

**CRUISE REPORT**  
**Eco-FOCI's Bering Sea Late Summer 2008**

**Cruise Number: 8M0823/ Magellan-45**  
**FOCI Number:1ME08**  
**Ship: R/V Melville**

**Area of Operations:** Bering Sea

Depart: Dutch Harbor, AK 24 August 2008

Return: Dutch Harbor, AK on 17September 2008

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**Objectives of Cruise:**

Ecosystems & Fisheries-Oceanography Coordinated Investigations (Eco-FOCI) is an effort by National Oceanic and Atmospheric Administration (NOAA) and associated academic scientists.

Eco-FOCI's goal is to understand the effects of abiotic and biotic variability on ecosystems of the North Pacific Ocean and Bering Sea. This cruise is in support of research sponsored by NOAA's North Pacific Climate Regimes & Ecosystem Productivity Program, the North Pacific Research Board (NPRB), the Alaskan Ocean Observing System (AOOS), and PMEL/AFSC base. This cruise supports the research of the BEST/BSIERP programs, that is, the Bering Ecosystem Study and the Bering Sea Integrated Ecosystem Research Program.

The primary purpose of this cruise is to observe the ecosystem of the eastern Bering Sea under late summer conditions. Operations primarily consisted of hydrographic measurements (with samples for oxygen, chlorophyll, nutrients, and salinity); and zooplankton sampling using MARMAP bongo tows. In addition, six moorings that measure water properties and current velocity were recovered, and two others deployed.

The conductivity, temperature and depth (CTD) casts were made with a SeaBird 911 with dual temperature and conductivity sensors. Attached to the CTD were sensors measuring oxygen, transmission (beam attenuation), fluorescence, and Photosynthetically Activated Radiation (PAR).

### **Samples Collected:**

Water sampling was done for chlorophyll, nutrients, salinity, dissolved oxygen and Oxygen-18 isotopes in the water. Zooplankton tows were done using the following types of gear: MARMAP bongo tows using 60 and 20 cm bongos, with .333 and 0.128mm mesh nets. Triple CalVET tows (California Vertical Egg Tows) were also done near the four mooring sites on the 70m isobath. An ancillary project in the harbor at Dutch Harbor, AK involved sampling for dissolved gases and heavy metals.

### **Cruise Summary:**

The R/V Melville departed Dutch Harbor, AK to at 0900 ADT on 24 August 2008.

We spent that afternoon sampling three hydrographic stations approximately 4mi. from the dock, in the harbor, sampling dissolved gases and heavy metals at the site of a possible hydrothermal vent. This was in support of PMEL research on vents. We then debarked Nathan Buck, the researcher involved in this sampling.

We then proceeded occupying stations of our primary hydrographic grid on the Bering Sea Shelf, which consists of four cross-shelf transects and one along-shelf (70-m isobath) hydrographic line (Fig 1). All stations had a CTD cast with water sampling. Approximately every second station had a MARMAP bongo tow and chlorophyll sampling. Additionally, chlorophyll samples were taken on the stations shallower than 50 m and all the 70-m stations. The stations in the box near Unimak Pass had bongo tows at each station. Around each of the 4 mooring sites on the 70m isobath there are boxes of 4 stations that are repeatedly sampled as a time series. We sampled these with CTD and bongos, plus 3 replicate CalVET tows at the mooring sites in the centers.

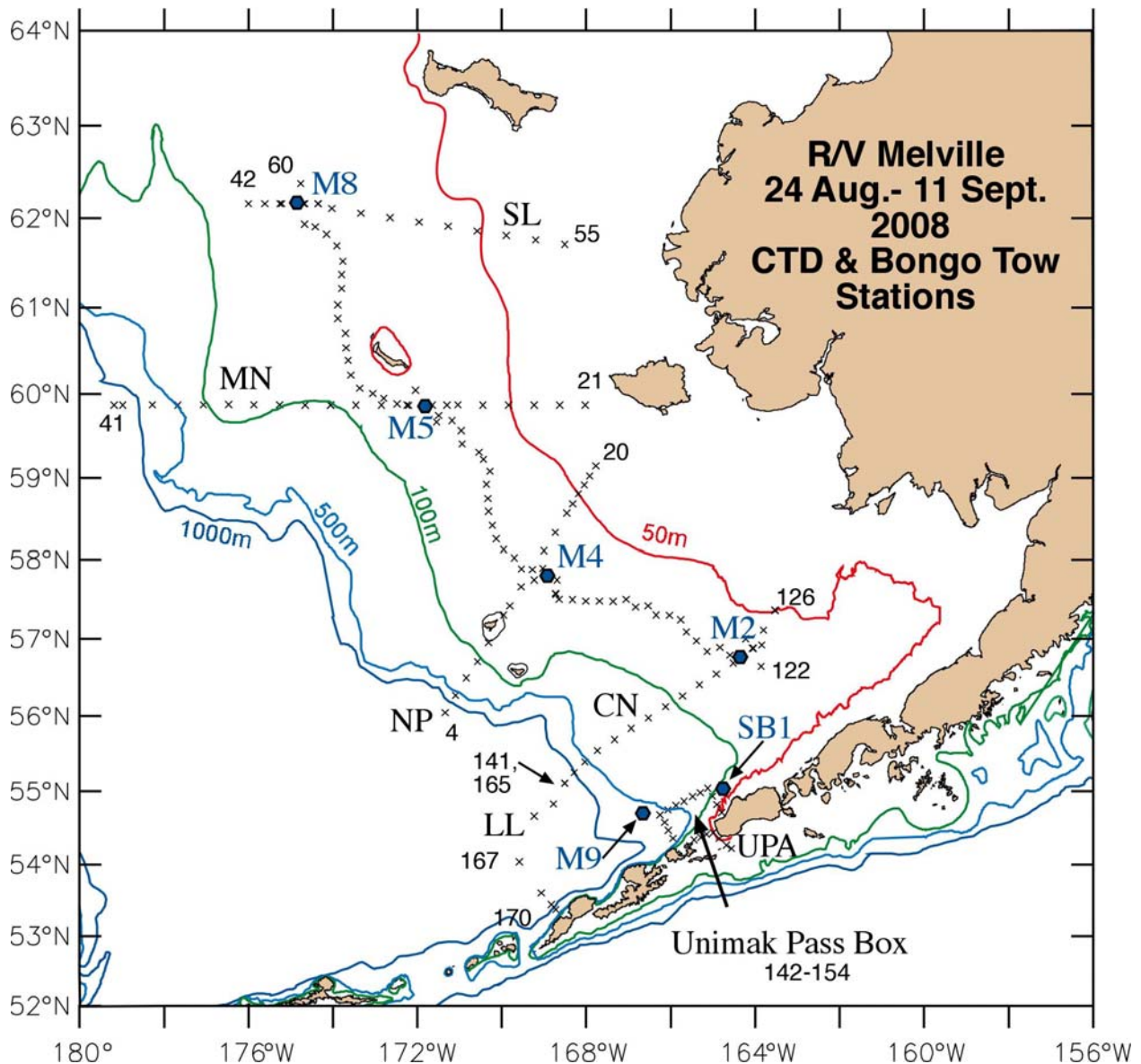


Figure 1. Map of CTD sections. Transect names appear in black. Arrows point to the locations of M2 and M4, the Eco-FOCI mooring sites. Red and green are used.

Our first transect began in the area southwest of St. Paul Island along the NP line (Nunivak-St Paul). At the end of that line, we spent ~1.5 hours unsuccessfully searching for a package of optical instruments that had been lost there by Eurico D'Sa on the summer BEST/BSIERP cruise of the USCG Healy.

We continued sampling along the MN (St. Matthews-Nunivak) and the SL (St. Lawrence) lines. This work took us until 31 August. We then returned to the M8 mooring site, where we recovered 3 moorings and deployed 2 others.

From 1-6 September, we occupied stations on the 70m-isobath line and at the corners of the boxes of stations around the moorings. At each of the stations around M4 we deployed a hydrophone to search for a mooring deployed in September 2007 and lost there in the spring. At site M4S we got a response from the lost mooring, and proceeded to locate it ~18nmi from its original deployment site. The next morning, we recovered the lost mooring with its data. After completing the 70m isobath line, we began the CN line at CN3, which is located at the inner front between the inner and middle hydrographic domains of the Bering Shelf, we observed a large flock of seabirds, most likely, short-tailed shearwaters. We continued the CN line beyond the shelf break and over the slope. At that point, the stations change designation to the L-Line, which is another historic transect designed to sample the Aleutian North Slope Current and Bering Slope Current.

After LL5 we broke the transect and proceed to the site of M9, to recover a mooring deployed in support of the research of Janet Duffy-Anderson of AFSC. After occupying stations on the north and east sides of "Unimak Box", we picked up the SB1 (Slime Bank-1) mooring, also part of Janet Duffy Anderson's project. We then detoured through Unimak Pass to occupy a line of 3 stations, including 2 stations that would clearly have Alaskan Coastal Current water. There we collected so vast number of pteropods in the net tows, we initially thought the tow had dragged bottom and collected sand.

The south line of the Unimak Box is of particular interest to researchers following humpback whales, because only the week before 3 tagged animals were tracked to the area, where occasionally swarms of birds and large numbers of marine mammals come to feed. At the easternmost station, a large number of euphausiids were collected.

After occupying the west line of the Unimak box we resumed the L-Line transect with a repeat of LL5. However, after station LL7, the ship experienced a mechanical problem that delayed us by five hours. We therefore ended the cruise by completing an abbreviated version of the remainder of L-Line.

The R/V Melville then returned to Dutch Harbor at 0800 on 11 September 2008.

Table 1 in the appendix summarizes the operations conducted, while Table 2 summarizes the samples collected. Table 3 is an event log of operations. It includes, in the last column, comments on conditions and some observations.

Among the observations are notes about jellyfish in the bongo nets. Jellyfish plagued our efforts throughout the cruise to collect quality CTD data on the middle of the shelf. We speculate that the abundance of jellyfish is once again increasing in the Bering Sea, as it did in the late 1990s. Another observation was the abundance of copepods at stations M4W, where four jars full were collected from the bongo tow.

## APPENDIX

**Table 1. Summary of Gear Deployed**

<b>Gears Used</b>	<b>Tows</b>
20cm bongo (20Bon)	98
60cm bongo (60Bon)	98
CalCOFI vertical egg tow net (CalVET)	12
Seabird SeaCAT CTD (CAT)	107
CTD without bottle samples (CTD)	1
CTD with bottle samples (CTDB)	169
Mooring deployment or recovery (Moor)	8

**Table 2. Summary of Samples Collected**

<b>Samples Collected</b>	<b>Tows</b>	<b>Number</b>
SeaBird SeaCat CTD (CAT)	110	
Extracted chlorophyll (Chlor)	136	803
Nutrient samples analyzed		
SeaBird CTD (CTD)	170	
Deployment of buoy or mooring (Deploy)	2	2
Stimulated fluorescence collected during CTD casts (Fluor)	166	1194
Photosynthetically Active Radiation data collected during CTD casts (PAR)		162
Quantitative tow preserved in formalin (QTowF)	218	232
Quantitative tow preserved in Stockard's (QTowS)	1	1
Rough count of pollock juveniles (RCountJ)	31	51
Recovery of buoy or mooring (Recovery)	6	6

