.72	1,105.28	-24.34	-13.99	23.42	0.14	0.13	2.74
2,381.00	0.59	173.08	2,380.71	1,011.29	-25.57	-14.23	24.63	0.58	-0.41	-30.56
2,476.00	1.38	83.90	2,475.70	916.30	-25.93	-13.03	25.06	1.57	0.83	-93.87
2,570.00	3.01	60.36	2,569.63	822.37	-24.59	-9.76	23.93	1.95	1.73	-25.04
2,664.00	4.55	53.03	2,663.43	728.57	-21.13	-4.64	20.80	1.71	1.64	-7.80
2,758.00	5.28	51.98	2,757.08	634.92	-16.22	1.75	16.30	0.78	0.78	-1.12
2,852.00	5.74	49.51	2,850.65	541.35	-10.51	8.73	11.03	0.55	0.49	-2.63
2,946.00	6.47	52.14	2,944.11	447.89	-4.20	16.49	5.23	0.83	0.78	2.80
3,040.00	7.63	61.74	3,037.40	354.60	2.00	26.17	-0.35	1.75	1.23	10.21
3,135.00	8.46	67.64	3,131.47	260.53	7.65	38.19	-5.23	1.23	0.87	6.21
3,229.00	8.57	68.92	3,224.43	167.57	12.80	51.11	-9.56	0.23	0.12	1.36
3,323.00	8.96	69.96	3,317.34	74.66	17.82	64.53	-13.74	0.45	0.41	1.11
3,417.00	9.43	70.51	3,410.13	-18.13	22.90	78.66	-17.92	0.51	0.50	0.59
3,511.00	9.38	67.64	3,502.86	-110.86	28.38	93.01	-22.49	0.50	-0.05	-3.05
3,606.00	9.40	65.14	3,596.59	-204.59	34.59	107.21	-27.79	0.43	0.02	-2.63
3,699.00	9.76	64.13	3,688.29	-296.29	41.22	121.19	-33.53	0.43	0.39	-1.09
3,793.00	10.06	65.43	3,780.89	-388.89	48.11	135.82	-39.49	0.40	0.32	1.38
3,887.00	9.62	66.70	3,873.51	-481.51	54.63	150.51	-45.07	0.52	-0.47	1.35
3,982.00	9.12	67.41	3,967.24	-575.24	60.67	164.75	-50.20	0.54	-0.53	0.75
4,076.00	8.25	68.45	4,060.16	-668.16	66.00	177.90	-54.70	0.94	-0.93	1.11
4,170.00	7.58	67.69	4,153.27	-761.27	70.84	189.91	-58.77	0.72	-0.71	-0.81
4,264.00	7.38	63.75	4,246.47	-854.47	75.86	201.06	-63.08	0.59	-0.21	-4.19
4,358.00	7.29	59.32	4,339.70	-947.70	81.57	211.60	-68.12	0.61	-0.10	-4.71
4,452.00	6.82	57.91	4,432.99	-1,040.99	87.58	221.46	-73.50	0.53	-0.50	-1.50
4,546.00	7.26	55.49	4,526.28	-1,134.28	93.91	231.08	-79.21	0.56	0.47	-2.57
4,640.00	7.75	55.02	4,619.47	-1,227.47	100.91	241.17	-85.56	0.53	0.52	-0.50
4,734.00	7.57	56.40	4,712.63	-1,320.63	107.97	251.52	-91.96	0.27	-0.19	1.47
4,828.00	7.32	53.74	4,805.84	-1,413.84	114.94	261.50	-98.29	0.45	-0.27	-2.83
4,923.00	7.02	51.84	4,800.10	-1,508.10	122.10	270.95	-104.85	0.40	-0.32	-2.00
5,017.00	7.58	50.33	4,993.34	-1,601.34	129.61	280.24	-111.76	0.63	0.60	-1.61
5,111.00	8.60	50.28	5,086.40	-1,694.40	138.06	290.42	-119.55	1.09	1.09	-0.05
5,205.00	8.55	50.29	5,179.35	-1,787.35	147.02	301.20	-127.81	0.05	-0.05	0.01
5,299.00	8.43	50.84	5,272.32	-1,880.32	155.83	311.92	-135.93	0.15	-0.13	0.59
5,393.00	8.00	50.62	5,365.35	-1,973.35	164.33	322.31	-143.77	0.46	-0.46	-0.23
5,405.00	7.89	50.70	5,377.24	-1,985.24	165.38	323.60	-144.74	0.92	-0.92	0.67
5,497.00	8.10	51.20	5,468.34	-2,076.34	173.44	333.54	-152.16	0.24	0.23	0.54
5,560.00	8.14	49.90	5,530.71	-2,138.71	179.10	340.41	-157.37	0.30	0.06	-2.06
5,654.00	8.75	60.08	5,623.70	-2,231.70	186.95	351.69	-164.50	1.71	0.65	10.83
5,748.00	8.76	73.15	5,716.61	-2,324.61	192.59	364.74	-169.31	2.11	0.01	13.90
5,842.00	8.69	77.00	5,809.53	-2,417.53	196.27	378.51	-172.11	0.63	-0.07	4.10

