



# HOKKAIDO UNIVERSITY

|                  |                                                                                    |
|------------------|------------------------------------------------------------------------------------|
| Title            | 1.THE " USHIO MARU " CRUISE 351, CRUISE 352, CRUISE 353 IN JANUARY - FEBRUARY 2016 |
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**THE " USHIO MARU "**

**CRUISE 351**

**CRUISE 352**

**CRUISE 353**

**IN JANUARY 2016**

**IN FEBRUARY 2016**

## 1.Cruise Itinerary

### 1. Cruise Itinerary

#### Cruise 351

|                                        |      |          |
|----------------------------------------|------|----------|
| Departure from Hakodate                | Jan. | 10, 2016 |
| Start hydrographic research (US16001)  |      | 10       |
| Arrival at Fukushima                   |      | 10       |
| Depart from Fukushima                  |      | 11       |
| Arrival at Hakodate                    |      | 11       |
| Depart from Hakodate                   |      | 12       |
| Arrival at Muroran                     |      | 12       |
| Depart from Muroran                    |      | 13       |
| Arrival at Muroran                     |      | 13       |
| Depart from Muroran                    |      | 14       |
| Finish hydrographic research (US16029) |      | 14       |
| Return to Hakodate                     |      | 15       |
| Total coverage 335.2 miles             |      |          |

#### Cruise 352

|                                        |      |          |
|----------------------------------------|------|----------|
| Departure from Hakodate                | Jan. | 25, 2016 |
| Start hydrographic research (US16030)  |      | 25       |
| Arrival at Fukushima                   |      | 25       |
| Depart from Fukushima                  |      | 26       |
| Arrival at Usujiri                     |      | 27       |
| Depart from Usujiri                    |      | 29       |
| Finish hydrographic research (US16064) |      | 30       |
| Return to Hakodate                     |      | 31       |
| Total coverage 367.1 miles             |      |          |

#### Cruise 353

|                                        |      |         |
|----------------------------------------|------|---------|
| Departure from Hakodate                | Feb. | 5, 2016 |
| Arrival at Usujiri                     |      | 5       |
| Start hydrographic research (US16065)  |      | 6       |
| Retrieval ADCP mooring system          |      | 6       |
| Arrival at Muroran                     |      | 6       |
| Depart from Muroran                    |      | 7       |
| Set ADCP mooring system                |      | 7       |
| Arrival at Usujiri                     |      | 7       |
| Depart from Usujiri                    |      | 8       |
| Arrival at and departure from Usujiri  |      | 8       |
| Finish hydrographic research (US16091) |      | 8       |
| Return to Hakodate                     |      | 8       |
| Total coverage 305.5 miles             |      |         |

## 2. Data on Temperature, Salinity and Computed Dynamic Depth Anomaly

Hydrographic work on deck and the data processing were made by the deck officers, crews, research staff and cadets of the “Ushio Maru”. Temperature and salinity were measured by CTD (Seabird SBE-19Plus and SBE-19). Dynamic computations were made using a desk-top computer aboard the “Ushio Maru”.

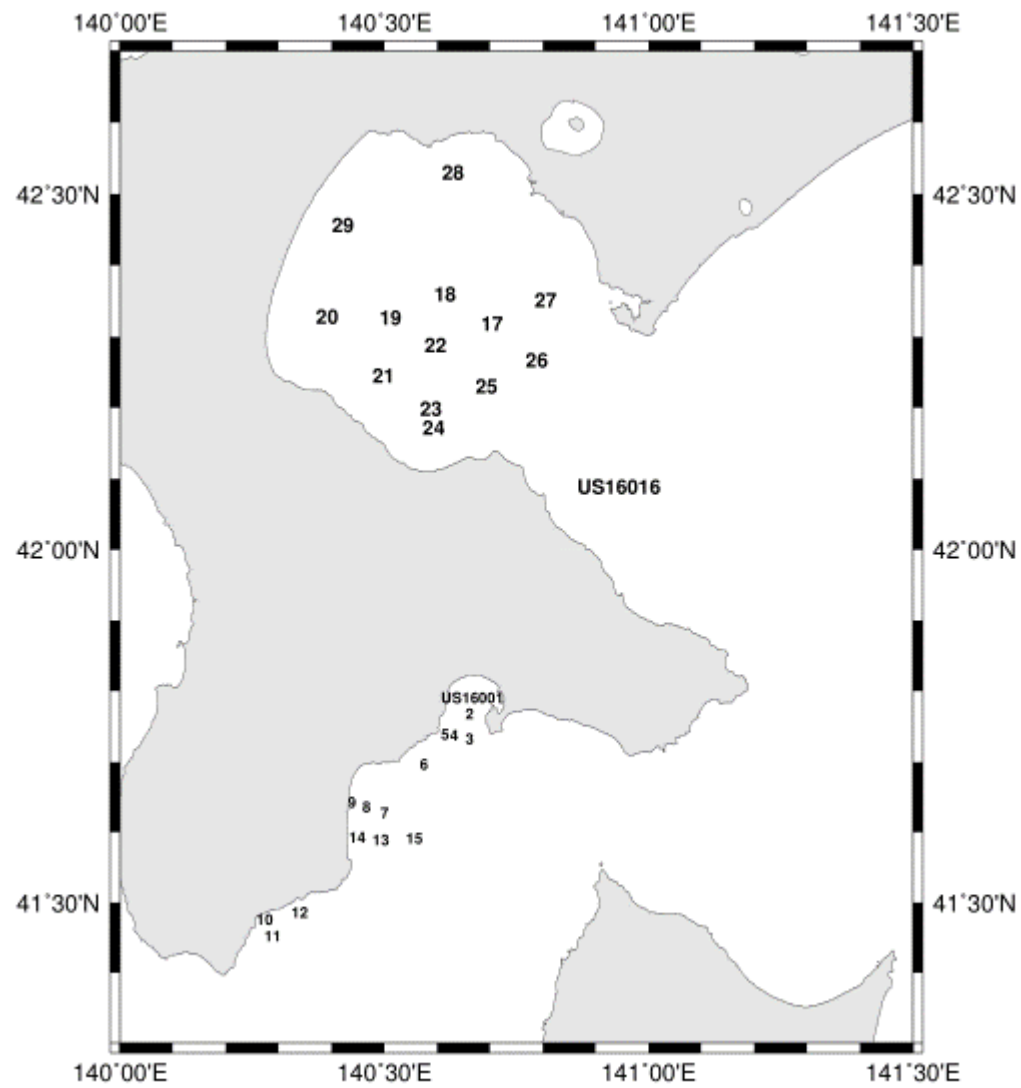


Figure 1. Oceanographic stations (Cruise 351)

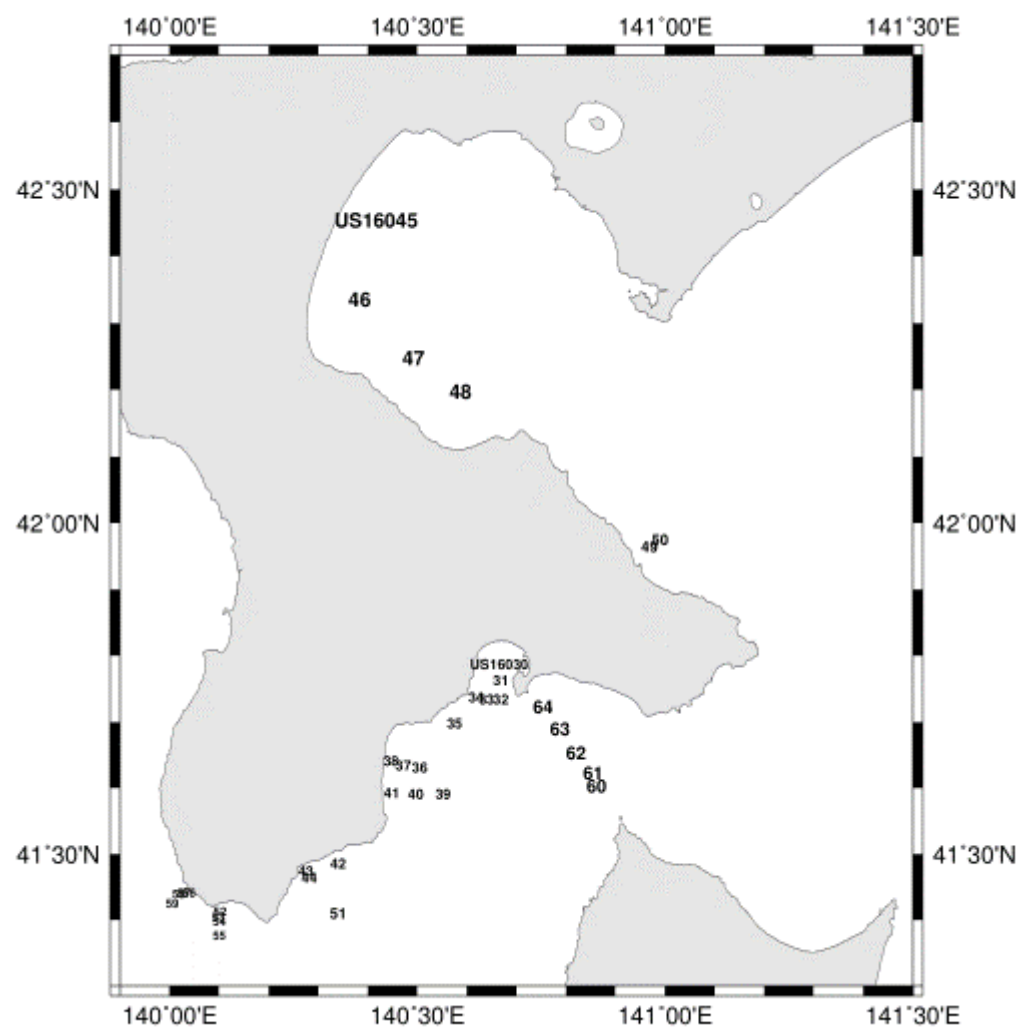


Figure 2. Oceanographic stations (Cruise 352)

