

*Oceanography Branch CTD Data Report*  
*CTD\_REPORT\_2017001GU*

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**DATE: July 18, 2017**

# CTD\_REPORT\_2017001GU.pdf

## Oceans and Climate Branch CTD Data Report

NOAA Fisheries Service  
Northeast Fisheries Science Center  
Woods Hole, MA 02543

GU 1701  
2017 Spring ECOMON Survey  
Data Coverage: May 16 – June 07, 2017  
Mid Atlantic Bight, Georges Bank, and Gulf of Maine

This report presents a summary of surface and bottom temperature and salinity data collected during the Northeast Fisheries Science Center's 2017 ECOMON Survey aboard the NOAA Ship *Gordon Gunter*. All data was obtained with a Seabird Electronics SBE Model 9/11+ CTD (s/n 0420) and a NMFS SBE19+V2 Seacat profiling CTD (s/n 7143). Salt water samples were collected for the purpose of calibrating the conductivity cell.

The SBE19+ was deployed on 134 double oblique bongo casts and 8 vertical and water sampling casts. The SBE9/11+ was used successfully on 31 stations. Data presented here have been audited; however, corrections and/or updates may be applied at a later time.

The most recent and complete station data can be found in an [NODCformatted ASCII file](#).

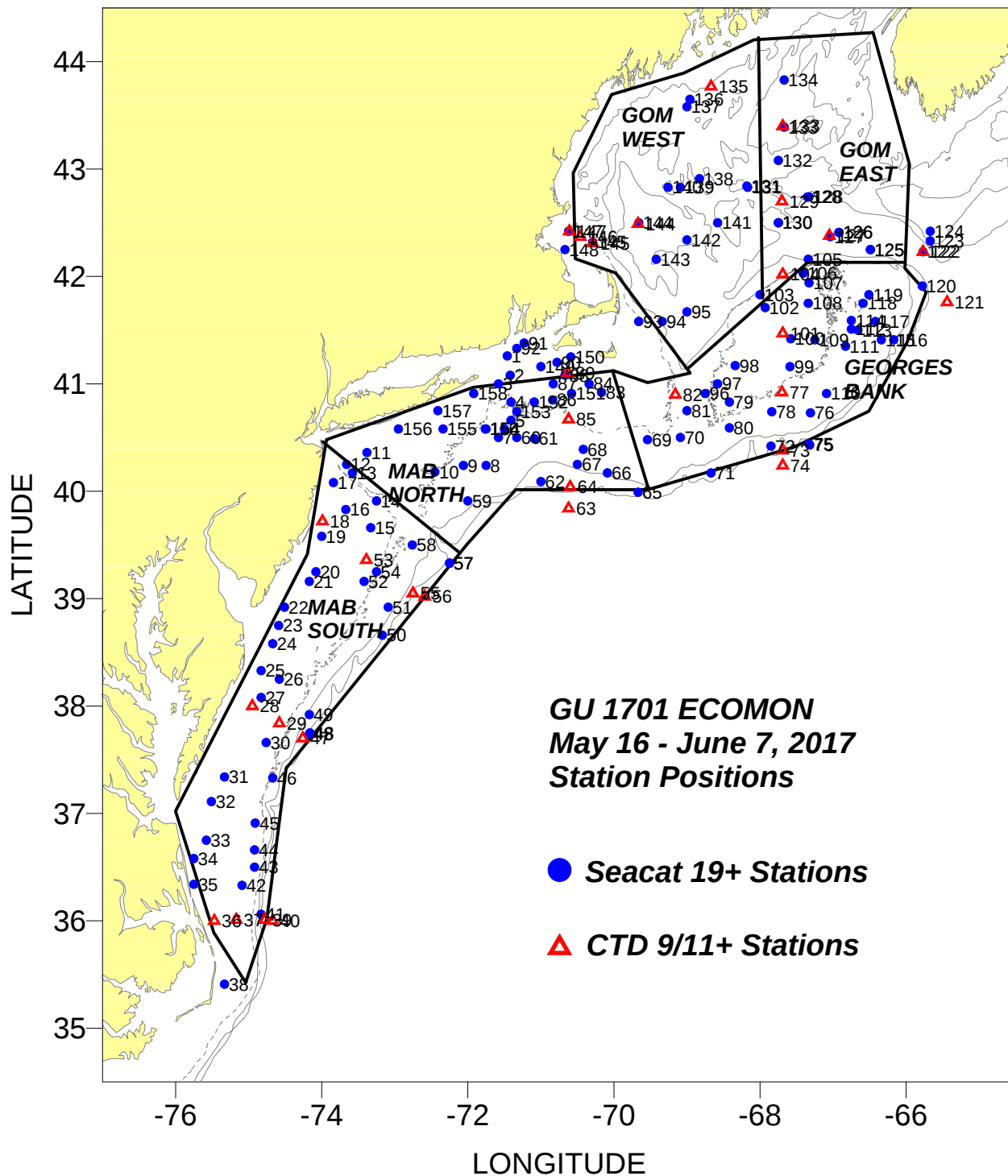
This report may be viewed on the [Oceans and Climate Branch website](#)

choose: **2017 Cruises**

**MAY\_ECOMON\_GU1701**

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Revised: July 18, 2017



**Areal average surface and bottom temperature/salinity and temperature/salinity anomalies for the  
GU1701 ECOMON Survey  
May 16 - June 7, 2017**

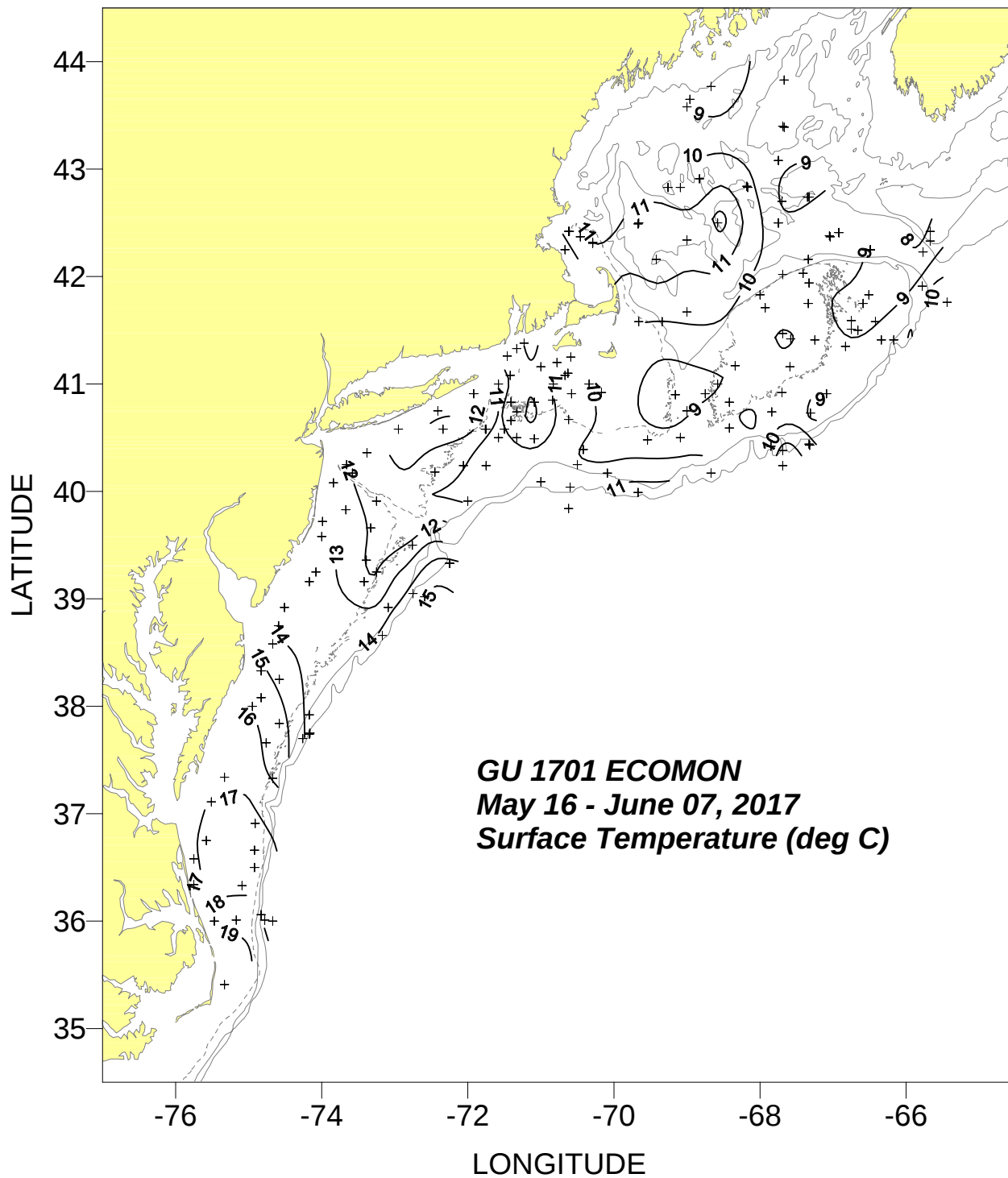
|                       |     | SURFACE |       |         |      |      |      | BOTTOM |       |         |      |      |      |         |
|-----------------------|-----|---------|-------|---------|------|------|------|--------|-------|---------|------|------|------|---------|
| CRUISE                | CD  | #obs    | T/S   | Anomaly | SDV1 | SDV2 | Flag | #obs   | T/S   | Anomaly | SDV1 | SDV2 | Flag | Purpose |
| Western Gulf of Maine |     |         |       |         |      |      |      |        |       |         |      |      |      |         |
| gu1701                | 155 | 19      | 10.42 | 0.11    | 0.23 | 0.87 | 0    | 17     | 6.49  | 1.08    | 0.20 | 0.56 | 0    | 22      |
| gu1701                | 155 | 19      | 31.83 | -0.32   | 0.10 | 0.49 | 0    | 17     | 33.07 | -0.21   | 0.07 | 0.21 | 0    | 22      |
| Eastern Gulf of Maine |     |         |       |         |      |      |      |        |       |         |      |      |      |         |
| gu1701                | 154 | 17      | 9.50  | 0.38    | 0.24 | 0.62 | 0    | 11     | 8.77  | 1.30    | 0.35 | 0.61 | 0    | 22      |
| gu1701                | 154 | 17      | 32.02 | -0.37   | 0.11 | 0.19 | 0    | 11     | 34.41 | -0.10   | 0.08 | 0.33 | 0    | 22      |
| Georges Bank          |     |         |       |         |      |      |      |        |       |         |      |      |      |         |
| gu1701                | 149 | 32      | 9.15  | 0.20    | 0.22 | 0.94 | 0    | 32     | 8.59  | 0.70    | 0.23 | 0.70 | 0    | 22      |
| gu1701                | 149 | 32      | 32.64 | -0.25   | 0.08 | 0.30 | 0    | 32     | 32.97 | -0.22   | 0.08 | 0.25 | 0    | 22      |
| MAB North             |     |         |       |         |      |      |      |        |       |         |      |      |      |         |
| gu1701                | 145 | 32      | 11.13 | -0.10   | 0.29 | 0.65 | 0    | 32     | 8.61  | 1.07    | 0.31 | 1.63 | 0    | 22      |
| gu1701                | 145 | 32      | 32.40 | -0.11   | 0.13 | 0.57 | 0    | 32     | 33.13 | -0.19   | 0.11 | 0.32 | 0    | 22      |
| MAB South             |     |         |       |         |      |      |      |        |       |         |      |      |      |         |
| gu1701                | 139 | 46      | 14.82 | 0.78    | 0.27 | 1.09 | 0    | 43     | 9.88  | 0.84    | 0.31 | 1.50 | 0    | 22      |
| gu1701                | 139 | 46      | 32.30 | 0.06    | 0.16 | 0.99 | 0    | 43     | 33.35 | -0.12   | 0.11 | 0.38 | 0    | 22      |