Survey Report



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Wellbore: JOB # 2019-242-650
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5,936.00	8.54	76.28	5,902.46	-2,510.46	199.52	392.21	-174.49	0.20	-0.16	-0.77
6,030.00	8.61	76.53	5,995.41	-2,603.41	202.81	405.84	-176.93	0.08	0.07	0.27
6,124.00	8.46	76.62	6,088.37	-2,696.37	206.05	419.40	-179.31	0.16	-0.16	0.10
6,218.00	8.45	76.35	6,181.35	-2,789.35	209.28	432.84	-181.69	0.04	-0.01	-0.29
6,312.00	8.39	77.81	6,274.34	-2,882.34	212.36	446.26	-183.92	0.24	-0.06	1.55
6,407.00	7.02	77.32	6,368.48	-2,976.48	215.10	458.70	-185.87	1.44	-1.44	-0.52
6,501.00	5.76	73.54	6,461.89	-3,069.89	217.70	468.82	-187.82	1.41	-1.34	-4.02
6,595.00	4.74	70.95	6,555.50	-3,163.50	220.30	477.02	-189.91	1.11	-1.09	-2.76
6,689.00	3.31	71.22	6,649.26	-3,257.26	222.44	483.26	-191.65	1.52	-1.52	0.29
6,784.00	1.78	67.66	6,744.17	-3,352.17	223.89	487.22	-192.84	1.62	-1.61	-3.75
6,878.00	0.38	247.06	6,838.15	-3,446.15	224.32	488.29	-193.21	2.30	-1.49	190.85
6,972.00	0.94	243.90	6,932.15	-3,540.15	223.86	487.31	-192.81	0.60	0.60	-3.36
7,067.00	0.88	242.40	7,027.14	-3,635.14	223.18	485.96	-192.22	0.07	-0.06	-1.58
7,161.00	0.96	242.35	7,121.12	-3,729.12	222.48	484.62	-191.60	0.09	0.09	-0.05
7,255.00	0.92	245.18	7,215.11	-3,823.11	221.79	483.24	-191.01	0.07	-0.04	3.01
7,349.00	1.03	246.64	7,309.10	-3,917.10	221.14	481.78	-190.45	0.12	0.12	1.55
7,443.00	0.95	247.62	7,403.08	-4,011.08	220.51	480.28	-189.91	0.09	-0.09	1.04
7,538.00	1.06	252.19	7,498.07	-4,106.07	219.94	478.72	-189.44	0.14	0.12	4.81
7,632.00	1.16	240.61	7,592.05	-4,200.05	219.21	477.06	-188.82	0.26	0.11	-12.32
7,727.00	1.31	244.73	7,687.03	-4,295.03	218.27	475.24	-188.00	0.18	0.16	4.34
7,821.00	1.27	245.12	7,781.01	-4,389.01	217.38	473.32	-187.22	0.04	-0.04	0.41
7,915.00	1.37	244.39	7,874.98	-4,482.98	216.45	471.37	-186.42	0.11	0.11	-0.78
8,010.00	1.32	247.08	7,969.95	-4,577.95	215.54	469.33	-185.64	0.08	-0.05	2.83
8,104.00	1.48	243.04	8,063.93	-4,671.93	214.56	467.26	-184.80	0.20	0.17	-4.30
8,198.00	1.46	246.99	8,157.90	-4,765.90	213.55	465.07	-183.92	0.11	-0.02	4.20
8,292.00	1.28	248.01	8,251.87	-4,859.87	212.68	463.00	-183.19	0.19	-0.19	1.09
8,386.00	1.19	245.79	8,345.85	-4,953.85	211.89	461.13	-182.51	0.11	-0.10	-2.36
8,480.00	1.08	243.88	8,439.83	-5,047.83	211.10	459.45	-181.83	0.12	-0.12	-2.03
