



# HOKKAIDO UNIVERSITY

|                  |                                                                                   |
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| Title            | 4.THE " USHIO MARU " CRUISE 360, CRUISE 361, CRUISE 362 IN MAY - JUNE 2016        |
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**THE " USHIO MARU "**

**CRUISE 360**

**CRUISE 361**

**CRUISE 362**

**IN MAY 2016**

**IN JUNE 2016**

## 1.Cruise Itinerary

### 1. Cruise Itinerary

#### Cruise 360

|                                       |              |
|---------------------------------------|--------------|
| Departure from Hakodate               | May 10, 2016 |
| Start hydrographic research (US16232) | 10           |
| Setting mooring ADCP system           | 10           |
| Arrival at Hakodate                   | 10           |
| Departure from Hakodate               | 12           |
| Re-setting mooring ADCP system        | 13           |
| Arrival at and departure from Usujiri | 13           |
| Towing frame trawl net                | 13           |
| Towing frame trawl net                | 14           |
| Arrival at Usujiri                    | 15           |
| Departure from Usujiri                | 17           |
| Arrival at Usujiri                    | 18           |
| Departure from Usujiri                | 19           |
| Sampling by trawl net                 | 19           |
| Finish hydrographic research          | 19           |
| Return to Hakodate                    | 20           |
| Total coverage 570.0 miles            |              |

#### Cruise 361

|                                        |               |
|----------------------------------------|---------------|
| Departure from Hakodate                | May. 24, 2016 |
| Arrival at and departure from Usujiri  | 25            |
| Arrival at Muroran                     | 25            |
| Departure from Muroran                 | 25            |
| Start hydrographic research (US16266)  | 25            |
| Towing 80cm ring net                   | 25            |
| Finish hydrographic research (US16267) | 25            |
| Hook and line fishing research         | 26            |
| Return to Hakodate                     | 27            |
| Total coverage 240.6 miles             |               |

|                                        |               |
|----------------------------------------|---------------|
| Cruise 362                             |               |
| Departure from Hakodate                | May. 30, 2016 |
| Start hydrographic research (US16268)  | 30            |
| Sampling by trawl net                  | 30            |
| Arrival at Aomori                      | 30            |
| Departure from Aomori                  | 31            |
| Sampling by trawl net                  | 31            |
| Arrival at Noheji                      | 31            |
| Departure from Noheji                  | Jun. 1, 2016  |
| Sampling by trawl net                  | 1             |
| Arrival at Ominato                     | 1             |
| Departure from Ominato                 | 2             |
| Sampling by trawl net                  | 2             |
| Finish hydrographic research (US16291) | 2             |
| Return to Hakodate                     | 3             |
| Total coverage 219.1 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”.

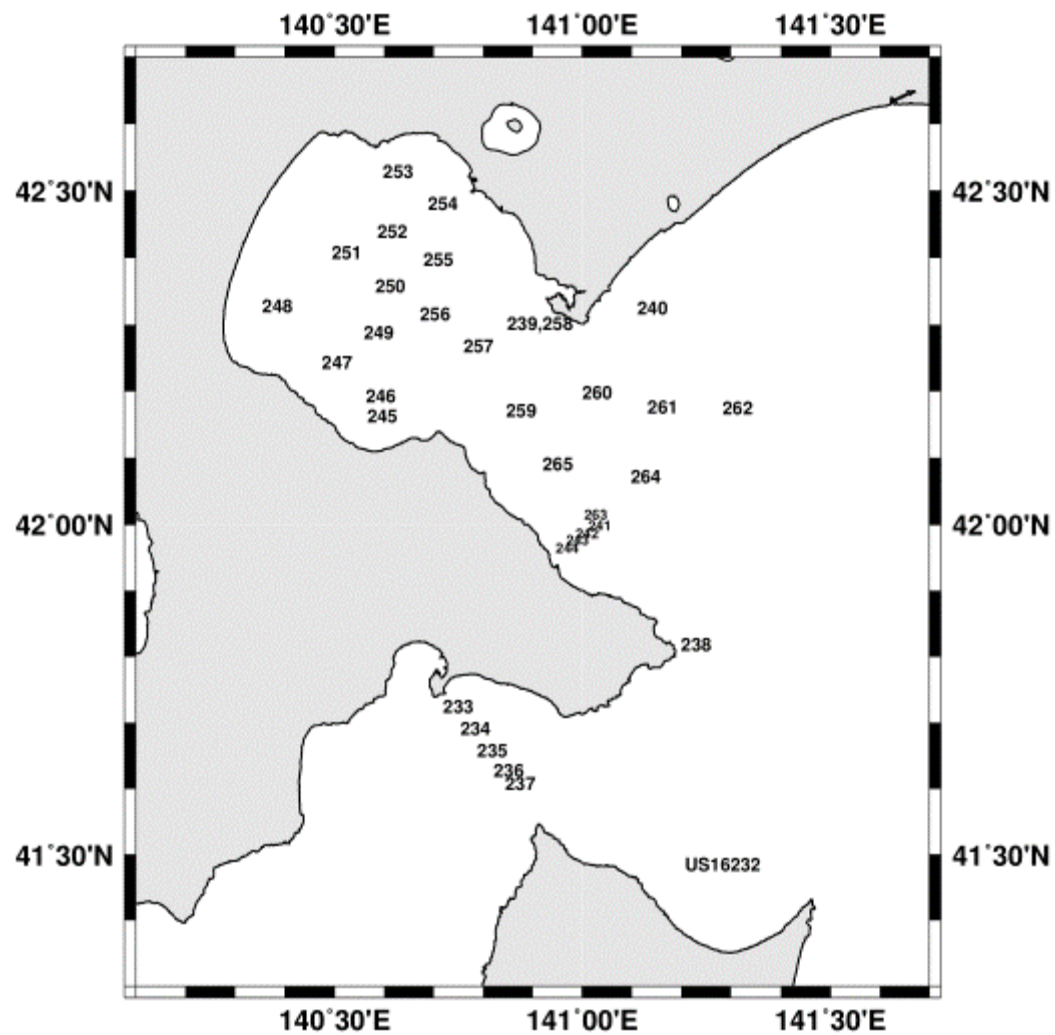


Figure 1. Oceanographic stations (Cruise 360)

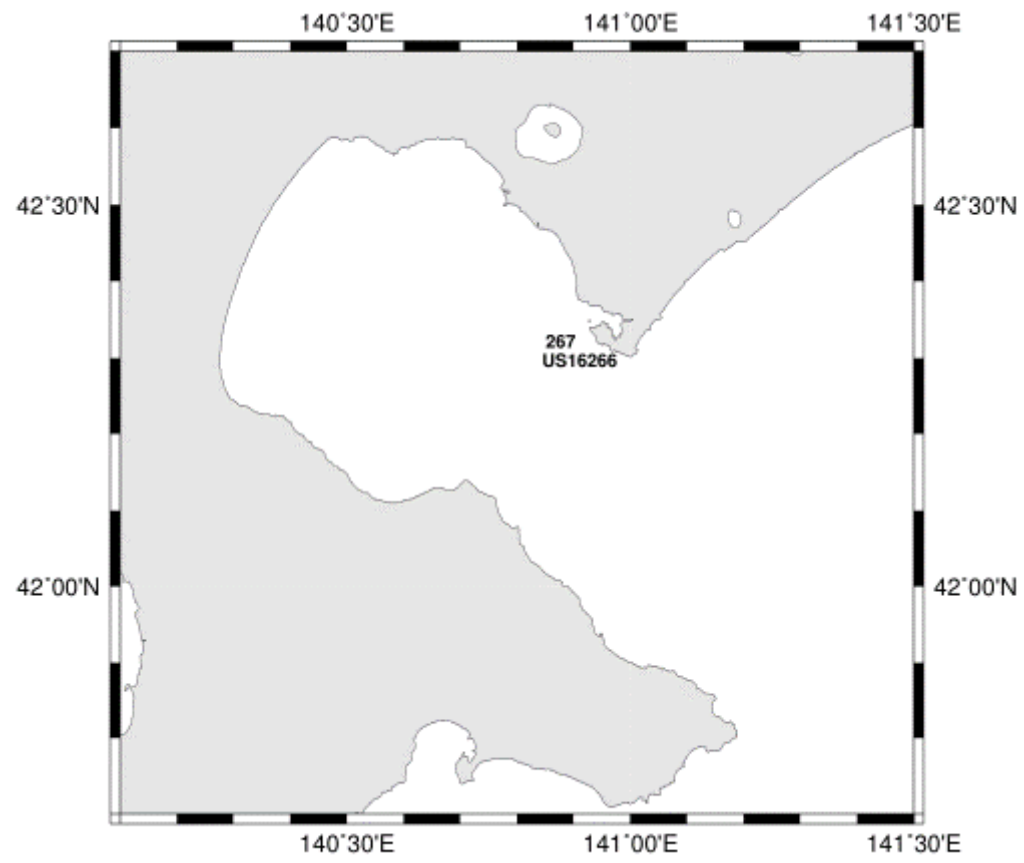


Figure 2. Oceanographic stations (Cruise 361)