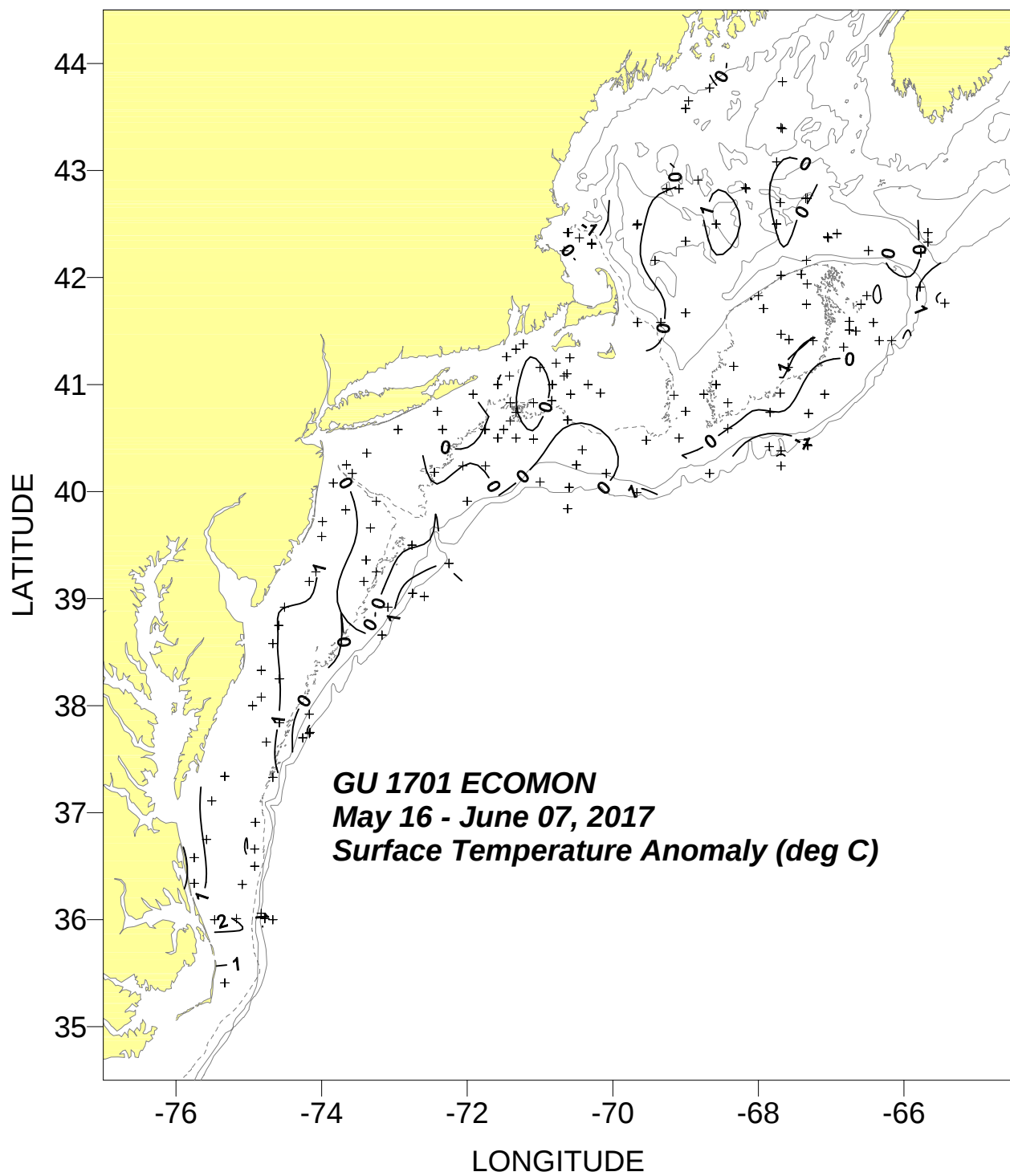
"CRUISE", the code name for a cruise: "CD", the calendar mid-date of all the stations within a region for a cruise:

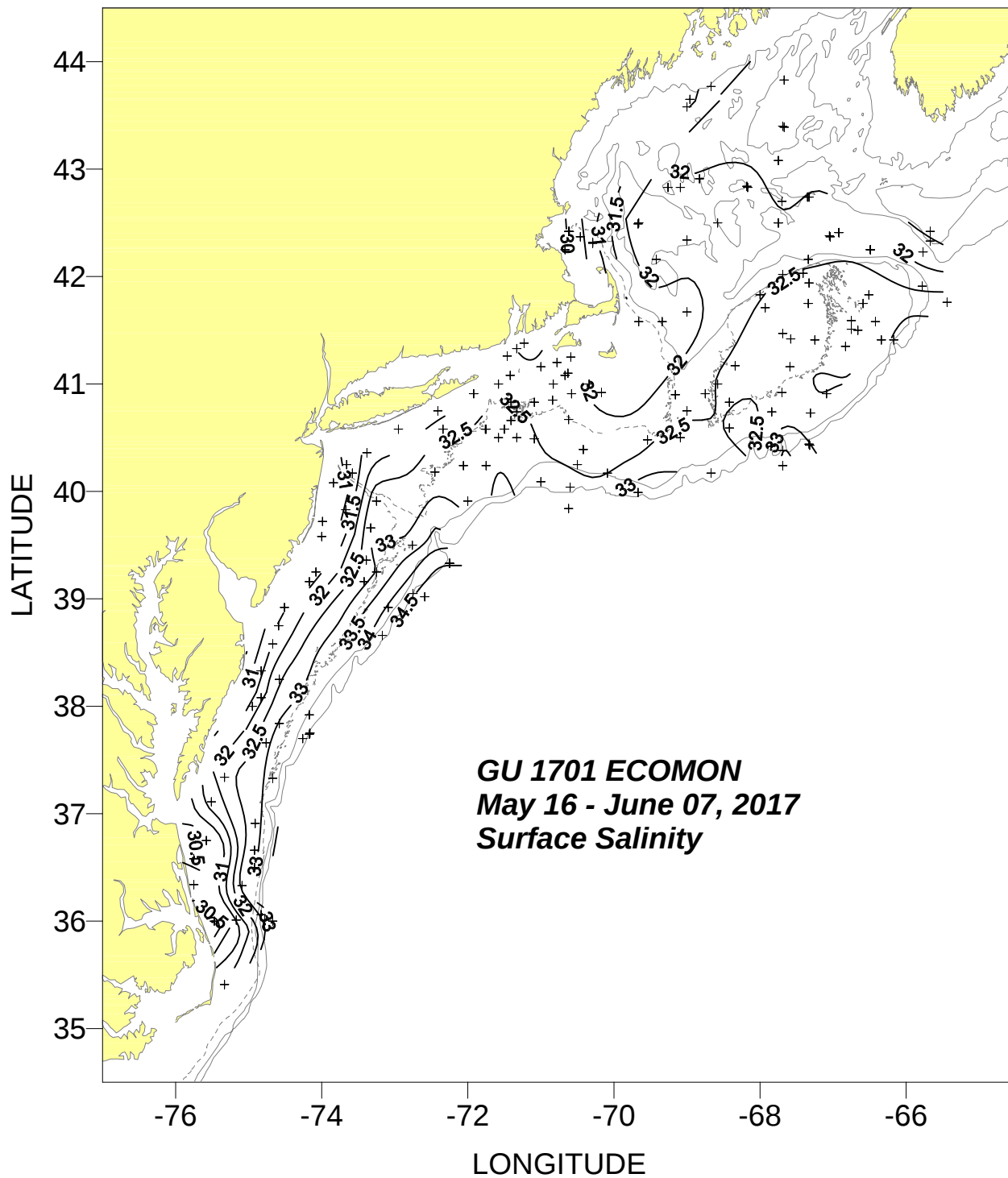
"#obs", the number of observations include in each average: "T/S", the areal average temp/salt: "Anomaly", the areal average temp/salt anomaly:

