



Total Directional
Services, LLC

USA Operations

Final MWD Survey Certification

"Lea County", "New Mexico"

Client: Devon Energy

Well Name: Grumpy Cat 15-22 Fed Com 211H

Total Job No: 2019-270-168

API No: 30-025-45730

Start Date: April 15th, 2019

End Date: May 17th, 2019

Measured Start Depth: 0

Measured End Depth: 21029

Vertical Section from well center at PTB: 10076.42'

HOBBS OCD
DEC 31 2019
RECEIVED

I, "Brett Yeo", 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: May 17th, 2019

Signed:

 , BRETT YEO.



Grumpy Cat 15-22 Fed Com 211H

Directional Survey Report

Start date: 04/15/2019

End date: 05/16/2019

Company Name: Devon Energy

Well Name: Grumpy Cat 15-22 Fed Com 211H

Field:

Rig ID: Cactus #168

API/UWI: 30-025-45730

State/Prov: Jal, NM

County: Lea County

Country: US

Location: Grumpy Cat Pad

Latitude/Longitude: 0 / 0

Survey Company: Total Directional Services

Job Number: 2019-270-168

Proposed Azimuth: 180

Declination: 6.41 KB: 23.5

North Reference: Grid

Svy	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	178.00	0.30	93.90	178.00	-0.03	0.46	0.03	0.47	93.90	0.17	178.00
2	269.00	0.40	101.80	269.00	-0.11	1.01	0.11	1.02	96.35	0.12	91.00
3	360.00	0.70	99.20	359.99	-0.27	1.87	0.27	1.89	98.10	0.33	91.00
4	451.00	0.90	102.90	450.98	-0.52	3.12	0.52	3.16	99.38	0.23	91.00
5	542.00	1.20	102.00	541.97	-0.87	4.75	0.87	4.83	100.42	0.33	91.00
6	635.00	1.40	103.00	634.94	-1.33	6.81	1.33	6.94	101.06	0.22	93.00
7	726.00	1.60	100.40	725.91	-1.81	9.14	1.81	9.32	101.20	0.23	91.00
8	817.00	2.00	98.80	816.87	-2.28	11.96	2.28	12.17	100.81	0.44	91.00
9	909.00	2.20	97.20	908.81	-2.75	15.30	2.75	15.54	100.19	0.23	92.00
10	999.00	2.30	110.90	998.74	-3.61	18.70	3.61	19.04	100.93	0.61	90.00
11	1,091.00	2.40	95.10	1,090.66	-4.44	22.34	4.44	22.78	101.24	0.71	92.00
12	1,169.00	2.40	96.10	1,168.59	-4.76	25.59	4.76	26.03	100.53	0.05	78.00
13	1,345.00	2.50	99.80	1,344.43	-5.80	33.04	5.80	33.54	99.96	0.11	176.00
14	1,436.00	2.10	107.90	1,435.36	-6.65	36.58	6.65	37.18	100.31	0.57	91.00
15	1,528.00	1.60	105.40	1,527.31	-7.51	39.42	7.51	40.13	100.79	0.55	92.00
16	1,620.00	1.10	99.50	1,619.29	-8.00	41.53	8.00	42.30	100.90	0.56	92.00
17	1,712.00	0.90	104.10	1,711.27	-8.32	43.10	8.32	43.90	100.93	0.23	92.00
18	1,803.00	0.90	97.70	1,802.26	-8.59	44.51	8.59	45.33	100.93	0.11	91.00
19	1,897.00	0.60	95.40	1,896.25	-8.74	45.73	8.74	46.55	100.82	0.32	94.00
20	1,992.00	0.40	101.10	1,991.25	-8.85	46.55	8.85	47.38	100.76	0.22	95.00
21	2,087.00	0.40	105.60	2,086.25	-9.00	47.19	9.00	48.04	100.80	0.03	95.00
22	2,181.00	0.30	51.60	2,180.24	-8.94	47.70	8.94	48.53	100.61	0.35	94.00
23	2,275.00	0.20	78.60	2,274.24	-8.75	48.05	8.75	48.85	100.32	0.16	94.00
24	2,370.00	0.30	92.00	2,369.24	-8.73	48.47	8.73	49.25	100.21	0.12	95.00
25	2,465.00	0.40	93.80	2,464.24	-8.76	49.05	8.76	49.82	100.12	0.11	95.00
26	2,560.00	0.30	104.80	2,559.24	-8.84	49.62	8.84	50.40	100.11	0.13	95.00
27	2,655.00	0.20	77.30	2,654.24	-8.87	50.02	8.87	50.80	100.06	0.16	95.00
28	2,749.00	0.10	119.90	2,748.24	-8.87	50.25	8.87	51.03	100.02	0.15	94.00
29	2,843.00	0.20	62.70	2,842.24	-8.84	50.47	8.84	51.24	99.94	0.18	94.00
30	2,937.00	0.30	42.70	2,936.24	-8.58	50.78	8.58	51.50	99.59	0.14	94.00
31	3,032.00	0.30	11.90	3,031.24	-8.16	51.00	8.16	51.65	99.09	0.17	95.00
32	3,126.00	0.30	344.50	3,125.23	-7.68	50.98	7.68	51.56	98.57	0.15	94.00
33	3,221.00	0.30	330.80	3,220.23	-7.22	50.80	7.22	51.31	98.09	0.08	95.00

