

HOBBS OCD
MAY 09 2019
RECEIVED

**CENTENNIAL RESOURCE
DEVELOPMENT, LLC**

LEA COUNTY, NM (NAD 83 - UTM ZONE 13 - TRUE)

SW SE SEC. 22 T24S R34E

SOLOMON FEDERAL COM #709H

08 March, 2019

Survey: FINAL SURVEYS



Survey Report



Company:	CENTENNIAL RESOURCE DEVELOPME	Local Co-ordinate Reference:	Well SOLOMON FEDERAL COM #709H
Project:	LEA COUNTY, NM (NAD 83 - UTM ZONE	TVD Reference:	KB 25' @ 3518.40usft (H&P 650)
Site:	SW SE SEC. 22 T24S R34E	MD Reference:	KB 25' @ 3518.40usft (H&P 650)
Well:	SOLOMON FEDERAL COM #709H	North Reference:	True
Wellbore:	JOB # 2018-742-650	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		SW SE SEC. 22 T24S R34E			
Site Position:		Northing:	11,690,513.90 usft	Latitude:	32.196605
From:	Map	Easting:	2,118,464.51 usft	Longitude:	-103.454148
Position Uncertainty:	0.00 usft	Slot Radius:	1.10 ft	Grid Convergence:	0.82 °

Well	SOLOMON FEDERAL COM #709H					
Well Position	+N/-S	0.00 usft	Northing:	11,690,513.90 usft	Latitude:	32.196605
	+E/-W	0.00 usft	Easting:	2,118,464.51 usft	Longitude:	-103.454148
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,493.40 usft

Wellbore	JOB # 2018-742-650				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	05/12/2018	6.74	60.04	47,783

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	350.65

Survey Program	Date 08/03/2019				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
217.00	17,260.00	FINAL SURVEYS (JOB # 2018-742-650)	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	3,518.40	0.00	0.00	0.00	0.00	0.00	0.00	
217.00	0.90	299.77	216.99	3,301.41	0.85	-1.48	1.08	0.41	0.41	0.00	
306.00	0.50	324.77	305.98	3,212.42	1.51	-2.31	1.87	0.56	-0.45	28.09	
395.00	0.50	323.77	394.98	3,123.42	2.14	-2.76	2.56	0.01	0.00	-1.12	
480.00	0.50	230.77	479.98	3,038.42	2.21	-3.27	2.71	0.85	0.00	-109.41	
565.00	0.50	329.77	564.98	2,953.42	2.29	-3.74	2.87	0.89	0.00	116.47	
650.00	0.80	290.77	649.97	2,868.43	2.82	-4.49	3.51	0.61	0.35	-45.88	
734.00	0.80	313.77	733.96	2,784.44	3.44	-5.46	4.28	0.38	0.00	27.38	
819.00	0.70	278.77	818.96	2,699.44	3.93	-6.40	4.91	0.54	-0.12	-41.18	
902.00	0.60	252.77	901.95	2,616.45	3.87	-7.32	5.01	0.37	-0.12	-31.33	
986.00	0.50	221.77	985.95	2,532.45	3.47	-7.98	4.72	0.37	-0.12	-36.90	
1,071.00	0.50	208.77	1,070.94	2,447.46	2.87	-8.41	4.20	0.13	0.00	-15.29	
1,155.00	0.20	139.77	1,154.94	2,363.46	2.44	-8.49	3.78	0.56	-0.36	-82.14	

