



Final MWD Survey Certification

Lea County, New Mexico

Client: Devon Energy

Well Name: Green Wave 20-32 Fed State Com 9H

Total Job No: SW-190013

API No: 30-025-40651

Start Date: 01/02/2020

End Date: 01/22/2020

Measured Start Depth: 100 feet

Measured End Depth: 22,780 feet

Vertical Section from well center at TD: 10,086.67 feet (10,136.62 @ PTB)

I, Robert Brewer, 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: 01/22/2020

Signed: *Robert R. Brewer*



Green Wave 20-32 Fed State Com 9H

Directional Survey Report

Start date: 01/02/2020

End date: 01/22/2020

Company Name: Devon Energy

Survey Company: Total Directional Services

Well Name: Green Wave 20-32 Fed State Com 9H

State/Prov: New Mexico

Job Number: SW-190013

Field: Rattlesnake

County: Lea County

Proposed Azimuth: 179.43

Rig ID: Cactus 126

Country: USA

Declination: 6.19

KB: 3379.1

API/UWI: 30-025-46051

Location: 32.028218 N, 103.4888520 W

North Reference: Grid

Latitude/Longitude: 32.0252180 / -103.4888520

Svy	TYPE	Depth	Inc	Azm	TVD	NS	EW	VS	CD	CA	DLS	CL
TieIn		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	90.00	0.00	
1		182.00	0.50	345.20	182.00	0.77	-0.20	-0.77	0.79	345.20	0.27	182.00
2		272.00	0.70	328.40	271.99	1.62	-0.59	-1.62	1.72	339.90	0.29	90.00
3		363.00	0.80	338.00	362.99	2.68	-1.12	-2.69	2.90	337.30	0.18	91.00
4		455.00	1.00	328.10	454.97	3.96	-1.79	-3.97	4.34	335.71	0.27	92.00
5		547.00	1.10	337.30	546.96	5.45	-2.55	-5.48	6.02	334.93	0.21	92.00
6		637.00	1.20	329.80	636.94	7.06	-3.36	-7.10	7.82	334.57	0.20	90.00
7		728.00	1.20	332.30	727.92	8.73	-4.28	-8.77	9.72	333.88	0.06	91.00
8		766.00	1.20	332.80	765.91	9.44	-4.65	-9.48	10.52	333.78	0.03	38.00
9		880.00	1.10	342.80	879.89	11.54	-5.52	-11.60	12.79	334.46	0.20	114.00
10		971.00	1.30	338.30	970.87	13.34	-6.16	-13.40	14.69	335.22	0.24	91.00
11		1,062.00	1.30	355.10	1,061.85	15.32	-6.63	-15.39	16.70	336.62	0.42	91.00
12		1,153.00	1.40	352.60	1,152.82	17.46	-6.86	-17.52	18.75	338.55	0.13	91.00
13		1,244.00	0.80	332.10	1,243.80	19.12	-7.30	-19.19	20.46	339.11	0.78	91.00
14		1,335.00	0.70	307.00	1,334.80	20.02	-8.04	-20.09	21.57	338.12	0.37	91.00
15		1,426.00	0.70	286.30	1,425.79	20.51	-9.02	-20.59	22.40	336.26	0.28	91.00
16		1,521.00	0.80	277.20	1,520.78	20.75	-10.23	-20.85	23.14	333.76	0.16	95.00
17		1,615.00	0.80	274.90	1,614.77	20.89	-11.54	-21.00	23.86	331.09	0.03	94.00