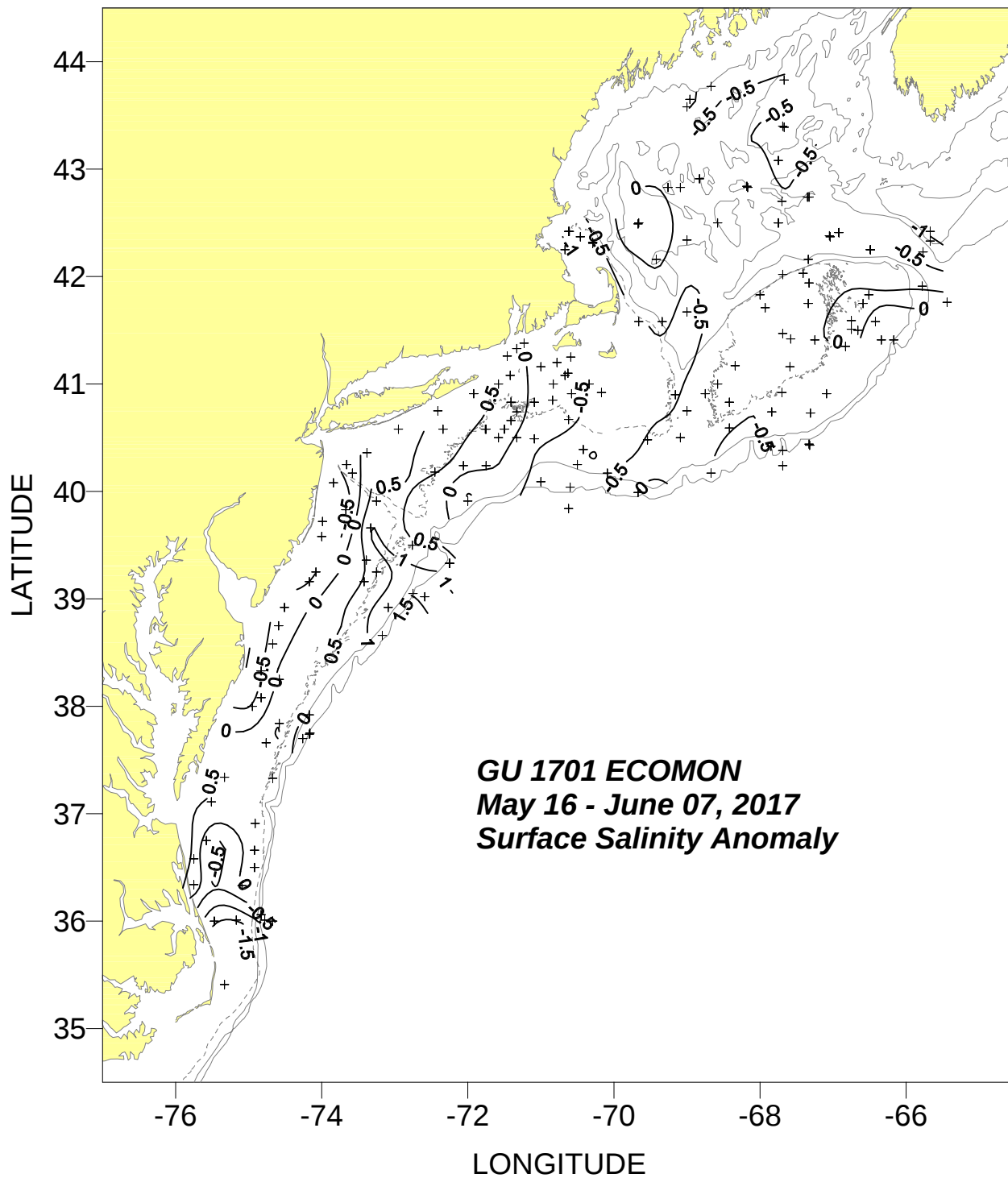
"SDV1", the standard deviation associated with the average temp/salt anomaly: "SDV2", the standard deviation of the individual anomalies from which the average anomaly was derived  
"Flag", a value of "1" indicates that a true areal average could not be calculated due to poor station coverage. The areal averages listed were derived from a simple average of the observations within the region.

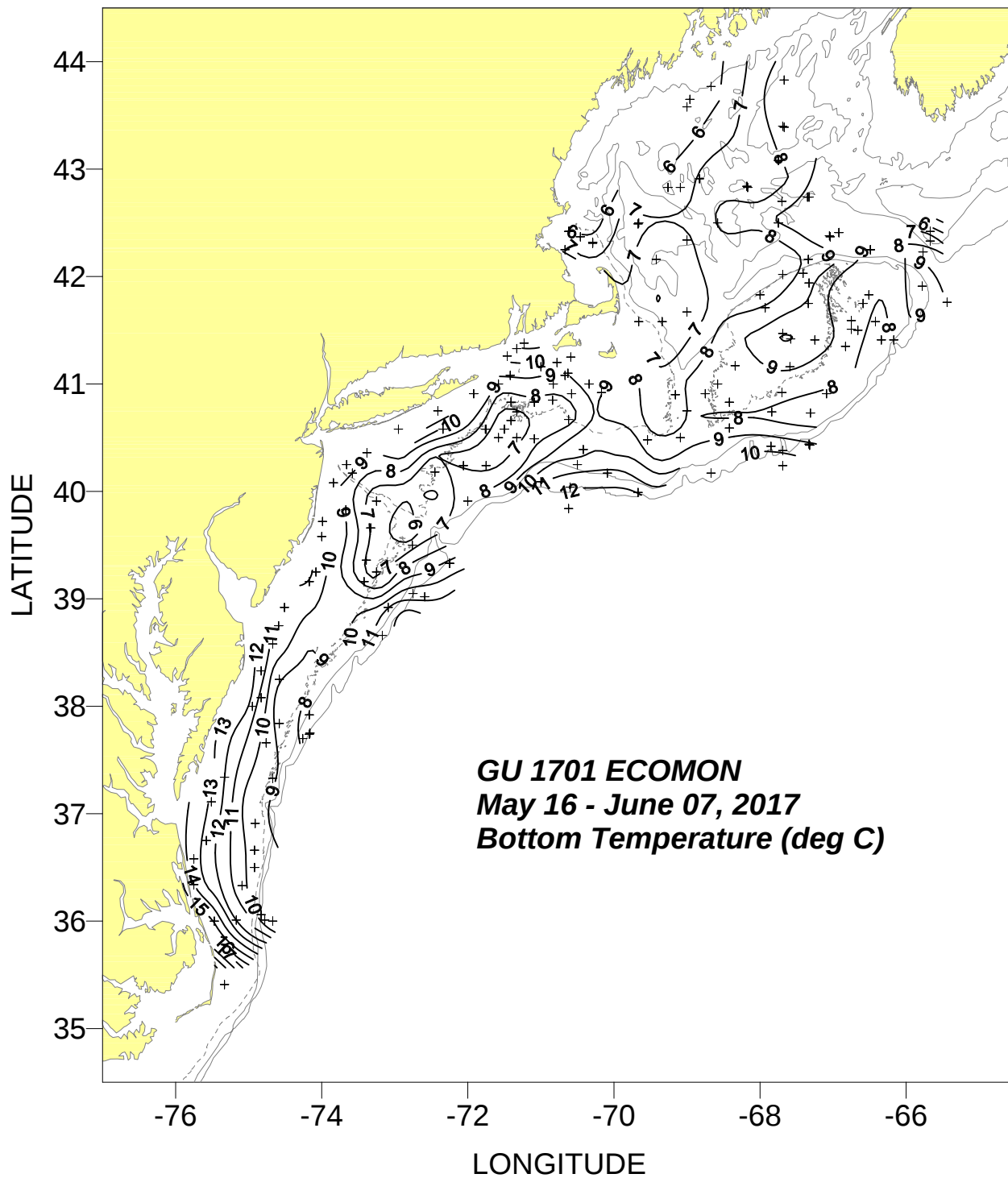
"Purpose", 2 digit code assigned by DMS to identify a unique NEFSC program survey.