Survey Report



Company:	CENTENNIAL RESOURCE DEVELOPME	Local Co-ordinate Reference:	Well SOLOMON FEDERAL COM #709H
Project:	LEA COUNTY, NM (NAD 83 - UTM ZONE	TVD Reference:	KB 25' @ 3518.40usft (H&P 650)
Site:	SW SE SEC. 22 T24S R34E	MD Reference:	KB 25' @ 3518.40usft (H&P 650)
Well:	SOLOMON FEDERAL COM #709H	North Reference:	True
Wellbore:	JOB # 2018-742-650	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)
1,240.00	0.20	131.77	1,239.94	2,278.46	2.22	-8.28	3.54	0.03	0.00	-9.41
1,325.00	0.30	288.77	1,324.94	2,193.46	2.20	-8.38	3.53	0.58	0.12	184.71
LAST INVICTUS SURVEY										
1,335.00	1.00	276.77	1,334.94	2,183.46	2.22	-8.49	3.57	7.09	7.00	-120.00
SURFACE CASING										
1,364.00	0.88	274.42	1,363.94	2,154.46	2.26	-8.96	3.69	0.44	-0.42	-8.10
1,437.00	0.58	264.18	1,436.93	2,081.47	2.27	-9.89	3.84	0.44	-0.41	-14.03
1,532.00	0.57	259.34	1,531.93	1,986.47	2.13	-10.83	3.86	0.05	-0.01	-5.09
1,626.00	0.59	269.29	1,625.92	1,892.48	2.04	-11.78	3.93	0.11	0.02	10.59
1,720.00	0.60	265.29	1,719.92	1,798.48	1.99	-12.75	4.04	0.05	0.01	-4.26
1,814.00	0.66	266.23	1,813.91	1,704.49	1.92	-13.78	4.13	0.06	0.06	1.00
1,908.00	0.64	266.66	1,907.91	1,610.49	1.85	-14.84	4.24	0.02	-0.02	0.46
2,002.00	0.79	260.96	2,001.90	1,516.50	1.72	-16.01	4.30	0.18	0.16	-6.06
2,096.00	0.85	260.31	2,095.89	1,422.51	1.50	-17.34	4.30	0.06	0.06	-0.69
2,191.00	0.89	254.63	2,190.88	1,327.52	1.18	-18.74	4.21	0.10	0.04	-5.98
2,285.00	0.95	252.61	2,284.87	1,233.53	0.76	-20.19	4.03	0.07	0.06	-2.15
2,379.00	0.92	255.37	2,378.85	1,139.55	0.33	-21.66	3.85	0.06	-0.03	2.94
2,473.00	0.92	257.42	2,472.84	1,045.56	-0.02	-23.13	3.74	0.04	0.00	2.18
2,567.00	0.96	263.30	2,566.83	951.57	-0.28	-24.65	3.73	0.11	0.04	6.26
2,661.00	0.98	262.86	2,660.81	857.59	-0.47	-26.23	3.80	0.02	0.02	-0.47
2,755.00	1.84	265.11	2,754.79	763.61	-0.70	-28.53	3.95	0.92	0.91	2.39
2,849.00	2.93	253.58	2,848.70	669.70	-1.50	-32.34	3.77	1.26	1.16	-12.27
2,943.00	3.17	250.97	2,942.57	575.83	-3.03	-37.10	3.04	0.29	0.26	-2.78
3,037.00	3.01	252.74	3,036.43	481.97	-4.61	-41.91	2.26	0.20	-0.17	1.88
3,131.00	4.35	256.26	3,130.24	388.16	-6.19	-47.73	1.65	1.44	1.43	3.74
3,225.00	5.58	260.87	3,223.88	294.52	-7.76	-55.71	1.39	1.37	1.31	4.90
3,319.00	7.11	260.72	3,317.30	201.10	-9.43	-65.96	1.42	1.63	1.63	-0.16
3,413.00	6.80	257.38	3,410.61	107.79	-11.58	-77.13	1.11	0.54	-0.33	-3.55
3,508.00	8.00	257.44	3,504.82	13.58	-14.25	-89.08	0.42	1.26	1.26	0.06
3,602.00	8.09	256.51	3,597.90	-79.50	-17.21	-101.89	-0.42	0.17	0.10	-0.99
3,696.00	8.02	255.83	3,690.97	-172.57	-20.36	-114.68	-1.45	0.13	-0.07	-0.72
3,790.00	7.80	254.97	3,784.07	-265.67	-23.62	-127.20	-2.63	0.27	-0.23	-0.91
3,885.00	7.39	254.47	3,878.24	-359.84	-26.93	-139.31	-3.93	0.44	-0.43	-0.53
3,979.00	7.32	254.15	3,971.47	-453.07	-30.18	-150.90	-5.26	0.09	-0.07	-0.34
4,072.00	7.60	255.65	4,063.68	-545.28	-33.32	-162.56	-6.46	0.37	0.30	1.61
4,167.00	7.85	254.59	4,157.82	-639.42	-36.60	-174.90	-7.70	0.30	0.26	-1.12
4,261.00	7.59	253.87	4,250.97	-732.57	-40.03	-187.05	-9.11	0.30	-0.28	-0.77
4,355.00	7.17	253.30	4,344.19	-825.79	-43.44	-198.63	-10.59	0.45	-0.45	-0.61
4,449.00	6.86	252.96	4,437.48	-919.08	-46.78	-209.62	-12.09	0.33	-0.33	-0.36
4,543.00	7.65	255.51	4,530.73	-1,012.33	-49.99	-221.04	-13.40	0.91	0.84	2.71
4,637.00	7.52	253.97	4,623.91	-1,105.51	-53.25	-233.01	-14.68	0.26	-0.14	-1.64
4,731.00	6.71	247.86	4,717.18	-1,198.78	-57.02	-244.01	-16.61	1.18	-0.86	-6.50
4,825.00	7.34	246.85	4,810.48	-1,292.08	-61.45	-254.62	-19.26	0.68	0.67	-1.07
4,920.00	7.68	247.50	4,904.66	-1,386.26	-66.26	-266.06	-22.15	0.37	0.36	0.68
5,014.00	6.74	240.01	4,997.92	-1,479.52	-71.42	-276.64	-25.52	1.41	-1.00	-7.97
5,108.00	6.05	232.26	5,091.34	-1,572.94	-77.21	-285.34	-29.82	1.17	-0.73	-8.24
5,202.00	6.70	239.55	5,184.76	-1,666.36	-83.03	-293.98	-34.15	1.10	0.69	7.76
5,296.00	7.42	249.75	5,278.05	-1,759.65	-87.91	-304.41	-37.27	1.53	0.77	10.85
5,390.00	7.55	252.61	5,371.25	-1,852.85	-91.85	-315.99	-39.28	0.42	0.14	3.04
5,485.00	7.10	252.63	5,465.47	-1,947.07	-95.47	-327.55	-40.97	0.47	-0.47	0.02
5,579.00	6.76	252.70	5,558.78	-2,040.38	-98.85	-338.38	-42.55	0.36	-0.36	0.07
5,673.00	6.50	251.41	5,652.16	-2,133.76	-102.19	-348.70	-44.17	0.32	-0.28	-1.37
5,767.00	6.56	249.85	5,745.55	-2,227.15	-105.74	-358.79	-46.03	0.20	0.06	-1.66