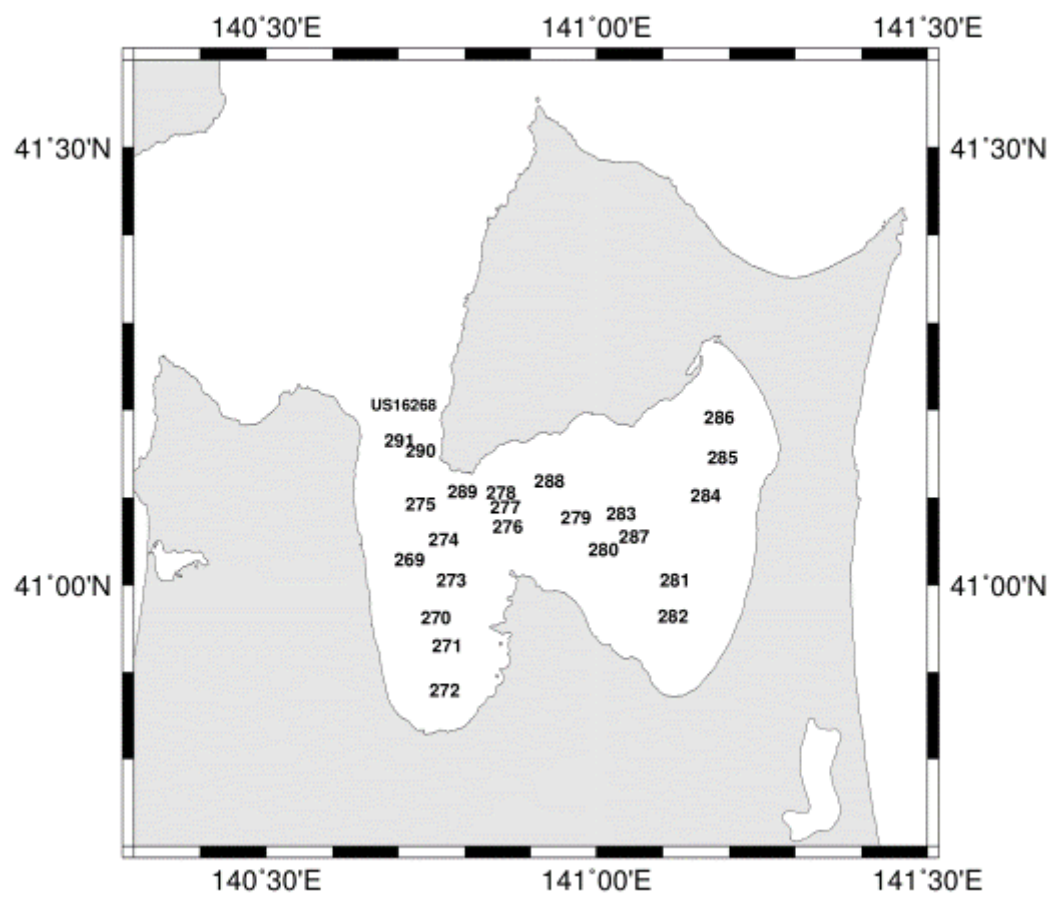


Figure 3. Oceanographic stations (Cruise 362)

Table 1. List of Oceanographic Station

| Cruise 360 |           |            |      |           |           |         |        |         |           |           |     |           |
|------------|-----------|------------|------|-----------|-----------|---------|--------|---------|-----------|-----------|-----|-----------|
| station    | Lat. (N)° | Long. (E)° | Date | Hour      | Depth (m) | Wave    | Swell  | Wind    | Air Temp. | Sea Temp. | Wr. | Bar (hPa) |
| US16232    | 41-28.5   | 141-17.0   | 5/10 | 1105-1115 | 231       | East-3  | ESE-1  | East-5  | 10.8      | 10.5      | o   | 1018      |
| US16233    | 41-42.9   | 140-45.0   | 5/13 | 0306-0314 | 83        | NNE-2   | ESE-1  | NNE-3   | 9.4       | 10.6      | bc  | 1018.8    |
| US16234    | 41-40.9   | 140-47.1   | 5/13 | 0334-0352 | 216       | NNE-2   | ESE-1  | NNE-2   | 9.5       | 10.5      | bc  | 1018.8    |
| US16235    | 41-38.9   | 140-49.1   | 5/13 | 0411-0435 | 350       | NE-2    | ESE-1  | NE-2    | 9.9       | 10.9      | bc  | 1018.7    |
| US16236    | 41-37.1   | 140-51.1   | 5/13 | 0452-0503 | 96        | NE-2    | ESE-1  | NE-2    | 10.6      | 11        | b   | 1018.6    |
| US16237    | 41-35.9   | 140-52.5   | 5/13 | 0519-0524 | 38        | NE-2    | ESE-1  | NE-3    | 10.9      | 11        | b   | 1019      |
| US16238    | 41-48.5   | 141-13.8   | 5/13 | 0931-0946 | 185       | South-1 | ESE-1  | South-2 | 13.7      | 8.3       | bc  | 1018.8    |
| US16239    | 42-17.5   | 140-54.9   | 5/13 | 2125-2132 | 57        | NW-3    | NW-1   | NW-5    | 10.1      | 8.2       | c   | 1022.5    |
| US16240    | 42-18.9   | 141-08.5   | 5/14 | 0643-0648 | 68        | West-2  | WNW-1  | West-2  | 10.7      | 8.3       | bc  | 1029.2    |
| US16240-2  | 42-19.4   | 141-09.2   | 5/14 | 0726-0732 | 72        | Calm    | ESE-1  | Calm    | 11.6      | 8.6       | bc  | 1029.2    |
| US16241    | 41-59.4   | 141-02.1   | 5/15 | 0412-0418 | 101       | East-2  | East-1 | East-4  | 9         | 8.2       | bc  | 1027.1    |
| US16242    | 41-58.7   | 141-00.6   | 5/15 | 0429-0434 | 93        | East-2  | East-1 | East-4  | 9.2       | 8.2       | bc  | 1027.1    |
| US16243    | 41-58.1   | 140-59.4   | 5/15 | 0443-0448 | 85        | SE-2    | East-1 | SE-3    | 9.2       | 8.1       | bc  | 1027.2    |
| US16244    | 41-57.4   | 140-58.2   | 5/15 | 0458-0503 | 78        | SE-2    | East-1 | SE-4    | 9.6       | 8.4       | bc  | 1027.2    |
| US16245    | 42-09.2   | 140-35.8   | 5/17 | 0619-0626 | 68        | West-1  | East-1 | West-2  | 11.1      | 6.4       | c   | 1013.7    |
| US16246    | 42-11.0   | 140-35.6   | 5/17 | 0647-0653 | 80        | West-1  | East-1 | West-2  | 12        | 7         | c   | 1014.1    |
| US16247    | 42-14.0   | 140-30.3   | 5/17 | 0756-0801 | 79        | SW-2    | East-1 | SW-4    | 13.2      | 7.5       | c   | 1014.2    |
| US16248    | 42-19.1   | 140-23.1   | 5/17 | 0910-0915 | 53        | SW-2    | East-1 | SW-4    | 13.5      | 8.9       | c   | 1014.6    |
| US16249    | 42-16.7   | 140-35.4   | 5/17 | 1023-1035 | 91        | WSW-2   | East-1 | WSW-3   | 13.8      | 8.5       | bc  | 1014.7    |
| US16250    | 42-20.9   | 140-36.8   | 5/17 | 1141-1148 | 87        | SW-2    | East-1 | SW-3    | 16.2      | 8.5       | bc  | 1015      |
| US16251    | 42-23.9   | 140-31.5   | 5/17 | 1221-1227 | 96        | SW-2    | East-1 | SW-3    | 16        | 8.7       | bc  | 1014.6    |
| US16252    | 42-25.8   | 140-37.0   | 5/17 | 1320-1326 | 83        | SSW-2   | East-1 | SSW-3   | 13.6      | 8.7       | bc  | 1014      |
| US16253    | 42-31.2   | 140-37.7   | 5/17 | 1400-1408 | 60        | SSW-2   | East-1 | SSW-4   | 17.8      | 10.6      | bc  | 1014      |
| US16254    | 42-28.3   | 140-43.1   | 5/17 | 1505-1510 | 60        | SSW-2   | East-1 | SSW-4   | 13.3      | 9.3       | bc  | 1013.6    |
| US16255    | 42-23.3   | 140-42.6   | 5/17 | 1601-1606 | 61        | South-2 | East-1 | South-2 | 14.1      | 9.4       | bc  | 1013.8    |
| US16256    | 42-18.4   | 140-42.2   | 5/18 | 0412-0417 | 64        | Calm    | SE-1   | Calm    | 10.4      | 8.7       | bc  | 1017.2    |
| US16257    | 42-15.5   | 140-47.4   | 5/18 | 0511-0516 | 71        | NW-2    | SE-1   | NW-2    | 10.1      | 8.6       | b   | 1017.8    |
| US16258    | 42-17.5   | 140-53.9   | 5/18 | 0608-0613 | 56        | WNW-2   | SE-1   | WNW-2   | 12.4      | 8.6       | b   | 1018.5    |
| US16259    | 42-09.7   | 140-52.6   | 5/18 | 0716-0721 | 74        | Calm    | East-1 | Calm    | 11.8      | 8.9       | b   | 1019.3    |
| US16260    | 42-11.3   | 141-01.8   | 5/18 | 0823-0828 | 80        | West-2  | East-1 | West-3  | 15.1      | 8.7       | bc  | 1019.5    |
| US16261    | 42-10.0   | 141-09.7   | 5/18 | 0933-0940 | 119       | West-2  | East-1 | West-3  | 16.9      | 9.3       | bc  | 1019.6    |
| US16262    | 42-09.9   | 141-18.8   | 5/18 | 1046-1103 | 334       | West-2  | East-1 | West-4  | 18.5      | 8.9       | bc  | 1019.2    |
| US16263    | 42-00.4   | 141-01.6   | 5/18 | 1343-1348 | 96        | Calm    | East-1 | Calm    | 17.4      | 9.8       | bc  | 1019.2    |
| US16264    | 42-03.7   | 141-07.7   | 5/19 | 0659-0707 | 119       | ENE-2   | SE-1   | ENE-2   | 10.5      | 9.3       | c   | 1025.2    |
| US16265    | 42-04.9   | 140-57.0   | 5/19 | 0918-0924 | 82        | ENE-2   | SE-1   | ENE-3   | 10.3      | 9.4       | f   | 1025.7    |