Svy	Depth	Inc	Azm	TVD	NS	EW	VS	CD	CA	DLS	CL
34	3,315.00	0.30	351.20	3,314.23	-6.77	50.64	6.77	51.09	97.61	0.11	94.00
35	3,410.00	0.30	301.80	3,409.23	-6.39	50.39	6.39	50.79	97.23	0.26	95.00
36	3,505.00	0.40	323.30	3,504.23	-5.99	49.98	5.99	50.34	96.84	0.17	95.00
37	3,600.00	0.50	319.20	3,599.23	-5.41	49.51	5.41	49.81	96.24	0.11	95.00
38	3,694.00	0.30	346.60	3,693.22	-4.86	49.19	4.86	49.43	95.65	0.29	94.00
39	3,788.00	0.20	17.50	3,787.22	-4.47	49.18	4.47	49.38	95.19	0.17	94.00
40	3,883.00	0.30	25.90	3,882.22	-4.08	49.34	4.08	49.51	94.73	0.11	95.00
41	3,978.00	0.70	96.30	3,977.22	-3.92	50.02	3.92	50.18	94.49	0.70	95.00
42	4,072.00	0.80	109.90	4,071.21	-4.21	51.21	4.21	51.38	94.70	0.22	94.00
43	4,167.00	0.50	262.80	4,166.21	-4.49	51.42	4.49	51.62	94.99	1.33	95.00
44	4,262.00	1.20	273.80	4,261.20	-4.47	50.02	4.47	50.22	95.11	0.75	95.00
45	4,356.00	1.20	279.30	4,355.18	-4.25	48.07	4.25	48.25	95.05	0.12	94.00
46	4,450.00	2.20	294.90	4,449.13	-3.33	45.46	3.33	45.58	94.19	1.16	94.00
47	4,545.00	4.30	301.00	4,543.98	-0.73	40.75	0.73	40.76	91.02	2.24	95.00
48	4,639.00	7.30	305.10	4,637.48	4.52	32.84	-4.52	33.15	82.16	3.22	94.00
49	4,734.00	9.90	301.90	4,731.41	12.31	20.97	-12.31	24.31	59.59	2.78	95.00
50	4,829.00	11.80	297.90	4,824.71	21.17	5.45	-21.17	21.86	14.43	2.15	95.00
51	4,923.00	13.10	294.30	4,916.50	30.05	-12.76	-30.05	32.65	337.00	1.61	94.00
52	5,017.00	15.70	290.80	5,007.54	38.95	-34.36	-38.95	51.94	318.59	2.92	94.00
53	5,112.00	16.80	288.40	5,098.74	47.85	-59.40	-47.85	76.28	308.85	1.36	95.00
54	5,207.00	16.10	287.80	5,189.85	56.21	-84.97	-56.21	101.88	303.49	0.76	95.00
55	5,301.00	15.90	287.50	5,280.21	64.07	-109.66	-64.07	127.01	300.30	0.23	94.00
56	5,395.00	16.50	287.70	5,370.48	72.00	-134.66	-72.00	152.70	298.13	0.64	94.00
57	5,490.00	17.00	288.50	5,461.45	80.51	-160.68	-80.51	179.72	296.61	0.58	95.00
58	5,584.00	17.10	288.50	5,551.32	89.25	-186.82	-89.25	207.04	295.54	0.11	94.00
59	5,679.00	16.10	287.80	5,642.36	97.71	-212.61	-97.71	233.98	294.68	1.07	95.00
60	5,773.00	15.20	287.40	5,732.87	105.38	-236.77	-105.38	259.17	293.99	0.96	94.00
61	5,868.00	14.70	288.20	5,824.65	112.87	-260.11	-112.87	283.54	293.46	0.57	95.00
62	5,963.00	15.10	290.60	5,916.46	120.99	-283.14	-120.99	307.91	293.14	0.77	95.00
63	6,057.00	14.50	290.30	6,007.34	129.38	-305.64	-129.38	331.90	292.94	0.64	94.00
64	6,152.00	14.90	291.70	6,099.23	138.02	-328.14	-138.02	355.99	292.81	0.56	95.00
65	6,246.00	15.10	294.30	6,190.03	147.53	-350.53	-147.53	380.31	292.82	0.75	94.00
66	6,341.00	15.40	296.20	6,281.69	158.19	-373.13	-158.19	405.28	292.97	0.61	95.00
67	6,435.00	14.90	296.20	6,372.42	169.04	-395.17	-169.04	429.81	293.16	0.53	94.00
68	6,529.00	15.30	296.20	6,463.17	179.85	-417.14	-179.85	454.26	293.32	0.43	94.00
69	6,624.00	15.10	298.50	6,554.85	191.29	-439.26	-191.29	479.11	293.53	0.67	95.00
70	6,718.00	14.30	298.90	6,645.77	202.74	-460.19	-202.74	502.87	293.78	0.86	94.00
71	6,813.00	14.50	297.90	6,737.79	213.97	-480.97	-213.97	526.42	293.98	0.34	95.00
72	6,915.00	15.10	297.80	6,836.40	226.15	-504.01	-226.15	552.42	294.17	0.59	102.00
73	7,009.00	16.00	297.30	6,926.96	237.80	-526.35	-237.80	577.57	294.31	0.97	94.00
74	7,103.00	16.10	296.30	7,017.30	249.51	-549.55	-249.51	603.54	294.42	0.31	94.00
75	7,197.00	15.60	296.30	7,107.72	260.89	-572.56	-260.89	629.20	294.50	0.53	94.00
76	7,291.00	16.20	296.60	7,198.13	272.36	-595.62	-272.36	654.94	294.57	0.64	94.00
77	7,385.00	15.60	295.60	7,288.53	283.69	-618.74	-283.69	680.68	294.63	0.70	94.00
78	7,480.00	14.70	295.00	7,380.23	294.31	-641.18	-294.31	705.50	294.66	0.96	95.00
79	7,575.00	13.40	294.00	7,472.38	303.88	-662.17	-303.88	728.56	294.65	1.39	95.00
80	7,670.00	12.30	294.30	7,565.00	312.52	-681.45	-312.52	749.69	294.64	1.16	95.00
81	7,765.00	10.80	295.00	7,658.08	320.45	-698.74	-320.45	768.71	294.64	1.59	95.00

