

**CRUISE REPORT**  
**MF-09-04 LEG II**  
**NOAA Ship Miller Freeman**  
**21 Sept. -13 Oct., 2009**

**Area of Operations:** Bering Sea - Dutch Harbor to south of St. Lawrence Island

**Itinerary:** Sept. 19-21 Load and prep for cruise. Sept. 22<sup>nd</sup> Depart Dutch Harbor. 13 Oct. End Cruise in Dutch Harbor, AK.

**Participating Organizations:**

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Jay Clark, NOAA/AFSC.RACE

**Participating Scientists:** Chrissy Jump, NOAA/AFSC/RACE  
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Lisa Deforest, NOAA/AFSC/RACE  
Hyun-Cheol Kim, School of Envir. Science, Korea  
Dr. Peter Proctor, NOAA/PMEL

**Cruise Objectives:** The continuation of a long term time series designed to describe the physical and biological characteristics of the Bering Sea shelf between Dutch Harbor and St. Lawrence Island. Methods include the recovery and deployment of several oceanographic instrumentation moorings, CTD casts, Bongo Tows, ADCP and shipboard metrological data collection.

### **Summary of Operations and Samples Collected:**

|  |     |
|--|-----|
| 20 cm bongo tows                       | 67  |
| 60 cm bongo tows                       | 67  |
| CalVet vertical tows                   | 12  |
| Seabird SeaCat data files              | 80  |
| Seabird CTD casts                      | 132 |
| Moorings deployed and recovered        | 19  |
| Salinity samples                       | 121 |
| Dissolved Oxygen samples               |     |
| Dissolved Organic Carbon               | 333 |
| Dissolved Inorganic Carbon             | 326 |
| Nutrient Samples                       | 898 |
| Seawater ph samples                    | 340 |
| Seabird observations (hours on effort) | 68  |

### **Cruise Summary:**

We were fortunate to have the opportunity to load some of the mooring equipment aboard the Miller Freeman late August, prior to their departure from Seattle. The remainder of the equipment needed for this cruise was shipped to Dutch Harbor via Horizon lines in a 40 foot container. Prior to loading the ship in Dutch Harbor the fishing nets and trawl doors from the previous cruise were offloaded to clear deck space for the mooring equipment. The AFSC items along with other fisheries equipment in storage at OSI were loaded onto a flat and shipped to Seattle via Samson Lines shipping. I was able to include our BSM-4 surface mooring float and tower on this shipment south. For review, the surface mooring at site BS-4 was scheduled for recovery on this Freeman mooring cruise. Sometime after BSM-4A was deployed in the spring of 2009, the ice advanced and moved the mooring approximately 4 miles south east and into shallower water. The change in water depth allowed to the release to drag on the bottom. Eventually a portion of the release that holds the release link failed and the mooring

started to drift. The Oscar Dyson was in the area and agreed to recover the mooring and place it in storage at OSI in Dutch Harbor.

The instruments from this mooring were loaded aboard the Miller Freeman prior to the Sept. mooring cruise.

With several distinct sampling protocols scheduled for this cruise, laboratory space was tight. Set up time took a little longer than anticipated and there were some issues with U.S. vs European power requirements for some of the equipment. In addition I would like to thank the Command of the Miller Freeman for opening up an extra bunk allowing us to include the sea bird observer from the U.S. fish and wildlife Service.

Loading was completed and we were scheduled to depart Dutch Harbor the afternoon of Sept. 22<sup>nd</sup>. A member of the science party neglected to confirm the date of their last TB test. Their test expired a week prior to the cruise, a new TB test was given by the Dutch Harbor medical clinic. We were required to remain in Dutch Harbor an extra day to meet the 48 hour injection to read time required by NOAA. Unfortunately waiting that extra day allowed time for the first of many storms to catch us so an additional day was spent on anchor in Dutch Harbor. Around 6:30am on Sept. 24<sup>th</sup> we pulled anchor and headed for our first mooring recovery.

On the afternoon of Sept. 24<sup>th</sup> mooring 09-BSP-9A was recovered. This is an ADCP mooring deployed for AFSC FOCI division. The second ADCP mooring in this group of 2 was trawled up by the F/V Nordic Star and dropped off in Dutch Harbor earlier in the year.

