



Ascent Energy, LLC

Lea County, NM (NAD 83 NME)

(Toque) Sec-6_T-21-S_R-33-E

Toque State Com #602H

OWB

Design: AWB

Standard Survey Report

25 November, 2019

INTREPID



Intrepid Survey Report



Company:	Ascent Energy, LLC	Local Co-ordinate Reference:	Well Toque State Com #602H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3820.0usft (Precision 553)
Site:	(Toque) Sec-6_T-21-S_R-33-E	MD Reference:	KB @ 3820.0usft (Precision 553)
Well:	Toque State Com #602H	North Reference:	True
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Project	Lea County, NM (NAD 83 NME)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site (Toque) Sec-6_T-21-S_R-33-E					
Site Position:		Northing:	549,140.00 usft	Latitude:	32° 30' 27.324 N
From:	Map	Easting:	763,075.50 usft	Longitude:	103° 36' 50.541 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.39 °

Well	Toque State Com #602H					
Well Position	+N/-S	0.0 usft	Northing:	549,139.90 usft	Latitude:	32° 30' 27.329 N
	+E/-W	0.0 usft	Easting:	762,985.60 usft	Longitude:	103° 36' 51.590 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,795.0 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/28/19	6.74	60.28	47,855.10565183

Design	AWB				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	180.00	

Survey Program	Date 11/25/19				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
149.0	5,578.0	Total MWD Svys (OWB)	MWD	OWSG MWD - Standard	
5,708.0	19,179.0	Intrepid MWD (OWB)	MWD	OWSG MWD - Standard	

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
149.0	0.66	259.30	149.0	-0.2	-0.8	0.2	0.44	0.44	0.00
240.0	0.79	254.38	240.0	-0.4	-2.0	0.4	0.16	0.14	-5.41
328.0	1.23	251.04	328.0	-0.9	-3.4	0.9	0.50	0.50	-3.80
416.0	1.80	248.58	415.9	-1.7	-5.6	1.7	0.65	0.65	-2.80
505.0	1.14	257.45	504.9	-2.4	-7.8	2.4	0.78	-0.74	9.97
593.0	0.88	250.86	592.9	-2.8	-9.3	2.8	0.32	-0.30	-7.49
688.0	1.01	236.89	687.9	-3.5	-10.7	3.5	0.28	0.14	-14.71
781.0	1.27	229.77	780.9	-4.6	-12.1	4.6	0.32	0.28	-7.66
874.0	1.36	231.17	873.8	-6.0	-13.8	6.0	0.10	0.10	1.51



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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)
967.0	1.05	233.02	966.8	-7.2	-15.3	7.2	0.34	-0.33	1.99
1,061.0	1.01	237.68	1,060.8	-8.2	-16.7	8.2	0.10	-0.04	4.96
1,153.0	1.27	227.22	1,152.8	-9.3	-18.2	9.3	0.36	0.28	-11.37
1,246.0	1.63	224.76	1,245.8	-10.9	-19.8	10.9	0.39	0.39	-2.65
1,338.0	0.75	251.57	1,337.7	-12.0	-21.3	12.0	1.11	-0.96	29.14
1,431.0	0.53	264.49	1,430.7	-12.3	-22.3	12.3	0.28	-0.24	13.89
1,524.0	0.70	272.83	1,523.7	-12.3	-23.3	12.3	0.21	0.18	8.97
1,617.0	0.66	269.32	1,616.7	-12.3	-24.4	12.3	0.06	-0.04	-3.77
1,664.0	0.84	274.15	1,663.7	-12.2	-25.0	12.2	0.41	0.38	10.28
1,711.0	0.53	281.36	1,710.7	-12.2	-25.6	12.2	0.68	-0.66	15.34
1,803.0	0.26	276.26	1,802.7	-12.1	-26.2	12.1	0.30	-0.29	-5.54
1,895.0	0.18	250.16	1,894.7	-12.1	-26.6	12.1	0.14	-0.09	-28.37
1,990.0	0.13	310.72	1,989.7	-12.1	-26.8	12.1	0.17	-0.05	63.75
2,083.0	0.22	300.26	2,082.7	-11.9	-27.0	11.9	0.10	0.10	-11.25
2,176.0	0.53	297.44	2,175.7	-11.6	-27.6	11.6	0.33	0.33	-3.03
2,268.0	2.42	274.50	2,267.7	-11.3	-29.9	11.3	2.11	2.05	-24.93
2,361.0	3.65	274.68	2,360.5	-10.9	-34.8	10.9	1.32	1.32	0.19
2,455.0	3.34	274.68	2,454.4	-10.4	-40.5	10.4	0.33	-0.33	0.00
2,549.0	3.03	275.56	2,548.2	-10.0	-45.7	10.0	0.33	-0.33	0.94
2,642.0	2.68	276.97	2,641.1	-9.5	-50.3	9.5	0.38	-0.38	1.52
2,735.0	4.09	272.57	2,733.9	-9.0	-55.8	9.0	1.54	1.52	-4.73
2,827.0	6.33	265.89	2,825.6	-9.3	-64.1	9.3	2.52	2.43	-7.26
2,920.0	10.15	271.25	2,917.6	-9.4	-77.4	9.4	4.19	4.11	5.76
3,012.0	11.69	274.33	3,007.9	-8.6	-94.8	8.6	1.79	1.67	3.35
3,106.0	11.12	273.19	3,100.1	-7.3	-113.4	7.3	0.65	-0.61	-1.21
3,200.0	12.09	278.64	3,192.1	-5.4	-132.2	5.4	1.56	1.03	5.80
3,294.0	12.22	282.15	3,284.0	-1.8	-151.6	1.8	0.80	0.14	3.73
3,388.0	11.65	281.45	3,376.0	2.2	-170.6	-2.2	0.63	-0.61	-0.74
3,481.0	11.03	280.39	3,467.2	5.7	-188.6	-5.7	0.70	-0.67	-1.14
3,575.0	11.69	280.57	3,559.3	9.0	-206.8	-9.0	0.70	0.70	0.19
3,668.0	12.84	281.80	3,650.2	12.9	-226.2	-12.9	1.27	1.24	1.32
3,759.0	12.26	281.36	3,739.0	16.8	-245.6	-16.8	0.65	-0.64	-0.48
3,945.0	11.38	280.83	3,921.1	24.2	-282.9	-24.2	0.48	-0.47	-0.28
4,038.0	11.74	281.36	4,012.2	27.8	-301.2	-27.8	0.40	0.39	0.57
4,131.0	12.84	283.12	4,103.1	32.0	-320.6	-32.0	1.25	1.18	1.89
4,224.0	12.48	284.70	4,193.8	36.9	-340.3	-36.9	0.54	-0.39	1.70
4,317.0	12.04	287.25	4,284.7	42.3	-359.3	-42.3	0.75	-0.47	2.74
4,411.0	12.40	275.47	4,376.6	46.2	-378.7	-46.2	2.68	0.38	-12.53
4,501.0	12.62	273.10	4,464.4	47.6	-398.2	-47.6	0.62	0.24	-2.63
4,594.0	12.09	273.19	4,555.3	48.7	-418.1	-48.7	0.57	-0.57	0.10
4,688.0	11.65	271.87	4,647.3	49.6	-437.4	-49.6	0.55	-0.47	-1.40
4,781.0	12.13	276.97	4,738.3	51.1	-456.4	-51.1	1.24	0.52	5.48
4,875.0	12.88	280.75	4,830.1	54.2	-476.5	-54.2	1.18	0.80	4.02



