



HOKKAIDO UNIVERSITY

Title	PART II -1. THE " USHIO MARU " CRUISE 379, CRUISE 380, CRUISE 381 IN JANUARY - FEBRUARY 2017
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THE " USHIO MARU "

CRUISE 379

CRUISE 380

CRUISE 381

IN JANUARY 2017

IN FEBRUARY 2017

1. Cruise Itinerary

Cruise 379

Departure from Hakodate	Jan.	11, 2017
Start hydrographic research (US17001)		11
Arrival at Hakodate		11
Depart from Hakodate		13
Finish hydrographic research (US17019)		14
Return to Hakodate		15
Total coverage 229.1 miles		

Cruise 380

Departure from Hakodate	Jan.	23, 2017
Start hydrographic research (US17020)		23
Finish hydrographic research (US17055)		26
Return to Hakodate		26
Total coverage 344.4 miles		

Cruise 381

Departure from Hakodate	Feb.	5, 2017
Start hydrographic research (US17056)		5
Finish hydrographic research (US17072)		6
Return to Hakodate		7
Total coverage 132.5 miles		

2. Data on Temperature, Salinity and Pressure

Hydrographic work on deck and the data processing were made by the deck officers, crews, research staff and cadets of the “Ushio Maru”. Temperature, salinity and pressure were measured by CTD (Seabird SBE-19Plus and SBE-19).

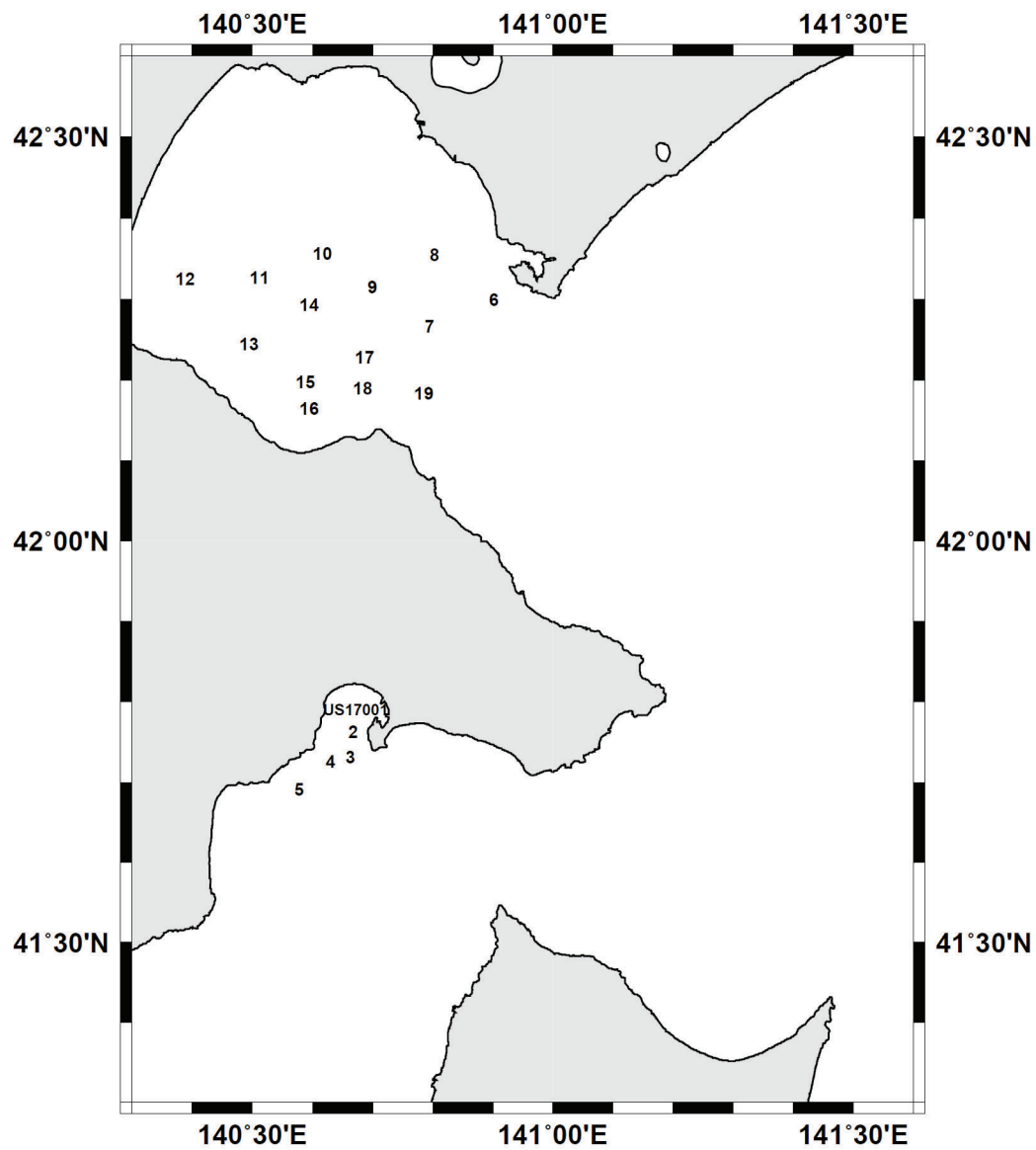


Figure 1. Oceanographic stations (Cruise 379)

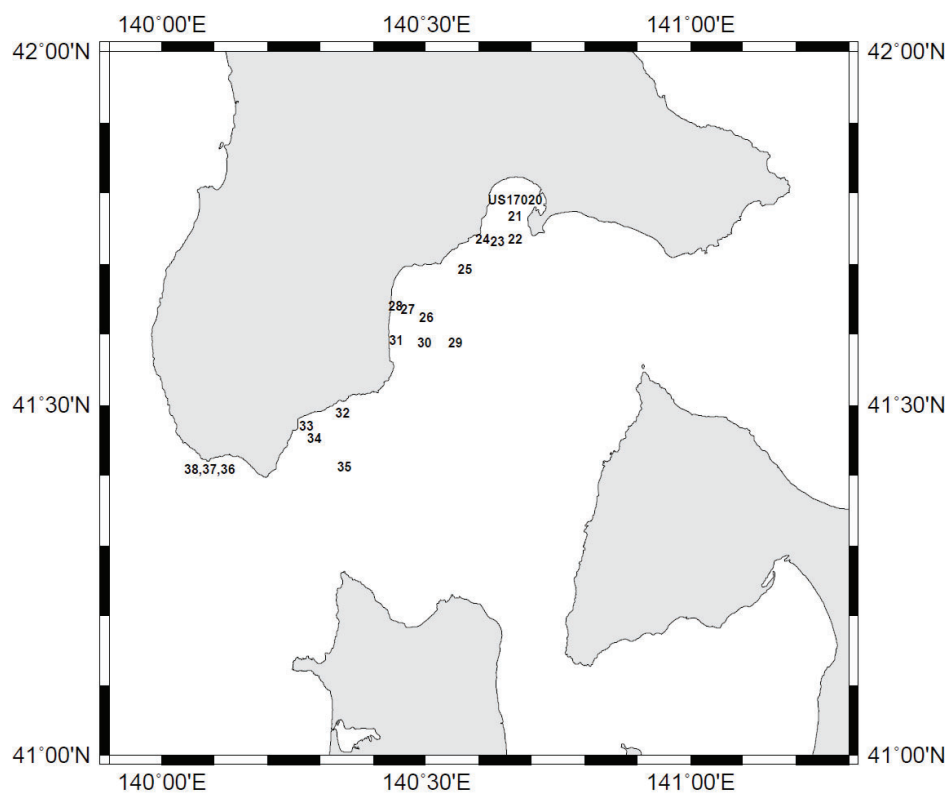


Figure 2. Oceanographic stations (Cruise 380-1)