Due to high winds and high seas the ship steamed slowly to mooring site BS-2 arriving at the morning of Sept. 25<sup>th</sup>. We completed CTD and bongo sampling around the mooring site before beginning mooring operations at daylight that afternoon. First out of the water was mooring 09-BSP-2A. Next mooring recovered was 09-BST-2A, the TAPS mooring. Moorings 09-BSP-2B and 09-BS-2C were deployed prior to recovery of the surface mooring. Once the seas calmed down a bit surface mooring 09-BSM-2A was recovered late on Sept. 25<sup>th</sup>. We completed the box of CTD/bongo stations around mooring site BS-2 then made our way up the 70 meter depth contour completing CTD and bongo casts at the designated stations. We arrive at the mooring site BS-4 at noon on Sept. 27<sup>th</sup>.

Because the surface mooring originally at site BS-4 had drifted and was recovered earlier by the Oscar Dyson only mooring 09-BSP-4A was left to recover at site 4. Moorings 09-BSP-4B, 09-BS-4B and 09-BSIP-4B (the ice thickness mooring) were successfully deployed at this site.

We finished the CTD/bongo combination at the remaining 2 corner stations at BS-4 and proceeded north along the 70 meter contour with CTD casts and bongo tows.

At 1100 Sept. 29<sup>th</sup> we arrived at the BS-5 mooring site. Moorings 09-BS-5A and 09-BSP-5A were successfully recovered. Moorings 09-BS-5B and 09-BSP-5B were successfully deployed.

The CTD/Bongo corner stations were completed before working our way north again along the 70 meter contour to mooring site BS-8. Arriving on site at sunrise Oct. 1<sup>st</sup> moorings 09-BSV-8A, 08-BSP-8A and 08-BS-8A were recovered. The top break away temperature sensor was missing from mooring 09-BSV-8A. This mooring was deployed in Aug. and designed for shallow depth temperature data. Since the temperature sensor is at 15 feet depth or less it's not unexpected to have the top sensor missing due to an

interaction with a ship's propeller. Moorings 09-BSP-8A and 09-BS-8A were deployed without issue and will remain on site for one full year.

The work at mooring site BS-8 concludes the mooring activities scheduled for the Bering Sea segment of this cruise. In spite of having several days with less than acceptable working weather all scheduled mooring recoveries and deployments were complete. The cruise plan mapped out CTD/Bongo stations on lines running through each of the historic Bering Sea mooring locations (BS-2,BS-4,BS-5 and BS-8) and perpendicular to the 70 meter isobath. Due to time lost to weather we were able to complete 3 of the 4 scheduled station lines.

On 3 Oct. we started the SL line of stations running perpendicular to mooring site BS-8. This line of 14 stations was completed on the afternoon of Oct. 4<sup>th</sup>.

Following a few hour transit, late on Oct. 4<sup>th</sup>, we started the CTD/bongo sampling along the MN line running perpendicular to mooring site BS-5. This line of 18 stations on the MN line were complete on Oct. 6<sup>th</sup> around noon.

Due to time limitations and prioritizing the line through mooring site 4 was skipped and we steamed to the start of the CN line transecting mooring site BS-2. 23 CTD/Bongo stations were completed along the CN line. With a few hours left on the clock the CN line was extended past the shelf break picking up several 1500 meter CTD casts.

The final CTD cast for the Bering Sea segment of this cruise was completed the morning of Oct. 10<sup>th</sup>. The Freeman steamed to Dutch Harbor for an overnight in-port Oct. 10/11. All Science party members with the exception of Wm. Floering disembarked in Dutch Harbor and the vessel took on fuel. Oct. 11<sup>th</sup> the Freeman left Dutch Harbor steaming to a mooring recovery in Pavlof Bay.

Mooring 08-PA-1A was recovered and mooring 09-PA-1A was successfully deployed on Oct. 12<sup>th</sup>. Calibration CTD casts were taken prior to recovery and following deployment. From Pavlof Bay we set a course for Chiniak Bay near the town of Kodiak,AK. Early evening of Oct. 14<sup>th</sup> we arrived at the Chiniak Bay mooring site. Mooring 09-CB-1A was recovered and mooring 09-CB-2A was successfully deployed. Once again calibration CTD casts were completed prior to recovery and following the new mooring deployment. The Oscar Dyson was in Kodiak and offered to send their small boat out to Chiniak to pick me up, saving the Freeman from having to navigate into Kodiak and tie up. I was picked up and dropped at the pier around 10pm the night of Oct. 14<sup>th</sup>. On Oct. 15<sup>th</sup> I flew to Seattle.

