



HOKKAIDO UNIVERSITY

Title	9. The "Ushio Maru" Cruise 270, 271, 272 in November 2012
Citation	海洋調査漁業試験要報, 56, 213-224
Issue Date	2015-03-31
Doc URL	https://hdl.handle.net/2115/77456
Type	dataset
File Information	Data.Rec.Oceanogr.Obs.Expl.Fish.56.213.pdf



THE " USHIO MARU "

CRUISE 270

CRUISE 271

CRUISE 272

IN NOVEMBER 2012

1. Cruise Itinerary

Cruise 270

Departure from Hakodate	Nov. 5, 2012
Start hydrographic research (US12693) and trawl net research	5
Arrival at Aomori	5
Departure from Aomori	6
Arrival at Wakinosawa	6
Departure from Wakinosawa	7
Finish hydrographic research (US12723) and trawl net research	7
Return to Hakodate	8
Total coverage 240.7 miles	

Cruise 271

Departure from Hakodate	Nov. 13, 2012
Start hydrographic research (US12724)	13
Arrival at and departure from Hakodate	14
Arrival at Shiraoi	14
Departure from Shiraoi	15
Start salmon fishing research	15
Arrival at and departure from Shiraoi	15
Arrival at and departure from Shiraoi	16
Finish salmon fishing research	16
Finish hydrographic research (US12740-2)	17
Return to Hakodate	18
Total coverage 371.0 miles	

Cruise 272

Departure from Hakodate	Nov. 26, 2012
Start hydrographic research (US12747) and sledge net sampling	26
Arrival at Fukushima	26
Departure from Fukushima	28
Finish hydrographic research (US12777) and sledge net sampling	28
Return to Hakodate	29
Total coverage 91.1 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-9Plus and SBE-19). Dynamic computations were made using a desk-top computer aboard the “Ushio Maru”.

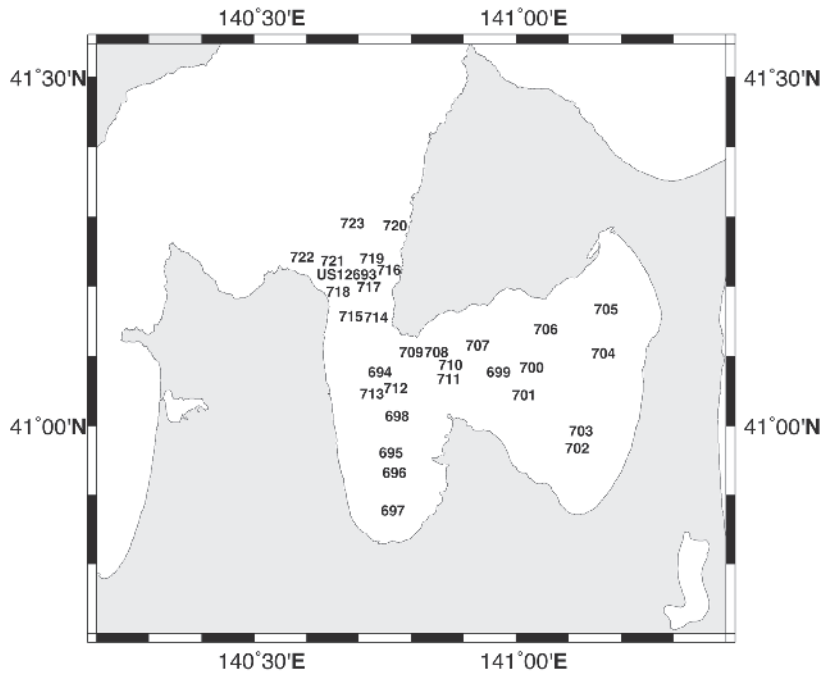


Figure 1. Oceanographic stations (Cruise 270)

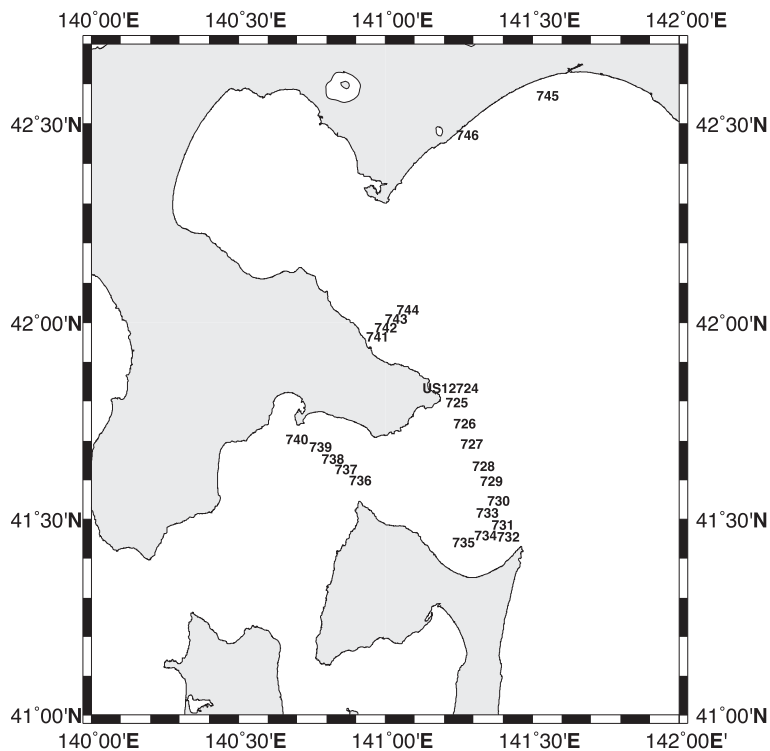


Figure 2. Oceanographic stations (Cruise 271)