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4,969.0	12.53	280.75	4,921.8	58.1	-496.9	-58.1	0.37	-0.37	0.00
5,064.0	12.18	280.13	5,014.6	61.8	-516.8	-61.8	0.39	-0.37	-0.65
5,157.0	12.00	279.43	5,105.5	65.1	-536.0	-65.1	0.25	-0.19	-0.75
5,249.0	11.91	278.99	5,195.5	68.1	-554.9	-68.1	0.14	-0.10	-0.48
5,342.0	11.65	280.22	5,286.5	71.3	-573.6	-71.3	0.39	-0.28	1.32
5,435.0	11.34	280.39	5,377.7	74.6	-591.8	-74.6	0.34	-0.33	0.18
5,529.0	10.81	281.18	5,469.9	78.0	-609.5	-78.0	0.59	-0.56	0.84
5,578.0	10.55	281.80	5,518.1	79.8	-618.4	-79.8	0.58	-0.53	1.27
Tie-In Point									
5,646.5	10.43	281.50	5,585.4	82.3	-630.7	-82.3	0.19	-0.17	-0.44
TOP_DELAWARE_SAND									
5,708.0	10.33	281.22	5,645.9	84.5	-641.5	-84.5	0.19	-0.17	-0.45
5,800.0	9.85	282.01	5,736.5	87.7	-657.3	-87.7	0.54	-0.52	0.86
5,893.0	9.54	280.52	5,828.2	90.8	-672.7	-90.8	0.43	-0.33	-1.60
5,970.8	9.09	279.27	5,904.9	93.0	-685.1	-93.0	0.63	-0.58	-1.61
CHERRY_CANYON									
5,985.0	9.01	279.03	5,919.0	93.3	-687.3	-93.3	0.63	-0.57	-1.70
6,078.0	7.96	275.95	6,011.0	95.1	-700.9	-95.1	1.23	-1.13	-3.31
6,170.0	6.42	272.87	6,102.2	96.0	-712.4	-96.0	1.72	-1.67	-3.35
6,262.0	5.14	265.40	6,193.8	96.0	-721.6	-96.0	1.61	-1.39	-8.12
6,355.0	4.84	268.30	6,286.4	95.5	-729.7	-95.5	0.42	-0.32	3.12
6,447.0	4.88	268.21	6,378.1	95.3	-737.5	-95.3	0.04	0.04	-0.10
6,539.0	4.26	269.80	6,469.8	95.1	-744.8	-95.1	0.69	-0.67	1.73
6,632.0	4.40	270.41	6,562.5	95.2	-751.8	-95.2	0.16	0.15	0.66
6,725.0	4.18	268.57	6,655.3	95.1	-758.8	-95.1	0.28	-0.24	-1.98
6,819.0	3.96	272.78	6,749.0	95.2	-765.4	-95.2	0.39	-0.23	4.48
6,913.0	4.70	257.67	6,842.8	94.5	-772.4	-94.5	1.44	0.79	-16.07
7,006.0	5.19	253.36	6,935.4	92.5	-780.2	-92.5	0.66	0.53	-4.63
7,100.0	5.23	253.45	7,029.0	90.1	-788.4	-90.1	0.04	0.04	0.10
7,128.7	5.02	252.26	7,057.6	89.3	-790.8	-89.3	0.81	-0.72	-4.13
BRUSHY_CANYON									
7,193.0	4.57	249.23	7,121.7	87.5	-795.9	-87.5	0.81	-0.71	-4.72
7,286.0	4.04	252.48	7,214.4	85.2	-802.5	-85.2	0.63	-0.57	3.49
7,379.0	3.91	253.71	7,307.2	83.4	-808.7	-83.4	0.17	-0.14	1.32
7,471.0	3.34	249.85	7,399.0	81.6	-814.2	-81.6	0.67	-0.62	-4.20
7,563.0	2.99	250.99	7,490.9	79.8	-819.0	-79.8	0.39	-0.38	1.24
7,655.0	2.73	241.85	7,582.8	78.0	-823.2	-78.0	0.57	-0.28	-9.93
7,747.0	3.03	235.61	7,674.6	75.6	-827.1	-75.6	0.47	0.33	-6.78
7,840.0	2.33	257.40	7,767.5	73.8	-831.0	-73.8	1.32	-0.75	23.43
7,933.0	3.16	279.90	7,860.4	73.9	-835.4	-73.9	1.45	0.89	24.19
8,025.0	3.60	285.44	7,952.3	75.1	-840.6	-75.1	0.60	0.48	6.02
8,120.0	3.12	283.07	8,047.1	76.4	-846.0	-76.4	0.53	-0.51	-2.49
8,211.0	3.25	284.83	8,138.0	77.7	-850.9	-77.7	0.18	0.14	1.93
8,303.0	2.73	285.88	8,229.8	78.9	-855.6	-78.9	0.57	-0.57	1.14