Survey Report



Company:	CENTENNIAL RESOURCE DEVELOPMENT	Local Co-ordinate Reference:	Well SOLOMON FEDERAL COM #709H
Project:	LEA COUNTY, NM (NAD 83 - UTM ZONE	TVD Reference:	KB 25' @ 3518.40usft (H&P 650)
Site:	SW SE SEC. 22 T24S R34E	MD Reference:	KB 25' @ 3518.40usft (H&P 650)
Well:	SOLOMON FEDERAL COM #709H	North Reference:	True
Wellbore:	JOB # 2018-742-650	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)
5,861.00	7.07	257.77	5,838.88	-2,320.48	-108.81	-369.48	-47.32	1.14	0.54	8.43
5,955.00	8.71	268.01	5,931.99	-2,413.59	-110.28	-382.25	-46.70	2.29	1.74	10.89
6,049.00	8.82	267.88	6,024.90	-2,506.50	-110.80	-396.57	-44.88	0.12	0.12	-0.14
6,144.00	8.32	267.57	6,118.84	-2,600.44	-111.36	-410.71	-43.14	0.53	-0.53	-0.33
6,238.00	8.91	269.68	6,211.78	-2,693.38	-111.69	-424.79	-41.17	0.71	0.63	2.24
6,332.00	8.91	268.91	6,304.64	-2,786.24	-111.87	-439.34	-38.99	0.13	0.00	-0.82
6,426.00	8.56	268.77	6,397.55	-2,879.15	-112.16	-453.62	-36.95	0.37	-0.37	-0.15
6,520.00	9.00	262.98	6,490.45	-2,972.05	-113.20	-467.91	-35.66	1.05	0.47	-6.16
6,614.00	9.00	262.40	6,583.29	-3,064.89	-115.08	-482.49	-35.14	0.10	0.00	-0.62
6,709.00	8.58	262.78	6,677.18	-3,158.78	-116.95	-496.89	-34.65	0.45	-0.44	0.40
6,803.00	8.37	262.74	6,770.15	-3,251.75	-118.70	-510.63	-34.14	0.22	-0.22	-0.04
6,897.00	8.20	262.77	6,863.17	-3,344.77	-120.40	-524.07	-33.64	0.18	-0.18	0.03
6,990.00	8.43	262.54	6,955.19	-3,436.79	-122.12	-537.41	-33.17	0.25	0.25	-0.25
7,084.00	7.59	263.41	7,048.27	-3,529.87	-123.73	-550.41	-32.64	0.90	-0.89	0.93
7,178.00	8.42	257.63	7,141.36	-3,622.96	-125.92	-563.30	-32.71	1.23	0.88	-6.15
7,272.00	8.49	255.63	7,234.34	-3,715.94	-129.11	-576.74	-33.67	0.32	0.07	-2.13
7,366.00	8.36	255.18	7,327.32	-3,808.92	-132.58	-590.07	-34.93	0.16	-0.14	-0.48
7,460.00	8.11	254.37	7,420.35	-3,901.95	-136.12	-603.06	-36.31	0.29	-0.27	-0.86
7,554.00	7.67	254.60	7,513.46	-3,995.06	-139.57	-615.49	-37.69	0.47	-0.47	0.24
7,648.00	7.48	254.67	7,606.64	-4,088.24	-142.85	-627.44	-38.99	0.20	-0.20	0.07
7,742.00	7.13	255.02	7,699.88	-4,181.48	-145.98	-638.98	-40.20	0.38	-0.37	0.37
7,836.00	6.88	256.62	7,793.18	-4,274.78	-148.79	-650.09	-41.17	0.34	-0.27	1.70
7,930.00	6.93	258.71	7,886.50	-4,368.10	-151.20	-661.13	-41.76	0.27	0.05	2.22
8,024.00	7.01	261.39	7,979.80	-4,461.40	-153.17	-672.36	-41.87	0.36	0.09	2.85
8,118.00	6.48	261.36	8,073.15	-4,554.75	-154.83	-683.28	-41.73	0.56	-0.56	-0.03
8,212.00	7.16	246.35	8,166.49	-4,648.09	-157.97	-693.89	-43.12	2.02	0.72	-15.97
8,306.00	7.58	258.34	8,259.72	-4,741.32	-161.58	-705.33	-44.81	1.69	0.45	12.76
8,400.00	7.11	259.30	8,352.95	-4,834.55	-163.91	-717.11	-45.20	0.52	-0.50	1.02
8,494.00	7.12	251.40	8,446.23	-4,927.83	-166.85	-728.35	-46.27	1.04	0.01	-8.40
8,588.00	6.78	250.80	8,539.54	-5,021.14	-170.53	-739.11	-48.16	0.37	-0.36	-0.64
8,682.00	6.34	251.82	8,632.92	-5,114.52	-173.98	-749.28	-49.90	0.48	-0.47	1.09
8,777.00	6.00	253.45	8,727.37	-5,208.97	-177.03	-759.03	-51.33	0.40	-0.36	1.72
8,870.00	5.72	253.94	8,819.89	-5,301.49	-179.69	-768.14	-52.48	0.31	-0.30	0.53
8,964.00	5.39	254.86	8,913.44	-5,395.04	-182.14	-776.90	-53.47	0.36	-0.35	0.98
9,059.00	5.12	255.86	9,008.05	-5,489.65	-184.34	-785.32	-54.28	0.30	-0.28	1.05
9,153.00	4.93	257.22	9,101.68	-5,583.28	-186.26	-793.33	-54.87	0.24	-0.20	1.45
9,247.00	4.55	253.88	9,195.36	-5,676.96	-188.19	-800.85	-55.55	0.50	-0.40	-3.55
9,340.00	3.15	257.90	9,288.15	-5,769.75	-189.75	-806.89	-56.11	1.53	-1.51	4.32
9,435.00	2.27	267.44	9,383.04	-5,864.64	-190.38	-811.32	-56.01	1.04	-0.93	10.04
9,529.00	2.23	274.59	9,476.97	-5,958.57	-190.32	-815.01	-55.35	0.30	-0.04	7.61
9,623.00	1.91	282.93	9,570.91	-6,052.51	-189.82	-818.36	-54.31	0.47	-0.34	8.87
9,717.00	0.96	303.75	9,664.88	-6,146.48	-189.03	-820.54	-53.18	1.14	-1.01	22.15
9,811.00	0.86	315.77	9,758.87	-6,240.47	-188.09	-821.68	-52.06	0.23	-0.11	12.79
9,905.00	0.77	305.90	9,852.86	-6,334.46	-187.21	-822.69	-51.04	0.18	-0.10	-10.50
10,000.00	0.70	314.27	9,947.85	-6,429.45	-186.43	-823.62	-50.12	0.13	-0.07	8.81
10,094.00	0.77	299.79	10,041.84	-6,523.44	-185.72	-824.58	-49.25	0.21	0.07	-15.40
10,188.00	0.84	293.41	10,135.83	-6,617.43	-185.13	-825.76	-48.48	0.12	0.07	-6.79
10,282.00	0.98	287.56	10,229.82	-6,711.42	-184.62	-827.16	-47.75	0.18	0.15	-6.22
10,376.00	1.05	297.23	10,323.81	-6,805.41	-183.98	-828.69	-46.87	0.20	0.07	10.29
10,469.00	1.10	288.88	10,416.79	-6,898.39	-183.30	-830.29	-45.94	0.18	0.05	-8.98
10,563.00	1.27	283.96	10,510.77	-6,992.37	-182.76	-832.16	-45.10	0.21	0.18	-5.23
10,657.00	0.88	293.49	10,604.75	-7,086.35	-182.22	-833.83	-44.30	0.46	-0.41	10.14
10,752.00	0.94	297.48	10,699.74	-7,181.34	-181.57	-835.19	-43.43	0.09	0.06	4.20