18		1,709.00	0.80	267.90	1,708.76	20.92	-12.85	-21.05	24.55	328.45	0.10	94.00
19		1,804.00	0.80	266.50	1,803.75	20.86	-14.17	-21.00	25.22	325.81	0.02	95.00
20		1,898.00	0.80	260.30	1,897.74	20.71	-15.47	-20.86	25.85	323.23	0.09	94.00
21		1,992.00	0.90	255.40	1,991.73	20.41	-16.83	-20.58	26.46	320.49	0.13	94.00
22		2,087.00	1.00	255.50	2,086.72	20.01	-18.36	-20.20	27.16	317.47	0.11	95.00
23		2,181.00	1.10	246.60	2,180.71	19.45	-19.98	-19.65	27.88	314.23	0.20	94.00
24		2,275.00	0.70	259.00	2,274.69	18.98	-21.37	-19.19	28.59	311.61	0.47	94.00
25		2,369.00	0.30	274.30	2,368.69	18.89	-22.18	-19.11	29.14	310.42	0.44	94.00
26		2,463.00	0.10	106.60	2,462.69	18.89	-22.35	-19.11	29.26	310.20	0.42	94.00
27		2,557.00	0.30	72.60	2,556.69	18.94	-22.03	-19.16	29.05	310.68	0.24	94.00
28		2,652.00	0.40	79.40	2,651.69	19.07	-21.47	-19.28	28.72	311.61	0.11	95.00
29		2,745.00	0.70	68.90	2,744.68	19.34	-20.62	-19.54	28.27	313.16	0.34	93.00
30		2,839.00	0.80	53.30	2,838.68	19.94	-19.56	-20.13	27.93	315.54	0.24	94.00
31		2,933.00	1.00	45.80	2,932.66	20.90	-18.45	-21.08	27.88	318.57	0.25	94.00
32		3,027.00	1.40	52.60	3,026.64	22.17	-16.95	-22.34	27.90	322.61	0.45	94.00
33		3,121.00	1.60	52.80	3,120.61	23.66	-14.99	-23.81	28.01	327.65	0.21	94.00
34		3,215.00	1.90	49.80	3,214.57	25.46	-12.75	-25.58	28.47	333.39	0.33	94.00
35		3,309.00	2.20	51.50	3,308.51	27.59	-10.15	-27.69	29.40	339.80	0.33	94.00
36		3,404.00	2.70	53.20	3,403.42	30.06	-6.93	-30.13	30.85	347.02	0.53	95.00
37		3,499.00	1.80	70.40	3,498.35	31.90	-3.73	-31.94	32.12	353.32	1.17	95.00
38		3,593.00	1.00	77.40	3,592.32	32.58	-1.54	-32.59	32.61	357.29	0.87	94.00
39		3,686.00	1.00	164.00	3,685.31	31.98	-0.53	-31.98	31.98	359.05	1.47	93.00
40		3,780.00	1.10	173.30	3,779.29	30.29	-0.20	-30.29	30.29	359.63	0.21	94.00
41		3,874.00	0.70	158.60	3,873.28	28.86	0.12	-28.86	28.86	0.24	0.49	94.00
42		3,968.00	0.80	123.10	3,967.27	27.97	0.88	-27.96	27.98	1.80	0.50	94.00
43		4,062.00	1.40	101.90	4,061.26	27.37	2.55	-27.35	27.49	5.33	0.76	94.00
44		4,157.00	2.00	104.10	4,156.21	26.73	5.29	-26.67	27.25	11.20	0.64	95.00
45		4,251.00	1.50	122.60	4,250.17	25.67	7.92	-25.59	26.86	17.15	0.80	94.00
46		4,346.00	1.50	203.10	4,345.15	23.85	8.48	-23.77	25.32	19.58	2.04	95.00
47		4,440.00	1.30	211.00	4,439.12	21.81	7.45	-21.73	23.04	18.86	0.30	94.00
48		4,534.00	1.20	173.20	4,533.10	19.92	7.02	-19.84	21.12	19.41	0.87	94.00
49		4,629.00	1.00	155.90	4,628.08	18.17	7.47	-18.10	19.65	22.36	0.41	95.00