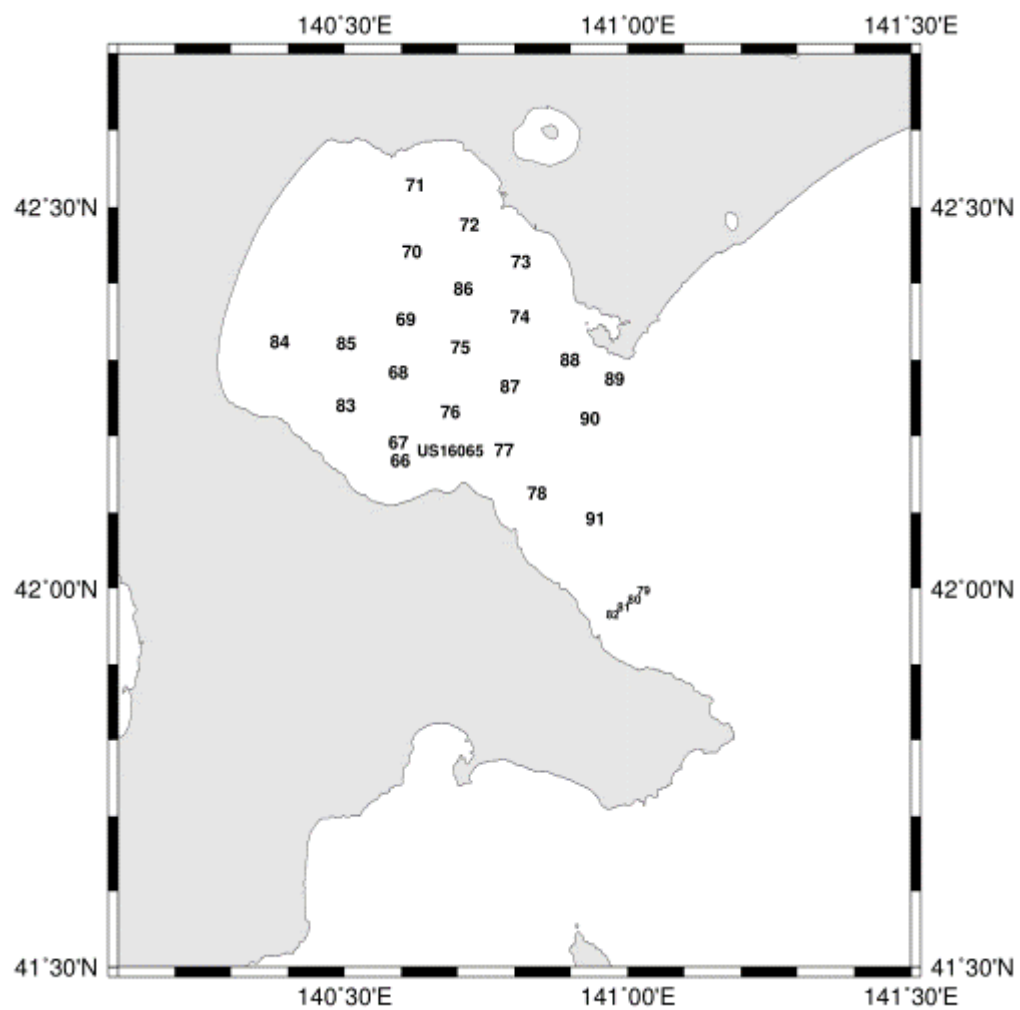


Figure 3. Oceanographic stations (Cruise 353)

Table 1. List of Oceanographic Station

| station | Lat. (N)° | Long. (E)° | Date | Hour      | Depth (m) | Wave   | Swell   | Wind   | Air Temp. | Sea Temp. | Wr. | Bar (hPa) |
|---------|-----------|------------|------|-----------|-----------|--------|---------|--------|-----------|-----------|-----|-----------|
| US16001 | 41-47.0   | 140-40.0   | 1/10 | 0825-0826 | 20        | NNW-1  | NNW-1   | NNW-4  | -1.3      | 7.7       | c   | 1014.6    |
| US16002 | 41-45.6   | 140-39.7   | 1/10 | 0848-0852 | 38        | NNW-1  | NNW-1   | NNW-2  | -1.0      | 7.7       | c   | 1014.7    |
| US16003 | 41-43.5   | 140-39.7   | 1/10 | 0916-0922 | 62        | NNW-1  | NNW-1   | NNW-3  | -0.7      | 10.0      | s   | 1015.1    |
| US16004 | 41-43.8   | 140-37.9   | 1/10 | 0942-0948 | 56        | WNW-1  | NW-1    | WNW-2  | -0.2      | 9.7       | s   | 1015.1    |
| US16005 | 41-43.9   | 140-36.9   | 1/10 | 0955-0959 | 38        | WNW-1  | NW-1    | WNW-3  | -0.5      | 9.8       | s   | 1015.0    |
| US16006 | 41-41.3   | 140-34.5   | 1/10 | 1039-1042 | 41        | West-1 | SW-1    | West-4 | 1.4       | 9.7       | bc  | 1014.5    |
| US16007 | 41-37.2   | 140-30.0   | 1/10 | 1126-1129 | 31        | West-2 | SSW-2   | West-5 | 1.6       | 9.2       | s   | 1013.7    |
| US16008 | 41-37.7   | 140-28.0   | 1/10 | 1153-1157 | 19        | West-2 | SE-1    | West-5 | 0.6       | 9.6       | s   | 1014.1    |
| US16009 | 41-38.1   | 140-26.3   | 1/10 | 1212-1216 | 13        | West-2 | SE-1    | West-4 | 1.2       | 8.3       | bc  | 1013.8    |
| US16010 | 41-28.1   | 140-16.4   | 1/11 | 0701-0706 | 25        | West-2 | South-1 | West-4 | -4.4      | 9.6       | c   | 1019.6    |
| US16011 | 41-26.7   | 140-17.3   | 1/11 | 0728-0734 | 62        | WNW-2  | South-1 | WNW-4  | -3.4      | 9.6       | s   | 1020.3    |
| US16012 | 41-28.7   | 140-20.4   | 1/11 | 0818-0824 | 62        | West-2 | South-2 | West-4 | -3.8      | 9.6       | c   | 1020.3    |
| US16013 | 41-34.9   | 140-29.6   | 1/11 | 0934-0940 | 43        | WSW-1  | South-1 | WSW-4  | -2.7      | 9.8       | c   | 1019.8    |
| US16014 | 41-35.1   | 140-26.9   | 1/11 | 1008-1011 | 15        | West-1 | South-1 | West-4 | -3.9      | 9.7       | c   | 1019.8    |
| US16015 | 41-35.0   | 140-33.4   | 1/11 | 1051-1056 | 58        | WSW-2  | SW-1    | WSW-5  | -3.1      | 9.8       | c   | 1019.6    |
| US16016 | 42-04.7   | 140-56.6   | 1/12 | 1153-1200 | 85        | WNW-2  | WNW-2   | WNW-4  | -2.6      | 8.8       | s   | 1014.1    |
| US16017 | 42-18.5   | 140-42.2   | 1/13 | 0713-0719 | 65        | WNW-3  | WNW-1   | WNW-4  | -2.5      | 6.6       | o   | 1013.5    |
| US16018 | 42-21.0   | 140-36.9   | 1/13 | 0801-0807 | 86        | WNW-2  | WNW-1   | West-4 | -2.2      | 7.0       | o   | 1013.6    |
| US16019 | 42-19.0   | 140-30.7   | 1/13 | 0853-0900 | 93        | West-2 | West-1  | West-4 | -2.7      | 6.7       | s   | 1013.9    |
| US16020 | 42-19.1   | 140-23.5   | 1/13 | 0952-0956 | 56        | WNW-1  | West-1  | WNW-3  | -3.1      | 6.9       | s   | 1014.0    |
| US16021 | 42-14.1   | 140-29.9   | 1/13 | 1048-1052 | 76        | NW-1   | West-1  | NW-3   | -2.4      | 6.6       | s   | 1014.0    |
| US16022 | 42-16.7   | 140-35.8   | 1/13 | 1141-1150 | 91        | NNW-1  | West-1  | NNW-3  | -1.7      | 6.9       | s   | 1014.0    |
| US16023 | 42-11.3   | 140-35.3   | 1/13 | 1244-1251 | 80        | WNW-1  | WNW-1   | WNW-3  | -1.7      | 6.9       | c   | 1012.6    |
| US16024 | 42-09.7   | 140-35.6   | 1/13 | 1335-1341 | 72        | West-1 | WNW-1   | West-2 | -1.0      | 7.1       | bc  | 1012.1    |
| US16025 | 42-13.2   | 140-41.6   | 1/13 | 1431-1437 | 89        | NW-1   | WNW-1   | NW-2   | -0.6      | 7.3       | bc  | 1012.3    |
| US16026 | 42-15.4   | 140-47.3   | 1/13 | 1530-1534 | 72        | West-1 | West-1  | West-2 | -0.1      | 7.5       | bc  | 1012.1    |
| US16027 | 42-20.5   | 140-48.3   | 1/13 | 1614-1619 | 54        | WNW-1  | West-1  | WNW-4  | 0.0       | 6.8       | c   | 1011.6    |
| US16028 | 42-31.2   | 140-37.8   | 1/14 | 0932-0937 | 60        | WNW-3  | WNW-2   | WNW-6  | -2.5      | 7.1       | bc  | 1012.1    |
| US16029 | 42-26.8   | 140-25.3   | 1/14 | 1050-1056 | 61        | West-2 | West-1  | West-4 | -3.9      | 7.2       | bc  | 1012.6    |

| station | Lat. (N)° | Long. (E)° | Date | Hour      | Depth (m) | Wave    | Swell   | Wind    | Air Temp. | Sea Temp. | Wr. | Bar (hPa) |
|---------|-----------|------------|------|-----------|-----------|---------|---------|---------|-----------|-----------|-----|-----------|
| US16030 | 41-46.8   | 140-39.9   | 1/25 | 0815-0819 | 21        | NNW-2   | NW-1    | NNW-5   | -1.9      | 8.2       | bc  | 1010.5    |
| US16031 | 41-45.3   | 140-40.1   | 1/25 | 0839-0843 | 45        | NNW-2   | NW-1    | NNW-4   | -2.1      | 9.6       | bc  | 1011.0    |
| US16032 | 41-43.6   | 140-40.1   | 1/25 | 0903-0910 | 66        | NNW-2   | NW-1    | NNW-4   | -1.7      | 10.0      | bc  | 1011.4    |
| US16033 | 41-43.6   | 140-38.4   | 1/25 | 0930-0936 | 58        | NNW-2   | NW-1    | NNW-4   | -1.3      | 10.0      | bc  | 1012.1    |
| US16034 | 41-43.8   | 140-37.1   | 1/25 | 0944-0952 | 45        | NNW-1   | NW-1    | NNW-2   | -1.3      | 10.0      | bc  | 1012.3    |
| US16035 | 41-41.4   | 140-34.5   | 1/25 | 1018-1034 | 41        | NNW-1   | NW-1    | NNW-3   | -0.8      | 10.0      | bc  | 1013.1    |
| US16036 | 41-37.4   | 140-30.3   | 1/25 | 1112-1118 | 32        | NW-1    | SE-1    | NW-3    | -0.2      | 9.1       | bc  | 1013.5    |
| US16037 | 41-37.6   | 140-28.3   | 1/25 | 1144-1148 | 22        | NNW-1   | SE-1    | NNW-2   | -0.8      | 9.9       | bc  | 1013.6    |
| US16038 | 41-38.0   | 140-26.8   | 1/25 | 1200-1207 | 15        | WNW-1   | SE-1    | WNW-3   | -0.5      | 8.7       | c   | 1014.1    |
| US16039 | 41-35.0   | 140-33.1   | 1/25 | 1302-1309 | 58        | WNW-1   | SE-1    | WNW-3   | -1.0      | 10.6      | s   | 1014.3    |
| US16040 | 41-35.0   | 140-29.8   | 1/25 | 1341-1347 | 44        | WNW-1   | ESE-1   | WNW-3   | -1.6      | 10.5      | s   | 1014.5    |
| US16041 | 41-35.1   | 140-26.9   | 1/25 | 1406-1412 | 16        | NW-1    | SE-1    | NW-3    | -1.4      | 10.2      | s   | 1014.6    |
| US16042 | 41-28.7   | 140-20.4   | 1/25 | 1531-1539 | 61        | West-3  | SW-2    | West-5  | -0.4      | 10.7      | s   | 1016.2    |
| US16043 | 41-28.0   | 140-16.5   | 1/26 | 0708-0713 | 29        | West-2  | South-2 | West-4  | 2.3       | 10.4      | c   | 1020.7    |
| US16044 | 41-27.4   | 140-16.9   | 1/26 | 0747-0755 | 44        | West-2  | South-2 | West-4  | 2.5       | 10.5      | c   | 1021.1    |
| US16045 | 42-26.6   | 140-25.0   | 1/27 | 0646-0652 | 60        | WNW-2   | NW-1    | NW-4    | 0.5       | 6.0       | bc  | 1019.1    |
| US16046 | 42-19.5   | 140-23.0   | 1/27 | 0747-0754 | 53        | WNW-2   | NW-1    | WNW-4   | -0.3      | 6.0       | bc  | 1020.3    |
| US16047 | 42-14.2   | 140-29.5   | 1/27 | 0853-0900 | 75        | West-2  | WNW-1   | West-5  | 0.1       | 5.5       | bc  | 1020.7    |
| US16048 | 42-11.2   | 140-35.2   | 1/27 | 0949-0955 | 80        | West-3  | WNW-1   | West-5  | 0.7       | 6.0       | bc  | 1021.6    |
| US16049 | 41-57.4   | 140-58.1   | 1/29 | 0703-0707 | 78        | West-2  | NW-1    | West-4  | -3.0      | 3.8       | bc  | 1029.5    |
| US16050 | 41-58.0   | 140-59.4   | 1/29 | 0718-0723 | 87        | West-2  | NW-1    | West-4  | -2.7      | 3.8       | bc  | 1029.6    |
| US16051 | 41-24.1   | 140-20.4   | 1/29 | 1340-1352 | 93        | NW-1    | SW-2    | NW-4    | -0.6      | 10.2      | c   | 1028.8    |
| US16052 | 41-24.4   | 140-06.1   | 1/30 | 0658-0705 | 55        | NNE-1   | WSW-1   | NNE-3   | -2.1      | 9.5       | c   | 1025.1    |
| US16053 | 41-23.9   | 140-05.9   | 1/30 | 0720-0730 | 85        | NE-1    | West-1  | NE-3    | -1.9      | 9.4       | o   | 1025.1    |
| US16054 | 41-23.5   | 140-06.0   | 1/30 | 0743-0754 | 95        | NNE-1   | West-1  | NNE-2   | -1.4      | 9.5       | o   | 1025.5    |
| US16055 | 41-22.2   | 140-06.0   | 1/30 | 0820-0827 | 119       | East-1  | West-1  | East-2  | -1.2      | 9.5       | c   | 1025.4    |
| US16056 | 41-26.1   | 140-02.4   | 1/30 | 0904-0911 | 38        | North-1 | West-1  | North-2 | -1.3      | 9.5       | bc  | 1025.5    |
| US16057 | 41-26.1   | 140-01.7   | 1/30 | 0923-0930 | 57        | NW-1    | West-1  | NW-2    | -0.8      | 9.3       | bc  | 1025.5    |
| US16058 | 41-26.0   | 140-01.1   | 1/30 | 0943-0949 | 80        | NW-1    | West-1  | NW-2    | -0.6      | 9.4       | bc  | 1025.5    |
| US16059 | 41-25.1   | 140-00.3   | 1/30 | 1008-1019 | 105       | NW-1    | West-1  | NW-1    | 0.1       | 9.7       | bc  | 1025.5    |
| US16060 | 41-35.6   | 140-51.7   | 1/30 | 1416-1424 | 54        | Calm    | East-1  | Calm    | -0.7      | 10.5      | c   | 1023.7    |
| US16061 | 41-36.8   | 140-51.3   | 1/30 | 1434-1443 | 85        | Calm    | East-1  | Calm    | -0.2      | 10.5      | bc  | 1023.6    |
| US16062 | 41-38.6   | 140-49.2   | 1/30 | 1502-1516 | 325       | Calm    | East-1  | Calm    | -0.2      | 10.4      | bc  | 1023.6    |
| US16063 | 41-40.8   | 140-47.3   | 1/30 | 1536-1546 | 222       | West-1  | East-1  | West-3  | 0.1       | 10.3      | bc  | 1023.1    |
| US16064 | 41-28.8   | 140-45.2   | 1/30 | 1605-1610 | 84        | SW-1    | East-1  | SW-1    | 0.0       | 10.4      | bc  | 1022.6    |