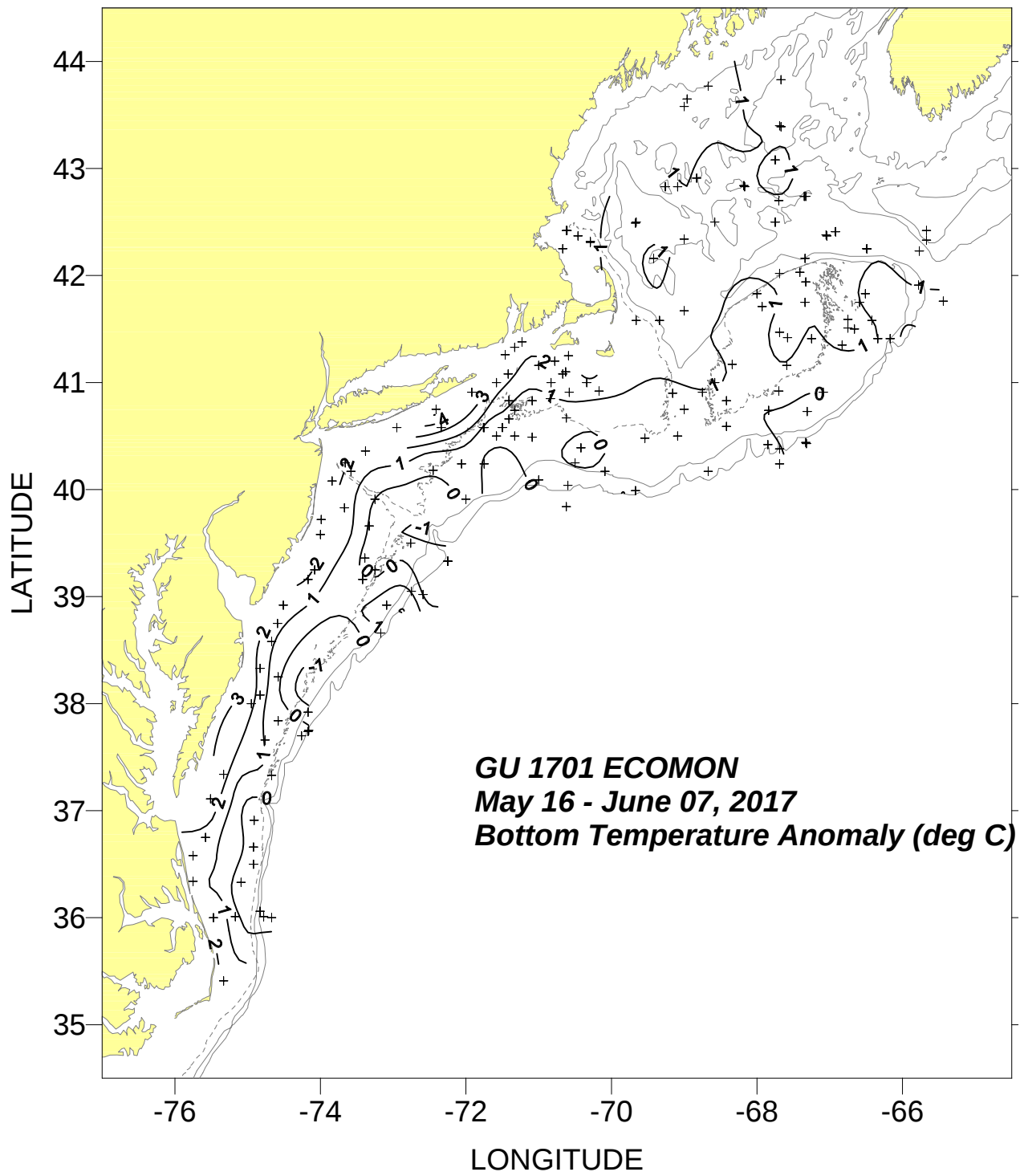


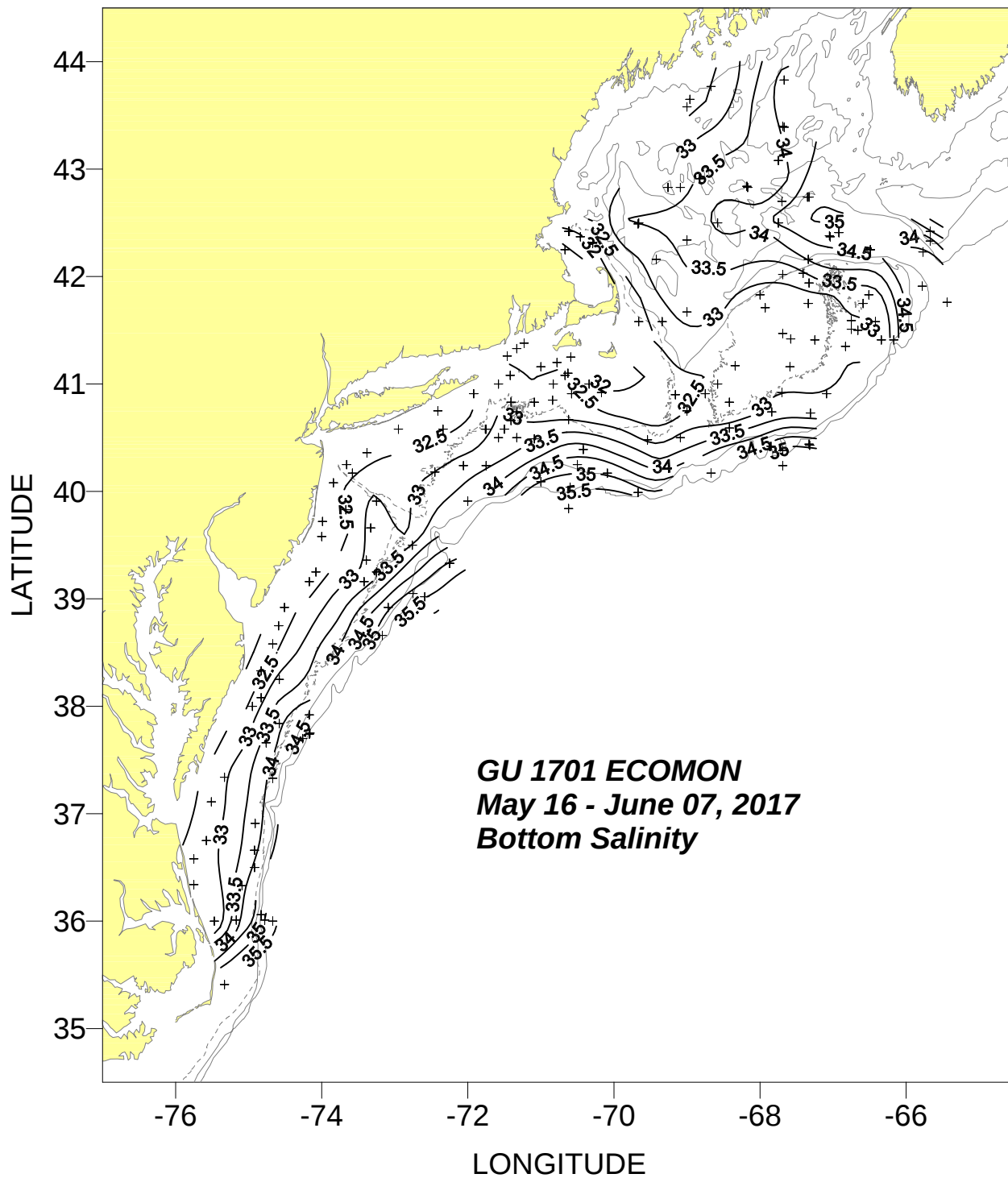


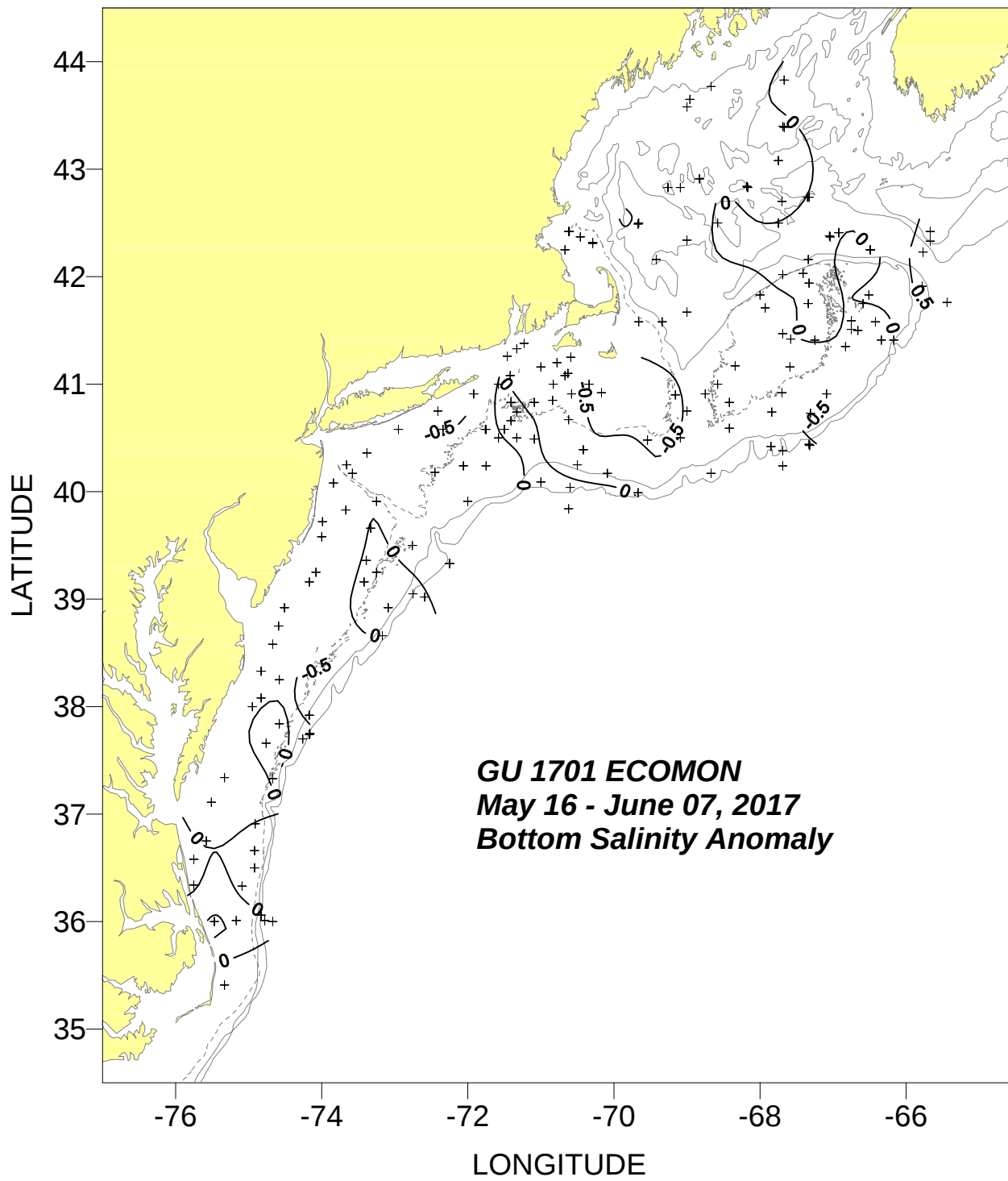












**GU1701 ECOMON Survey**  
**May 16 - June 7 2017**

| Cast     | Sta       | Lat           | Long          | Day       | Mo       | Year        | Time         | Btm       | Sfc          | Sfc          | Deepest<br>Observed | Deepest<br>Observed | Meters<br>from | Method<br>of |
|----------|-----------|---------------|---------------|-----------|----------|-------------|--------------|-----------|--------------|--------------|---------------------|---------------------|----------------|--------------|
| #        | #         | (deg N)       | (deg W)       |           |          |             | (GMT)        | Depth (m) | Temp (deg C) | Salt         | Temp (deg C)        | Salt                | Bottom         | Deployment   |
| 1        | 1         | 4115.8        | 7127.4        | 16        | 5        | 2017        | 21:46        | 39        | 11.20        | 32.04        | 9.24                | 32.64               | 5              | B            |
| 2        | 2         | 4104.6        | 7125.1        | 16        | 5        | 2017        | 23:18        | 37        | 10.49        | 32.61        | 8.77                | 32.79               | 5              | B            |
| 3        | 3         | 4059.8        | 7134.8        | 17        | 5        | 2017        | 0:33         | 45        | 10.67        | 32.37        | 8.66                | 32.79               | 4              | B            |
| 4        | 4         | 4049.6        | 7124.5        | 17        | 5        | 2017        | 2:06         | 60        | 10.22        | 32.72        | 6.61                | 33.10               | 6              | B            |
| 5        | 5         | 4039.7        | 7124.8        | 17        | 5        | 2017        | 3:22         | 62        | 10.51        | 32.94        | 6.21                | 33.14               | 6              | B            |
| 6        | 6         | 4034.7        | 7129.9        | 17        | 5        | 2017        | 4:19         | 69        | 10.37        | 32.99        | 6.15                | 33.15               | 3              | B            |
| 7        | 7         | 4029.8        | 7134.8        | 17        | 5        | 2017        | 5:15         | 76        | 10.48        | 32.98        | 6.21                | 33.17               | 5              | B            |
| 8        | 8         | 4014.7        | 7144.9        | 17        | 5        | 2017        | 7:21         | 80        | 10.46        | 32.94        | 6.25                | 33.18               | 4              | B            |
| 9        | 9         | 4014.7        | 7203.9        | 17        | 5        | 2017        | 9:19         | 63        | 10.37        | 32.97        | 6.25                | 33.14               | 4              | B            |
| 10       | 10        | 4010.7        | 7227.2        | 17        | 5        | 2017        | 11:36        | 66        | 10.63        | 32.81        | 5.60                | 32.95               | 5              | B            |
| 11       | 11        | 4021.3        | 7322.9        | 17        | 5        | 2017        | 16:08        | 32        | 11.32        | 31.56        | 9.04                | 32.28               | 5              | B            |
| 12       | 12        | 4015.1        | 7339.5        | 17        | 5        | 2017        | 17:48        | 27        | 11.65        | 31.70        | 8.78                | 32.22               | 5              | B            |
| 13       | 13        | 4010.2        | 7334.5        | 17        | 5        | 2017        | 19:12        | 36        | 11.40        | 31.96        | 7.51                | 32.53               | 5              | B            |
| 14       | 14        | 3954.8        | 7315.1        | 17        | 5        | 2017        | 21:40        | 58        | 11.17        | 32.81        | 6.17                | 33.13               | 6              | B            |
| 15       | 15        | 3939.6        | 7320.0        | 17        | 5        | 2017        | 23:34        | 38        | 11.85        | 33.06        | 6.95                | 33.25               | 4              | B            |
| 16       | 16        | 3949.8        | 7340.1        | 18        | 5        | 2017        | 1:46         | 30        | 12.88        | 31.30        | 9.33                | 32.49               | 6              | B            |
| 17       | 17        | 4005.0        | 7350.2        | 18        | 5        | 2017        | 3:50         | 29        | 13.21        | 29.54        | 8.90                | 32.55               | 5              | B            |
| <b>1</b> | <b>18</b> | <b>3943.2</b> | <b>7359.6</b> | <b>18</b> | <b>5</b> | <b>2017</b> | <b>6:56</b>  | <b>23</b> | <b>13.45</b> | <b>29.00</b> | <b>10.86</b>        | <b>31.47</b>        | <b>1</b>       | <b>W</b>     |
| 18       | 19        | 3934.9        | 7400.0        | 18        | 5        | 2017        | 8:08         | 25        | 13.16        | 30.31        | 11.03               | 31.62               | 4              | B            |
| 19       | 20        | 3914.8        | 7405.0        | 18        | 5        | 2017        | 10:26        | 26        | 13.87        | 31.19        | 11.08               | 32.23               | 5              | B            |
| 20       | 21        | 3909.9        | 7410.0        | 18        | 5        | 2017        | 11:16        | 21        | 13.92        | 31.42        | 10.95               | 32.24               | 4              | B            |
| 21       | 22        | 3855.5        | 7430.6        | 18        | 5        | 2017        | 13:43        | 23        | 13.76        | 31.49        | 10.95               | 32.20               | 3              | B            |
| 22       | 23        | 3844.9        | 7435.1        | 18        | 5        | 2017        | 15:08        | 29        | 13.38        | 31.58        | 9.74                | 32.41               | 4              | B            |
| 23       | 24        | 3834.7        | 7440.4        | 18        | 5        | 2017        | 16:31        | 23        | 14.15        | 31.57        | 11.20               | 32.12               | 5              | B            |
| 24       | 25        | 3819.9        | 7449.5        | 18        | 5        | 2017        | 18:37        | 21        | 15.82        | 30.63        | 12.11               | 32.31               | 5              | B            |
| 25       | 26        | 3814.9        | 7434.9        | 18        | 5        | 2017        | 20:06        | 40        | 14.91        | 32.70        | 8.35                | 33.37               | 4              | B            |
| 26       | 27        | 3804.9        | 7449.8        | 18        | 5        | 2017        | 22:05        | 33        | 15.21        | 31.38        | 11.06               | 32.78               | 5              | B            |
| <b>2</b> | <b>28</b> | <b>3800.1</b> | <b>7457.1</b> | <b>18</b> | <b>5</b> | <b>2017</b> | <b>23:11</b> | <b>22</b> | <b>15.88</b> | <b>31.56</b> | <b>12.35</b>        | <b>32.45</b>        | <b>2</b>       | <b>W</b>     |