Svy	TYPE	Depth	Inc	Azm	TVD	NS	EW	VS	CD	CA	DLS	CL
50		4,723.00	1.80	130.80	4,722.05	16.46	8.93	-16.37	18.72	28.47	1.05	94.00
51		4,817.00	2.20	129.10	4,815.99	14.35	11.44	-14.24	18.36	38.56	0.43	94.00
52		4,911.00	2.10	154.60	4,909.93	11.66	13.58	-11.53	17.90	49.35	1.01	94.00
53		5,005.00	2.60	150.30	5,003.85	8.25	15.38	-8.10	17.45	61.78	0.56	94.00
54		5,099.00	3.70	149.20	5,097.71	3.80	17.99	-3.62	18.38	78.08	1.17	94.00
55		5,193.00	1.70	147.70	5,191.60	0.01	20.29	0.19	20.29	89.97	2.13	94.00
56		5,288.00	1.00	147.40	5,286.57	-1.88	21.49	2.09	21.57	94.99	0.74	95.00
57		5,382.00	1.00	161.50	5,380.56	-3.35	22.19	3.57	22.44	98.58	0.26	94.00
58		5,476.00	0.90	159.30	5,474.54	-4.82	22.71	5.04	23.21	101.97	0.11	94.00
59		5,571.00	0.60	161.40	5,569.54	-5.98	23.13	6.21	23.89	104.51	0.32	95.00
60		5,665.00	0.60	166.80	5,663.53	-6.93	23.40	7.16	24.41	106.50	0.06	94.00
61		5,759.00	0.60	159.20	5,757.53	-7.87	23.69	8.10	24.96	108.38	0.08	94.00
62		5,853.00	0.50	146.60	5,851.52	-8.67	24.09	8.91	25.60	109.80	0.17	94.00
63		5,947.00	0.50	134.60	5,945.52	-9.30	24.61	9.55	26.31	110.71	0.11	94.00
64		6,041.00	0.40	140.00	6,039.52	-9.84	25.11	10.09	26.97	111.40	0.12	94.00
65		6,136.00	0.50	121.80	6,134.51	-10.31	25.67	10.57	27.67	111.89	0.18	95.00
66		6,230.00	0.30	102.40	6,228.51	-10.58	26.26	10.84	28.32	111.95	0.25	94.00
67		6,326.00	0.40	44.40	6,324.51	-10.40	26.74	10.66	28.69	111.25	0.37	96.00
68		6,419.00	0.60	30.50	6,417.50	-9.75	27.22	10.02	28.91	109.70	0.25	93.00
69		6,514.00	0.60	24.30	6,512.50	-8.86	27.67	9.14	29.06	107.76	0.07	95.00
70		6,608.00	0.60	16.80	6,606.49	-7.94	28.02	8.22	29.12	105.83	0.08	94.00
71		6,702.00	0.80	5.60	6,700.49	-6.82	28.23	7.10	29.04	103.58	0.26	94.00
72		6,796.00	0.80	14.40	6,794.48	-5.53	28.45	5.81	28.99	101.00	0.13	94.00
73		6,890.00	0.70	34.80	6,888.47	-4.42	28.94	4.71	29.28	98.69	0.30	94.00
74		6,984.00	0.60	33.00	6,982.46	-3.54	29.54	3.83	29.75	96.83	0.11	94.00
75		7,079.00	0.70	18.00	7,077.46	-2.57	29.99	2.87	30.10	94.90	0.21	95.00
76		7,173.00	0.60	1.90	7,171.45	-1.53	30.18	1.83	30.22	92.91	0.22	94.00
77		7,268.00	0.40	349.00	7,266.45	-0.71	30.14	1.01	30.15	91.35	0.24	95.00
78		7,362.00	0.60	340.20	7,360.45	0.07	29.91	0.22	29.91	89.86	0.23	94.00
79		7,456.00	0.40	319.60	7,454.44	0.79	29.53	-0.49	29.54	88.47	0.28	94.00
80		7,550.00	0.30	316.20	7,548.44	1.22	29.15	-0.93	29.17	87.61	0.11	94.00
81		7,644.00	0.20	349.10	7,642.44	1.55	28.94	-1.27	28.99	86.93	0.18	94.00
82		7,739.00	0.20	310.00	7,737.44	1.82	28.79	-1.54	28.84	86.38	0.14	95.00