**Table 3. Cruise Summary For FOCI Cruise 1ME08 (MGLN45MV)**

Date (GMT)	Time (GMT)	Station	Haul	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	Samples Collected	Haul Comments
25-Aug-08	21:28	1	1	NP15	CTD004	2753	56 03.36 N	171 18.21 W	CTDB	Chlor, CTD, Fluor, PAR	11 nutrient samples .
25-Aug-08	23:47	2	1	NP14	CTD005	136	56 16.57 N	171 03.10 W	CTDB	CTD, Fluor, PAR	9 nutrient samples
26-Aug-08	1:47	3	1	NP13	CTD006	121	56 30.76 N	170 48.25 W	CTDB	Chlor, CTD, Fluor, PAR	9 nutrient samples .
26-Aug-08	2:24	3	2	NP13	BON001	121	56 30.78 N	170 48.72 W	20Bon	Discard	Aborted tow, problem with seacat reading.
26-Aug-08	2:24	3	2	NP13	BON001	121	56 30.78 N	170 48.72 W	20Bon	Discard	Tow aborted, problem with Seacat reading.
26-Aug-08	2:24	3	2	NP13	BON001	121	56 30.78 N	170 48.72 W	60Bon	Discard	Aborted tow, problem with seacat reading.
26-Aug-08	2:24	3	2	NP13	BON001	121	56 30.78 N	170 48.72 W	60Bon	Discard	Aborted tow,problem with Seacat reading.
26-Aug-08	2:24	3	2	NP13	BON001	121	56 30.78 N	170 48.72 W	CAT	CAT	Aborted tow, problem with seacat reading
26-Aug-08	3:02	3	3	NP13	BON002	121	56 30.78 N	170 49.13 W	20Bon	QTowF	
26-Aug-08	3:02	3	3	NP13	BON002	121	56 30.78 N	170 49.13 W	60Bon	QTowF	
26-Aug-08	3:02	3	3	NP13	BON002	121	56 30.78 N	170 49.13 W	CAT	CAT	
26-Aug-08	5:04	4	1	NP12	CTD007	108	56 43.49 N	170 32.39 W	CTDB	CTD, Fluor, PAR	8 nutrient samples
26-Aug-08	6:57	5	1	NP11	CTD008	74	56 58.33 N	170 16.82 W	CTDB	CTD, Fluor, PAR	7 nutrient samples
26-Aug-08	10:04	6	1	NP10	CTD009	70	57 19.33 N	169 55.41 W	CTDB	Chlor, CTD, Fluor, PAR	Nutrients . Estimated bottom depth using altimeter: depth sensor incorrect.
26-Aug-08	10:45	6	2	NP10	BON003	70	57 19.27 N	169 55.91 W	20Bon	QTowF	
26-Aug-08	10:45	6	2	NP10	BON003	70	57 19.27 N	169 55.91 W	60Bon	QTowF	
26-Aug-08	10:45	6	2	NP10	BON003	70	57 19.27 N	169 55.91 W	60Bon	QTowF	Bottom depth estimated using altimeter; depth sensor was incorrect.
26-Aug-08	10:45	6	2	NP10	BON003	70	57 19.27 N	169 55.91 W	CAT	CAT	
26-Aug-08	11:54	7	1	NP09	CTD010	70	57 26.49 N	169 46.25 W	CTDB	CTD, Fluor, PAR	Nutrients
26-Aug-08	13:53	8	1	NP08	CTD011	74	57 40.74 N	169 30.34 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrients .
26-Aug-08	14:27	8	2	NP08	BON004	70	57 40.81 N	169 31.16 W	20Bon	QTowF	Flow meters spinning in wind.
26-Aug-08	14:27	8	2	NP08	BON004	70	57 40.81 N	169 31.16 W	60Bon	QTowF	Flow meters spinning in wind.
26-Aug-08	14:27	8	2	NP08	BON004	70	57 40.81 N	169 31.16 W	CAT	CAT	Flow meters spinning in wind.
26-Aug-08	16:20	9	1	NP07	CTD012	67	57 54.03 N	169 14.59 W	CTDB	CTD, Fluor, PAR	Nutrients
26-Aug-08	18:28	10	1	NP06	CTD013	75	58 07.96 N	168 58.14 W	CTDB	CTD, Fluor, PAR	Nutrients
26-Aug-08	20:37	11	1	NP05	CTD014	67	58 21.50 N	168 42.35 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
26-Aug-08	20:45	11	2	NP05	BON005	63	58 21.52 N	168 42.22 W	20Bon	QTowF	
26-Aug-08	20:45	11	2	NP05	BON005	63	58 21.52 N	168 42.22 W	60Bon	QTowF	
26-Aug-08	20:45	11	2	NP05	BON005	63	58 21.52 N	168 42.22 W	CAT	CAT	
26-Aug-08	23:12	12	1	NP04	CTD015	60	58 35.76 N	168 26.10 W	CTDB	CTD, Fluor, PAR	6 nutrient samples
27-Aug-08	0:28	13	1	NP3A	CTD016	51	58 42.61 N	168 17.35 W	CTDB	Chlor, CTD, Fluor, PAR	Deepest chlorophyll sample is 46m; vial reads 50m. 6 nutrient samples .
27-Aug-08	0:51	13	2	NP3A	BON006	50	58 43.01 N	168 17.04 W	20Bon	QTowF	
27-Aug-08	0:51	13	2	NP3A	BON006	50	58 43.01 N	168 17.04 W	60Bon	QTowF	
27-Aug-08	0:51	13	2	NP3A	BON006	50	58 43.01 N	168 17.04 W	CAT	CAT	
27-Aug-08	1:55	14	1	NP03	CTD017	46	58 49.79 N	168 09.27 W	CTDB	Chlor, CTD, Fluor, PAR	5 nutrient samples .
27-Aug-08	3:01	15	1	NP2A	CTD018	42	58 56.37 N	168 01.07 W	CTDB	Chlor, CTD, Fluor, PAR	5 Nutrient samples
27-Aug-08	3:20	15	2	NP2A	BON007	44	58 56.06 N	168 01.03 W	20Bon	QTowF	
27-Aug-08	3:20	15	2	NP2A	BON007	44	58 56.06 N	168 01.03 W	60Bon	QTowF	
27-Aug-08	3:20	15	2	NP2A	BON007	44	58 56.06 N	168 01.03 W	CAT	CAT	
27-Aug-08	4:24	16	1	NP02	CTD019	41	59 02.96 N	167 53.68 W	CTDB	Chlor, CTD, Fluor, PAR	5 nutrient samples .
27-Aug-08	6:41	17	1	NP01	CTD020	40	59 10.22 N	167 44.97 W	CTDB	Chlor, CTD, Fluor, PAR	4 nutrient samples .
27-Aug-08	7:05	17	2	NP01	BON008	40	59 10.32 N	167 45.40 W	20Bon	Discard	Tow aborted; seacat depth readings unreliable. Wire out estimated by using a 45 degree wire angle.
27-Aug-08	7:05	17	2	NP01	BON008	40	59 10.32 N	167 45.40 W	60Bon	Discard	Tow aborted; seacat depth readings unreliable. Wire out estimated by using a 45 degree wire angle.

Date (GMT)	Time (GMT)	Station	Haul	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	Samples Collected	Haul Comments
27-Aug-08	7:05	17	2	NP01	BON008	40	59 10.32 N	167 45.40 W	CAT	CAT	Tow aborted; seacat depth readings unreliable. Wire out estimated by using a 45 degree wire angle.
27-Aug-08	7:27	17	3	NP01	BON009	40	59 10.45 N	167 45.86 W	20Bon	QTowF	Wire readout not working. Wire out estimated using 45 degree wire angle.
27-Aug-08	7:27	17	3	NP01	BON009	40	59 10.45 N	167 45.86 W	60Bon	QTowF	Wire readout not working. Wire out estimated using 45 degree wire angle. Flowmeter for 60BON net 2 looks low.
27-Aug-08	7:27	17	3	NP01	BON009	40	59 10.45 N	167 45.86 W	60Bon	QTowF	Wire readout not working. Wire out estimated using 45 degree wire angle. Flowmeter for 60bon net 2 reading was low; quest.
27-Aug-08	7:27	17	3	NP01	BON009	40	59 10.45 N	167 45.86 W	CAT	CAT	Wire readout not working. Wire out estimated using 45 degree wire angle.
27-Aug-08	12:04	18	1	MN1	CTD021	33	59 53.87 N	167 59.83 W	CTDB	Chlor, CTD, Fluor, PAR	Nutrients
27-Aug-08	14:10	19	1	MN2	CTD022	42	59 54.02 N	168 36.14 W	CTDB	Chlor, CTD, Fluor, PAR	Nutrient samples
27-Aug-08	14:37	19	2	MN2	BON010	38	59 54.29 N	168 36.68 W	20Bon	QTowF	
27-Aug-08	14:37	19	2	MN2	BON010	38	59 54.29 N	168 36.68 W	60Bon	QTowF	
27-Aug-08	14:37	19	2	MN2	BON010	38	59 54.29 N	168 36.68 W	CAT	CAT	
27-Aug-08	16:28	20	1	MN3	CTD023	47	59 54.03 N	169 12.16 W	CTDB	Chlor, CTD, Fluor, PAR	Nutrient samples
27-Aug-08	18:26	21	1	MN4	CTD024	54	59 53.93 N	169 48.09 W	CTDB	Chlor, CTD, Fluor, PAR	
27-Aug-08	18:58	21	2	MN4	BON011	54	59 54.27 N	169 48.04 W	20Bon	QTowF	Preserved 20bongo net 2 because net 1 has a tear in it.
27-Aug-08	18:58	21	2	MN4	BON011	54	59 54.27 N	169 48.04 W	60Bon	QTowF	Preserved 20 bon net 2 because net 1 has a tear in it.
27-Aug-08	18:58	21	2	MN4	BON011	54	59 54.27 N	169 48.04 W	CAT	CAT	Preserved 20bongo net 2 because net 1 has a tear in it.
27-Aug-08	20:49	22	1	MN5	CTD025	62	59 54.01 N	170 24.38 W	CTDB	CTD, Fluor, PAR	7 nutrient samples .
27-Aug-08	22:41	23	1	MN6	CTD026	71	59 54.08 N	170 00.11 W	CTDB	Chlor, CTD, Fluor, PAR	6 nutrient samples collected .
27-Aug-08	23:12	23	2	MN6	BON012	69	59 53.05 N	170 59.05 W	20Bon	QTowF	
27-Aug-08	23:12	23	2	MN6	BON012	69	59 53.05 N	170 59.05 W	60Bon	QTowF	
27-Aug-08	23:12	23	2	MN6	BON012	69	59 53.05 N	170 59.05 W	CAT	CAT	
28-Aug-08	1:11	24	1	MN7	CTD027	70	59 53.94 N	171 36.03 W	CTDB	CTD, Fluor, PAR	7 nutrient samples .
28-Aug-08	3:05	25	1	MN8	CTD028	73	59 53.90 N	172 12.03 W	CTDB	CTD, Fluor, PAR	7 nutrient samples
28-Aug-08	5:01	26	1	MN9	CTD029	74	59 53.96 N	172 48.04 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples .
28-Aug-08	5:21	26	2	MN9	BON013	74	59 53.09 N	172 48.03 W	20Bon	QTowF	
28-Aug-08	5:21	26	2	MN9	BON013	74	59 53.09 N	172 48.03 W	60Bon	QTowF	
28-Aug-08	5:21	26	2	MN9	BON013	74	59 53.09 N	172 48.03 W	CAT	CAT	
28-Aug-08	7:11	27	1	MN10	CTD030	89	59 53.89 N	173 24.16 W	CTDB	CTD, Fluor, PAR	7 nutrient samples .
28-Aug-08	9:08	28	1	MN11	CTD031	106	59 54.01 N	174 00.03 W	CTDB	Discard	Altimeter and depth meter not functioning properly
28-Aug-08	9:42	28	2	MN11	CTD032	110	59 54.00 N	173 59.87 W	CTDB	Chlor, CTD, Fluor, PAR	Nutrients
28-Aug-08	10:18	28	3	MN11	BON014	101	59 53.64 N	173 59.19 W	20Bon	QTowF	
28-Aug-08	10:18	28	3	MN11	BON014	101	59 53.64 N	173 59.19 W	60Bon	QTowF	
28-Aug-08	10:18	28	3	MN11	BON014	101	59 53.64 N	173 59.19 W	CAT	CAT	
28-Aug-08	12:25	29	1	MN12	CTD033	111	59 54.01 N	174 35.81 W	CTDB	CTD, Fluor, PAR	Nutrient samples
28-Aug-08	14:35	30	1	MV13	CTD034	123	59 54.04 N	175 12.18 W	CTDB	Chlor, CTD, Fluor, PAR	Nutrients .
28-Aug-08	15:13	30	2	MV13	BON015	120	59 53.96 N	175 11.19 W	20Bon	QTowF	Flowmeters spinning in wind.
28-Aug-08	15:13	30	2	MV13	BON015	120	59 53.96 N	175 11.19 W	60Bon	QTowF	Flowmeters spinning in wind.
28-Aug-08	15:13	30	2	MV13	BON015	120	59 53.96 N	175 11.19 W	CAT	CAT	Flowmeters spinning in wind.
28-Aug-08	17:30	31	1	MN14	CTD035	134	59 54.07 N	175 48.61 W	CTDB	CTD, Fluor, PAR	nutrients
28-Aug-08	20:05	32	1	MN15	CTD036	138	59 54.35 N	176 24.37 W	CTDB	Chlor, CTD, Fluor	9 nutrient samples .
28-Aug-08	23:13	33	1	MN16	CTD037	135	59 54.16 N	177 00.09 W	CTDB	CTD, Fluor, PAR	Nutrients .
29-Aug-08	0:16	36	1	MN17	CTD038	137	59 54.02 N	177 36.16 W	CTDB	Chlor, CTD, Fluor, PAR	9 nutrient samples .
29-Aug-08	0:45	36	2	MN17	BON016	138	59 54.03 N	177 35.70 W	20Bon	Discard	Tow aborted, bad inboard wire angle.
29-Aug-08	0:45	36	2	MN17	BON016	138	59 54.03 N	177 35.70 W	60Bon	Discard	Tow aborted, bad inboard wire angle.