Svy	Depth	Inc	Azm	TVD	NS	EW	VS	CD	CA	DLS	CL
82	7,859.00	9.70	295.50	7,750.58	327.58	-713.87	-327.58	785.44	294.65	1.17	94.00
83	7,953.00	8.40	295.30	7,843.40	333.92	-727.22	-333.92	800.22	294.66	1.38	94.00
84	8,047.00	7.50	295.00	7,936.50	339.45	-738.99	-339.45	813.22	294.67	0.96	94.00
85	8,142.00	6.30	294.40	8,030.81	344.22	-749.35	-344.22	824.63	294.67	1.27	95.00
86	8,236.00	5.70	292.80	8,124.29	348.16	-758.35	-348.16	834.46	294.66	0.66	94.00
87	8,332.00	5.20	288.10	8,219.86	351.36	-766.89	-351.36	843.54	294.62	0.70	96.00
88	8,425.00	4.90	287.80	8,312.50	353.88	-774.67	-353.88	851.68	294.55	0.32	93.00
89	8,520.00	4.60	283.40	8,407.17	356.01	-782.24	-356.01	859.44	294.47	0.50	95.00
90	8,614.00	4.00	287.60	8,500.91	357.87	-789.03	-357.87	866.40	294.40	0.72	94.00
91	8,709.00	3.60	290.00	8,595.70	359.89	-794.99	-359.89	872.66	294.36	0.45	95.00
92	8,784.00	3.30	284.80	8,670.56	361.25	-799.29	-361.25	877.14	294.32	0.58	75.00
93	8,878.00	2.30	280.80	8,764.45	362.30	-803.76	-362.30	881.64	294.26	1.08	94.00
94	8,972.00	0.70	14.90	8,858.42	363.20	-805.47	-363.20	883.57	294.27	2.61	94.00
95	9,067.00	1.80	67.30	8,953.40	364.34	-803.94	-364.34	882.65	294.38	1.56	95.00
96	9,161.00	1.50	81.20	9,047.36	365.10	-801.36	-365.10	880.61	294.49	0.53	94.00
97	9,256.00	1.70	112.50	9,142.33	364.75	-798.83	-364.75	878.17	294.54	0.93	95.00
98	9,350.00	1.90	138.00	9,236.28	363.06	-796.50	-363.06	875.34	294.50	0.87	94.00
99	9,444.00	1.70	165.10	9,330.24	360.55	-795.10	-360.55	873.03	294.39	0.92	94.00
100	9,538.00	2.40	186.10	9,424.18	357.25	-794.95	-357.25	871.54	294.20	1.08	94.00
101	9,634.00	2.40	177.70	9,520.09	353.24	-795.09	-353.24	870.02	293.95	0.37	96.00
102	9,727.00	2.60	168.80	9,613.01	349.23	-794.60	-349.23	867.95	293.73	0.47	93.00
103	9,821.00	1.50	183.90	9,706.95	345.91	-794.27	-345.91	866.32	293.53	1.29	94.00
104	9,915.00	1.60	151.80	9,800.91	343.52	-793.73	-343.52	864.88	293.40	0.92	94.00
105	10,009.00	1.70	131.60	9,894.87	341.44	-792.07	-341.44	862.53	293.32	0.62	94.00