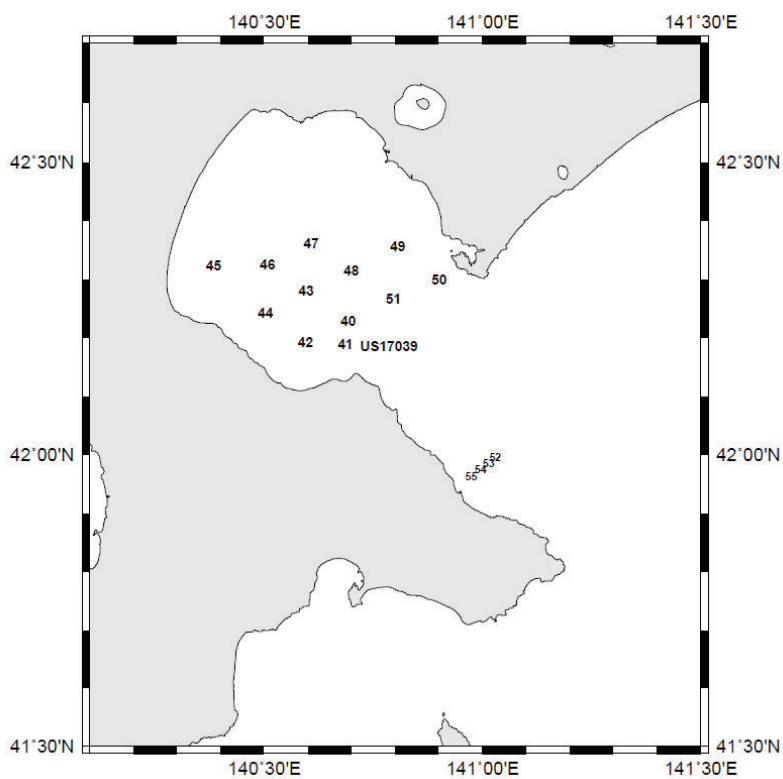


Figure 3. Oceanographic stations (Cruise 380-2)

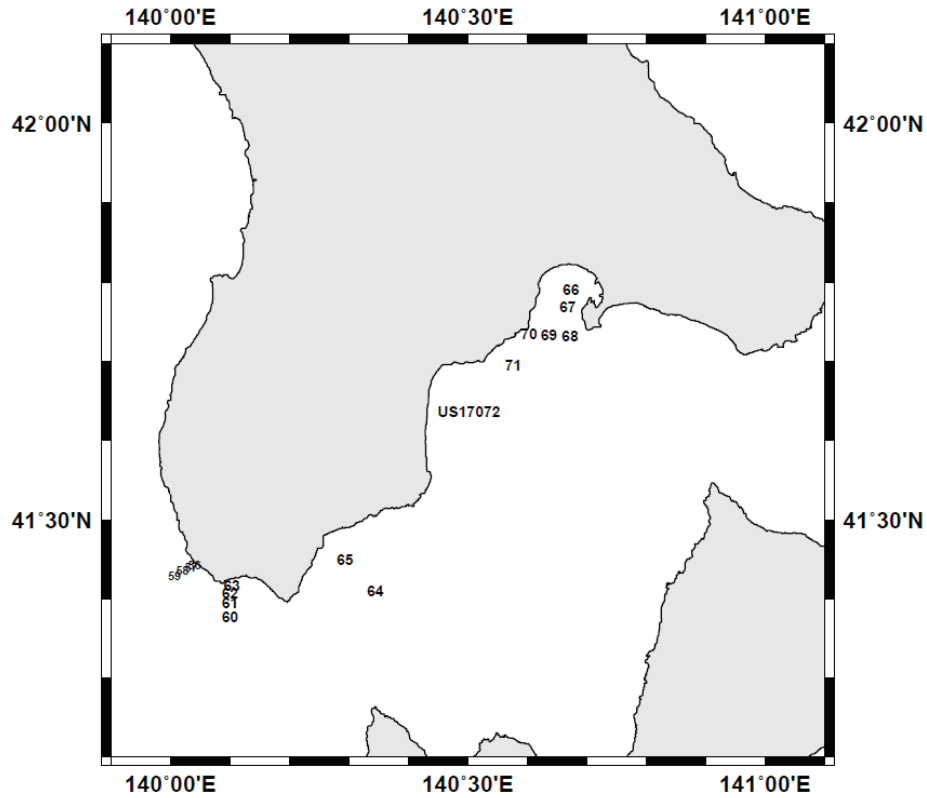


Figure 4. Oceanographic stations (Cruise 381)

Table 1. List of Oceanographic Station

station	Lat. (N)°	Long. (E)°	Date	Hour (JST)	Depth (m)	Wave	Swell	Wind	Air Temp.	Sea Temp.	Wr.	Bar (hPa)
US17001	41-47.0	140-40.3	1/11	0855-0900	20	NW-2	SSW-1	NW-4	-6.3	8.2	s	1011.2
US17002	41-45.3	140-40.1	1/11	0920-0925	43	NW-2	SSW-1	NW-3	-6.6	9.5	s	1011.1
US17003	41-43.4	140-39.8	1/11	0957-1003	66	WNW-3	SSW-1	WNW-4	-6.2	9.7	s	1011.1
US17004	41-43.1	140-37.8	1/11	1036-1042	61	West-3	SSW-1	West-4	-6.1	9.8	s	1010.7
US17005	41-41.0	140-34.7	1/11	1120-1125	44	West-3	SSW-1	West-4	-6.2	9.7	s	1010.5
US17006	42-17.5	140-54.1	1/13	1432-1438	57	WNW-3	NW-1	WNW-4	-3.3	7.3	c	1004.1
US17007	42-15.5	140-47.7	1/13	1521-1528	71	NW-2	NW-1	NW-4	-3.6	8.1	s	1004.6
US17008	42-20.8	140-48.2	1/13	1614-1619	53	WNW-2	NW-1	WNW-4	-3.4	7	c	1005.1
US17009	42-18.4	140-42.0	1/14	0711-0716	66	WNW-3	NW-1	WNW-5	-4.1	6	c	1003.7
US17010	42-20.9	140-37.0	1/14	0756-0803	86	NNW-3	NW-1	NNW-4	-4.6	6.6	c	1003.4
US17011	42-19.1	140-30.7	1/14	0848-0855	93	North-3	NW-1	North-4	-4.2	6.2	c	1003.5
US17012	42-19.0	140-23.3	1/14	0949-0954	54	North-2	North-1	North-3	-4.5	6.5	c	1003.4
US17013	42-14.2	140-29.7	1/14	1051-1055	76	ENE-2	North-1	ENE-2	-4.8	6.4	s	1002.7
US17014	42-17.1	140-35.7	1/14	1148-1155	91	NNE-2	North-1	NNE-2	-4.1	7.4	c	1001.6
US17015	42-11.4	140-35.3	1/14	1250-1255	81	North-2	NNW-1	North-2	-3.4	5.1	o	1000.4
US17016	42-09.4	140-35.7	1/14	1320-1324	70	SSE-2	North-1	SSE-3	-3.8	7.1	s	1000.5
US17017	42-13.2	140-41.2	1/14	1420-1427	89	NE-2	North-1	NE-3	-3.2	8.7	s	1000.7
US17018	42-10.9	140-41.0	1/14	1452-1458	89	NE-2	North-1	NE-4	-2.8	8.6	s	1000.6
US17019	42-10.5	140-47.1	1/14	1546-1553	92	North-3	North-1	North-5	-4.9	8.4	s	1001