Survey Report



Company:	CENTENNIAL RESOURCE DEVELOPMENT	Local Co-ordinate Reference:	Well SOLOMON FEDERAL COM #709H
Project:	LEA COUNTY, NM (NAD 83 - UTM ZONE	TVD Reference:	KB 25' @ 3518.40usft (H&P 650)
Site:	SW SE SEC. 22 T24S R34E	MD Reference:	KB 25' @ 3518.40usft (H&P 650)
Well:	SOLOMON FEDERAL COM #709H	North Reference:	True
Wellbore:	JOB # 2018-742-650	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)
10,846.00	0.99	290.12	10,793.73	-7,275.33	-180.93	-836.64	-42.57	0.14	0.05	-7.83
10,940.00	0.90	306.50	10,887.72	-7,369.32	-180.21	-837.99	-41.64	0.30	-0.10	17.43
11,034.00	0.53	329.47	10,981.71	-7,463.31	-179.40	-838.81	-40.71	0.49	-0.39	24.44
11,129.00	0.52	308.77	11,076.71	-7,558.31	-178.75	-839.37	-39.98	0.20	-0.01	-21.79
11,223.00	0.30	292.02	11,170.70	-7,652.30	-178.39	-839.93	-39.53	0.26	-0.23	-17.82
11,317.00	0.56	307.06	11,264.70	-7,746.30	-178.02	-840.52	-39.07	0.30	0.28	16.00
11,411.00	0.63	296.98	11,358.70	-7,840.30	-177.51	-841.35	-38.43	0.13	0.07	-10.72
11,505.00	0.94	293.19	11,452.69	-7,934.29	-176.98	-842.52	-37.71	0.33	0.33	-4.03
11,599.00	1.28	287.80	11,546.67	-8,028.27	-176.35	-844.23	-36.82	0.38	0.36	-5.73
11,653.00	1.35	287.30	11,600.65	-8,082.25	-175.98	-845.41	-36.26	0.13	0.13	-0.93
ICP										
11,708.00	1.56	281.92	11,655.64	-8,137.24	-175.63	-846.76	-35.69	0.45	0.37	-9.78
11,740.00	1.68	279.41	11,687.62	-8,169.22	-175.46	-847.65	-35.39	0.45	0.39	-7.85
11,772.00	1.67	275.00	11,719.61	-8,201.21	-175.35	-848.57	-35.12	0.40	-0.03	-13.78
KOP										
11,836.00	2.02	298.15	11,783.58	-8,265.18	-174.73	-850.50	-34.20	1.27	0.55	36.17
11,868.00	2.81	319.82	11,815.55	-8,297.15	-173.87	-851.50	-33.18	3.73	2.47	67.72
11,901.00	4.59	334.54	11,848.48	-8,330.08	-172.06	-852.59	-31.22	6.07	5.39	44.61
11,933.00	8.02	345.44	11,880.28	-8,361.88	-168.74	-853.70	-27.77	11.31	10.72	34.06
11,965.00	13.20	354.54	11,911.73	-8,393.33	-162.94	-854.61	-21.89	16.96	16.19	28.44
11,997.00	20.17	358.59	11,942.36	-8,423.96	-153.77	-855.10	-12.77	22.07	21.78	12.66
12,029.00	26.09	0.57	11,971.78	-8,453.38	-141.21	-855.16	-0.37	18.66	18.50	6.19
12,061.00	29.67	0.65	12,000.06	-8,481.66	-126.25	-855.00	14.37	11.19	11.19	0.25
12,093.00	33.89	2.94	12,027.26	-8,508.86	-109.41	-854.45	30.89	13.71	13.19	7.16
12,124.00	37.76	5.08	12,052.39	-8,533.99	-91.32	-853.17	48.54	13.12	12.48	6.90
12,157.00	39.19	6.35	12,078.22	-8,559.82	-70.89	-851.12	68.36	4.95	4.33	3.85
12,189.00	40.45	5.51	12,102.80	-8,584.40	-50.51	-849.01	88.13	4.28	3.94	-2.62
12,221.00	43.00	4.43	12,126.68	-8,608.28	-29.29	-847.17	108.76	8.28	7.97	-3.37
12,252.00	46.47	3.75	12,148.70	-8,630.30	-7.53	-845.61	129.98	11.30	11.19	-2.19
12,284.00	49.94	3.29	12,170.02	-8,651.62	16.27	-844.15	153.24	10.90	10.84	-1.44
12,316.00	51.94	3.69	12,190.19	-8,671.79	41.07	-842.64	177.46	6.32	6.25	1.25
12,348.00	53.51	3.99	12,209.57	-8,691.17	66.48	-840.93	202.25	4.96	4.91	0.94
12,380.00	54.99	3.85	12,228.26	-8,709.86	92.39	-839.16	227.53	4.84	4.62	-0.44
12,412.00	57.85	3.84	12,245.96	-8,727.56	118.99	-837.37	253.48	8.94	8.94	-0.03
12,444.00	60.05	3.89	12,262.46	-8,744.06	146.34	-835.52	280.17	6.88	6.87	0.16
12,492.00	63.12	3.58	12,285.30	-8,766.90	188.46	-832.77	321.28	6.42	6.40	-0.65
12,541.00	68.16	1.85	12,305.51	-8,787.11	233.03	-830.67	364.92	10.78	10.29	-3.53
12,588.00	72.83	0.02	12,321.20	-8,802.80	277.31	-829.96	408.50	10.59	9.94	-3.89
12,637.00	73.43	0.87	12,335.42	-8,817.02	324.20	-829.60	454.71	2.06	1.22	1.73
12,684.00	74.91	1.24	12,348.24	-8,829.84	369.41	-828.76	499.18	3.24	3.15	0.79
12,733.00	76.66	0.67	12,360.27	-8,841.87	416.90	-827.97	545.91	3.75	3.57	-1.16
12,780.00	81.01	359.54	12,369.37	-8,850.97	463.00	-827.89	591.38	9.55	9.26	-2.40
12,828.00	84.90	358.82	12,375.25	-8,856.85	510.62	-828.57	638.48	8.24	8.10	-1.50
HZ LANDING										
12,875.00	90.10	359.11	12,377.30	-8,858.90	557.56	-829.42	684.93	11.08	11.06	0.62
12,924.00	91.36	359.19	12,376.68	-8,858.28	606.54	-830.15	733.38	2.58	2.57	0.16
13,020.00	92.02	358.68	12,373.85	-8,855.45	702.49	-831.93	828.34	0.87	0.69	-0.53
13,115.00	93.71	0.45	12,369.10	-8,850.70	797.36	-832.65	922.07	2.57	1.78	1.86
13,211.00	93.36	2.68	12,363.18	-8,844.78	893.13	-830.04	1,016.14	2.35	-0.36	2.32
13,307.00	94.17	2.38	12,356.88	-8,838.48	988.83	-825.81	1,109.88	0.90	0.84	-0.31
13,402.00	92.39	2.14	12,351.44	-8,833.04	1,083.60	-822.07	1,202.78	1.89	-1.87	-0.25
13,498.00	90.62	2.69	12,348.92	-8,830.52	1,179.48	-818.02	1,296.73	1.93	-1.84	0.57
13,594.00	89.65	3.41	12,348.69	-8,830.29	1,275.34	-812.92	1,390.49	1.26	-1.01	0.75