For GMT times and positions for all moorings and other operations see the corrected MOA Excel file.

All mooring and scientific equipment remained on the Miller Freeman for transport to Seattle. The Freeman tied up at Federal Center South in Seattle. Equipment was off loaded and taken to NOAA Sand Point by OERD-2 personnel.

### **Issues and Observations:**

As expected this time of year, we endured a number of pre-winter storms with winds in the 35-50 knot range. It's difficult to calculate the exact number of days or hours lost to weather because the weather impacts transit time and scheduling of operations as well as discontinuing operations when conditions dictate. Due to the failure of the centerboard acoustic release transducer the search for a missing mooring at site BS-2 was canceled.

Seems every cruise we experience the same difficulties with the computer generated SCS station record keeping. For what ever reason the correct buttons and/or annotations are not being entered by the bridge staff and the appropriate people are not notified when the system locks up. The SCS MOA is the primary record for location, time and conditions for each CTD, Bongo, mooring or any other important event. If the events are not documented correctly someone has to invest a number of hours to reconcile the mistakes and omissions. This year the Chief Survey Technician corrected the mistakes.

### **Overview of Ancillary and Cooperative Projects:**

U.S. Fish and Wildlife Service, represented by Aaron Lang for Migratory Bird Management. The seabird and marine mammal observation data will be archived in the North Pacific Pelagic Seabird database.

Observations were from the bridge port side using 8x binoculars during daylight hours. Observation field was a 300 meter, 90 degree arc from the bow to mid ship.

Alaska Fisheries Science Center/RACE/FOCI represented by Jay Clark, Chrissy Jump, Steve Porter and Lisa DeForest. Continuation of the time series study of zooplankton and phytoplankton distribution and abundance in the eastern Bering Sea coupled with chlorophyll sampling from the underway seawater sampling system and from the CTD bottle casts. Vertical CalVet tows, 60cm and 20cm bongo tows were the primary sampling devices. 333 micron nets for the 60 cm bongo, 153 micron nets for the 20 cm bongo and 53 micron nets in the CalVet.

Pohang University of Science and Technology, Puhang South Korea, represented by Hyun Cheol Kim. From the CTD bottle casts Mr. Kim was sampling seawater pH (total alkalinity) dissolved organic carbon and dissolved inorganic carbon.

Pennsylvania State University, Miksis-Olds Acoustic Laboratory represented by Samuel Denes. Mr. Denes maintained passive and active acoustic sensors deployed at our mooring sites BS-2 and BS-5 to observe the cumulative and synergistic effects of biological, physical and acoustical signals on marine mammal habitat use. The passive acoustic devices (PALs) adaptively subsample the acoustic environment of the Eastern Bering Sea. The Acoustic Water Column Profilers (AWCP) arrays use active acoustics to characterize zooplankton concentrations at each of the selected mooring locations.

University of Alaska Fairbanks, represented by Jessica Cross and Daniel Naber. Jessica Cross collected dissolved organic and dissolved inorganic water samples from the CTD bottle casts. Daniel Naber set up and maintained the ISUS nutrient sampling instruments attached to a number of the Bering Sea mooring string.

**Table of Operations (Times and Positions):**

| Station Name        | Station/Haul | Activity            | Depth (m) | Transit (hrs) |
|---------------------|--------------|---------------------|-----------|---------------|
| Depart Dutch Harbor |              | DEPART              |           |               |
| CN16                |              | CTD/BON             | 456       | 10.3          |
| CN14                |              | CTD/BON             | 139       | 1.9           |
| CN13                |              | ctd                 | 137       | 1.5           |
| CN12                |              | CTD/BON             | 133       | 1.5           |
| CN11                |              | ctd                 | 125       | 1.5           |
| CN10                |              | CTD/BON             | 107       | 1.6           |
| CN9                 |              | ctd                 | 91        | 1.5           |
| CN8                 |              | CTD/BON             | 80        | 1.5           |
| CN7                 |              | ctd                 | 80        | 1.5           |
| CN6                 |              | CTD/BON             | 73        | 1.5           |
| CN5/ M2             |              | ctd                 | 71        | 1.8           |
| CN4                 |              | CTD/BON             | 60        | 1.5           |
| CN3                 |              | ctd                 | 47        | 1.7           |
| CN2??               |              | CTD/BON             | 46        | 1.6           |
| CTD - M2E           |              | CTD/BON             | 70        | 4.3           |
| CTD -M2N            |              | CTD/BON             | 73        | 1.3           |
| CTD - M2W           |              | CTD/BON             | 75        | 1.5           |
| CTD -M2S            |              | CTD/BON             | 73        | 1.6           |
| 70M2/M2             |              | mooring site-in2008 | 74        | 1.3           |
| 70M2/M2             |              | 3 CalVETs           | 73        | 0.1           |
| 70M2/M2             |              | CTD/BON             | 73        | 0.0           |
| 70M3                |              | CTD/BON             | 73        | 1.7           |
| 70M4                |              | ctd                 | 72        | 1.0           |