106	10,104.00	2.50	88.90	9,989.82	340.55	-788.94	-340.55	859.30	293.35	1.79	95.00
107	10,158.00	2.10	89.20	10,043.77	340.58	-786.78	-340.58	857.33	293.41	0.74	54.00
108	10,291.00	7.30	154.70	10,176.34	332.97	-780.72	-332.97	848.76	293.10	5.04	133.00
109	10,387.00	13.60	172.40	10,270.72	316.25	-776.62	-316.25	838.54	292.16	7.29	96.00
110	10,434.00	17.50	178.00	10,316.00	303.70	-775.64	-303.70	832.98	291.38	8.88	47.00
111	10,481.00	20.10	182.80	10,360.49	288.57	-775.79	-288.57	827.72	290.40	6.43	47.00
112	10,528.00	22.50	183.60	10,404.27	271.52	-776.75	-271.52	822.84	289.27	5.14	47.00
113	10,575.00	24.80	182.20	10,447.32	252.70	-777.69	-252.70	817.71	288.00	5.04	47.00
114	10,622.00	27.80	181.80	10,489.45	231.89	-778.41	-231.89	812.22	286.59	6.39	47.00
115	10,670.00	30.10	183.00	10,531.45	208.68	-779.39	-208.68	806.85	284.99	4.94	48.00
116	10,717.00	33.50	182.00	10,571.39	183.94	-780.46	-183.94	801.85	283.26	7.32	47.00
117	10,765.00	41.50	178.10	10,609.45	154.75	-780.40	-154.75	795.59	281.22	17.38	48.00
118	10,812.00	50.60	174.10	10,642.04	121.05	-778.01	-121.05	787.37	278.84	20.30	47.00
119	10,859.00	62.00	173.30	10,668.07	82.25	-773.71	-82.25	778.07	276.07	24.30	47.00
120	10,890.00	69.80	173.90	10,680.72	54.15	-770.56	-54.15	772.46	274.02	25.22	31.00
121	10,930.00	79.20	174.70	10,691.40	15.84	-766.74	-15.84	766.91	271.18	23.58	40.00
122	10,961.00	83.10	174.80	10,696.17	-14.66	-763.94	14.66	764.08	268.90	12.58	31.00
123	10,993.00	84.50	175.10	10,699.63	-46.35	-761.14	46.35	762.55	266.52	4.47	32.00
124	11,024.00	86.60	174.80	10,702.03	-77.13	-758.42	77.13	762.33	264.19	6.84	31.00
125	11,119.00	88.40	175.30	10,706.17	-171.68	-750.23	171.68	769.62	257.11	1.97	95.00
126	11,212.00	89.70	175.40	10,707.72	-264.36	-742.69	264.36	788.34	250.41	1.40	93.00
127	11,306.00	89.80	176.60	10,708.13	-358.13	-736.14	358.13	818.63	244.06	1.28	94.00
128	11,400.00	89.70	177.90	10,708.54	-452.02	-731.63	452.02	860.00	238.29	1.39	94.00
129	11,494.00	90.40	180.30	10,708.45	-546.00	-730.15	546.00	911.72	233.21	2.66	94.00