83		7,833.00	0.10	3.00	7,831.44	2.01	28.66	-1.73	28.73	85.99	0.17	94.00
84		7,928.00	0.10	31.10	7,926.44	2.16	28.71	-1.88	28.79	85.69	0.05	95.00
85		8,022.00	0.30	208.20	8,020.44	2.02	28.64	-1.73	28.71	85.97	0.43	94.00
86		8,116.00	0.40	241.70	8,114.44	1.65	28.23	-1.36	28.28	86.66	0.24	94.00
87		8,210.00	0.50	233.40	8,208.43	1.25	27.61	-0.97	27.64	87.42	0.13	94.00
88		8,305.00	0.70	245.00	8,303.43	0.75	26.76	-0.49	26.77	88.39	0.25	95.00
89		8,399.00	0.80	234.70	8,397.42	0.13	25.70	0.12	25.70	89.71	0.18	94.00
90		8,493.00	0.80	238.90	8,491.41	-0.59	24.60	0.83	24.61	91.37	0.06	94.00
91		8,588.00	0.90	229.50	8,586.40	-1.41	23.47	1.65	23.51	93.45	0.18	95.00
92		8,682.00	0.90	217.50	8,680.39	-2.48	22.46	2.70	22.59	96.30	0.20	94.00
93		8,776.00	1.00	216.30	8,774.38	-3.73	21.52	3.94	21.84	99.82	0.11	94.00
94		8,870.00	1.30	225.70	8,868.36	-5.13	20.27	5.33	20.91	104.21	0.38	94.00
95		8,963.00	1.30	226.10	8,961.33	-6.60	18.76	6.79	19.88	109.39	0.01	93.00
96		9,058.00	1.20	218.50	9,056.31	-8.13	17.36	8.30	19.17	115.08	0.20	95.00
97		9,152.00	1.20	213.00	9,150.29	-9.72	16.21	9.88	18.90	120.95	0.12	94.00
98		9,246.00	1.40	226.30	9,244.27	-11.34	14.85	11.49	18.68	127.38	0.38	94.00
99		9,341.00	1.50	229.30	9,339.24	-12.95	13.06	13.08	18.40	134.76	0.13	95.00
100		9,436.00	1.60	230.50	9,434.20	-14.61	11.10	14.72	18.35	142.77	0.11	95.00
101		9,530.00	1.50	231.60	9,528.17	-16.21	9.12	16.30	18.60	150.63	0.11	94.00
102		9,624.00	1.50	233.60	9,622.13	-17.70	7.17	17.77	19.10	157.96	0.06	94.00
103		9,718.00	1.40	241.00	9,716.10	-18.99	5.17	19.04	19.68	164.76	0.23	94.00
104		9,813.00	1.40	243.80	9,811.08	-20.06	3.12	20.09	20.30	171.17	0.07	95.00
105		9,906.00	1.50	246.00	9,904.05	-21.06	0.98	21.07	21.08	177.32	0.12	93.00
106		10,001.00	1.50	242.60	9,999.01	-22.14	-1.26	22.12	22.17	183.25	0.09	95.00
107		10,095.00	1.30	242.40	10,092.99	-23.20	-3.29	23.16	23.43	188.08	0.21	94.00
108		10,189.00	1.20	250.00	10,186.96	-24.03	-5.16	23.98	24.58	192.13	0.21	94.00
109		10,283.00	1.00	237.70	10,280.95	-24.80	-6.78	24.73	25.71	195.29	0.33	94.00
110		10,377.00	1.10	230.60	10,374.93	-25.81	-8.17	25.73	27.08	197.56	0.17	94.00
111		10,472.00	1.50	240.00	10,469.91	-27.01	-9.95	26.91	28.79	200.22	0.48	95.00
112		10,565.00	1.80	243.40	10,562.87	-28.28	-12.31	28.15	30.84	203.53	0.34	93.00
113		10,659.00	1.80	245.30	10,656.82	-29.56	-14.97	29.40	33.13	206.87	0.06	94.00
114		10,754.00	0.80	276.60	10,751.80	-30.10	-16.99	29.93	34.57	209.44	1.25	95.00

