

HOBBS OCD

AUG 01 2019

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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 #501H

07 May, 2019

Survey: FINAL SURVEYS





Project: LEA COUNTY, NM (NAD 83 - UTM ZONE 13 - TRUE)
Site: NE SE SEC. 1 T23S R34E
Well: DUCK HUNT 1 STATE COM #501H
Wellbore: JOB # 2019-243-650
Design: FINAL SURVEYS



ANNOTATIONS

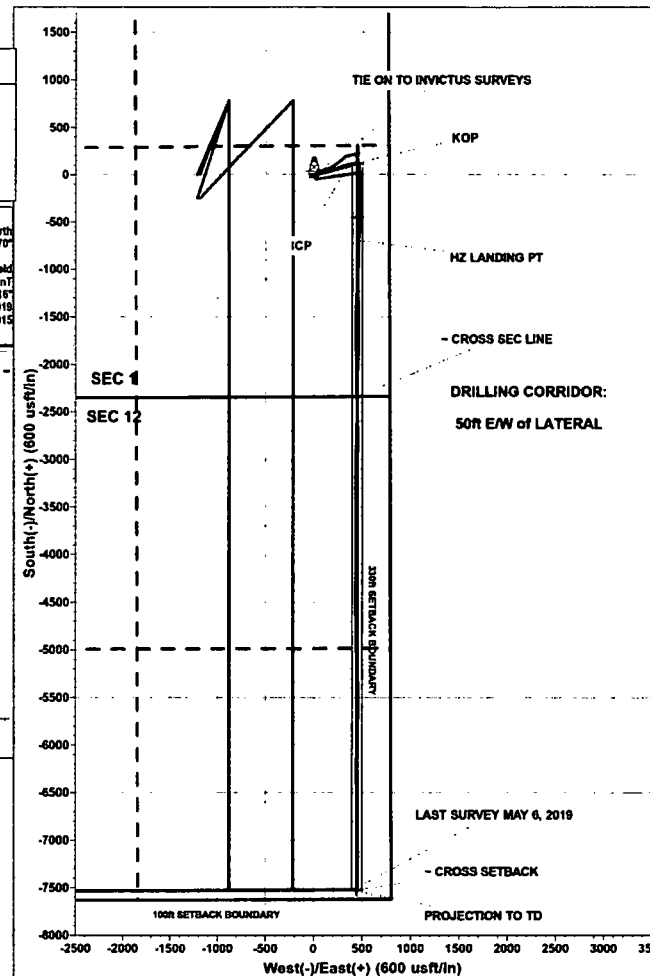
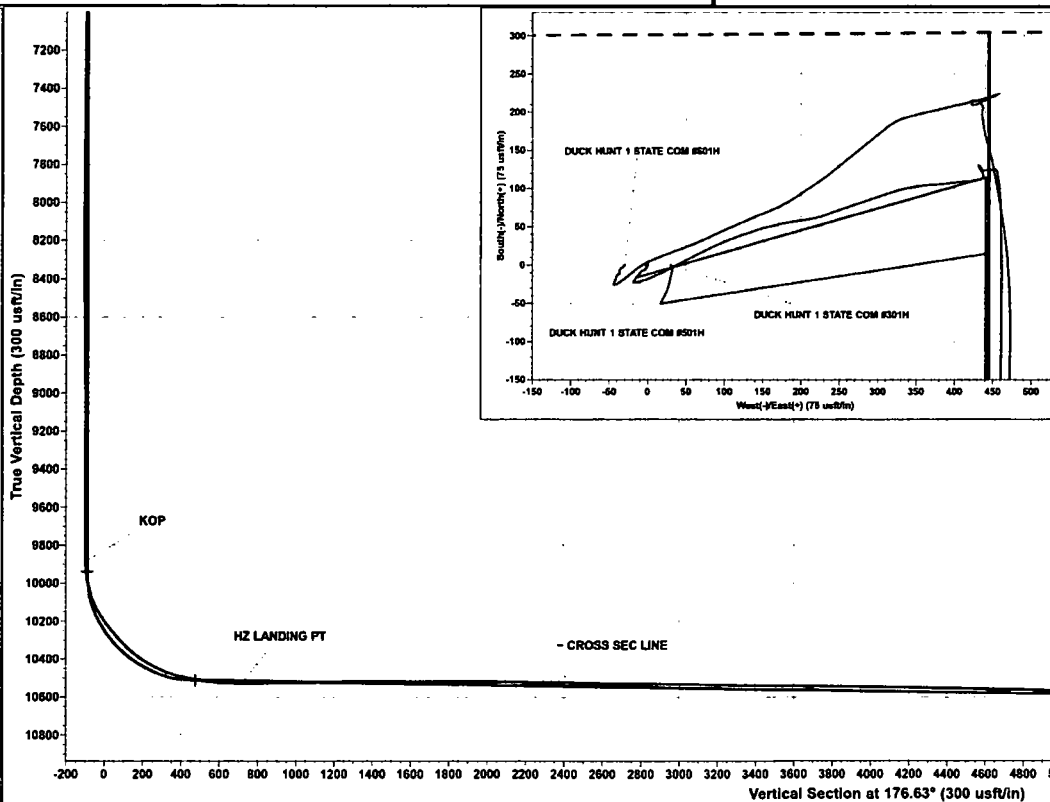
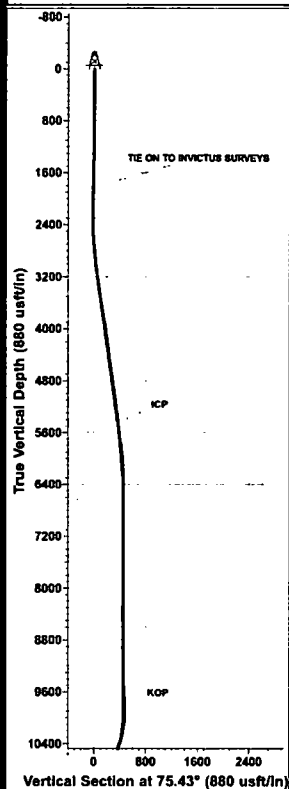
TVD	MD	Inc	Adj	+N/-S	+E/-W	VSec/Departure	Annotation
1828.59	1828.50	0.90	225.75	-14.28	-13.52	13.44	24.28
5447.16	5475.00	5.89	83.17	103.75	357.54	-42.53	434.23
8958.06	9020.00	2.11	152.86	123.84	454.95	-49.56	598.25
10527.14	11078.00	90.25	190.83	-491.74	458.85	717.60	1382.28
10522.85	12728.00	88.90	179.01	-2339.73	439.55	2361.54	3031.18
10552.22	17692.00	88.89	180.13	-7501.54	442.19	7514.50	8194.48
10592.68	17912.00	88.83	180.13	-7521.54	442.15	7534.52	8214.48
10592.89	17924.00	88.89	180.13	-7533.53	442.12	7546.50	8228.48