Svy	Depth	Inc	Azm	TVD	NS	EW	VS	CD	CA	DLS	CL
130	11,589.00	90.30	180.40	10,707.87	-641.00	-730.73	641.00	972.03	228.74	0.15	95.00
131	11,683.00	89.60	180.60	10,707.96	-734.99	-731.55	734.99	1,037.01	224.87	0.77	94.00
132	11,779.00	92.10	180.30	10,706.53	-830.97	-732.30	830.97	1,107.60	221.39	2.62	96.00
133	11,873.00	91.00	180.40	10,703.99	-924.94	-732.88	924.94	1,180.09	218.39	1.18	94.00
134	11,967.00	89.70	180.80	10,703.42	-1,018.93	-733.86	1,018.93	1,255.69	215.76	1.45	94.00
135	12,062.00	88.20	180.40	10,705.16	-1,113.90	-734.86	1,113.90	1,334.46	213.41	1.63	95.00
136	12,156.00	89.80	179.60	10,706.80	-1,207.88	-734.86	1,207.88	1,413.86	211.32	1.90	94.00
137	12,251.00	91.00	179.40	10,706.13	-1,302.88	-734.03	1,302.88	1,495.42	209.40	1.28	95.00
138	12,345.00	90.30	179.90	10,705.07	-1,396.87	-733.45	1,396.87	1,577.72	207.70	0.92	94.00
139	12,439.00	90.80	179.60	10,704.16	-1,490.86	-733.04	1,490.86	1,661.33	206.18	0.62	94.00
140	12,534.00	89.70	179.90	10,703.75	-1,585.86	-732.63	1,585.86	1,746.91	204.80	1.20	95.00
141	12,629.00	91.70	179.70	10,702.59	-1,680.85	-732.30	1,680.85	1,833.44	203.54	2.12	95.00
142	12,724.00	91.10	179.60	10,700.27	-1,775.82	-731.72	1,775.82	1,920.66	202.39	0.64	95.00
143	12,819.00	90.00	179.40	10,699.36	-1,870.81	-730.89	1,870.81	2,008.51	201.34	1.18	95.00
144	12,914.00	90.00	178.50	10,699.36	-1,965.79	-729.15	1,965.79	2,096.66	200.35	0.95	95.00
145	13,009.00	89.10	178.10	10,700.10	-2,060.74	-726.33	2,060.74	2,185.00	199.42	1.04	95.00
146	13,103.00	90.20	178.90	10,700.68	-2,154.71	-723.87	2,154.71	2,273.05	198.57	1.45	94.00
147	13,198.00	90.60	178.70	10,700.01	-2,249.68	-721.88	2,249.68	2,362.67	197.79	0.47	95.00
148	13,292.00	90.90	178.60	10,698.78	-2,343.65	-719.67	2,343.65	2,451.65	197.07	0.34	94.00
149	13,386.00	90.20	178.70	10,697.88	-2,437.62	-717.45	2,437.62	2,541.01	196.40	0.75	94.00
150	13,481.00	89.50	180.40	10,698.13	-2,532.61	-716.71	2,532.61	2,632.07	195.80	1.94	95.00
151	13,575.00	90.60	181.00	10,698.05	-2,626.60	-717.85	2,626.60	2,722.93	195.29	1.33	94.00
152	13,669.00	90.70	181.30	10,696.98	-2,720.58	-719.74	2,720.58	2,814.17	194.82	0.34	94.00
153	13,764.00	89.70	181.70	10,696.65	-2,815.54	-722.23	2,815.54	2,906.70	194.39	1.13	95.00