Svy	TYPE	Depth	Inc	Azm	TVD	NS	EW	VS	CD	CA	DLS	CL
115		10,848.00	1.30	299.40	10,845.78	-29.50	-18.57	29.32	34.86	212.19	0.68	94.00
116		10,943.00	2.50	302.40	10,940.73	-27.86	-21.26	27.65	35.05	217.34	1.27	95.00
117		11,037.00	3.10	293.40	11,034.61	-25.76	-25.32	25.50	36.12	224.51	0.79	94.00
118		11,132.00	2.60	286.80	11,129.50	-24.11	-29.74	23.82	38.29	230.97	0.63	95.00
119		11,226.00	2.20	280.50	11,223.41	-23.17	-33.56	22.83	40.78	235.38	0.51	94.00
120		11,320.00	2.50	275.00	11,317.33	-22.66	-37.37	22.29	43.71	238.77	0.40	94.00
121		11,414.00	2.40	280.10	11,411.25	-22.14	-41.35	21.72	46.91	241.84	0.26	94.00
122		11,508.00	0.60	309.30	11,505.21	-21.48	-43.67	21.04	48.67	243.81	2.02	94.00
123		11,603.00	1.90	322.90	11,600.19	-19.91	-45.01	19.46	49.21	246.14	1.39	95.00
124		11,697.00	1.90	325.10	11,694.14	-17.39	-46.84	16.92	49.96	249.63	0.08	94.00
125		11,791.00	1.80	328.10	11,788.09	-14.86	-48.51	14.37	50.73	252.97	0.15	94.00
126		11,885.00	1.60	326.50	11,882.05	-12.51	-50.01	12.01	51.56	255.96	0.22	94.00
127		11,979.00	1.30	301.90	11,976.02	-10.85	-51.64	10.34	52.77	258.13	0.73	94.00
128		12,074.00	1.50	276.70	12,070.99	-10.14	-53.79	9.60	54.74	259.33	0.67	95.00
129		12,168.00	2.00	286.30	12,164.95	-9.53	-56.59	8.97	57.39	260.44	0.61	94.00
130		12,204.00	2.20	263.80	12,200.92	-9.43	-57.88	8.85	58.64	260.75	2.34	36.00
131		12,281.00	2.30	259.30	12,277.86	-9.88	-60.87	9.27	61.66	260.78	0.26	77.00
132		12,344.00	2.20	259.50	12,340.82	-10.33	-63.30	9.70	64.14	260.73	0.16	63.00
133		12,439.00	9.40	188.20	12,435.33	-18.36	-66.20	17.70	68.70	254.50	9.41	95.00
134		12,533.00	21.80	180.20	12,525.70	-43.51	-67.36	42.84	80.20	237.14	13.36	94.00
135		12,627.00	34.20	176.40	12,608.55	-87.51	-65.76	86.85	109.46	216.92	13.32	94.00
136		12,722.00	41.90	177.20	12,683.30	-145.93	-62.53	145.30	158.76	203.20	8.12	95.00
137		12,816.00	50.20	171.80	12,748.51	-213.16	-55.83	212.59	220.35	194.68	9.74	94.00
138		12,910.00	59.30	169.30	12,802.71	-288.78	-43.15	288.33	291.98	188.50	9.92	94.00
139		13,004.00	70.60	171.20	12,842.45	-372.58	-28.82	372.27	373.69	184.42	12.16	94.00
140		13,098.00	77.50	173.70	12,868.26	-462.12	-16.98	461.92	462.43	182.10	7.77	94.00
141		13,192.00	90.40	179.30	12,878.16	-555.19	-11.35	555.05	555.30	181.17	14.94	94.00
142		13,287.00	90.20	178.20	12,877.66	-650.16	-9.27	650.04	650.23	180.82	1.18	95.00
143		13,381.00	89.30	176.50	12,878.07	-744.06	-4.93	743.97	744.07	180.38	2.05	94.00
144		13,514.00	90.00	174.30	12,878.88	-876.62	5.74	876.63	876.63	179.62	1.74	133.00
145		13,608.00	90.80	175.00	12,878.23	-970.20	14.50	970.30	970.31	179.14	1.13	94.00
146		13,701.00	91.70	179.20	12,876.20	-1,063.04	19.21	1,063.18	1,063.21	178.96	4.62	93.00
147		13,795.00	90.20	178.10	12,874.64	-1,157.00	21.42	1,157.15	1,157.19	178.94	1.98	94.00
148		13,889.00	90.90	178.90	12,873.74	-1,250.96	23.88	1,251.13	1,251.19	178.91	1.13	94.00