Table 1. List of Oceanographic Station (continued)

| Cruise 353 |           |            |      |           |           |         |        |         |           |           |     |           |
|------------|-----------|------------|------|-----------|-----------|---------|--------|---------|-----------|-----------|-----|-----------|
| station    | Lat. (N)° | Long. (E)° | Date | Hour      | Depth (m) | Wave    | Swell  | Wind    | Air Temp. | Sea Temp. | Wr. | Bar (hPa) |
| US16065    | 42-10.4   | 140-41.2   | 2/6  | 0646-0651 | 86        | WNW-2   | NW-1   | WNW-5   | -2.2      | 4.8       | c   | 1014.8    |
| US16066    | 42-09.6   | 140-35.9   | 2/6  | 0742-0745 | 72        | West-2  | NW-1   | West-5  | -2.1      | 4.3       | c   | 1014.8    |
| US16067    | 42-11.0   | 140-35.7   | 2/6  | 0827-0831 | 79        | WNW-2   | NW-1   | WNW-5   | -2.7      | 5.3       | c   | 1015.5    |
| US16068    | 42-16.5   | 140-35.7   | 2/6  | 0940-0945 | 91        | WNW-3   | WNW-1  | WNW-5   | -2.9      | 5.5       | bc  | 1015.6    |
| US16069    | 42-20.7   | 140-36.5   | 2/6  | 1104-1109 | 88        | WNW-3   | WNW-1  | WNW-6   | -1.0      | 5.2       | bc  | 1014.6    |
| US16070    | 42-26.0   | 140-37.1   | 2/6  | 1156-1202 | 84        | WSW-3   | West-1 | WSW-6   | -0.6      | 5.0       | bc  | 1014.5    |
| US16071    | 42-31.2   | 140-37.5   | 2/6  | 1249-1253 | 61        | WNW-3   | SW-1   | WNW-5   | -0.7      | 4.4       | bc  | 1014.3    |
| US16072    | 42-28.1   | 140-43.2   | 2/6  | 1349-1353 | 60        | WNW-1   | West-2 | WNW-3   | -2.0      | 5.0       | bc  | 1014.4    |
| US16073    | 42-25.2   | 140-48.7   | 2/6  | 1435-1437 | 43        | NW-1    | West-2 | NW-4    | -2.1      | 4.5       | c   | 1014.3    |
| US16074    | 42-20.9   | 140-48.6   | 2/7  | 0652-0656 | 52        | WNW-3   | WNW-1  | NW-6    | -3.6      | 4.3       | bc  | 1016.5    |
| US16075    | 42-18.5   | 140-42.3   | 2/7  | 0740-0745 | 64        | WNW-3   | WNW-1  | WNW-5   | -4.2      | 4.5       | bc  | 1016.8    |
| US16076    | 42-13.4   | 140-41.2   | 2/7  | 0907-0912 | 88        | NW-2    | NW-1   | NW-4    | -3.9      | 4.5       | bc  | 1017.6    |
| US16077    | 42-10.4   | 140-46.9   | 2/7  | 1002-1007 | 94        | West-3  | NW-1   | West-5  | -3.5      | 5.0       | s   | 1017.1    |
| US16078    | 42-07.0   | 140-50.4   | 2/7  | 1049-1053 | 68        | WNW-3   | NW-1   | WNW-5   | -3.1      | 5.2       | bc  | 1017.1    |
| US16079    | 41-59.5   | 141-01.7   | 2/7  | 1209-1215 | 100       | WNW-3   | NW-1   | WNW-5   | -1.6      | 5.4       | bc  | 1015.6    |
| US16080    | 41-58.8   | 141-00.7   | 2/7  | 1224-1230 | 94        | NW-3    | NW-1   | NW-5    | -1.4      | 5.5       | bc  | 1014.8    |
| US16081    | 41-58.2   | 140-59.6   | 2/7  | 1239-1244 | 87        | NW-3    | NW-1   | NW-5    | -1.3      | 5.5       | bc  | 1014.6    |
| US16082    | 41-57.6   | 140-58.4   | 2/7  | 1254-1259 | 81        | WNW-3   | NW-1   | WNW-5   | -1.2      | 5.3       | bc  | 1014.2    |
| US16083    | 42-13.9   | 140-30.1   | 2/8  | 0746-0751 | 78        | NW-3    | NW-1   | NW-5    | -1.6      | 5.1       | bc  | 1020.6    |
| US16084    | 42-18.9   | 140-23.1   | 2/8  | 0848-0854 | 53        | NW-1    | NW-1   | NW-2    | -1.5      | 5.0       | bc  | 1020.8    |
| US16085    | 42-18.8   | 140-30.2   | 2/8  | 0938-0944 | 92        | West-1  | NW-1   | West-3  | -0.6      | 5.1       | bc  | 1021.1    |
| US16086    | 42-23.1   | 140-42.6   | 2/8  | 1102-1107 | 61        | NW-1    | NW-1   | NW-3    | -0.4      | 4.4       | b   | 1020.7    |
| US16087    | 42-15.4   | 140-47.5   | 2/8  | 1217-1220 | 72        | NNW-1   | NW-1   | NNW-2   | 0.1       | 4.4       | b   | 1020.1    |
| US16088    | 42-17.5   | 140-53.9   | 2/8  | 1305-1310 | 57        | North-1 | NW-1   | North-3 | 0.6       | 4.4       | b   | 1019.1    |
| US16089    | 42-16.0   | 140-58.6   | 2/8  | 1345-1350 | 64        | NNW-1   | West-1 | NNW-2   | 1.6       | 4.9       | b   | 1019.0    |
| US16090    | 42-12.9   | 140-56.0   | 2/8  | 1424-1429 | 69        | NNW-1   | WNW-1  | NNW-2   | 0.3       | 4.5       | bc  | 1018.8    |
| US16091    | 42-05.0   | 140-56.6   | 2/8  | 1529-1534 | 84        | Calm    | WNW-1  | Calm    | 0.6       | 5.4       | bc  | 1019.0    |

Table 2. Oceanographic data

|                      |         |          |         |
|----------------------|---------|----------|---------|
| STATION US16001      |         |          |         |
| LATITUDE 41-47.0 N   |         |          |         |
| LONGITUDE 140-40.0 E |         |          |         |
| DEPTH (m) 20         |         |          |         |
| Press.               | Temp.   | Salinity | Sigma-T |
| 5                    | 10.1711 | 33.8988  | 26.063  |
| 10                   | 10.1709 | 33.8986  | 26.0629 |
| 20                   | 10.1661 | 33.8977  | 26.063  |
| 30                   | 10.1081 | 33.8861  | 26.0638 |
| 40                   | 10.0292 | 33.8726  | 26.0667 |
| 50                   | 9.9676  | 33.8803  | 26.0831 |
| 55                   | 10.056  | 33.9164  | 26.0964 |

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| STATION US16002      |         |          |         |
| LATITUDE 41-45.6 N   |         |          |         |
| LONGITUDE 140-39.7 E |         |          |         |
| DEPTH (m) 38         |         |          |         |
| Press.               | Temp.   | Salinity | Sigma-T |
| 5                    | 9.9808  | 33.8855  | 26.085  |
| 10                   | 9.9839  | 33.8854  | 26.0843 |
| 20                   | 10.0825 | 33.9077  | 26.0851 |
| 30                   | 10.0973 | 33.9094  | 26.0839 |
| 37                   | 10.0945 | 33.9106  | 26.0853 |

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| STATION US16003      |         |          |         |
| LATITUDE 41-43.5 N   |         |          |         |
| LONGITUDE 140-39.7 E |         |          |         |
| DEPTH (m) 62         |         |          |         |
| Press.               | Temp.   | Salinity | Sigma-T |
| 5                    | 10.2704 | 33.9278  | 26.0686 |
| 10                   | 10.2543 | 33.931   | 26.0739 |
| 20                   | 10.2392 | 33.9325  | 26.0776 |
| 30                   | 10.2354 | 33.9336  | 26.0791 |
| 40                   | 10.1936 | 33.9377  | 26.0895 |
| 50                   | 10.073  | 33.9455  | 26.1162 |
| 62                   | 9.9687  | 33.9566  | 26.1425 |