154	13,859.00	90.20	180.80	10,696.73	-2,910.52	-724.30	2,910.52	2,999.29	193.97	1.08	95.00
155	13,954.00	88.90	181.10	10,697.48	-3,005.50	-725.87	3,005.50	3,091.91	193.58	1.40	95.00
156	14,048.00	90.20	181.10	10,698.22	-3,099.48	-727.68	3,099.48	3,183.75	193.21	1.38	94.00
157	14,142.00	90.20	180.90	10,697.89	-3,193.46	-729.32	3,193.46	3,275.68	192.86	0.21	94.00
158	14,237.00	90.20	181.20	10,697.56	-3,288.45	-731.06	3,288.45	3,368.73	192.53	0.32	95.00
159	14,331.00	90.00	181.40	10,697.39	-3,382.42	-733.19	3,382.42	3,460.98	192.23	0.30	94.00
160	14,426.00	89.10	181.60	10,698.14	-3,477.39	-735.68	3,477.39	3,554.35	191.95	0.97	95.00
161	14,521.00	89.20	181.10	10,699.55	-3,572.35	-737.92	3,572.35	3,647.77	191.67	0.54	95.00
162	14,616.00	89.10	180.30	10,700.96	-3,667.33	-739.08	3,667.33	3,741.06	191.39	0.85	95.00
163	14,710.00	89.60	177.70	10,702.02	-3,761.30	-737.44	3,761.30	3,832.91	191.09	2.82	94.00
164	14,806.00	90.60	178.10	10,701.86	-3,857.24	-733.92	3,857.24	3,926.44	190.77	1.12	96.00
165	14,901.00	91.20	177.90	10,700.36	-3,952.17	-730.60	3,952.17	4,019.13	190.47	0.67	95.00
166	14,995.00	91.00	177.70	10,698.56	-4,046.08	-727.00	4,046.08	4,110.87	190.19	0.30	94.00
167	15,090.00	90.70	177.20	10,697.15	-4,140.97	-722.77	4,140.97	4,203.58	189.90	0.61	95.00
168	15,185.00	92.00	177.70	10,694.91	-4,235.85	-718.54	4,235.85	4,296.36	189.63	1.47	95.00
169	15,279.00	91.70	177.90	10,691.88	-4,329.73	-714.94	4,329.73	4,388.36	189.38	0.38	94.00
170	15,373.00	90.50	179.50	10,690.07	-4,423.69	-712.81	4,423.69	4,480.75	189.15	2.13	94.00
171	15,468.00	89.60	179.50	10,689.99	-4,518.68	-711.98	4,518.68	4,574.43	188.95	0.95	95.00
172	15,562.00	91.10	180.00	10,689.42	-4,612.68	-711.57	4,612.68	4,667.24	188.77	1.68	94.00
173	15,657.00	91.00	179.50	10,687.68	-4,707.66	-711.15	4,707.66	4,761.07	188.59	0.54	95.00
174	15,752.00	90.60	179.50	10,686.35	-4,802.65	-710.32	4,802.65	4,854.89	188.41	0.42	95.00
175	15,846.00	92.30	180.70	10,683.97	-4,896.61	-710.49	4,896.61	4,947.89	188.26	2.21	94.00
176	15,940.00	91.80	180.90	10,680.61	-4,990.54	-711.80	4,990.54	5,041.05	188.12	0.57	94.00
177	16,035.00	91.20	181.10	10,678.12	-5,085.49	-713.46	5,085.49	5,135.30	187.99	0.67	95.00