|                         |  |           |    |     |
|-------------------------|--|-----------|----|-----|
| 70M5                    |  | CTD/BON   | 73 | 1.0 |
| 70M6                    |  | ctd       | 72 | 1.1 |
| 70M7                    |  | CTD/BON   | 70 | 1.0 |
| 70M8                    |  | ctd       | 70 | 1.0 |
| 70M9                    |  | CTD/BON   | 70 | 0.9 |
| 70M10                   |  | ctd       | 70 | 1.0 |
| 70M11                   |  | CTD/BON   | 70 | 0.9 |
| 70M12                   |  | ctd       | 70 | 0.9 |
| 70M13                   |  | CTD/BON   | 70 | 0.9 |
| 70M14                   |  | ctd       | 71 | 0.9 |
| 70M15                   |  | CTD/BON   | 72 | 1.0 |
| 70M16                   |  | ctd       | 71 | 1.0 |
| 70M17                   |  | CTD/BON   | 79 | 1.0 |
| 70M18                   |  | ctd       | 78 | 1.0 |
| 70m19-M4S               |  | CTD/BON   | 75 | 0.5 |
| CTD - M4E               |  | CTD/BON   | 74 | 1.0 |
| 70M21/M4                |  | 3 CalVETs | 73 | 0.8 |
| 70M21/M4                |  | CTD/BON   | 73 | 0.0 |
| 70M21 M4-go1 mi<br>away |  | Mooring   | 73 | 0.1 |
| 70m22 - M4W             |  | CTD/BON   | 71 | 1.1 |
| CTD - M4N               |  | CTD/BON   | 71 | 1.1 |
| 70M23                   |  | ctd       | 70 | 1.5 |
| 70M24                   |  | CTD/BON   | 69 | 0.9 |
| 70M25                   |  | ctd       | 71 | 1.0 |
| 70M26                   |  | CTD/BON   | 72 | 0.9 |
| 70M27                   |  | ctd       | 73 | 1.0 |
| 70M28                   |  | CTD/BON   | 72 | 1.0 |

|             |  |                   |    |     |
|-------------|--|-------------------|----|-----|
| 70M29       |  | ctd               | 71 | 0.9 |
| 70M30       |  | CTD/BON           | 72 | 1.0 |
| 70M31       |  | ctd               | 69 | 0.9 |
| 70M32       |  | CTD/BON           | 68 | 0.9 |
| 70M33       |  | ctd               | 70 | 0.9 |
| 70M34       |  | CTD/BON           | 86 | 0.9 |
| 70M35       |  | ctd               | 85 | 0.9 |
| 70M36       |  | CTD/BON           | 84 | 0.9 |
| 70M37       |  | ctd               | 83 | 1.0 |
| M5E         |  | CTD/BON           | 81 | 0.9 |
| CTD - M5S   |  | CTD/BON           | 80 | 1.3 |
| 70m38/ M5   |  | 3 CalVETs         | 79 | 1.3 |
| 70m38/ M5   |  | CTD/BON           | 79 | 0.0 |
| 70m38M5     |  | mooring site 2008 | 79 | 0.1 |
| 70M38 - M5N |  | CTD/BON           | 77 | 1.3 |
| 70M39 M5W   |  | CTD/BON           | 76 | 1.1 |
| 70M40       |  | ctd               | 74 | 0.8 |
| 70M41       |  | CTD/BON           | 68 | 1.0 |
| 70M42       |  | ctd               | 70 | 0.8 |
| 70M43       |  | CTD/BON           | 70 | 1.0 |
| 70M44       |  | ctd               | 70 | 1.0 |
| 70M45       |  | CTD/BON           | 60 | 1.0 |
| 70M46       |  | ctd               | 68 | 0.9 |
| 70M47       |  | CTD/BON           | 72 | 1.0 |
| 70M48       |  | ctd               | 83 | 1.1 |
| 70M49       |  | CTD/BON           | 79 | 0.9 |
| 70M50       |  | ctd               | 75 | 1.1 |
| 70M51       |  | CTD/BON           | 75 | 0.9 |