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
KOP - DUCK HUNT 1 STATE COM #501H (P2)	8938.57	114.59	440.85	11740342.37	2129441.26	32.333130	-103.416287
17P/BHL - DUCK HUNT 1 STATE COM #501H (P2)	10622.50	-7521.25	443.28	11732708.36	2129556.39	32.312142	-103.416279
PP/FTP "NEW" - DUCK HUNT 1 STATE COM #501H (P2)	10511.47	-449.37	441.15	11739778.54	2129449.78	32.331579	-103.416288



Azimuths to True North
Magnetic North: 6.70°
Magnetic Field
Strength: 47838.5nT
Dip Angle: 60.18°
Date: 19/03/2019
Model: IGRF2015



Survey Report



Company:	CENTENNIAL RESOURCE DEVELOPME	Local Co-ordinate Reference:	Well DUCK HUNT 1 STATE COM #501H
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 #501H	North Reference:	True
Wellbore:	JOB # 2019-243-650	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 #501H

Well Position	+N/-S	0.00 usft	Northing:	11,740,221.29 usft	Latitude:	32.332815
	+E/-W	0.00 usft	Easting:	2,129,002.11 usft	Longitude:	-103.417714
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,365.50 usft

Wellbore JOB # 2019-243-650

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)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.00	0.00	0.00	176.63	

Survey Program Date 07/05/2019

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
26.50	17,924.00	FINAL SURVEYS (JOB # 2019-243-650)	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
26.50	0.00	0.00	26.50	3,365.50	0.00	0.00	0.00	0.00	0.00	0.00
139.50	0.30	210.75	139.50	3,252.50	-0.25	-0.15	0.24	0.27	0.27	0.00
226.50	0.50	286.75	226.50	3,165.50	-0.34	-0.63	0.30	0.59	0.23	87.36
311.50	0.70	298.75	311.49	3,080.51	0.02	-1.44	-0.10	0.28	0.24	14.12
398.50	0.30	328.75	398.49	2,993.51	0.47	-2.03	-0.58	0.53	-0.46	34.48
516.50	0.20	268.75	516.49	2,875.51	0.73	-2.39	-0.87	0.22	-0.08	-50.85
606.50	0.60	189.75	606.49	2,785.51	0.26	-2.63	-0.41	0.66	0.44	-87.78
697.50	0.80	150.75	697.48	2,694.52	-0.77	-2.40	0.62	0.55	0.22	-42.86
787.50	0.60	155.75	787.47	2,604.53	-1.74	-1.90	1.63	0.23	-0.22	5.56
876.50	0.70	177.75	876.47	2,515.53	-2.71	-1.69	2.61	0.30	0.11	24.72
967.50	0.60	200.75	967.46	2,424.54	-3.71	-1.83	3.60	0.30	-0.11	25.27
1,057.50	0.90	247.75	1,057.46	2,334.54	-4.42	-2.65	4.26	0.73	0.33	52.22