Table 1. List of Oceanographic Station (continued)

Crs380												
station	Lat. (N)°	Long. (E)°	Date	Hour (JST)	Depth (m)	Wave	Swell	Wind	Air Temp.	Sea Temp.	Wr.	Bar (hPa)
US17020	41-47.0	140-40.1	1/23	0853-0857	20	NNW-3	NNW-1	NNW-5	0.7	6.7	bc	1007.2
US17021	41-45.6	140-40.1	1/23	0916-0921	35	NNW-3	NNW-1	NNW-5	0.9	8.2	bc	1007.7
US17022	41-43.7	140-40.1	1/23	0951-0957	63	NNW-3	NNW-1	NNW-5	0.7	9	bc	1008.2
US17023	41-43.5	140-38.1	1/23	1034-1041	58	NNW-3	NNW-1	NNW-5	0.6	9	bc	1008.6
US17024	41-43.7	140-36.4	1/23	1117-1122	32	NNW-3	NNW-1	NNW-5	0.6	8.8	bc	1008.6
US17025	41-41.1	140-34.4	1/23	1159-1205	42	North-3	NNW-1	North-5	-0.2	8.7	bc	1009
US17026	41-37.0	140-30.0	1/23	1245-1249	32	NNW-3	NNW-1	NNW-5	0.8	8.6	bc	1009.3
US17027	41-37.7	140-27.9	1/23	1311-1315	18	NNW-3	NNW-1	NNW-5	0.3	8.2	bc	1009.5
US17028	41-38.0	140-26.5	1/23	1332-1336	15	NNW-3	WNW-1	NNW-5	0.6	7.6	bc	1009.7
US17029	41-34.9	140-33.3	1/23	1423-1429	61	NNW-3	NNW-1	NNW-5	0.1	8.8	bc	1010.1
US17030	41-34.9	140-29.8	1/23	1455-1500	45	NNW-3	NNW-1	NNW-5	0.1	8.8	bc	1010.6
US17031	41-35.1	140-26.6	1/23	1525-1527	12	Noth-3	NNW-1	North-5	0.1	7.6	bc	1011.2
US17032	41-28.9	140-20.5	1/24	0717-0724	61	NW-2	SW-1	NW-4	-3.8	7.4	c	1016.6
US17033	41-27.8	140-16.4	1/24	0753-0757	29	NW-2	South-1	NW-4	-3.3	7	bc	1017.1
US17034	41-26.7	140-17.3	1/24	0819-0825	61	NNW-2	South-1	NNW-3	-3.7	7.2	bc	1018
US17035	41-24.3	140-20.7	1/24	0859-0906	97	Noth-2	South-1	Noth-3	-2.7	7.1	c	1018.5
US17036	41-24.3	140-06.2	1/24	1024-1030	63	WNW-2	WSW-1	WNW-3	-3.5	6.5	c	1019.2
US17037	41-24.1	140-05.4	1/24	1044-1050	73	WNW-2	West-1	WNW-3	-3	6.7	c	1019.2
US17038	41-24.1	140-04.2	1/24	1107-1113	87	NW-1	WSW-1	NW-3	-3.6	7	s	1019.1
US17039	42-10.6	140-47.1	1/25	0655-0700	92	West-3	NW-1	West-5	-2.5	5.2	o	1023.6
US17040	42-13.2	140-41.5	1/25	0752-0758	89	NW-3	West-1	NW-4	-2.5	5.1	c	1024.1
US17041	42-10.8	140-41.1	1/25	0829-0835	88	WNW-3	West-1	WNW-4	-2.8	5.5	c	1024.5
US17042	42-11.0	140-35.6	1/25	0917-0923	80	West-3	West-1	West-4	-2.7	5.5	bc	1024.6
US17043	42-16.3	140-35.7	1/25	1014-1020	91	West-3	West-1	West-4	-2.2	6	c	1024.7
US17044	42-14.0	140-30.1	1/25	1108-1113	78	NW-3	WNW-1	NW-5	-1.9	6	c	1024.5
US17045	42-18.9	140-23.0	1/25	1214-1218	53	WNW-3	WNW-1	WNW-4	-2.3	6.5	s	1024.3
US17046	42-19.0	140-30.4	1/25	1306-1313	93	West-3	West-1	West-5	-1.6	5.6	bc	1024
US17047	42-21.1	140-36.4	1/25	1401-1407	88	NW-2	West-1	NW-4	-0.5	6.2	c	1023.5
US17048	42-18.4	140-41.9	1/25	1450-1456	67	West-3	West-1	West-5	-1.1	6	c	1023.6
US17049	42-20.9	140-48.3	1/25	1538-1542	52	West-3	West-1	West-4	-1.4	4.7	s	1023.4
US17050	42-17.5	140-54.0	1/25	1625-1629	57	WNW-3	West-1	WNW-5	-1.1	4.2	s	1023.4
US17051	42-15.5	140-47.7	1/26	0728-0733	71	NW-3	West-1	NW-5	0.4	4.6	bc	1024.2
US17052	41-59.4	141-01.7	1/26	0942-0948	100	West-2	NW-1	West-4	1.2	3.4	bc	1024.5
US17053	41-58.7	141-00.8	1/26	0955-1000	96	West-2	NW-1	West-4	1.1	3.5	bc	1024.8
US17054	41-58.1	140-59.7	1/26	1008-1013	88	West-2	NW-1	West-4	1.2	3.9	bc	1025
US17055	41-57.4	140-58.4	1/26	1021-1026	79	WNW-2	NW-1	WNW-4	1.1	3.8	bc	1025