| <b>3</b> | <b>29</b> | <b>3750.6</b> | <b>7434.8</b> | <b>19</b> | <b>5</b> | <b>2017</b> | <b>1:36</b>  | <b>54</b> | <b>15.61</b> | <b>33.20</b> | <b>8.48</b>         | <b>33.77</b>        | <b>3</b>       | <b>W</b>     |

**GU1701 ECOMON Survey**  
**May 16 - June 7 2017**

| Cast      | Sta       | Lat           | Long          | Day       | Mo       | Year        | Time         | Btm         | Sfc          | Sfc          | Deepest<br>Observed | Deepest<br>Observed | Meters<br>from | Method<br>of |
|-----------|-----------|---------------|---------------|-----------|----------|-------------|--------------|-------------|--------------|--------------|---------------------|---------------------|----------------|--------------|
| #         | #         | (deg N)       | (deg W)       |           |          |             | (GMT)        | Depth (m)   | Temp (deg C) | Salt         | Temp (deg C)        | Salt                | Bottom         | Deployment   |
| 1         | 1         | 4115.8        | 7127.4        | 16        | 5        | 2017        | 21:46        | 39          | 11.20        | 32.04        | 9.24                | 32.64               | 5              | B            |
| 27        | 30        | 3739.9        | 7445.3        | 19        | 5        | 2017        | 3:24         | 49          | 16.23        | 32.77        | 8.62                | 33.83               | 4              | B            |
| 28        | 31        | 3720.1        | 7519.9        | 19        | 5        | 2017        | 7:28         | 28          | 16.62        | 32.44        | 12.19               | 32.97               | 4              | B            |
| 29        | 32        | 3706.7        | 7530.7        | 19        | 5        | 2017        | 9:28         | 24          | 16.93        | 31.99        | 13.08               | 32.64               | 4              | B            |
| 30        | 33        | 3645.0        | 7535.0        | 19        | 5        | 2017        | 11:54        | 22          | 17.60        | 29.32        | 12.75               | 32.81               | 4              | B            |
| 31        | 34        | 3635.0        | 7545.1        | 19        | 5        | 2017        | 13:29        | 18          | 16.57        | 30.41        | 13.48               | 32.67               | 4              | B            |
| 32        | 35        | 3620.1        | 7544.9        | 19        | 5        | 2017        | 15:20        | 17          | 16.04        | 31.19        | 14.01               | 32.50               | 3              | B            |
| <b>4</b>  | <b>36</b> | <b>3600.1</b> | <b>7528.4</b> | <b>19</b> | <b>5</b> | <b>2017</b> | <b>18:15</b> | <b>24</b>   | <b>18.91</b> | <b>29.55</b> | <b>14.78</b>        | <b>32.34</b>        | <b>2</b>       | <b>W</b>     |
| <b>5</b>  | <b>37</b> | <b>3600.5</b> | <b>7510.3</b> | <b>19</b> | <b>5</b> | <b>2017</b> | <b>20:08</b> | <b>35</b>   | <b>18.92</b> | <b>30.41</b> | <b>10.97</b>        | <b>33.64</b>        | <b>3</b>       | <b>W</b>     |
| 33        | 38        | 3524.9        | 7519.7        | 20        | 5        | 2017        | 0:32         | 24          | 20.08        | 31.72        | 22.67               | 36.11               | 3              | B            |
| <b>6</b>  | <b>39</b> | <b>3600.3</b> | <b>7446.5</b> | <b>20</b> | <b>5</b> | <b>2017</b> | <b>5:14</b>  | <b>397</b>  | <b>18.06</b> | <b>32.94</b> | <b>7.97</b>         | <b>35.13</b>        | <b>3</b>       | <b>W</b>     |
| <b>7</b>  | <b>40</b> | <b>3559.9</b> | <b>7440.1</b> | <b>20</b> | <b>5</b> | <b>2017</b> | <b>6:33</b>  | <b>1243</b> | <b>17.26</b> | <b>33.24</b> | <b>6.10</b>         | <b>35.05</b>        | <b>736</b>     | <b>W</b>     |
| 34        | 41        | 3603.5        | 7449.9        | 20        | 5        | 2017        | 8:13         | 102         | 18.15        | 32.59        | 11.66               | 35.11               | 4              | B            |
| 35        | 42        | 3619.6        | 7505.3        | 20        | 5        | 2017        | 10:45        | 39          | 17.79        | 32.84        | 9.85                | 33.87               | 3              | B            |
| 36        | 43        | 3630.0        | 7455.1        | 20        | 5        | 2017        | 12:20        | 34          | 17.41        | 33.63        | 10.07               | 33.99               | 3              | B            |
| 37        | 44        | 3639.9        | 7455.0        | 20        | 5        | 2017        | 13:44        | 31          | 17.66        | 32.87        | 9.75                | 33.83               | 4              | B            |
| 38        | 45        | 3654.8        | 7454.9        | 20        | 5        | 2017        | 15:31        | 40          | 17.52        | 32.84        | 8.70                | 33.80               | 5              | B            |
| 39        | 46        | 3719.9        | 7440.0        | 20        | 5        | 2017        | 18:49        | 72          | 15.89        | 33.23        | 8.76                | 34.02               | 3              | B            |
| <b>8</b>  | <b>47</b> | <b>3742.0</b> | <b>7415.4</b> | <b>20</b> | <b>5</b> | <b>2017</b> | <b>22:51</b> | <b>115</b>  | <b>13.81</b> | <b>33.14</b> | <b>11.94</b>        | <b>35.32</b>        | <b>3</b>       | <b>W</b>     |
| 40        | 48        | 3744.7        | 7410.2        | 20        | 5        | 2017        | 23:52        | 280         | 13.75        | 33.14        | 12.34               | 35.50               | 77             | B            |
| 41        | 48        | 3745.0        | 7409.6        | 21        | 5        | 2017        | 0:28         | 420         | 13.72        | 33.16        | 7.30                | 35.11               | 1              | V            |
| 42        | 49        | 3755.0        | 7410.0        | 21        | 5        | 2017        | 2:14         | 104         | 13.49        | 33.13        | 7.79                | 33.83               | 5              | B            |
| 43        | 50        | 3839.7        | 7310.2        | 21        | 5        | 2017        | 11:21        | 144         | 14.55        | 34.55        | 12.59               | 35.47               | 5              | B            |
| 44        | 51        | 3855.1        | 7305.1        | 21        | 5        | 2017        | 13:45        | 78          | 13.15        | 33.92        | 11.74               | 35.10               | 2              | B            |
| 45        | 52        | 3909.9        | 7325.0        | 21        | 5        | 2017        | 16:11        | 50          | 11.94        | 32.97        | 6.80                | 33.27               | 6              | B            |
| <b>9</b>  | <b>53</b> | <b>3921.5</b> | <b>7323.5</b> | <b>21</b> | <b>5</b> | <b>2017</b> | <b>17:40</b> | <b>49</b>   | <b>12.05</b> | <b>32.90</b> | <b>7.23</b>         | <b>33.19</b>        | <b>4</b>       | <b>W</b>     |
| 46        | 54        | 3915.0        | 7315.0        | 21        | 5        | 2017        | 19:03        | 62          | 11.86        | 32.94        | 6.32                | 33.22               | 6              | B            |
| <b>10</b> | <b>55</b> | <b>3902.9</b> | <b>7244.8</b> | <b>21</b> | <b>5</b> | <b>2017</b> | <b>22:12</b> | <b>225</b>  | <b>15.17</b> | <b>34.75</b> | <b>11.44</b>        | <b>35.43</b>        | <b>5</b>       | <b>W</b>     |