| Cruise 361 |           |            |      |           |           |       |       |       |           |           |     |           |
|------------|-----------|------------|------|-----------|-----------|-------|-------|-------|-----------|-----------|-----|-----------|
| station    | Lat. (N)° | Long. (E)° | Date | Hour      | Depth (m) | Wave  | Swell | Wind  | Air Temp. | Sea Temp. | Wr. | Bar (hPa) |
| US16266    | 42-17.3   | 140-54.6   | 5/25 | 1353-1359 | 57        | NNE-2 | SE-1  | NNE-2 | 19.3      | 11.9      | bc  | 1010.5    |
| US16267    | 42-18.8   | 140-52.6   | 5/25 | 1750-1754 | 51        | Calm  | SE-1  | Calm  | 16.8      | 12.1      | o   | 1011      |

Table 1. List of Oceanographic Station (continued)

| Cruise 362 |           |            |      |           |           |         |        |         |           |           |     |           |
|------------|-----------|------------|------|-----------|-----------|---------|--------|---------|-----------|-----------|-----|-----------|
| station    | Lat. (N)° | Long. (E)° | Date | Hour      | Depth (m) | Wave    | Swell  | Wind    | Air Temp. | Sea Temp. | Wr. | Bar (hPa) |
| US16268    | 41-12.0   | 140-42.5   | 5/30 | 1158-1203 | 73        | East-2  | East-1 | East-5  | 19        | 14        | bc  | 1009.6    |
| US16269    | 41-01.3   | 140-43.0   | 5/30 | 1348-1351 | 55        | East-3  | East-1 | ENE-6   | 17        | 13.9      | bc  | 1009.2    |
| US16270    | 40-57.3   | 140-45.4   | 5/30 | 1420-1424 | 50        | NE-3    | NE-1   | NE-5    | 17.6      | 15.5      | bc  | 1008.7    |
| US16271    | 40-55.4   | 140-46.4   | 5/30 | 1516-1519 | 41        | NE-3    | NE-1   | NE-5    | 18.9      | 15.8      | bc  | 1008.5    |
| US16272    | 40-52.3   | 140-46.2   | 5/30 | 1541-1543 | 29        | NE-2    | NE-1   | NE-4    | 19.7      | 16.1      | bc  | 1008.2    |
| US16273    | 40-59.9   | 140-46.8   | 5/31 | 0727-0730 | 51        | Calm    | NNE-1  | Calm    | 16        | 15        | o   | 1006.8    |
| US16274    | 41-02.7   | 140-46.1   | 5/31 | 0833-0836 | 51        | NNE-2   | NNE-1  | NNE-3   | 15.9      | 14.9      | o   | 1006.2    |
| US16275    | 41-05.1   | 140-44.0   | 5/31 | 0855-0900 | 60        | East-2  | NE-1   | East-3  | 15.9      | 14.9      | c   | 1006.1    |
| US16276    | 41-03.6   | 140-51.9   | 5/31 | 1026-1030 | 50        | NE-2    | NE-1   | NE-3    | 18.7      | 15.6      | bc  | 1005      |
| US16277    | 41-04.9   | 140-51.7   | 5/31 | 1041-1045 | 52        | ENE-2   | NE-1   | ENE-3   | 17.6      | 15.3      | bc  | 1004.7    |
| US16278    | 41-05.9   | 140-51.3   | 5/31 | 1112-1115 | 52        | NE-2    | NE-1   | NE-2    | 18.4      | 14.8      | bc  | 1004.5    |
| US16279    | 41-04.2   | 140-58.1   | 5/31 | 1232-1236 | 49        | East-2  | NE-1   | East-3  | 21.2      | 15.8      | bc  | 1002.8    |
| US16280    | 41-02.0   | 141-00.6   | 5/31 | 1307-1311 | 49        | ESE-2   | NE-1   | ESE-2   | 20.7      | 16        | bc  | 1002.2    |
| US16281    | 40-59.9   | 141-07.1   | 5/31 | 1348-1351 | 42        | ESE-2   | NE-1   | ESE-4   | 21.3      | 16        | c   | 1001.1    |
| US16282    | 40-57.4   | 141-06.9   | 5/31 | 1510-1514 | 36        | WNW-2   | NE-1   | WNW-4   | 16.1      | 16        | r   | 1001.1    |
| US16283    | 41-04.5   | 141-02.2   | 6/1  | 0750-0755 | 47        | West-2  | West-1 | West-4  | 11        | 14.6      | r   | 1000      |
| US16284    | 41-05.7   | 141-09.9   | 6/1  | 0858-0901 | 38        | WSW-2   | West-1 | WSW-4   | 11.6      | 14.6      | c   | 999.7     |
| US16285    | 41-08.3   | 141-11.4   | 6/1  | 0927-0931 | 34        | WSW-3   | WSW-1  | WSW-5   | 12.5      | 14.4      | bc  | 999       |
| US16286    | 41-11.1   | 141-11.1   | 6/1  | 0952-0956 | 29        | WSW-3   | WSW-1  | WSW-5   | 14.2      | 14.6      | bc  | 998.5     |
| US16287    | 41-02.9   | 141-03.4   | 6/2  | 0941-0944 | 37        | NW-3    | West-1 | NW-4    | 13.6      | 13.7      | c   | 1004.3    |
| US16288    | 41-06.7   | 140-55.7   | 6/2  | 1030-1035 | 46        | NW-3    | West-1 | NW-4    | 13.3      | 13.6      | c   | 1005.2    |
| US16289    | 41-06.0   | 140-47.8   | 6/2  | 1118-1124 | 50        | NNW-2   | West-1 | NNW-5   | 13.6      | 13        | bc  | 1005.5    |
| US16290    | 41-08.8   | 140-44.0   | 6/2  | 1158-1202 | 61        | NNW-3   | NNW-1  | NNW-5   | 14        | 13.6      | bc  | 1005.5    |
| US16291    | 41-09.5   | 140-42.1   | 6/2  | 1222-1226 | 49        | North-3 | NNW-1  | Notrh-6 | 14        | 14.1      | bc  | 1005.5    |



Table 2. Oceanographic data

|           |         |          |         |  |
|-----------|---------|----------|---------|--|
| STATION   |         | US16232  |         |  |
| LATITUDE  |         | 41-28.5  | N       |  |
| LONGITUD  |         | 141-17.0 | E       |  |
| DEPTH (m) |         | 231      |         |  |
| Press.    | Temp.   | Salinity | Sigma-T |  |
| 5         | 10.6653 | 33.8741  | 25.9582 |  |
| 10        | 10.6651 | 33.8746  | 25.9586 |  |
| 20        | 10.6621 | 33.8748  | 25.9593 |  |
| 30        | 10.5748 | 33.8824  | 25.9805 |  |
| 40        | 10.5191 | 33.8933  | 25.9987 |  |
| 50        | 10.4912 | 33.9014  | 26.0099 |  |
| 75        | 10.4542 | 33.9106  | 26.0235 |  |
| 100       | 10.3041 | 33.9258  | 26.0613 |  |
| 125       | 10.1858 | 33.9583  | 26.107  |  |
| 150       | 10.1876 | 33.9582  | 26.1066 |  |
| 175       | 10.1816 | 33.9564  | 26.1062 |  |
| 200       | 9.8089  | 33.9551  | 26.1681 |  |
| 220       | 7.5186  | 33.7203  | 26.3387 |  |

|           |         |          |         |  |
|-----------|---------|----------|---------|--|
| STATION   |         | US16235  |         |  |
| LATITUDE  |         | 41-38.9  | N       |  |
| LONGITUD  |         | 140-49.1 | E       |  |
| DEPTH (m) |         | 350      |         |  |
| Press.    | Temp.   | Salinity | Sigma-T |  |
| 5         | 11.2601 | 33.8124  | 25.8038 |  |
| 10        | 11.2464 | 33.8372  | 25.8256 |  |
| 20        | 11.1685 | 33.8652  | 25.8615 |  |
| 30        | 11.1552 | 33.8699  | 25.8676 |  |
| 40        | 11.124  | 33.8778  | 25.8793 |  |
| 50        | 11.0811 | 33.8825  | 25.8907 |  |
| 75        | 10.873  | 33.8996  | 25.9413 |  |
| 100       | 10.7196 | 33.9246  | 25.988  |  |
| 125       | 10.5914 | 33.9451  | 26.0265 |  |
| 150       | 10.4644 | 33.974   | 26.0711 |  |
| 175       | 10.4316 | 33.982   | 26.0831 |  |
| 200       | 10.1857 | 34.0088  | 26.1464 |  |
| 250       | 10.045  | 34.0181  | 26.1776 |  |
| 300       | 9.9283  | 34.0271  | 26.2043 |  |
| 322       | 9.9124  | 34.0293  | 26.2088 |  |