|           |  |                         |     |      |
|-----------|--|-------------------------|-----|------|
| 70M52     |  | ctd                     | 72  | 0.9  |
| 70M53     |  | CTD/BON                 | 71  | 1.0  |
| 70M54     |  | ctd                     | 71  | 1.0  |
| 70M55     |  | CTD/BON                 | 73  | 0.9  |
| m8-S      |  | Mooring 2008            | 70  | 0.7  |
| 70M56     |  | ctd                     | 74  | 0.3  |
|           |  | moorings- 3 pickups & 2 |     | 1.0  |
| M8        |  | deployed                | 71  |      |
| SL1bb     |  | CTD/BON                 | 25  | 17.0 |
| SL1aa     |  | ctd                     | 25  | 1.9  |
| SL1       |  | CTD/BON                 | 30  | 1.9  |
| SL2a      |  | ctd                     | 35  | 1.9  |
| SL4a      |  | CTD/BON                 | 43  | 1.9  |
| SL6a      |  | ctd                     | 45  | 1.9  |
| SL8a      |  | CTD/BON                 | 50  | 1.9  |
| SL9a      |  | ctd                     | 60  | 1.9  |
| SL11a     |  | CTD/BON                 | 70  | 1.9  |
| M8E/SL12a |  | CTD/BON                 | 70  | 0.9  |
| M8-N      |  | CTD/BON                 | 80  | 1.7  |
| M8        |  | CTD                     | 70  | 1.3  |
| M8        |  | mooring site            | 71  | 0.1  |
| SL14/M8W  |  | ctd                     | 80  | 1.1  |
| SL12      |  | CTD                     | 70  | 1.4  |
| SL15      |  | CTD/BON                 | 85  | 2.5  |
| SL16      |  | ctd                     | 90  | 1.0  |
| MN18      |  | ctd                     | 173 | 14.6 |
| MN17      |  | CTD/BON                 | 135 | 1.7  |
| MN16      |  | ctd                     | 100 | 1.7  |

|             |  |                            |     |     |
|-------------|--|----------------------------|-----|-----|
| MN15        |  | CTD/BON                    | 100 | 1.7 |
| MN14        |  | ctd                        | 132 | 1.7 |
| MN13        |  | CTD/BON                    | 100 | 1.7 |
| MN12        |  | ctd                        | 90  | 1.7 |
| MN11        |  | CTD/BON                    | 80  | 1.7 |
| MN10        |  | ctd                        | 76  | 1.7 |
| MN9         |  | CTD/BON                    | 70  | 1.7 |
| MN8         |  | ctd                        | 66  | 1.7 |
| 70m20~site5 |  | Mooring site-NOT a Station | 67  | 1.4 |
| MN7         |  | CTD/BON                    | 70  | 0.3 |
| MN6         |  | CTD/BON                    | 66  | 1.7 |
| MN5         |  | ctd                        | 64  | 1.7 |
| MN4         |  | CTD/BON                    | 50  | 1.7 |
| MN3         |  | ctd                        | 48  | 1.7 |
| MN2         |  | CTD/BON                    | 42  | 1.7 |
| MN1         |  | ctd                        | 38  | 1.7 |
| NP01        |  | CTD/BON                    | 38  | 4.2 |
| NP02        |  | ctd                        | 41  | 0.8 |
| NP2a        |  | CTD/BON                    | 43  | 0.7 |
| NP03        |  | ctd                        | 45  | 0.8 |
| NP3a        |  | CTD/BON                    | 51  | 0.8 |
| NP04        |  | ctd                        | 74  | 0.8 |
| NP05        |  | CTD/BON                    | 72  | 1.6 |
| NP06        |  | ctd                        | 70  | 1.5 |
| NP07        |  | ctd                        | 68  | 1.6 |
| NP08        |  | CTD/BON                    | 69  | 1.5 |
| NP09        |  | ctd                        | 67  | 1.6 |
| NP10        |  | CTD/BON                    | 75  | 0.8 |