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8,396.0	2.99	285.88	8,322.7	80.2	-860.0	-80.2	0.28	0.28	0.00
8,473.9	2.15	290.77	8,400.5	81.3	-863.3	-81.3	1.11	-1.08	6.28
JABALINA_SAND									
8,490.0	1.98	292.30	8,416.6	81.5	-863.9	-81.5	1.11	-1.06	9.47
8,559.3	2.05	291.63	8,485.9	82.4	-866.1	-82.4	0.10	0.10	-0.97
JABALINA_SAND_BASE									
8,582.0	2.07	291.42	8,508.6	82.7	-866.9	-82.7	0.10	0.10	-0.92
8,676.0	1.80	295.72	8,602.5	83.9	-869.8	-83.9	0.33	-0.29	4.57
8,769.0	1.45	296.87	8,695.5	85.1	-872.2	-85.1	0.38	-0.38	1.24
8,832.0	1.09	298.17	8,758.5	85.8	-873.4	-85.8	0.57	-0.57	2.07
BC1									
8,862.0	0.92	299.15	8,788.5	86.0	-873.9	-86.0	0.57	-0.57	3.26
8,898.4	0.77	301.35	8,824.9	86.3	-874.3	-86.3	0.43	-0.42	6.05
BSPG_LIME									
8,956.0	0.53	307.41	8,882.5	86.6	-874.9	-86.6	0.43	-0.41	10.52
9,049.0	0.35	278.32	8,975.5	86.9	-875.5	-86.9	0.30	-0.19	-31.28
9,051.8	0.35	278.32	8,978.3	86.9	-875.5	-86.9	0.00	0.00	0.00
AVLN									
9,143.0	0.26	259.78	9,069.5	86.9	-876.0	-86.9	0.15	-0.10	-20.33
9,235.0	0.18	263.91	9,161.5	86.9	-876.3	-86.9	0.09	-0.09	4.49
9,327.0	0.57	132.07	9,253.5	86.6	-876.2	-86.6	0.76	0.42	-143.30
9,420.0	0.44	121.00	9,346.4	86.1	-875.5	-86.1	0.17	-0.14	-11.90
9,513.0	0.75	219.44	9,439.4	85.4	-875.6	-85.4	0.99	0.33	105.85
9,606.0	0.44	216.18	9,532.4	84.7	-876.2	-84.7	0.34	-0.33	-3.51
9,700.0	0.31	217.68	9,626.4	84.2	-876.5	-84.2	0.14	-0.14	1.60
9,792.0	0.84	181.38	9,718.4	83.3	-876.7	-83.3	0.67	0.58	-39.46
9,886.0	1.14	197.99	9,812.4	81.7	-877.0	-81.7	0.44	0.32	17.67
9,918.4	1.18	202.24	9,844.9	81.1	-877.2	-81.1	0.29	0.12	13.08
1ST_BSPG_SND									
9,978.0	1.27	209.24	9,904.4	80.0	-877.8	-80.0	0.29	0.15	11.76
10,071.0	1.58	211.61	9,997.4	78.0	-879.0	-78.0	0.34	0.33	2.55
10,154.0	1.49	211.00	10,080.3	76.1	-880.1	-76.1	0.11	-0.11	-0.73
10,198.5	1.18	257.77	10,124.9	75.5	-880.9	-75.5	2.46	-0.69	105.03
2ND_BSPG									
10,247.0	1.80	298.80	10,173.3	75.7	-882.0	-75.7	2.46	1.27	84.65
10,341.0	2.59	347.93	10,267.3	78.5	-883.8	-78.5	2.09	0.84	52.27
10,434.0	2.55	352.41	10,360.2	82.6	-884.5	-82.6	0.22	-0.04	4.82
10,440.8	2.46	354.52	10,367.0	82.9	-884.5	-82.9	1.92	-1.36	30.89
2ND_BSPG_SND									
10,527.0	1.76	36.80	10,453.1	85.8	-883.9	-85.8	1.92	-0.81	49.07
10,620.0	1.10	63.43	10,546.1	87.4	-882.3	-87.4	0.99	-0.71	28.63
10,623.4	1.09	64.26	10,549.5	87.4	-882.2	-87.4	0.62	-0.40	24.43
2ND_BSPG_S_LM_MRKR_A									
10,691.4	0.87	85.65	10,617.4	87.7	-881.1	-87.7	0.62	-0.31	31.47