Survey Report



Company:	CENTENNIAL RESOURCE DEVELOPMENT	Local Co-ordinate Reference:	Well SOLOMON FEDERAL COM #709H
Project:	LEA COUNTY, NM (NAD 83 - UTM ZONE)	TVD Reference:	KB 25' @ 3518.40usft (H&P 650)
Site:	SW SE SEC. 22 T24S R34E	MD Reference:	KB 25' @ 3518.40usft (H&P 650)
Well:	SOLOMON FEDERAL COM #709H	North Reference:	True
Wellbore:	JOB # 2018-742-650	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)
13,690.00	88.10	3.61	12,350.58	-8,832.18	1,371.14	-807.04	1,484.06	1.63	-1.61	0.21
13,785.00	88.92	3.96	12,353.05	-8,834.65	1,485.90	-800.77	1,576.54	0.94	0.86	0.37
13,881.00	89.19	2.26	12,354.63	-8,836.23	1,561.74	-795.56	1,670.26	1.79	0.28	-1.77
13,976.00	91.04	1.51	12,354.44	-8,836.04	1,656.68	-792.44	1,763.43	2.10	1.95	-0.79
14,072.00	91.32	1.37	12,352.46	-8,834.06	1,752.63	-790.03	1,857.72	0.33	0.29	-0.15
14,168.00	92.08	0.98	12,349.62	-8,831.22	1,848.57	-788.06	1,952.06	0.89	0.79	-0.41
14,264.00	92.62	1.33	12,345.68	-8,827.28	1,944.47	-786.13	2,046.37	0.67	0.56	0.36
14,359.00	93.65	1.70	12,340.48	-8,822.08	2,039.29	-783.62	2,139.52	1.15	1.08	0.39
14,455.00	93.22	0.36	12,334.73	-8,816.33	2,135.10	-781.90	2,233.78	1.46	-0.45	-1.40
14,487.00	92.83	359.96	12,333.04	-8,814.64	2,167.05	-781.81	2,265.30	1.74	-1.22	-1.25
14,518.00	91.87	359.65	12,331.77	-8,813.37	2,198.03	-781.91	2,295.87	3.25	-3.10	-1.00
14,550.00	90.21	359.74	12,331.19	-8,812.79	2,230.02	-782.08	2,327.47	5.20	-5.19	0.28
14,582.00	89.02	359.40	12,331.41	-8,813.01	2,262.02	-782.32	2,359.08	3.87	-3.72	-1.06
14,614.00	88.07	359.66	12,332.22	-8,813.82	2,294.01	-782.59	2,390.69	3.08	-2.97	0.81
14,646.00	87.80	359.69	12,333.37	-8,814.97	2,325.99	-782.77	2,422.27	0.85	-0.84	0.09
14,678.00	87.75	359.85	12,334.61	-8,816.21	2,357.96	-782.90	2,453.84	0.52	-0.16	0.50
14,710.00	88.08	359.93	12,335.78	-8,817.38	2,389.94	-782.96	2,485.41	1.06	1.03	0.25
14,741.00	88.52	359.29	12,336.70	-8,818.30	2,420.92	-783.17	2,516.01	2.50	1.42	-2.06
14,773.00	88.04	358.23	12,337.66	-8,819.26	2,452.90	-783.86	2,547.68	3.63	-1.50	-3.31
14,805.00	88.42	358.24	12,338.65	-8,820.25	2,484.87	-784.85	2,579.38	1.19	1.19	0.03
14,837.00	88.21	358.60	12,339.59	-8,821.19	2,516.85	-785.73	2,611.08	1.30	-0.66	1.12
14,933.00	89.23	359.11	12,341.73	-8,823.33	2,612.80	-787.64	2,706.07	1.19	1.06	0.53
15,028.00	90.11	358.87	12,342.28	-8,823.88	2,707.78	-789.32	2,800.06	0.96	0.93	-0.25
15,124.00	90.63	359.31	12,341.66	-8,823.26	2,803.77	-790.84	2,895.02	0.71	0.54	0.46