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| STATION US16004      |       |          |         |
| LATITUDE 41-43.8 N   |       |          |         |
| LONGITUDE 140-37.9 E |       |          |         |
| DEPTH (m) 56         |       |          |         |
| Press.               | Temp. | Salinity | Sigma-T |
| 5                    | 6.473 | 33.534   | 26.334  |
| 10                   | 6.480 | 33.536   | 26.335  |
| 20                   | 6.488 | 33.538   | 26.336  |
| 30                   | 6.484 | 33.539   | 26.336  |
| 40                   | 6.458 | 33.548   | 26.347  |
| 50                   | 6.432 | 33.549   | 26.352  |

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| STATION US16005      |         |          |         |
| LATITUDE 41-43.9 N   |         |          |         |
| LONGITUDE 140-36.9 E |         |          |         |
| DEPTH (m) 38         |         |          |         |
| Press.               | Temp.   | Salinity | Sigma-T |
| 5                    | 10.1091 | 33.9106  | 26.0828 |
| 10                   | 10.1245 | 33.9137  | 26.0826 |
| 20                   | 10.128  | 33.9165  | 26.0842 |
| 30                   | 10.1351 | 33.925   | 26.0896 |
| 37                   | 10.1205 | 33.924   | 26.0913 |

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| STATION US16006      |         |          |         |
| LATITUDE 41-41.3 N   |         |          |         |
| LONGITUDE 140-34.5 E |         |          |         |
| DEPTH (m) 41         |         |          |         |
| Press.               | Temp.   | Salinity | Sigma-T |
| 5                    | 10.089  | 33.9279  | 26.0998 |
| 10                   | 10.0947 | 33.9285  | 26.0992 |
| 20                   | 10.0896 | 33.9281  | 26.0998 |
| 30                   | 10.0599 | 33.9267  | 26.1037 |
| 40                   | 9.8761  | 33.9242  | 26.1328 |

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| STATION US16007      |         |          |         |
| LATITUDE 41-37.2 N   |         |          |         |
| LONGITUDE 140-30.0 E |         |          |         |
| DEPTH (m) 31         |         |          |         |
| Press.               | Temp.   | Salinity | Sigma-T |
| 5                    | 10.7367 | 33.8989  | 25.9649 |
| 10                   | 10.7381 | 33.8986  | 25.9644 |
| 20                   | 10.2741 | 33.9163  | 26.059  |
| 29                   | 9.5313  | 33.8836  | 26.1583 |

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| STATION US16008      |        |          |         |
| LATITUDE 41-37.7 N   |        |          |         |
| LONGITUDE 140-28.0 E |        |          |         |
| DEPTH (m) 19         |        |          |         |
| Press.               | Temp.  | Salinity | Sigma-T |
| 5                    | 8.8972 | 33.8184  | 26.2091 |
| 10                   | 8.9111 | 33.8242  | 26.2115 |
| 18                   | 8.9398 | 33.8337  | 26.2144 |

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| STATION US16009      |        |          |         |
| LATITUDE 41-38.1 N   |        |          |         |
| LONGITUDE 140-26.3 E |        |          |         |
| DEPTH (m) 13         |        |          |         |
| Press.               | Temp.  | Salinity | Sigma-T |
| 5                    | 8.2844 | 33.7151  | 26.2225 |
| 10                   | 8.316  | 33.7306  | 26.2298 |
| 12                   | 8.2697 | 33.7228  | 26.2307 |

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| STATION US16010      |        |          |         |
| LATITUDE 41-28.1 N   |        |          |         |
| LONGITUDE 140-16.4 E |        |          |         |
| DEPTH (m) 25         |        |          |         |
| Press.               | Temp.  | Salinity | Sigma-T |
| 5                    | 9.9745 | 33.9353  | 26.1249 |
| 10                   | 9.9552 | 33.9355  | 26.1283 |
| 20                   | 9.9778 | 33.9349  | 26.124  |
| 24                   | 9.9702 | 33.9347  | 26.1251 |

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| STATION US16011      |        |          |         |
| LATITUDE 41-26.7 N   |        |          |         |
| LONGITUDE 140-17.3 E |        |          |         |
| DEPTH (m) 62         |        |          |         |
| Press.               | Temp.  | Salinity | Sigma-T |
| 5                    | 9.9421 | 33.9722  | 26.1592 |
| 10                   | 9.9527 | 33.9723  | 26.1574 |
| 20                   | 9.9503 | 33.9725  | 26.158  |
| 30                   | 9.958  | 33.9726  | 26.1567 |
| 40                   | 9.9539 | 33.9726  | 26.1575 |
| 50                   | 9.9515 | 33.9725  | 26.1578 |
| 57                   | 9.9505 | 33.9724  | 26.1579 |

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| STATION US16012      |         |          |         |
| LATITUDE 41-28.7 N   |         |          |         |
| LONGITUDE 140-20.4 E |         |          |         |
| DEPTH (m) 62         |         |          |         |
| Press.               | Temp.   | Salinity | Sigma-T |
| 5                    | 10.201  | 33.9546  | 26.1014 |
| 10                   | 10.2056 | 33.9542  | 26.1003 |
| 20                   | 10.0852 | 33.9589  | 26.1245 |
| 30                   | 9.9958  | 33.9588  | 26.1397 |
| 40                   | 9.8716  | 33.96    | 26.1615 |
| 50                   | 9.8529  | 33.9611  | 26.1655 |
| 57                   | 9.8577  | 33.9611  | 26.1647 |

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| STATION US16013      |         |          |         |
| LATITUDE 41-34.9 N   |         |          |         |
| LONGITUDE 140-29.6 E |         |          |         |
| DEPTH (m) 43         |         |          |         |
| Press.               | Temp.   | Salinity | Sigma-T |
| 5                    | 10.0831 | 33.9516  | 26.1192 |
| 10                   | 10.0911 | 33.9508  | 26.1172 |
| 20                   | 10.0869 | 33.9509  | 26.118  |
| 30                   | 10.0293 | 33.9551  | 26.131  |
| 40                   | 9.7829  | 33.9672  | 26.182  |
| 42                   | 9.7767  | 33.9689  | 26.1843 |

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| STATION US16014      |         |          |         |
| LATITUDE 41-35.1 N   |         |          |         |
| LONGITUDE 140-26.9 E |         |          |         |
| DEPTH (m) 15         |         |          |         |
| Press.               | Temp.   | Salinity | Sigma-T |
| 5                    | 10.1136 | 33.9262  | 26.0942 |
| 10                   | 10.1217 | 33.9273  | 26.0937 |
| 14                   | 10.1254 | 33.9278  | 26.0934 |

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| STATION US16015      |         |          |         |
| LATITUDE 41-35.0 N   |         |          |         |
| LONGITUDE 140-33.4 E |         |          |         |
| DEPTH (m) 58         |         |          |         |
| Press.               | Temp.   | Salinity | Sigma-T |
| 5                    | 10.2454 | 33.9424  | 26.0843 |
| 10                   | 10.2528 | 33.9428  | 26.0833 |
| 20                   | 10.2093 | 33.947   | 26.0941 |
| 30                   | 10.2098 | 33.9473  | 26.0943 |
| 40                   | 10.2085 | 33.9469  | 26.0942 |
| 50                   | 10.1472 | 33.9535  | 26.1098 |
| 56                   | 10.0584 | 33.9594  | 26.1294 |



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| STATION US16016 |          |          |         |
| LATITUDE        | 42-04.7  | N        |         |
| LONGITUDE       | 140-56.6 | E        |         |
| DEPTH (m)       | 85       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 9.0123   | 33.8837  | 26.2421 |
| 10              | 9.0215   | 33.8836  | 26.2405 |
| 20              | 9.0305   | 33.8834  | 26.239  |
| 30              | 9.0317   | 33.8827  | 26.2382 |
| 40              | 9.0317   | 33.883   | 26.2384 |
| 50              | 9.0152   | 33.8818  | 26.2401 |
| 75              | 7.8575   | 33.8126  | 26.3622 |
| 81              | 7.8041   | 33.8148  | 26.3718 |

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| STATION US16019 |          |          |         |
| LATITUDE        | 42-19.0  | N        |         |
| LONGITUDE       | 140-30.7 | E        |         |
| DEPTH (m)       | 93       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 7.0444   | 33.7386  | 26.4191 |
| 10              | 7.0287   | 33.7379  | 26.4207 |
| 20              | 7.0338   | 33.7382  | 26.4202 |
| 30              | 7.0389   | 33.7381  | 26.4194 |
| 40              | 7.0504   | 33.7379  | 26.4177 |
| 50              | 7.054    | 33.7375  | 26.4169 |
| 75              | 7.0554   | 33.7369  | 26.4163 |
| 91              | 7.0566   | 33.7371  | 26.4162 |

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| STATION US16022 |          |          |         |
| LATITUDE        | 42-16.7  | N        |         |
| LONGITUDE       | 140-35.8 | E        |         |
| DEPTH (m)       | 91       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 7.4623   | 33.8086  | 26.416  |
| 10              | 7.461    | 33.8096  | 26.4169 |
| 20              | 7.4227   | 33.8023  | 26.4166 |
| 30              | 7.3965   | 33.7975  | 26.4165 |
| 40              | 7.399    | 33.7984  | 26.4168 |
| 50              | 7.3986   | 33.7978  | 26.4165 |
| 75              | 7.4796   | 33.8109  | 26.4153 |
| 87              | 7.458    | 33.8066  | 26.415  |

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| STATION US16025 |          |          |         |
| LATITUDE        | 42-13.2  | N        |         |
| LONGITUDE       | 140-41.6 | E        |         |
| DEPTH (m)       | 89       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 7.5468   | 33.808   | 26.4035 |
| 10              | 7.5505   | 33.8076  | 26.4026 |
| 20              | 7.5514   | 33.8074  | 26.4023 |
| 30              | 7.551    | 33.8069  | 26.402  |
| 40              | 7.5498   | 33.807   | 26.4023 |
| 50              | 7.5498   | 33.8074  | 26.4026 |
| 75              | 7.5378   | 33.8056  | 26.4029 |
| 86              | 7.3934   | 33.793   | 26.4134 |

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| STATION US16028 |          |          |         |
| LATITUDE        | 42-31.2  | N        |         |
| LONGITUDE       | 140-37.8 | E        |         |
| DEPTH (m)       | 60       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 7.3634   | 33.7962  | 26.4201 |
| 10              | 7.3738   | 33.7972  | 26.4195 |
| 20              | 7.3942   | 33.7998  | 26.4187 |
| 30              | 7.3841   | 33.7984  | 26.419  |
| 40              | 7.3838   | 33.7976  | 26.4184 |
| 50              | 7.3904   | 33.799   | 26.4185 |
| 57              | 7.3924   | 33.7999  | 26.419  |

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| STATION US16017 |          |          |         |
| LATITUDE        | 42-18.5  | N        |         |
| LONGITUDE       | 140-42.2 | E        |         |
| DEPTH (m)       | 65       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 7.6521   | 33.8363  | 26.4107 |
| 10              | 7.6532   | 33.8353  | 26.4097 |
| 20              | 7.5608   | 33.822   | 26.4125 |
| 30              | 7.4472   | 33.8105  | 26.4196 |
| 40              | 7.1852   | 33.7839  | 26.4353 |
| 50              | 7.1421   | 33.7841  | 26.4414 |
| 62              | 7.1017   | 33.7789  | 26.4429 |

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| STATION US16020 |          |          |         |
| LATITUDE        | 42-19.1  | N        |         |
| LONGITUDE       | 140-23.5 | E        |         |
| DEPTH (m)       | 56       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 7.2239   | 33.7493  | 26.4027 |
| 10              | 7.2272   | 33.7493  | 26.4023 |
| 20              | 7.2288   | 33.7486  | 26.4015 |
| 30              | 7.2285   | 33.7486  | 26.4015 |
| 40              | 7.2324   | 33.7498  | 26.402  |
| 50              | 7.2349   | 33.7514  | 26.4029 |
| 53              | 7.1852   | 33.748   | 26.4071 |