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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)
2ND_BS_S_MRK_B									
10,713.0	0.84	94.28	10,639.1	87.7	-880.8	-87.7	0.62	-0.16	39.90
10,743.7	1.04	130.82	10,669.7	87.5	-880.3	-87.5	2.01	0.64	119.04
2ND_BS_S_MRKR_C									
10,805.0	2.02	160.46	10,731.0	86.1	-879.6	-86.1	2.01	1.61	48.35
10,805.3	2.02	160.46	10,731.4	86.1	-879.6	-86.1	0.00	0.00	0.00
2ND_BSPG_S_MID_SAND									
10,838.6	2.27	169.08	10,764.6	84.9	-879.2	-84.9	1.23	0.76	25.91
2ND_BSPG_S_MID_SAND_TRGT_BASE									
10,864.3	2.49	174.42	10,790.3	83.9	-879.1	-83.9	1.22	0.86	20.73
2ND_BS_TARGET_TOP									
10,882.2	2.66	177.58	10,808.2	83.1	-879.0	-83.1	1.22	0.92	17.70
2ND_BS_TARGET_BASE									
10,898.0	2.81	180.06	10,824.0	82.3	-879.0	-82.3	1.22	0.96	15.71
10,965.5	3.01	180.06	10,891.4	78.9	-879.0	-78.9	0.29	0.29	0.00
3RD_BSPG									
10,991.0	3.08	180.06	10,916.8	77.5	-879.0	-77.5	0.29	0.29	0.00
11,054.0	5.23	175.31	10,979.7	73.0	-878.8	-73.0	3.45	3.41	-7.54
11,085.0	9.14	174.70	11,010.4	69.1	-878.4	-69.1	12.62	12.61	-1.97
11,102.1	10.47	171.44	11,027.3	66.2	-878.1	-66.2	8.39	7.74	-19.06
3RD_BSPG_C_BRK_SND									
11,116.0	11.56	169.34	11,040.9	63.6	-877.6	-63.6	8.39	7.88	-15.11
11,147.0	14.07	168.11	11,071.1	56.9	-876.3	-56.9	8.14	8.10	-3.97
11,178.0	16.62	165.21	11,101.0	48.9	-874.4	-48.9	8.59	8.23	-9.35
11,209.7	19.18	158.91	11,131.2	39.7	-871.4	-39.7	10.12	8.08	-19.89
3RD_BSPG_C_BRK_SND_BASE									
11,225.0	20.48	156.42	11,145.6	34.9	-869.4	-34.9	10.12	8.49	-16.24
11,247.6	21.16	160.71	11,166.7	27.4	-866.4	-27.4	7.39	3.03	18.98
100' Heel Setback									
11,271.0	21.98	164.86	11,188.5	19.2	-863.9	-19.2	7.39	3.48	17.74
11,318.0	26.15	171.01	11,231.4	0.4	-860.0	-0.4	10.34	8.87	13.09
11,336.4	28.03	172.80	11,247.8	-7.9	-858.8	7.9	11.14	10.22	9.75
3RD_BSPG_C_SH_MRKR_BASE									
11,362.0	30.68	174.96	11,270.1	-20.3	-857.5	20.3	11.14	10.35	8.42
11,389.2	33.88	177.72	11,293.1	-34.8	-856.6	34.8	12.92	11.74	10.13
3RD_BSPG_SND									
11,410.0	36.35	179.53	11,310.1	-46.8	-856.3	46.8	12.92	11.91	8.72
11,454.0	40.40	183.22	11,344.6	-74.1	-857.0	74.1	10.57	9.20	8.39
11,501.0	45.63	184.37	11,378.9	-106.0	-859.1	106.0	11.25	11.13	2.45
11,513.6	47.16	184.07	11,387.6	-115.2	-859.8	115.2	12.27	12.14	-2.41
3BS_S_A									
11,545.5	51.04	183.36	11,408.5	-139.2	-861.4	139.2	12.27	12.15	-2.21
3BS_S_B									
11,548.0	51.34	183.31	11,410.1	-141.1	-861.5	141.1	12.27	12.16	-2.08
11,577.7	54.86	182.04	11,427.9	-164.8	-862.6	164.8	12.33	11.85	-4.27



Intrepid Survey Report



Company: Ascent Energy, LLC
Project: Lea County, NM (NAD 83 NME)
Site: (Toque) Sec-6_T-21-S_R-33-E
Well: Toque State Com #602H
Wellbore: OWB
Design: AWB

Local Co-ordinate Reference: Well Toque State Com #602H
TVD Reference: KB @ 3820.0usft (Precision 553)
MD Reference: KB @ 3820.0usft (Precision 553)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.15 Single User Db