|                            |  |                |             |             |
|----------------------------|--|----------------|-------------|-------------|
| <b>NP11</b>                |  | <b>ctd</b>     | <b>74</b>   | <b>2.3</b>  |
| <b>NP12</b>                |  | <b>CTD105</b>  | <b>123</b>  | <b>1.6</b>  |
| <b>NP13</b>                |  | <b>CTD/BON</b> | <b>123</b>  | <b>1.5</b>  |
| <b>NP14</b>                |  | <b>ctd</b>     | <b>136</b>  | <b>1.5</b>  |
| <b>NP15</b>                |  | <b>CTD/BON</b> | <b>2752</b> | <b>1.5</b>  |
| <b>Depart Dutch Harbor</b> |  | <b>DEPART</b>  |             | <b>20.2</b> |

# Cruise Summary:

## Cruise Summary For FOCI Cruise 2MF09 (MF0904L2)

| Date (GMT) | Time (GMT) | Statio | Hau | FOCI Grid | Alternat Station | Depth (m) | Latitude   | Longitude   | Gear   | SamplesCollected       | HaulComments                         |
|------------|------------|--------|-----|-----------|------------------|-----------|------------|-------------|--------|------------------------|--------------------------------------|
| 24-Sep-09  | 19:52      | 1      | 1   |           | CTD001           | 398       | 54 35.67 N | 166 34.16 W | CTD    | CTD, Fluor, PAR        | CTD before mooring recovery 09BSP-9A |
| 24-Sep-09  | 20:18      | 1      | 2   |           |                  | 396       | 54 35.64 N | 166 33.22 W | Moor   | Recovery               | Mooring recovery 09BSP-9A            |
| 25-Sep-09  | 14:11      | 2      | 1   | M2S       | CTD002           | 76        | 56 39.90 N | 163 53.04 W | CTDB   | Chlor, CTD, Fluor, PAR | Mooring Site 2, south corner         |
| 25-Sep-09  | 14:47      | 2      | 2   | M2S       | BON001           | 75        | 56 39.75 N | 163 53.01 W | 20Bon  | QTowF                  | Mooring 2, south corner              |
| 25-Sep-09  | 14:47      | 2      | 2   | M2S       | BON001           | 75        | 56 39.75 N | 163 53.01 W | 60Bon  | QTowF                  | Mooring 2, south corner              |
| 25-Sep-09  | 14:47      | 2      | 2   | M2S       | BON001           | 75        | 56 39.75 N | 163 53.01 W | CAT    | CAT                    | Mooring 2, south corner              |
| 25-Sep-09  | 16:55      | 3      | 1   | M2        | CTD003           | 72        | 56 51.56 N | 164 03.62 W | CTDB   | Chlor, CTD, Fluor, PAR |                                      |
| 25-Sep-09  | 17:29      | 3      | 2   | M2        | CTD004           | 72        | 56 51.80 N | 164 04.44 W | CTDB   | Chlor, CTD, Fluor, PAR |                                      |
| 25-Sep-09  | 17:58      | 3      | 3   | M2        | CTD005           | 72        | 56 52.08 N | 164 04.50 W | CTDB   | Chlor, CTD, Fluor, PAR |                                      |
| 25-Sep-09  | 18:28      | 3      | 4   | M2        | CAL001           | 71        | 56 52.13 N | 164 04.79 W | CalVET | QTowF                  | nets 1 and 2 combined                |
| 25-Sep-09  | 18:28      | 3      | 4   | M2        | CAL001           | 71        | 56 52.13 N | 164 04.79 W | CAT    | CAT                    | nets 1 and 2 combined                |
| 25-Sep-09  | 18:43      | 3      | 5   | M2        | CAL002           | 73        | 56 52.01 N | 164 05.16 W | CalVET | QTowF                  | nets 1 and 2 combined                |
| 25-Sep-09  | 18:43      | 3      | 5   | M2        | CAL002           | 73        | 56 52.01 N | 164 05.16 W | CAT    | CAT                    | Nets 1 and 2 combined                |
| 25-Sep-09  | 18:58      | 3      | 6   | M2        | CAL003           | 73        | 56 51.92 N | 164 05.43 W | CalVET | QTowF                  | nets 1 and 2 combined                |
| 25-Sep-09  | 18:58      | 3      | 6   | M2        | CAL003           | 73        | 56 51.92 N | 164 05.43 W | CAT    | CAT                    | nets 1 and 2 combined                |
| 25-Sep-09  | 19:19      | 3      | 7   | M2        | BON002           | 73        | 56 51.56 N | 164 03.76 W | 20Bon  | QTowF                  |                                      |
| 25-Sep-09  | 19:19      | 3      | 7   | M2        | BON002           | 73        | 56 51.56 N | 164 03.76 W | 60Bon  | QTowF                  |                                      |