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| STATION US16023 |          |          |         |
| LATITUDE        | 42-11.3  | N        |         |
| LONGITUDE       | 140-35.3 | E        |         |
| DEPTH (m)       | 80       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 6.9605   | 33.7365  | 26.4289 |
| 10              | 6.9612   | 33.7357  | 26.4282 |
| 20              | 6.9623   | 33.7358  | 26.4281 |
| 30              | 6.9642   | 33.7361  | 26.428  |
| 40              | 6.9558   | 33.7345  | 26.4279 |
| 50              | 6.9419   | 33.7327  | 26.4284 |
| 75              | 6.8095   | 33.7178  | 26.4346 |
| 79              | 6.7739   | 33.7147  | 26.4368 |

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| STATION US16026 |          |          |         |
| LATITUDE        | 42-15.4  | N        |         |
| LONGITUDE       | 140-47.3 | E        |         |
| DEPTH (m)       | 72       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 7.9344   | 33.8513  | 26.3813 |
| 10              | 7.8898   | 33.8433  | 26.3816 |
| 20              | 7.7554   | 33.8271  | 26.3885 |
| 30              | 7.7439   | 33.8262  | 26.3894 |
| 40              | 7.7294   | 33.8243  | 26.3901 |
| 50              | 7.7249   | 33.8238  | 26.3903 |
| 70              | 7.6323   | 33.8134  | 26.3955 |

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| STATION US16029 |          |          |         |
| LATITUDE        | 42-26.8  | N        |         |
| LONGITUDE       | 140-25.3 | E        |         |
| DEPTH (m)       | 61       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 7.1474   | 33.7566  | 26.4191 |
| 10              | 7.1683   | 33.7592  | 26.4182 |
| 20              | 7.2252   | 33.7684  | 26.4176 |
| 30              | 7.2281   | 33.769   | 26.4176 |
| 40              | 7.201    | 33.7633  | 26.4169 |
| 50              | 7.1978   | 33.7637  | 26.4177 |
| 58              | 7.1993   | 33.7648  | 26.4183 |

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| STATION US16018 |          |          |         |
| LATITUDE        | 42-21.0  | N        |         |
| LONGITUDE       | 140-36.9 | E        |         |
| DEPTH (m)       | 86       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 7.498    | 33.826   | 26.4246 |
| 10              | 7.5081   | 33.8258  | 26.4229 |
| 20              | 7.5097   | 33.8255  | 26.4225 |
| 30              | 7.5087   | 33.8258  | 26.4229 |
| 40              | 7.5079   | 33.8256  | 26.4228 |
| 50              | 7.5083   | 33.8256  | 26.4228 |
| 75              | 7.5093   | 33.8256  | 26.4227 |
| 83              | 7.5111   | 33.8255  | 26.4223 |

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| STATION US16021 |          |          |         |
| LATITUDE        | 42-14.1  | N        |         |
| LONGITUDE       | 140-29.9 | E        |         |
| DEPTH (m)       | 76       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 7.0281   | 33.7328  | 26.4167 |
| 10              | 7.0301   | 33.7318  | 26.4157 |
| 20              | 7.0457   | 33.7343  | 26.4155 |
| 30              | 7.0473   | 33.7346  | 26.4155 |
| 40              | 7.0413   | 33.7337  | 26.4156 |
| 50              | 7.0427   | 33.7337  | 26.4154 |
| 73              | 7.0358   | 33.7326  | 26.4156 |

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| STATION US16024 |          |          |         |
| LATITUDE        | 42-09.7  | N        |         |
| LONGITUDE       | 140-35.6 | E        |         |
| DEPTH (m)       | 72       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 7.3285   | 33.799   | 26.4273 |
| 10              | 7.329    | 33.799   | 26.4272 |
| 20              | 7.3272   | 33.7988  | 26.4273 |
| 30              | 7.3233   | 33.7983  | 26.4274 |
| 40              | 7.3083   | 33.7969  | 26.4284 |
| 50              | 7.2894   | 33.7941  | 26.4289 |
| 68              | 7.2631   | 33.7905  | 26.4297 |

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| STATION US16027 |          |          |         |
| LATITUDE        | 42-20.5  | N        |         |
| LONGITUDE       | 140-48.3 | E        |         |
| DEPTH (m)       | 54       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 7.1161   | 33.7569  | 26.4236 |
| 10              | 7.1257   | 33.7568  | 26.4223 |
| 20              | 7.128    | 33.7554  | 26.4208 |
| 30              | 7.1338   | 33.7552  | 26.4198 |
| 40              | 7.1327   | 33.7542  | 26.4192 |
| 50              | 7.1342   | 33.7543  | 26.4191 |
| 52              | 7.1325   | 33.7541  | 26.4192 |

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| STATION US16030 |          |          |         |
| LATITUDE        | 41-46.8  | N        |         |
| LONGITUDE       | 140-39.9 | E        |         |
| DEPTH (m)       | 21       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 8.7271   | 33.7212  | 26.1595 |
| 10              | 8.7383   | 33.7194  | 26.1564 |
| 20              | 8.7281   | 33.7196  | 26.1582 |
| 20              | 8.7281   | 33.7196  | 26.1582 |

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| STATION US16031 |          |          |         |
| LATITUDE        | 41-45.3  | N        |         |
| LONGITUDE       | 140-40.1 | E        |         |
| DEPTH (m)       | 45       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 10.0995  | 33.9346  | 26.1031 |
| 10              | 10.0929  | 33.9349  | 26.1045 |
| 20              | 10.1055  | 33.9346  | 26.1022 |
| 30              | 10.0977  | 33.9349  | 26.1037 |
| 40              | 10.1091  | 33.9349  | 26.1018 |
| 42              | 10.1072  | 33.9349  | 26.102  |

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| STATION US16034 |          |          |         |
| LATITUDE        | 41-43.8  | N        |         |
| LONGITUDE       | 140-37.1 | E        |         |
| DEPTH (m)       | 45       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 10.0848  | 33.9406  | 26.1104 |
| 10              | 10.0783  | 33.9391  | 26.1103 |
| 20              | 10.0833  | 33.9396  | 26.1098 |
| 30              | 10.0762  | 33.9386  | 26.1103 |
| 40              | 9.8893   | 33.9175  | 26.1253 |
| 42              | 9.8441   | 33.9131  | 26.1295 |

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| STATION US16037 |          |          |         |
| LATITUDE        | 41-37.6  | N        |         |
| LONGITUDE       | 140-28.3 | E        |         |
| DEPTH (m)       | 22       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 9.953    | 33.9168  | 26.1141 |
| 10              | 9.9332   | 33.9121  | 26.1138 |
| 20              | 9.0558   | 33.8727  | 26.2265 |

|                 |          |          |         |
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| STATION US16040 |          |          |         |
| LATITUDE        | 41-35.0  | N        |         |
| LONGITUDE       | 140-29.8 | E        |         |
| DEPTH (m)       | 44       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 10.9805  | 33.9011  | 25.9233 |
| 10              | 10.9811  | 33.9005  | 25.9227 |
| 20              | 10.957   | 33.9011  | 25.9275 |
| 30              | 10.8624  | 33.9062  | 25.9483 |
| 40              | 10.7986  | 33.9188  | 25.9694 |
| 44              | 10.7993  | 33.9181  | 25.9688 |

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| STATION US16043 |          |          |         |
| LATITUDE        | 41-28.0  | N        |         |
| LONGITUDE       | 140-16.5 | E        |         |
| DEPTH (m)       | 29       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 10.7349  | 33.9091  | 25.9732 |
| 10              | 10.7484  | 33.9092  | 25.9709 |
| 20              | 10.7212  | 33.9076  | 25.9744 |
| 27              | 10.7024  | 33.9068  | 25.9772 |

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| STATION US16032 |          |          |         |
| LATITUDE        | 41-43.6  | N        |         |
| LONGITUDE       | 140-40.1 | E        |         |
| DEPTH (m)       | 66       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 10.3782  | 33.9482  | 26.066  |
| 10              | 10.3755  | 33.9462  | 26.0649 |
| 20              | 10.3836  | 33.9456  | 26.063  |
| 30              | 10.3825  | 33.9455  | 26.0631 |
| 40              | 10.3286  | 33.9419  | 26.0696 |
| 50              | 10.2882  | 33.9415  | 26.0762 |
| 63              | 10.2583  | 33.9405  | 26.0806 |

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| STATION US16035 |          |          |         |
| LATITUDE        | 41-41.4  | N        |         |
| LONGITUDE       | 140-34.5 | E        |         |
| DEPTH (m)       | 41       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 10.2463  | 33.9489  | 26.0893 |
| 10              | 10.2383  | 33.9478  | 26.0897 |
| 20              | 10.2181  | 33.946   | 26.0918 |
| 30              | 10.0223  | 33.925   | 26.1088 |
| 39              | 9.737    | 33.8939  | 26.1323 |

|                 |          |          |         |
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| STATION US16038 |          |          |         |
| LATITUDE        | 41-38.0  | N        |         |
| LONGITUDE       | 140-26.8 | E        |         |
| DEPTH (m)       | 15       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 8.4978   | 33.7858  | 26.2455 |
| 10              | 8.5308   | 33.8042  | 26.2549 |
| 14              | 8.5382   | 33.806   | 26.2551 |

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| STATION US16041 |          |          |         |
| LATITUDE        | 41-35.1  | N        |         |
| LONGITUDE       | 140-26.9 | E        |         |
| DEPTH (m)       | 16       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 10.4737  | 33.9381  | 26.0415 |
| 10              | 10.432   | 33.9329  | 26.0447 |
| 14              | 9.3635   | 33.8393  | 26.151  |

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| STATION US16044 |          |          |         |
| LATITUDE        | 41-27.4  | N        |         |
| LONGITUDE       | 140-16.9 | E        |         |
| DEPTH (m)       | 44       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 10.8088  | 33.9101  | 25.9609 |
| 10              | 10.817   | 33.9106  | 25.9598 |
| 20              | 10.8423  | 33.9093  | 25.9543 |
| 30              | 10.8424  | 33.9086  | 25.9537 |
| 40              | 10.8414  | 33.9085  | 25.9538 |
| 41              | 10.8407  | 33.9082  | 25.9538 |

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| STATION US16033 |          |          |         |
| LATITUDE        | 41-43.6  | N        |         |
| LONGITUDE       | 140-38.4 | E        |         |
| DEPTH (m)       | 58       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 10.2819  | 33.9457  | 26.0806 |
| 10              | 10.2843  | 33.9456  | 26.0801 |
| 20              | 10.2909  | 33.9456  | 26.079  |
| 30              | 10.2754  | 33.9435  | 26.08   |
| 40              | 10.2605  | 33.9432  | 26.0824 |
| 50              | 10.2454  | 33.9409  | 26.0832 |
| 56              | 10.2123  | 33.938   | 26.0865 |

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| STATION US16036 |          |          |         |
| LATITUDE        | 41-37.4  | N        |         |
| LONGITUDE       | 140-30.3 | E        |         |
| DEPTH (m)       | 32       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 10.4128  | 33.9369  | 26.0512 |
| 10              | 10.4182  | 33.9358  | 26.0494 |
| 20              | 10.3568  | 33.9329  | 26.0577 |
| 30              | 9.3967   | 33.8947  | 26.189  |
| 30              | 9.3967   | 33.8947  | 26.189  |