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)
3BS_S_C									
11,601.0	57.63	181.12	11,440.8	-184.2	-863.1	184.2	12.33	11.89	-3.95
11,601.2	57.63	181.12	11,441.0	-184.4	-863.1	184.4	0.00	0.00	0.00
3BS_S_D_MRKR									
11,639.0	62.68	179.45	11,459.7	-217.2	-863.2	217.2	13.91	13.37	-4.42
11,683.4	68.42	178.45	11,478.1	-257.6	-862.5	257.6	13.08	12.91	-2.26
3BS_S_E_MRKR									
11,686.0	68.75	178.39	11,479.1	-260.0	-862.4	260.0	13.08	12.92	-2.16
11,708.7	72.58	178.44	11,486.6	-281.4	-861.8	281.4	16.91	16.91	0.20
3BS_S_F_MRKR									
11,732.0	76.53	178.48	11,492.8	-303.8	-861.2	303.8	16.91	16.91	0.19
11,773.0	80.75	179.09	11,500.9	-344.0	-860.4	344.0	10.40	10.29	1.49
11,866.0	84.92	178.65	11,512.5	-436.3	-858.6	436.3	4.51	4.48	-0.47
11,959.0	88.97	179.53	11,517.4	-529.1	-857.1	529.1	4.46	4.35	0.95
12,051.0	90.95	179.97	11,517.5	-621.1	-856.7	621.1	2.20	2.15	0.48
12,144.0	88.22	180.76	11,518.1	-714.1	-857.3	714.1	3.06	-2.94	0.85
12,237.0	88.84	180.50	11,520.5	-807.0	-858.3	807.0	0.72	0.67	-0.28
12,332.0	88.44	180.68	11,522.8	-902.0	-859.3	902.0	0.46	-0.42	0.19
12,426.0	87.34	180.50	11,526.2	-995.9	-860.2	995.9	1.19	-1.17	-0.19
12,519.0	88.22	180.15	11,529.9	-1,088.9	-860.8	1,088.9	1.02	0.95	-0.38
12,611.0	87.96	178.74	11,532.9	-1,180.8	-859.9	1,180.8	1.56	-0.28	-1.53
12,704.0	89.19	178.30	11,535.2	-1,273.7	-857.5	1,273.7	1.40	1.32	-0.47
12,797.0	88.48	179.27	11,537.1	-1,366.7	-855.5	1,366.7	1.29	-0.76	1.04
12,890.0	89.63	179.71	11,538.7	-1,459.7	-854.7	1,459.7	1.32	1.24	0.47
12,982.0	90.68	179.27	11,538.4	-1,551.7	-853.9	1,551.7	1.24	1.14	-0.48
13,074.0	90.24	179.97	11,537.7	-1,643.7	-853.3	1,643.7	0.90	-0.48	0.76
13,166.0	88.79	181.73	11,538.4	-1,735.7	-854.6	1,735.7	2.48	-1.58	1.91
13,259.0	88.75	181.73	11,540.4	-1,828.6	-857.4	1,828.6	0.04	-0.04	0.00
13,353.0	89.23	180.76	11,542.1	-1,922.6	-859.5	1,922.6	1.15	0.51	-1.03
13,445.0	88.26	181.55	11,544.1	-2,014.5	-861.3	2,014.5	1.36	-1.05	0.86
13,537.0	88.44	181.91	11,546.8	-2,106.4	-864.1	2,106.4	0.44	0.20	0.39
13,630.0	89.05	181.03	11,548.8	-2,199.4	-866.5	2,199.4	1.15	0.66	-0.95
13,722.0	89.71	180.41	11,549.8	-2,291.4	-867.6	2,291.4	0.98	0.72	-0.67
13,816.0	87.43	179.88	11,552.1	-2,385.3	-867.9	2,385.3	2.49	-2.43	-0.56
13,908.0	88.53	179.80	11,555.4	-2,477.3	-867.6	2,477.3	1.20	1.20	-0.09
14,001.0	90.68	179.27	11,556.0	-2,570.3	-866.9	2,570.3	2.38	2.31	-0.57
14,093.0	89.32	179.97	11,556.0	-2,662.3	-866.3	2,662.3	1.66	-1.48	0.76
14,187.0	89.45	180.06	11,557.0	-2,756.2	-866.3	2,756.2	0.17	0.14	0.10
14,280.0	87.65	180.59	11,559.4	-2,849.2	-866.8	2,849.2	2.02	-1.94	0.57
14,373.0	87.82	180.15	11,563.1	-2,942.1	-867.4	2,942.1	0.51	0.18	-0.47
14,466.0	89.10	179.71	11,565.6	-3,035.1	-867.3	3,035.1	1.46	1.38	-0.47
14,559.0	88.40	180.15	11,567.6	-3,128.1	-867.2	3,128.1	0.89	-0.75	0.47
14,652.0	89.10	180.06	11,569.6	-3,221.1	-867.4	3,221.1	0.76	0.75	-0.10
14,744.0	88.57	180.68	11,571.5	-3,313.0	-867.9	3,313.0	0.89	-0.58	0.67



Intrepid Survey Report



Company: Ascent Energy, LLC
Project: Lea County, NM (NAD 83 NME)
Site: (Toque) Sec-6_T-21-S_R-33-E
Well: Toque State Com #602H
Wellbore: OWB
Design: AWB

Local Co-ordinate Reference: Well Toque State Com #602H
TVD Reference: KB @ 3820.0usft (Precision 553)
MD Reference: KB @ 3820.0usft (Precision 553)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.15 Single User Db

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)
14,838.0	88.53	179.80	11,573.9	-3,407.0	-868.3	3,407.0	0.94	-0.04	-0.94
14,930.0	89.85	179.27	11,575.2	-3,499.0	-867.6	3,499.0	1.55	1.43	-0.58
15,023.0	88.79	179.80	11,576.3	-3,592.0	-866.8	3,592.0	1.27	-1.14	0.57
15,116.0	88.62	180.06	11,578.4	-3,685.0	-866.7	3,685.0	0.33	-0.18	0.28
15,208.0	88.70	179.18	11,580.5	-3,776.9	-866.1	3,776.9	0.96	0.09	-0.96
15,301.0	88.18	178.04	11,583.1	-3,869.9	-863.9	3,869.9	1.35	-0.56	-1.23
15,394.0	88.70	177.25	11,585.6	-3,962.7	-860.0	3,962.7	1.02	0.56	-0.85
15,489.0	88.88	178.13	11,587.6	-4,057.6	-856.2	4,057.6	0.95	0.19	0.93
15,581.0	89.71	180.24	11,588.7	-4,149.6	-854.9	4,149.6	2.46	0.90	2.29
15,668.0	90.02	180.24	11,588.9	-4,236.6	-855.3	4,236.6	0.36	0.36	0.00
15,762.0	89.14	178.92	11,589.6	-4,330.6	-854.6	4,330.6	1.69	-0.94	-1.40
15,855.0	89.63	180.15	11,590.6	-4,423.6	-853.8	4,423.6	1.42	0.53	1.32
15,948.0	89.45	180.50	11,591.4	-4,516.6	-854.3	4,516.6	0.42	-0.19	0.38
16,040.0	89.45	181.20	11,592.3	-4,608.6	-855.7	4,608.6	0.76	0.00	0.76
16,133.0	87.91	181.12	11,594.4	-4,701.5	-857.6	4,701.5	1.66	-1.66	-0.09
16,226.0	87.78	181.99	11,597.9	-4,794.4	-860.1	4,794.4	0.95	-0.14	0.94
16,320.0	89.05	181.99	11,600.5	-4,888.3	-863.4	4,888.3	1.35	1.35	0.00
16,413.0	91.47	182.52	11,600.1	-4,981.3	-867.0	4,981.3	2.66	2.60	0.57
16,507.0	87.91	182.35	11,600.6	-5,075.2	-871.0	5,075.2	3.79	-3.79	-0.18
16,602.0	85.41	181.99	11,606.1	-5,169.9	-874.6	5,169.9	2.66	-2.63	-0.38
16,695.0	84.79	182.26	11,614.1	-5,262.5	-878.1	5,262.5	0.73	-0.67	0.29
16,788.0	86.37	180.59	11,621.2	-5,355.2	-880.4	5,355.2	2.47	1.70	-1.80
16,880.0	88.18	179.09	11,625.6	-5,447.1	-880.1	5,447.1	2.55	1.97	-1.63
16,974.0	90.33	179.53	11,626.8	-5,541.1	-879.0	5,541.1	2.33	2.29	0.47
17,067.0	90.29	179.80	11,626.3	-5,634.1	-878.4	5,634.1	0.29	-0.04	0.29
17,160.0	89.49	179.09	11,626.5	-5,727.1	-877.5	5,727.1	1.15	-0.86	-0.76
17,253.0	89.41	178.39	11,627.4	-5,820.0	-875.5	5,820.0	0.76	-0.09	-0.75
17,345.0	90.51	178.13	11,627.5	-5,912.0	-872.7	5,912.0	1.23	1.20	-0.28
17,433.0	90.77	179.27	11,626.2	-6,020.0	-870.2	6,020.0	1.08	0.24	1.06
17,530.0	89.67	180.24	11,626.0	-6,097.0	-869.9	6,097.0	1.90	-1.43	1.26
17,622.0	90.02	180.41	11,626.2	-6,189.0	-870.4	6,189.0	0.42	0.38	0.18
17,716.0	88.31	180.85	11,627.6	-6,282.9	-871.5	6,282.9	1.88	-1.82	0.47
17,808.0	90.29	181.03	11,628.7	-6,374.9	-873.0	6,374.9	2.16	2.15	0.20
17,903.0	89.14	180.85	11,629.2	-6,469.9	-874.5	6,469.9	1.23	-1.21	-0.19
17,997.0	87.78	180.15	11,631.7	-6,563.9	-875.4	6,563.9	1.63	-1.45	-0.74
18,089.0	87.82	179.62	11,635.2	-6,655.8	-875.2	6,655.8	0.58	0.04	-0.58
18,182.0	88.26	179.45	11,638.4	-6,748.7	-874.4	6,748.7	0.51	0.47	-0.18
18,276.0	89.32	179.45	11,640.4	-6,842.7	-873.5	6,842.7	1.13	1.13	0.00
18,369.0	88.84	179.80	11,641.9	-6,935.7	-872.9	6,935.7	0.64	-0.52	0.38
18,462.0	89.76	179.88	11,643.0	-7,028.7	-872.6	7,028.7	0.99	0.99	0.09
18,557.0	89.36	178.92	11,643.7	-7,123.7	-871.7	7,123.7	1.09	-0.42	-1.01
18,650.0	89.36	179.80	11,644.8	-7,216.7	-870.6	7,216.7	0.95	0.00	0.95
18,742.0	88.79	179.88	11,646.3	-7,308.6	-870.4	7,308.6	0.63	-0.62	0.09