**GU1701 ECOMON Survey**  
**May 16 - June 7 2017**

| Cast      | Sta       | Lat           | Long          | Day       | Mo       | Year        | Time         | Btm         | Sfc          | Sfc          | Deepest<br>Observed | Deepest<br>Observed | Meters<br>from | Method<br>of |
|-----------|-----------|---------------|---------------|-----------|----------|-------------|--------------|-------------|--------------|--------------|---------------------|---------------------|----------------|--------------|
| #         | #         | (deg N)       | (deg W)       |           |          |             | (GMT)        | Depth (m)   | Temp (deg C) | Salt         | Temp (deg C)        | Salt                | Bottom         | Deployment   |
| 1         | 1         | 4115.8        | 7127.4        | 16        | 5        | 2017        | 21:46        | 39          | 11.20        | 32.04        | 9.24                | 32.64               | 5              | B            |
| <b>11</b> | <b>56</b> | <b>3900.9</b> | <b>7235.1</b> | <b>21</b> | <b>5</b> | <b>2017</b> | <b>23:43</b> | <b>1200</b> | <b>15.10</b> | <b>34.68</b> | <b>6.43</b>         | <b>35.06</b>        | <b>698</b>     | <b>W</b>     |
| 47        | 57        | 3920.0        | 7215.1        | 22        | 5        | 2017        | 3:04         | 292         | 15.24        | 34.89        | 11.93               | 35.50               | 89             | B            |
| 48        | 57        | 3920.0        | 7215.1        | 22        | 5        | 2017        | 3:39         | 284         | 15.20        | 34.86        | 9.34                | 35.22               | 2              | V            |
| 49        | 58        | 3929.8        | 7245.3        | 22        | 5        | 2017        | 6:34         | 66          | 11.76        | 32.94        | 5.29                | 32.98               | 4              | B            |
| 50        | 59        | 3954.9        | 7200.0        | 22        | 5        | 2017        | 11:11        | 97          | 10.80        | 32.69        | 8.29                | 33.92               | 4              | B            |
| 51        | 60        | 4029.8        | 7120.0        | 22        | 5        | 2017        | 16:19        | 72          | 11.31        | 32.69        | 6.27                | 33.09               | 6              | B            |
| 52        | 61        | 4029.6        | 7105.2        | 22        | 5        | 2017        | 17:46        | 79          | 11.43        | 32.67        | 6.66                | 33.04               | 5              | B            |
| 53        | 62        | 4005.6        | 7059.9        | 22        | 5        | 2017        | 20:50        | 177         | 9.75         | 32.48        | 12.01               | 35.42               | 4              | B            |
| <b>12</b> | <b>63</b> | <b>3950.1</b> | <b>7037.4</b> | <b>22</b> | <b>5</b> | <b>2017</b> | <b>23:51</b> | <b>884</b>  | <b>12.12</b> | <b>33.75</b> | <b>6.09</b>         | <b>35.04</b>        | <b>382</b>     | <b>W</b>     |
| <b>13</b> | <b>64</b> | <b>4002.4</b> | <b>7036.0</b> | <b>23</b> | <b>5</b> | <b>2017</b> | <b>1:56</b>  | <b>166</b>  | <b>10.22</b> | <b>32.42</b> | <b>12.00</b>        | <b>35.41</b>        | <b>3</b>       | <b>W</b>     |
| 54        | 65        | 3959.7        | 6940.4        | 23        | 5        | 2017        | 7:00         | 131         | 12.07        | 33.48        | 12.34               | 35.48               | 3              | B            |
| 55        | 66        | 4010.0        | 7005.1        | 23        | 5        | 2017        | 9:32         | 110         | 9.69         | 32.06        | 11.56               | 35.09               | 4              | B            |
| 56        | 67        | 4015.0        | 7030.0        | 23        | 5        | 2017        | 11:53        | 111         | 10.24        | 32.36        | 11.39               | 35.12               | 4              | B            |
| 57        | 68        | 4023.4        | 7025.4        | 23        | 5        | 2017        | 13:09        | 82          | 10.02        | 32.27        | 8.94                | 34.18               | 4              | B            |
| 58        | 69        | 4028.9        | 6932.1        | 23        | 5        | 2017        | 18:03        | 65          | 9.14         | 32.44        | 7.52                | 32.61               | 5              | B            |
| 59        | 70        | 4029.9        | 6905.5        | 23        | 5        | 2017        | 20:33        | 80          | 9.30         | 32.48        | 7.35                | 32.56               | 5              | B            |
| 60        | 71        | 4010.0        | 6840.0        | 23        | 5        | 2017        | 23:55        | 163         | 10.72        | 32.94        | 12.07               | 35.46               | 5              | B            |
| 61        | 72        | 4025.4        | 6751.2        | 24        | 5        | 2017        | 4:45         | 155         | 8.27         | 32.21        | 11.12               | 35.09               | 6              | B            |
| <b>14</b> | <b>73</b> | <b>4023.0</b> | <b>6741.3</b> | <b>24</b> | <b>5</b> | <b>2017</b> | <b>6:06</b>  | <b>300</b>  | <b>12.15</b> | <b>33.91</b> | <b>9.92</b>         | <b>35.28</b>        | <b>2</b>       | <b>W</b>     |
| <b>15</b> | <b>74</b> | <b>4014.7</b> | <b>6741.3</b> | <b>24</b> | <b>5</b> | <b>2017</b> | <b>7:50</b>  | <b>1003</b> | <b>10.69</b> | <b>33.05</b> | <b>6.64</b>         | <b>35.07</b>        | <b>502</b>     | <b>W</b>     |
| 62        | 75        | 4026.3        | 6719.8        | 24        | 5        | 2017        | 10:43        | 316         | 9.16         | 32.56        | 12.67               | 35.60               | 115            | B            |
| 63        | 75        | 4026.1        | 6719.3        | 24        | 5        | 2017        | 11:06        | 330         | 10.34        | 33.03        | 9.50                | 35.24               | 7              | V            |
| 64        | 76        | 4044.1        | 6718.6        | 24        | 5        | 2017        | 13:25        | 98          | 8.70         | 32.62        | 6.81                | 33.06               | 4              | B            |
| <b>16</b> | <b>77</b> | <b>4055.4</b> | <b>6742.2</b> | <b>24</b> | <b>5</b> | <b>2017</b> | <b>16:10</b> | <b>67</b>   | <b>9.47</b>  | <b>32.60</b> | <b>7.54</b>         | <b>32.72</b>        | <b>4</b>       | <b>W</b>     |
| 65        | 78        | 4044.7        | 6750.1        | 24        | 5        | 2017        | 17:37        | 72          | 9.38         | 32.61        | 6.58                | 32.83               | 6              | B            |
| 66        | 79        | 4049.8        | 6825.2        | 24        | 5        | 2017        | 20:36        | 51          | 8.73         | 32.48        | 8.73                | 32.46               | 6              | B            |
| 67        | 80        | 4035.1        | 6825.5        | 24        | 5        | 2017        | 22:40        | 82          | 9.32         | 32.47        | 6.66                | 32.74               | 4              | B            |