|           |        |          |         |  |
|-----------|--------|----------|---------|--|
| STATION   |        | US16238  |         |  |
| LATITUDE  |        | 41-48.5  | N       |  |
| LONGITUD  |        | 141-13.8 | E       |  |
| DEPTH (m) |        | 185      |         |  |
| Press.    | Temp.  | Salinity | Sigma-T |  |
| 5         | 8.3011 | 33.1874  | 25.806  |  |
| 10        | 8.2215 | 33.307   | 25.9117 |  |
| 20        | 8.4335 | 33.5697  | 26.0859 |  |
| 30        | 8.5238 | 33.6394  | 26.1268 |  |
| 40        | 8.5526 | 33.6785  | 26.153  |  |
| 50        | 8.6905 | 33.7269  | 26.1697 |  |
| 75        | 7.5622 | 33.6751  | 26.2968 |  |
| 100       | 7.2479 | 33.6852  | 26.3489 |  |
| 125       | 6.7416 | 33.6421  | 26.384  |  |
| 150       | 6.5549 | 33.6356  | 26.4035 |  |
| 172       | 6.5247 | 33.6359  | 26.4077 |  |

|           |        |           |         |  |
|-----------|--------|-----------|---------|--|
| STATION   |        | US16240-2 |         |  |
| LATITUDE  |        | 42-19.4   | N       |  |
| LONGITUD  |        | 141-09.2  | E       |  |
| DEPTH (m) |        | 72        |         |  |
| Press.    | Temp.  | Salinity  | Sigma-T |  |
| 5         | 8.5035 | 32.7059   | 25.3981 |  |
| 10        | 7.943  | 32.8561   | 25.5987 |  |
| 20        | 7.295  | 33.1195   | 25.8973 |  |
| 30        | 6.5282 | 33.2598   | 26.1106 |  |
| 40        | 6.6831 | 33.3972   | 26.1987 |  |
| 50        | 5.8204 | 33.3417   | 26.2644 |  |
| 66        | 5.8263 | 33.4104   | 26.3181 |  |

|           |         |          |         |  |
|-----------|---------|----------|---------|--|
| STATION   |         | US16233  |         |  |
| LATITUDE  |         | 41-42.9  | N       |  |
| LONGITUD  |         | 140-45.0 | E       |  |
| DEPTH (m) |         | 83       |         |  |
| Press.    | Temp.   | Salinity | Sigma-T |  |
| 5         | 10.9749 | 33.7342  | 25.7943 |  |
| 10        | 10.9795 | 33.7513  | 25.8068 |  |
| 20        | 10.9048 | 33.7964  | 25.8553 |  |
| 30        | 10.7075 | 33.9637  | 26.0205 |  |
| 40        | 10.5405 | 33.9922  | 26.072  |  |
| 50        | 10.4805 | 34.0036  | 26.0914 |  |
| 72        | 10.0821 | 34.0314  | 26.1816 |  |

|           |         |          |         |  |
|-----------|---------|----------|---------|--|
| STATION   |         | US16236  |         |  |
| LATITUDE  |         | 41-37.1  | N       |  |
| LONGITUD  |         | 140-51.1 | E       |  |
| DEPTH (m) |         | 96       |         |  |
| Press.    | Temp.   | Salinity | Sigma-T |  |
| 5         | 11.2768 | 33.79    | 25.7833 |  |
| 10        | 11.262  | 33.8058  | 25.7984 |  |
| 20        | 11.3163 | 33.8327  | 25.8094 |  |
| 30        | 11.2589 | 33.8323  | 25.8195 |  |
| 40        | 11.2437 | 33.8356  | 25.8249 |  |
| 50        | 11.2646 | 33.8331  | 25.8191 |  |
| 75        | 11.2339 | 33.8375  | 25.8281 |  |
| 86        | 11.2295 | 33.8385  | 25.8297 |  |

|           |        |          |         |  |
|-----------|--------|----------|---------|--|
| STATION   |        | US16239  |         |  |
| LATITUDE  |        | 42-17.5  | N       |  |
| LONGITUD  |        | 140-54.9 | E       |  |
| DEPTH (m) |        | 57       |         |  |
| Press.    | Temp.  | Salinity | Sigma-T |  |
| 5         | 7.9899 | 32.4666  | 25.2862 |  |
| 10        | 7.9924 | 32.472   | 25.29   |  |
| 20        | 7.6924 | 32.6348  | 25.4607 |  |
| 30        | 7.5202 | 32.7916  | 25.6081 |  |
| 40        | 7.3119 | 32.9867  | 25.7905 |  |
| 48        | 6.8534 | 33.1597  | 25.9889 |  |

|           |        |          |         |  |
|-----------|--------|----------|---------|--|
| STATION   |        | US16241  |         |  |
| LATITUDE  |        | 41-59.4  | N       |  |
| LONGITUD  |        | 141-02.1 | E       |  |
| DEPTH (m) |        | 101      |         |  |
| Press.    | Temp.  | Salinity | Sigma-T |  |
| 5         | 8.514  | 32.8241  | 25.4892 |  |
| 10        | 8.5024 | 32.8491  | 25.5105 |  |
| 20        | 8.1506 | 33.0615  | 25.7296 |  |
| 30        | 8.0565 | 33.1027  | 25.7757 |  |
| 40        | 7.4218 | 33.4001  | 26.1004 |  |
| 50        | 7.4299 | 33.6271  | 26.2778 |  |
| 75        | 6.7051 | 33.6192  | 26.3708 |  |
| 99        | 5.6976 | 33.579   | 26.467  |  |

|           |         |          |         |  |
|-----------|---------|----------|---------|--|
| STATION   |         | US16234  |         |  |
| LATITUDE  |         | 41-40.9  | N       |  |
| LONGITUD  |         | 140-47.1 | E       |  |
| DEPTH (m) |         | 216      |         |  |
| Press.    | Temp.   | Salinity | Sigma-T |  |
| 5         | 11.3673 | 33.8894  | 25.8442 |  |
| 10        | 11.3699 | 33.9064  | 25.857  |  |
| 20        | 11.3716 | 33.9142  | 25.8627 |  |
| 30        | 11.3112 | 33.9199  | 25.8782 |  |
| 40        | 11.2932 | 33.9209  | 25.8823 |  |
| 50        | 11.2885 | 33.921   | 25.8832 |  |
| 75        | 11.2368 | 33.9344  | 25.903  |  |
| 100       | 11.1401 | 33.9489  | 25.9318 |  |
| 125       | 10.5681 | 33.9704  | 26.0502 |  |
| 150       | 10.4832 | 33.9924  | 26.0822 |  |
| 175       | 10.5341 | 33.9854  | 26.0679 |  |
| 200       | 10.0014 | 34.0394  | 26.2016 |  |
| 201       | 10.0007 | 34.0402  | 26.2023 |  |

|           |         |          |         |  |
|-----------|---------|----------|---------|--|
| STATION   |         | US16237  |         |  |
| LATITUDE  |         | 41-35.9  | N       |  |
| LONGITUD  |         | 140-52.5 | E       |  |
| DEPTH (m) |         | 38       |         |  |
| Press.    | Temp.   | Salinity | Sigma-T |  |
| 5         | 11.3385 | 33.804   | 25.783  |  |
| 10        | 11.3429 | 33.821   | 25.7955 |  |
| 20        | 11.3521 | 33.826   | 25.7977 |  |
| 30        | 11.3554 | 33.8272  | 25.798  |  |
| 31        | 11.356  | 33.8273  | 25.7979 |  |

|           |        |          |         |  |
|-----------|--------|----------|---------|--|
| STATION   |        | US16240  |         |  |
| LATITUDE  |        | 42-18.9  | N       |  |
| LONGITUD  |        | 141-08.5 | E       |  |
| DEPTH (m) |        | 68       |         |  |
| Press.    | Temp.  | Salinity | Sigma-T |  |
| 5         | 8.4268 | 32.7918  | 25.4769 |  |
| 10        | 8.2319 | 32.8457  | 25.5483 |  |
| 20        | 6.8987 | 33.235   | 26.0422 |  |
| 30        | 6.7137 | 33.3281  | 26.1402 |  |
| 40        | 6.2247 | 33.3206  | 26.1975 |  |
| 50        | 5.634  | 33.3398  | 26.2855 |  |
| 60        | 5.7431 | 33.3786  | 26.303  |  |

|           |        |          |         |  |
|-----------|--------|----------|---------|--|
| STATION   |        | US16242  |         |  |
| LATITUDE  |        | 41-58.7  | N       |  |
| LONGITUD  |        | 141-00.6 | E       |  |
| DEPTH (m) |        | 93       |         |  |
| Press.    | Temp.  | Salinity | Sigma-T |  |
| 5         | 8.3915 | 32.6688  | 25.3858 |  |
| 10        | 8.2846 | 32.7827  | 25.491  |  |
| 20        | 8.1526 | 32.8726  | 25.581  |  |
| 30        | 7.8707 | 32.9138  | 25.6544 |  |
| 40        | 6.6843 | 33.2307  | 26.0673 |  |
| 50        | 6.8281 | 33.5279  | 26.2823 |  |
| 75        | 6.5069 | 33.6032  | 26.3843 |  |
| 90        | 5.2506 | 33.5406  | 26.4896 |  |