Survey Report



Company:	CENTENNIAL RESOURCE DEVELOPME	Local Co-ordinate Reference:	Well DUCK HUNT 1 STATE COM #501H
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 #501H	North Reference:	True
Wellbore:	JOB # 2019-243-650	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)
1,147.50	0.70	205.75	1,147.45	2,244.55	-5.18	-3.55	4.97	0.67	-0.22	-46.67
1,237.50	0.90	223.75	1,237.44	2,154.56	-6.19	-4.27	5.93	0.35	0.22	20.00
1,326.50	0.90	248.75	1,326.43	2,065.57	-6.95	-5.41	6.62	0.44	0.00	28.09
1,366.50	1.10	250.75	1,366.42	2,025.58	-7.19	-6.06	6.82	0.51	0.50	5.00
1,505.50	1.20	236.75	1,505.39	1,886.61	-8.43	-8.54	7.91	0.21	0.07	-10.07
1,595.50	1.50	209.75	1,595.37	1,796.63	-9.97	-9.91	9.37	0.77	0.33	-30.00
1,685.50	1.70	220.75	1,685.34	1,706.66	-12.00	-11.37	11.31	0.41	0.22	12.22
1,775.50	1.10	225.75	1,775.31	1,616.69	-13.61	-12.86	12.83	0.68	-0.67	5.56
TIE ON TO INVICTUS SURVEYS										
1,828.50	0.90	225.75	1,828.30	1,563.70	-14.26	-13.52	13.44	0.38	-0.38	0.00
1,911.00	1.21	217.18	1,910.79	1,481.21	-15.41	-14.51	14.52	0.42	0.38	-10.39
2,005.00	1.24	212.10	2,004.76	1,387.24	-17.06	-15.65	16.11	0.12	0.03	-5.40
2,099.00	1.15	207.59	2,098.74	1,293.26	-18.76	-16.63	17.74	0.14	-0.10	-4.80
2,193.00	1.06	214.83	2,192.73	1,199.27	-20.31	-17.56	19.24	0.18	-0.10	7.70
2,287.00	1.12	212.42	2,286.71	1,105.29	-21.79	-18.55	20.67	0.08	0.06	-2.56
2,382.00	0.65	139.82	2,381.70	1,010.30	-22.99	-18.70	21.85	1.17	-0.49	-76.42
2,476.00	2.41	83.95	2,475.67	916.33	-23.19	-16.39	22.18	2.25	1.87	-59.44
2,570.00	4.28	73.55	2,569.50	822.50	-21.99	-11.06	21.30	2.08	1.99	-11.06
2,664.00	4.93	69.97	2,663.20	728.80	-19.61	-3.91	19.35	0.76	0.69	-3.81
2,758.00	5.33	67.03	2,756.82	635.18	-16.52	3.91	16.72	0.51	0.43	-3.13
2,852.00	5.67	64.75	2,850.39	541.61	-12.84	12.13	13.53	0.43	0.36	-2.43
2,946.00	6.28	63.52	2,943.88	448.12	-8.57	20.93	9.78	0.66	0.65	-1.31
3,040.00	7.03	64.59	3,037.24	354.76	-3.80	30.73	5.61	0.81	0.80	1.14
3,135.00	7.20	61.80	3,131.51	260.49	1.50	41.23	0.93	0.41	0.18	-2.94
3,229.00	7.52	62.33	3,224.74	167.26	7.14	51.87	-4.08	0.35	0.34	0.56
3,323.00	8.32	62.56	3,317.84	74.16	13.13	63.35	-9.38	0.85	0.85	0.24
3,418.00	9.02	64.94	3,411.76	-19.76	19.46	76.20	-14.94	0.83	0.74	2.51
3,512.00	9.36	65.59	3,504.55	-112.55	25.74	89.83	-20.41	0.38	0.36	0.69
3,606.00	9.40	67.98	3,597.29	-205.29	31.77	103.91	-25.60	0.42	0.04	2.54
3,700.00	9.53	70.73	3,690.01	-298.01	37.22	118.37	-30.19	0.50	0.14	2.93
3,793.00	9.87	70.83	3,781.68	-389.68	42.38	133.17	-34.47	0.37	0.37	0.11
3,888.00	9.95	73.84	3,875.27	-483.27	47.33	148.74	-38.50	0.55	0.08	3.17
3,982.00	9.38	76.02	3,967.93	-575.93	51.45	163.97	-41.71	0.72	-0.61	2.32
4,076.00	8.31	78.92	4,060.81	-668.81	54.60	178.07	-44.03	1.23	-1.14	3.09
4,170.00	7.40	80.96	4,153.93	-761.93	56.86	190.72	-45.54	1.01	-0.97	2.17
4,264.00	6.81	82.70	4,247.21	-855.21	58.52	202.22	-46.52	0.67	-0.63	1.85
4,359.00	6.88	78.94	4,341.53	-949.53	60.33	213.40	-47.67	0.48	0.07	-3.96
4,453.00	7.88	73.61	4,434.75	-1,042.75	63.22	225.10	-49.87	1.29	1.06	-5.67
4,547.00	8.55	70.50	4,527.79	-1,135.79	67.37	237.87	-53.26	0.86	0.71	-3.31
4,641.00	8.80	70.19	4,620.71	-1,228.71	72.14	251.22	-57.24	0.27	0.27	-0.33
4,735.00	8.47	70.99	4,713.65	-1,321.65	76.84	264.53	-61.14	0.37	-0.35	0.85
4,829.00	8.53	71.20	4,806.62	-1,414.62	81.34	277.68	-64.86	0.07	0.06	0.22
4,923.00	8.35	70.77	4,899.60	-1,507.60	85.83	290.72	-68.58	0.20	-0.19	-0.46
5,017.00	8.25	71.48	4,992.61	-1,600.61	90.22	303.56	-72.21	0.15	-0.11	0.76
5,111.00	7.77	72.30	5,085.70	-1,693.70	94.30	316.01	-75.54	0.52	-0.51	0.87
5,205.00	7.36	74.09	5,178.88	-1,786.88	97.88	327.85	-78.42	0.50	-0.44	1.90
5,299.00	6.66	77.73	5,272.17	-1,880.17	100.69	338.97	-80.57	0.88	-0.74	3.87
5,393.00	6.04	81.32	5,365.60	-1,973.60	102.59	349.19	-81.87	0.78	-0.66	3.82
5,412.00	5.89	81.49	5,384.49	-1,992.49	102.89	351.14	-82.05	0.79	-0.79	0.89
ICP										
5,475.00	5.89	83.17	5,447.16	-2,055.16	103.75	357.54	-82.53	0.27	-0.01	2.67
5,558.00	5.89	85.39	5,529.72	-2,137.72	104.60	366.01	-82.88	0.27	0.00	2.67
5,652.00	5.91	86.16	5,623.23	-2,231.23	105.31	375.65	-83.03	0.09	0.02	0.82