149		13,983.00	90.00	179.10	12,873.00	-1,344.94	25.52	1,345.13	1,345.18	178.91	0.98	94.00
150		14,077.00	89.80	180.20	12,873.16	-1,438.94	26.10	1,439.13	1,439.17	178.96	1.19	94.00
151		14,171.00	88.70	178.90	12,874.39	-1,532.92	26.83	1,533.11	1,533.16	179.00	1.81	94.00
152		14,265.00	88.90	180.50	12,876.36	-1,626.90	27.33	1,627.09	1,627.13	179.04	1.72	94.00
153		14,360.00	87.50	179.80	12,879.35	-1,721.85	27.08	1,722.03	1,722.06	179.10	1.65	95.00
154		14,453.00	89.30	179.60	12,881.94	-1,814.81	27.56	1,814.99	1,815.02	179.13	1.95	93.00
155		14,547.00	88.80	179.70	12,883.50	-1,908.79	28.14	1,908.98	1,909.00	179.16	0.54	94.00
156		14,642.00	91.70	180.00	12,883.09	-2,003.78	28.39	2,003.96	2,003.98	179.19	3.07	95.00
157		14,736.00	91.30	179.90	12,880.63	-2,097.75	28.47	2,097.93	2,097.94	179.22	0.44	94.00
158		14,830.00	90.90	180.20	12,878.82	-2,191.73	28.39	2,191.90	2,191.91	179.26	0.53	94.00
159		14,924.00	90.20	180.10	12,877.92	-2,285.72	28.14	2,285.89	2,285.90	179.29	0.75	94.00
160		15,018.00	90.20	180.70	12,877.59	-2,379.72	27.48	2,379.88	2,379.88	179.34	0.64	94.00
161		15,112.00	89.40	180.90	12,877.92	-2,473.71	26.17	2,473.85	2,473.85	179.39	0.88	94.00
162		15,206.00	89.50	184.40	12,878.82	-2,567.59	21.83	2,567.68	2,567.68	179.51	3.72	94.00
163		15,300.00	90.10	185.40	12,879.15	-2,661.25	13.80	2,661.25	2,661.28	179.70	1.24	94.00
164		15,394.00	90.30	182.40	12,878.82	-2,755.02	7.40	2,754.95	2,755.03	179.85	3.20	94.00
165		15,488.00	90.90	179.30	12,877.84	-2,848.99	6.01	2,848.91	2,848.99	179.88	3.36	94.00
166		15,582.00	90.20	180.30	12,876.94	-2,942.98	6.34	2,942.90	2,942.99	179.88	1.30	94.00
167		15,676.00	89.40	177.60	12,877.26	-3,036.96	8.06	3,036.89	3,036.97	179.85	3.00	94.00
168		15,771.00	89.30	179.10	12,878.34	-3,131.91	10.80	3,131.86	3,131.93	179.80	1.58	95.00
169		15,865.00	90.60	180.60	12,878.42	-3,225.90	11.04	3,225.85	3,225.92	179.80	2.11	94.00
170		15,959.00	91.00	179.40	12,877.11	-3,319.89	11.04	3,319.84	3,319.91	179.81	1.35	94.00
171		16,053.00	90.50	182.50	12,875.88	-3,413.86	9.48	3,413.78	3,413.87	179.84	3.34	94.00
172		16,147.00	90.60	183.10	12,874.98	-3,507.74	4.89	3,507.62	3,507.75	179.92	0.65	94.00
173		16,242.00	90.40	184.50	12,874.15	-3,602.53	-1.40	3,602.33	3,602.53	180.02	1.49	95.00
174		16,336.00	90.70	182.30	12,873.25	-3,696.35	-6.98	3,696.10	3,696.36	180.11	2.36	94.00
175		16,430.00	89.20	178.40	12,873.33	-3,790.33	-7.55	3,790.07	3,790.34	180.11	4.45	94.00
176		16,524.00	88.90	178.70	12,874.89	-3,884.29	-5.17	3,884.04	3,884.29	180.08	0.45	94.00
177		16,617.00	89.70	180.50	12,876.02	-3,977.27	-4.52	3,977.03	3,977.27	180.07	2.12	93.00
178		16,711.00	91.90	178.10	12,874.71	-4,071.24	-3.38	4,071.01	4,071.24	180.05	3.46	94.00
179		16,805.00	90.90	177.50	12,872.41	-4,165.14	0.23	4,164.94	4,165.14	180.00	1.24	94.00