|           |          |          |         |
|-----------|----------|----------|---------|
| STATION   | US16243  |          |         |
| LATITUDE  | 41-58.1  | N        |         |
| LONGITUD  | 140-59.4 | E        |         |
| DEPTH (m) | 85       |          |         |
| Press.    | Temp.    | Salinity | Sigma-T |
| 5         | 8.3662   | 32.5645  | 25.3078 |
| 10        | 8.1464   | 32.6497  | 25.4071 |
| 20        | 7.7754   | 32.8168  | 25.5919 |
| 30        | 7.1596   | 32.9555  | 25.7869 |
| 40        | 6.7426   | 33.1073  | 25.9623 |
| 50        | 6.8722   | 33.4696  | 26.2306 |
| 75        | 5.6663   | 33.5129  | 26.4185 |
| 82        | 5.2858   | 33.5246  | 26.4729 |

|           |          |          |         |
|-----------|----------|----------|---------|
| STATION   | US16246  |          |         |
| LATITUDE  | 42-11.0  | N        |         |
| LONGITUD  | 140-35.6 | E        |         |
| DEPTH (m) | 80       |          |         |
| Press.    | Temp.    | Salinity | Sigma-T |
| 5         | 7.2397   | 32.7378  | 25.6046 |
| 10        | 7.0434   | 32.7439  | 25.6361 |
| 20        | 6.5514   | 32.7714  | 25.7225 |
| 30        | 5.6119   | 32.8515  | 25.9019 |
| 40        | 5.3628   | 33.2     | 26.2069 |
| 50        | 6.0692   | 33.4521  | 26.3209 |
| 75        | 5.0002   | 33.4853  | 26.4744 |
| 78        | 4.9961   | 33.4893  | 26.478  |

|           |          |          |         |
|-----------|----------|----------|---------|
| STATION   | US16249  |          |         |
| LATITUDE  | 42-16.7  | N        |         |
| LONGITUD  | 140-35.4 | E        |         |
| DEPTH (m) | 91       |          |         |
| Press.    | Temp.    | Salinity | Sigma-T |
| 5         | 8.4855   | 32.5173  | 25.253  |
| 10        | 8.4341   | 32.5503  | 25.2866 |
| 20        | 8.3239   | 32.5446  | 25.2985 |
| 30        | 8.2419   | 32.5542  | 25.3181 |
| 40        | 7.1982   | 32.7906  | 25.6518 |
| 50        | 6.437    | 33.1229  | 26.0144 |
| 75        | 5.0604   | 33.4558  | 26.4442 |
| 87        | 4.6694   | 33.5304  | 26.5469 |

|           |          |          |         |
|-----------|----------|----------|---------|
| STATION   | US16252  |          |         |
| LATITUDE  | 42-25.8  | N        |         |
| LONGITUD  | 140-37.0 | E        |         |
| DEPTH (m) | 83       |          |         |
| Press.    | Temp.    | Salinity | Sigma-T |
| 5         | 8.929    | 32.4779  | 25.1547 |
| 10        | 8.8895   | 32.4694  | 25.1541 |
| 20        | 8.4563   | 32.4697  | 25.2201 |
| 30        | 8.4478   | 32.4744  | 25.2251 |
| 40        | 8.3131   | 32.4872  | 25.2551 |
| 50        | 6.6759   | 32.9543  | 25.8505 |
| 75        | 5.2045   | 33.361   | 26.3526 |
| 82        | 4.9305   | 33.4681  | 26.4686 |

|           |          |          |         |
|-----------|----------|----------|---------|
| STATION   | US16255  |          |         |
| LATITUDE  | 42-23.3  | N        |         |
| LONGITUD  | 140-42.6 | E        |         |
| DEPTH (m) | 61       |          |         |
| Press.    | Temp.    | Salinity | Sigma-T |
| 5         | 9.2172   | 32.479   | 25.1105 |
| 10        | 8.7444   | 32.4791  | 25.184  |
| 20        | 8.4365   | 32.4929  | 25.2412 |
| 30        | 8.2837   | 32.5365  | 25.2981 |
| 40        | 7.0431   | 32.8684  | 25.734  |
| 50        | 5.3029   | 33.086   | 26.1236 |
| 59        | 5.3082   | 33.1643  | 26.185  |

|           |          |          |         |
|-----------|----------|----------|---------|
| STATION   | US16244  |          |         |
| LATITUDE  | 41-57.4  | N        |         |
| LONGITUD  | 140-58.2 | E        |         |
| DEPTH (m) | 78       |          |         |
| Press.    | Temp.    | Salinity | Sigma-T |
| 5         | 8.3599   | 32.5641  | 25.3084 |
| 10        | 8.5004   | 32.5454  | 25.2728 |
| 20        | 7.9556   | 32.8272  | 25.5742 |
| 30        | 6.848    | 32.8972  | 25.7829 |
| 40        | 6.9606   | 33.3539  | 26.1275 |
| 50        | 6.967    | 33.4885  | 26.2326 |
| 75        | 5.8212   | 33.5221  | 26.4069 |
| 75        | 5.8212   | 33.5221  | 26.4069 |

|           |          |          |         |
|-----------|----------|----------|---------|
| STATION   | US16247  |          |         |
| LATITUDE  | 42-14.0  | N        |         |
| LONGITUD  | 140-30.3 | E        |         |
| DEPTH (m) | 79       |          |         |
| Press.    | Temp.    | Salinity | Sigma-T |
| 5         | 7.8074   | 32.6463  | 25.4534 |
| 10        | 7.5858   | 32.6488  | 25.4867 |
| 20        | 6.9707   | 32.6734  | 25.5902 |
| 30        | 6.9468   | 32.8764  | 25.7533 |
| 40        | 6.4842   | 32.9912  | 25.9045 |
| 50        | 7.0379   | 33.3723  | 26.1315 |
| 75        | 5.0109   | 33.3864  | 26.3948 |
| 77        | 5.0064   | 33.3971  | 26.4037 |

|           |          |          |         |
|-----------|----------|----------|---------|
| STATION   | US16250  |          |         |
| LATITUDE  | 42-20.9  | N        |         |
| LONGITUD  | 140-36.8 | E        |         |
| DEPTH (m) | 87       |          |         |
| Press.    | Temp.    | Salinity | Sigma-T |
| 5         | 9.0144   | 32.4986  | 25.1576 |
| 10        | 8.5389   | 32.4908  | 25.2243 |
| 20        | 8.3904   | 32.5062  | 25.2585 |
| 30        | 8.3305   | 32.5162  | 25.2753 |
| 40        | 8.2269   | 32.5237  | 25.2964 |
| 50        | 7.2605   | 33.0713  | 25.8642 |
| 75        | 4.8614   | 33.4381  | 26.4525 |
| 85        | 4.6876   | 33.5108  | 26.5294 |

|           |          |          |         |
|-----------|----------|----------|---------|
| STATION   | US16253  |          |         |
| LATITUDE  | 42-31.2  | N        |         |
| LONGITUD  | 140-37.7 | E        |         |
| DEPTH (m) | 60       |          |         |
| Press.    | Temp.    | Salinity | Sigma-T |
| 5         | 9.5266   | 32.229   | 24.8659 |
| 10        | 8.828    | 32.4334  | 25.1354 |
| 20        | 8.5952   | 32.4887  | 25.2141 |
| 30        | 8.1517   | 32.5582  | 25.3345 |
| 40        | 8.0506   | 32.5827  | 25.3685 |
| 50        | 7.9967   | 32.5997  | 25.3896 |
| 55        | 8.0203   | 32.6221  | 25.4038 |

|           |          |          |         |
|-----------|----------|----------|---------|
| STATION   | US16256  |          |         |
| LATITUDE  | 42-18.4  | N        |         |
| LONGITUD  | 140-42.2 | E        |         |
| DEPTH (m) | 64       |          |         |
| Press.    | Temp.    | Salinity | Sigma-T |
| 5         | 8.8889   | 32.4822  | 25.1642 |
| 10        | 8.7967   | 32.4714  | 25.17   |
| 20        | 8.7053   | 32.4818  | 25.1921 |
| 30        | 7.9405   | 32.6359  | 25.4262 |
| 40        | 6.429    | 32.8173  | 25.7744 |
| 50        | 5.4555   | 33.2041  | 26.1993 |
| 62        | 5.1809   | 33.4575  | 26.4319 |

|           |          |          |         |
|-----------|----------|----------|---------|
| STATION   | US16245  |          |         |
| LATITUDE  | 42-09.2  | N        |         |
| LONGITUD  | 140-35.8 | E        |         |
| DEPTH (m) | 68       |          |         |
| Press.    | Temp.    | Salinity | Sigma-T |
| 5         | 6.7575   | 32.7656  | 25.6912 |
| 10        | 6.6731   | 32.825   | 25.749  |
| 20        | 5.7608   | 32.9086  | 25.9293 |
| 30        | 5.0955   | 33.0745  | 26.1381 |
| 40        | 6.1965   | 33.4383  | 26.294  |
| 50        | 6.0654   | 33.4903  | 26.3516 |
| 64        | 5.3615   | 33.449   | 26.4042 |

|           |          |          |         |
|-----------|----------|----------|---------|
| STATION   | US16248  |          |         |
| LATITUDE  | 42-19.1  | N        |         |
| LONGITUD  | 140-23.1 | E        |         |
| DEPTH (m) | 53       |          |         |
| Press.    | Temp.    | Salinity | Sigma-T |
| 5         | 9.1589   | 32.359   | 25.0259 |
| 10        | 8.3503   | 32.4616  | 25.2295 |
| 20        | 8.3257   | 32.5194  | 25.2785 |
| 30        | 7.1947   | 32.8351  | 25.6873 |
| 40        | 6.8271   | 32.9881  | 25.8572 |
| 50        | 5.0026   | 33.1347  | 26.1963 |
| 51        | 4.9898   | 33.1561  | 26.2147 |