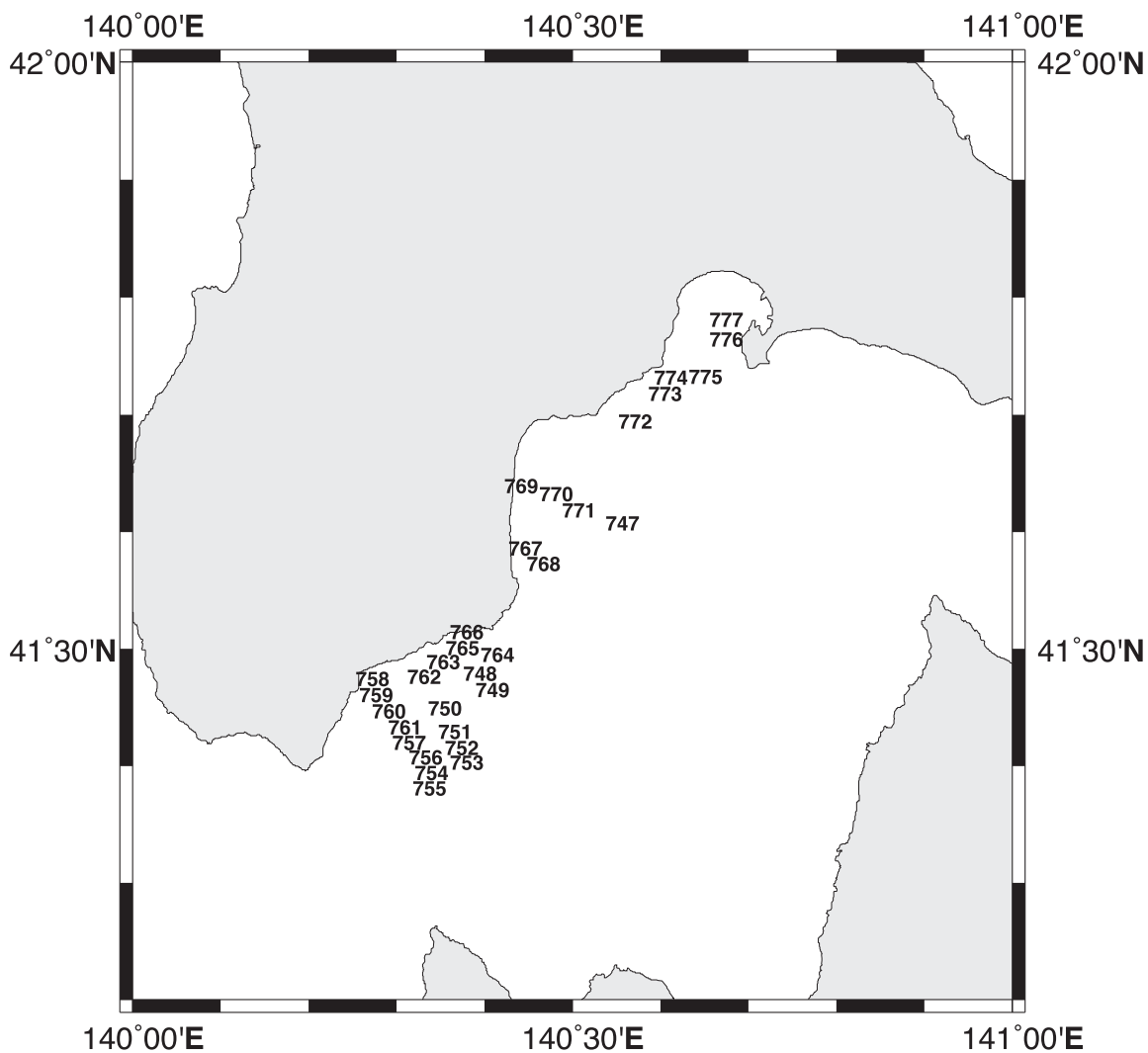


Figure 3. Oceanographic stations (Cruise 272)

Table 1. List of Oceanographic Station

Cruise 270												
Station	Lat. (N)*	Long. (E)*	Date	S.M.T.	Depth (m)	Wave	Swell	Wind	Air Temp.	Sea Temp.	Wr.	Bar. (hPa)
US12693	41-12.6	140-41.5	11/5	1143-1149	78	SE -1	SE -1	SE -3	13.6	18.6	c	1024.1
US12694	41-04.2	140-44.4	11/5	1320-1325	56	East-2	East-1	East-4	13.6	17.9	c	1023.1
US12695	40-57.2	140-45.7	11/5	1423-1428	49	East-3	East-1	East-5	14.4	17.9	bc	1022.1
US12696	40-55.5	140-46.1	11/5	1559-1603	42	ENE-3	East-1	ENE-5	12.9	17.7	bc	1022.1
US12697	40-52.2	140-45.9	11/5	1636-1640	29	East-3	ENE-1	East-5	13.2	17.8	c	1021.7
US12698	41-00.4	140-46.4	11/6	0756-0802	52	East-1	NE -1	East-2	14.1	18.0	c	1018.1
US12699	41-04.2	140-58.0	11/6	0912-0915	49	ESE-3	East-1	ESE-5	13.9	17.4	o	1017.9
US12700	41-04.6	141-01.8	11/6	0947-0952	47	SE -3	East-1	SE -5	15.0	16.8	o	1017.6
US12701	41-02.2	141-00.9	11/6	1131-1136	48	SE -3	SE -1	SE -5	15.5	17.3	o	1015.6
US12702	40-57.6	141-07.0	11/6	1215-1220	37	SSE-2	SE -1	SSE-4	15.6	17.2	r	1015.1
US12703	40-59.1	141-07.4	11/6	1313-1317	41	SE -3	SE -1	SE -5	16.2	17.2	r	1014.6
US12704	41-05.8	141-10.0	11/6	1409-1413	37	SE -3	SE -1	SE -5	15.5	16.8	r	1014.1
US12705	41-09.6	141-10.3	11/6	1510-1514	33	SE -3	SE -1	SE -5	14.8	16.4	r	1013.6
US12706	41-07.9	141-03.4	11/6	1605-1609	36	SE -3	SE -1	SE -6	15.6	16.5	r	1013.0
US12707	41-06.5	140-55.6	11/6	1658-1702	46	SE -3	SE -1	SE -5	16.4	17.1	r	1012.2
US12708	41-05.9	140-50.9	11/7	0623-0627	53	SSW-1	SE -1	SSW-3	12.9	16.9	r	1008.0
US12709	41-05.9	140-48.0	11/7	0642-0650	54	SW -1	SE -1	SW -3	13.9	17.5	r	1007.6
US12710	41-04.8	140-52.5	11/7	0748-0754	51	South-1	South-1	South-2	14.2	17.7	r	1007.6
US12711	41-03.6	140-52.3	11/7	0821-0828	50	SSW-1	South-1	SSW-2	14.8	17.7	c	1007.6
US12712	41-02.8	140-46.2	11/7	0901-0906	51	South-1	South-1	South-3	15.0	17.6	c	1007.5
US12713	41-02.3	140-43.5	11/7	0927-0932	57	SE -1	South-1	SE -3	15.2	17.4	bc	1007.2
US12714	41-08.9	140-44.0	11/7	1039-1042	61	South-1	South-1	South-2	16.1	18.0	c	1006.6
US12715	41-09.0	140-41.1	11/7	1102-1107	46	SE -1	South-1	SE -3	16.4	17.8	c	1006.4
US12716	41-13.0	140-45.8	11/7	1155-1201	61	ESE-2	NW -1	ESE-4	15.3	18.0	c	1005.1
US12717	41-12.2	140-43.0	11/7	1218-1223	73	South-1	NW -1	South-2	15.8	18.2	c	1004.7
US12718	41-11.0	140-39.1	11/7	1249-1252	32	SE -1	South-1	SE -3	16.2	18.3	c	1004.6
US12719	41-14.0	140-43.5	11/7	1328-1335	80	SSE-1	WNW-1	SSE-2	15.6	18.0	c	1004.1
US12720	41-16.8	140-46.5	11/7	1403-1413	58	East-1	WNW-1	East-2	15.1	18.0	o	1003.6
US12721	41-13.8	140-39.0	11/7	1452-1501	87	NW -3	West-1	NW -5	13.9	18.1	r	1003.6
US12722	41-14.1	140-35.5	11/7	1520-1528	62	West-2	West-1	West-4	14.0	18.2	c	1003.5
US12723	41-17.0	140-41.3	11/7	1608-1625	147	NNW-2	NW -1	NNW-4	13.8	18.0	c	1003.5
Cruise 271												
Station	Lat. (N)*	Long. (E)*	Date	S.M.T.	Depth (m)	Wave	Swell	Wind	Air Temp.	Sea Temp.	Wr.	Bar. (hPa)
US12724	41-49.3	141-13.3	11/13	1100-1112	176	Calm	East-1	Calm	11.5	14.2	o	1004.6
US12725	41-47.1	141-14.6	11/13	1201-1216	201	WSW-1	East-1	WSW-1	11.7	14.3	o	1003.6
US12726	41-43.9	141-16.2	11/13	1237-1254	229	SW -1	East-1	SW -3	11.3	14.4	r	1003.3
US12727	41-40.8	141-17.7	11/13	1315-1330	228	SW -1	East-1	SW -2	10.2	14.2	r	1003.0
US12728	41-37.4	141-20.1	11/13	1352-1410	228	Calm	SE -1	Calm	10.7	17.7	o	1002.6
US12729	41-35.1	141-21.7	11/13	1424-1443	299	Calm	SE -2	Calm	11.2	18.1	r	1002.2
US12730	41-32.1	141-23.1	11/13	1501-1526	219	South-1	SE -2	South-3	11.3	17.9	r	1002.2
US12731	41-28.9	141-23.7	11/13	1607-1612	84	SW -1	SE -1	SW -3	11.7	17.8	r	1002.1
US12732	41-27.3	141-24.2	11/13	1626-1629	46	SW -1	East-1	SW -3	11.0	17.5	r	1002.0
US12733	41-29.8	141-21.2	11/13	1656-1712	212	NW -1	East-1	NW -2	10.8	17.1	o	1001.6
US12734	41-26.6	141-20.8	11/13	1732-1738	74	North-1	SE -1	North-3	11.3	16.9	o	1001.6
US12735	41-26.2	141-16.0	11/13	1802-1809	76	North-2	ESE-1	North-4	11.3	17.1	r	1001.5
US12736	41-35.2	140-54.9	11/13	2003-2007	60	NW -1	ESE-1	NW -3	9.8	17.9	r	1001.1
US12737	41-36.9	140-52.0	11/13	2035-2040	77	NW -2	East-1	NW -4	10.0	18.0	r	1000.6
US12738	41-38.5	140-49.3	11/13	2104-2115	327	North-2	East-1	North-4	9.8	17.4	c	1000.2
US12739	41-40.8	140-46.2	11/13	2138-2145	211	North-1	East-1	North-3	9.9	17.0	c	1000.1
US12740	41-41.5	140-42.0	11/13	2209-2213	121	NW -1	ESE-1	NW -2	9.6	17.7	r	1000.1
US12741	41-57.3	140-58.4	11/14	1256-1300	78	NW -2	NW -1	NW-4	10.8	14.2	bc	999.3
US12742	41-58.0	140-59.5	11/14	1309-1313	85	NW -2	NW -1	NW-4	11.2	14.2	c	999.5
US12743	41-58.7	141-00.7	11/14	1323-1326	94	NW -2	NW -1	NW-4	11.3	14.0	c	999.5
US12744	41-59.4	141-01.9	11/14	1336-1340	100	NW -2	NW -1	NW-4	11.3	13.4	c	999.6
US12745	42-33.5	141-33.2	11/15	1633-1636	52	North-3	North-1	North-5	7.6	13.2	bc	1015.5
US12746	42-27.6	141-16.8	11/16	0615-0618	46	NW -1	South-1	NW -2	5.9	13.6	c	1022.5