Date (GMT)	Time (GMT)	Station	Haul	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
29-Aug-08	0:45	36	2	MN17	BON016	138	59 54.03 N	177 35.70 W	CAT	CAT	Tow aborted, bad inboard wire angle.
29-Aug-08	1:02	36	3	MN17	BON017	137	59 54.37 N	177 35.03 W	20Bon	QTowF	
29-Aug-08	1:02	36	3	MN17	BON017	137	59 54.37 N	177 35.03 W	60Bon	QTowF	
29-Aug-08	1:02	36	3	MN17	BON017	137	59 54.37 N	177 35.03 W	CAT	CAT	
29-Aug-08	3:06	37	1	MN18	CTD039	143	59 54.11 N	178 11.92 W	CTDB	CTD, Fluor, PAR	9 nutrient samples
29-Aug-08	6:44	38	1	MN19	CTD040	1596	59 53.88 N	179 06.09 W	CTDB	Chlor, CTD, Fluor, PAR	12 Nutrient samples .
29-Aug-08	7:49	38	2	MN19	BON018	1670	59 54.31 N	179 05.60 W	20Bon	QTowF	
29-Aug-08	7:49	38	2	MN19	BON018	1670	59 54.31 N	179 05.60 W	60Bon	QTowF	
29-Aug-08	7:49	38	2	MN19	BON018	1670	59 54.31 N	179 05.60 W	CAT	CAT	
29-Aug-08	9:10	39	1	MN19A	CTD041	494	59 54.01 N	178 53.91 W	CTDB	Chlor, CTD, Fluor, PAR	Nutrient samples collected for Calvin Mordy
30-Aug-08	1:27	40	1	SL16	CTD042	91	62 11.98 N	175 56.51 W	CTDB	CTD, Fluor, PAR	8 nutrient samples .
30-Aug-08	3:00	41	1	SL15	CTD043	87	62 11.98 N	175 33.06 W	CTDB	Chlor, CTD, Fluor, PAR	8 nutrient samples .
30-Aug-08	3:23	41	2	SL15	BON019	87	62 12.25 N	175 32.76 W	20Bon	QTowF	
30-Aug-08	3:23	41	2	SL15	BON019	87	62 12.25 N	175 32.76 W	60Bon	QTowF	
30-Aug-08	3:23	41	2	SL15	BON019	87	62 12.25 N	175 32.76 W	CAT	CAT	

Date (GMT)	Time (GMT)	Station	Haul	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
30-Aug-08	4:57	42	1	SL14/M8	CTD044	80	62 12.02 N	175 09.22 W	CTDB	CTD, Fluor, PAR	7 Nutrient samples .
30-Aug-08	6:49	43	1	SL12	CTD045	74	62 12.02 N	174 36.81 W	CTDB	Chlor, CTD, Fluor, PAR	7 Nutrient samples .
30-Aug-08	8:05	44	1	SL11M8E	CTD046	68	62 11.96 N	174 18.14 W	CTDB	CTD, Fluor, PAR	Nutrients .
30-Aug-08	9:32	45	1	SL11A	CTD047	65	62 08.80 N	173 58.43 W	CTDB	Chlor, CTD, Fluor, PAR	7 Nutrient samples
30-Aug-08	10:00	45	2	SL11A	BON020	65	62 09.15 N	173 58.11 W	20Bon	QTowF	very close to bottom. Flow meters spinning in wind.
30-Aug-08	10:00	45	2	SL11A	BON020	65	62 09.15 N	173 58.11 W	60Bon	QTowF	very close to bottom. Flow meters spinning in wind.
30-Aug-08	10:00	45	2	SL11A	BON020	65	62 09.15 N	173 58.11 W	CAT	CAT	very close to bottom. Flow meters spinning in wind.
30-Aug-08	12:10	46	1	SL9A	CTD048	61	62 05.77 N	173 17.37 W	CTDB	CTD, Fluor, PAR	6 nutrient samples collected for Sir Calvin Mordy
30-Aug-08	14:20	47	1	SL8A	CTD049	55	62 02.82 N	172 36.00 W	CTDB	Chlor, CTD, Fluor, PAR	6 nutrient samples .
30-Aug-08	14:47	47	2	SL8A	BON021	56	62 02.98 N	172 35.35 W	20Bon	QTowF	Flowmeters spinning in wind.
30-Aug-08	14:47	47	2	SL8A	BON021	56	62 02.98 N	172 35.35 W	60Bon	QTowF	Flowmeters spinning in wind.
30-Aug-08	14:47	47	2	SL8A	BON021	56	62 02.98 N	172 35.35 W	CAT	CAT	Flowmeters spinning in wind.
30-Aug-08	16:43	48	1	SL6A	CTD050	55	61 59.85 N	171 54.89 W	CTDB	CTD, Fluor, PAR	6 nutrient samples .
30-Aug-08	20:32	49	1	SL4A	CTD051	50	61 56.94 N	171 13.62 W	CTDB	Chlor, CTD, Fluor, PAR	5 nutrient samples .
30-Aug-08	20:32	49	2	SL4A	BON022	52	61 57.14 N	171 12.61 W	20Bon	QTowF	
30-Aug-08	20:32	49	2	SL4A	BON022	52	61 57.14 N	171 12.61 W	60Bon	QTowF	
30-Aug-08	20:32	49	2	SL4A	BON022	52	61 57.14 N	171 12.61 W	CAT	CAT	
30-Aug-08	22:49	50	1	SL2A	CTD052	48	61 53.94 N	170 32.58 W	CTDB	Chlor, CTD, Fluor, PAR	5 Nutrient samples .
31-Aug-08	0:33	51	1	SL1	CTD053	44	61 50.92 N	169 51.46 W	CTDB	Chlor, CTD, Fluor, PAR	4 nutrient samples . 10m Niskin bottle did not trip.
31-Aug-08	0:52	51	2	SL1	BON023	45	61 50.90 N	169 50.89 W	20Bon	QTowF	
31-Aug-08	0:52	51	2	SL1	BON023	45	61 50.90 N	169 50.89 W	60Bon	QTowF	
31-Aug-08	0:52	51	2	SL1	BON023	45	61 50.90 N	169 50.89 W	CAT	CAT	
31-Aug-08	2:48	52	1	SL1AA	CTD054	39	61 47.92 N	169 10.18 W	CTDB	Chlor, CTD, Fluor, PAR	5 nutriens samples .
31-Aug-08	4:48	53	1	SL1BB	CTD055	36	61 45.02 N	168 28.83 W	CTDB	Chlor, CTD, Fluor, PAR	4 nutrient samples
31-Aug-08	5:03	53	2	SL1BB	BON024	35	61 45.13 N	168 28.34 W	20Bon	QTowF	
31-Aug-08	5:03	53	2	SL1BB	BON024	35	61 45.13 N	168 28.34 W	60Bon	QTowF	
31-Aug-08	5:03	53	2	SL1BB	BON024	35	61 45.13 N	168 28.34 W	CAT	CAT	
31-Aug-08	20:15	54	1	M8	CTD056	72	62 12.41 N	174 43.10 W	CTDB	Chlor, CTD, Fluor, PAR	9 nutrient samples
31-Aug-08	20:48	54	2	M8	MOOR01	71	62 12.05 N	174 44.94 W	Moor	Recovery	08BSV8A
31-Aug-08	22:23	54	3	M8	MOOR02	71	62 11.62 N	174 40.06 W	Moor	Recovery	07BS8A
31-Aug-08	23:10	54	4	M8	M00R03	71	62 11.73 N	174 39.58 W	Moor	Recovery	07BSP8A
01-Sep-08	1:25	54	5	M8	MOOR04	71	62 11.64 N	174 40.03 W	Moor	Deploy	08BS8A