|           |          |          |         |
|-----------|----------|----------|---------|
| STATION   | US16251  |          |         |
| LATITUDE  | 42-23.9  | N        |         |
| LONGITUD  | 140-31.5 | E        |         |
| DEPTH (m) | 96       |          |         |
| Press.    | Temp.    | Salinity | Sigma-T |
| 5         | 8.8161   | 32.4697  | 25.1656 |
| 10        | 8.4156   | 32.4704  | 25.2267 |
| 20        | 8.3776   | 32.4808  | 25.2405 |
| 30        | 8.3255   | 32.4868  | 25.2529 |
| 40        | 8.1566   | 32.5115  | 25.2972 |
| 50        | 6.0874   | 32.7577  | 25.7703 |
| 75        | 5.0501   | 33.3438  | 26.3566 |
| 93        | 4.8392   | 33.4754  | 26.4846 |

|           |          |          |         |
|-----------|----------|----------|---------|
| STATION   | US16254  |          |         |
| LATITUDE  | 42-28.3  | N        |         |
| LONGITUD  | 140-43.1 | E        |         |
| DEPTH (m) | 60       |          |         |
| Press.    | Temp.    | Salinity | Sigma-T |
| 5         | 8.9346   | 32.6354  | 25.277  |
| 10        | 8.2888   | 32.6351  | 25.3747 |
| 20        | 8.0087   | 32.689   | 25.458  |
| 30        | 7.8889   | 32.7442  | 25.5186 |
| 40        | 7.8017   | 32.7781  | 25.5578 |
| 50        | 6.4228   | 33.0922  | 25.992  |
| 56        | 6.1555   | 33.1712  | 26.0883 |

|           |          |          |         |
|-----------|----------|----------|---------|
| STATION   | US16257  |          |         |
| LATITUDE  | 42-15.5  | N        |         |
| LONGITUD  | 140-47.4 | E        |         |
| DEPTH (m) | 71       |          |         |
| Press.    | Temp.    | Salinity | Sigma-T |
| 5         | 8.9515   | 32.1915  | 24.9268 |
| 10        | 7.515    | 32.1861  | 25.133  |
| 20        | 7.5826   | 32.4816  | 25.3558 |
| 30        | 7.1513   | 32.64    | 25.5397 |
| 40        | 6.0638   | 32.9289  | 25.9083 |
| 50        | 6.3835   | 33.1968  | 26.0795 |
| 69        | 4.9346   | 33.5039  | 26.4966 |

|        | STATION   | US16258  |         |  |
|--------|-----------|----------|---------|--|
|        | LATITUDE  | 42-17.5  | N       |  |
|        | LONGITUD  | 140-53.9 | E       |  |
|        | DEPTH (m) | 56       |         |  |
| Press. | Temp.     | Salinity | Sigma-T |  |
| 5      | 8.8144    | 32.1395  | 24.9074 |  |
| 10     | 8.7351    | 32.2366  | 24.9954 |  |
| 20     | 8.6523    | 32.2924  | 25.0517 |  |
| 30     | 8.2228    | 32.5436  | 25.3126 |  |
| 40     | 7.8786    | 32.603   | 25.4093 |  |
| 50     | 7.1804    | 32.8845  | 25.7281 |  |
| 54     | 6.7178    | 33.1658  | 26.0117 |  |

ここまで終了。

|        | STATION   | US16261  |         |  |
|--------|-----------|----------|---------|--|
|        | LATITUDE  | 42-10.0  | N       |  |
|        | LONGITUD  | 141-09.7 | E       |  |
|        | DEPTH (m) | 119      |         |  |
| Press. | Temp.     | Salinity | Sigma-T |  |
| 5      | 9.7384    | 32.7482  | 25.2372 |  |
| 10     | 8.8756    | 32.838   | 25.4448 |  |
| 20     | 8.3251    | 32.8892  | 25.5685 |  |
| 30     | 6.2641    | 33.0472  | 25.9768 |  |
| 40     | 5.5733    | 33.1822  | 26.168  |  |
| 50     | 6.0131    | 33.3505  | 26.2477 |  |
| 75     | 6.6745    | 33.5411  | 26.3133 |  |
| 100    | 6.6192    | 33.5603  | 26.3357 |  |
| 117    | 6.501     | 33.5595  | 26.3505 |  |

|        | STATION   | US16264  |         |  |
|--------|-----------|----------|---------|--|
|        | LATITUDE  | 42-03.7  | N       |  |
|        | LONGITUD  | 141-07.7 | E       |  |
|        | DEPTH (m) | 119      |         |  |
| Press. | Temp.     | Salinity | Sigma-T |  |
| 5      | 9.3296    | 32.3727  | 25.0097 |  |
| 10     | 8.8463    | 32.7798  | 25.4037 |  |
| 20     | 6.6702    | 33.0957  | 25.9627 |  |
| 30     | 6.8714    | 33.3207  | 26.1133 |  |
| 40     | 6.5418    | 33.3774  | 26.2016 |  |
| 50     | 7.3157    | 33.6179  | 26.2866 |  |
| 75     | 6.9948    | 33.5822  | 26.3026 |  |
| 100    | 6.312     | 33.5463  | 26.3646 |  |
| 116    | 6.3373    | 33.5575  | 26.3701 |  |

|        | STATION   | US16267  |         |  |
|--------|-----------|----------|---------|--|
|        | LATITUDE  | 42-18.8  | N       |  |
|        | LONGITUD  | 140-52.6 | E       |  |
|        | DEPTH (m) | 51       |         |  |
| Press. | Temp.     | Salinity | Sigma-T |  |
| 5      | 10.7984   | 32.242   | 24.6638 |  |
| 10     | 9.9865    | 32.3305  | 24.8704 |  |
| 20     | 7.5344    | 32.5464  | 25.4134 |  |
| 30     | 6.8902    | 32.753   | 25.6636 |  |
| 40     | 5.9766    | 32.9983  | 25.974  |  |
| 46     | 6.0314    | 33.1661  | 26.0998 |  |

|        | STATION   | US16270  |         |  |
|--------|-----------|----------|---------|--|
|        | LATITUDE  | 40-57.3  | N       |  |
|        | LONGITUD  | 140-45.4 | E       |  |
|        | DEPTH (m) | 50       |         |  |
| Press. | Temp.     | Salinity | Sigma-T |  |
| 5      | 15.6677   | 33.2413  | 24.4697 |  |
| 10     | 15.0316   | 33.3446  | 24.689  |  |
| 20     | 13.8053   | 33.6149  | 25.1571 |  |
| 30     | 13.434    | 33.6157  | 25.2336 |  |
| 40     | 12.7393   | 33.5571  | 25.3265 |  |
| 49     | 11.7074   | 33.5035  | 25.4816 |  |

|        | STATION   | US16259  |         |  |
|--------|-----------|----------|---------|--|
|        | LATITUDE  | 42-09.7  | N       |  |
|        | LONGITUD  | 140-52.6 | E       |  |
|        | DEPTH (m) | 74       |         |  |
| Press. | Temp.     | Salinity | Sigma-T |  |
| 5      | 8.7832    | 32.3548  | 25.0807 |  |
| 10     | 7.793     | 32.6174  | 25.4327 |  |
| 20     | 6.5161    | 32.8319  | 25.7747 |  |
| 30     | 6.3045    | 32.9483  | 25.8936 |  |
| 40     | 6.6509    | 33.3423  | 26.1595 |  |
| 50     | 6.5927    | 33.2857  | 26.1226 |  |
| 72     | 4.7313    | 33.5078  | 26.5222 |  |

|        | STATION   | US16262  |         |  |
|--------|-----------|----------|---------|--|
|        | LATITUDE  | 42-09.9  | N       |  |
|        | LONGITUD  | 141-18.8 | E       |  |
|        | DEPTH (m) | 334      |         |  |
| Press. | Temp.     | Salinity | Sigma-T |  |
| 5      | 9.2249    | 32.9109  | 25.4471 |  |
| 10     | 8.5924    | 33.0623  | 25.664  |  |
| 20     | 8.4328    | 33.1777  | 25.7786 |  |
| 30     | 8.2795    | 33.2094  | 25.8264 |  |
| 40     | 8.0965    | 33.2574  | 25.8912 |  |
| 50     | 7.6361    | 33.4707  | 26.1255 |  |
| 75     | 7.5388    | 33.6541  | 26.2836 |  |
| 100    | 6.715     | 33.5879  | 26.3448 |  |
| 125    | 6.3237    | 33.5678  | 26.38   |  |
| 150    | 6.1304    | 33.6058  | 26.4346 |  |
| 175    | 5.702     | 33.5845  | 26.4708 |  |
| 200    | 5.0109    | 33.5264  | 26.5058 |  |
| 250    | 4.3986    | 33.5605  | 26.5998 |  |
| 300    | 3.4353    | 33.5569  | 26.6934 |  |
| 312    | 3.7466    | 33.6172  | 26.7115 |  |