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| STATION US16039 |          |          |         |
| LATITUDE        | 41-35.0  | N        |         |
| LONGITUDE       | 140-33.1 | E        |         |
| DEPTH (m)       | 58       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 10.917   | 33.9133  | 25.9441 |
| 10              | 10.9234  | 33.9127  | 25.9425 |
| 20              | 10.9156  | 33.9122  | 25.9436 |
| 30              | 10.8601  | 33.9165  | 25.9567 |
| 40              | 10.8139  | 33.9194  | 25.9672 |
| 50              | 10.7821  | 33.9236  | 25.9761 |
| 57              | 10.7794  | 33.9243  | 25.9771 |

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| STATION US16042 |          |          |         |
| LATITUDE        | 41-28.7  | N        |         |
| LONGITUDE       | 140-20.4 | E        |         |
| DEPTH (m)       | 61       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 10.9866  | 33.8972  | 25.9191 |
| 10              | 10.9934  | 33.8969  | 25.9177 |
| 20              | 10.9778  | 33.897   | 25.9205 |
| 30              | 11.0054  | 33.897   | 25.9156 |
| 40              | 10.9996  | 33.8973  | 25.9169 |
| 50              | 10.9612  | 33.9037  | 25.9288 |
| 58              | 10.9514  | 33.9061  | 25.9324 |

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| STATION US16045 |          |          |         |
| LATITUDE        | 42-26.6  | N        |         |
| LONGITUDE       | 140-25.0 | E        |         |
| DEPTH (m)       | 60       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 6.329    | 33.7768  | 26.5443 |
| 10              | 6.3239   | 33.7764  | 26.5446 |
| 20              | 6.3155   | 33.7765  | 26.5458 |
| 30              | 6.3211   | 33.7769  | 26.5454 |
| 40              | 6.2722   | 33.7729  | 26.5485 |
| 50              | 6.262    | 33.7727  | 26.5496 |
| 58              | 6.2536   | 33.7719  | 26.5501 |

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| STATION US16046 |          |          |         |
| LATITUDE        | 42-19.5  | N        |         |
| LONGITUDE       | 140-23.0 | E        |         |
| DEPTH (m)       | 53       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 6.1819   | 33.7686  | 26.5567 |
| 10              | 6.1917   | 33.769   | 26.5557 |
| 20              | 6.1931   | 33.7689  | 26.5554 |
| 30              | 6.2035   | 33.77    | 26.555  |
| 40              | 6.1996   | 33.7732  | 26.558  |
| 50              | 6.1302   | 33.774   | 26.5675 |
| 52              | 6.1294   | 33.7741  | 26.5677 |

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| STATION US16047 |          |          |         |
| LATITUDE        | 42-14.2  | N        |         |
| LONGITUDE       | 140-29.5 | E        |         |
| DEPTH (m)       | 75       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 5.7259   | 33.717   | 26.5727 |
| 10              | 5.7159   | 33.7144  | 26.5718 |
| 20              | 5.7222   | 33.7159  | 26.5723 |
| 30              | 5.7219   | 33.7154  | 26.5719 |
| 40              | 5.7302   | 33.7164  | 26.5717 |
| 50              | 5.7288   | 33.7162  | 26.5717 |
| 73              | 5.8341   | 33.7356  | 26.5742 |

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| STATION US16048 |          |          |         |
| LATITUDE        | 42-11.2  | N        |         |
| LONGITUDE       | 140-35.2 | E        |         |
| DEPTH (m)       | 80       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 6.3004   | 33.7574  | 26.5326 |
| 10              | 6.31     | 33.7586  | 26.5324 |
| 20              | 6.3166   | 33.7589  | 26.5318 |
| 30              | 6.2846   | 33.7555  | 26.5331 |
| 40              | 6.2764   | 33.7547  | 26.5336 |
| 50              | 6.2592   | 33.7536  | 26.5349 |
| 75              | 6.1625   | 33.7435  | 26.5393 |
| 78              | 6.039    | 33.73    | 26.5442 |

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| STATION US16049 |          |          |         |
| LATITUDE        | 41-57.4  | N        |         |
| LONGITUDE       | 140-58.1 | E        |         |
| DEPTH (m)       | 78       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 4.2499   | 32.9763  | 26.1513 |
| 10              | 4.2559   | 32.9764  | 26.1507 |
| 20              | 4.2668   | 32.9786  | 26.1514 |
| 30              | 4.5776   | 33.0353  | 26.1639 |
| 40              | 5.5101   | 33.2439  | 26.2243 |
| 50              | 6.7215   | 33.5866  | 26.3429 |
| 75              | 6.5914   | 33.734   | 26.4763 |
| 76              | 6.6481   | 33.7565  | 26.4865 |

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| STATION US16050 |          |          |         |
| LATITUDE        | 41-58.0  | N        |         |
| LONGITUDE       | 140-59.4 | E        |         |
| DEPTH (m)       | 87       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 4.2359   | 32.9631  | 26.1422 |
| 10              | 4.2392   | 32.9634  | 26.1421 |
| 20              | 4.2819   | 32.9715  | 26.1442 |
| 30              | 4.2419   | 32.9626  | 26.1413 |
| 40              | 4.4985   | 33.0196  | 26.1598 |
| 50              | 5.2702   | 33.2052  | 26.2214 |
| 75              | 7.0494   | 33.6526  | 26.3507 |
| 83              | 6.8113   | 33.6724  | 26.3985 |

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| STATION US16051 |          |          |         |
| LATITUDE        | 41-24.1  | N        |         |
| LONGITUDE       | 140-20.4 | E        |         |
| DEPTH (m)       | 93       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 10.5655  | 33.9235  | 26.0142 |
| 10              | 10.581   | 33.9226  | 26.0107 |
| 20              | 10.5694  | 33.9217  | 26.012  |
| 30              | 10.3328  | 33.9306  | 26.0601 |
| 40              | 10.0884  | 33.9435  | 26.112  |
| 50              | 10.0229  | 33.9478  | 26.1264 |
| 75              | 9.7234   | 33.9617  | 26.1876 |
| 90              | 8.9388   | 33.9996  | 26.3444 |

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| STATION US16052 |          |          |         |
| LATITUDE        | 41-24.4  | N        |         |
| LONGITUDE       | 140-06.1 | E        |         |
| DEPTH (m)       | 55       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 9.8315   | 33.9517  | 26.1617 |
| 10              | 9.8291   | 33.952   | 26.1623 |
| 20              | 9.7895   | 33.9555  | 26.1717 |
| 30              | 9.7322   | 33.9602  | 26.1849 |
| 40              | 9.6514   | 33.9623  | 26.2    |
| 50              | 9.4083   | 33.9756  | 26.2503 |
| 55              | 9.3761   | 33.9809  | 26.2596 |

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| STATION US16053 |          |          |         |
| LATITUDE        | 41-23.9  | N        |         |
| LONGITUDE       | 140-05.9 | E        |         |
| DEPTH (m)       | 85       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 9.6655   | 33.9522  | 26.1897 |
| 10              | 9.6679   | 33.952   | 26.1892 |
| 20              | 9.6625   | 33.9503  | 26.1888 |
| 30              | 9.6562   | 33.9514  | 26.1907 |
| 40              | 9.5435   | 33.9672  | 26.2216 |
| 50              | 9.399    | 33.9772  | 26.253  |
| 75              | 8.5005   | 34.0248  | 26.4325 |
| 82              | 8.4457   | 34.0281  | 26.4434 |

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| STATION US16054 |          |          |         |
| LATITUDE        | 41-23.5  | N        |         |
| LONGITUDE       | 140-06.0 | E        |         |
| DEPTH (m)       | 95       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 9.7759   | 33.9535  | 26.1724 |
| 10              | 9.7851   | 33.9533  | 26.1707 |
| 20              | 9.7659   | 33.9534  | 26.174  |
| 30              | 9.4926   | 33.9704  | 26.2325 |
| 40              | 9.3974   | 33.9764  | 26.2526 |
| 50              | 9.3389   | 33.9798  | 26.2649 |
| 75              | 8.9377   | 33.9952  | 26.3412 |
| 92              | 8.3728   | 34.0322  | 26.4578 |

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| STATION US16055 |          |          |         |
| LATITUDE        | 41-22.2  | N        |         |
| LONGITUDE       | 140-06.0 | E        |         |
| DEPTH (m)       | 119      |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 9.8379   | 33.9393  | 26.1509 |
| 10              | 9.8418   | 33.9395  | 26.1504 |
| 20              | 9.8422   | 33.9391  | 26.1501 |
| 30              | 9.8371   | 33.9379  | 26.15   |
| 40              | 9.8399   | 33.9368  | 26.1487 |
| 50              | 9.8322   | 33.9409  | 26.1531 |
| 75              | 9.1743   | 33.9783  | 26.2902 |
| 100             | 8.2451   | 34.0165  | 26.4649 |
| 116             | 7.9166   | 34.032   | 26.5259 |

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| STATION US16056 |          |          |         |
| LATITUDE        | 41-26.1  | N        |         |
| LONGITUDE       | 140-02.4 | E        |         |
| DEPTH (m)       | 38       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 9.5913   | 33.9513  | 26.2013 |
| 10              | 9.5529   | 33.9541  | 26.2098 |
| 20              | 9.5206   | 33.958   | 26.2181 |
| 30              | 9.5329   | 33.9569  | 26.2153 |
| 35              | 9.5182   | 33.9583  | 26.2188 |

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| STATION US16057 |          |          |         |
| LATITUDE        | 41-26.1  | N        |         |
| LONGITUDE       | 140-01.7 | E        |         |
| DEPTH (m)       | 57       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 9.5917   | 33.9529  | 26.2025 |
| 10              | 9.5761   | 33.9528  | 26.205  |
| 20              | 9.5619   | 33.9532  | 26.2076 |
| 30              | 9.5264   | 33.9547  | 26.2146 |
| 40              | 9.5502   | 33.9528  | 26.2092 |
| 50              | 9.5365   | 33.9547  | 26.213  |
| 53              | 9.5363   | 33.9547  | 26.213  |

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| STATION US16058 |          |          |         |
| LATITUDE        | 41-26.0  | N        |         |
| LONGITUDE       | 140-01.1 | E        |         |
| DEPTH (m)       | 80       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 9.8935   | 33.9466  | 26.1473 |
| 10              | 9.8324   | 33.9436  | 26.1553 |
| 20              | 9.7507   | 33.9463  | 26.171  |
| 30              | 9.7675   | 33.9461  | 26.168  |
| 40              | 9.7565   | 33.947   | 26.1706 |
| 50              | 9.7141   | 33.9461  | 26.1769 |
| 75              | 9.7207   | 33.9505  | 26.1793 |
| 78              | 9.7183   | 33.9505  | 26.1797 |

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| STATION US16059 |          |          |         |
| LATITUDE        | 41-25.1  | N        |         |
| LONGITUDE       | 140-00.3 | E        |         |
| DEPTH (m)       | 105      |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 10.0752  | 33.9495  | 26.1189 |
| 10              | 10.071   | 33.9492  | 26.1194 |
| 20              | 10.0465  | 33.9475  | 26.1222 |
| 30              | 10.0435  | 33.9476  | 26.1228 |
| 40              | 9.9744   | 33.9455  | 26.1328 |
| 50              | 9.8016   | 33.946   | 26.1623 |
| 75              | 9.5058   | 33.9453  | 26.2107 |
| 100             | 7.533    | 34.0372  | 26.5856 |
| 102             | 7.4597   | 34.0399  | 26.5983 |

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| STATION US16060 |          |          |         |
| LATITUDE        | 41-35.6  | N        |         |
| LONGITUDE       | 140-51.7 | E        |         |
| DEPTH (m)       | 54       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 10.86    | 33.8158  | 25.8784 |
| 10              | 10.8555  | 33.8163  | 25.8795 |
| 20              | 10.787   | 33.8635  | 25.9285 |
| 30              | 10.7894  | 33.871   | 25.9339 |
| 40              | 10.7918  | 33.8714  | 25.9337 |
| 46              | 10.7927  | 33.8716  | 25.9337 |