Cruise 272

Station	Lat. (N) ^a	Long. (E) ^a	Date	S.M.T.	Depth (m)	Wave	Swell	Wind	Air Temp.	Sea Temp.	Wr.	Bar. (hPa)
US12747	41-36.1	140-33.4	11/26	0931-0934	51	SSW-3	SW -1	SSW-5	9.3	14.2	c	1006.2
US12748	41-28.4	140-23.7	11/26	1047-1053	119	SW -2	SW -1	SW -4	8.5	13.4	r	1005.1
US12749	41-28.0	140-24.4	11/26	1111-1117	150	SW -2	South-1	SW -4	8.3	13.6	o	1004.1
US12750	41-26.6	140-21.3	11/26	1153-1157	77	SW -2	SSW-1	SW -4	7.8	13.4	r	1003.1
US12751	41-25.4	140-22.0	11/26	1217-1222	96	West-1	SSW-1	West-2	7.5	13.5	r	1002.0
US12752	41-24.8	140-22.0	11/26	1241-1247	144	West-1	SSW-1	West-2	8.0	13.6	r	1001.4
US12753	41-24.4	140-21.9	11/26	1306-1314	181	NW -1	SSW-1	NW -3	7.9	13.5	r	1000.6
US12754	41-23.4	140-20.4	11/26	1344-1352	146	NW -1	SW -1	NW -3	7.4	13.0	r	999.5
US12755	41-23.3	140-20.1	11/26	1416-1422	118	NW -1	SW -1	NW -3	7.5	13.4	r	998.6
US12756	41-24.1	140-20.0	11/26	1457-1501	94	NW -2	SW -1	NW -4	7.2	13.1	r	997.7
US12757	41-24.6	140-19.0	11/26	1518-1522	90	NW -2	SW -1	NW -4	7.4	13.1	r	997.6
US12758	41-28.0	140-16.2	11/28	0640-0642	22	NW -1	South-1	NW -2	1.2	13.0	c	1021.1
US12759	41-27.3	140-16.6	11/28	0659-0701	36	NW-1	South-1	NW -2	1.8	13.1	c	1021.1
US12760	41-26.8	140-17.5	11/28	0724-0728	60	NW -1	South-1	NW -2	3.0	13.1	c	1021.1
US12761	41-26.1	140-18.3	11/28	0753-0758	70	NW -2	SSW-2	NW -4	4.0	12.7	c	1021.1
US12762	41-28.8	140-19.9	11/28	0836-0841	58	NW -2	SSW-1	NW -3	3.2	12.9	bc	1021.3
US12763	41-29.0	140-21.2	11/28	0902-0907	62	NW -1	SSW-1	NW -3	3.2	12.6	c	1021.1
US12764	41-29.8	140-23.4	11/28	0929-0934	87	West-1	SSW-1	West-3	4.1	14.0	bc	1021.1
US12765	41-29.7	140-22.5	11/28	0957-1002	73	West-1	SSW-1	West-3	4.9	14.2	bc	1021.1
US12766	41-30.4	140-22.8	11/28	1018-1022	50	SW -2	SSW-1	SW -4	5.8	14.1	bc	1020.6
US12767	41-34.8	140-26.8	11/28	1112-1117	16	South-2	South-1	South-4	6.8	12.8	bc	1019.5
US12768	41-34.7	140-27.9	11/28	1136-1137	26	South-1	South-1	South-3	6.0	12.9	bc	1018.9
US12769	41-38.0	140-26.5	11/28	1212-1213	15	South-1	South-1	South-3	7.2	12.7	bc	1018.1
US12770	41-37.6	140-28.3	11/28	1241-1242	22	South-1	South-1	South-3	6.3	13.1	bc	1017.8
US12771	41-37.2	140-30.0	11/28	1300-1302	31	South-2	South-1	South-4	7.0	13.3	bc	1017.6
US12772	41-41.3	140-34.3	11/28	1348-1351	40	South-2	South-1	South-3	7.5	13.6	bc	1016.9
US12773	41-43.4	140-36.2	11/28	1421-1423	34	South-2	South-1	South-4	7.1	13.8	c	1016.7
US12774	41-44.0	140-35.8	11/28	1430-1431	10	SSE-1	South-1	SSE-3	7.7	13.8	o	1016.7
US12775	41-43.6	140-39.1	11/28	1509-1513	61	SSE-3	South-1	SSE-5	8.1	14.0	o	1016.1
US12776	41-45.5	140-40.5	11/28	1538-1540	36	SSE-3	South-1	SSE-5	7.9	13.3	o	1015.7
US12777	41-46.5	140-40.5	11/28	1557-1559	23	SE -3	South-1	SE -5	7.1	13.1	o	1015.6