Date (GMT)	Time (GMT)	Station	Haul	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	Samples Collected	Haul Comments
01-Sep-08	2:52	54	6	M8	MOOR05	71	62 11.76 N	174 39.55 W	Moor	Deploy	08BSP8A
01-Sep-08	3:38	54	7	M8	CTD057	72	62 12.00 N	174 38.70 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples .
01-Sep-08	4:18	54	8	M8	BON025	75	62 12.41 N	174 38.29 W	20Bon	QTowF	
01-Sep-08	4:18	54	8	M8	BON025	75	62 12.41 N	174 38.29 W	60Bon	QTowF	Transforming (about 25 mm) Theragra chalcogramma noted in sample (net 1). Did not hear tech call surface so time is likely long. Seacat data can verify.
01-Sep-08	4:18	54	8	M8	BON025	75	62 12.41 N	174 38.29 W	CAT	CAT	
01-Sep-08	4:50	54	9	M8	CAL001	72	62 12.11 N	174 39.18 W	CalVET	QTowF	Nets 1 and 2 combined. Flowmeters did not have water in them. Seacat was not used for depth. Gear Depth estimated by wire out.
01-Sep-08	5:05	54	10	M8	CAL002	72	62 12.12 N	174 39.20 W	CalVET	QTowF	Nets 1 and 2 combined. Flowmeters did not have water in them. Seacat was not used for depth. Gear depth estimated using wire out.
01-Sep-08	5:19	54	11	M8	CAL003	72	62 12.13 N	174 39.11 W	CalVET	QTowF	Nets 1 and 2 combined. Flowmeters did not have water in them. Seacat not used for dpeth. Depth estimated by wire out.
01-Sep-08	6:29	55	1	M8E	CTD058	70	62 12.01 N	174 17.80 W	CTDB	Chlor, CTD, Fluor, PAR	Station also known as SL12A. 7 nutrient samples .
01-Sep-08	6:42	55	2	M8E	BON026	70	62 12.18 N	174 17.81 W	20Bon	QTowF	Station also known as SL12A.
01-Sep-08	6:42	55	2	M8E	BON026	70	62 12.18 N	174 17.81 W	60Bon	QTowF	Station also known as SL12A.
01-Sep-08	6:42	55	2	M8E	BON026	70	62 12.18 N	174 17.81 W	CAT	CAT	Station also known as SL12A.
01-Sep-08	9:10	56	1	M8W	CTD059	80	62 12.06 N	175 11.88 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
01-Sep-08	9:37	56	2	M8W	BON027	80	62 12.48 N	175 12.00 W	20Bon	QTowF	
01-Sep-08	9:37	56	2	M8W	BON027	80	62 12.48 N	175 12.00 W	60Bon	QTowF	
01-Sep-08	9:37	56	2	M8W	BON027	80	62 12.48 N	175 12.00 W	CAT	CAT	
01-Sep-08	11:33	57	1	M8N	CTD060	72	62 25.27 N	174 42.10 W	CTDB	Chlor, CTD, Fluor, PAR	7 Nutrient samples
01-Sep-08	11:59	57	2	M8N	BON028	72	62 25.61 N	174 41.74 W	20Bon	QTowF	
01-Sep-08	11:59	57	2	M8N	BON028	72	62 25.61 N	174 41.74 W	60Bon	QTowF	
01-Sep-08	11:59	57	2	M8N	BON028	72	62 25.61 N	174 41.74 W	CAT	CAT	
01-Sep-08	13:34	58	1	M8	CTD061	73	62 11.80 N	174 45.11 W	CTDB	Chlor, CTD, Fluor, PAR	7 Nutrient samples
01-Sep-08	15:06	59	1	M8S	CTD062	75	61 58.43 N	174 37.04 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
01-Sep-08	15:36	59	2	M8S	BON029	75	61 59.03 N	174 37.46 W	20Bon	QTowF	
01-Sep-08	15:36	59	2	M8S	BON029	75	61 59.03 N	174 37.46 W	60Bon	QTowF	
01-Sep-08	15:36	59	2	M8S	BON029	75	61 59.03 N	174 37.46 W	CAT	CAT	
01-Sep-08	16:53	60	1	70M55	CTD063	73	61 56.61 N	174 21.88 W	CTDB	Chlor, CTD, Fluor, PAR	Surface Chl filter leaked; No sample collected. 7 nutrient samples
01-Sep-08	17:18	60	2	70M55	BON030	75	61 56.91 N	174 21.57 W	20Bon	QTowF	
01-Sep-08	17:18	60	2	70M55	BON030	75	61 56.91 N	174 21.57 W	60Bon	QTowF	
01-Sep-08	17:18	60	2	70M55	BON030	75	61 56.91 N	174 21.57 W	CAT	CAT	
01-Sep-08	18:35	61	1	70M54	CTD064	72	61 51.69 N	174 05.60 W	CTDB	Chlor, CTD, Fluor, PAR	7 Nutrients
01-Sep-08	19:58	62	1	70M53	CTD065	73	61 43.65 N	173 51.27 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples .
01-Sep-08	20:17	62	2	70M53	BON031	70	61 44.01 N	173 51.84 W	20Bon	QTowF	
01-Sep-08	20:17	62	2	70M53	BON031	70	61 44.01 N	173 51.84 W	60Bon	QTowF	
01-Sep-08	20:17	62	2	70M53	BON031	70	61 44.01 N	173 51.84 W	CAT	CAT	
01-Sep-08	21:35	63	1	70M52	CTD066	74	61 33.61 N	173 42.81 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples .
01-Sep-08	22:52	64	1	70M51	CTD067	73	61 24.55 N	173 44.28 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
01-Sep-08	23:17	64	2	70M51	BON032	76	61 24.69 N	173 44.94 W	20Bon	QTowF	
01-Sep-08	23:17	64	2	70M51	BON032	76	61 24.69 N	173 44.94 W	60Bon	QTowF	
01-Sep-08	23:17	64	2	70M51	BON032	76	61 24.69 N	173 44.94 W	CAT	CAT	
02-Sep-08	0:29	65	1	70M50	CTD068	73	61 14.95 N	173 44.47 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
02-Sep-08	1:49	66	1	70M49	CTD069	75	61 03.94 N	173 49.91 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
02-Sep-08	2:11	66	2	70M49	BON033	78	61 04.16 N	173 50.18 W	20Bon	QTowF	Flowmeter revsa for net 2 60Bon look low.
02-Sep-08	2:11	66	2	70M49	BON033	78	61 04.16 N	173 50.18 W	60Bon	QTowF	Flow meter revs. For 60BON net 2 look low

Date (GMT)	Time (GMT)	Station	Haul	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
02-Sep-08	2:11	66	2	70M49	BON033	78	61 04.16 N	173 50.18 W	60Bon	QTowF	Flowmeter revsa for net 2 60Bon look low.
02-Sep-08	2:11	66	2	70M49	BON033	78	61 04.16 N	173 50.18 W	CAT	CAT	Flowmeter revsa for net 2 60Bon look low.
02-Sep-08	3:22	67	1	70M48	CTD070	81	60 54.44 N	173 49.65 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
02-Sep-08	4:49	68	1	70M47	CTD071	72	60 44.25 N	173 38.86 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples .
02-Sep-08	5:11	68	2	70M47	BON034	74	60 44.65 N	173 39.22 W	20Bon	QTowF	
02-Sep-08	5:11	68	2	70M47	BON034	74	60 44.65 N	173 39.22 W	60Bon	QTowF	
02-Sep-08	5:11	68	2	70M47	BON034	74	60 44.65 N	173 39.22 W	CAT	CAT	
02-Sep-08	6:29	69	1	70M46	CTD072	67	60 34.28 N	173 38.38 W	CTDB	Chlor, CTD, Fluor, PAR	7 Nutrient samples .
02-Sep-08	7:43	70	1	70M45	CTD073	66	60 25.48 N	173 35.37 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples .
02-Sep-08	8:00	70	2	70M45	BON035	65	60 25.70 N	173 35.65 W	20Bon	QTowF	Flowmeters spinning in wind.
02-Sep-08	8:00	70	2	70M45	BON035	65	60 25.70 N	173 35.65 W	60Bon	QTowF	Flowmeters spinning in wind.
02-Sep-08	8:00	70	2	70M45	BON035	65	60 25.70 N	173 35.65 W	CAT	CAT	Flowmeters spinning in wind.
02-Sep-08	9:20	71	1	70M44	CTD074	69	60 15.05 N	173 31.29 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
02-Sep-08	10:44	72	1	70M43	CTD075	70	60 06.03 N	173 18.88 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples .
02-Sep-08	11:09	72	2	70M43	BON036	70	60 06.19 N	173 19.48 W	20Bon	QTowF	Flow meters spinning in wind
02-Sep-08	11:09	72	2	70M43	BON036	70	60 06.19 N	173 19.48 W	60Bon	QTowF	Flow meters spinning in wind
02-Sep-08	11:09	72	2	70M43	BON036	70	60 06.19 N	173 19.48 W	CAT	CAT	Flow meters spinning in wind
02-Sep-08	12:20	73	1	70M42	CTD076	67	60 02.18 N	173 00.31 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
02-Sep-08	13:31	74	1	70M41	CTD077	68	59 58.64 N	172 44.76 W	CTDB	Chlor, CTD, Fluor, PAR	Surface chlorophyll and nutrient sample taken from bucket sample. Forgot to pop surface bottle. 7 nutrient samples .
02-Sep-08	13:58	74	2	70M41	BON037	68	59 58.94 N	172 45.63 W	20Bon	QTowF	Flowmeters spinning in wind.
02-Sep-08	13:58	74	2	70M41	BON037	68	59 58.94 N	172 45.63 W	60Bon	QTowF	Flowmeters spinning in wind.
02-Sep-08	13:58	74	2	70M41	BON037	68	59 58.94 N	172 45.63 W	CAT	CAT	Flowmeters spinning in wind.
02-Sep-08	15:15	75	1	70M40	CTD078	71	59 54.72 N	172 26.05 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
02-Sep-08	16:28	76	1	70M39	CTD079	74	59 53.57 N	172 09.56 W	CTDB	Chlor, CTD, Fluor, PAR	Also know as M5W. 7 nutrient samples
02-Sep-08	16:54	76	2	70M39	BON038	74	59 54.23 N	172 10.34 W	20Bon	QTowF	Also known as M5W. Flow meters spinning in wind.
02-Sep-08	16:54	76	2	70M39	BON038	74	59 54.23 N	172 10.34 W	60Bon	QTowF	Also known as M5W. Flow meters spinning in wind.
02-Sep-08	16:54	76	2	70M39	BON038	74	59 54.23 N	172 10.34 W	CAT	CAT	Also known as M5W. Flow meters spinning in wind.
02-Sep-08	18:16	77	1	70M38	CTD080	62	60 04.47 N	172 00.01 W	CTDB	Chlor, CTD, Fluor, PAR	7 Nutrient samples .
02-Sep-08	18:44	77	2	70M38	BON039	64	60 04.79 N	172 00.42 W	20Bon	QTowF	Station also known as M5N.
02-Sep-08	18:44	77	2	70M38	BON039	64	60 04.79 N	172 00.42 W	60Bon	QTowF	Also known as M5N. Flow meters spinning in wind. Wind speed ~14 knots.
02-Sep-08	18:44	77	2	70M38	BON039	64	60 04.79 N	172 00.42 W	CAT	CAT	Also known as M5N. Flow meters spinning in wind. Wind speed ~14 knots.
02-Sep-08	18:44	77	2	70M38	BON039	64	60 04.79 N	172 00.42 W	CAT	CAT	Also known as M5N. Flow meters spinning in wind. Wind speed ~14 knots.
02-Sep-08	20:21	78	1	70M38	CAL004	72	59 53.39 N	171 42.68 W	CaIVET	QTowF	Mooring site 5 (M5). Nets 1 and 2 combined in one jar.
02-Sep-08	20:21	78	1	70M38	CAL004	72	59 53.39 N	171 42.68 W	CAT	CAT	Mooring site 5 (M5). Nets 1 and 2 combined in one jar.
02-Sep-08	20:44	78	2	70M38	CAL005	72	59 53.40 N	171 42.76 W	CaIVET	QTowF	Mooring site 5 (M5). Nets 1 and 2 combined. Flowmeter revs look off for both nets.
02-Sep-08	20:44	78	2	70M38	CAL005	72	59 53.40 N	171 42.76 W	CAT	CAT	Mooring site 5 (M5). Nets 1 and 2 combined. Flowmeter revs look off for both nets.
02-Sep-08	21:08	78	3	70M38	CAL006	72	59 53.37 N	171 42.81 W	CaIVET	QTowF	Mooring site 5 (M5). Nets 1 and two combined.
02-Sep-08	21:08	78	3	70M38	CAL006	72	59 53.37 N	171 42.81 W	CAT	CAT	Mooring site 5 (M5). Nets 1 and two combined.
02-Sep-08	21:27	78	4	70M38	CTD081	70	59 53.33 N	171 42.82 W	CTDB	Chlor, CTD, Fluor, PAR	Mooring site 5 (M5). 7 nutrient samples