8,574.00	1.00	246.76	8,533.81	-5,141.81	210.39	457.90	-181.22	0.10	-0.09	3.06
8,668.00	0.94	260.94	8,627.80	-5,235.80	209.94	456.38	-180.87	0.26	-0.06	15.09
8,762.00	1.08	270.09	8,721.78	-5,329.78	209.82	454.73	-180.85	0.23	0.15	9.73
8,856.00	1.01	273.98	8,815.77	-5,423.77	209.88	453.02	-181.02	0.11	-0.07	4.14
8,950.00	0.59	34.19	8,909.76	-5,517.76	210.34	452.47	-181.51	1.49	-0.45	127.88
9,044.00	0.59	32.83	9,003.76	-5,611.76	211.15	453.00	-182.28	0.01	0.00	-1.45
9,138.00	1.03	344.07	9,097.75	-5,705.75	212.37	453.03	-183.49	0.83	0.47	-51.87
9,232.00	1.48	339.91	9,191.73	-5,799.73	214.32	452.38	-185.48	0.49	0.48	-4.43
9,326.00	1.44	97.49	9,285.71	-5,893.71	215.30	453.14	-186.42	2.66	-0.04	125.09
9,421.00	1.21	106.36	9,380.69	-5,988.69	214.87	455.28	-185.85	0.32	-0.24	9.34
9,515.00	0.80	109.56	9,474.67	-6,082.67	214.37	456.85	-185.25	0.44	-0.44	3.40
9,609.00	0.27	80.93	9,568.67	-6,176.67	214.18	457.69	-185.02	0.61	-0.56	-30.46
9,703.00	0.49	56.94	9,662.67	-6,270.67	214.44	458.25	-185.23	0.28	0.23	-25.52
9,797.00	0.63	54.72	9,756.66	-6,364.66	214.95	459.01	-185.70	0.15	0.15	-2.36
9,891.00	0.61	59.92	9,850.66	-6,458.66	215.50	459.86	-186.20	0.06	-0.02	5.53
9,985.00	0.41	88.62	9,944.65	-6,552.65	215.76	460.63	-186.41	0.34	-0.21	30.53
10,079.00	0.34	135.62	10,038.65	-6,646.65	215.57	461.16	-186.18	0.33	-0.07	50.00
10,173.00	0.79	157.23	10,132.65	-6,740.65	214.77	461.61	-185.36	0.52	0.48	22.99
10,267.00	1.33	145.66	10,226.63	-6,834.63	213.28	462.47	-183.81	0.62	0.57	-12.31
10,361.00	1.24	134.78	10,320.61	-6,928.61	211.66	463.81	-182.11	0.28	-0.10	-11.57
10,455.00	1.26	136.24	10,414.58	-7,022.58	210.20	465.25	-180.56	0.04	0.02	1.55
10,549.00	1.13	154.51	10,508.56	-7,116.56	208.61	466.36	-178.91	0.43	-0.14	19.44
10,643.00	1.38	173.38	10,602.54	-7,210.54	206.65	466.89	-176.92	0.51	0.27	20.07
10,737.00	1.75	192.26	10,696.51	-7,304.51	204.12	466.72	-174.41	0.67	0.39	20.09
10,768.00	1.96	194.26	10,727.49	-7,335.49	203.15	466.48	-173.45	0.71	0.68	6.45

Survey Report



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Site:	NE SE SEC. 1 T23S R34E	MD Reference:	KB 26.5' @ 3392.00usft (H&P 650)
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Wellbore:	JOB # 2019-242-650	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEYS	Database:	Database 1