(*): Fixed position by Global Positioning System

Table 2. Oceanographic data

STATION US12693				STATION US12694				STATION US12695			
LATITUDE 41-12.6 N				LATITUDE 41-04.2 N				LATITUDE 40-57.2 N			
LONGITUD 140-41.5 E				LONGITUD 140-44.4 E				LONGITUD 140-45.7 E			
DEPTH (m) 78				DEPTH (m) 56				DEPTH (m) 49			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	18.352	33.182	23.794	5	17.926	33.346	24.024	5	17.933	33.315	23.998
10	18.530	33.169	23.740	10	17.953	33.474	24.115	10	17.981	33.441	24.083
20	18.747	33.440	23.893	20	17.981	33.515	24.140	20	17.999	33.492	24.117
30	18.751	33.440	23.892	30	17.941	33.518	24.152	30	18.003	33.493	24.117
40	18.744	33.442	23.895	40	17.922	33.522	24.160	40	17.987	33.489	24.119
50	18.675	33.459	23.925	50	17.655	33.530	24.230				
75	18.529	33.491	23.986								
STATION US12696				STATION US12697				STATION US12698			
LATITUDE 40-55.5 N				LATITUDE 40-52.2 N				LATITUDE 41-00.4 N			
LONGITUD 140-46.1 E				LONGITUD 140-45.9 E				LONGITUD 140-46.4 E			
DEPTH (m) 42				DEPTH (m) 29				DEPTH (m) 52			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	17.771	32.931	23.744	5	17.725	32.751	23.617	5	17.816	32.930	23.732
10	18.036	33.477	24.097	10	17.636	32.859	23.721	10	18.057	33.157	23.847
20	18.043	33.485	24.102	20	17.942	33.459	24.106	20	18.079	33.489	24.096
30	18.046	33.485	24.101					30	18.059	33.508	24.115
								40	17.843	33.523	24.179
								50	17.822	33.527	24.188
STATION US12699				STATION US12700				STATION US12701			
LATITUDE 41-04.2 N				LATITUDE 41-04.6 N				LATITUDE 41-02.2 N			
LONGITUD 140-58.0 E				LONGITUD 141-01.8 E				LONGITUD 141-00.9 E			
DEPTH (m) 49				DEPTH (m) 47				DEPTH (m) 48			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	17.549	33.011	23.858	5	16.822	33.061	24.068	5	17.426	33.303	24.111
10	17.692	33.468	24.174	10	16.991	33.514	24.376	10	17.481	33.447	24.208
20	17.670	33.510	24.212	20	17.008	33.533	24.387	20	17.481	33.504	24.252
30	17.555	33.526	24.251	30	17.010	33.533	24.386	30	17.202	33.545	24.350
40	17.473	33.529	24.273	40	17.017	33.536	24.387	40	16.933	33.537	24.407

STATION US12702			
LATITUDE 40-57.6 N			
LONGITUD 141-07.0 E			
DEPTH (m) 37			
Press.	Temp.	Salinity	Sigma-T
5	17.351	33.254	24.091
10	17.405	33.349	24.152
20	17.476	33.510	24.258
30	17.480	33.511	24.257

STATION US12705			
LATITUDE 41-09.6 N			
LONGITUD 141-10.3 E			
DEPTH (m) 33			
Press.	Temp.	Salinity	Sigma-T
5	16.591	33.390	24.374
10	16.616	33.482	24.439
20	16.612	33.517	24.467
30	16.471	33.522	24.503

STATION US12708			
LATITUDE 41-05.9 N			
LONGITUD 140-50.9 E			
DEPTH (m) 53			
Press.	Temp.	Salinity	Sigma-T
5	17.645	32.949	23.787
10	17.726	33.300	24.037
20	17.668	33.494	24.200
30	17.222	33.529	24.333
40	17.140	33.536	24.358
50	17.000	33.539	24.393

STATION US12711			
LATITUDE 41-03.6 N			
LONGITUD 140-52.3 E			
DEPTH (m) 50			
Press.	Temp.	Salinity	Sigma-T
5	17.899	33.276	23.977
10	17.943	33.342	24.017
20	17.976	33.496	24.126
30	17.948	33.508	24.142
40	17.840	33.525	24.181

STATION US12714			
LATITUDE 41-08.9 N			
LONGITUD 140-44.0 E			
DEPTH (m) 61			
Press.	Temp.	Salinity	Sigma-T
5	18.092	33.338	23.977
10	18.112	33.448	24.056
20	18.026	33.472	24.096
30	18.001	33.496	24.120
40	17.847	33.509	24.168
50	17.790	33.525	24.193

STATION US12717			
LATITUDE 41-12.2 N			
LONGITUD 140-43.0 E			
DEPTH (m) 73			
Press.	Temp.	Salinity	Sigma-T
5	18.239	33.345	23.946
10	18.268	33.441	24.013
20	18.286	33.515	24.065
30	18.272	33.522	24.074
40	18.232	33.517	24.080
50	18.236	33.540	24.096

STATION US12703			
LATITUDE 40-59.1 N			
LONGITUD 141-07.4 E			
DEPTH (m) 41			
Press.	Temp.	Salinity	Sigma-T
5	17.166	33.265	24.144
10	17.211	33.464	24.286
20	17.170	33.530	24.346
30	16.973	33.541	24.401

STATION US12706			
LATITUDE 41-07.9 N			
LONGITUD 141-03.4 E			
DEPTH (m) 36			
Press.	Temp.	Salinity	Sigma-T
5	16.921	33.044	24.032
10	16.985	33.133	24.086
20	17.013	33.525	24.380
30	16.029	33.436	24.539