Survey Report



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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 #501H	North Reference:	True
Wellbore:	JOB # 2019-243-650	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)
5,746.00	5.71	84.06	5,716.74	-2,324.74	106.12	385.13	-83.27	0.31	-0.21	-2.23
5,840.00	5.49	83.56	5,810.29	-2,418.29	107.11	394.25	-83.72	0.24	-0.23	-0.53
5,934.00	5.27	85.48	5,903.88	-2,511.88	107.95	403.02	-84.05	0.30	-0.23	2.04
6,028.00	5.11	83.48	5,997.50	-2,605.50	108.77	411.48	-84.37	0.26	-0.17	-2.13
6,122.00	5.10	84.55	6,091.12	-2,699.12	109.64	419.80	-84.75	0.10	-0.01	1.14
6,216.00	4.15	80.08	6,184.82	-2,792.82	110.62	427.31	-85.29	1.08	-1.01	-4.76
6,311.00	3.12	72.24	6,279.62	-2,887.62	112.00	433.16	-86.32	1.20	-1.08	-8.25
6,405.00	1.39	51.83	6,373.55	-2,981.55	113.49	436.49	-87.61	2.00	-1.84	-21.71
6,499.00	0.50	12.07	6,467.54	-3,075.54	114.59	437.48	-88.65	1.12	-0.95	-42.30
6,594.00	0.42	349.31	6,562.53	-3,170.53	115.34	437.50	-89.40	0.21	-0.08	-23.96
6,687.00	0.66	331.54	6,655.53	-3,263.53	116.15	437.18	-90.22	0.31	0.26	-19.11
6,782.00	0.67	3.87	6,750.52	-3,358.52	117.18	436.96	-91.27	0.39	0.01	34.03
6,876.00	0.76	345.60	6,844.52	-3,452.52	118.33	436.84	-92.43	0.26	0.10	-19.44
6,970.00	0.51	358.56	6,938.51	-3,546.51	119.36	436.67	-93.46	0.31	-0.27	13.79
7,065.00	0.74	344.58	7,033.50	-3,641.50	120.37	436.50	-94.48	0.29	0.24	-14.72
7,159.00	0.63	334.92	7,127.50	-3,735.50	121.42	436.12	-95.55	0.17	-0.12	-10.28
7,253.00	0.61	345.26	7,221.49	-3,829.49	122.37	435.77	-96.52	0.12	-0.02	11.00
7,347.00	0.33	349.79	7,315.49	-3,923.49	123.12	435.60	-97.28	0.30	-0.30	4.82
7,442.00	0.61	14.70	7,410.49	-4,018.49	123.88	435.68	-98.04	0.36	0.29	26.22
7,536.00	0.49	340.65	7,504.48	-4,112.48	124.75	435.67	-98.90	0.36	-0.13	-36.22
7,631.00	0.28	339.05	7,599.48	-4,207.48	125.35	435.45	-99.51	0.22	-0.22	-1.68
7,725.00	0.58	344.13	7,693.48	-4,301.48	126.02	435.24	-100.19	0.32	0.32	5.40
7,820.00	0.64	318.56	7,788.47	-4,396.47	126.88	434.76	-101.08	0.29	0.06	-26.92
7,914.00	0.58	324.61	7,882.47	-4,490.47	127.66	434.13	-101.90	0.09	-0.06	6.44
8,008.00	0.51	304.91	7,976.46	-4,584.46	128.29	433.52	-102.56	0.21	-0.07	-20.96
8,102.00	0.85	308.74	8,070.45	-4,678.45	128.96	432.63	-103.29	0.36	0.36	4.07
8,196.00	0.83	312.97	8,164.44	-4,772.44	129.86	431.59	-104.25	0.07	-0.02	4.50
8,290.00	0.56	308.00	8,258.44	-4,866.44	130.61	430.73	-105.04	0.29	-0.29	-5.29
8,384.00	0.82	153.09	8,352.44	-4,960.44	130.29	430.67	-104.73	1.43	0.28	-164.80
8,478.00	1.27	153.80	8,446.42	-5,054.42	128.76	431.43	-103.15	0.48	0.48	0.76
8,572.00	1.05	157.31	8,540.40	-5,148.40	127.03	432.23	-101.38	0.25	-0.23	3.73
8,667.00	0.74	142.91	8,635.39	-5,243.39	125.74	432.93	-100.05	0.40	-0.33	-15.16
8,761.00	0.49	143.57	8,729.38	-5,337.38	124.93	433.54	-99.21	0.27	-0.27	0.70
8,855.00	0.68	154.34	8,823.38	-5,431.38	124.10	434.02	-98.35	0.23	0.20	11.46
8,949.00	0.56	170.92	8,917.37	-5,525.37	123.15	434.33	-97.38	0.23	-0.13	17.64
9,043.00	0.49	159.07	9,011.37	-5,619.37	122.32	434.55	-96.54	0.14	-0.07	-12.61
9,137.00	0.25	36.60	9,105.37	-5,713.37	122.11	434.81	-96.31	0.70	-0.26	-130.29
9,231.00	0.75	54.41	9,199.36	-5,807.36	122.63	435.43	-96.80	0.55	0.53	18.95
9,325.00	2.03	80.83	9,293.33	-5,901.33	123.25	437.58	-97.29	1.49	1.36	28.11
9,419.00	2.10	80.84	9,387.27	-5,995.27	123.79	440.92	-97.64	0.07	0.07	0.01
9,513.00	1.94	80.65	9,481.22	-6,089.22	124.33	444.19	-97.98	0.17	-0.17	-0.20
9,607.00	1.63	89.68	9,575.17	-6,183.17	124.59	447.10	-98.07	0.44	-0.33	9.61
9,701.00	1.40	90.97	9,669.14	-6,277.14	124.58	449.58	-97.91	0.25	-0.24	1.37
9,795.00	1.65	81.23	9,763.10	-6,371.10	124.77	452.07	-97.95	0.38	0.27	-10.36
9,857.00	1.34	91.07	9,825.08	-6,433.08	124.89	453.68	-97.98	0.65	-0.50	15.87
KOP										
9,920.00	2.11	152.66	9,888.06	-6,496.06	123.84	454.95	-96.86	3.00	1.23	97.76
9,937.00	2.53	159.88	9,905.04	-6,513.04	123.21	455.22	-96.22	3.00	2.46	42.50
9,984.00	6.00	172.40	9,951.91	-6,559.91	119.80	455.90	-92.77	7.60	7.38	26.64
10,032.00	11.88	172.37	9,999.30	-6,607.30	112.41	456.89	-85.34	12.25	12.25	-0.06
10,079.00	16.25	173.69	10,044.88	-6,652.88	101.08	458.26	-73.94	9.32	9.30	2.81
10,126.00	22.07	175.93	10,089.26	-6,697.26	85.72	459.61	-58.53	12.48	12.38	4.77
10,173.00	26.98	178.44	10,132.01	-6,740.01	66.24	460.52	-39.03	10.68	10.45	5.34