|        | STATION   | US16265  |         |  |
|--------|-----------|----------|---------|--|
|        | LATITUDE  | 42-04.9  | N       |  |
|        | LONGITUD  | 140-57.0 | E       |  |
|        | DEPTH (m) | 82       |         |  |
| Press. | Temp.     | Salinity | Sigma-T |  |
| 5      | 9.2738    | 32.5996  | 25.1959 |  |
| 10     | 8.6394    | 32.636   | 25.3228 |  |
| 20     | 5.9618    | 32.8283  | 25.8415 |  |
| 30     | 6.8106    | 33.258   | 26.0718 |  |
| 40     | 7.0322    | 33.3359  | 26.1036 |  |
| 50     | 6.3047    | 33.3065  | 26.1763 |  |
| 75     | 4.8137    | 33.4871  | 26.4967 |  |
| 80     | 4.7967    | 33.4998  | 26.5086 |  |

|        | STATION   | US16268  |         |  |
|--------|-----------|----------|---------|--|
|        | LATITUDE  | 41-12.0  | N       |  |
|        | LONGITUD  | 140-42.5 | E       |  |
|        | DEPTH (m) | 73       |         |  |
| Press. | Temp.     | Salinity | Sigma-T |  |
| 5      | 14.1411   | 33.5791  | 25.0597 |  |
| 10     | 14.0364   | 33.5903  | 25.0902 |  |
| 20     | 13.471    | 33.6033  | 25.2165 |  |
| 30     | 13.1711   | 33.6039  | 25.2773 |  |
| 40     | 12.5092   | 33.6067  | 25.4097 |  |
| 50     | 12.3909   | 33.6335  | 25.4533 |  |
| 71     | 10.1647   | 33.6406  | 25.8627 |  |

|        | STATION   | US16271  |         |  |
|--------|-----------|----------|---------|--|
|        | LATITUDE  | 40-55.4  | N       |  |
|        | LONGITUD  | 140-46.4 | E       |  |
|        | DEPTH (m) | 41       |         |  |
| Press. | Temp.     | Salinity | Sigma-T |  |
| 5      | 15.9057   | 33.0734  | 24.2873 |  |
| 10     | 15.0229   | 33.2785  | 24.64   |  |
| 20     | 13.2444   | 33.4296  | 25.1278 |  |
| 30     | 12.9566   | 33.6088  | 25.3238 |  |
| 40     | 11.5492   | 33.4001  | 25.4304 |  |

|        | STATION   | US16260  |         |  |
|--------|-----------|----------|---------|--|
|        | LATITUDE  | 42-11.3  | N       |  |
|        | LONGITUI  | 141-01.8 | E       |  |
|        | DEPTH (m) | 80       |         |  |
| Press. | Temp.     | Salinity | Sigma-T |  |
| 5      | 8.9094    | 32.3395  | 25.0494 |  |
| 10     | 8.0532    | 32.3032  | 25.1487 |  |
| 20     | 6.7155    | 32.8042  | 25.7271 |  |
| 30     | 6.2122    | 32.9546  | 25.9102 |  |
| 40     | 6.0171    | 33.1187  | 26.064  |  |
| 50     | 6.1675    | 33.2758  | 26.1693 |  |
| 75     | 5.868     | 33.294   | 26.2209 |  |
| 78     | 5.8579    | 33.2993  | 26.2263 |  |

|        | STATION   | US16263  |         |  |
|--------|-----------|----------|---------|--|
|        | LATITUDE  | 42-00.4  | N       |  |
|        | LONGITUI  | 141-01.6 | E       |  |
|        | DEPTH (m) | 96       |         |  |
| Press. | Temp.     | Salinity | Sigma-T |  |
| 5      | 8.4401    | 32.8017  | 25.4827 |  |
| 10     | 8.414     | 32.858   | 25.5308 |  |
| 20     | 8.086     | 33.0302  | 25.7145 |  |
| 30     | 6.0211    | 32.947   | 25.928  |  |
| 40     | 5.4749    | 33.0987  | 26.1136 |  |
| 50     | 6.0959    | 33.3538  | 26.2399 |  |
| 75     | 5.9367    | 33.4186  | 26.3109 |  |
| 95     | 4.9543    | 33.5006  | 26.4917 |  |

|        | STATION   | US16266  |         |  |
|--------|-----------|----------|---------|--|
|        | LATITUDE  | 42-17.3  | N       |  |
|        | LONGITUI  | 140-54.6 | E       |  |
|        | DEPTH (m) | 57       |         |  |
| Press. | Temp.     | Salinity | Sigma-T |  |
| 5      | 11.0327   | 32.1917  | 24.5836 |  |
| 10     | 10.231    | 32.3217  | 24.8227 |  |
| 20     | 9.4218    | 32.4602  | 25.0634 |  |
| 30     | 6.6443    | 32.6359  | 25.6037 |  |
| 40     | 6.0284    | 32.7493  | 25.7709 |  |
| 50     | 5.7146    | 33.0744  | 26.066  |  |
| 51     | 5.7363    | 33.1451  | 26.1192 |  |

|        | STATION   | US16269  |         |  |
|--------|-----------|----------|---------|--|
|        | LATITUDE  | 41-01.3  | N       |  |
|        | LONGITUI  | 140-43.0 | E       |  |
|        | DEPTH (m) | 55       |         |  |
| Press. | Temp.     | Salinity | Sigma-T |  |
| 5      | 14.1279   | 33.5487  | 25.039  |  |
| 10     | 14.1028   | 33.5484  | 25.044  |  |
| 20     | 13.9154   | 33.5488  | 25.0833 |  |
| 30     | 13.4895   | 33.6208  | 25.2262 |  |
| 40     | 11.4323   | 33.4268  | 25.4726 |  |
| 50     | 10.9302   | 33.633   | 25.7235 |  |
| 54     | 10.3183   | 33.67    | 25.8593 |  |

|        | STATION   | US16272  |         |  |
|--------|-----------|----------|---------|--|
|        | LATITUDE  | 40-52.3  | N       |  |
|        | LONGITUI  | 140-46.2 | E       |  |
|        | DEPTH (m) | 29       |         |  |
| Press. | Temp.     | Salinity | Sigma-T |  |
| 5      | 15.8454   | 33.076   | 24.3025 |  |
| 10     | 14.3408   | 33.4716  | 24.9348 |  |
| 20     | 13.8944   | 33.5408  | 25.0814 |  |
| 29     | 12.6968   | 33.4025  | 25.215  |  |

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| STATION US16273     |         |          |         |
| LATITUDE 40-59.9 N  |         |          |         |
| LONGITUD 140-46.8 E |         |          |         |
| DEPTH (m) 51        |         |          |         |
| Press.              | Temp.   | Salinity | Sigma-T |
| 5                   | 14.958  | 33.3625  | 24.7188 |
| 10                  | 14.6993 | 33.4354  | 24.8307 |
| 20                  | 12.7917 | 33.42    | 25.21   |
| 30                  | 12.1956 | 33.4708  | 25.3645 |
| 40                  | 11.6753 | 33.5662  | 25.5362 |
| 50                  | 10.3614 | 33.6383  | 25.8272 |

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| STATION US16276     |         |          |         |
| LATITUDE 41-03.6 N  |         |          |         |
| LONGITUD 140-51.9 E |         |          |         |
| DEPTH (m) 50        |         |          |         |
| Press.              | Temp.   | Salinity | Sigma-T |
| 5                   | 14.9423 | 33.3883  | 24.7421 |
| 10                  | 14.1447 | 33.45    | 24.9593 |
| 20                  | 13.2994 | 33.5133  | 25.1815 |
| 30                  | 12.401  | 33.5588  | 25.3935 |
| 40                  | 12.7873 | 33.7325  | 25.453  |
| 49                  | 11.582  | 33.5343  | 25.5287 |

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| STATION US16279     |         |          |         |
| LATITUDE 41-04.2 N  |         |          |         |
| LONGITUD 140-58.1 E |         |          |         |
| DEPTH (m) 49        |         |          |         |
| Press.              | Temp.   | Salinity | Sigma-T |
| 5                   | 14.8047 | 33.1821  | 24.6128 |
| 10                  | 14.7914 | 33.1965  | 24.6268 |
| 20                  | 12.6789 | 33.2795  | 25.1231 |
| 30                  | 10.8283 | 33.2323  | 25.4295 |
| 40                  | 10.4605 | 33.3912  | 25.6175 |
| 48                  | 9.1777  | 33.4126  | 25.8471 |

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| STATION US16282     |         |          |         |
| LATITUDE 40-57.4 N  |         |          |         |
| LONGITUD 141-06.9 E |         |          |         |
| DEPTH (m) 36        |         |          |         |
| Press.              | Temp.   | Salinity | Sigma-T |
| 5                   | 15.7281 | 33.1066  | 24.3526 |
| 10                  | 15.1772 | 33.1382  | 24.4984 |
| 20                  | 11.0951 | 33.2042  | 25.3604 |
| 30                  | 10.2081 | 33.3089  | 25.5965 |
| 33                  | 10.0995 | 33.3387  | 25.6381 |

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| STATION US16285     |         |          |         |
| LATITUDE 41-08.3 N  |         |          |         |
| LONGITUD 141-11.4 E |         |          |         |
| DEPTH (m) 34        |         |          |         |
| Press.              | Temp.   | Salinity | Sigma-T |
| 5                   | 14.673  | 33.0856  | 24.5666 |
| 10                  | 14.5181 | 33.1213  | 24.627  |
| 20                  | 11.2173 | 33.2162  | 25.3477 |
| 30                  | 10.7555 | 33.2812  | 25.4804 |
| 33                  | 10.7681 | 33.3377  | 25.5222 |