Crs381												
station	Lat. (N)°	Long. (E)°	Date	Hour (JST)	Depth (m)	Wave	Swell	Wind	Air Temp.	Sea Temp.	Wr.	Bar (hPa)
US17056	41-26.2	140-02.4	2/5	1210-1216	35	ESE-1	WSW-1	ESE-2	5.5	8.5	bc	1014.0
US17057	41-26.1	140-02.1	2/5	1233-1239	45	East-1	WSW-1	East-3	5.1	9.1	bc	1013.2
US17058	41-25.8	140-01.2	2/5	1256-1303	84	ESE-1	WSW-1	ESE-3	5.9	9.7	bc	1013.2
US17059	41-25.4	140-00.4	2/5	1322-1329	102	ESE-1	West-1	ESE-3	6.0	10.0	bc	1013.1
US17060	41-22.2	140-06.0	2/5	1419-1428	119	East-1	West-1	East-3	5.8	8.5	o	1012.1
US17061	41-23.3	140-06.0	2/5	1445-1453	98	East-1	West-1	East-3	5.8	8.8	c	1011.6
US17062	41-24.0	140-06.0	2/5	1506-1513	78	East-1	West-1	East-3	5.6	9.0	c	1011.6
US17063	41-24.6	140-06.2	2/5	1518-1524	48	East-1	West-1	East-3	5.7	8.7	c	1011.7
US17064	41-24.2	140-20.7	2/5	1642-1649	97	NNE-1	SW-1	NNE-3	6.4	9.5	o	1011.1
US17065	41-26.6	140-17.6	2/5	1723-1729	65	NNE-1	SW-1	NNE-3	5.5	8.2	o	1011.0
US17066	41-47.0	140-40.4	2/6	1135-1141	20	North-2	NNW-1	North-4	2.8	8.8	s	999.7
US17067	41-45.7	140-40.1	2/6	1158-1202	34	NW-3	SE-1	NW-5	2.2	8.9	s	999.6
US17068	41-43.5	140-40.3	2/6	1237-1242	67	NW-3	SE-1	NNW-6	2.8	9.1	o	999.2
US17069	41-43.6	140-38.2	2/6	1311-1318	58	NNW-3	SE-1	NNW-6	2.9	9.2	o	999.0
US17070	41-43.7	140-36.2	2/6	1338-1344	26	North-3	East-1	North-5	3.1	8.7	o	999.1
US17071	41-41.3	140-34.6	2/6	1414-1419	43	North-2	East-1	North-4	3.1	9.1	o	999.6
US17072	41-37.8	140-30.1	2/6	1512-1517	28	NW-3	East-1	NW-5	2.7	8.9	o	1001.1

Table 2. Oceanographic data

STATION US17001			
LATITUDE	41-47.0	N	
LONGITUDE	140-40.3	E	
DEPTH (m)	20		
Press.	Temp.	Salinity	Sigma-T
5	8.3706	33.5306	26.0647
10	8.6962	33.627	26.0905
19	9.2627	33.791	26.1295

STATION US17002			
LATITUDE	41-45.3	N	
LONGITUDE	140-40.1	E	
DEPTH (m)	43		
Press.	Temp.	Salinity	Sigma-T
5	10.0655	33.9631	26.1312
10	10.0685	33.9622	26.13
20	10.0655	33.9617	26.13
30	10.0763	33.962	26.1285
40	9.7888	33.9492	26.1669
43	9.737	33.948	26.175

STATION US17003			
LATITUDE	41-43.4	N	
LONGITUDE	140-39.8	E	
DEPTH (m)	66		
Press.	Temp.	Salinity	Sigma-T
5	10.0483	33.944	26.1192
10	9.9035	33.9285	26.1316
20	9.8681	33.9357	26.1431
30	9.8772	33.9306	26.1376
40	9.8691	33.9296	26.1382
50	9.881	33.9339	26.1395
64	9.7221	33.9633	26.189

STATION US17004			
LATITUDE	41-43.1	N	
LONGITUDE	140-37.8	E	
DEPTH (m)	61		
Press.	Temp.	Salinity	Sigma-T
5	10.093	33.957	26.122
10	10.084	33.958	26.124
20	10.059	33.955	26.126
30	10.038	33.953	26.128
40	10.031	33.956	26.132
50	10.009	33.957	26.136
61	9.937	33.960	26.151

STATION US17005			
LATITUDE	41-41.0	N	
LONGITUDE	140-34.7	E	
DEPTH (m)	44		
Press.	Temp.	Salinity	Sigma-T
5	9.9692	33.9554	26.1414
10	9.9625	33.9554	26.1426
20	9.9837	33.9546	26.1384
30	9.9766	33.9533	26.1386
40	9.9698	33.9522	26.1389
45	9.936	33.968	26.157

STATION US17006			
LATITUDE	42-17.5	N	
LONGITUDE	140-54.1	E	
DEPTH (m)	57		
Press.	Temp.	Salinity	Sigma-T
5	7.8013	34.0108	26.5261
10	7.8165	34.01	26.5234
20	7.7943	34.0049	26.5225
30	7.6687	33.9872	26.5268
40	7.2037	33.9499	26.5634
50	6.884	33.927	26.589
55	6.871	33.930	26.594

STATION US17007			
LATITUDE	42-15.5	N	
LONGITUDE	140-47.7	E	
DEPTH (m)	71		
Press.	Temp.	Salinity	Sigma-T
5	8.3433	33.9622	26.4073
10	8.347	33.961	26.4059
20	8.3391	33.9582	26.4049
30	8.0815	33.9489	26.4362
40	7.3952	33.9158	26.5097
50	7.1892	33.9202	26.5421
69	7.2476	33.9588	26.5644

STATION US17008			
LATITUDE	42-20.8	N	
LONGITUDE	140-48.2	E	
DEPTH (m)	53		
Press.	Temp.	Salinity	Sigma-T
5	7.2548	33.973	26.5745
10	7.2554	33.9735	26.5748
20	7.2547	33.9692	26.5716
30	7.081	33.951	26.581
40	6.987	33.938	26.584
50	6.601	33.889	26.597
52	6.568	33.886	26.599

STATION US17009			
LATITUDE	42-18.4	N	
LONGITUDE	140-42.0	E	
DEPTH (m)	66		
Press.	Temp.	Salinity	Sigma-T
5	6.9117	33.928	26.5864
10	6.9148	33.928	26.5859
20	6.893	33.9256	26.587
30	6.792	33.913	26.590
40	6.678	33.905	26.600
50	6.617	33.896	26.601
64	6.584	33.895	26.604

STATION US17010			
LATITUDE	42-20.9	N	
LONGITUDE	140-37.0	E	
DEPTH (m)	86		
Press.	Temp.	Salinity	Sigma-T
5	6.8996	33.9217	26.583
10	6.9062	33.9234	26.5834
20	6.4465	33.8669	26.6001
30	6.3413	33.8588	26.6074
40	6.366	33.864	26.608
50	6.366	33.864	26.608
75	6.290	33.854	26.610
84	6.243	33.848	26.612