Intrepid Survey Report



Company:	Ascent Energy, LLC	Local Co-ordinate Reference:	Well Toque State Com #602H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3820.0usft (Precision 553)
Site:	(Toque) Sec-6_T-21-S_R-33-E	MD Reference:	KB @ 3820.0usft (Precision 553)
Well:	Toque State Com #602H	North Reference:	True
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

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)
18,833.0	87.65	179.45	11,649.1	-7,399.6	-869.8	7,399.6	1.34	-1.25	-0.47
18,926.0	88.53	179.01	11,652.2	-7,492.5	-868.6	7,492.5	1.06	0.95	-0.47
19,018.0	89.85	179.01	11,653.5	-7,584.5	-867.0	7,584.5	1.43	1.43	0.00
19,110.0	90.42	179.18	11,653.3	-7,676.5	-865.5	7,676.5	0.65	0.62	0.18
19,123.0	90.42	179.18	11,653.2	-7,689.5	-865.3	7,689.5	0.00	0.00	0.00
LAST SVY									
19,128.5	90.42	179.18	11,653.1	-7,695.0	-865.3	7,695.0	0.00	0.00	0.00
100' Toe Setback									
19,179.0	90.42	179.18	11,652.8	-7,745.5	-864.5	7,745.5	0.00	0.00	0.00
Projection to TD									

Design 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
FTP (Toque State Cor - actual wellpath misses target center by 192.7usft at 11501.0usft MD (11378.9 TVD, -106.0 N, -859.1 E) - Point	0.00	0.00	11,518.0	27.4	-860.2	549,161.50	762,125.20	32° 30' 27.600 N	103° 37' 1.636 W
PBHL (Toque State C - actual wellpath misses target center by 19.4usft at 19178.7usft MD (11652.8 TVD, -7745.2 N, -864.5 E) - Rectangle (sides W45.0 H7,773.0 D0.0)	0.91	180.01	11,634.0	-7,745.0	-859.5	541,389.27	762,178.34	32° 29' 10.691 N	103° 37' 1.625 W
LTP (Toque State Cor - actual wellpath misses target center by 20.0usft at 19128.5usft MD (11653.1 TVD, -7695.0 N, -865.3 E) - Point	0.00	0.00	11,634.0	-7,695.0	-859.5	541,439.30	762,178.00	32° 29' 11.186 N	103° 37' 1.625 W