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| STATION   | US16061  |          |         |
| LATITUDE  | 41-36.8  | N        |         |
| LONGITUDE | 140-51.3 | E        |         |
| DEPTH (m) | 85       |          |         |
| Press.    | Temp.    | Salinity | Sigma-T |
| 5         | 10.8446  | 33.8236  | 25.8872 |
| 10        | 10.8151  | 33.8285  | 25.8962 |
| 20        | 10.7828  | 33.8382  | 25.9094 |
| 30        | 10.7638  | 33.8535  | 25.9247 |
| 40        | 10.7587  | 33.8619  | 25.9322 |
| 50        | 10.7637  | 33.8664  | 25.9348 |
| 75        | 10.7667  | 33.8671  | 25.9348 |
| 83        | 10.7676  | 33.867   | 25.9346 |

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| STATION   | US16062  |          |         |
| LATITUDE  | 41-38.6  | N        |         |
| LONGITUDE | 140-49.2 | E        |         |
| DEPTH (m) | 325      |          |         |
| Press.    | Temp.    | Salinity | Sigma-T |
| 5         | 10.6898  | 33.8542  | 25.9384 |
| 10        | 10.6948  | 33.856   | 25.9389 |
| 20        | 10.6717  | 33.9156  | 25.9894 |
| 30        | 10.4996  | 33.9132  | 26.0177 |
| 40        | 10.5054  | 33.9138  | 26.0171 |
| 50        | 10.3567  | 33.8993  | 26.0315 |
| 75        | 10.269   | 33.8892  | 26.0387 |
| 100       | 10.2203  | 33.901   | 26.0564 |
| 125       | 10.2223  | 33.9057  | 26.0596 |
| 150       | 10.239   | 33.9057  | 26.0568 |
| 175       | 10.2399  | 33.8991  | 26.0515 |
| 200       | 10.1715  | 33.9282  | 26.0859 |
| 250       | 10.1508  | 33.9502  | 26.1066 |
| 300       | 10.1441  | 33.9525  | 26.1095 |
| 307       | 10.1375  | 33.9529  | 26.111  |

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| STATION   | US16063  |          |         |
| LATITUDE  | 41-40.8  | N        |         |
| LONGITUDE | 140-47.3 | E        |         |
| DEPTH (m) | 222      |          |         |
| Press.    | Temp.    | Salinity | Sigma-T |
| 5         | 10.6891  | 33.8678  | 25.9491 |
| 10        | 10.6737  | 33.8877  | 25.9672 |
| 20        | 10.6814  | 33.911   | 25.984  |
| 30        | 10.6487  | 33.9091  | 25.9884 |
| 40        | 10.6465  | 33.9123  | 25.9912 |
| 50        | 10.6197  | 33.9096  | 25.9938 |
| 75        | 10.618   | 33.9107  | 25.995  |
| 100       | 10.4715  | 33.9151  | 26.024  |
| 125       | 10.4018  | 33.9201  | 26.04   |
| 150       | 10.294   | 33.9242  | 26.0618 |
| 175       | 10.2384  | 33.9374  | 26.0816 |
| 200       | 10.1683  | 33.9422  | 26.0974 |
| 205       | 10.1603  | 33.9457  | 26.1015 |

|           |          |          |         |
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| STATION   | US16064  |          |         |
| LATITUDE  | 41-28.8  | N        |         |
| LONGITUDE | 140-45.2 | E        |         |
| DEPTH (m) | 84       |          |         |
| Press.    | Temp.    | Salinity | Sigma-T |
| 5         | 10.6031  | 33.8884  | 25.9802 |
| 10        | 10.6032  | 33.8884  | 25.9802 |
| 20        | 10.6103  | 33.8888  | 25.9792 |
| 30        | 10.5921  | 33.892   | 25.9849 |
| 40        | 10.5019  | 33.8999  | 26.0068 |
| 50        | 10.1939  | 33.8868  | 26.0497 |
| 75        | 10.1606  | 33.9168  | 26.0788 |
| 81        | 10.1841  | 33.926   | 26.0821 |

|           |          |          |         |
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| STATION   | US16065  |          |         |
| LATITUDE  | 42-10.4  | N        |         |
| LONGITUDE | 140-41.2 | E        |         |
| DEPTH (m) | 86       |          |         |
| Press.    | Temp.    | Salinity | Sigma-T |
| 5         | 5.2933   | 33.7088  | 26.6178 |
| 10        | 5.3136   | 33.711   | 26.6172 |
| 20        | 5.3989   | 33.7313  | 26.6232 |
| 30        | 5.4091   | 33.7329  | 26.6233 |
| 40        | 5.3869   | 33.7319  | 26.6251 |
| 50        | 5.3786   | 33.733   | 26.627  |
| 75        | 5.298    | 33.7366  | 26.6393 |
| 84        | 5.3107   | 33.7388  | 26.6395 |

|           |          |          |         |
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| STATION   | US16066  |          |         |
| LATITUDE  | 42-09.6  | N        |         |
| LONGITUDE | 140-35.9 | E        |         |
| DEPTH (m) | 72       |          |         |
| Press.    | Temp.    | Salinity | Sigma-T |
| 5         | 4.8196   | 33.6743  | 26.6445 |
| 10        | 4.8536   | 33.679   | 26.6444 |
| 20        | 4.9509   | 33.6958  | 26.6469 |
| 30        | 4.8218   | 33.6736  | 26.6437 |
| 40        | 4.8468   | 33.6813  | 26.647  |
| 50        | 4.9826   | 33.7038  | 26.6496 |
| 70        | 5.1396   | 33.7366  | 26.6577 |

|           |          |          |         |
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| STATION   | US16067  |          |         |
| LATITUDE  | 42-11.0  | N        |         |
| LONGITUDE | 140-35.7 | E        |         |
| DEPTH (m) | 79       |          |         |
| Press.    | Temp.    | Salinity | Sigma-T |
| 5         | 5.5685   | 33.7818  | 26.643  |
| 10        | 5.5746   | 33.7812  | 26.6418 |
| 20        | 5.5777   | 33.7808  | 26.6411 |
| 30        | 5.577    | 33.7807  | 26.6411 |
| 40        | 5.5761   | 33.7806  | 26.6411 |
| 50        | 5.5713   | 33.7791  | 26.6405 |
| 75        | 5.4118   | 33.7705  | 26.6527 |
| 78        | 5.2834   | 33.7632  | 26.662  |

|           |          |          |         |
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| STATION   | US16068  |          |         |
| LATITUDE  | 42-16.5  | N        |         |
| LONGITUDE | 140-35.7 | E        |         |
| DEPTH (m) | 91       |          |         |
| Press.    | Temp.    | Salinity | Sigma-T |
| 5         | 5.6778   | 33.7868  | 26.6338 |
| 10        | 5.6814   | 33.7864  | 26.6329 |
| 20        | 5.6842   | 33.7864  | 26.6326 |
| 30        | 5.6843   | 33.7861  | 26.6324 |
| 40        | 5.6854   | 33.7864  | 26.6325 |
| 50        | 5.6865   | 33.7867  | 26.6326 |
| 75        | 5.6893   | 33.7862  | 26.6319 |
| 89        | 5.6843   | 33.7863  | 26.6325 |

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| STATION   | US16069  |          |         |
| LATITUDE  | 42-20.7  | N        |         |
| LONGITUDE | 140-36.5 | E        |         |
| DEPTH (m) | 88       |          |         |
| Press.    | Temp.    | Salinity | Sigma-T |
| 5         | 5.5245   | 33.7495  | 26.6227 |
| 10        | 5.525    | 33.7486  | 26.6219 |
| 20        | 5.5248   | 33.7485  | 26.6218 |
| 30        | 5.5265   | 33.7493  | 26.6224 |
| 40        | 5.5195   | 33.748   | 26.6221 |
| 50        | 5.576    | 33.7589  | 26.6239 |
| 75        | 5.5865   | 33.7605  | 26.624  |
| 86        | 5.5895   | 33.7608  | 26.6238 |

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| STATION   | US16070  |          |         |
| LATITUDE  | 42-26.0  | N        |         |
| LONGITUDE | 140-37.1 | E        |         |
| DEPTH (m) | 84       |          |         |
| Press.    | Temp.    | Salinity | Sigma-T |
| 5         | 5.5077   | 33.6886  | 26.5765 |
| 10        | 5.5088   | 33.6888  | 26.5765 |
| 20        | 5.5071   | 33.6879  | 26.576  |
| 30        | 5.5044   | 33.6875  | 26.5761 |
| 40        | 5.4975   | 33.6874  | 26.5768 |
| 50        | 5.4971   | 33.6873  | 26.5767 |
| 75        | 5.6553   | 33.7552  | 26.6115 |
| 81        | 5.6548   | 33.7554  | 26.6117 |

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| STATION   | US16071  |          |         |
| LATITUDE  | 42-31.2  | N        |         |
| LONGITUDE | 140-37.5 | E        |         |
| DEPTH (m) | 61       |          |         |
| Press.    | Temp.    | Salinity | Sigma-T |
| 5         | 5.0632   | 33.6189  | 26.5732 |
| 10        | 5.067    | 33.62    | 26.5736 |
| 20        | 5.0703   | 33.6205  | 26.5736 |
| 30        | 5.074    | 33.6211  | 26.5737 |
| 40        | 5.0745   | 33.621   | 26.5735 |
| 50        | 5.0847   | 33.6229  | 26.5739 |
| 59        | 4.9925   | 33.6149  | 26.578  |

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| STATION   | US16072  |          |         |
| LATITUDE  | 42-28.1  | N        |         |
| LONGITUDE | 140-43.2 | E        |         |
| DEPTH (m) | 60       |          |         |
| Press.    | Temp.    | Salinity | Sigma-T |
| 5         | 4.9643   | 33.4729  | 26.4686 |
| 10        | 4.9568   | 33.4763  | 26.4722 |
| 20        | 5.1087   | 33.5229  | 26.4919 |
| 30        | 5.2096   | 33.5603  | 26.5099 |
| 40        | 5.3969   | 33.6419  | 26.5527 |
| 50        | 5.5446   | 33.6759  | 26.562  |
| 58        | 5.5294   | 33.675   | 26.5631 |

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| STATION   | US16073  |          |         |
| LATITUDE  | 42-25.2  | N        |         |
| LONGITUDE | 140-48.7 | E        |         |
| DEPTH (m) | 43       |          |         |
| Press.    | Temp.    | Salinity | Sigma-T |
| 5         | 4.7492   | 33.3368  | 26.3845 |
| 10        | 4.7486   | 33.3362  | 26.3842 |
| 20        | 4.7491   | 33.3355  | 26.3835 |
| 30        | 4.7732   | 33.3541  | 26.3957 |
| 40        | 4.881    | 33.4083  | 26.4267 |
| 41        | 4.908    | 33.4314  | 26.442  |

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| STATION   | US16074  |          |         |
| LATITUDE  | 42-20.9  | N        |         |
| LONGITUDE | 140-48.6 | E        |         |
| DEPTH (m) | 52       |          |         |
| Press.    | Temp.    | Salinity | Sigma-T |
| 5         | 4.6237   | 33.2828  | 26.3554 |
| 10        | 4.6294   | 33.2821  | 26.3542 |
| 20        | 4.6245   | 33.283   | 26.3555 |
| 30        | 5.0387   | 33.4481  | 26.4406 |
| 40        | 5.4161   | 33.6252  | 26.5372 |
| 49        | 5.4265   | 33.6408  | 26.5483 |