**GU1701 ECOMON Survey**  
**May 16 - June 7 2017**

| Cast      | Sta        | Lat           | Long          | Day       | Mo       | Year        | Time         | Btm       | Sfc          | Sfc          | Deepest<br>Observed | Deepest<br>Observed | Meters<br>from | Method<br>of |
|-----------|------------|---------------|---------------|-----------|----------|-------------|--------------|-----------|--------------|--------------|---------------------|---------------------|----------------|--------------|
| #         | #          | (deg N)       | (deg W)       |           |          |             | (GMT)        | Depth (m) | Temp (deg C) | Salt         | Temp (deg C)        | Salt                | Bottom         | Deployment   |
| 1         | 1          | 4115.8        | 7127.4        | 16        | 5        | 2017        | 21:46        | 39        | 11.20        | 32.04        | 9.24                | 32.64               | 5              | B            |
| 68        | 81         | 4044.9        | 6900.1        | 25        | 5        | 2017        | 1:36         | 72        | 8.90         | 32.44        | 8.07                | 32.59               | 7              | B            |
| <b>17</b> | <b>82</b>  | <b>4053.8</b> | <b>6909.4</b> | <b>25</b> | <b>5</b> | <b>2017</b> | <b>3:06</b>  | <b>68</b> | <b>7.91</b>  | <b>32.16</b> | <b>7.78</b>         | <b>32.22</b>        | <b>2</b>       | <b>W</b>     |
| 69        | 83         | 4055.0        | 7010.2        | 25        | 5        | 2017        | 9:36         | 28        | 10.20        | 31.78        | 10.20               | 31.77               | 3              | B            |
| 70        | 84         | 4059.9        | 7020.3        | 25        | 5        | 2017        | 10:42        | 42        | 9.53         | 32.07        | 9.38                | 32.11               | 4              | B            |
| <b>18</b> | <b>85</b>  | <b>4040.4</b> | <b>7037.3</b> | <b>25</b> | <b>5</b> | <b>2017</b> | <b>13:41</b> | <b>61</b> | <b>10.23</b> | <b>32.43</b> | <b>6.97</b>         | <b>32.79</b>        | <b>2</b>       | <b>W</b>     |
| 71        | 86         | 4051.0        | 7050.5        | 25        | 5        | 2017        | 15:30        | 53        | 10.97        | 32.57        | 7.85                | 32.85               | 4              | B            |
| 72        | 87         | 4059.8        | 7050.0        | 25        | 5        | 2017        | 16:40        | 49        | 11.10        | 32.62        | 8.47                | 32.73               | 7              | B            |
| 73        | 88         | 4104.5        | 7040.4        | 25        | 5        | 2017        | 17:49        | 42        | 10.48        | 32.40        | 8.73                | 32.61               | 3              | B            |
| <b>19</b> | <b>89</b>  | <b>4106.1</b> | <b>7037.5</b> | <b>25</b> | <b>5</b> | <b>2017</b> | <b>18:25</b> | <b>43</b> | <b>10.46</b> | <b>32.33</b> | <b>8.93</b>         | <b>32.46</b>        | <b>2</b>       | <b>W</b>     |
| 74        | 90         | 4111.8        | 7047.0        | 25        | 5        | 2017        | 19:37        | 31        | 11.13        | 31.80        | 10.81               | 32.01               | 5              | B            |
| 75        | 91         | 4122.5        | 7113.7        | 25        | 5        | 2017        | 22:10        | 27        | 12.37        | 32.17        | 12.01               | 32.27               | 5              | B            |
| 76        | 92         | 4120.0        | 7120.0        | 25        | 5        | 2017        | 23:05        | 29        | 12.24        | 32.32        | 11.38               | 32.29               | 4              | B            |
| 77        | 93         | 4134.7        | 6939.9        | 31        | 5        | 2017        | 0:15         | 38        | 9.80         | 31.54        | 6.04                | 32.02               | 5              | B            |
| 78        | 94         | 4134.8        | 6920.1        | 31        | 5        | 2017        | 1:59         | 131       | 9.95         | NaN          | 5.92                | 33.04               | 5              | B            |
| 79        | 95         | 4140.0        | 6900.0        | 31        | 5        | 2017        | 4:02         | 158       | 10.45        | 31.68        | 6.21                | 33.22               | 7              | B            |
| 80        | 96         | 4054.7        | 6845.1        | 31        | 5        | 2017        | 9:37         | 63        | 9.01         | 32.52        | 9.01                | 32.50               | 9              | B            |
| 81        | 97         | 4059.9        | 6834.8        | 31        | 5        | 2017        | 11:16        | 51        | 8.83         | 32.57        | 8.83                | 32.55               | 5              | B            |
| 82        | 98         | 4110.0        | 6820.2        | 31        | 5        | 2017        | 13:46        | 48        | 9.43         | 32.60        | 9.43                | 32.58               | 4              | B            |
| 83        | 99         | 4109.8        | 6735.2        | 31        | 5        | 2017        | 18:12        | 53        | 9.79         | 32.86        | 9.79                | 32.84               | 4              | B            |
| 84        | 100        | 4125.0        | 6734.9        | 31        | 5        | 2017        | 19:54        | 41        | 10.27        | 32.82        | 10.27               | 32.81               | 3              | B            |
| <b>20</b> | <b>101</b> | <b>4128.2</b> | <b>6741.2</b> | <b>31</b> | <b>5</b> | <b>2017</b> | <b>20:52</b> | <b>40</b> | <b>10.09</b> | <b>32.74</b> | <b>10.05</b>        | <b>32.73</b>        | <b>3</b>       | <b>W</b>     |
| 85        | 102        | 4142.8        | 6755.8        | 31        | 5        | 2017        | 23:40        | 32        | 9.42         | 32.68        | 9.42                | 32.66               | 3              | B            |
| 86        | 103        | 4149.9        | 6800.1        | 1         | 6        | 2017        | 1:02         | 60        | 9.47         | 32.42        | 6.86                | 32.62               | 4              | B            |
| <b>21</b> | <b>104</b> | <b>4201.4</b> | <b>6741.7</b> | <b>1</b>  | <b>6</b> | <b>2017</b> | <b>3:11</b>  | <b>84</b> | <b>9.35</b>  | <b>32.47</b> | <b>6.02</b>         | <b>33.00</b>        | <b>3</b>       | <b>W</b>     |
| 87        | 105        | 4209.7        | 6720.1        | 1         | 6        | 2017        | 5:34         | 171       | 9.59         | 32.41        | 8.15                | 34.16               | 5              | B            |
| 88        | 106        | 4201.8        | 6724.5        | 1         | 6        | 2017        | 7:01         | 48        | 8.58         | 32.73        | 8.58                | 32.71               | 4              | B            |
| 89        | 107        | 4156.1        | 6719.9        | 1         | 6        | 2017        | 8:04         | 49        | 9.02         | 32.75        | 9.02                | 32.73               | 3              | B            |
| 90        | 108        | 4144.8        | 6720.1        | 1         | 6        | 2017        | 9:36         | 49        | 9.29         | 32.72        | 9.29                | 32.70               | 4              | B            |

**GU1701 ECOMON Survey**  
**May 16 - June 7 2017**

| Cast      | Sta        | Lat           | Long          | Day      | Mo       | Year        | Time         | Btm         | Sfc          | Sfc          | Deepest<br>Observed | Deepest<br>Observed | Meters<br>from | Method<br>of |
|-----------|------------|---------------|---------------|----------|----------|-------------|--------------|-------------|--------------|--------------|---------------------|---------------------|----------------|--------------|
| #         | #          | (deg N)       | (deg W)       |          |          |             | (GMT)        | Depth (m)   | Temp (deg C) | Salt         | Temp (deg C)        | Salt                | Bottom         | Deployment   |
| 1         | 1          | 4115.8        | 7127.4        | 16       | 5        | 2017        | 21:46        | 39          | 11.20        | 32.04        | 9.24                | 32.64               | 5              | B            |
| 91        | 109        | 4124.7        | 6715.0        | 1        | 6        | 2017        | 11:46        | 48          | 9.69         | 32.81        | 9.69                | 32.79               | 4              | B            |
| 92        | 110        | 4054.8        | 6705.6        | 1        | 6        | 2017        | 15:11        | 84          | 8.69         | 32.10        | 7.90                | 32.89               | 4              | B            |
| 93        | 111        | 4121.2        | 6649.8        | 1        | 6        | 2017        | 18:32        | 73          | 9.32         | 32.86        | 8.36                | 32.84               | 5              | B            |
| 94        | 112        | 4130.3        | 6645.2        | 1        | 6        | 2017        | 19:48        | 72          | 8.56         | 32.86        | 8.56                | 32.83               | 4              | B            |
| 95        | 113        | 4130.1        | 6639.9        | 1        | 6        | 2017        | 20:36        | 78          | 9.10         | 32.82        | 8.26                | 32.81               | 3              | B            |
| 96        | 114        | 4135.1        | 6645.1        | 1        | 6        | 2017        | 21:36        | 73          | 9.11         | 32.83        | 8.56                | 32.82               | 4              | B            |
| 97        | 115        | 4124.8        | 6620.1        | 1        | 6        | 2017        | 23:59        | 95          | 9.77         | 32.56        | 7.40                | 32.90               | 4              | B            |
| 98        | 116        | 4124.7        | 6610.2        | 2        | 6        | 2017        | 1:03         | 130         | 7.93         | 31.97        | 8.46                | 34.35               | 2              | B            |
| 99        | 117        | 4134.8        | 6625.4        | 2        | 6        | 2017        | 3:09         | 89          | 8.51         | 32.83        | 8.19                | 32.85               | 4              | B            |
| 100       | 118        | 4144.9        | 6635.1        | 2        | 6        | 2017        | 5:04         | 72          | 7.98         | 32.90        | 7.98                | 32.86               | 5              | B            |
| 101       | 119        | 4149.9        | 6630.4        | 2        | 6        | 2017        | 6:02         | 75          | 7.99         | 32.83        | 7.49                | 32.90               | 4              | B            |
| 102       | 120        | 4154.7        | 6547.0        | 2        | 6        | 2017        | 9:56         | 175         | 9.99         | 32.82        | 9.52                | 35.16               | 6              | B            |
| <b>22</b> | <b>121</b> | <b>4145.3</b> | <b>6526.6</b> | <b>2</b> | <b>6</b> | <b>2017</b> | <b>12:33</b> | <b>1983</b> | <b>10.99</b> | <b>32.70</b> | <b>5.57</b>         | <b>35.02</b>        | <b>1478</b>    | <b>W</b>     |
| 103       | 122        | 4213.5        | 6546.2        | 2        | 6        | 2017        | 16:24        | 223         | 7.56         | 31.53        | 9.96                | 35.13               | 22             | B            |
| <b>23</b> | <b>122</b> | <b>4213.5</b> | <b>6546.2</b> | <b>2</b> | <b>6</b> | <b>2017</b> | <b>17:26</b> | <b>221</b>  | <b>7.95</b>  | <b>31.19</b> | <b>9.51</b>         | <b>35.21</b>        | <b>1</b>       | <b>W</b>     |
| 104       | 123        | 4219.9        | 6540.5        | 2        | 6        | 2017        | 18:51        | 109         | 8.74         | 30.90        | 8.83                | 34.15               | 4              | B            |
| 105       | 124        | 4225.1        | 6540.2        | 2        | 6        | 2017        | 19:43        | 96          | 7.51         | 31.15        | 3.75                | 32.22               | 3              | B            |
| 106       | 125        | 4214.9        | 6629.7        | 2        | 6        | 2017        | 23:43        | 247         | 9.06         | 32.32        | 8.31                | 34.25               | 45             | B            |
| 107       | 125        | 4214.9        | 6629.7        | 3        | 6        | 2017        | 0:09         | 249         | 9.27         | 32.30        | 9.18                | 34.77               | 1              | W            |
| 108       | 126        | 4224.6        | 6655.0        | 3        | 6        | 2017        | 2:48         | 362         | 10.04        | 32.23        | 9.58                | 34.97               | 160            | B            |
| 109       | 126        | 4224.8        | 6655.5        | 3        | 6        | 2017        | 3:14         | 362         | 10.06        | 32.24        | 9.60                | 35.11               | 2              | W            |
| 110       | 127        | 4222.3        | 6702.6        | 3        | 6        | 2017        | 4:27         | 335         | 10.08        | 32.24        | 9.80                | 35.03               | 133            | B            |
| <b>24</b> | <b>127</b> | <b>4222.5</b> | <b>6703.1</b> | <b>3</b> | <b>6</b> | <b>2017</b> | <b>4:54</b>  | <b>336</b>  | <b>10.03</b> | <b>32.23</b> | <b>9.67</b>         | <b>35.10</b>        | <b>3</b>       | <b>W</b>     |
| 111       | 128        | 4244.5        | 6720.0        | 3        | 6        | 2017        | 7:56         | 227         | 8.45         | 32.09        | 9.54                | 34.93               | 26             | B            |
| 112       | 128        | 4244.6        | 6721.0        | 3        | 6        | 2017        | 8:23         | 224         | 8.60         | 32.07        | 9.63                | 34.98               | 3              | W            |
| <b>25</b> | <b>129</b> | <b>4241.9</b> | <b>6742.1</b> | <b>3</b> | <b>6</b> | <b>2017</b> | <b>10:28</b> | <b>191</b>  | <b>8.98</b>  | <b>31.98</b> | <b>8.19</b>         | <b>34.06</b>        | <b>2</b>       | <b>W</b>     |
| 113       | 130        | 4229.8        | 6745.2        | 3        | 6        | 2017        | 12:14        | 236         | 9.15         | 32.06        | 9.59                | 34.78               | 35             | B            |
| 114       | 130        | 4230.0        | 6745.0        | 3        | 6        | 2017        | 12:54        | 236         | 9.20         | 32.06        | 9.81                | 34.94               | 5              | V            |

