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THE " USHIO MARU "

CRUISE 360
CRUISE 361
CRUISE 362

IN MAY 2016
IN JUNE 2016

1. Cruise Itinerary

Cruise 360

Departure from Hakodate	May	10, 2016
Start hydrographic research (US16232)		10
Setting mooring ADCP system		10
Aarrival 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
Depature 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 fising 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
Depature from Aomori		31
Sampling by trawl net		31
Arrival ar Noheji		31
Depature from Noheji	Jun.	1, 2016
Sampling by trawl net		1
Arrival at Ominato		1
Depature 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”.

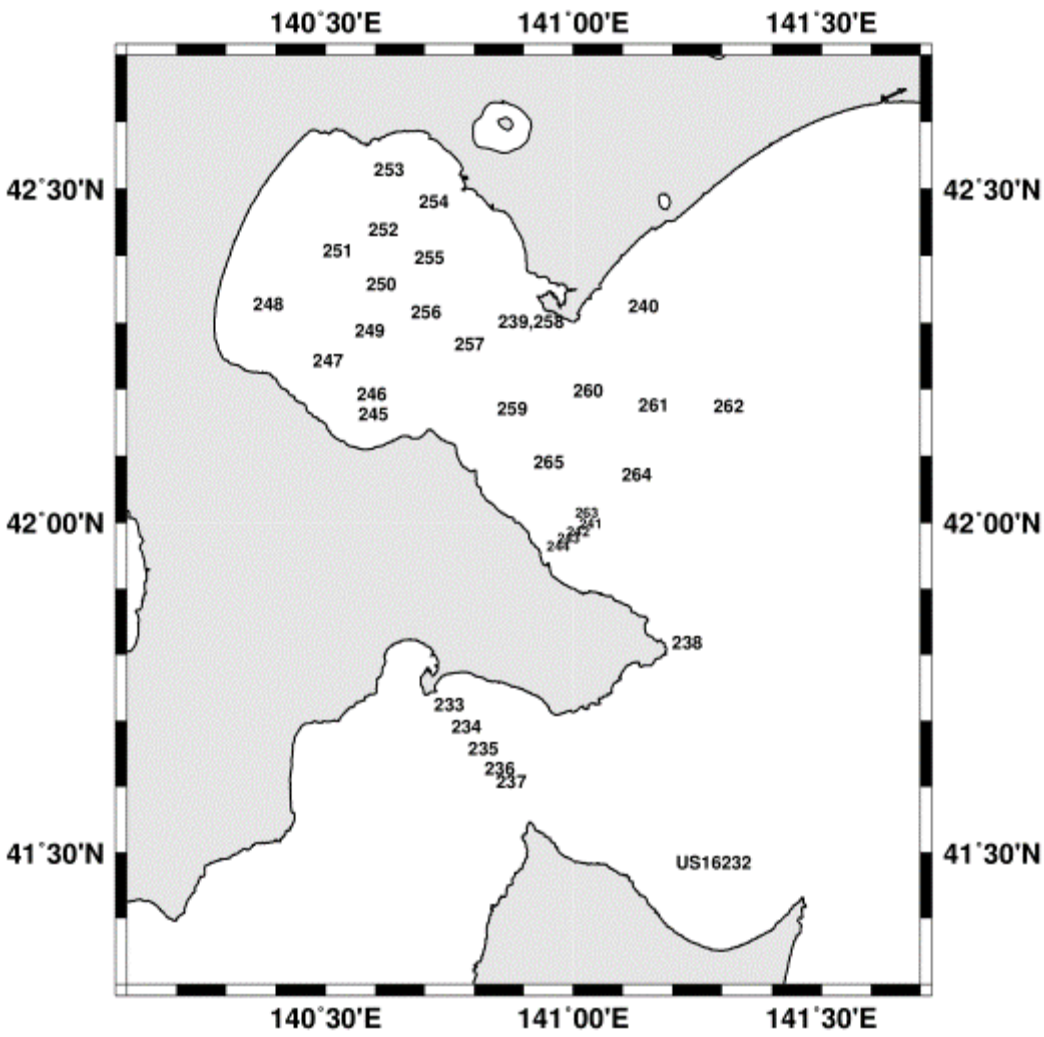

Figure 1. Oceanographic stations (Cruise 360)

Figure 2. Oceanographic stations (Cruise 361)