Intrepid Survey Report



Company:	Ascent Energy, LLC	Local Co-ordinate Reference:	Well Toque State Com #602H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3820.0usft (Precision 553)
Site:	(Toque) Sec-6_T-21-S_R-33-E	MD Reference:	KB @ 3820.0usft (Precision 553)
Well:	Toque State Com #602H	North Reference:	True
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,646.5	5,585.4	TOP_DELAWARE_SAND			
5,970.8	5,904.9	CHERRY_CANYON			
7,128.7	7,057.6	BRUSHY_CANYON			
8,473.9	8,400.5	JABALINA_SAND			
8,559.3	8,485.9	JABALINA_SAND_BASE			
8,832.0	8,758.5	BC1			
8,898.4	8,824.9	BSPG_LIME			
9,051.8	8,978.3	AVLN			
9,918.4	9,844.9	1ST_BSPG_SND			
10,198.5	10,124.9	2ND_BSPG			
10,440.8	10,367.0	2ND_BSPG_SND			
10,623.4	10,549.5	2ND_BSPG_S_LM_MRKR_A			
10,691.4	10,617.4	2ND_BS_S_MRKR_B			
10,743.7	10,669.7	2ND_BS_S_MRKR_C			
10,805.3	10,731.4	2ND_BSPG_S_MID_SAND			
10,838.6	10,764.6	2ND_BSPG_S_MID_SAND_TRGT_			
10,864.3	10,790.3	2ND_BS_TARGET_TOP			
10,882.2	10,808.2	2ND_BS_TARGET_BASE			
10,965.5	10,891.4	3RD_BSPG			
11,102.1	11,027.3	3RD_BSPG_C_BRK_SND			
11,209.7	11,131.2	3RD_BSPG_C_BRK_SND_BASE			
11,336.4	11,247.8	3RD_BSPG_C_SH_MRKR_BASE			
11,389.2	11,293.1	3RD_BSPG_SND			
11,513.6	11,387.6	3BS_S_A			
11,545.5	11,408.5	3BS_S_B			
11,577.7	11,427.9	3BS_S_C			
11,601.2	11,441.0	3BS_S_D_MRKR			
11,683.4	11,478.1	3BS_S_E_MRKR			
11,708.7	11,486.6	3BS_S_F_MRKER			

Design Annotations

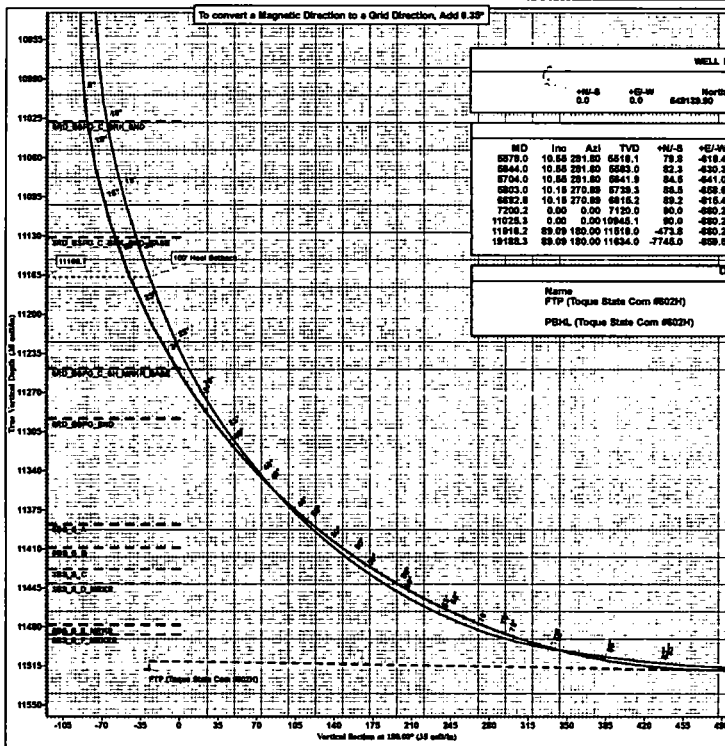
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,578.0	5,518.1	79.8	-618.4	Tie-in Point
11,247.6	11,166.7	27.4	-866.4	100' Heel Setback
19,123.0	11,653.2	-7,689.5	-865.3	LAST SVY
19,128.5	11,653.1	-7,695.0	-865.3	100' Toe Setback
19,179.0	11,652.8	-7,745.5	-864.5	Projection to TD

Checked By: _____	Approved By: _____	Date: _____
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Ascent Energy, LLC
Project: Lea County, NM (NAD 83 NME)
Site: (Toque) Sec-4, T-41-S, R-33-E
Well: Toque State Com #602H
Wellbore: OWS
Design: AWB
Let: 32° 30' 27.329 N
Long: 103° 35' 51.890 W
Pad GL: 3795.0
KB: KB @ 3820.0usft (Precision 553)

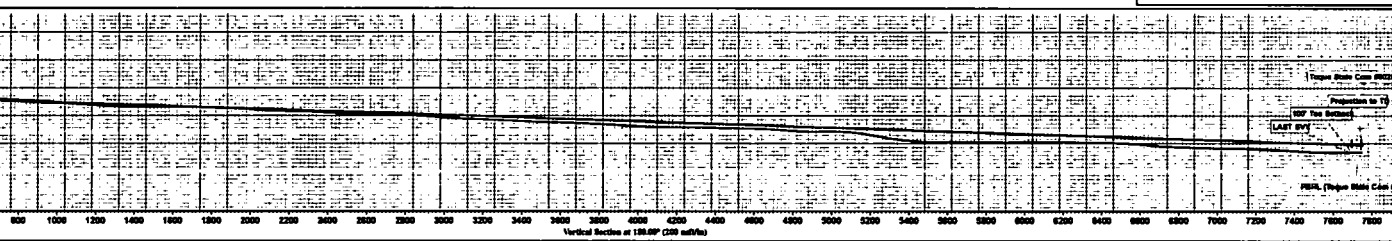
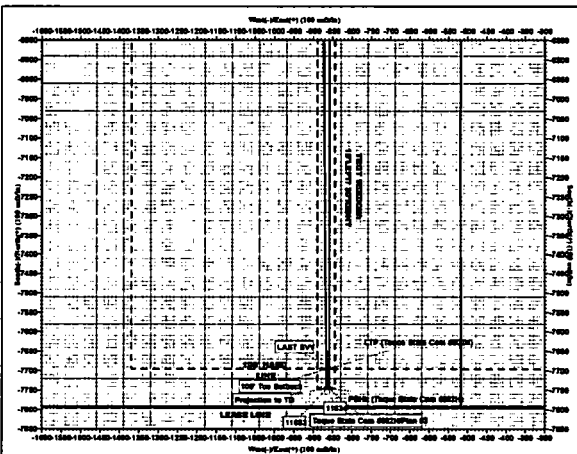
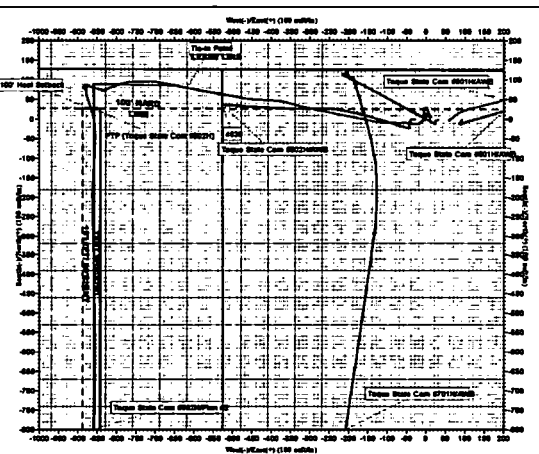
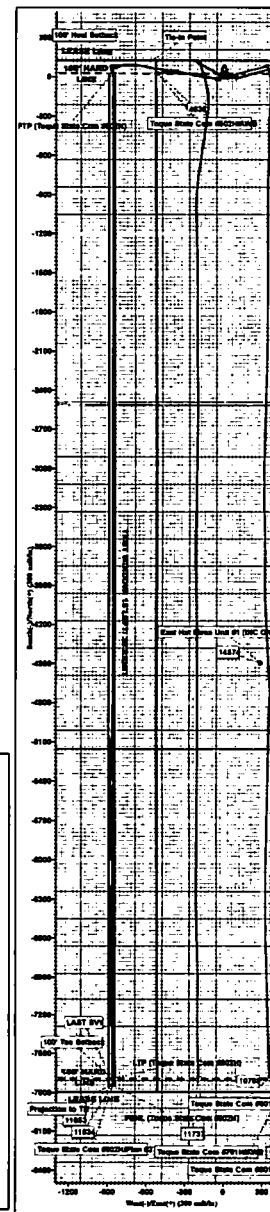
RECEIVED
FEB 12 2020
HOBBS OGD