Svy	Depth	Inc	Azm	TVD	NS	EW	VS	CD	CA	DLS	CL
178	16,129.00	91.20	181.00	10,676.15	-5,179.46	-715.18	5,179.46	5,228.60	187.86	0.11	94.00
179	16,224.00	90.10	181.50	10,675.07	-5,274.43	-717.25	5,274.43	5,322.97	187.74	1.27	95.00
180	16,318.00	90.20	181.40	10,674.83	-5,368.40	-719.63	5,368.40	5,416.41	187.63	0.15	94.00
181	16,412.00	89.10	181.60	10,675.40	-5,462.36	-722.09	5,462.36	5,509.88	187.53	1.19	94.00
182	16,507.00	89.20	181.50	10,676.81	-5,557.31	-724.66	5,557.31	5,604.36	187.43	0.15	95.00
183	16,600.00	89.10	181.10	10,678.19	-5,650.28	-726.77	5,650.28	5,696.83	187.33	0.44	93.00
184	16,694.00	88.60	181.10	10,680.08	-5,744.24	-728.57	5,744.24	5,790.26	187.23	0.53	94.00
185	16,789.00	88.00	181.00	10,682.90	-5,839.19	-730.31	5,839.19	5,884.68	187.13	0.64	95.00
186	16,884.00	87.70	180.40	10,686.46	-5,934.11	-731.47	5,934.11	5,979.02	187.03	0.71	95.00
187	16,978.00	89.10	179.60	10,689.09	-6,028.07	-731.47	6,028.07	6,072.29	186.92	1.72	94.00
188	17,073.00	89.40	179.10	10,690.33	-6,123.06	-730.40	6,123.06	6,166.47	186.80	0.61	95.00
189	17,167.00	89.30	178.90	10,691.40	-6,217.04	-728.76	6,217.04	6,259.60	186.69	0.24	94.00
190	17,262.00	90.10	178.20	10,691.89	-6,312.00	-726.35	6,312.00	6,353.66	186.56	1.12	95.00
191	17,357.00	90.00	177.90	10,691.81	-6,406.95	-723.12	6,406.95	6,447.63	186.44	0.33	95.00
192	17,452.00	90.70	178.50	10,691.23	-6,501.90	-720.13	6,501.90	6,541.66	186.32	0.97	95.00
193	17,546.00	90.70	178.70	10,690.08	-6,595.86	-717.84	6,595.86	6,634.81	186.21	0.21	94.00
194	17,641.00	91.10	178.50	10,688.59	-6,690.82	-715.52	6,690.82	6,728.97	186.10	0.47	95.00
195	17,735.00	91.50	178.10	10,686.46	-6,784.76	-712.73	6,784.76	6,822.09	186.00	0.60	94.00
196	17,830.00	93.50	180.90	10,682.31	-6,879.65	-711.90	6,879.65	6,916.38	185.91	3.62	95.00
197	17,925.00	92.80	180.80	10,677.09	-6,974.49	-713.31	6,974.49	7,010.88	185.84	0.74	95.00
198	18,018.00	90.60	182.40	10,674.33	-7,067.41	-715.90	7,067.41	7,103.57	185.78	2.92	93.00
199	18,113.00	90.40	182.60	10,673.50	-7,162.31	-720.05	7,162.31	7,198.42	185.74	0.30	95.00
200	18,208.00	89.10	182.90	10,673.92	-7,257.20	-724.60	7,257.20	7,293.29	185.70	1.40	95.00
201	18,302.00	89.40	182.40	10,675.15	-7,351.09	-728.95	7,351.09	7,387.15	185.66	0.62	94.00
202	18,397.00	89.80	182.10	10,675.81	-7,446.02	-732.68	7,446.02	7,481.98	185.62	0.53	95.00
203	18,492.00	90.90	182.50	10,675.23	-7,540.94	-736.49	7,540.94	7,576.82	185.58	1.23	95.00
204	18,587.00	88.90	182.30	10,675.40	-7,635.85	-740.47	7,635.85	7,671.67	185.54	2.12	95.00