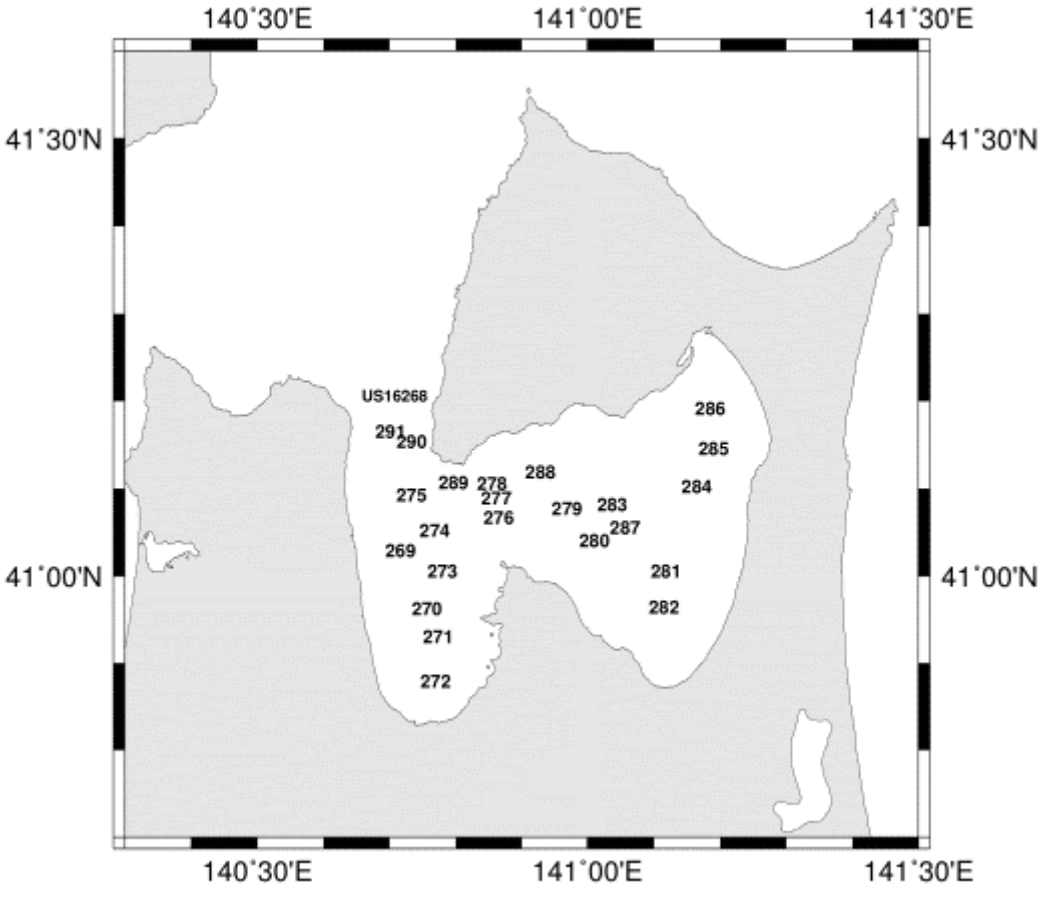

Figure 3. Oceanographic stations (Cruise 362)

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 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 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 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 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 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 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 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 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 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 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 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 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 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 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 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 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 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 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 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 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 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 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 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 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 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

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 US16260
LATITUDE 42-11.3 N
LONGITUD 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

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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 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 US16263
LATITUDE 42-00.4 N
LONGITUD 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 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 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 US16266
LATITUDE 42-17.3 N
LONGITUD 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 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 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 US16269
LATITUDE 41-01.3 N
LONGITUD 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 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 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 US16272
LATITUDE 40-52.3 N
LONGITUD 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

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

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

STATION US16275
LATITUDE 41-05.1 N
LONGITUD 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

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

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

STATION US16278
LATITUDE 41-05.9 N
LONGITUD 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

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

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

STATION US16281
LATITUDE 40-59.9 N
LONGITUD 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

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

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

STATION US16284
LATITUDE 41-05.7 N
LONGITUD 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

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

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

STATION US16287
LATITUDE 41-02.9 N
LONGITUD 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

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

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

STATION US16290
LATITUDE 41-08.8 N
LONGITUD 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
	LONGITUD	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