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Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
KOP										
10,831.00	2.60	188.03	10,790.44	-7,398.44	200.69	466.02	-171.03	1.09	1.02	-9.89
10,877.00	7.74	175.81	10,836.24	-7,444.24	196.56	466.10	-166.90	11.36	11.17	-26.57
10,925.00	13.58	173.85	10,883.39	-7,491.39	187.73	466.94	-158.03	12.19	12.17	-4.08
10,972.00	16.73	167.91	10,928.75	-7,536.75	175.62	468.95	-145.83	7.46	6.70	-12.64
11,019.00	21.27	164.86	10,973.18	-7,581.18	160.77	472.60	-130.78	9.88	9.66	-6.49
11,066.00	24.08	166.19	11,016.54	-7,624.54	143.23	477.11	-112.98	6.08	5.98	2.83
11,113.00	26.22	168.08	11,059.09	-7,667.09	123.76	481.55	-93.27	4.86	4.55	4.02
11,160.00	30.38	170.20	11,100.46	-7,708.46	101.88	485.71	-71.17	9.10	8.85	4.51
11,207.00	35.15	170.90	11,139.97	-7,747.97	76.79	489.88	-45.87	10.18	10.15	1.49
11,254.00	40.93	171.95	11,176.97	-7,784.97	48.16	494.18	-17.03	12.37	12.30	2.23
11,301.00	45.93	173.54	11,211.10	-7,819.10	16.12	498.24	15.20	10.89	10.64	3.38
11,348.00	50.20	177.28	11,242.50	-7,850.50	-18.71	501.00	50.14	10.84	9.09	7.96
11,395.00	53.77	178.00	11,271.44	-7,879.44	-55.71	502.51	87.15	7.69	7.60	1.53
11,442.00	59.12	180.59	11,297.42	-7,905.42	-94.85	502.97	126.25	12.27	11.38	5.51
11,489.00	64.46	181.06	11,319.63	-7,927.63	-136.25	502.37	167.53	11.40	11.36	1.00
11,536.00	68.45	180.39	11,338.40	-7,946.40	-179.32	501.83	210.48	8.59	8.49	-1.43
11,583.00	71.37	180.17	11,354.54	-7,962.54	-223.46	501.61	254.52	6.23	6.21	-0.47
11,630.00	71.28	179.82	11,369.59	-7,977.59	-267.98	501.62	298.96	0.73	-0.19	-0.74
11,677.00	73.31	180.19	11,383.88	-7,991.88	-312.75	501.61	343.64	4.38	4.32	0.79
11,724.00	76.12	180.82	11,396.27	-8,004.27	-358.09	501.21	388.86	6.12	5.98	1.34
11,771.00	80.25	180.46	11,405.89	-8,013.89	-404.08	500.70	434.72	8.82	8.79	-0.77
11,818.00	81.34	180.49	11,413.41	-8,021.41	-450.47	500.31	481.00	2.32	2.32	0.06
11,865.00	82.87	181.10	11,419.87	-8,027.87	-497.02	499.67	527.42	3.50	3.26	1.30
11,912.00	82.15	181.58	11,425.99	-8,033.99	-543.60	498.58	573.84	1.84	-1.53	1.02
11,959.00	82.51	182.14	11,432.27	-8,040.27	-590.16	497.07	620.21	1.41	0.77	1.19
HZ LANDING PT										
12,006.00	91.43	183.47	11,434.75	-8,042.75	-636.99	494.77	666.80	19.19	18.98	2.83
12,054.00	95.32	182.81	11,431.92	-8,039.92	-684.82	492.14	714.38	8.22	8.10	-1.37
12,080.00	93.74	182.58	11,429.87	-8,037.87	-710.71	490.93	740.14	6.14	-6.08	-0.88
12,156.00	92.74	181.85	11,425.57	-8,033.57	-786.53	487.99	815.63	1.63	-1.32	-0.96
12,251.00	89.65	181.21	11,423.59	-8,031.59	-881.47	485.46	910.21	3.32	-3.25	-0.67
12,282.00	89.62	181.68	11,423.79	-8,031.79	-912.46	484.68	941.09	1.52	-0.10	1.52
12,345.00	87.86	179.95	11,425.18	-8,033.18	-975.43	483.78	1,003.89	3.92	-2.79	-2.75
12,439.00	84.58	180.20	11,431.37	-8,039.37	-1,069.21	483.66	1,097.48	3.50	-3.49	0.27
12,470.00	83.98	179.76	11,434.46	-8,042.46	-1,100.06	483.67	1,128.26	2.40	-1.94	-1.42
12,533.00	83.40	180.05	11,441.39	-8,049.39	-1,162.68	483.77	1,190.76	1.03	-0.92	0.46
12,564.00	85.41	180.54	11,444.41	-8,052.41	-1,193.53	483.61	1,221.54	6.67	6.48	1.58
12,596.00	86.21	180.03	11,446.75	-8,054.75	-1,225.44	483.45	1,253.38	2.96	2.50	-1.59
12,627.00	87.15	179.71	11,448.54	-8,056.54	-1,256.39	483.52	1,284.27	3.20	3.03	-1.03
12,659.00	87.27	179.41	11,450.10	-8,058.10	-1,288.35	483.77	1,316.19	1.01	0.37	-0.94
12,690.00	87.09	179.05	11,451.62	-8,059.62	-1,319.31	484.19	1,347.11	1.30	-0.58	-1.16
12,721.00	86.57	179.05	11,453.34	-8,061.34	-1,350.26	484.70	1,378.03	1.68	-1.68	0.00
12,753.00	86.67	178.77	11,455.23	-8,063.23	-1,382.19	485.31	1,409.94	0.93	0.31	-0.87
12,784.00	86.78	178.45	11,457.00	-8,065.00	-1,413.13	486.06	1,440.87	1.09	0.35	-1.03
12,816.00	86.78	178.13	11,458.79	-8,066.79	-1,445.07	487.01	1,472.80	1.00	0.00	-1.00
12,910.00	87.41	178.43	11,463.56	-8,071.56	-1,538.91	489.83	1,566.63	0.74	0.67	0.32
13,036.00	91.41	180.43	11,464.86	-8,072.86	-1,664.86	491.08	1,692.42	3.55	3.17	1.59
13,130.00	90.74	181.27	11,463.09	-8,071.09	-1,758.83	489.69	1,786.11	1.14	-0.71	0.89
13,224.00	89.06	181.01	11,463.26	-8,071.26	-1,852.81	487.82	1,879.79	1.81	-1.79	-0.28
13,318.00	88.24	182.01	11,465.47	-8,073.47	-1,946.75	485.34	1,973.39	1.38	-0.87	1.06
13,413.00	88.42	184.33	11,468.24	-8,076.24	-2,041.56	480.09	2,067.68	2.45	0.19	2.44
13,507.00	88.59	181.35	11,470.69	-8,078.69	-2,135.40	475.43	2,161.04	3.17	0.18	-3.17