STATION US17011			
LATITUDE	42-19.1	N	
LONGITUDE	140-30.7	E	
DEPTH (m)	93		
Press.	Temp.	Salinity	Sigma-T
5	6.3372	33.8633	26.6115
10	6.3466	33.8629	26.6099
20	6.3546	33.8626	26.6087
30	6.3563	33.8619	26.6079
40	6.3565	33.8618	26.6078
50	6.3562	33.8619	26.6079
75	6.3593	33.8617	26.6074
90	6.3589	33.8621	26.6078

STATION US17012			
LATITUDE	42-19.0	N	
LONGITUDE	140-23.3	E	
DEPTH (m)	54		
Press.	Temp.	Salinity	Sigma-T
5	6.8312	33.9219	26.5924
10	6.8265	33.9213	26.5926
20	6.836	33.921	26.5911
30	6.8283	33.9212	26.5923
40	6.8267	33.9212	26.5925
50	6.7988	33.9214	26.5964
53	6.7981	33.922	26.5969

STATION US17013			
LATITUDE	42-14.2	N	
LONGITUDE	140-29.7	E	
DEPTH (m)	76		
Press.	Temp.	Salinity	Sigma-T
5	6.6444	33.9038	26.6032
10	6.6483	33.9041	26.6029
20	6.6484	33.9038	26.6026
30	6.6507	33.9038	26.6024
40	6.6474	33.9035	26.6025
50	6.6456	33.9032	26.6025
75	6.648	33.904	26.603

STATION US17014			
LATITUDE	42-17.1	N	
LONGITUDE	140-35.7	E	
DEPTH (m)	91		
Press.	Temp.	Salinity	Sigma-T
5	7.7799	33.932	26.4673
10	7.7862	33.9316	26.4661
20	7.5389	33.9323	26.5023
30	7.082	33.899	26.540
40	6.698	33.870	26.569
50	6.265	33.822	26.588
75	6.257	33.834	26.599
89	6.270	33.839	26.601

STATION US17015			
LATITUDE	42-11.4	N	
LONGITUDE	140-35.3	E	
DEPTH (m)	81		
Press.	Temp.	Salinity	Sigma-T
5	7.3788	33.9107	26.5081
10	7.3819	33.9082	26.5056
20	5.9939	33.7675	26.5795
30	5.9093	33.7728	26.5942
40	5.9084	33.7786	26.5989
50	5.8761	33.7763	26.6011
75	5.4579	33.7347	26.6189
79	5.5013	33.7421	26.6196

STATION US17016			
LATITUDE 42-09.4 N			
LONGITUDE 140-35.7 E			
DEPTH (m) 70			
Press.	Temp.	Salinity	Sigma-T
5	7.1971	33.9111	26.5338
10	7.1537	33.9091	26.5382
20	6.3335	33.8049	26.5659
30	6.1678	33.8047	26.587
40	6.1703	33.8097	26.5906
50	6.1451	33.8091	26.5933
69	6.0487	33.7977	26.5965

STATION US17019			
LATITUDE 42-10.5 N			
LONGITUDE 140-47.1 E			
DEPTH (m) 92			
Press.	Temp.	Salinity	Sigma-T
5	8.7443	34.0127	26.3853
10	8.745	34.0123	26.3848
20	8.7891	34.0179	26.3823
30	8.7684	34.0186	26.3861
40	8.2752	33.9752	26.4278
50	8.089	33.9565	26.4411
75	6.7183	33.8013	26.5125
90	6.4855	33.8239	26.5611

STATION US17022			
LATITUDE 41-43.7 N			
LONGITUDE 140-40.1 E			
DEPTH (m) 63			
Press.	Temp.	Salinity	Sigma-T
5	9.3111	33.9974	26.2832
10	9.3167	33.9966	26.2816
20	9.2983	33.9949	26.2833
30	9.189	33.9889	26.2962
40	9.1181	33.9838	26.3036
50	9.0044	33.9839	26.3217
62	8.9582	33.9848	26.3298

STATION US17025			
LATITUDE 41-41.1 N			
LONGITUDE 140-34.4 E			
DEPTH (m) 42			
Press.	Temp.	Salinity	Sigma-T
5	8.9696	33.9786	26.3232
10	8.9717	33.9781	26.3224
20	8.9645	33.9782	26.3237
30	8.9611	33.9767	26.323
40	8.9629	33.9768	26.3228
41	8.9628	33.977	26.323

STATION US17028			
LATITUDE 41-38.0 N			
LONGITUDE 140-26.5 E			
DEPTH (m) 15			
Press.	Temp.	Salinity	Sigma-T
5	7.2406	33.7961	26.4373
10	7.2391	33.7954	26.4369
14	7.2258	33.7954	26.4387

STATION US17017			
LATITUDE 42-13.2 N			
LONGITUDE 140-41.2 E			
DEPTH (m) 89			
Press.	Temp.	Salinity	Sigma-T
5	8.8149	34.0132	26.3746
10	8.8314	34.013	26.3719
20	8.836	34.012	26.3703
30	8.7944	34.0078	26.3736
40	8.7209	33.9996	26.3786
50	8.591	33.9862	26.3882
75	7.0858	33.9237	26.5591
87	7.0345	33.9302	26.5713

STATION US17020			
LATITUDE 41-47.0 N			
LONGITUDE 140-40.1 E			
DEPTH (m) 20			
Press.	Temp.	Salinity	Sigma-T
5	7.2308	33.4037	26.1298
10	7.8108	33.7001	26.2806
19	8.5226	33.8839	26.3187

STATION US17023			
LATITUDE 41-43.5 N			
LONGITUDE 140-38.1 E			
DEPTH (m) 58			
Press.	Temp.	Salinity	Sigma-T
5	9.2204	33.9966	26.2971
10	9.2213	33.996	26.2965
20	9.2226	33.9938	26.2946
30	9.1637	33.984	26.2964
40	9.1125	33.9752	26.2977
50	9.0437	33.9712	26.3056
57	8.9789	33.9688	26.3139

STATION US17026			
LATITUDE 41-37.0 N			
LONGITUDE 140-30.0 E			
DEPTH (m) 32			
Press.	Temp.	Salinity	Sigma-T
5	8.8073	33.9772	26.3476
10	8.8116	33.9777	26.3473
20	8.6661	33.9643	26.3595
30	8.5527	33.9565	26.3709
30	8.5527	33.9565	26.3709

STATION US17029			
LATITUDE 41-34.9 N			
LONGITUDE 140-33.3 E			
DEPTH (m) 61			
Press.	Temp.	Salinity	Sigma-T
5	9.0802	33.9857	26.3111
10	9.0801	33.9855	26.311
20	9.1041	33.9843	26.3062
30	9.1005	33.9841	26.3066
40	9.0833	33.983	26.3085
50	8.9562	33.9821	26.328
59	8.4663	33.9678	26.393