Date (GMT)	Time (GMT)	Station	Haul	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	Samples Collected	Haul Comments
02-Sep-08	21:48	78	5	70M38	BON040	70	59 53.39 N	171 43.14 W	20Bon	QTowF	Mooring site 5 (M5).
02-Sep-08	21:48	78	5	70M38	BON040	70	59 53.39 N	171 43.14 W	60Bon	QTowF	Mooring site 5 (M5).
02-Sep-08	21:48	78	5	70M38	BON040	70	59 53.39 N	171 43.14 W	CAT	CAT	Mooring site 5 (M5).
02-Sep-08	23:21	79	1	M5S	CTD082	74	59 41.94 N	171 30.34 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
02-Sep-08	23:39	79	2	M5S	BON041	75	59 42.13 N	171 30.62 W	20Bon	QTowF	
02-Sep-08	23:39	79	2	M5S	BON041	75	59 42.13 N	171 30.62 W	60Bon	QTowF	
02-Sep-08	23:39	79	2	M5S	BON041	75	59 42.13 N	171 30.62 W	CAT	CAT	
03-Sep-08	1:30	80	1	M5E	CTD083	70	59 53.89 N	171 15.53 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples .
03-Sep-08	1:50	80	2	M5E	BON042	71	59 54.02 N	171 15.83 W	20Bon	QTowF	
03-Sep-08	1:50	80	2	M5E	BON042	71	59 54.02 N	171 15.83 W	60Bon	QTowF	
03-Sep-08	1:50	80	2	M5E	BON042	71	59 54.02 N	171 15.83 W	CAT	CAT	
03-Sep-08	2:54	81	1	70M37	CTD084	74	59 46.58 N	171 27.11 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
03-Sep-08	4:11	82	1	70M36	CTD085	71	59 42.96 N	171 08.36 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples .
03-Sep-08	4:32	82	2	70M36	BON043	73	59 43.39 N	171 08.70 W	20Bon	QTowF	Flowmeters spun in wind considerably during deployment and wire angle was high. Revs seem high.
03-Sep-08	4:32	82	2	70M36	BON043	73	59 43.39 N	171 08.70 W	60Bon	QTowF	Flowmeters spun in wind considerably during deployment and wire angle was high. Revs seem high.
03-Sep-08	4:32	82	2	70M36	BON043	73	59 43.39 N	171 08.70 W	CAT	CAT	Flowmeters spun in wind considerably during deployment and wire angle was high. Revs seem high.
03-Sep-08	5:50	83	1	70M35	CTD086	72	59 35.66 N	170 55.25 W	CTDB	Chlor, CTD, Fluor, PAR	7 Nutrient samples
03-Sep-08	7:05	84	1	70M34	CTD087	72	59 26.06 N	170 54.35 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
03-Sep-08	7:26	84	2	70M34	BON044	70	59 26.53 N	170 54.63 W	20Bon	QTowF	
03-Sep-08	7:26	84	2	70M34	BON044	70	59 26.53 N	170 54.63 W	60Bon	QTowF	
03-Sep-08	7:26	84	2	70M34	BON044	70	59 26.53 N	170 54.63 W	CAT	CAT	
03-Sep-08	8:37	85	1	70M33	CTD088	70	59 20.13 N	170 30.24 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
03-Sep-08	9:53	86	1	70M32	CTD089	69	59 14.84 N	170 24.03 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
03-Sep-08	10:18	86	2	70M32	BON045	66	59 15.15 N	170 25.11 W	20Bon	QTowF	2 small jellies (Aurelia labiata?) from 60BON net 1. Flow meters spinning in (20 knot) wind.
03-Sep-08	10:18	86	2	70M32	BON045	66	59 15.15 N	170 25.11 W	60Bon	QTowF, RCountJ	2 small jellies (Aurelia labiata?) from 60BON net 1. Flow meters spinning in (20 knot) wind.
03-Sep-08	10:18	86	2	70M32	BON045	66	59 15.15 N	170 25.11 W	CAT	CAT	2 small jellies (Aurelia labiata?) from 60BON net 1. Flow meters spinning in (20 knot) wind.
03-Sep-08	11:31	87	1	70M31	CTD090	68	59 06.40 N	170 14.73 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
03-Sep-08	12:46	88	1	70M30	CTD091	70	58 56.87 N	170 19.81 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
03-Sep-08	13:14	88	2	70M30	BON046	67	58 57.09 N	170 20.59 W	20Bon	QTowF	flow meters spinning in wind (20 knots)
03-Sep-08	13:14	88	2	70M30	BON046	67	58 57.09 N	170 20.59 W	60Bon	QTowF, RCountJ	flow meters spinning in wind (20 knots)
03-Sep-08	13:14	88	2	70M30	BON046	67	58 57.09 N	170 20.59 W	CAT	CAT	flow meters spinning in wind (20 knots)
03-Sep-08	14:26	89	1	70M29	CTD092	72	58 46.42 N	170 17.66 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
03-Sep-08	15:46	90	1	70M28	CTD093	71	58 36.99 N	170 16.70 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
	90	2	70M28	BON047	71	58 37.45 N	170 17.38 W	20Bon	QTowF	Flowmeters spinning in wind. 2 medium sized jellies removed from 60 bon net 1.	03-Sep-08 16:07
03-Sep-08	16:07	90	2	70M28	BON047	71	58 37.45 N	170 17.38 W	60Bon	QTowF, RCountJ	Flowmeters spinning in wind. 2 medium sized jellies removed from 60 bon net 1.
03-Sep-08	16:07	90	2	70M28	BON047	71	58 37.45 N	170 17.38 W	CAT	CAT	Flowmeters spinning in wind. 2 medium sized jellies removed from 60 bon net 1.
03-Sep-08	17:34	91	1	70M27	CTD094	74	58 26.73 N	170 11.20 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
03-Sep-08	18:58	92	1	70M26	CTD095	72	58 16.87 N	170 05.63 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples .
03-Sep-08	19:26	92	2	70M26	BON048	72	58 17.33 N	170 06.11 W	20Bon	QTowF	Flowmeters spinning in wind. 6 small Chrysaora jellies removed from net 1. Transforming Theragra present in net 2.

Date (GMT)	Time (GMT)	Station	Haul	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	Samples Collected	Haul Comments
03-Sep-08	19:26	92	2	70M26	BON048	72	58 17.33 N	170 06.11 W	60Bon	QTowF, RCountJ	Flowmeters spinning in wind. 6 small Chrysaora jellies removed from net 1. Transforming Theragra present in net 2.
03-Sep-08	19:26	92	2	70M26	BON048	72	58 17.33 N	170 06.11 W	60Bon	QTowF, RCountJ	Flowmeters spinning in wind. 6 small Chrysaora jellies removed from net 1. Transforming Theragra present in net 2. Two large amphipods removed from 60 bon net 1 sample for J. Napp to identify.
03-Sep-08	19:26	92	2	70M26	BON048	72	58 17.33 N	170 06.11 W	CAT	CAT	Flowmeters spinning in wind. 6 small Chrysaora jellies removed from net 1. Transforming Theragra present in net 2.
03-Sep-08	20:50	93	1	70M25	CTD096	71	58 08.78 N	169 55.12 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples About 1/3 - 1/2 of the 20 m chorophyll sample accidentally filtered in 10 m sample. 10m and 20m chlorophyll samples are bad.
03-Sep-08	22:13	94	1	70M24	CTD097	71	58 02.54 N	169 40.14 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples .
03-Sep-08	22:32	94	2	70M24	BON049	72	58 02.69 N	169 40.42 W	20Bon	QTowF	
03-Sep-08	22:32	94	2	70M24	BON049	72	58 02.69 N	169 40.42 W	60Bon	QTowF, RCountJ	
03-Sep-08	22:32	94	2	70M24	BON049	72	58 02.69 N	169 40.42 W	CAT	CAT	
03-Sep-08	23:45	95	1	70M23	CTD098	69	57 54.27 N	169 30.13 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples .
04-Sep-08	1:15	96	1	M4W	CTD099	63	57 45.97 N	169 12.09 W	CTDB	Chlor, CTD, Fluor, PAR	This station is also known as 70M22. 7 nutrient samples .
04-Sep-08	1:42	96	2	M4W	BON050	63	57 46.12 N	169 12.43 W	20Bon	QTowF	Station is also known as 70M22. 6 clear jellies (Aurelia spp. ?) removed from net 1 and discarded.
04-Sep-08	1:42	96	2	M4W	BON050	63	57 46.12 N	169 12.43 W	60Bon	QTowF	Station is also known as 70M22. 6 clear jellies (Aurelia spp. ?) removed from net 1 and discarded.
04-Sep-08	1:42	96	2	M4W	BON050	63	57 46.12 N	169 12.43 W	CAT	CAT	Station is also known as 70M22. 6 clear jellies (Aurelia spp. ?) removed from net 1 and discarded.
04-Sep-08	3:02	97	1	M4N	CTD100	70	57 54.90 N	169 00.01 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples .
04-Sep-08	3:27	97	2	M4N	BON051	70	57 55.04 N	169 00.28 W	20Bon	QTowF	
04-Sep-08	3:27	97	2	M4N	BON051	70	57 55.04 N	169 00.28 W	60Bon	QTowF	
04-Sep-08	3:27	97	2	M4N	BON051	70	57 55.04 N	169 00.28 W	CAT	CAT	
04-Sep-08	6:13	98	1	M4	CTD101	70	57 50.00 N	168 53.00 W	CTDB	Chlor, CTD, Fluor, PAR	station also known as 70M21. 7 Nutrient samples .
04-Sep-08	6:35	98	2	M4	BON052	70	57 50.25 N	168 53.53 W	20Bon	QTowF	station also known as 70M21. ? Jellies discarded.
04-Sep-08	6:35	98	2	M4	BON052	70	57 50.25 N	168 53.53 W	60Bon	QTowF	station also known as 70M21. ? Jellies discarded.
04-Sep-08	6:35	98	2	M4	BON052	70	57 50.25 N	168 53.53 W	CAT	CAT	station also known as 70M21. ? Jellies discarded.
04-Sep-08	6:59	98	3	M4	CAL007	70	57 49.97 N	168 53.07 W	CalVET	QTowF	Station also known as 70M21. Nets 1 and 2 combined in one jar.
04-Sep-08	6:59	98	3	M4	CAL007	70	57 49.97 N	168 53.07 W	CAT	CAT	
04-Sep-08	7:14	98	4	M4	CAL008	70	59 49.99 N	168 53.09 W	CalVET	QTowF	Station also known as 70M21. Nets 1 and 2 combined in one jar.
04-Sep-08	7:14	98	4	M4	CAL008	70	59 49.99 N	168 53.09 W	CAT	CAT	
04-Sep-08	7:29	98	5	M4	CAL009	70	57 50.07 N	168 53.03 W	CalVET	QTowF	Station also known as 70M21. Nets 1 and 2 combined in 1 jar. Winch a bit slow on retrieve.
04-Sep-08	7:29	98	5	M4	CAL009	70	57 50.07 N	168 53.03 W	CAT	CAT	
04-Sep-08	8:30	99	1	M4E	CTD102	71	57 45.94 N	168 39.99 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples .

Date (GMT)	Time (GMT)	Station	Haul	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
04-Sep-08	9:06	99	2	M4E	BON053	71	57 45.99 N	168 40.38 W	20Bon	QTowF	Flow meters spinning in wind. 4 small Chrysaura jellies removed from 60 Bon net 1. 1 Aureliea jelly removed from 60 bon net 1.
04-Sep-08	9:06	99	2	M4E	BON053	71	57 45.99 N	168 40.38 W	60Bon	QTowF, RCountJ	Flow meters spinning in wind. 4 small Chrysaura jellies removed from 60 Bon net 1. 1 Aureliea jelly removed from 60 bon net 1.
04-Sep-08	9:06	99	2	M4E	BON053	71	57 45.99 N	168 40.38 W	CAT	CAT	Flow meters spinning in wind. 4 small Chrysaura jellies removed from 60 Bon net 1. 1 Aureliea jelly removed from 60 bon net 1.
04-Sep-08	10:36	100	1	M4S	CTD103	72	57 36.00 N	168 42.04 W	CTDB	Chlor, CTD, Fluor, PAR	Also known as station 70M19. 7 nutrient samples
04-Sep-08	11:06	100	2	M4S	BON054	72	57 36.06 N	168 42.47 W	20Bon	QTowF	Station also known as 70M19. Flow meters spinning in wind. 3 Chrysaura melenaster jellies removed form 60 bon net 1.
04-Sep-08	11:06	100	2	M4S	BON054	72	57 36.06 N	168 42.47 W	60Bon	QTowF, RCountJ	Station also known as 70M19. Flow meters spinning in wind. 3 Chrysaura melenaster jellies removed form 60 bon net 1.
04-Sep-08	11:06	100	2	M4S	BON054	72	57 36.06 N	168 42.47 W	CAT	CAT	Station also known as 70M19. Flow meters spinning in wind. 3 Chrysaura melenaster jellies removed form 60 bon net 1.
04-Sep-08	12:09	101	1	70M18	CTD104	72	57 31.42 N	168 36.82 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples .
04-Sep-08	14:19	102	1	70M17	CTD105	69	57 31.22 N	168 18.21 W	CTDB	Chlor, CTD, Fluor, PAR	
04-Sep-08	14:44	102	2	70M17	BON055	72	57 31.21 N	168 19.21 W	20Bon	QTowF	Flowmeters spinning in wind. 2 small Crysaura melanaster jellies removed from 60bon net 1.
04-Sep-08	14:44	102	2	70M17	BON055	72	57 31.21 N	168 19.21 W	60Bon	QTowF, RCountJ	Flowmeters spinning in wind. 2 small Crysaura melanaster jellies removed from 60bon net 1.
04-Sep-08	14:44	102	2	70M17	BON055	72	57 31.21 N	168 19.21 W	CAT	CAT	Flowmeters spinning in wind. 2 small Crysaura melanaster jellies removed from 60bon net 1.
04-Sep-08	18:09	103	1	M4FOUN	CTD106	71	57 35.31 N	168 41.35 W	CTDB	Chlor, CTD, Fluor, PAR	Lost mooring 4 was found. This is the CTD before the recovery.
04-Sep-08	18:39	103	2	M4FOUN	MOOR006	71	57 35.31 N	168 41.35 W	Moor	Recovery	Mooring recovered 575m due east of the position here (position of ctd is recorded here).
04-Sep-08	20:09	104	1	70M16	CTD107	72	57 30.01 N	167 59.13 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples .
04-Sep-08	21:25	105	1	70M15	CTD108	73	57 30.08 N	167 39.80 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples .
04-Sep-08	21:44	105	2	70M15	BON056	72	57 30.08 N	167 39.79 W	20Bon	QTowF	
04-Sep-08	21:44	105	2	70M15	BON056	72	57 30.08 N	167 39.79 W	60Bon	QTowF	
04-Sep-08	21:44	105	2	70M15	BON056	72	57 30.08 N	167 39.79 W	60Bon	QTowF	2 Chrysaora, 2 Aurelia? jellies removed from net 1 60 Bon.
04-Sep-08	21:44	105	2	70M15	BON056	72	57 30.08 N	167 39.79 W	CAT	CAT	
04-Sep-08	23:01	106	1	70M14	CTD109	71	57 29.93 N	167 20.58 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
05-Sep-08	0:14	107	1	70M13	CTD110	71	57 31.26 N	167 02.23 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
05-Sep-08	0:36	107	2	70M13	BON057	71	57 31.30 N	167 02.90 W	20Bon	QTowF	7 small Chrysaora jellies discarded from net 1.
05-Sep-08	0:36	107	2	70M13	BON057	71	57 31.30 N	167 02.90 W	60Bon	QTowF	7 small Chrysaora jellies discarded from net 1.
05-Sep-08	0:36	107	2	70M13	BON057	71	57 31.30 N	167 02.90 W	CAT	CAT	7 small Chrysaora jellies discarded from net 1.
05-Sep-08	1:42	108	1	70M12	CTD111	70	57 25.65 N	166 48.71 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples .
05-Sep-08	2:56	109	1	70M11	CTD112	70	56 21.31 N	166 30.80 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
05-Sep-08	3:17	109	2	70M11	BON058	70	57 26.44 N	166 31.28 W	20Bon	QTowF	4 medium size Chrysaora jellies discarded from net 1.
05-Sep-08	3:17	109	2	70M11	BON058	70	57 26.44 N	166 31.28 W	60Bon	QTowF	4 medium size Chrysaora jellies discarded from net 1.
05-Sep-08	3:17	109	2	70M11	BON058	70	57 26.44 N	166 31.28 W	CAT	CAT	4 medium size Chrysaora jellies discarded