15,219.00	92.31	359.37	12,339.22	-8,820.82	2,898.73	-791.94	2,988.89	1.77	1.77	0.06
15,315.00	93.35	359.88	12,334.48	-8,816.08	2,994.61	-792.57	3,083.60	1.21	1.08	0.53
15,347.00	92.88	0.19	12,332.74	-8,814.34	3,026.56	-792.55	3,115.12	1.76	-1.47	0.97
15,379.00	92.46	0.48	12,331.25	-8,812.85	3,058.52	-792.36	3,146.63	1.59	-1.31	0.91
15,411.00	90.32	0.33	12,330.48	-8,812.08	3,090.51	-792.13	3,178.16	6.70	-6.69	-0.47
15,442.00	88.18	0.65	12,330.88	-8,812.48	3,121.51	-791.87	3,208.70	6.98	-6.90	1.03
15,474.00	87.65	0.62	12,332.05	-8,813.65	3,153.48	-791.51	3,240.19	1.66	-1.66	-0.09
15,506.00	88.13	1.38	12,333.23	-8,814.83	3,185.46	-790.96	3,271.65	2.81	1.50	2.37
15,538.00	88.77	1.38	12,334.09	-8,815.69	3,217.44	-790.19	3,303.08	2.00	2.00	0.00
15,570.00	89.69	1.72	12,334.52	-8,816.12	3,249.42	-789.32	3,334.50	3.07	2.87	1.06
15,602.00	90.41	1.83	12,334.49	-8,816.09	3,281.40	-788.33	3,365.89	2.28	2.25	0.34
15,634.00	89.97	1.39	12,334.39	-8,815.99	3,313.39	-787.43	3,397.31	1.94	-1.37	-1.37
15,665.00	88.73	0.04	12,334.74	-8,816.34	3,344.39	-787.04	3,427.83	5.91	-4.00	-4.35
15,697.00	88.25	359.33	12,335.58	-8,817.18	3,376.37	-787.22	3,459.42	2.68	-1.50	-2.22
15,729.00	87.91	359.14	12,336.65	-8,818.25	3,408.35	-787.65	3,491.04	1.22	-1.06	-0.59
15,793.00	89.64	359.66	12,338.02	-8,819.62	3,472.33	-788.32	3,554.28	2.82	2.70	0.81
15,857.00	90.18	359.35	12,338.12	-8,819.72	3,536.33	-788.87	3,617.52	0.97	0.84	-0.48
15,889.00	91.11	358.83	12,337.76	-8,819.36	3,568.32	-789.38	3,649.17	3.33	2.91	-1.62
15,920.00	92.59	358.04	12,336.76	-8,818.36	3,599.29	-790.22	3,679.87	5.41	4.77	-2.55
15,952.00	93.99	357.02	12,334.93	-8,816.53	3,631.21	-791.60	3,711.58	5.41	4.37	-3.19
15,984.00	94.62	356.73	12,332.52	-8,814.12	3,663.07	-793.34	3,743.30	2.17	1.97	-0.91
16,016.00	95.02	356.56	12,329.83	-8,811.43	3,694.91	-795.20	3,775.02	1.36	1.25	-0.53
16,048.00	95.10	356.53	12,327.01	-8,808.61	3,726.72	-797.13	3,806.72	0.27	0.25	-0.09
16,080.00	94.48	355.16	12,324.34	-8,805.94	3,758.53	-799.44	3,838.48	4.69	-1.94	-4.28
16,112.00	93.63	354.37	12,322.08	-8,803.68	3,790.31	-802.35	3,870.32	3.62	-2.66	-2.47
16,144.00	91.06	354.99	12,320.77	-8,802.37	3,822.14	-805.31	3,902.21	8.26	-8.03	1.94
16,176.00	91.64	355.83	12,320.01	-8,801.61	3,854.03	-807.87	3,934.09	3.19	1.81	2.62
16,240.00	92.46	357.93	12,317.72	-8,799.32	3,917.89	-811.35	3,997.66	3.52	1.28	3.28
16,271.00	92.94	358.38	12,316.26	-8,797.86	3,948.84	-812.35	4,028.36	2.12	1.55	1.45