STATION US17018			
LATITUDE 42-10.9 N			
LONGITUDE 140-41.0 E			
DEPTH (m) 89			
Press.	Temp.	Salinity	Sigma-T
5	8.9887	34.0257	26.357
10	8.9708	34.0215	26.3566
20	8.9947	34.0246	26.3552
30	8.7617	33.9918	26.3661
40	8.5016	33.974	26.3924
50	8.3955	33.9782	26.412
75	7.4038	33.9252	26.5159
87	6.4302	33.834	26.5763

STATION US17021			
LATITUDE 41-45.6 N			
LONGITUDE 140-40.1 E			
DEPTH (m) 35			
Press.	Temp.	Salinity	Sigma-T
5	8.6702	33.927	26.3297
10	8.7081	33.9311	26.327
20	8.696	33.9266	26.3253
30	8.6676	33.921	26.3253
34	8.6815	33.9239	26.3255

STATION US17024			
LATITUDE 41-43.7 N			
LONGITUDE 140-36.4 E			
DEPTH (m) 32			
Press.	Temp.	Salinity	Sigma-T
5	8.9138	33.9753	26.3294
10	8.9308	33.9746	26.3261
20	8.9203	33.9734	26.3268
30	8.8852	33.9669	26.3273
31	8.8807	33.9671	26.3282

STATION US17027			
LATITUDE 41-37.7 N			
LONGITUDE 140-27.9 E			
DEPTH (m) 18			
Press.	Temp.	Salinity	Sigma-T
5	7.9882	33.9246	26.431
10	7.9931	33.924	26.4298
17	7.9961	33.9231	26.4286

STATION US17030			
LATITUDE 41-34.9 N			
LONGITUDE 140-29.8 E			
DEPTH (m) 45			
Press.	Temp.	Salinity	Sigma-T
5	9.0208	33.989	26.3231
10	9.0184	33.9879	26.3227
20	9.0236	33.9881	26.322
30	8.9179	33.9798	26.3322
40	8.7818	33.9715	26.3471
43	8.7381	33.9698	26.3528

STATION US17031			
LATITUDE 41-35.1 N			
LONGITUDE 140-26.6 E			
DEPTH (m) 12			
Press.	Temp.	Salinity	Sigma-T
5	7.8396	33.8952	26.4297
10	7.8443	33.8958	26.4295
12	7.8224	33.8938	26.4311

STATION US17032			
LATITUDE 41-28.9 N			
LONGITUDE 140-20.5 E			
DEPTH (m) 61			
Press.	Temp.	Salinity	Sigma-T
5	7.5676	33.9963	26.5485
10	7.5722	33.9967	26.5482
20	7.4884	33.9933	26.5575
30	6.6837	33.9826	26.6601
40	6.2468	33.988	26.7216
50	6.1967	33.9884	26.7283
58	6.189	33.9909	26.7313

STATION US17033			
LATITUDE 41-27.8 N			
LONGITUDE 140-16.4 E			
DEPTH (m) 29			
Press.	Temp.	Salinity	Sigma-T

STATION US17034			
LATITUDE 41-26.7 N			
LONGITUDE 140-17.3 E			
DEPTH (m) 61			
Press.	Temp.	Salinity	Sigma-T
5	7.3608	33.9981	26.5794
10	7.3704	33.9965	26.5768
20	7.1974	33.9914	26.597
30	6.783	33.9813	26.6457
40	6.7125	33.991	26.6629
50	6.7134	33.9922	26.6637
59	6.7159	33.9924	26.6635

STATION US17035			
LATITUDE 41-24.3 N			
LONGITUDE 140-20.7 E			
DEPTH (m) 97			
Press.	Temp.	Salinity	Sigma-T
5	7.2659	33.9978	26.5924
10	7.1742	33.9897	26.5989
20	6.9223	33.9881	26.6323
30	6.225	33.9914	26.7271
40	6.0512	33.9894	26.7476
50	5.966	33.993	26.761
71	5.867	33.992	26.773

STATION US17036			
LATITUDE 41-24.3 N			
LONGITUDE 140-06.2 E			
DEPTH (m) 63			
Press.	Temp.	Salinity	Sigma-T
5	6.6958	33.996	26.6691
10	6.1984	33.9778	26.7197
20	5.7996	33.9909	26.7802
30	5.7082	33.9974	26.7966
40	5.6539	33.9953	26.8016
50	5.5676	33.9883	26.8065
61	5.2384	33.9958	26.8516

STATION US17037			
LATITUDE 41-24.1 N			
LONGITUDE 140-05.4 E			
DEPTH (m) 73			
Press.	Temp.	Salinity	Sigma-T
5	7.181	34.0013	26.607
10	7.1842	34.0008	26.6062
20	6.3989	33.9929	26.7058
30	6.251	33.992	26.724
40	5.703	33.990	26.792
50	5.563	33.998	26.815
71	5.049	33.998	26.875

STATION US17038			
LATITUDE 41-24.1 N			
LONGITUDE 140-04.2 E			
DEPTH (m) 87			
Press.	Temp.	Salinity	Sigma-T
5	7.1791	33.9986	26.6052
10	6.5479	33.9948	26.6877
20	6.4697	33.9987	26.7011
30	6.629	34.000	26.681
40	6.591	34.002	26.687
50	6.173	33.958	26.708
75	5.068	33.998	26.873
79	5.086	34.000	26.872

STATION US17039			
LATITUDE 42-10.6 N			
LONGITUDE 140-47.1 E			
DEPTH (m) 92			
Press.	Temp.	Salinity	Sigma-T
5	5.4145	33.1661	26.174
10	5.4155	33.1664	26.1741
20	5.5224	33.1984	26.1869
30	6.2055	33.7906	26.571
40	6.2075	33.8963	26.6542
50	6.2144	33.8975	26.6543
75	5.9921	33.8823	26.6704
90	5.8786	33.8808	26.6834

STATION US17040			
LATITUDE 42-13.2 N			
LONGITUDE 140-41.5 E			
DEPTH (m) 89			
Press.	Temp.	Salinity	Sigma-T
5	5.4729	33.283	26.2597
10	5.479	33.2833	26.2592
20	6.228	33.8472	26.6128
30	6.2414	33.8807	26.6375
40	6.2296	33.8947	26.6502
50	6.1896	33.8903	26.6518
75	6.158	33.889	26.655
87	5.9725	33.8816	26.6723

STATION US17041			
LATITUDE 42-10.8 N			
LONGITUDE 140-41.1 E			
DEPTH (m) 88			
Press.	Temp.	Salinity	Sigma-T
5	5.737	33.7895	26.6287
10	5.811	33.8224	26.6456
20	5.9561	33.899	26.6882
30	5.940	33.907	26.696
40	5.930	33.906	26.697
50	5.929	33.907	26.698
75	5.928	33.907	26.698
86	5.9219	33.9068	26.6986

STATION US17042			
LATITUDE 42-11.0 N			
LONGITUDE 140-35.6 E			
DEPTH (m) 80			
Press.	Temp.	Salinity	Sigma-T
5	5.8776	33.8964	26.6959
10	5.8853	33.8959	26.6945
20	5.8869	33.8956	26.694
30	5.8834	33.8957	26.6946
40	5.8856	33.896	26.6946
50	5.8843	33.8957	26.6945
75	5.6614	33.8781	26.7079
78	5.5651	33.8814	26.7222