from net 1.

Date (GMT)	Time (GMT)	Station	Haul	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	Samples Collected	Haul Comments
05-Sep-08	4:25	110	1	70M10	CTD113	70	57 19.55 N	166 19.55 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
05-Sep-08	5:44	111	1	70M9	CTD114	69	57 19.24 N	166 00.66 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
05-Sep-08	6:01	111	2	70M9	BON059	70	57 19.22 N	166 01.03 W	20Bon	QTowF	1 large Chrysaora jelly discarded from net 1 60 Bon.
05-Sep-08	6:01	111	2	70M9	BON059	70	57 19.22 N	166 01.03 W	60Bon	QTowF	1 large Chrysaora jelly discarded from net 1 60 Bon.
05-Sep-08	6:01	111	2	70M9	BON059	70	57 19.22 N	166 01.03 W	CAT	CAT	1 large Chrysaora jelly discarded from net 1 60 Bon.
05-Sep-08	7:16	112	1	70M8	CTD115	70	57 15.76 N	165 44.67 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples .
05-Sep-08	8:28	113	1	70M7	CTD116	71	57 06.36 N	165 36.79 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples .
05-Sep-08	8:55	113	2	70M7	BON060	70	57 06.19 N	165 37.34 W	20Bon	QTowF	4 Chrysaora Melanaster jellies in 60 bon net 1.
05-Sep-08	8:55	113	2	70M7	BON060	70	57 06.19 N	165 37.34 W	60Bon	QTowF, RCountJ	4 Chrysaora Melanaster jellies in 60 bon net 1.
05-Sep-08	8:55	113	2	70M7	BON060	70	57 06.19 N	165 37.34 W	CAT	CAT	4 Chrysaora Melanaster jellies in 60 bon net 1.
05-Sep-08	10:11	114	1	70M6	CTD117	71	56 59.56 N	165 22.70 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
05-Sep-08	11:33	115	1	70M5	CTD118	74	56 51.42 N	165 07.42 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
05-Sep-08	11:59	115	2	70M5	BON061	74	56 51.19 N	165 08.17 W	20Bon	QTowF	1 Chrysaora jelly removed form 60 BON net 1
05-Sep-08	11:59	115	2	70M5	BON061	74	56 51.19 N	165 08.17 W	60Bon	QTowF, RCountJ	1 Chrysaora jelly removed form 60 BON net 1
05-Sep-08	11:59	115	2	70M5	BON061	74	56 51.19 N	165 08.17 W	CAT	CAT	1 Chrysaora jelly removed form 60 BON net 1
05-Sep-08	13:15	116	1	70M4	CTD119	70	56 54.55 N	164 49.58 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
05-Sep-08	14:39	117	1	70M3	CTD120	73	56 48.50 N	164 34.98 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
05-Sep-08	15:05	117	2	70M3	BON062	73	56 48.09 N	164 36.13 W	20Bon	QTowF, RCountJ	flow meters spinning in wind. 5 chrysaora melanaster jellies removed form 60 BON net 1.
05-Sep-08	15:05	117	2	70M3	BON062	73	56 48.09 N	164 36.13 W	60Bon	QTowF, RCountJ	flow meters spinning in wind. 5 chrysaora melanaster jellies removed form 60 BON net 1.
05-Sep-08	15:05	117	2	70M3	BON062	73	56 48.09 N	164 36.13 W	CAT	CAT	flow meters spinning in wind. 5 chrysaora melanaster jellies removed form 60 BON net 1.
05-Sep-08	17:15	118	1	M2-70M2	CAL010	70	56 53.97 N	164 03.14 W	CalVET	QTowF	nets 1 & 2 combined
05-Sep-08	17:15	118	1	M2-70M2	CAL010	70	56 53.97 N	164 03.14 W	CAT	CAT	nets 1 & 2 combined
05-Sep-08	17:33	118	2	M2-70M2	CAL011	70	56 53.98 N	164 03.19 W	CalVET	QTowF	nets 1 & 2 combined
05-Sep-08	17:33	118	2	M2-70M2	CAL011	70	56 53.98 N	164 03.19 W	CAT	CAT	nets 1 & 2 combined
05-Sep-08	17:52	118	3	M2-70M2	CAL012	70	56 53.99 N	164 03.20 W	CalVET	QTowF	nets 1 & 2 combined
05-Sep-08	17:52	118	3	M2-70M2	CAL012	70	56 53.99 N	164 03.20 W	CAT	CAT	nets 1 & 2 combined
05-Sep-08	18:12	118	4	M2-70M2	CTD121	71	56 53.98 N	164 03.18 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
05-Sep-08	18:39	118	5	M2-70M2	BON063	71	56 53.79 N	164 03.67 W	20Bon	QTowF, RCountJ	flow meters spinning in wind. Sub-sampled 1000mL out of 5000mL total. Subsamle facter x 5. 1 Chrysaora jelly removed from 60 Bon net 1.
05-Sep-08	18:39	118	5	M2-70M2	BON063	71	56 53.79 N	164 03.67 W	60Bon	QTowF, RCountJ	flow meters spinning in wind. Sub-sampled 1000mL out of 5000mL total. Subsamle facter x 5. 1 Chrysaora jelly removed from 60 Bon net 1.
05-Sep-08	18:39	118	5	M2-70M2	BON063	71	56 53.79 N	164 03.67 W	CAT	CAT	flow meters spinning in wind. Sub-sampled 1000mL out of 5000mL total. Subsamle facter x 5. 1 Chrysaora jelly removed from 60 Bon net 1.
05-Sep-08	20:24	119	1	M2S	CTD122	76	56 39.95 N	163 51.02 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
05-Sep-08	20:46	119	2	M2S	BON064	78	56 39.66 N	163 52.50 W	20Bon	QTowF	
05-Sep-08	20:46	119	2	M2S	BON064	78	56 39.66 N	163 52.50 W	60Bon	QTowF, RCountJ	
05-Sep-08	20:46	119	2	M2S	BON064	78	56 39.66 N	163 52.50 W	CAT	CAT	
05-Sep-08	22:33	120	1	M4W	CTD123	73	56 45.98 N	164 19.91 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples .
05-Sep-08	22:53	120	2	M2W	BON065	75	56 45.92 N	124 20.29 W	20Bon	QTowF	

Date (GMT)	Time (GMT)	Station	Haul	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
05-Sep-08	22:53	120	2	M2W	BON065	75	56 45.92 N	124 20.29 W	60Bon	QTowF	
05-Sep-08	22:53	120	2	M2W	BON065	75	56 45.92 N	124 20.29 W	60Bon	QTowF	4 medium Chrysaora jellies removed from net 1 60 Bon.
05-Sep-08	22:53	120	2	M2W	BON065	75	56 45.92 N	124 20.29 W	CAT	CAT	
06-Sep-08	0:30	121	1	M2N	CTD124	70	57 01.04 N	164 12.90 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples .
06-Sep-08	0:50	121	2	M2N	BON066	69	57 00.89 N	164 13.55 W	20Bon	QTowF	2 medium Chrysaora jellies removed from net 1 20 Bon. 3 medium and 4 small Chrysaora jellies removed from net 1 60 Bon. Only 50% by volume of net 1 60 Bon retained. 2 cod removed from 60 bon net 2.
06-Sep-08	0:50	121	2	M2N	BON066	69	57 00.89 N	164 13.55 W	60Bon	QTowF	2 medium Chrysaora jellies removed from net 1 20 Bon and discarded. 3 medium and 4 small Chrysaora jellies removed from net 1 60 Bon and discarded. Only 50% by volume of net 1 60 Bon retained.
06-Sep-08	0:50	121	2	M2N	BON066	69	57 00.89 N	164 13.55 W	60Bon	QTowF	2 medium Chrysaora jellies removed from net 1 20 Bon. 3 medium and 4 small Chrysaora jellies removed from net 1 60 Bon. Only 50% by volume of net 1 60 Bon retained. 2 cod removed from 60 bon net 2.
06-Sep-08	0:50	121	2	M2N	BON066	69	57 00.89 N	164 13.55 W	CAT	CAT	2 medium Chrysaora jellies removed from net 1 20 Bon. 3 medium and 4 small Chrysaora jellies removed from net 1 60 Bon. Only 50% by volume of net 1 60 Bon retained. 2 cod removed from 60 bon net 2.
06-Sep-08	2:17	122	1	M2E	CTD125	67	56 56.46 N	163 50.14 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples .
06-Sep-08	2:40	122	2	M2E	BON067	67	56 56.29 N	163 50.73 W	20Bon	QTowF	
06-Sep-08	2:40	122	2	M2E	BON067	67	56 56.29 N	163 50.73 W	60Bon	QTowF	
06-Sep-08	2:40	122	2	M2E	BON067	67	56 56.29 N	163 50.73 W	CAT	CAT	
06-Sep-08	5:33	123	1	CN3	CTD127	53	57 23.05 N	163 31.34 W	CTDB	Chlor, CTD, Fluor, PAR	CTD 126 failed to trip bottles. 6 nutrient samples .
06-Sep-08	5:50	123	2	CN3	BON068	53	57 22.78 N	163 31.42 W	20Bon	QTowF	Large aggregation of seabirds nearby (mostly shearwaters). Three small Chrysaora jellies removed from net 1 60 Bon and discarded.
06-Sep-08	5:50	123	2	CN3	BON068	53	57 22.78 N	163 31.42 W	60Bon	QTowF	Large aggregation of seabirds nearby (mostly shearwaters). Three small Chrysaora jellies removed from net 1 60 Bon and discarded.
06-Sep-08	5:50	123	2	CN3	BON068	53	57 22.78 N	163 31.42 W	CAT	CAT	Large aggregation of seabirds nearby (mostly shearwaters). Three small Chrysaora jellies removed from net 1 60 Bon and discarded.
06-Sep-08	7:34	124	1	CN4	CTD128	66	57 07.85 N	163 47.86 W	CTDB	CTD, Fluor, PAR	7 nutrient samples . No chlorophylls taken; bottles emptied accidentally.
06-Sep-08	7:50	124	2	CN4	BON069	65	57 07.93 N	163 48.26 W	20Bon	QTowF	3 small chrysaora melanaster jellies removed from 60bon net 1.
06-Sep-08	7:50	124	2	CN4	BON069	65	57 07.93 N	163 48.26 W	60Bon	QTowF, RCountJ	3 small chrysaora melanaster jellies removed from 60bon net 1.
06-Sep-08	7:50	124	2	CN4	BON069	65	57 07.93 N	163 48.26 W	CAT	CAT	3 small chrysaora melanaster jellies removed from 60bon net 1.
06-Sep-08	9:31	125	1	CN5M2	CTD129	72	56 53.92 N	164 02.20 W	CTDB	CTD, Fluor, PAR	7 nutrient samples .
06-Sep-08	11:41	126	1	CN6	CTD130	75	56 42.26 N	164 30.46 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
06-Sep-08	13:16	127	1	CN7	CTD131	78	56 33.86 N	164 54.40 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples .
06-Sep-08	13:45	127	2	CN7	BON070	77	56 34.23 N	164 54.20 W	20Bon	QTowF, RCountJ	1 large and 2 small chrysaora melanaster jellies removed from 60 bon net 1.