Survey Report



Company:	CENTENNIAL RESOURCE DEVELOPMENT	Local Co-ordinate Reference:	Well SOLOMON FEDERAL COM #709H
Project:	LEA COUNTY, NM (NAD 83 - UTM ZONE	TVD Reference:	KB 25' @ 3518.40usft (H&P 650)
Site:	SW SE SEC. 22 T24S R34E	MD Reference:	KB 25' @ 3518.40usft (H&P 650)
Well:	SOLOMON FEDERAL COM #709H	North Reference:	True
Wellbore:	JOB # 2018-742-650	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)
16,318.00	91.04	359.19	12,314.63	-8,796.23	3,995.80	-813.35	4,074.86	4.39	-4.04	1.72
16,366.00	88.03	359.17	12,315.02	-8,796.62	4,043.79	-814.03	4,122.32	6.27	-6.27	-0.04
16,462.00	90.57	358.33	12,316.19	-8,797.79	4,139.75	-816.13	4,217.35	2.79	2.65	-0.87
16,558.00	91.78	358.22	12,314.23	-8,795.83	4,235.68	-819.02	4,312.48	1.27	1.26	-0.11
16,654.00	93.10	357.80	12,310.14	-8,791.74	4,331.54	-822.35	4,407.60	1.44	1.37	-0.44
16,749.00	93.19	358.24	12,304.93	-8,786.53	4,426.34	-825.62	4,501.67	0.47	0.09	0.46
16,845.00	92.21	357.65	12,300.40	-8,782.00	4,522.17	-829.06	4,596.78	1.19	-1.02	-0.61
16,908.00	92.00	358.80	12,298.09	-8,779.69	4,585.09	-831.01	4,659.19	1.85	-0.33	1.83
16,940.00	90.38	0.27	12,297.43	-8,779.03	4,617.08	-831.27	4,690.80	6.84	-5.06	4.59
16,972.00	88.64	1.08	12,297.70	-8,779.30	4,649.08	-830.90	4,722.31	6.00	-5.44	2.53
17,036.00	86.65	1.79	12,300.33	-8,781.93	4,713.00	-829.29	4,785.12	3.30	-3.11	1.11
17,132.00	88.10	1.34	12,304.73	-8,786.33	4,808.86	-826.68	4,879.28	1.58	1.51	-0.47
- CROSS SETBACK										
17,199.00	88.48	1.25	12,306.73	-8,788.33	4,875.82	-825.16	4,945.10	0.58	0.57	-0.14
LAST SURVEY MAR 7, 2019										
17,206.00	88.52	1.24	12,306.91	-8,788.51	4,882.81	-825.01	4,951.98	0.58	0.57	-0.14
PROJECTION TO TD										
17,260.00	88.52	1.24	12,308.30	-8,789.90	4,936.78	-823.84	5,005.04	0.00	0.00	0.00