STATION US12709			
LATITUDE 41-05.9 N			
LONGITUD 140-48.0 E			
DEPTH (m) 54			
Press.	Temp.	Salinity	Sigma-T
5	17.629	33.249	24.021
10	17.660	33.404	24.133
20	17.412	33.519	24.280
30	17.307	33.546	24.326
40	17.266	33.546	24.336
50	17.204	33.543	24.348

STATION US12712			
LATITUDE 41-02.8 N			
LONGITUD 140-46.2 E			
DEPTH (m) 51			
Press.	Temp.	Salinity	Sigma-T
5	17.720	33.280	24.023
10	17.755	33.357	24.074
20	17.789	33.474	24.155
30	17.768	33.492	24.174
40	17.244	33.522	24.322

STATION US12715			
LATITUDE 41-09.0 N			
LONGITUD 140-41.1 E			
DEPTH (m) 46			
Press.	Temp.	Salinity	Sigma-T
5	18.395	33.099	23.720
10	18.388	33.356	23.918
20	18.176	33.430	24.027
30	18.162	33.490	24.076
40	18.117	33.507	24.100

STATION US12718			
LATITUDE 41-11.0 N			
LONGITUD 140-39.1 E			
DEPTH (m) 32			
Press.	Temp.	Salinity	Sigma-T
5	18.208	32.852	23.577
10	18.522	33.362	23.889
20	18.542	33.486	23.979

STATION US12704			
LATITUDE 41-05.8 N			
LONGITUD 141-10.0 E			
DEPTH (m) 37			
Press.	Temp.	Salinity	Sigma-T
5	16.836	32.854	23.906
10	17.100	33.438	24.293
20	17.071	33.550	24.385
30	16.536	33.537	24.500

STATION US12707			
LATITUDE 41-06.5 N			
LONGITUD 140-55.6 E			
DEPTH (m) 46			
Press.	Temp.	Salinity	Sigma-T
5	17.151	32.933	23.893
10	17.217	33.379	24.219
20	17.074	33.539	24.376
30	16.929	33.537	24.409
40	16.910	33.538	24.413

STATION US12710			
LATITUDE 41-04.8 N			
LONGITUD 140-52.5 E			
DEPTH (m) 51			
Press.	Temp.	Salinity	Sigma-T
5	17.849	33.235	23.957
10	17.909	33.376	24.051
20	17.938	33.503	24.141
30	17.819	33.515	24.179
40	17.416	33.531	24.288

STATION US12713			
LATITUDE 41-02.3 N			
LONGITUD 140-43.5 E			
DEPTH (m) 57			
Press.	Temp.	Salinity	Sigma-T
5	17.464	32.599	23.563
10	17.560	33.420	24.169
20	17.605	33.494	24.215
30	17.555	33.528	24.253
40	17.465	33.542	24.285
50	17.430	33.541	24.293

STATION US12716			
LATITUDE 41-13.0 N			
LONGITUD 140-45.8 E			
DEPTH (m) 61			
Press.	Temp.	Salinity	Sigma-T
5	18.137	33.338	23.966
10	18.172	33.428	24.026
20	18.257	33.496	24.058
30	18.130	33.508	24.098
40	17.963	33.529	24.155
50	17.589	33.537	24.252

STATION US12719			
LATITUDE 41-14.0 N			
LONGITUD 140-43.5 E			
DEPTH (m) 80			
Press.	Temp.	Salinity	Sigma-T
5	18.225	33.331	23.939
10	18.258	33.444	24.018
20	18.280	33.512	24.064
30	18.276	33.522	24.072
40	18.277	33.526	24.076
50	18.276	33.529	24.078
75	17.639	33.624	24.306

STATION US12720			
LATITUDE	41-16.8	N	
LONGITUD	140-46.5	E	
DEPTH (m)	58		
Press.	Temp.	Salinity	Sigma-T
5	17.635	33.124	23.924
10	18.077	33.104	23.801
20	18.235	33.506	24.070
30	18.226	33.505	24.072
40	18.232	33.506	24.072
50	18.231	33.508	24.073

STATION US12721			
LATITUDE	41-13.8	N	
LONGITUD	140-39.0	E	
DEPTH (m)	87		
Press.	Temp.	Salinity	Sigma-T
5	17.500	32.333	23.351
10	18.075	32.892	23.640
20	18.296	33.511	24.059
30	18.246	33.514	24.074
40	18.205	33.518	24.087
50	18.180	33.525	24.099
75	17.738	33.594	24.259

STATION US12722			
LATITUDE	41-14.1	N	
LONGITUD	140-35.5	E	
DEPTH (m)	62		
Press.	Temp.	Salinity	Sigma-T
5	17.724	33.208	23.967
10	18.105	33.135	23.818
20	18.366	33.501	24.035
30	18.361	33.505	24.039
40	18.355	33.507	24.041
50	18.335	33.513	24.051

STATION US12723			
LATITUDE	41-17.0	N	
LONGITUD	140-41.3	E	
DEPTH (m)	147		
Press.	Temp.	Salinity	Sigma-T
5	17.853	33.010	23.784
10	18.090	33.144	23.829
20	18.152	33.519	24.101
30	18.202	33.541	24.105
40	18.114	33.556	24.138
50	18.109	33.558	24.141
75	18.077	33.564	24.153
100	18.069	33.565	24.156
125	17.840	33.593	24.233

STATION US12724			
LATITUDE	41-49.3	N	
LONGITUD	141-13.3	E	
DEPTH (m)	176		
Press.	Temp.	Salinity	Sigma-T
5	14.534	33.559	24.961
10	14.580	33.747	25.097
20	14.118	33.739	25.188
30	13.984	33.732	25.211
40	13.914	33.745	25.235
50	13.284	33.735	25.356
75	12.549	33.901	25.631
100	11.897	33.961	25.801
125	10.549	34.003	26.079
150	10.273	34.048	26.162

STATION US12725			
LATITUDE	41-47.1	N	
LONGITUD	141-14.6	E	
DEPTH (m)	201		
Press.	Temp.	Salinity	Sigma-T
5	14.562	33.741	25.096
10	14.545	33.771	25.123
20	14.373	33.765	25.155
30	14.214	33.753	25.179
40	13.956	33.747	25.228
50	13.890	33.748	25.243
75	13.635	33.747	25.295
100	12.409	33.928	25.678
125	11.475	33.977	25.893
150	10.039	34.020	26.180
175	9.043	33.999	26.328

STATION US12726			
LATITUDE	41-43.9	N	
LONGITUD	141-16.2	E	
DEPTH (m)	229		
Press.	Temp.	Salinity	Sigma-T
5	14.246	32.930	24.537
10	14.103	33.361	24.899
20	14.266	33.737	25.155
30	14.172	33.752	25.187
40	14.068	33.757	25.212
50	13.929	33.738	25.227
75	13.430	33.796	25.374
100	12.690	33.890	25.594
125	11.680	33.960	25.842
150	9.670	34.041	26.258
175	8.867	33.951	26.318
200	8.038	33.919	26.419