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| STATION US16288     |         |          |         |
| LATITUDE 41-06.7 N  |         |          |         |
| LONGITUD 140-55.7 E |         |          |         |
| DEPTH (m) 46        |         |          |         |
| Press.              | Temp.   | Salinity | Sigma-T |
| 5                   | 13.8694 | 33.3653  | 24.9511 |
| 10                  | 13.8521 | 33.3661  | 24.9552 |
| 20                  | 12.0637 | 33.2213  | 25.1955 |
| 30                  | 10.6886 | 33.3084  | 25.5133 |
| 40                  | 9.7697  | 33.3737  | 25.7206 |
| 47                  | 9.6799  | 33.4086  | 25.7627 |

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| STATION US16274     |         |          |         |
| LATITUDE 41-02.7 N  |         |          |         |
| LONGITUD 140-46.1 E |         |          |         |
| DEPTH (m) 51        |         |          |         |
| Press.              | Temp.   | Salinity | Sigma-T |
| 5                   | 14.962  | 33.3604  | 24.7163 |
| 10                  | 14.9218 | 33.3639  | 24.7277 |
| 20                  | 13.5771 | 33.5734  | 25.1718 |
| 30                  | 12.5462 | 33.6226  | 25.4149 |
| 40                  | 11.322  | 33.5404  | 25.581  |
| 50                  | 10.8606 | 33.5761  | 25.6916 |
| 51                  | 10.4233 | 33.5363  | 25.7371 |

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| STATION US16277     |         |          |         |
| LATITUDE 41-04.9 N  |         |          |         |
| LONGITUD 140-51.7 E |         |          |         |
| DEPTH (m) 52        |         |          |         |
| Press.              | Temp.   | Salinity | Sigma-T |
| 5                   | 14.5424 | 33.4359  | 24.8645 |
| 10                  | 13.8431 | 33.5045  | 25.064  |
| 20                  | 13.656  | 33.5579  | 25.1437 |
| 30                  | 13.0313 | 33.6887  | 25.3708 |
| 40                  | 12.7487 | 33.7219  | 25.4524 |
| 50                  | 11.6902 | 33.6202  | 25.5754 |
| 51                  | 11.5621 | 33.6145  | 25.5948 |

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| STATION US16280     |         |          |         |
| LATITUDE 41-02.0 N  |         |          |         |
| LONGITUD 141-00.6 E |         |          |         |
| DEPTH (m) 49        |         |          |         |
| Press.              | Temp.   | Salinity | Sigma-T |
| 5                   | 15.4801 | 33.1488  | 24.4401 |
| 10                  | 15.3061 | 33.1524  | 24.4811 |
| 20                  | 11.6746 | 33.1797  | 25.2361 |
| 30                  | 10.8111 | 33.2405  | 25.4389 |
| 40                  | 10.8305 | 33.5138  | 25.6483 |
| 46                  | 9.7921  | 33.3936  | 25.7324 |

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| STATION US16283     |         |          |         |
| LATITUDE 41-04.5 N  |         |          |         |
| LONGITUD 141-02.2 E |         |          |         |
| DEPTH (m) 47        |         |          |         |
| Press.              | Temp.   | Salinity | Sigma-T |
| 5                   | 14.9159 | 33.0059  | 24.4531 |
| 10                  | 14.8474 | 33.1294  | 24.563  |
| 20                  | 13.9531 | 33.1462  | 24.7642 |
| 30                  | 11.0888 | 33.2237  | 25.3767 |
| 40                  | 9.6958  | 33.351   | 25.715  |
| 45                  | 9.3469  | 33.3949  | 25.8061 |

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| STATION US16286     |         |          |         |
| LATITUDE 41-11.1 N  |         |          |         |
| LONGITUD 141-11.1 E |         |          |         |
| DEPTH (m) 29        |         |          |         |
| Press.              | Temp.   | Salinity | Sigma-T |
| 5                   | 14.8601 | 33.1024  | 24.5395 |
| 10                  | 14.7854 | 33.105   | 24.5575 |
| 20                  | 11.3156 | 33.2159  | 25.3298 |
| 28                  | 10.6212 | 33.2568  | 25.4848 |

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| STATION US16289     |         |          |         |
| LATITUDE 41-06.0 N  |         |          |         |
| LONGITUD 140-47.8 E |         |          |         |
| DEPTH (m) 50        |         |          |         |
| Press.              | Temp.   | Salinity | Sigma-T |
| 5                   | 13.1548 | 33.4602  | 25.1694 |
| 10                  | 13.0436 | 33.4683  | 25.1978 |
| 20                  | 12.5235 | 33.6108  | 25.4101 |
| 30                  | 11.9277 | 33.5914  | 25.5087 |
| 40                  | 11.0439 | 33.479   | 25.5833 |
| 48                  | 9.5833  | 33.3966  | 25.7692 |

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| STATION US16275     |         |          |         |
| LATITUDE 41-05.1 N  |         |          |         |
| LONGITUI 140-44.0 E |         |          |         |
| DEPTH (m) 60        |         |          |         |
| Press.              | Temp.   | Salinity | Sigma-T |
| 5                   | 14.967  | 33.3625  | 24.7169 |
| 10                  | 14.813  | 33.3881  | 24.7698 |
| 20                  | 12.0354 | 33.3108  | 25.2706 |
| 30                  | 11.3077 | 33.3116  | 25.4056 |
| 40                  | 10.6067 | 33.372   | 25.5771 |
| 50                  | 10.469  | 33.4851  | 25.6892 |
| 58                  | 9.6835  | 33.4554  | 25.7984 |

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| STATION US16278     |         |          |         |
| LATITUDE 41-05.9 N  |         |          |         |
| LONGITUI 140-51.3 E |         |          |         |
| DEPTH (m) 52        |         |          |         |
| Press.              | Temp.   | Salinity | Sigma-T |
| 5                   | 14.225  | 33.5304  | 25.0045 |
| 10                  | 14.1891 | 33.552   | 25.0288 |
| 20                  | 13.7377 | 33.5416  | 25.1144 |
| 30                  | 13.0254 | 33.6926  | 25.3751 |
| 40                  | 12.5403 | 33.6825  | 25.4625 |
| 50                  | 10.8308 | 33.5704  | 25.6923 |
| 51                  | 10.0824 | 33.4398  | 25.7203 |

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| STATION US16281     |         |          |         |
| LATITUDE 40-59.9 N  |         |          |         |
| LONGITUI 141-07.1 E |         |          |         |
| DEPTH (m) 42        |         |          |         |
| Press.              | Temp.   | Salinity | Sigma-T |
| 5                   | 15.9402 | 33.1434  | 24.3333 |
| 10                  | 15.7877 | 33.1476  | 24.3708 |
| 20                  | 13.3296 | 33.1914  | 24.9263 |
| 30                  | 10.6193 | 33.2389  | 25.4712 |
| 40                  | 9.5518  | 33.3725  | 25.7554 |

|                     |         |          |         |
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| STATION US16284     |         |          |         |
| LATITUDE 41-05.7 N  |         |          |         |
| LONGITUI 141-09.9 E |         |          |         |
| DEPTH (m) 38        |         |          |         |
| Press.              | Temp.   | Salinity | Sigma-T |
| 5                   | 14.7942 | 33.1535  | 24.593  |
| 10                  | 14.7946 | 33.1534  | 24.5928 |
| 20                  | 13.6015 | 33.1651  | 24.851  |
| 30                  | 10.9294 | 33.2326  | 25.4119 |
| 37                  | 9.7509  | 33.3759  | 25.7255 |

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| STATION US16287     |         |          |         |
| LATITUDE 41-02.9 N  |         |          |         |
| LONGITUI 141-03.4 E |         |          |         |
| DEPTH (m) 37        |         |          |         |
| Press.              | Temp.   | Salinity | Sigma-T |
| 5                   | 13.5755 | 33.1334  | 24.8319 |
| 10                  | 13.3965 | 33.1428  | 24.8754 |
| 20                  | 12.2256 | 33.1615  | 25.1187 |
| 30                  | 10.5797 | 33.2954  | 25.5222 |
| 36                  | 10.3383 | 33.3561  | 25.611  |

|                     |         |          |         |
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| STATION US16290     |         |          |         |
| LATITUDE 41-08.8 N  |         |          |         |
| LONGITUI 140-44.0 E |         |          |         |
| DEPTH (m) 61        |         |          |         |
| Press.              | Temp.   | Salinity | Sigma-T |
| 5                   | 14.0965 | 33.3896  | 24.9228 |
| 10                  | 14.0682 | 33.391   | 24.9297 |
| 20                  | 13.4743 | 33.5189  | 25.1505 |
| 30                  | 12.886  | 33.6255  | 25.3507 |
| 40                  | 12.2122 | 33.6421  | 25.4943 |
| 50                  | 11.1036 | 33.598   | 25.6653 |
| 58                  | 10.2188 | 33.6712  | 25.8773 |

STATION US16291  
 LATITUDE 41-09.5 N  
 LONGITUDE 140-42.1 E  
 DEPTH (m) 49

| Press. | Temp.   | Salinity | Sigma-T |
|--------|---------|----------|---------|
| 5      | 14.1337 | 33.5164  | 25.0128 |
| 10     | 14.0928 | 33.5203  | 25.0244 |
| 20     | 14.0674 | 33.5401  | 25.045  |
| 30     | 13.9671 | 33.5596  | 25.0809 |
| 40     | 13.5974 | 33.5881  | 25.179  |
| 47     | 13.0445 | 33.6573  | 25.3439 |