Date (GMT)	Time (GMT)	Station	Haul	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
06-Sep-08	13:45	127	2	CN7	BON070	77	56 34.23 N	164 54.20 W	60Bon	QTowF, RCountJ	1 large and 2 small chrysauro melanaster jellies removed from 60 bon net 1.
06-Sep-08	13:45	127	2	CN7	BON070	77	56 34.23 N	164 54.20 W	CAT	CAT	1 large and 2 small chrysauro melanaster jellies removed from 60 bon net 1.
06-Sep-08	15:19	128	1	CN8	CTD132	84	56 25.35 N	165 18.34 W	CTDB	CTD, Fluor, PAR	8 nutrient samples
06-Sep-08	17:05	129	1	CN9	CTD133	91	56 16.61 N	165 42.25 W	CTDB	Chlor, CTD, Fluor, PAR	8 nutrient samples
06-Sep-08	17:37	129	2	CN9	BON071	91	56 17.09 N	165 42.23 W	20Bon	QTowF, RCountJ	flow meters spinning in wind. 1 Chrysauro melanaster jelly removed from 60BON net 1.
06-Sep-08	17:37	129	2	CN9	BON071	91	56 17.09 N	165 42.23 W	60Bon	QTowF, RCountJ	flow meters spinning in wind. 1 Chrysauro melanaster jelly removed from 60BON net 1.
06-Sep-08	17:37	129	2	CN9	BON071	91	56 17.09 N	165 42.23 W	CAT	CAT	flow meters spinning in wind. 1 Chrysauro melanaster jelly removed from 60BON net 1.
06-Sep-08	19:22	130	1	CN10	CTD134	107	56 08.20 N	166 06.31 W	CTDB	CTD, Fluor, PAR	8 nutrient samples .
06-Sep-08	21:24	131	1	CN11	CTD135	127	55 59.22 N	166 30.66 W	CTDB	Chlor, CTD, Fluor, PAR	9 nutrient samples .
06-Sep-08	21:49	131	2	CN11	BON072	126	55 59.38 N	166 31.02 W	20Bon	QTowF	
06-Sep-08	21:49	131	2	CN11	BON072	126	55 59.38 N	166 31.02 W	60Bon	QTowF	
06-Sep-08	21:49	131	2	CN11	BON072	126	55 59.38 N	166 31.02 W	CAT	CAT	
06-Sep-08	23:37	132	1	CN12	CTD136	134	55 51.02 N	166 54.57 W	CTDB	CTD, Fluor, PAR	9 NUTRIENT SAMPLES COLLECTED FOR C. MORDY.
07-Sep-08	1:27	133	1	CN13	CTD137	137	55 41.87 N	167 18.28 W	CTDB	Chlor, CTD, Fluor, PAR	9 nutrient samples .
07-Sep-08	1:57	133	2	CN13	BON073	138	55 42.48 N	167 18.79 W	20Bon	QTowF	1 smal Chrysaora and 1 Staurophora jellies removed from net 1 60 Bon and discarded.
07-Sep-08	1:57	133	2	CN13	BON073	138	55 42.48 N	167 18.79 W	60Bon	QTowF	1 smal Chrysaora and 1 Staurophora jellies removed from net 1 60 Bon and discarded.
07-Sep-08	1:57	133	2	CN13	BON073	138	55 42.48 N	167 18.79 W	CAT	CAT	1 smal Chrysaora and 1 Staurophora jellies removed from net 1 60 Bon and discarded.
07-Sep-08	3:41	134	1	CN14	CTD138	136	55 33.16 N	167 42.55 W	CTDB	CTD, Fluor, PAR	
07-Sep-08	5:17	135	1	CN16	CTD139	208	55 24.31 N	168 00.13 W	CTDB	Chlor, CTD, Fluor, PAR	10 nutrient samples .
07-Sep-08	5:49	135	2	CN16	BON074	207	55 24.55 N	168 00.89 W	20Bon	QTowF	
07-Sep-08	5:49	135	2	CN16	BON074	207	55 24.55 N	168 00.89 W	60Bon	QTowF	
07-Sep-08	5:49	135	2	CN16	BON074	207	55 24.55 N	168 00.89 W	CAT	CAT	
07-Sep-08	8:32	136	1	LL4	CTD140	1597	55 15.64 N	168 15.34 W	CTDB	Chlor, CTD, Fluor	12 nutrient samples
07-Sep-08	9:50	137	1	LL5	CTD141	1736	55 06.91 N	168 29.03 W	CTDB	Chlor, CTD, Fluor	12 nutrient samples
07-Sep-08	11:44	137	2	LL5	BON075	1737	55 07.11 N	168 31.11 W	20Bon	QTowF, RCountJ	Flow meters spinning wildly in wind
07-Sep-08	11:44	137	2	LL5	BON075	1737	55 07.11 N	168 31.11 W	60Bon	QTowF, RCountJ	Flow meters spinning wildly in wind
07-Sep-08	11:44	137	2	LL5	BON075	1737	55 07.11 N	168 31.11 W	CAT	CAT	
07-Sep-08	18:35	139	1	M9	CTD142	437	54 42.61 N	166 38.33 W	CTD	CTD, Fluor, PAR	
07-Sep-08	19:14	139	2	M9	MOOR007	433	54 32.63 N	166 38.74 W	Moor	Recovery	
07-Sep-08	23:31	140	1	UPN1	CTD143	224	54 45.08 N	166 03.04 W	CTDB	Chlor, CTD, Fluor, PAR	10 nutrient samples
07-Sep-08	23:08	140	2	UPN1	BON076	228	54 44.73 N	166 03.26 W	20Bon	QTowF	
07-Sep-08	23:08	140	2	UPN1	BON076	228	54 44.73 N	166 03.26 W	60Bon	QTowF	
07-Sep-08	23:08	140	2	UPN1	BON076	228	54 44.73 N	166 03.26 W	CAT	CAT	
08-Sep-08	0:24	141	1	UPN2	CTD144	164	54 48.74 N	165 51.43 W	CTDB	Chlor, CTD, Fluor, PAR	9 nutrient samples .
08-Sep-08	3:21	141	2	UPN2	BON077	166	54 48.49 N	165 51.67 W	20Bon	QTowF	Humpback whales nearby.
08-Sep-08	3:21	141	2	UPN2	BON077	166	54 48.49 N	165 51.67 W	60Bon	QTowF	Humpback whales nearby.
08-Sep-08	3:21	141	2	UPN2	BON077	166	54 48.49 N	165 51.67 W	CAT	CAT	Humpback whales nearby.
08-Sep-08	4:36	142	1	UPN3	CTD145	141	54 52.16 N	165 40.14 W	CTDB	Chlor, CTD, Fluor, PAR	9 nutrient samples .
08-Sep-08	5:02	142	2	UPN3	BON078	144	54 51.72 N	165 40.49 W	20Bon	QTowF	
08-Sep-08	5:02	142	2	UPN3	BON078	144	54 51.72 N	165 40.49 W	60Bon	QTowF	
08-Sep-08	5:02	142	2	UPN3	BON078	144	54 51.72 N	165 40.49 W	CAT	CAT	
08-Sep-08	6:19	143	1	UPN4	CTD146	124	54 56.06 N	165 28.27 W	CTDB	Chlor, CTD, Fluor, PAR	9 nutrient samples . No bongo at this station due to excessive boat traffic.
08-Sep-08	7:32	144	1	UPN5	CTD147	114	54 59.23 N	165 17.06 W	CTDB	Chlor, CTD, Fluor, PAR	8 nutrient samples .