STATION US12727			
LATITUDE	41-40.8	N	
LONGITUD	141-17.7	E	
DEPTH (m)	228		
Press.	Temp.	Salinity	Sigma-T
5	14.098	33.249	24.814
10	13.810	33.402	24.992
20	14.510	33.772	25.131
30	14.490	33.771	25.135
40	14.413	33.770	25.150
50	14.417	33.771	25.149
75	14.400	33.771	25.153
100	14.385	33.771	25.156
125	12.658	33.959	25.654
150	11.245	34.071	26.008
175	10.185	34.039	26.170
200	8.477	33.941	26.370

STATION US12728			
LATITUDE	41-37.4	N	
LONGITUD	141-20.1	E	
DEPTH (m)	228		
Press.	Temp.	Salinity	Sigma-T
5	17.347	33.074	23.955
10	16.592	33.252	24.268
20	16.305	33.612	24.610
30	15.808	33.649	24.752
40	15.272	33.691	24.903
50	14.954	33.694	24.975
75	14.437	33.884	25.233
100	12.719	33.950	25.635
125	11.371	34.019	25.945
150	10.812	34.010	26.038
175	9.224	33.969	26.275
200	8.623	33.944	26.350

STATION US12729			
LATITUDE	41-35.1	N	
LONGITUD	141-21.7	E	
DEPTH (m)	299		
Press.	Temp.	Salinity	Sigma-T
5	17.645	33.185	23.968
10	18.211	33.286	23.908
20	17.808	33.496	24.167
30	17.411	33.533	24.291
40	17.211	33.546	24.349
50	17.013	33.564	24.409
75	16.318	33.612	24.607
100	15.468	33.681	24.852
125	12.552	33.932	25.654
150	10.542	33.970	26.054
175	10.342	33.983	26.100
200	8.774	33.906	26.297
250	6.292	33.784	26.555

STATION US12730			
LATITUDE	41-32.1	N	
LONGITUD	141-23.1	E	
DEPTH (m)	219		
Press.	Temp.	Salinity	Sigma-T
5	17.440	33.221	24.045
10	17.754	33.480	24.168
20	17.739	33.501	24.187
30	17.292	33.589	24.362
40	16.995	33.622	24.458
50	16.928	33.629	24.479
75	15.613	33.723	24.852
100	14.538	34.017	25.314
125	13.517	34.153	25.633
150	12.707	34.208	25.837
175	12.528	34.222	25.883

STATION US12731			
LATITUDE	41-28.9	N	
LONGITUD	141-23.7	E	
DEPTH (m)	84		
Press.	Temp.	Salinity	Sigma-T
5	17.141	32.765	23.766
10	17.251	32.822	23.784
20	17.153	33.616	24.416
30	17.138	33.625	24.427
40	16.979	33.645	24.479
50	16.492	33.679	24.619

STATION US12732			
LATITUDE	41-27.3	N	
LONGITUD	141-24.2	E	
DEPTH (m)	46		
Press.	Temp.	Salinity	Sigma-T
5	17.577	33.310	24.081
10	17.494	33.464	24.218
20	16.787	33.670	24.544
30	16.768	33.683	24.558

STATION US12733			
LATITUDE	41-29.8	N	
LONGITUD	141-21.2	E	
DEPTH (m)	212		
Press.	Temp.	Salinity	Sigma-T
5	16.842	33.171	24.148
10	17.151	33.062	23.992
20	17.401	33.571	24.322
30	17.264	33.597	24.375
40	17.102	33.623	24.433
50	17.022	33.637	24.463
75	16.542	33.721	24.639
100	15.666	33.764	24.872
125	14.999	33.923	25.142
150	13.871	34.104	25.522
175	13.063	34.197	25.758
199	12.994	34.204	25.777

STATION US12734			
LATITUDE	41-26.6	N	
LONGITUD	141-20.8	E	
DEPTH (m)	74		
Press.	Temp.	Salinity	Sigma-T
5	16.981	33.114	24.072
10	16.968	33.275	24.198
20	16.609	33.688	24.599
30	16.516	33.706	24.634
40	16.515	33.708	24.636
50	16.523	33.708	24.634

STATION US12735			
LATITUDE	41-26.2	N	
LONGITUD	141-16.0	E	
DEPTH (m)	76		
Press.	Temp.	Salinity	Sigma-T
5	16.968	33.239	24.171
10	17.189	33.217	24.102
20	17.474	33.560	24.297
30	17.474	33.562	24.299
40	17.477	33.565	24.300
50	17.459	33.569	24.307

STATION US12736			
LATITUDE	41-35.2	N	
LONGITUD	140-54.9	E	
DEPTH (m)	60		
Press.	Temp.	Salinity	Sigma-T
5	18.087	33.599	24.178
10	18.086	33.609	24.186
20	18.081	33.620	24.195
30	18.083	33.620	24.195
40	18.080	33.620	24.196
50	18.082	33.613	24.190

STATION US12737			
LATITUDE	41-36.9	N	
LONGITUD	140-52.0	E	
DEPTH (m)	77		
Press.	Temp.	Salinity	Sigma-T
5	18.070	33.460	24.076
10	17.993	33.484	24.113
20	17.808	33.543	24.203
30	17.815	33.538	24.198
40	17.785	33.553	24.216
50	17.648	33.589	24.277

STATION US12738			
LATITUDE	41-38.5	N	
LONGITUD	140-49.3	E	
DEPTH (m)	327		
Press.	Temp.	Salinity	Sigma-T
5	17.616	33.508	24.223
10	17.470	33.539	24.282
20	17.198	33.549	24.354
30	16.972	33.624	24.465
40	16.934	33.641	24.487
50	16.905	33.646	24.498
75	16.152	33.765	24.763
100	15.744	33.835	24.909
125	14.274	34.039	25.387
150	13.422	34.172	25.666
175	12.767	34.218	25.833
200	12.771	34.252	25.859
250	12.578	34.261	25.904
300	11.966	34.245	26.009

STATION US12739			
LATITUDE	41-40.8	N	
LONGITUD	140-46.2	E	
DEPTH (m)	211		
Press.	Temp.	Salinity	Sigma-T
5	17.667	33.624	24.299
10	17.673	33.626	24.300
20	17.666	33.635	24.308
30	17.586	33.659	24.346
40	17.367	33.716	24.442
50	17.255	33.726	24.477
75	15.409	34.041	25.143
100	13.956	34.268	25.631
125	13.540	34.277	25.724
150	13.373	34.279	25.759
175	12.981	34.290	25.847
200	12.515	34.277	25.929

STATION US12740			
LATITUDE	41-41.5	N	
LONGITUD	140-42.0	E	
DEPTH (m)	121		
Press.	Temp.	Salinity	Sigma-T
5	17.980	33.569	24.181
10	17.973	33.581	24.192
20	17.579	33.677	24.361
30	17.361	33.728	24.453
40	17.279	33.742	24.483
50	17.175	33.753	24.516
75	16.607	33.904	24.765
100	15.485	34.063	25.143