STATION US17043			
LATITUDE 42-16.3 N			
LONGITUDE 140-35.7 E			
DEPTH (m) 91			
Press.	Temp.	Salinity	Sigma-T
5	6.1782	33.7244	26.5222
10	6.1937	33.7281	26.5232
20	6.2503	33.8652	26.6242
30	6.1656	33.864	26.6341
40	6.123	33.875	26.648
50	6.126	33.879	26.651
75	6.111	33.887	26.659
89	6.1082	33.888	26.6604

STATION US17044			
LATITUDE 42-14.0 N			
LONGITUDE 140-30.1 E			
DEPTH (m) 78			
Press.	Temp.	Salinity	Sigma-T
5	6.4321	33.9378	26.658
10	6.4307	33.9378	26.6581
20	6.4116	33.9349	26.6583
30	6.2906	33.921	26.663
40	6.2505	33.9209	26.6681
50	6.1812	33.9145	26.672
75	5.978	33.909	26.693
76	5.9593	33.9085	26.6953

STATION US17045			
LATITUDE 42-18.9 N			
LONGITUDE 140-23.0 E			
DEPTH (m) 53			
Press.	Temp.	Salinity	Sigma-T
5	6.7895	33.9236	26.5994
10	6.7986	33.9246	26.599
20	6.8086	33.925	26.5979
30	6.8101	33.9239	26.5969
40	6.8229	33.9253	26.5963
50	6.8081	33.9266	26.5992
51	6.8049	33.9262	26.5993

STATION US17046			
LATITUDE 42-19.0 N			
LONGITUDE 140-30.4 E			
DEPTH (m) 93			
Press.	Temp.	Salinity	Sigma-T
5	5.9473	33.8814	26.6753
10	5.9446	33.8826	26.6766
20	5.9449	33.8824	26.6765
30	5.948	33.883	26.6765
40	5.9509	33.8837	26.6767
50	5.9502	33.8833	26.6764
75	5.948	33.8831	26.6766
91	5.9484	33.8835	26.6769

STATION US17047			
LATITUDE 42-21.1 N			
LONGITUDE 140-36.4 E			
DEPTH (m) 88			
Press.	Temp.	Salinity	Sigma-T
5	6.5425	33.6846	26.4438
10	6.5483	33.6844	26.4429
20	6.5569	33.686	26.443
30	6.7441	33.8425	26.5415
40	6.9922	33.9464	26.5899
50	6.7238	33.9292	26.6126
75	6.4554	33.9149	26.6369
86	6.3007	33.9049	26.6491

STATION US17048			
LATITUDE 42-18.4 N			
LONGITUDE 140-41.9 E			
DEPTH (m) 67			
Press.	Temp.	Salinity	Sigma-T
5	6.4421	33.5619	26.3601
10	6.4613	33.5706	26.3645
20	6.427	33.5753	26.3726
30	6.3981	33.5831	26.3825
40	6.4036	33.5886	26.3861
50	6.4259	33.5974	26.3902
66	6.691	33.9152	26.606

STATION US17049			
LATITUDE 42-20.9 N			
LONGITUDE 140-48.3 E			
DEPTH (m) 52			
Press.	Temp.	Salinity	Sigma-T
5	4.9222	33.0201	26.1144
10	4.9209	33.0206	26.1149
20	4.9028	33.0157	26.1131
30	4.8244	33.0072	26.1149
40	5.2287	33.1079	26.1494
50	5.9983	33.2807	26.1943
51	6.0636	33.2916	26.1948

STATION US17050			
LATITUDE 42-17.5 N			
LONGITUDE 140-54.0 E			
DEPTH (m) 57			
Press.	Temp.	Salinity	Sigma-T
5	4.3373	32.8559	26.0467
10	4.3412	32.8568	26.047
20	4.376	32.8622	26.0477
30	4.518	32.8936	26.0577
40	5.4097	33.0616	26.0919
50	4.9554	33.0757	26.1548
56	5.0096	33.098	26.1665

STATION US17051			
LATITUDE 42-15.5 N			
LONGITUDE 140-47.7 E			
DEPTH (m) 71			
Press.	Temp.	Salinity	Sigma-T
5	4.8203	33.0085	26.1164
10	4.825	33.0101	26.1172
20	4.8377	33.0105	26.1161
30	4.8948	33.0225	26.1193
40	6.5958	33.5505	26.331
50	6.8598	33.7639	26.4641
69	6.2137	33.8858	26.6452

STATION US17052			
LATITUDE 41-59.4 N			
LONGITUDE 141-01.7 E			
DEPTH (m) 100			
Press.	Temp.	Salinity	Sigma-T
5	3.7143	32.7269	26.0059
10	3.736	32.7337	26.0093
20	4.1143	32.816	26.0377
30	4.5506	32.9064	26.0645
40	5.7053	33.1724	26.1445
50	6.1667	33.2595	26.1565
75	7.6049	33.5848	26.2197
92	6.1521	33.8167	26.5984

STATION US17053			
LATITUDE 41-58.7 N			
LONGITUDE 141-00.8 E			
DEPTH (m) 96			
Press.	Temp.	Salinity	Sigma-T
5	3.9543	32.7784	26.0236
10	4.0043	32.7846	26.0236
20	4.4355	32.8825	26.0576
30	5.0668	33.0344	26.1095
40	6.0465	33.2488	26.1632
50	6.597	33.3563	26.1777
75	7.3421	33.5856	26.2575
89	5.9869	33.8697	26.6611

STATION US17054			
LATITUDE 41-58.1 N			
LONGITUDE 140-59.7 E			
DEPTH (m) 88			
Press.	Temp.	Salinity	Sigma-T
5	4.2251	32.8396	26.0452
10	4.2395	32.8416	26.0454
20	5.3591	33.1246	26.1476
30	6.2261	33.2868	26.1707
40	6.423	33.3223	26.1735
50	6.5669	33.3662	26.1895
75	5.954	33.853	26.652
83	5.9122	33.8533	26.6575

STATION US17055			
LATITUDE 41-57.4 N			
LONGITUDE 140-58.4 E			
DEPTH (m) 79			
Press.	Temp.	Salinity	Sigma-T
5	4.3963	32.9124	26.0854
10	5.066	33.0956	26.1582
20	6.6546	33.4722	26.2615
30	6.7099	33.4891	26.2675
40	6.746	33.5111	26.2801
50	6.7356	33.5375	26.3023
75	5.9095	33.7476	26.5743
75	5.9095	33.7476	26.5743

STATION US17056			
LATITUDE 41-26.2 N			
LONGITUDE 140-02.4 E			
DEPTH (m) 35			
Press.	Temp.	Salinity	Sigma-T
5	9.0417	33.9959	26.3252
10	8.8325	33.995	26.3576
20	8.4124	33.9963	26.4236
30	8.2522	33.9959	26.4476
34	7.8505	34.0029	26.513