Svy	TYPE	Depth	Inc	Azm	TVD	NS	EW	VS	CD	CA	DLS	CL
180		16,899.00	91.70	177.80	12,870.28	-4,259.04	4.08	4,258.87	4,259.04	179.95	0.91	94.00
181		16,993.00	87.90	177.40	12,870.61	-4,352.94	8.02	4,352.80	4,352.95	179.89	4.06	94.00
182		17,088.00	87.60	176.90	12,874.34	-4,447.75	12.74	4,447.66	4,447.77	179.84	0.61	95.00
183		17,182.00	88.20	177.10	12,877.78	-4,541.56	17.66	4,541.51	4,541.59	179.78	0.67	94.00
184		17,275.00	88.30	177.60	12,880.62	-4,634.41	21.95	4,634.40	4,634.47	179.73	0.55	93.00
185		17,369.00	90.90	176.10	12,881.28	-4,728.26	27.12	4,728.29	4,728.34	179.67	3.19	94.00
186		17,463.00	91.20	175.80	12,879.56	-4,822.01	33.76	4,822.10	4,822.13	179.60	0.45	94.00
187		17,557.00	91.40	175.60	12,877.42	-4,915.72	40.80	4,915.88	4,915.89	179.52	0.30	94.00
188		17,651.00	89.20	177.10	12,876.93	-5,009.52	46.79	5,009.74	5,009.74	179.46	2.83	94.00
189		17,745.00	88.70	177.70	12,878.65	-5,103.40	51.05	5,103.66	5,103.66	179.43	0.83	94.00
190		17,840.00	90.40	179.20	12,879.40	-5,198.36	53.62	5,198.64	5,198.64	179.41	2.39	95.00
191		17,934.00	90.20	178.40	12,878.91	-5,292.34	55.59	5,292.63	5,292.63	179.40	0.88	94.00
192		18,028.00	89.80	179.30	12,878.91	-5,386.32	57.47	5,386.62	5,386.62	179.39	1.05	94.00
193		18,122.00	90.20	178.10	12,878.91	-5,480.29	59.61	5,480.61	5,480.62	179.38	1.35	94.00
194		18,216.00	89.60	178.90	12,879.07	-5,574.26	62.07	5,574.60	5,574.60	179.36	1.06	94.00
195		18,310.00	90.50	181.30	12,878.99	-5,668.25	61.90	5,668.59	5,668.59	179.37	2.73	94.00
196		18,404.00	91.10	181.30	12,877.68	-5,762.22	59.77	5,762.53	5,762.53	179.41	0.64	94.00
197		18,498.00	91.80	181.70	12,875.30	-5,856.15	57.31	5,856.43	5,856.43	179.44	0.86	94.00
198		18,592.00	88.30	177.80	12,875.22	-5,950.12	57.72	5,950.40	5,950.40	179.44	5.57	94.00
199		18,686.00	88.10	179.00	12,878.17	-6,044.04	60.34	6,044.34	6,044.34	179.43	1.29	94.00
200		18,780.00	90.60	177.60	12,879.24	-6,137.98	63.13	6,138.30	6,138.30	179.41	3.05	94.00
201		18,874.00	89.80	176.00	12,878.91	-6,231.83	68.38	6,232.20	6,232.20	179.37	1.90	94.00
202		18,968.00	90.30	176.30	12,878.83	-6,325.61	74.69	6,326.04	6,326.06	179.32	0.62	94.00
203		19,062.00	90.60	176.50	12,878.09	-6,419.43	80.59	6,419.91	6,419.93	179.28	0.38	94.00
204		19,157.00	90.30	178.50	12,877.34	-6,514.33	84.74	6,514.85	6,514.88	179.25	2.13	95.00
205		19,251.00	90.60	180.60	12,876.60	-6,608.32	85.47	6,608.84	6,608.87	179.26	2.26	94.00
206		19,346.00	90.30	182.70	12,875.86	-6,703.27	82.74	6,703.76	6,703.78	179.29	2.23	95.00
207		19,440.00	90.70	183.20	12,875.04	-6,797.14	77.90	6,797.58	6,797.59	179.34	0.68	94.00
208		19,534.00	90.00	181.70	12,874.46	-6,891.05	73.88	6,891.44	6,891.45	179.39	1.76	94.00
209		19,628.00	89.30	178.50	12,875.04	-6,985.03	73.72	6,985.42	6,985.42	179.40	3.48	94.00
210		19,722.00	89.30	178.40	12,876.19	-7,078.99	76.26	7,079.40	7,079.40	179.38	0.11	94.00
211		19,816.00	88.80	178.10	12,877.74	-7,172.94	79.13	7,173.37	7,173.37	179.37	0.62	94.00