STATION US12741			
LATITUDE	41-57.3	N	
LONGITUD	140-58.4	E	
DEPTH (m)	78		
Press.	Temp.	Salinity	Sigma-T
5	14.485	33.769	25.134
10	14.489	33.771	25.135
20	14.492	33.771	25.134
30	14.072	33.689	25.159
40	14.074	33.756	25.211
50	13.779	33.760	25.275

STATION US12742			
LATITUDE	41-58.0	N	
LONGITUD	140-59.5	E	
DEPTH (m)	85		
Press.	Temp.	Salinity	Sigma-T
5	14.434	33.776	25.150
10	14.436	33.776	25.150
20	14.423	33.776	25.152
30	14.391	33.777	25.159
40	14.348	33.775	25.167
50	14.092	33.796	25.238
75	12.882	33.837	25.516

STATION US12743			
LATITUDE	41-58.7	N	
LONGITUD	141-00.7	E	
DEPTH (m)	94		
Press.	Temp.	Salinity	Sigma-T
5	13.879	33.748	25.244
10	13.861	33.745	25.246
20	13.859	33.746	25.247
30	13.852	33.742	25.246
40	13.799	33.729	25.247
50	13.533	33.687	25.269
75	12.669	33.892	25.600

STATION US12744			
LATITUDE 41-59.4 N			
LONGITUD 141-01.9 E			
DEPTH (m) 100			
Press.	Temp.	Salinity	Sigma-T
5	13.682	33.699	25.248
10	13.689	33.700	25.247
20	13.606	33.682	25.250
30	13.522	33.691	25.274
40	13.288	33.707	25.334
50	13.083	33.763	25.418
75	12.585	33.909	25.630

STATION US12747			
LATITUDE 41-36.1 N			
LONGITUD 140-33.4 E			
DEPTH (m) 51			
Press.	Temp.	Salinity	Sigma-T
5	14.441	33.758	25.135
10	14.468	33.769	25.138
20	14.475	33.821	25.176
30	14.133	33.961	25.356
40	13.653	34.030	25.509

STATION US12750			
LATITUDE 41-26.6 N			
LONGITUD 140-21.3 E			
DEPTH (m) 77			
Press.	Temp.	Salinity	Sigma-T
5	13.624	33.884	25.402
10	13.364	33.901	25.469
20	13.012	33.984	25.603
30	12.854	34.017	25.661
40	12.760	34.037	25.695
50	12.623	34.064	25.742
75	11.374	34.267	26.137

STATION US12753			
LATITUDE 41-24.4 N			
LONGITUD 140-21.9 E			
DEPTH (m) 181			
Press.	Temp.	Salinity	Sigma-T
5	13.834	33.831	25.318
10	13.515	33.874	25.417
20	12.900	34.000	25.638
30	12.811	34.029	25.678
40	12.753	34.040	25.698
50	12.717	34.048	25.712
75	11.823	34.166	25.975
100	11.559	34.199	26.050
125	11.449	34.220	26.087
150	10.989	34.253	26.196
175	10.632	34.257	26.263

STATION US12756			
LATITUDE 41-24.1 N			
LONGITUD 140-20.0 E			
DEPTH (m) 94			
Press.	Temp.	Salinity	Sigma-T
5	13.249	33.905	25.495
10	13.218	33.931	25.521
20	12.585	34.050	25.739
30	12.361	34.084	25.809
40	12.267	34.102	25.840
50	11.963	34.126	25.917
75	11.409	34.261	26.126

STATION US12745			
LATITUDE 42-33.5 N			
LONGITUD 141-33.2 E			
DEPTH (m) 52			
Press.	Temp.	Salinity	Sigma-T
5	13.443	33.601	25.221
10	13.442	33.601	25.221
20	13.443	33.606	25.225
30	13.442	33.597	25.218
40	13.372	33.548	25.194
50	12.815	33.706	25.427

STATION US12748			
LATITUDE 41-28.4 N			
LONGITUD 140-23.7 E			
DEPTH (m) 119			
Press.	Temp.	Salinity	Sigma-T
5	13.635	33.886	25.402
10	13.548	33.904	25.433
20	13.445	33.923	25.469
30	13.311	33.937	25.507
40	13.291	33.941	25.514
50	13.220	33.970	25.551
75	12.172	34.169	25.911
100	11.315	34.259	26.141

STATION US12751			
LATITUDE 41-25.4 N			
LONGITUD 140-22.0 E			
DEPTH (m) 96			
Press.	Temp.	Salinity	Sigma-T
5	13.918	33.879	25.338
10	13.696	33.895	25.396
20	13.191	33.979	25.563
30	12.957	34.002	25.628
40	12.796	34.036	25.687
50	12.785	34.040	25.692
75	12.819	34.034	25.681

STATION US12754			
LATITUDE 41-23.4 N			
LONGITUD 140-20.4 E			
DEPTH (m) 146			
Press.	Temp.	Salinity	Sigma-T
5	14.087	33.765	25.214
10	14.159	33.746	25.185
20	14.230	33.735	25.162
30	13.742	33.824	25.331
40	13.642	33.820	25.349
50	13.536	33.833	25.381
75	13.004	33.985	25.606
100	12.330	34.083	25.814
125	11.928	34.148	25.941
150	11.850	34.155	25.961

STATION US12757			
LATITUDE 41-24.6 N			
LONGITUD 140-19.0 E			
DEPTH (m) 90			
Press.	Temp.	Salinity	Sigma-T
5	13.436	33.874	25.433
10	13.275	33.938	25.515
20	12.777	34.026	25.683
30	12.612	34.065	25.745
40	12.382	34.105	25.821
50	11.841	34.191	25.991
75	11.608	34.228	26.063

STATION US12746			
LATITUDE 42-27.6 N			
LONGITUD 141-16.8 E			
DEPTH (m) 46			
Press.	Temp.	Salinity	Sigma-T
5	13.842	33.712	25.225
10	13.845	33.709	25.222
20	13.849	33.709	25.221
30	13.834	33.700	25.217
40	13.803	33.697	25.221

STATION US12749			
LATITUDE 41-28.0 N			
LONGITUD 140-24.4 E			
DEPTH (m) 150			
Press.	Temp.	Salinity	Sigma-T
5	13.948	33.680	25.178
10	13.854	33.843	25.323
20	13.445	33.902	25.453
30	13.350	33.929	25.493
40	13.322	33.936	25.504
50	13.297	33.944	25.516
75	13.170	33.987	25.574
100	11.930	34.223	25.999
125	11.188	34.257	26.163

STATION US12752			
LATITUDE 41-24.8 N			
LONGITUD 140-22.0 E			
DEPTH (m) 144			
Press.	Temp.	Salinity	Sigma-T
5	13.976	33.837	25.293
10	13.734	33.892	25.386
20	13.270	33.951	25.526
30	13.067	33.988	25.596
40	13.045	33.994	25.604
50	12.945	34.012	25.639
75	12.618	34.056	25.737
100	12.093	34.136	25.900
125	11.602	34.198	26.041