Survey Report



Company:	CENTENNIAL RESOURCE DEVELOPME	Local Co-ordinate Reference:	Well SOLOMON FEDERAL COM #709H
Project:	LEA COUNTY, NM (NAD 83 - UTM ZONE	TVD Reference:	KB 25' @ 3518.40usft (H&P 650)
Site:	SW SE SEC. 22 T24S R34E	MD Reference:	KB 25' @ 3518.40usft (H&P 650)
Well:	SOLOMON FEDERAL COM #709H	North Reference:	True
Wellbore:	JOB # 2018-742-650	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 - SOLOMON FEDE - survey misses target center by 606.30usft at 11829.56usft MD (11777.14 TVD, -174.84 N, -850.30 E) - Point	0.00	0.00	11,784.30	-779.41	-805.12	11,689,723.10	2,117,670.79	32.194463	-103.456750
FTP/PP - SOLOMON FE - survey misses target center by 286.30usft at 12252.00usft MD (12148.70 TVD, -7.53 N, -845.61 E) - Point	0.00	0.00	12,357.22	-199.45	-804.92	11,690,302.93	2,117,662.65	32.196057	-103.456750
ABDN VERT BUFF 22 - survey misses target center by 3321.33usft at 13964.88usft MD (12354.62 TVD, 1645.57 N, -792.74 E) - Circle (radius 30.00)	0.00	0.00	15,520.60	1,684.94	-1,795.86	11,692,172.62	2,116,644.86	32.201237	-103.459953
KOP - SOLOMON FEDE - survey misses target center by 51.60usft at 11828.03usft MD (11775.61 TVD, -174.86 N, -850.25 E) - Point	0.00	0.00	11,777.21	-199.45	-804.92	11,690,302.93	2,117,662.65	32.196057	-103.456750
LTP/BHL - SOLOMON F - survey misses target center by 24.91usft at 17200.19usft MD (12306.76 TVD, 4877.00 N, -825.14 E) - Point	0.00	0.00	12,295.00	4,876.84	-803.18	11,695,378.01	2,117,591.41	32.210010	-103.456744
FTP/PP - SOLOMON FE - survey misses target center by 23.84usft at 12695.61usft MD (12351.22 TVD, 380.63 N, -828.53 E) - Point	0.00	0.00	12,350.13	380.51	-804.72	11,690,882.75	2,117,654.51	32.197651	-103.456749
ABDN VERT MADRA B - survey misses target center by 3373.77usft at 12840.41usft MD (12376.21 TVD, 522.99 N, -828.82 E) - Circle (radius 30.00)	0.00	0.00	15,487.40	363.74	-2,124.00	11,690,847.02	2,116,335.80	32.197605	-103.461014
LTP/BHL - SOLOMON F - survey misses target center by 24.91usft at 17200.19usft MD (12306.76 TVD, 4877.00 N, -825.14 E) - Point	0.00	0.00	12,295.00	4,876.84	-803.18	11,695,378.01	2,117,591.41	32.210010	-103.456744

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
1,335.00	1,334.94	2.22	-8.49	LAST INVICTUS SURVEY
1,364.00	1,363.94	2.26	-8.96	SURFACE CASING
11,708.00	11,655.64	-175.63	-846.76	ICP
11,836.00	11,783.58	-174.73	-850.50	KOP
12,875.00	12,377.30	557.56	-829.42	HZ LANDING
17,199.00	12,306.73	4,875.82	-825.16	~ CROSS SETBACK
17,206.00	12,306.91	4,882.81	-825.01	LAST SURVEY MAR 7, 2019
17,260.00	12,308.30	4,936.78	-823.84	PROJECTION TO TD

Checked By: _____ Approved By: _____ Date: _____