212		19,911.00	89.00	178.20	12,879.57	-7,267.87	82.20	7,268.33	7,268.33	179.35	0.24	95.00
213		20,005.00	90.20	178.70	12,880.22	-7,361.83	84.74	7,362.31	7,362.32	179.34	1.38	94.00
214		20,099.00	90.30	178.50	12,879.81	-7,455.80	87.04	7,456.30	7,456.31	179.33	0.24	94.00
215		20,193.00	90.10	178.10	12,879.49	-7,549.76	89.83	7,550.28	7,550.29	179.32	0.48	94.00
216		20,287.00	90.00	178.30	12,879.40	-7,643.71	92.78	7,644.26	7,644.28	179.30	0.24	94.00
217		20,381.00	89.80	177.80	12,879.57	-7,737.66	95.98	7,738.23	7,738.25	179.29	0.57	94.00
218		20,475.00	89.80	177.80	12,879.90	-7,831.59	99.59	7,832.19	7,832.22	179.27	0.00	94.00
219		20,569.00	89.90	177.40	12,880.14	-7,925.50	103.52	7,926.14	7,926.18	179.25	0.44	94.00
220		20,663.00	89.60	177.00	12,880.55	-8,019.39	108.11	8,020.07	8,020.12	179.23	0.53	94.00
221		20,757.00	90.30	179.50	12,880.63	-8,113.34	110.98	8,114.04	8,114.10	179.22	2.76	94.00
222		20,852.00	90.00	179.10	12,880.39	-8,208.33	112.14	8,209.04	8,209.10	179.22	0.53	95.00
223		20,946.00	89.50	180.00	12,880.80	-8,302.33	112.88	8,303.04	8,303.09	179.22	1.10	94.00
224		21,040.00	88.80	179.70	12,882.19	-8,396.32	113.13	8,397.03	8,397.08	179.23	0.81	94.00
225		21,134.00	89.60	181.10	12,883.50	-8,490.30	112.47	8,491.00	8,491.05	179.24	1.72	94.00
226		21,228.00	90.50	180.80	12,883.42	-8,584.29	110.91	8,584.97	8,585.00	179.26	1.01	94.00
227		21,323.00	90.50	180.80	12,882.59	-8,679.27	109.59	8,679.93	8,679.97	179.28	0.00	95.00
228		21,417.00	89.80	180.60	12,882.35	-8,773.27	108.44	8,773.91	8,773.94	179.29	0.77	94.00
229		21,511.00	89.60	180.60	12,882.84	-8,867.26	107.46	8,867.89	8,867.91	179.31	0.21	94.00
230		21,606.00	91.10	181.30	12,882.26	-8,962.24	105.88	8,962.85	8,962.87	179.32	1.74	95.00
231		21,700.00	89.90	179.90	12,881.44	-9,056.23	104.90	9,056.82	9,056.84	179.34	1.96	94.00
232		21,794.00	89.80	179.90	12,881.68	-9,150.23	105.06	9,150.82	9,150.83	179.34	0.11	94.00
233		21,888.00	89.30	179.90	12,882.42	-9,244.22	105.22	9,244.81	9,244.82	179.35	0.53	94.00
234		21,982.00	89.90	180.60	12,883.08	-9,338.22	104.81	9,338.80	9,338.81	179.36	0.98	94.00
235		22,076.00	89.80	180.40	12,883.32	-9,432.22	103.99	9,432.78	9,432.79	179.37	0.24	94.00
236		22,170.00	90.10	180.50	12,883.41	-9,526.21	103.26	9,526.77	9,526.77	179.38	0.34	94.00
237		22,264.00	90.20	180.60	12,883.16	-9,620.21	102.35	9,620.75	9,620.75	179.39	0.15	94.00
238		22,358.00	90.10	180.20	12,882.91	-9,714.21	101.70	9,714.74	9,714.74	179.40	0.44	94.00
239		22,452.00	90.40	180.40	12,882.50	-9,808.20	101.20	9,808.72	9,808.73	179.41	0.38	94.00
240		22,547.00	90.60	180.50	12,881.67	-9,903.20	100.46	9,903.71	9,903.71	179.42	0.24	95.00
241		22,641.00	90.70	180.30	12,880.61	-9,997.19	99.80	9,997.69	9,997.69	179.43	0.24	94.00
242		22,730.00	88.60	177.50	12,881.15	-10,086.16	101.51	10,086.67	10,086.67	179.42	3.93	89.00
PTB	PTB	22,780.00	88.60	177.50	12,882.37	-10,136.09	103.69	10,136.62	10,136.62	179.41	0.00	50.00