STATION US12755			
LATITUDE 41-23.3 N			
LONGITUD 140-20.1 E			
DEPTH (m) 118			
Press.	Temp.	Salinity	Sigma-T
5	14.256	33.754	25.171
10	14.263	33.761	25.174
20	14.067	33.750	25.207
30	13.544	33.879	25.415
40	13.637	33.866	25.386
50	13.676	33.850	25.366
75	13.571	33.869	25.402
100	13.140	33.965	25.563

STATION US12758			
LATITUDE 41-28.0 N			
LONGITUD 140-16.2 E			
DEPTH (m) 22			
Press.	Temp.	Salinity	Sigma-T
5	13.462	33.849	25.408
10	13.463	33.848	25.407
20	13.479	33.848	25.404

STATION US12759			
LATITUDE 41-27.3 N			
LONGITUD 140-16.6 E			
DEPTH (m) 36			
Press.	Temp.	Salinity	Sigma-T
5	13.330	33.860	25.444
10	13.343	33.860	25.441
20	13.221	33.911	25.505
30	12.935	34.001	25.632

STATION US12762			
LATITUDE 41-28.8 N			
LONGITUD 140-19.9 E			
DEPTH (m) 58			
Press.	Temp.	Salinity	Sigma-T
5	13.350	33.888	25.462
10	13.279	33.911	25.493
20	12.839	34.030	25.673
30	12.720	34.054	25.716
40	12.437	34.088	25.797
50	12.150	34.176	25.920

STATION US12765			
LATITUDE 41-29.7 N			
LONGITUD 140-22.5 E			
DEPTH (m) 73			
Press.	Temp.	Salinity	Sigma-T
5	14.297	33.851	25.236
10	14.136	33.866	25.282
20	13.858	33.903	25.369
30	13.708	33.928	25.419
40	13.665	33.935	25.433
50	13.387	33.970	25.517

STATION US12768			
LATITUDE 41-34.7 N			
LONGITUD 140-27.9 E			
DEPTH (m) 26			
Press.	Temp.	Salinity	Sigma-T
5	13.249	33.497	25.179
10	13.252	33.629	25.281
20	13.526	33.771	25.335

STATION US12771			
LATITUDE 41-37.2 N			
LONGITUD 140-30.0 E			
DEPTH (m) 31			
Press.	Temp.	Salinity	Sigma-T
5	13.537	33.762	25.326
10	13.526	33.791	25.350
20	13.540	33.828	25.376

STATION US12774			
LATITUDE 41-44.0 N			
LONGITUD 140-35.8 E			
DEPTH (m) 10			
Press.	Temp.	Salinity	Sigma-T
5	13.771	33.782	25.293
10	13.772	33.832	25.332

STATION US12760			
LATITUDE 41-26.8 N			
LONGITUD 140-17.5 E			
DEPTH (m) 60			
Press.	Temp.	Salinity	Sigma-T
5	13.363	33.868	25.443
10	13.365	33.874	25.447
20	12.919	34.050	25.673
30	12.291	34.152	25.874
40	12.216	34.153	25.890
50	12.187	34.158	25.900

STATION US12763			
LATITUDE 41-29.0 N			
LONGITUD 140-21.2 E			
DEPTH (m) 62			
Press.	Temp.	Salinity	Sigma-T
5	13.025	34.017	25.626
10	13.020	34.021	25.630
20	13.039	34.018	25.625
30	13.023	34.021	25.630
40	12.774	34.046	25.698
50	12.539	34.083	25.773

STATION US12766			
LATITUDE 41-30.4 N			
LONGITUD 140-22.8 E			
DEPTH (m) 50			
Press.	Temp.	Salinity	Sigma-T
5	14.079	33.872	25.299
10	13.945	33.885	25.337
20	13.874	33.899	25.363
30	13.854	33.901	25.368
40	13.804	33.890	25.370

STATION US12769			
LATITUDE 41-38.0 N			
LONGITUD 140-26.5 E			
DEPTH (m) 15			
Press.	Temp.	Salinity	Sigma-T
5	13.354	33.457	25.127
10	13.501	33.596	25.205

STATION US12772			
LATITUDE 41-41.3 N			
LONGITUD 140-34.3 E			
DEPTH (m) 40			
Press.	Temp.	Salinity	Sigma-T
5	14.038	33.858	25.297
10	14.035	33.856	25.296
20	13.964	33.866	25.318
30	13.854	33.893	25.362

STATION US12775			
LATITUDE 41-43.6 N			
LONGITUD 140-39.1 E			
DEPTH (m) 61			
Press.	Temp.	Salinity	Sigma-T
5	14.359	33.841	25.216
10	14.352	33.864	25.235
20	14.364	33.862	25.231
30	14.181	33.837	25.251
40	14.033	33.818	25.267
50	13.861	33.802	25.290

STATION US12761			
LATITUDE 41-26.1 N			
LONGITUD 140-18.3 E			
DEPTH (m) 70			
Press.	Temp.	Salinity	Sigma-T
5	12.761	33.989	25.657
10	12.659	34.015	25.697
20	12.507	34.051	25.754
30	11.946	34.084	25.888
40	11.547	34.193	26.048
50	11.550	34.203	26.054

STATION US12764			
LATITUDE 41-29.8 N			
LONGITUD 140-23.4 E			
DEPTH (m) 87			
Press.	Temp.	Salinity	Sigma-T
5	14.306	33.830	25.219
10	14.307	33.825	25.215
20	14.077	33.860	25.290
30	13.745	33.900	25.390
40	13.589	33.945	25.457
50	13.445	33.972	25.507
75	13.353	33.987	25.538

STATION US12767			
LATITUDE 41-34.8 N			
LONGITUD 140-26.8 E			
DEPTH (m) 16			
Press.	Temp.	Salinity	Sigma-T
5	13.547	33.731	25.300
10	13.554	33.747	25.311

STATION US12770			
LATITUDE 41-37.6 N			
LONGITUD 140-28.3 E			
DEPTH (m) 22			
Press.	Temp.	Salinity	Sigma-T
5	13.490	33.656	25.254
10	13.524	33.740	25.312

STATION US12773			
LATITUDE 41-43.4 N			
LONGITUD 140-36.2 E			
DEPTH (m) 34			
Press.	Temp.	Salinity	Sigma-T
5	14.283	33.849	25.239
10	14.249	33.847	25.244
20	14.194	33.847	25.255
30	14.068	33.876	25.305

STATION US12776			
LATITUDE 41-45.5 N			
LONGITUD 140-40.5 E			
DEPTH (m) 36			
Press.	Temp.	Salinity	Sigma-T
5	13.508	33.675	25.265
10	13.481	33.664	25.261
20	13.731	33.771	25.293
30	13.729	33.893	25.388

STATION US12777
 LATITUDE 41-46.5 N
 LONGITUD 140-40.5 E
 DEPTH (m) 23

Press.	Temp.	Salinity	Sigma-T
5	13.310	33.545	25.204
10	13.312	33.544	25.203
20	13.736	33.887	25.382