Survey Report



Company: CENTENNIAL RESOURCE DEVELOPME
Project: LEA COUNTY, NM (NAD 83 - UTM ZONE
Site: NE SE SEC. 1 T23S R34E
Well: DUCK HUNT 1 STATE COM #501H
Wellbore: JOB # 2019-243-650
Design: FINAL SURVEYS

Local Co-ordinate Reference: Well DUCK HUNT 1 STATE COM #501H
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)
10,220.00	32.54	178.89	10,172.79	-6,780.79	42.93	461.06	-15.73	11.84	11.83	0.96
10,267.00	36.83	179.39	10,211.43	-6,819.43	16.19	461.46	10.99	9.15	9.13	1.06
10,314.00	38.75	179.94	10,248.57	-6,856.57	-12.61	461.62	39.74	4.15	4.09	1.17
10,361.00	40.81	181.12	10,284.69	-6,892.69	-42.68	461.34	69.74	4.67	4.38	2.51
10,408.00	43.75	180.04	10,319.46	-6,927.46	-74.29	461.02	101.28	6.44	6.26	-2.30
10,455.00	47.81	179.94	10,352.23	-6,960.23	-107.96	461.03	134.90	8.64	8.64	-0.21
10,502.00	52.79	181.24	10,382.25	-6,990.25	-144.11	460.64	170.96	10.81	10.60	2.77
10,549.00	57.27	182.21	10,409.18	-7,017.18	-182.60	459.48	209.31	9.68	9.53	2.06
10,596.00	61.30	181.53	10,433.18	-7,041.18	-222.97	458.16	249.54	8.66	8.57	-1.45
10,643.00	65.94	181.03	10,454.06	-7,062.06	-265.06	457.23	291.50	9.92	9.87	-1.06
10,690.00	70.10	180.55	10,471.65	-7,079.65	-308.63	456.63	334.96	8.90	8.85	-1.02
10,736.00	74.44	180.48	10,485.65	-7,093.65	-352.43	456.23	378.66	9.44	9.43	-0.15
10,784.00	76.80	179.83	10,497.57	-7,105.57	-398.92	456.11	425.07	5.09	4.92	-1.35
10,828.00	80.18	178.04	10,506.35	-7,114.35	-442.02	456.92	468.14	8.65	7.68	-4.07
10,875.00	81.48	177.37	10,513.84	-7,121.84	-488.38	458.77	514.53	3.10	2.77	-1.43
10,922.00	83.98	179.05	10,519.79	-7,127.79	-534.98	460.23	561.13	6.39	5.32	3.57
10,969.00	86.95	180.43	10,523.50	-7,131.50	-581.82	460.44	607.91	6.96	6.32	2.94
11,016.00	87.37	179.90	10,525.83	-7,133.83	-628.77	460.30	654.76	1.44	0.89	-1.13
HZ LANDING PT										
11,079.00	90.25	180.93	10,527.14	-7,135.14	-691.74	459.85	717.60	4.85	4.57	1.63
11,111.00	90.90	181.03	10,526.82	-7,134.82	-723.74	459.30	749.51	2.06	2.03	0.31
11,159.00	91.19	181.46	10,525.94	-7,133.94	-771.72	458.26	797.34	1.08	0.60	0.90
11,205.00	91.42	181.14	10,524.90	-7,132.90	-817.69	457.21	843.18	0.86	0.50	-0.70
11,232.00	90.96	181.26	10,524.34	-7,132.34	-844.68	456.65	870.09	1.76	-1.70	0.44
11,326.00	90.64	181.90	10,523.02	-7,131.02	-938.64	454.06	963.72	0.76	-0.34	0.68