Date (GMT)	Time (GMT)	Station	Haul	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
08-Sep-08	7:45	144	2	UPN5	BON079	115	54 59.01 N	165 16.96 W	20Bon	QTowF	Flowmeters spinning in wind.
08-Sep-08	7:45	144	2	UPN5	BON079	115	54 59.01 N	165 16.96 W	60Bon	QTowF, RCountJ	Flowmeters spinning in wind.
08-Sep-08	7:45	144	2	UPN5	BON079	115	54 59.01 N	165 16.96 W	CAT	CAT	Flowmeters spinning in wind.
08-Sep-08	9:02	145	1	UPN6	CTD148	110	55 02.75 N	165 06.47 W	CTDB	Chlor, CTD, Fluor, PAR	8 nutrient samples .
08-Sep-08	9:34	145	2	UPN6	BON080	110	55 02.32 N	165 06.35 W	20Bon	QTowF	1 aurillia jelly removed from 60 bon net 1.
08-Sep-08	9:34	145	2	UPN6	BON080	110	55 02.32 N	165 06.35 W	60Bon	QTowF, RCountJ	1 aurillia jelly removed from 60 bon net 1.
08-Sep-08	9:34	145	2	UPN6	BON080	110	55 02.32 N	165 06.35 W	CAT	CAT	1 aurillia jelly removed from 60 bon net 1.
08-Sep-08	11:57	146	1	UPE3	CTD149	46	54 42.90 N	164 47.12 W	CTDB	Chlor, CTD, Fluor, PAR	5 nutrient samples
08-Sep-08	12:13	146	2	UPE3	BON081	46	54 43.09 N	164 47.35 W	20Bon	QTowF	
08-Sep-08	12:13	146	2	UPE3	BON081	46	54 43.09 N	164 47.35 W	60Bon	QTowF, RCountJ	
08-Sep-08	12:13	146	2	UPE3	BON081	46	54 43.09 N	164 47.35 W	CAT	CAT	
08-Sep-08	13:06	147	1	UPE2	CTD150	74	54 49.65 N	164 53.58 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
08-Sep-08	13:37	147	2	UPE2	BON082	74	54 49.76 N	164 53.41 W	20Bon	QTowF	2 small aurelia jellies removed from 60bon net 1. 1 chrysaure jelly removed from 60 bon net 1
08-Sep-08	13:37	147	2	UPE2	BON082	74	54 49.76 N	164 53.41 W	60Bon	QTowF, RCountJ	2 small aurelia jellies removed from 60bon net 1. 1 chrysaure jelly removed from 60 bon net 1
08-Sep-08	13:37	147	2	UPE2	BON082	74	54 49.76 N	164 53.41 W	CAT	CAT	2 small aurelia jellies removed from 60bon net 1. 1 chrysaure jelly removed from 60 bon net 1
08-Sep-08	14:35	148	1	UPE1	CTD151	92	54 56.26 N	164 59.78 W	CTDB	Chlor, CTD, Fluor, PAR	9 nutrient samples
08-Sep-08	15:04	148	2	UPE1	BON083	92	54 55.99 N	165 00.22 W	20Bon	QTowF, RCountJ	
08-Sep-08	15:04	148	2	UPE1	BON083	92	54 55.99 N	165 00.22 W	60Bon	QTowF, RCountJ	
08-Sep-08	15:04	148	2	UPE1	BON083	92	54 55.99 N	165 00.22 W	CAT	CAT	
08-Sep-08	16:25	149	1	SB1	CTD152	74	55 01.64 N	164 43.95 W	CTDB	CTD, Fluor, PAR	CTD before mooring recovery. 1 nutrient sample .
08-Sep-08	17:00	149	2	SB1	MOOR008	74	55 01.94 N	164 43.22 W	Moor	Recovery	
08-Sep-08	23:47	150	1	UPA1	CTD153	123	54 13.53 N	164 33.11 W	CTDB	Chlor, CTD, Fluor, PAR	9 nutriens samples .
09-Sep-08	0:15	150	2	UPA1	BON084	122	54 13.34 N	164 33.67 W	20Bon	Discard	Tow failed, net hit bottom. Samples discarded.
09-Sep-08	0:15	150	2	UPA1	BON084	122	54 13.34 N	164 33.67 W	60Bon	Discard	Tow failed, net hit bottom. Samples discarded.
09-Sep-08	0:15	150	2	UPA1	BON084	122	54 13.34 N	164 33.67 W	CAT	CAT	Tow failed, net hit bottom. Samples discarded.
09-Sep-08	0:53	150	3	UPA1	B0N085	125	54 13.44 N	164 33.52 W	20Bon	Discard	Tow failed, net hit bottom.
09-Sep-08	0:53	150	3	UPA1	B0N085	125	54 13.44 N	164 33.52 W	60Bon	Discard	Tow failed, net hit bottom.
09-Sep-08	0:53	150	3	UPA1	B0N085	125	54 13.44 N	164 33.52 W	CAT	CAT	Tow failed, net hit bottom.
09-Sep-08	2:24	150	4	UPA1	B0N086	125	54 13.36 N	164 33.73 W	20Bon	QTowF	"Previous tows called "fail" really were not but samples were discarded because thousands of tiny pteropods were mistaken as "sand".
09-Sep-08	2:24	150	4	UPA1	B0N086	125	54 13.36 N	164 33.73 W	60Bon	QTowF	"Previous tows called "fail" really were not but samples were discarded because thousands of tiny pteropods were mistaken as "sand".
09-Sep-08	2:24	150	4	UPA1	B0N086	125	54 13.36 N	164 33.73 W	CAT	CAT	"Previous tows called "fail" really were not but samples were discarded because thousands of tiny pteropods were mistaken as "sand".
09-Sep-08	3:12	151	1	UPA2	CTD154	90	54 16.00 N	164 40.21 W	CTDB	Chlor, CTD, Fluor, PAR	7 nutrient samples
09-Sep-08	3:33	151	2	UPA2	BON087	80	54 15.96 N	164 40.94 W	20Bon	QTowF	
09-Sep-08	3:33	151	2	UPA2	BON087	80	54 15.96 N	164 40.94 W	60Bon	QTowF	
09-Sep-08	3:33	151	2	UPA2	BON087	80	54 15.96 N	164 40.94 W	CAT	CAT	
09-Sep-08	4:31	152	1	UPA3	CTD155	56	54 21.72 N	164 50.22 W	CTDB	Chlor, CTD, Fluor, PAR	6 nutrient samples .
09-Sep-08	5:25	153	1	UPS1	CTD156	46	56 26.50 N	164 59.04 W	CTDB	Chlor, CTD, Fluor	5 nutrient samples .
09-Sep-08	5:44	153	2	UPS1	BON088	61	54 26.74 N	165 00.16 W	20Bon	QTowF	1 large Staurophora jelly removed from net 1 60 Bon and discarded.
09-Sep-08	5:44	153	2	UPS1	BON088	61	54 26.74 N	165 00.16 W	60Bon	QTowF	1 large Staurophora jelly removed from net 1

60 bon and discarded.

Date (GMT)	Time (GMT)	Station	Haul	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	Samples Collected	Haul Comments
09-Sep-08	5:44	153	2	UPS1	BON088	61	54 26.74 N	165 00.16 W	CAT	CAT	1 large Staurophora jelly removed from net 1 60 Bon and discarded.
09-Sep-08	6:32	154	1	UPS2	CTD157	132	54 25.19 N	165 08.42 W	CTDB	Chlor, CTD, Fluor, PAR	9 nutrient samples
09-Sep-08	6:58	154	2	UPS2	BON89	134	54 25.21 N	165 08.47 W	20Bon	QTowF	
09-Sep-08	6:58	154	2	UPS2	BON89	134	54 25.21 N	165 08.47 W	60Bon	QTowF	
09-Sep-08	6:58	154	2	UPS2	BON89	134	54 25.21 N	165 08.47 W	CAT	CAT	
09-Sep-08	7:54	155	1	UPS3	CTD158	164	54 22.50 N	165 16.42 W	CTDB	Chlor, CTD, Fluor, PAR	10 nutrient samples
09-Sep-08	8:46	155	2	UPS3	BON090	160	52 24.41 N	165 16.98 W	20Bon	QTowF	2.5 miles from CTD location due to tanker traffic.
09-Sep-08	8:46	155	2	UPS3	BON090	160	52 24.41 N	165 16.98 W	60Bon	QTowF	2.5 miles from CTD location due to tanker traffic.
09-Sep-08	8:46	155	2	UPS3	BON090	160	52 24.41 N	165 16.98 W	CAT	CAT	2.5 miles from CTD location due to tanker traffic.
09-Sep-08	9:52	156	1	UPS4	CTD159	154	54 20.51 N	165 25.72 W	CTDB	Chlor, CTD, Fluor, PAR	10 nutrient samples
09-Sep-08	10:25	156	2	UPS4	BON091	163	54 20.14 N	165 26.39 W	20Bon	QTowF, RCountJ	Water deepening, 169m when at depth. Preserved 20 BON net 2 because saw net 1 has hole in it. Removed 1 aurelia jelly from 20 BON net 2.
09-Sep-08	10:25	156	2	UPS4	BON091	163	54 20.14 N	165 26.39 W	60Bon	QTowF, RCountJ	Water deepening, 169m when at depth. Preserved 20 BON net 2 because saw net 1 has hole in it. Removed 1 aurelia jelly from 20 BON net 2.
09-Sep-08	10:25	156	2	UPS4	BON091	163	54 20.14 N	165 26.39 W	CAT	CAT	Water deepening, 169m when at depth. Preserved 20 BON net 2 because saw net 1 has hole in it. Removed 1 aurelia jelly from 20 BON net 2.
09-Sep-08	13:20	157	1	UPW4	CTD160	474	54 21.59 N	165 55.67 W	CTDB	Chlor, CTD, Fluor, PAR	12 nutrient samples
09-Sep-08	13:20	157	2	UPW4	BON092	495	54 21.84 N	165 56.80 W	20Bon	QTowF	
09-Sep-08	13:20	157	2	UPW4	BON092	495	54 21.84 N	165 56.80 W	60Bon	QTowF, RCountJ	
09-Sep-08	13:20	157	2	UPW4	BON092	495	54 21.84 N	165 56.80 W	CAT	CAT	
09-Sep-08	14:32	158	1	UPW3	CTD161	536	54 28.38 N	166 02.26 W	CTDB	Chlor, CTD, Fluor, PAR	12 nutrient samples collected
09-Sep-08	15:37	158	2	UPW3	BON093	537	54 28.51 N	166 03.02 W	20Bon	QTowF	1 aurelia jelly removed from 60Bon net 1.
09-Sep-08	15:37	158	2	UPW3	BON093	537	54 28.51 N	166 03.02 W	60Bon	QTowF	1 aurelia jelly removed from 60Bon net 1.
09-Sep-08	15:37	158	2	UPW3	BON093	537	54 28.51 N	166 03.02 W	CAT	CAT	1 aurelia jelly removed from 60Bon net 1.
09-Sep-08	17:03	159	1	UPW2	CTD162	420	54 34.84 N	166 07.65 W	CTDB	Chlor, CTD, Fluor, PAR	12 nutrient samples . 0m chlor samples filter leaked; but remaining sample was poured into small calibrated bottle so sample is ok.
09-Sep-08	17:51	159	2	UPW2	BON094	420	54 35.02 N	166 08.51 W	20Bon	QTowF	Humpback whales nearby.
09-Sep-08	17:51	159	2	UPW2	BON094	420	54 35.02 N	166 08.51 W	60Bon	QTowF	Humpback whales nearby.
09-Sep-08	17:51	159	2	UPW2	BON094	420	54 35.02 N	166 08.51 W	CAT	CAT	Humpback whales nearby.
09-Sep-08	19:11	160	1	UPW1	CTD163	298	54 40.97 N	166 14.20 W	CTDB	Chlor, CTD, Fluor, PAR	11 nutrient samples .
09-Sep-08	20:24	160	2	UPW1	BON095	295	54 41.01 N	166 14.99 W	20Bon	QTowF	
09-Sep-08	20:24	160	2	UPW1	BON095	295	54 41.01 N	166 14.99 W	60Bon	QTowF	
09-Sep-08	20:24	160	2	UPW1	BON095	295	54 41.01 N	166 14.99 W	CAT	CAT	
10-Sep-08	4:54	161	1	LL5	CTD164	1720	55 06.95 N	168 29.04 W	CTDB	CTD, Fluor, PAR	12 nutrient samples
10-Sep-08	8:00	162	2	LL6	CTD165	2340	54 50.10 N	168 44.58 W	CTDB	CTD, Fluor, PAR	12 nutrient samples .
10-Sep-08	11:15	163	1	LL7	CTD166	1711	54 39.93 N	169 12.11 W	CTDB	Chlor, CTD, Fluor, PAR	12 nutrient samples .
10-Sep-08	12:24	163	2	LL7	BON096	1714	54 39.57 N	169 13.88 W	20Bon	QTowF	Flowmeters spinning in wind.
10-Sep-08	12:24	163	2	LL7	BON096	1714	54 39.57 N	169 13.88 W	60Bon	QTowF	Flowmeters spinning in wind.
10-Sep-08	12:24	163	2	LL7	BON096	1714	54 39.57 N	169 13.88 W	CAT	CAT	Flowmeters spinning in wind.
10-Sep-08	21:31	164	1	LL9	CTD167	1830	54 02.24 N	169 33.25 W	CTDB	Chlor, CTD, Fluor, PAR	12 nutrieny samples .

Date (GMT)	Time (GMT)	Station	Haul	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	SamplesCollected	HaulComments
10-Sep-08	22:38	164	2	LL9	BON097	1825	54 01.68 N	169 33.24 W	20Bon	QTowF	
10-Sep-08	22:38	164	2	LL9	BON097	1825	54 01.68 N	169 33.24 W	60Bon	QTowF	
10-Sep-08	22:38	164	2	LL9	BON097	1825	54 01.68 N	169 33.24 W	CAT	CAT	
11-Sep-08	2:09	165	1	L11	CTD168	1756	53 36.31 N	169 01.78 W	CTDB	Chlor, CTD, Fluor, PAR	12 nutrient samples collected .
11-Sep-08	4:26	166	1	LL14	CTD169	1268	53 26.42 N	168 47.62 W	CTDB	Chlor, CTD, Fluor, PAR	12 nutrient samples
11-Sep-08	5:54	167	1	LL15	CTD170	422	53 22.17 N	168 41.52 W	CTDB	Chlor, CTD, Fluor, PAR	11 nutrient samples .
11-Sep-08	6:31	167	2	LL15	BONO98	212	53 22.47 N	168 40.11 W	20Bon	QtowF	
11-Sep-08	6:31	167	2	LL15	BONO98	212	53 22.47 N	168 40.11 W	60Bon	QTowF	
11-Sep-08	6:31	167	2	LL15	BONO98	212	53 22.47 N	168 40.11 W	CAT	CAT	
11-Sep-08	16:15	Arrive Dutch Harbor									