Survey Report



Company:	CENTENNIAL RESOURCE DEVELOPME	Local Co-ordinate Reference:	Well DUCK HUNT 1 STATE COM #601H
Project:	LEA COUNTY, NM (NAD 83 - UTM ZONE	TVD Reference:	KB 26.5' @ 3392.00usft (H&P 650)
Site:	NE SE SEC. 1 T23S R34E	MD Reference:	KB 26.5' @ 3392.00usft (H&P 650)
Well:	DUCK HUNT 1 STATE COM #601H	North Reference:	True
Wellbore:	JOB # 2019-242-650	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEYS	Database:	Database 1

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,601.00	89.10	179.02	11,472.59	-8,080.59	-2,229.37	475.13	2,254.81	2.54	0.54	-2.48
13,695.00	88.42	180.40	11,474.62	-8,082.62	-2,323.35	475.61	2,348.63	1.64	-0.72	1.47
13,789.00	88.66	182.04	11,477.02	-8,085.02	-2,417.29	473.61	2,442.26	1.76	0.26	1.74
13,820.00	88.63	181.76	11,477.75	-8,085.75	-2,448.27	472.58	2,473.11	0.91	-0.10	-0.90
13,852.00	88.67	181.19	11,478.50	-8,086.50	-2,480.25	471.75	2,504.98	1.79	0.12	-1.78
13,883.00	87.86	180.89	11,479.44	-8,087.44	-2,511.23	471.19	2,535.86	2.79	-2.61	-0.97
13,977.00	87.49	181.90	11,483.26	-8,091.26	-2,605.12	468.91	2,629.43	1.14	-0.39	1.07
14,071.00	87.31	180.51	11,487.52	-8,095.52	-2,699.00	466.93	2,723.00	1.49	-0.19	-1.48
14,166.00	87.61	181.31	11,491.73	-8,099.73	-2,793.89	465.42	2,817.61	0.90	0.32	0.84
14,260.00	88.24	182.47	11,495.13	-8,103.13	-2,887.78	462.33	2,911.11	1.40	0.67	1.23
14,354.00	88.66	181.91	11,497.68	-8,105.68	-2,981.68	458.74	3,004.60	0.74	0.45	-0.60
14,448.00	88.89	181.79	11,499.69	-8,107.69	-3,075.61	455.70	3,098.15	0.28	0.24	-0.13
14,542.00	89.05	181.23	11,501.38	-8,109.38	-3,169.56	453.22	3,191.76	0.62	0.17	-0.60
14,635.00	88.95	179.26	11,503.00	-8,111.00	-3,262.54	452.83	3,284.54	2.12	-0.11	-2.12
14,730.00	88.81	179.22	11,504.86	-8,112.86	-3,357.51	454.09	3,379.40	0.15	-0.15	-0.04
14,824.00	88.60	179.83	11,506.98	-8,114.98	-3,451.48	454.87	3,473.24	0.69	-0.22	0.65
14,917.00	88.85	178.97	11,509.05	-8,117.05	-3,544.45	455.84	3,566.08	0.96	0.27	-0.92
15,012.00	88.84	179.48	11,510.96	-8,118.96	-3,639.43	457.12	3,660.95	0.54	-0.01	0.54
15,106.00	88.46	178.96	11,513.18	-8,121.18	-3,733.39	458.40	3,754.81	0.69	-0.40	-0.55
15,200.00	88.49	178.98	11,515.68	-8,123.68	-3,827.34	460.09	3,848.68	0.04	0.03	0.02
15,294.00	88.56	179.18	11,518.10	-8,126.10	-3,921.30	461.60	3,942.55	0.23	0.07	0.21
15,388.00	88.71	180.56	11,520.34	-8,128.34	-4,015.27	461.81	4,036.35	1.48	0.16	1.47
15,482.00	88.32	180.15	11,522.78	-8,130.78	-4,109.24	461.23	4,130.09	0.60	-0.41	-0.44
15,576.00	88.33	180.33	11,525.52	-8,133.52	-4,203.19	460.84	4,223.84	0.19	0.01	0.19