STATION US17057			
LATITUDE 41-26.1 N			
LONGITUDE 140-02.1 E			
DEPTH (m) 45			
Press.	Temp.	Salinity	Sigma-T
5	8.9976	34.0011	26.3363
10	8.9333	34.0028	26.3478
20	8.597	33.9959	26.3949
30	8.3208	33.9985	26.4392
40	8.0951	33.9918	26.4679
42	7.9598	33.9946	26.4902

STATION US17058			
LATITUDE 41-25.8 N			
LONGITUDE 140-01.2 E			
DEPTH (m) 84			
Press.	Temp.	Salinity	Sigma-T
5	10.0355	34.002	26.1667
10	9.9541	33.998	26.1773
20	9.7192	33.9902	26.2106
30	9.2393	33.9935	26.2917
40	9.0061	34.0059	26.3387
50	7.9772	33.971	26.469
75	6.9708	33.9988	26.6341
80	6.9622	34.0016	26.6375

STATION US17059			
LATITUDE 41-25.4 N			
LONGITUDE 140-00.4 E			
DEPTH (m) 102			
Press.	Temp.	Salinity	Sigma-T
5	10.2466	34.0029	26.1314
10	10.1445	33.9974	26.1445
20	10.0385	33.9995	26.1642
30	9.8274	33.9932	26.1948
40	9.4189	33.9931	26.2622
50	8.3875	33.9906	26.4229
75	7.1143	34	26.6153
99	5.5	33.9959	26.8207

STATION US17060			
LATITUDE 41-22.2 N			
LONGITUDE 140-06.0 E			
DEPTH (m) 119			
Press.	Temp.	Salinity	Sigma-T
5	8.5573	34.0019	26.4057
10	8.5253	34.0051	26.4132
20	8.4905	34.0045	26.4181
30	8.4853	34.0042	26.4187
40	8.4639	34.0041	26.4219
50	8.4403	34.003	26.4247
75	7.890	34.001	26.505
100	6.315	33.995	26.718
114	5.684	33.992	26.796

STATION US17061			
LATITUDE 41-23.3 N			
LONGITUDE 140-06.0 E			
DEPTH (m) 98			
Press.	Temp.	Salinity	Sigma-T
5	9.0923	33.9972	26.3181
10	8.8781	33.993	26.3488
20	8.72	33.9972	26.3769
22	8.7401	33.999	26.3752

STATION US17062			
LATITUDE 41-24.0 N			
LONGITUDE 140-06.0 E			
DEPTH (m) 78			
Press.	Temp.	Salinity	Sigma-T
5	9.1058	33.9907	26.3109
10	8.9342	33.9916	26.3389
20	8.6852	33.9887	26.3757
30	8.5862	33.9982	26.3984
40	8.535	33.9996	26.4074
50	8.551	33.9994	26.4047
66	8.5232	33.9986	26.4084

STATION US17063			
LATITUDE 41-24.6 N			
LONGITUDE 140-06.2 E			
DEPTH (m) 48			
Press.	Temp.	Salinity	Sigma-T
5	8.864	33.9966	26.3539
10	8.853	33.9956	26.3548
20	8.7833	33.9967	26.3666
30	8.7799	33.9966	26.3671
40	8.743	33.9966	26.3728
46	8.7441	33.997	26.373

STATION US17064			
LATITUDE 41-24.2 N			
LONGITUDE 140-20.7 E			
DEPTH (m) 97			
Press.	Temp.	Salinity	Sigma-T
5	9.6373	34.0043	26.2351
10	9.5946	34.0043	26.2422
20	9.4547	34.0021	26.2635
30	9.4285	34.0024	26.268
40	9.0178	33.9937	26.3273
50	8.3968	33.9781	26.4116
75	7.3589	33.999	26.5803
92	7.1591	34.0008	26.6097

STATION US17065			
LATITUDE 41-26.6 N			
LONGITUDE 140-17.6 E			
DEPTH (m) 65			
Press.	Temp.	Salinity	Sigma-T
5	8.6846	34.0035	26.3873
10	8.5718	34.0025	26.404
20	8.3402	34.002	26.4391
30	8.2006	34.0036	26.4614
40	8.1412	34.0038	26.4705
50	8.0937	34.0041	26.4777
63	8.0368	34.0041	26.4862

STATION US17066			
LATITUDE 41-47.0 N			
LONGITUDE 140-40.4 E			
DEPTH (m) 20			
Press.	Temp.	Salinity	Sigma-T
5	9.0814	33.981	26.3072
10	9.0511	33.975	26.3074
20	8.7396	33.927	26.3189
20	8.7396	33.927	26.3189

STATION US17067			
LATITUDE 41-45.7 N			
LONGITUDE 140-40.1 E			
DEPTH (m) 34			
Press.	Temp.	Salinity	Sigma-T
5	9.1875	33.9863	26.2944
10	9.1823	33.9853	26.2944
20	9.1923	33.9864	26.2937
30	9.1478	33.9838	26.2988
33	9.1161	33.9803	26.3011

STATION US17068			
LATITUDE 41-43.5 N			
LONGITUDE 140-40.3 E			
DEPTH (m) 67			
Press.	Temp.	Salinity	Sigma-T
5	9.4432	34.0003	26.2639
10	9.4429	33.9994	26.2633
20	9.4637	34.0011	26.2612
30	9.4704	34.0017	26.2605
40	9.451	33.9983	26.2611
50	9.3354	33.9864	26.2706
64	9.3144	33.9838	26.2719

STATION US17069			
LATITUDE 41-43.6 N			
LONGITUDE 140-38.2 E			
DEPTH (m) 58			
Press.	Temp.	Salinity	Sigma-T
5	9.3616	33.9927	26.2713
10	9.3636	33.9924	26.2707
20	9.367	33.9921	26.2699
30	9.3228	33.988	26.2739
40	9.2933	33.9883	26.2789
50	9.268	33.9874	26.2823
57	8.2774	33.8438	26.3245

STATION US17070			
LATITUDE 41-43.7 N			
LONGITUDE 140-36.2 E			
DEPTH (m) 26			
Press.	Temp.	Salinity	Sigma-T
5	8.1188	33.6423	26.19
10	9.2462	33.9953	26.292
20	9.3518	33.9946	26.2743
27	9.2975	33.9884	26.2783

STATION US17071			
LATITUDE 41-41.3 N			
LONGITUDE 140-34.6 E			
DEPTH (m) 43			
Press.	Temp.	Salinity	Sigma-T
5	9.4481	33.9951	26.259
10	9.4478	33.995	26.259
20	9.4513	33.9946	26.2581
30	9.442	33.9941	26.2592
40	9.077	33.9661	26.2962
45	9.0629	33.9675	26.2996

STATION US17072			
LATITUDE 41-37.8 N			
LONGITUDE 140-30.1 E			
DEPTH (m) 28			
Press.	Temp.	Salinity	Sigma-T
5	9.1203	33.9895	26.3076
10	9.1326	33.9893	26.3056
20	9.1203	33.9877	26.3063