11,420.00	90.67	182.95	10,521.95	-7,129.95	-1,032.54	450.08	1,057.24	1.12	0.03	1.12
11,514.00	90.67	182.94	10,520.85	-7,128.85	-1,126.41	445.25	1,150.66	0.01	0.00	-0.01
11,608.00	90.63	183.45	10,519.78	-7,127.78	-1,220.26	440.01	1,244.04	0.54	-0.04	0.54
11,702.00	90.38	184.02	10,518.96	-7,126.96	-1,314.06	433.89	1,337.31	0.66	-0.27	0.61
11,796.00	90.01	181.69	10,518.64	-7,126.64	-1,407.93	429.21	1,430.75	2.51	-0.39	-2.48
11,890.00	90.10	180.85	10,518.54	-7,126.54	-1,501.91	427.13	1,524.44	0.90	0.10	-0.89
11,984.00	90.11	179.87	10,518.37	-7,126.37	-1,595.91	426.53	1,618.24	1.04	0.01	-1.04
12,078.00	90.13	179.05	10,518.18	-7,126.18	-1,689.90	427.42	1,712.12	0.87	0.02	-0.87
12,172.00	90.26	178.30	10,517.86	-7,125.86	-1,783.87	429.59	1,806.06	0.81	0.14	-0.80
12,267.00	89.72	178.39	10,517.87	-7,125.87	-1,878.83	432.34	1,901.02	0.58	-0.57	0.09
12,361.00	89.23	179.04	10,518.73	-7,126.73	-1,972.81	434.45	1,994.95	0.87	-0.52	0.69
12,455.00	89.33	178.91	10,519.91	-7,127.91	-2,066.78	436.13	2,088.86	0.17	0.11	-0.14
12,549.00	88.95	178.80	10,521.33	-7,129.33	-2,160.75	438.01	2,182.78	0.42	-0.40	-0.12
12,643.00	90.10	180.11	10,522.11	-7,130.11	-2,254.74	438.90	2,276.66	1.85	1.22	1.39
~ CROSS SEC LINE										
12,728.00	88.90	179.01	10,522.85	-7,130.85	-2,339.73	439.55	2,361.54	1.92	-1.41	-1.30
12,737.00	88.77	178.89	10,523.03	-7,131.03	-2,348.73	439.72	2,370.53	1.92	-1.41	-1.30
12,831.00	88.74	178.50	10,525.07	-7,133.07	-2,442.68	441.86	2,464.45	0.42	-0.03	-0.41
12,925.00	88.61	178.20	10,527.25	-7,135.25	-2,536.62	444.57	2,558.38	0.35	-0.14	-0.32
13,020.00	89.27	178.22	10,529.01	-7,137.01	-2,631.56	447.53	2,653.33	0.70	0.69	0.02
13,114.00	89.20	179.77	10,530.26	-7,138.26	-2,725.53	449.18	2,747.24	1.65	-0.07	1.65
13,207.00	89.30	180.23	10,531.48	-7,139.48	-2,818.52	449.18	2,840.07	0.51	0.11	0.49
13,302.00	89.33	180.76	10,532.61	-7,140.61	-2,913.51	448.36	2,934.84	0.56	0.03	0.56
13,396.00	89.21	180.49	10,533.81	-7,141.81	-3,007.50	447.34	3,028.61	0.31	-0.13	-0.29
13,490.00	89.12	180.44	10,535.18	-7,143.18	-3,101.49	446.57	3,122.39	0.11	-0.10	-0.05
13,584.00	89.09	180.68	10,536.65	-7,144.65	-3,195.47	445.65	3,216.15	0.26	-0.03	0.26
13,678.00	89.51	181.66	10,537.80	-7,145.80	-3,289.44	443.73	3,309.85	1.13	0.45	1.04
13,772.00	89.08	181.23	10,538.95	-7,146.95	-3,383.40	441.36	3,403.51	0.65	-0.46	-0.46