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| STATION   | US16075  |          |         |
| LATITUDE  | 42-18.5  | N        |         |
| LONGITUDE | 140-42.3 | E        |         |
| DEPTH (m) | 64       |          |         |
| Press.    | Temp.    | Salinity | Sigma-T |
| 5         | 4.9148   | 33.5678  | 26.5494 |
| 10        | 4.959    | 33.5754  | 26.5505 |
| 20        | 5.2286   | 33.6659  | 26.5914 |
| 30        | 5.3088   | 33.7002  | 26.6092 |
| 40        | 5.3355   | 33.7103  | 26.6141 |
| 50        | 5.3562   | 33.72    | 26.6194 |
| 62        | 5.3877   | 33.7267  | 26.6209 |

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| STATION US16076 |          |          |         |
| LATITUDE        | 42-13.4  | N        |         |
| LONGITUDE       | 140-41.2 | E        |         |
| DEPTH (m)       | 88       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 4.8513   | 33.5994  | 26.5816 |
| 10              | 4.86     | 33.5994  | 26.5806 |
| 20              | 4.8532   | 33.5989  | 26.5809 |
| 30              | 5.2243   | 33.7117  | 26.6281 |
| 40              | 5.2451   | 33.712   | 26.626  |
| 50              | 5.2743   | 33.7183  | 26.6276 |
| 75              | 5.2977   | 33.7322  | 26.6358 |
| 86              | 5.2944   | 33.7323  | 26.6364 |

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| STATION US16079 |          |          |         |
| LATITUDE        | 41-59.5  | N        |         |
| LONGITUDE       | 141-01.7 | E        |         |
| DEPTH (m)       | 100      |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 5.8042   | 33.3411  | 26.266  |
| 10              | 5.7978   | 33.3411  | 26.2667 |
| 20              | 5.8053   | 33.3418  | 26.2664 |
| 30              | 5.8102   | 33.3426  | 26.2664 |
| 40              | 5.8086   | 33.342   | 26.2662 |
| 50              | 5.7936   | 33.3439  | 26.2695 |
| 75              | 5.7872   | 33.3764  | 26.2959 |
| 96              | 5.5047   | 33.5416  | 26.4606 |

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| STATION US16082 |          |          |         |
| LATITUDE        | 41-57.6  | N        |         |
| LONGITUDE       | 140-58.4 | E        |         |
| DEPTH (m)       | 81       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 5.7638   | 33.3317  | 26.2635 |
| 10              | 5.7665   | 33.3317  | 26.2631 |
| 20              | 5.7654   | 33.3313  | 26.2629 |
| 30              | 5.7293   | 33.3311  | 26.2672 |
| 40              | 5.6206   | 33.3344  | 26.2828 |
| 50              | 5.4525   | 33.3277  | 26.2975 |
| 75              | 5.6558   | 33.4902  | 26.4019 |
| 77              | 5.6041   | 33.4955  | 26.4122 |

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| STATION US16085 |          |          |         |
| LATITUDE        | 42-18.8  | N        |         |
| LONGITUDE       | 140-30.2 | E        |         |
| DEPTH (m)       | 92       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 5.4743   | 33.7351  | 26.6173 |
| 10              | 5.4746   | 33.7356  | 26.6176 |
| 20              | 5.4789   | 33.7363  | 26.6177 |
| 30              | 5.482    | 33.7368  | 26.6177 |
| 40              | 5.4776   | 33.7358  | 26.6175 |
| 50              | 5.4934   | 33.7387  | 26.6179 |
| 75              | 5.5293   | 33.7453  | 26.6188 |
| 90              | 5.3968   | 33.774   | 26.6573 |

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| STATION US16088 |          |          |         |
| LATITUDE        | 42-17.5  | N        |         |
| LONGITUDE       | 140-53.9 | E        |         |
| DEPTH (m)       | 57       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 5.1977   | 33.3748  | 26.3644 |
| 10              | 5.1562   | 33.3715  | 26.3665 |
| 20              | 5.1173   | 33.3733  | 26.3724 |
| 30              | 5.0296   | 33.3772  | 26.3854 |
| 40              | 5.0412   | 33.3956  | 26.3987 |
| 50              | 5.0143   | 33.4626  | 26.4549 |
| 55              | 5.4195   | 33.7273  | 26.6176 |

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| STATION US16091 |          |          |         |
| LATITUDE        | 42-05.0  | N        |         |
| LONGITUDE       | 140-56.6 | E        |         |
| DEPTH (m)       | 84       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 5.6106   | 33.3404  | 26.2888 |
| 10              | 5.6074   | 33.3407  | 26.2894 |
| 20              | 5.5347   | 33.3354  | 26.2938 |
| 30              | 5.5046   | 33.334   | 26.2963 |
| 40              | 5.5146   | 33.3367  | 26.2972 |
| 50              | 5.5161   | 33.3374  | 26.2976 |
| 75              | 5.3564   | 33.3851  | 26.3542 |
| 82              | 5.3068   | 33.4588  | 26.4183 |

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| STATION US16077 |          |          |         |
| LATITUDE        | 42-10.4  | N        |         |
| LONGITUDE       | 140-46.9 | E        |         |
| DEPTH (m)       | 94       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 5.3005   | 33.6252  | 26.5508 |
| 10              | 5.3088   | 33.625   | 26.5497 |
| 20              | 5.3175   | 33.6258  | 26.5493 |
| 30              | 5.319    | 33.6264  | 26.5496 |
| 40              | 5.3217   | 33.6292  | 26.5515 |
| 50              | 5.3391   | 33.6427  | 26.5602 |
| 75              | 5.4312   | 33.6912  | 26.5877 |
| 92              | 5.354    | 33.6978  | 26.602  |

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| STATION US16080 |          |          |         |
| LATITUDE        | 41-58.8  | N        |         |
| LONGITUDE       | 141-00.7 | E        |         |
| DEPTH (m)       | 94       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 5.8549   | 33.3489  | 26.2659 |
| 10              | 5.8542   | 33.3492  | 26.2662 |
| 20              | 5.8535   | 33.3488  | 26.266  |
| 30              | 5.8595   | 33.35    | 26.2662 |
| 40              | 5.8376   | 33.3485  | 26.2678 |
| 50              | 5.5827   | 33.3296  | 26.2836 |
| 75              | 5.6977   | 33.3906  | 26.318  |
| 91              | 5.5091   | 33.5343  | 26.4542 |

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| STATION US16083 |          |          |         |
| LATITUDE        | 42-13.9  | N        |         |
| LONGITUDE       | 140-30.1 | E        |         |
| DEPTH (m)       | 78       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 5.4541   | 33.7483  | 26.6302 |
| 10              | 5.4546   | 33.749   | 26.6306 |
| 20              | 5.4568   | 33.7497  | 26.6309 |
| 30              | 5.4615   | 33.7499  | 26.6306 |
| 40              | 5.4703   | 33.7505  | 26.63   |
| 50              | 5.4686   | 33.7504  | 26.63   |
| 75              | 5.4896   | 33.7663  | 26.6402 |
| 77              | 5.4916   | 33.7669  | 26.6405 |

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| STATION US16086 |          |          |         |
| LATITUDE        | 42-23.1  | N        |         |
| LONGITUDE       | 140-42.6 | E        |         |
| DEPTH (m)       | 61       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 4.7791   | 33.4651  | 26.483  |
| 10              | 4.7581   | 33.464   | 26.4845 |
| 20              | 4.8756   | 33.5136  | 26.5108 |
| 30              | 4.9904   | 33.5493  | 26.5262 |
| 40              | 5.3071   | 33.6629  | 26.5798 |
| 50              | 5.5683   | 33.7328  | 26.6043 |
| 59              | 5.5839   | 33.7434  | 26.6108 |

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| STATION US16089 |          |          |         |
| LATITUDE        | 42-16.0  | N        |         |
| LONGITUDE       | 140-58.6 | E        |         |
| DEPTH (m)       | 64       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 5.1898   | 33.341   | 26.3385 |
| 10              | 5.1489   | 33.3394  | 26.342  |
| 20              | 5.2287   | 33.3875  | 26.3709 |
| 30              | 5.1665   | 33.3849  | 26.376  |
| 40              | 5.0883   | 33.3828  | 26.3832 |
| 50              | 5.1108   | 33.3946  | 26.39   |
| 63              | 5.1592   | 33.4267  | 26.41   |

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| STATION US16078 |          |          |         |
| LATITUDE        | 42-07.0  | N        |         |
| LONGITUDE       | 140-50.4 | E        |         |
| DEPTH (m)       | 68       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 5.7022   | 33.3996  | 26.3246 |
| 10              | 5.708    | 33.4013  | 26.3252 |
| 20              | 5.7229   | 33.4059  | 26.327  |
| 30              | 5.8914   | 33.5775  | 26.4421 |
| 40              | 5.6335   | 33.5954  | 26.4877 |
| 50              | 5.3661   | 33.5909  | 26.5159 |
| 60              | 5.405    | 33.6243  | 26.5378 |

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| STATION US16081 |          |          |         |
| LATITUDE        | 41-58.2  | N        |         |
| LONGITUDE       | 140-59.6 | E        |         |
| DEPTH (m)       | 87       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 5.553    | 33.2985  | 26.2625 |
| 10              | 5.5543   | 33.2985  | 26.2623 |
| 20              | 5.5597   | 33.2993  | 26.2624 |
| 30              | 5.5617   | 33.2991  | 26.2619 |
| 40              | 5.644    | 33.3174  | 26.2666 |
| 50              | 5.8359   | 33.3636  | 26.2799 |
| 75              | 6.0772   | 33.4635  | 26.3289 |
| 84              | 5.5375   | 33.5417  | 26.4568 |

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| STATION US16084 |          |          |         |
| LATITUDE        | 42-18.9  | N        |         |
| LONGITUDE       | 140-23.1 | E        |         |
| DEPTH (m)       | 53       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 5.3427   | 33.7605  | 26.653  |
| 10              | 5.3347   | 33.7597  | 26.6533 |
| 20              | 5.3311   | 33.7592  | 26.6533 |
| 30              | 5.3333   | 33.7598  | 26.6535 |
| 40              | 5.2417   | 33.7518  | 26.6579 |
| 50              | 5.199    | 33.7542  | 26.6648 |
| 51              | 5.1887   | 33.7543  | 26.666  |

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| STATION US16087 |          |          |         |
| LATITUDE        | 42-15.4  | N        |         |
| LONGITUDE       | 140-47.5 | E        |         |
| DEPTH (m)       | 72       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 4.9389   | 33.4135  | 26.4244 |
| 10              | 4.9088   | 33.4149  | 26.4288 |
| 20              | 4.8098   | 33.5081  | 26.5137 |
| 30              | 4.831    | 33.534   | 26.5319 |
| 40              | 5.1567   | 33.653   | 26.5895 |
| 50              | 5.3604   | 33.721   | 26.6196 |
| 71              | 5.3756   | 33.7408  | 26.6335 |

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| STATION US16090 |          |          |         |
| LATITUDE        | 42-12.9  | N        |         |
| LONGITUDE       | 140-56.0 | E        |         |
| DEPTH (m)       | 69       |          |         |
| Press.          | Temp.    | Salinity | Sigma-T |
| 5               | 5.1813   | 33.3062  | 26.312  |
| 10              | 5.1441   | 33.325   | 26.3311 |
| 20              | 5.2202   | 33.3427  | 26.3363 |
| 30              | 5.3394   | 33.3723  | 26.346  |
| 40              | 5.1701   | 33.3625  | 26.3578 |
| 50              | 5.2699   | 33.3879  | 26.3664 |
| 68              | 5.4335   | 33.71    | 26.6023 |