| 25-Sep-09  | 19:19      | 3      | 7   | M2        | BON002           | 73        | 56 51.56 N | 164 03.76 W | CAT    | CAT                    |                                      |
| 25-Sep-09  | 20:12      | 3      | 8   | M2        |                  | 73        | 56 51.96 N | 164 02.78 W | Moor   | Recovery               | Mooring 2, 09BSP-2A recovery         |
| 25-Sep-09  | 21:27      | 3      | 9   | M2        |                  | 73        | 56 51.91 N | 164 03.26 W | Moor   | Recovery               | Mooring 2, 09BST-2A recovery         |
| 26-Sep-09  | 0:16       | 3      | 10  | M2        |                  | 73        | 56 51.57 N | 164 03.80 W | Moor   | Deploy                 | Mooring 2 deployment 09BSP-2B        |
| 26-Sep-09  | 2:33       | 3      | 11  | M2        |                  | 73        | 56 51.23 N | 164 04.54 W | Moor   | Deploy                 | MOORING 2 DEPLOYMENT 09BS-2C         |
| 26-Sep-09  | 5:12       | 3      | 12  | M2        |                  | 73        | 56 51.93 N | 164 03.18 W | Moor   | Recovery               | MOORING 2 RECOVERY, 09BSM-2A         |
| 26-Sep-09  | 6:51       | 3      | 13  | M2        | CTD006           | 73        | 56 51.10 N | 164 03.63 W | CTDB   | Chlor, CTD, Fluor, PAR |                                      |
| 26-Sep-09  | 7:28       | 3      | 14  | M2        | CTD007           | 73        | 56 51.04 N | 164 03.36 W | CTDB   | Chlor, CTD, Fluor, PAR |                                      |
| 26-Sep-09  | 8:47       | 4      | 1   | M2E       | CTD008           | 71        | 56 56.76 N | 163 50.15 W | CTDB   | Chlor, CTD, Fluor, PAR | MOORING 2 EAST CORNER                |
| 26-Sep-09  | 9:13       | 4      | 2   | M2E       | BON003           | 71        | 56 56.60 N | 163 49.94 W | 20Bon  | QTowF                  | 2 JELLIES REMOVED FROM 60 BON NET 1. |
| 26-Sep-09  | 9:13       | 4      | 2   | M2E       | BON003           | 71        | 56 56.60 N | 163 49.94 W | 60Bon  | QTowF                  | MOORING 2 EAST CORNER                |
| 26-Sep-09  | 9:13       | 4      | 2   | M2E       | BON003           | 71        | 56 56.60 N | 163 49.94 W | 60Bon  | QTowF                  | 2 JELLIES REMOVED FROM 60 BON NET 1. |
| 26-Sep-09  | 9:13       | 4      | 2   | M2E       | BON003           | 71        | 56 56.60 N | 163 49.94 W | CAT    | CAT                    | MOORING 2 EAST CORNER                |
| 26-Sep-09  | 9:13       | 4      | 2   | M2E       | BON003           | 71        | 56 56.60 N | 163 49.94 W | CAT    | CAT                    | 2 JELLIES REMOVED FROM 60 BON NET 1. |
| 26-Sep-09  | 10:55      | 5      | 1   | M2N       | CTD009           | 70        | 57 00.87 N | 164 12.65 W | CTDB   | Chlor, CTD, Fluor, PAR | MOORING 2 NORTH CORNER               |
| 26-Sep-09  | 11:16      | 5      | 2   | M2N       | BON004           | 70        | 57 01.11 N | 164 12.67 W | 20Bon  | QTowF                  | MOORING 2 NORTH CORNER               |
| 26-Sep-09  | 11:16      | 5      | 2   | M2N       | BON004           | 70        | 57 01.11 N | 164 12.67 W | 60Bon  | QTowF                  | MOORING 2 NORTH CORNER               |
| 26-Sep-09  | 11:16      | 5      | 2   | M2N       | BON004           | 70        | 57 01.11 N | 164 12.67 W | CAT    | CAT                    | MOORING 2 NORTH CORNER               |
| 26-Sep-09  | 10:55      | 6      | 1   | M2W       | CTD010           | 84        | 56 45.77 N | 164 20.10 W | CTDB   | Chlor, CTD, Fluor, PAR | MOORING 2 WEST CORNER                |
| 26-Sep-09  | 13:23      | 6      | 2   | M2W       | BON005           | 75        | 56 45.84 N | 164 20.24 W | 20Bon  | QTowF                  | MOORING 2 WEST CORNER                |
| 26-Sep-09  | 13:23      | 6      | 2   | M2W       | BON005           | 75        | 56 45.84 N | 164 20.24 W | 60Bon  | QTowF                  | MOORING 2 WEST CORNER                |
| 26-Sep-09  | 13:23      | 6      | 2   | M2W       | BON005           | 75        | 56 45.84 N | 164 20.24 W | CAT    | CAT                    | MOORING 2 WEST CORNER                |