Survey Report



Company:	CENTENNIAL RESOURCE DEVELOPME	Local Co-ordinate Reference:	Well DUCK HUNT 1 STATE COM #501H
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 #501H	North Reference:	True
Wellbore:	JOB # 2019-243-650	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)
13,867.00	89.02	181.15	10,540.53	-7,148.53	-3,478.37	439.39	3,498.20	0.11	-0.06	-0.08
13,961.00	89.09	181.27	10,542.08	-7,150.08	-3,572.34	437.41	3,591.88	0.15	0.07	0.13
14,055.00	89.23	181.48	10,543.46	-7,151.46	-3,666.30	435.15	3,685.55	0.27	0.15	0.22
14,149.00	89.23	181.19	10,544.72	-7,152.72	-3,760.27	432.96	3,779.23	0.31	0.00	-0.31
14,243.00	89.23	181.01	10,545.98	-7,153.98	-3,854.24	431.16	3,872.93	0.19	0.00	-0.19
14,337.00	89.20	179.73	10,547.27	-7,155.27	-3,948.23	430.55	3,966.72	1.36	-0.03	-1.36
14,431.00	89.34	180.37	10,548.47	-7,156.47	-4,042.22	430.47	4,060.54	0.70	0.15	0.68
14,525.00	89.34	180.96	10,549.55	-7,157.55	-4,136.21	429.38	4,154.30	0.63	0.00	0.63
14,619.00	89.24	181.11	10,550.72	-7,158.72	-4,230.18	427.68	4,248.02	0.19	-0.11	0.16
14,713.00	89.23	180.88	10,551.97	-7,159.97	-4,324.16	426.05	4,341.74	0.24	-0.01	-0.24
14,807.00	88.53	180.61	10,553.81	-7,161.81	-4,418.13	424.83	4,435.48	0.80	-0.74	-0.29
14,901.00	88.76	178.77	10,556.03	-7,164.03	-4,512.10	425.33	4,529.31	1.97	0.24	-1.96
14,995.00	88.66	178.85	10,558.15	-7,166.15	-4,606.06	427.29	4,623.22	0.14	-0.11	0.09
15,089.00	88.77	178.52	10,560.26	-7,168.26	-4,700.01	429.44	4,717.13	0.37	0.12	-0.35
15,183.00	88.71	177.89	10,562.32	-7,170.32	-4,793.94	432.39	4,811.08	0.67	-0.06	-0.67
15,277.00	88.86	178.42	10,564.32	-7,172.32	-4,887.87	435.41	4,905.02	0.59	0.16	0.56
15,371.00	88.70	178.37	10,566.32	-7,174.32	-4,981.81	438.04	4,998.95	0.18	-0.17	-0.05
15,465.00	88.71	178.27	10,568.44	-7,176.44	-5,075.75	440.80	5,092.89	0.11	0.01	-0.11
15,559.00	88.69	177.72	10,570.58	-7,178.58	-5,169.67	444.09	5,186.84	0.59	-0.02	-0.59
15,654.00	88.95	177.36	10,572.53	-7,180.53	-5,264.56	448.16	5,281.81	0.47	0.27	-0.38
15,748.00	89.04	177.24	10,574.18	-7,182.18	-5,358.44	452.59	5,375.78	0.16	0.10	-0.13
15,842.00	89.26	178.49	10,575.58	-7,183.58	-5,452.36	456.09	5,469.75	1.35	0.23	1.33
15,936.00	89.94	180.25	10,576.23	-7,184.23	-5,546.35	457.13	5,563.64	2.01	0.72	1.87
16,030.00	90.28	181.27	10,576.05	-7,184.05	-5,640.34	455.88	5,657.39	1.14	0.36	1.09
16,124.00	90.35	181.59	10,575.53	-7,183.53	-5,734.31	453.53	5,751.06	0.35	0.07	0.34
16,218.00	90.21	182.61	10,575.08	-7,183.08	-5,828.24	450.09	5,844.63	1.10	-0.15	1.09
16,312.00	89.72	181.43	10,575.13	-7,183.13	-5,922.18	446.78	5,938.21	1.36	-0.52	-1.26
16,406.00	90.44	181.98	10,575.00	-7,183.00	-6,016.14	443.98	6,031.84	0.96	0.77	0.59
16,500.00	90.18	183.25	10,574.49	-7,182.49	-6,110.04	439.69	6,125.32	1.38	-0.28	1.35
16,594.00	90.07	181.40	10,574.29	-7,182.29	-6,203.96	435.88	6,218.85	1.97	-0.12	-1.97
16,688.00	90.26	178.92	10,574.02	-7,182.02	-6,297.95	435.61	6,312.67	2.65	0.20	-2.64
16,782.00	90.20	178.05	10,573.64	-7,181.64	-6,391.91	438.10	6,406.62	0.93	-0.06	-0.93
16,877.00	90.14	177.81	10,573.36	-7,181.36	-6,486.85	441.53	6,501.59	0.26	-0.06	-0.25
16,971.00	89.41	178.06	10,573.73	-7,181.73	-6,580.79	444.92	6,595.57	0.82	-0.78	0.27
17,065.00	89.04	179.31	10,575.00	-7,183.00	-6,674.75	447.08	6,689.50	1.39	-0.39	1.33
17,159.00	89.26	180.25	10,576.39	-7,184.39	-6,768.74	447.44	6,783.34	1.03	0.23	1.00
17,253.00	88.77	180.77	10,578.01	-7,186.01	-6,862.72	446.60	6,877.11	0.76	-0.52	0.55
17,347.00	88.80	180.94	10,580.00	-7,188.00	-6,956.69	445.20	6,970.83	0.18	0.03	0.18
17,441.00	88.69	180.36	10,582.06	-7,190.06	-7,050.66	444.13	7,064.58	0.63	-0.12	-0.62
17,535.00	88.57	180.10	10,584.31	-7,192.31	-7,144.64	443.75	7,158.37	0.30	-0.13	-0.28
17,629.00	88.74	180.53	10,586.51	-7,194.51	-7,238.61	443.24	7,252.15	0.49	0.18	0.46
17,723.00	88.78	180.32	10,588.55	-7,196.55	-7,332.58	442.54	7,345.92	0.23	0.04	-0.22
17,818.00	88.77	180.00	10,590.58	-7,198.58	-7,427.56	442.27	7,440.72	0.34	-0.01	-0.34
LAST SURVEY MAY 6, 2019										
17,892.00	88.69	180.13	10,592.22	-7,200.22	-7,501.54	442.19	7,514.56	0.21	-0.11	0.18
~ CROSS SETBACK										
17,912.00	88.69	180.13	10,592.68	-7,200.68	-7,521.54	442.15	7,534.52	0.00	0.00	0.00
PROJECTION TO TD										
17,924.00	88.69	180.13	10,592.95	-7,200.95	-7,533.53	442.12	7,546.50	0.00	0.00	0.00