15,670.00	88.71	180.06	11,527.95	-8,135.95	-4,297.16	460.52	4,317.60	0.50	0.40	-0.29
15,764.00	88.84	179.55	11,529.96	-8,137.96	-4,391.14	460.84	4,411.41	0.56	0.14	-0.54
15,858.00	89.15	179.52	11,531.61	-8,139.61	-4,485.12	461.60	4,505.26	0.33	0.33	-0.03
15,952.00	89.10	179.33	11,533.05	-8,141.05	-4,579.11	462.54	4,599.12	0.21	-0.05	-0.20
16,046.00	89.34	179.45	11,534.32	-8,142.32	-4,673.09	463.55	4,692.98	0.29	0.26	0.13
16,141.00	89.36	179.48	11,535.40	-8,143.40	-4,768.08	464.43	4,787.84	0.04	0.02	0.03
16,235.00	89.36	179.11	11,536.45	-8,144.45	-4,862.07	465.59	4,881.71	0.39	0.00	-0.39
16,329.00	88.85	179.24	11,537.92	-8,145.92	-4,956.05	466.94	4,975.59	0.56	-0.54	0.14
16,423.00	89.02	179.43	11,539.67	-8,147.67	-5,050.03	468.03	5,069.45	0.27	0.18	0.20
16,517.00	89.13	179.68	11,541.19	-8,149.19	-5,144.01	468.76	5,163.29	0.29	0.12	0.27
16,611.00	88.85	179.18	11,542.84	-8,150.84	-5,237.99	469.70	5,257.15	0.61	-0.30	-0.53
16,705.00	89.44	180.09	11,544.25	-8,152.25	-5,331.98	470.30	5,350.99	1.15	0.63	0.97
16,799.00	88.85	178.84	11,545.65	-8,153.65	-5,425.96	471.17	5,444.84	1.47	-0.63	-1.33
16,893.00	89.19	179.02	11,547.26	-8,155.26	-5,519.93	472.93	5,538.73	0.41	0.36	0.19
16,987.00	89.07	179.89	11,548.68	-8,156.68	-5,613.91	473.82	5,632.59	0.93	-0.13	0.93
17,082.00	89.16	179.68	11,550.15	-8,158.15	-5,708.90	474.18	5,727.41	0.24	0.09	-0.22
17,176.00	88.70	179.46	11,551.91	-8,159.91	-5,802.88	474.89	5,821.25	0.54	-0.49	-0.23
17,270.00	88.78	179.28	11,553.97	-8,161.97	-5,896.85	475.92	5,915.10	0.21	0.09	-0.19
17,364.00	88.73	180.19	11,556.02	-8,164.02	-5,990.83	476.35	6,008.92	0.97	-0.05	0.97
17,458.00	88.10	179.46	11,558.62	-8,166.62	-6,084.79	476.64	6,102.71	1.03	-0.67	-0.78
17,551.00	88.36	179.98	11,561.49	-8,169.49	-6,177.75	477.09	6,195.51	0.62	0.28	0.56
17,645.00	88.53	179.76	11,564.04	-8,172.04	-6,271.71	477.31	6,289.31	0.30	0.18	-0.23
17,740.00	88.88	179.43	11,566.19	-8,174.19	-6,366.68	477.98	6,384.13	0.51	0.37	-0.35
17,834.00	88.25	179.50	11,568.54	-8,176.54	-6,460.65	478.86	6,477.97	0.67	-0.67	0.07
17,928.00	88.12	179.47	11,571.52	-8,179.52	-6,554.60	479.70	6,571.79	0.14	-0.14	-0.03
18,022.00	87.96	179.58	11,574.73	-8,182.73	-6,648.54	480.48	6,665.59	0.21	-0.17	0.12
18,116.00	88.39	179.70	11,577.73	-8,185.73	-6,742.49	481.07	6,759.39	0.47	0.46	0.13
18,210.00	88.07	179.59	11,580.63	-8,188.63	-6,836.44	481.65	6,853.20	0.36	-0.34	-0.12
18,304.00	88.33	179.06	11,583.58	-8,191.58	-6,930.39	482.76	6,947.03	0.63	0.28	-0.56