**GU1701 ECOMON Survey**  
**May 16 - June 7 2017**

| Cast      | Sta        | Lat           | Long          | Day      | Mo       | Year        | Time         | Btm        | Sfc          | Sfc          | Deepest<br>Observed | Deepest<br>Observed | Meters<br>from | Method<br>of |
|-----------|------------|---------------|---------------|----------|----------|-------------|--------------|------------|--------------|--------------|---------------------|---------------------|----------------|--------------|
| #         | #          | (deg N)       | (deg W)       |          |          |             | (GMT)        | Depth (m)  | Temp (deg C) | Salt         | Temp (deg C)        | Salt                | Bottom         | Deployment   |
| 1         | 1          | 4115.8        | 7127.4        | 16       | 5        | 2017        | 21:46        | 39         | 11.20        | 32.04        | 9.24                | 32.64               | 5              | B            |
| 115       | 131        | 4249.9        | 6810.1        | 3        | 6        | 2017        | 16:13        | 179        | 10.40        | 32.24        | 7.85                | 33.87               | 4              | B            |
| 116       | 131        | 4250.6        | 6810.8        | 3        | 6        | 2017        | 16:52        | 175        | 10.34        | 32.24        | 7.73                | 33.80               | 5              | B            |
| 117       | 132        | 4304.9        | 6745.1        | 3        | 6        | 2017        | 19:41        | 171        | 8.82         | 31.53        | 6.97                | 33.45               | 5              | B            |
| 118       | 133        | 4323.4        | 6740.2        | 3        | 6        | 2017        | 22:04        | 245        | 10.23        | 31.71        | 8.91                | 34.27               | 44             | B            |
| <b>26</b> | <b>133</b> | <b>4324.0</b> | <b>6741.1</b> | <b>3</b> | <b>6</b> | <b>2017</b> | <b>22:35</b> | <b>247</b> | <b>10.19</b> | <b>31.70</b> | <b>9.00</b>         | <b>34.29</b>        | <b>4</b>       | <b>W</b>     |
| 119       | 134        | 4349.9        | 6740.2        | 4        | 6        | 2017        | 1:56         | 218        | 9.80         | 31.77        | 8.75                | 34.20               | 8              | B            |
| <b>27</b> | <b>135</b> | <b>4346.4</b> | <b>6840.1</b> | <b>4</b> | <b>6</b> | <b>2017</b> | <b>6:49</b>  | <b>115</b> | <b>8.08</b>  | <b>31.42</b> | <b>5.41</b>         | <b>32.32</b>        | <b>4</b>       | <b>W</b>     |
| 120       | 136        | 4339.0        | 6857.8        | 4        | 6        | 2017        | 9:35         | 120        | 8.71         | 30.76        | 5.03                | 32.18               | 4              | B            |
| 121       | 137        | 4334.6        | 6859.8        | 4        | 6        | 2017        | 10:30        | 120        | 9.04         | 31.28        | 4.92                | 32.45               | 1              | B            |
| 122       | 138        | 4254.6        | 6850.0        | 4        | 6        | 2017        | 15:17        | 180        | 10.53        | 31.99        | 7.59                | 33.77               | 3              | B            |
| 123       | 139        | 4250.0        | 6905.2        | 4        | 6        | 2017        | 16:54        | 180        | 10.41        | 32.17        | 6.25                | 33.17               | 5              | B            |
| 124       | 140        | 4249.9        | 6915.3        | 4        | 6        | 2017        | 18:08        | 139        | 10.60        | 32.26        | 5.87                | 32.99               | 5              | B            |
| 125       | 141        | 4229.9        | 6835.0        | 4        | 6        | 2017        | 22:29        | 203        | 12.61        | 32.53        | 8.24                | 34.19               | 4              | B            |
| 126       | 142        | 4220.1        | 6859.9        | 5        | 6        | 2017        | 1:04         | 219        | 11.00        | 32.17        | 7.52                | 33.80               | 14             | B            |
| 127       | 143        | 4209.7        | 6925.2        | 5        | 6        | 2017        | 3:48         | 181        | 11.65        | 32.38        | 6.36                | 33.24               | 6              | B            |
| 128       | 144        | 4230.0        | 6939.8        | 5        | 6        | 2017        | 6:41         | 252        | 11.66        | 32.39        | 8.05                | 33.90               | 51             | B            |
| <b>28</b> | <b>144</b> | <b>4229.7</b> | <b>6940.5</b> | <b>5</b> | <b>6</b> | <b>2017</b> | <b>7:10</b>  | <b>259</b> | <b>11.62</b> | <b>32.38</b> | <b>8.34</b>         | <b>34.04</b>        | <b>1</b>       | <b>W</b>     |
| 129       | 145        | 4219.0        | 7017.2        | 5        | 6        | 2017        | 10:34        | 33         | 9.18         | 31.30        | 6.32                | 31.87               | 4              | B            |
| <b>29</b> | <b>145</b> | <b>4218.6</b> | <b>7017.2</b> | <b>5</b> | <b>6</b> | <b>2017</b> | <b>10:52</b> | <b>35</b>  | <b>11.19</b> | <b>30.77</b> | <b>6.34</b>         | <b>31.87</b>        | <b>3</b>       | <b>W</b>     |
| <b>30</b> | <b>146</b> | <b>4222.4</b> | <b>7027.6</b> | <b>5</b> | <b>6</b> | <b>2017</b> | <b>12:08</b> | <b>86</b>  | <b>11.77</b> | <b>29.43</b> | <b>4.68</b>         | <b>32.35</b>        | <b>4</b>       | <b>W</b>     |
| 130       | 147        | 4225.5        | 7037.1        | 5        | 6        | 2017        | 13:18        | 88         | 11.86        | 29.85        | 4.54                | 32.41               | 3              | B            |
| <b>31</b> | <b>147</b> | <b>4225.2</b> | <b>7036.8</b> | <b>5</b> | <b>6</b> | <b>2017</b> | <b>13:35</b> | <b>86</b>  | <b>11.94</b> | <b>29.82</b> | <b>4.56</b>         | <b>32.40</b>        | <b>2</b>       | <b>W</b>     |
| 131       | 148        | 4214.8        | 7040.1        | 5        | 6        | 2017        | 15:10        | 28         | 12.39        | 29.69        | 8.20                | 31.02               | 4              | B            |
| 132       | 149        | 4109.8        | 7100.1        | 6        | 6        | 2017        | 0:34         | 37         | 11.74        | 31.66        | 9.81                | 32.08               | 4              | B            |
| 133       | 150        | 4114.8        | 7035.4        | 6        | 6        | 2017        | 2:52         | 28         | 12.64        | 30.91        | 11.17               | 31.43               | 4              | B            |
| 134       | 151        | 4054.9        | 7035.0        | 6        | 6        | 2017        | 5:09         | 51         | 12.46        | 32.41        | 8.33                | 32.54               | 5              | B            |
| 135       | 152        | 4049.7        | 7105.3        | 6        | 6        | 2017        | 7:46         | 57         | 12.50        | 32.34        | 7.54                | 32.78               | 3              | B            |

**GU1701 ECOMON Survey**  
**May 16 - June 7 2017**

| Cast     | Sta      | Lat     | Long    | Day | Mo | Year | Time  | Btm       | Sfc          | Sfc   | Deepest<br>Observed | Deepest<br>Observed | Meters<br>from | Method<br>of |
|----------|----------|---------|---------|-----|----|------|-------|-----------|--------------|-------|---------------------|---------------------|----------------|--------------|
| #        | #        | (deg N) | (deg W) |     |    |      | (GMT) | Depth (m) | Temp (deg C) | Salt  | Temp (deg C)        | Salt                | Bottom         | Deployment   |
| <b>1</b> | <b>1</b> | 4115.8  | 7127.4  | 16  | 5  | 2017 | 21:46 | 39        | 11.20        | 32.04 | 9.24                | 32.64               | 5              | B            |
| 136      | 153      | 4044.7  | 7120.0  | 6   | 6  | 2017 | 9:22  | 61        | 12.68        | 32.39 | 7.43                | 32.87               | 4              | B            |
| 137      | 154      | 4034.8  | 7145.4  | 6   | 6  | 2017 | 11:50 | 68        | 13.07        | 32.44 | 6.99                | 33.00               | 4              | B            |
| 138      | 154      | 4034.8  | 7145.1  | 6   | 6  | 2017 | 12:00 | 68        | 13.08        | 32.44 | 6.97                | 33.01               | 3              | W            |
| 139      | 155      | 4034.9  | 7220.1  | 6   | 6  | 2017 | 14:56 | 47        | 13.66        | 32.52 | 9.04                | 32.78               | 5              | B            |
| 140      | 156      | 4034.9  | 7257.3  | 6   | 6  | 2017 | 17:53 | 25        | 13.92        | 31.67 | 12.45               | 32.29               | 3              | B            |
| 141      | 157      | 4044.8  | 7224.5  | 6   | 6  | 2017 | 21:11 | 37        | 12.93        | 31.72 | 12.62               | 31.77               | 3              | B            |
| 142      | 158      | 4054.5  | 7155.4  | 7   | 6  | 2017 | 0:31  | 35        | 12.43        | 32.05 | 12.12               | 32.05               | 4              | B            |

Deployment codes: B=bongo cast; W=water cast; and V=vertical cast

**Casts in bold are from CTD s/n 0420**