WELL DETAILS: Toque State Com #602H									
+N-S		+E-W		Northings	Eastings	Latitude	Longitude		
0.0		0.0		549133.30	702986.60	32° 30' 27.329 N	103° 35' 51.890 W		
SECTION DETAILS									
MD	Inc	Asl	TVD	+N-S	+E-W	Diag	TPace	VSec	Annotation
5275.0	10.58	291.80	5515.1	79.5	-430.3	0.00	0.00	-78.8	Top of
5844.0	10.58	291.80	5583.0	82.3	-430.3	0.00	0.00	-82.3	Cog Pt - 60.0 hold at 5844.0 MD
5704.0	10.58	291.80	5541.9	84.5	-441.0	0.00	0.00	-84.5	Start DLS 2.00 TPO -106.98
5902.0	10.18	270.89	5739.3	85.5	-458.8	2.00	-106.98	-85.5	HOLD - 625.9 at 5902.0 MD
5872.8	10.18	270.89	5816.2	89.2	-415.4	0.00	0.00	-89.2	DROP - 2.00
7200.2	0.00	0.00	7120.0	90.0	-480.2	2.00	180.00	-90.0	HOLD - 5825.1 at 7200.2 MD
11025.3	0.00	0.00	10945.1	90.0	-480.2	0.00	0.00	-90.0	KOP - DLS 10.00 TPO 180.00
11918.2	89.29	180.00	11918.0	-473.8	-480.2	10.00	180.00	473.8	EOC - 7272.1 hold at 11918.2 MD
19183.3	89.29	180.00	11634.0	-7748.0	-489.8	0.00	0.00	7748.0	TD at 19183.3

DESIGN TARGET DETAILS									
Name	TVD	+N-S	+E-W	Northings	Eastings				
FTP (Toque State Com #602H)	11918.0	77.6	-450.2	549115.00	702125.20				
PBHL (Toque State Com #602H)	11634.0	-7748.0	-459.8	541433.35	702178.34				

DESIGN TARGET DETAILS									
TVDPath	MDPath	Formation							
5275.0	5515.1	TOP DELAWARE SAND							
5844.0	5583.0	CHERRY CANYON							
5704.0	5541.9	BRUSHY CANYON							
5902.0	5739.3	JABALINA SAND							
5872.8	5816.2	JABALINA SAND BASE							
7200.2	7120.0	RATTLENAKE SAND							
11025.3	10945.1	RATTLENAKE SAND							
11918.2	11918.0	BC1							
19183.3	11634.0	BSPO LWS							
5275.0	5515.1	1ST BSPO SAND							
5844.0	5583.0	2ND BSPO							
5704.0	5541.9	2ND BSPO SAND							
5902.0	5739.3	2ND BSPO SAND							
5872.8	5816.2	2ND BSPO SAND							
7200.2	7120.0	2ND BSPO SAND							
11025.3	10945.1	2ND BSPO SAND							
11918.2	11918.0	2ND BSPO SAND							
19183.3	11634.0	2ND BSPO SAND							
5275.0	5515.1	2ND BSPO SAND							
5844.0	5583.0	2ND BSPO SAND							
5704.0	5541.9	2ND BSPO SAND							
5902.0	5739.3	2ND BSPO SAND							
5872.8	5816.2	2ND BSPO SAND							
7200.2	7120.0	2ND BSPO SAND							
11025.3	10945.1	2ND BSPO SAND							
11918.2	11918.0	2ND BSPO SAND							
19183.3	11634.0	2ND BSPO SAND							





Operator: Ascent Energy, LLC
Well Name: Toque State Com #602H
County: Lea
State: New Mexico
Rig Name: Precision 553
API: 30-025-44788

Intrepid Directional Drilling Specialists certifies that the surveys performed on the above referenced well are true and correct MWD surveys, data provided as follows:

Surveyor: Intrepid Directional Drilling Specialists
Survey Depths: 5708' MD – 19123' MD
Projection to Bit: 19179' MD
Dates Performed: 11/08/2019 – 11/25/2019
Type of Survey: MWD

Sincerely,

James Burleson
Vice President of MWD Operations
Intrepid Directional Drilling Specialists
INTREPID