Survey Report



Company:	CENTENNIAL RESOURCE DEVELOPME	Local Co-ordinate Reference:	Well DUCK HUNT 1 STATE COM #601H
Project:	LEA COUNTY, NM (NAD 83 - UTM ZONE	TVD Reference:	KB 26.5' @ 3392.00usft (H&P 650)
Site:	NE SE SEC. 1 T23S R34E	MD Reference:	KB 26.5' @ 3392.00usft (H&P 650)
Well:	DUCK HUNT 1 STATE COM #601H	North Reference:	True
Wellbore:	JOB # 2019-242-650	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEYS	Database:	Database 1

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
18,398.00	88.12	179.05	11,586.49	-8,194.49	-7,024.33	484.31	7,040.88	0.22	-0.22	-0.01
18,492.00	88.57	179.74	11,589.21	-8,197.21	-7,118.29	485.30	7,134.71	0.88	0.48	0.73
18,586.00	88.17	180.81	11,591.88	-8,199.88	-7,212.25	484.85	7,228.46	1.21	-0.43	1.14
18,680.00	90.43	181.15	11,593.03	-8,201.03	-7,306.22	483.24	7,322.15	2.43	2.40	0.36
18,774.00	89.38	181.08	11,593.19	-8,201.19	-7,400.20	481.41	7,415.83	1.12	-1.12	-0.07
LAST SURVEY APR 21, 2019										
18,872.00	89.80	181.32	11,593.89	-8,201.89	-7,498.18	479.36	7,513.48	0.49	0.43	0.24
PROJECTION TO TD										
18,905.00	89.80	181.32	11,594.00	-8,202.00	-7,531.17	478.60	7,546.36	0.00	0.00	0.00

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PP/FTP "NEW" - DUCK - survey misses target center by 31.80usft at 11712.55usft MD (11393.46 TVD, -346.99 N, 501.35 E) - Point	0.00	0.00	11,383.95	-349.32	471.10	11,739,878.52	2,129,448.28	32.331854	-103.416286
LTP/BHL - DUCK HUNT - survey misses target center by 97.63usft at 18894.82usft MD (11593.97 TVD, -7520.99 N, 478.83 E) - Point	0.00	0.00	11,496.50	-7,521.20	473.28	11,732,708.36	2,129,556.39	32.312142	-103.416279
KOP - DUCK HUNT 1 S - survey misses target center by 16.02usft at 10850.30usft MD (10809.70 TVD, 199.46 N, 465.96 E) - Point	0.00	0.00	10,811.06	214.64	470.90	11,740,442.34	2,129,439.75	32.333404	-103.416287
LTP/BHL - DUCK HUNT - survey misses target center by 97.63usft at 18894.82usft MD (11593.97 TVD, -7520.99 N, 478.83 E) - Point	0.00	0.00	11,496.50	-7,521.20	473.28	11,732,708.36	2,129,556.39	32.312142	-103.416279
PP/FTP - DUCK HUNT - survey misses target center by 47.92usft at 11913.35usft MD (11426.18 TVD, -544.94 N, 498.54 E) - Point	0.00	0.00	11,387.09	-549.32	471.17	11,739,678.57	2,129,451.30	32.331305	-103.416286
KOP - DUCK HUNT 1 S - survey misses target center by 49.38usft at 10712.78usft MD (10672.30 TVD, 204.83 N, 466.84 E) - Point	0.00	0.00	10,670.98	155.63	470.92	11,740,383.35	2,129,440.64	32.333242	-103.416287