Survey Report



Company:	CENTENNIAL RESOURCE DEVELOPME	Local Co-ordinate Reference:	Well DUCK HUNT 1 STATE COM #501H
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 #501H	North Reference:	True
Wellbore:	JOB # 2019-243-650	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEYS	Database:	Database 1

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
KOP - DUCK HUNT 1 S - survey misses target center by 16.12usft at 9970.86usft MD (9938.83 TVD, 121.05 N, 455.72 E) - Point	0.00	0.00	9,938.57	114.59	440.95	11,740,342.37	2,129,441.26	32.333130	-103.416287
PP/FTP "NEW" - DUCK - survey misses target center by 16.48usft at 10835.44usft MD (10507.61 TVD, -449.35 N, 457.17 E) - Point	0.00	0.00	10,511.47	-449.37	441.15	11,739,778.54	2,129,449.79	32.331579	-103.416286
KOP - DUCK HUNT 1 S - survey misses target center by 48.91usft at 9908.94usft MD (9877.00 TVD, 124.17 N, 454.75 E) - Point	0.00	0.00	9,876.50	77.25	440.96	11,740,305.04	2,129,441.82	32.333027	-103.416287
LTP/BHL - DUCK HUNT - survey misses target center by 29.85usft at 17912.00usft MD (10592.68 TVD, -7521.54 N, 442.15 E) - Point	0.00	0.00	10,622.50	-7,521.25	443.28	11,732,708.36	2,129,556.39	32.312142	-103.416279
LTP/BHL - DUCK HUNT - survey misses target center by 29.85usft at 17912.00usft MD (10592.68 TVD, -7521.54 N, 442.15 E) - Point	0.00	0.00	10,622.50	-7,521.25	443.28	11,732,708.36	2,129,556.39	32.312142	-103.416279
PP/FTP - DUCK HUNT - survey misses target center by 20.87usft at 10935.73usft MD (10521.12 TVD, -548.64 N, 460.41 E) - Point	0.00	0.00	10,513.04	-549.37	441.18	11,739,678.57	2,129,451.30	32.331305	-103.416286

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,828.50	1,828.30	-14.26	-13.52	TIE ON TO INVICTUS SURVEYS
5,475.00	5,447.16	103.75	357.54	ICP
9,920.00	9,888.06	123.84	454.95	KOP
11,079.00	10,527.14	-691.74	459.85	HZ LANDING PT
12,728.00	10,522.85	-2,339.73	439.55	~ CROSS SEC LINE
17,892.00	10,592.22	-7,501.54	442.19	LAST SURVEY MAY 6, 2019
17,912.00	10,592.68	-7,521.54	442.15	~ CROSS SETBACK
17,924.00	10,592.95	-7,533.53	442.12	PROJECTION TO TD

Checked By: _____ Approved By: _____ Date: _____



Total Directional
Services, LLC

USA Operations

Final MWD Survey Certification

Lea County, New Mexico

Client: Centennial Resource Development

Well Name: Duck Hunt State Com #501H

Total Job No: 2019-243-650

API No: 30-025-45265

Start Date: 4/23/2019

End Date: 5/6/2019

Measured Start Depth: 1,872 feet

Measured End Depth: 17,924 feet

Vertical Section from well center at TD: 7,546.51 feet

I, Ottie Calvert, certify that; I am employed by Total Directional Services, LLC and we conducted or supervised the taking of these open hole MWD surveys at the request of this client. This 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 have reviewed this report and find that it conforms to the principals and procedures as set forth by Total Directional Services, LLC.

Date: 5/7/2019

Signed: *Ottie Calvert*