205	18,681.00	89.10	181.90	10,677.04	-7,729.77	-743.91	7,729.77	7,765.49	185.50	0.48	94.00
206	18,776.00	90.60	183.00	10,677.29	-7,824.68	-747.97	7,824.68	7,860.35	185.46	1.96	95.00
207	18,871.00	88.10	181.90	10,678.36	-7,919.58	-752.04	7,919.58	7,955.20	185.42	2.87	95.00
208	18,966.00	88.60	182.80	10,681.10	-8,014.46	-755.93	8,014.46	8,050.03	185.39	1.08	95.00
209	19,060.00	87.60	181.20	10,684.22	-8,108.34	-759.21	8,108.34	8,143.81	185.35	2.01	94.00
210	19,158.00	88.90	178.50	10,687.21	-8,206.29	-758.95	8,206.29	8,241.31	185.28	3.06	98.00
211	19,253.00	88.60	177.40	10,689.28	-8,301.20	-755.55	8,301.20	8,335.52	185.20	1.20	95.00
212	19,348.00	90.40	177.40	10,690.11	-8,396.10	-751.24	8,396.10	8,429.64	185.11	1.89	95.00
213	19,442.00	90.30	177.00	10,689.54	-8,489.98	-746.65	8,489.98	8,522.75	185.03	0.44	94.00
214	19,537.00	90.10	176.60	10,689.21	-8,584.83	-741.35	8,584.83	8,616.78	184.94	0.47	95.00
215	19,631.00	89.90	176.10	10,689.21	-8,678.64	-735.37	8,678.64	8,709.74	184.84	0.57	94.00
216	19,726.00	90.20	178.90	10,689.12	-8,773.54	-731.22	8,773.54	8,803.96	184.76	2.96	95.00
217	19,821.00	89.30	178.30	10,689.54	-8,868.51	-728.90	8,868.51	8,898.42	184.70	1.14	95.00
218	19,915.00	90.50	179.60	10,689.70	-8,962.49	-727.18	8,962.49	8,991.94	184.64	1.88	94.00
219	20,009.00	90.60	181.00	10,688.80	-9,056.48	-727.67	9,056.48	9,085.67	184.59	1.49	94.00
220	20,101.00	89.60	180.40	10,688.64	-9,148.48	-728.79	9,148.48	9,177.46	184.55	1.27	92.00
221	20,198.00	90.90	180.60	10,688.21	-9,245.47	-729.64	9,245.47	9,274.22	184.51	1.36	97.00
222	20,293.00	90.20	180.20	10,687.30	-9,340.46	-730.30	9,340.46	9,368.97	184.47	0.85	95.00
223	20,388.00	89.50	180.10	10,687.55	-9,435.46	-730.55	9,435.46	9,463.70	184.43	0.74	95.00
224	20,482.00	89.70	179.40	10,688.21	-9,529.46	-730.14	9,529.46	9,557.39	184.38	0.77	94.00
225	20,577.00	91.10	180.40	10,687.54	-9,624.45	-729.98	9,624.45	9,652.09	184.34	1.81	95.00

Svy	Depth	Inc	Azm	TVD	NS	EW	VS	CD	CA	DLS	CL
226	20,671.00	90.80	180.40	10,685.99	-9,718.43	-730.63	9,718.43	9,745.86	184.30	0.32	94.00
227	20,766.00	90.50	180.00	10,684.91	-9,813.43	-730.96	9,813.43	9,840.61	184.26	0.53	95.00
228	20,861.00	89.90	179.60	10,684.58	-9,908.43	-730.63	9,908.43	9,935.33	184.22	0.76	95.00
229	20,956.00	89.80	179.90	10,684.83	-10,003.42	-730.22	10,003.42	10,030.04	184.18	0.33	95.00
230	20,973.00	89.20	179.70	10,684.97	-10,020.42	-730.16	10,020.42	10,046.99	184.17	3.72	17.00
PTB	21,029.00	89.20	179.70	10,685.76	-10,076.42	-729.87	10,076.42	10,102.82	184.14	0.00	56.00