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
1,839.50	1,839.29	-17.32	-11.12	TIE ON TO SURFACE SURVEYS
10,831.00	10,790.44	200.69	466.02	KOP
12,006.00	11,434.75	-636.99	494.77	HZ LANDING PT
18,872.00	11,593.89	-7,498.18	479.36	LAST SURVEY APR 21, 2019
18,905.00	11,594.00	-7,531.17	478.60	PROJECTION TO TD

Checked By: _____ Approved By: _____ Date: _____



State of New Mexico

County of Lea

I, Ottie Calvert, certify that: I am employed by Total Directional Services, LLC. On 4/06/2019 through 4/22/2019, I conducted or supervised the taking of the MWD survey(s) from a measured depth of 1832' feet to a measured depth of 18905 feet. The data is true, correct, complete and within the limitations of the tool as set forth by Total Directional Services, LLC. I am authorized and qualified to make this report and this survey(s) was were conducted at the request of Centennial Resources for the well Duck Hunt 1 State Com #601H, API No. 30-025-45566 in Lea County, New Mexico. I have reviewed this report and find that it conforms to the principals and procedures as set forth by Total Directional Services, LLC.

Ottie Calvert

A handwritten signature in black ink, appearing to be "Ottie Calvert", written over a horizontal line.



Project: LEA COUNTY, NM (NAD 83 - UTM ZONE 13 - TRUE)
Site: NE SE SEC. 1 T23S R34E
Well: DUCK HUNT 1 STATE COM #601H
Wellbore: JOB # 2019-242-650
Design: FINAL SURVEYS



SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dieg	TFace	Vsect	Annotation
1775.50	0.90	187.75	1775.30	-16.50	-10.82	0.00	0.00	15.79	TIE ON TO SURVEYS
1839.50	0.90	211.56	1839.29	-17.43	-11.15	0.58	102.00	18.69	PROJECTION TO TD - SURFACE
2390.00	0.00	0.00	2389.77	-21.11	-13.41	0.16	180.00	20.23	START NUDGE (1°/100R BUR)
3189.93	8.00	64.04	3187.10	3.29	36.71	1.00	64.04	-0.98	EOD TO 8° INC
6259.36	8.00	64.04	6226.67	190.24	420.77	0.00	0.00	-163.44	END OF TANGENT
7059.29	0.00	0.00	7024.00	214.64	470.90	1.00	180.00	-184.64	EOD TO VERTICAL
10848.35	0.00	0.00	10811.08	214.64	470.90	0.00	0.00	-184.64	KOP (10°/100R BUR)
11737.36	89.10	179.98	11383.95	-349.32	471.10	10.00	179.98	378.22	PP/FTP "NEW": 1990R FSL & 330R FEL of Sec 1
18910.12	89.10	179.99	11496.50	-7621.20	473.28	0.00	70.77	7536.08	LTP/BHL: 100R FSL & 330R FEL of Sec 12

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
KOP - DUCK HUNT 1 STATE COM #601H (P2)	10811.08	214.64	470.90	11740442.34	2129439.75	32.333404	-103.416287
LTP/BHL - DUCK HUNT 1 STATE COM #601H (P2)	11496.50	-7521.20	473.28	11732708.36	2129556.39	32.331242	-103.416279
PP/FTP "NEW" - DUCK HUNT 1 STATE COM #601H (P2)	11496.50	-349.32	471.10	11739878.52	2129448.28	32.331854	-103.416288



Azimuths to True North
Magnetic North: 6.70°
Magnetic Field
Strength: 47838.5nT
Dip Angle: 50.10°
Date: 18/03/2019
Model: IGRF2015