## Cruise Summary For FOCI Cruise 2MF09 (MF0904L2)

| Date<br>(GMT) | Time<br>(GMT) | Statio | Hau | FOCI<br>Grid | Alternat<br>Station | Depth<br>(m) | Latitude   | Longitude   | Gear  | SamplesCollected       | HaulComments  |
|---------------|---------------|--------|-----|--------------|---------------------|--------------|------------|-------------|-------|------------------------|---|
| 26-Sep-09     | 14:28         | 7      | 1   | 70M3         | CTD011              | 74           | 56 48.15 N | 164 35.04 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 26-Sep-09     | 14:46         | 7      | 2   | 70M3         | BON006              | 74           | 56 48.26 N | 164 35.24 W | 20Bon | QTowF                  | 1 JELLY REMOVED FROM 60 BON NET 1   |
| 26-Sep-09     | 14:46         | 7      | 2   | 70M3         | BON006              | 74           | 56 48.26 N | 164 35.24 W | 60Bon | QTowF                  | 1 JELLY REMOVED FROM 60 BON NET 1   |
| 26-Sep-09     | 14:46         | 7      | 2   | 70M3         | BON006              | 74           | 56 48.26 N | 164 35.24 W | CAT   | CAT                    | 1 JELLY REMOVED FROM 60 BON NET 1   |
| 26-Sep-09     | 16:15         | 8      | 1   | 70M4         | CTD012              | 72           | 56 54.45 N | 164 49.73 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 26-Sep-09     | 17:36         | 9      | 1   | 70M5         | CTD013              | 74           | 56 51.27 N | 165 06.79 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 26-Sep-09     | 17:58         | 9      | 2   | 70M5         | BON007              | 74           | 56 51.36 N | 165 07.23 W | 20Bon | QTowF                  |   |
| 26-Sep-09     | 17:58         | 9      | 2   | 70M5         | BON007              | 74           | 56 51.36 N | 165 07.23 W | 60Bon | QTowF                  |   |
| 26-Sep-09     | 17:58         | 9      | 2   | 70M5         | BON007              | 74           | 56 51.36 N | 165 07.23 W | CAT   | CAT                    |   |
| 26-Sep-09     | 19:27         | 10     | 1   | 70M6         | CTD014              | 72           | 56 59.69 N | 165 22.40 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 26-Sep-09     | 20:39         | 11     | 1   | 70M7         | CTD015              | 71           | 57 06.17 N | 165 36.15 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 26-Sep-09     | 21:14         | 11     | 2   | 70M7         | BON008              | 71           | 57 06.42 N | 165 36.50 W | 20Bon | QTowF                  |   |
| 26-Sep-09     | 21:14         | 11     | 2   | 70M7         | BON008              | 71           | 57 06.42 N | 165 36.50 W | 60Bon | QTowF                  |   |
| 26-Sep-09     | 21:14         | 11     | 2   | 70M7         | BON008              | 71           | 57 06.42 N | 165 36.50 W | CAT   | CAT                    |   |
| 26-Sep-09     | 22:31         | 12     | 1   | 70M8         | CTD016              | 70           | 57 15.62 N | 165 44.35 W | CTDB  | Chlor, CTD, Fluor, PAR | Surface chlorophyll was taken using a bucket over the side - broken bottle. |
| 26-Sep-09     | 23:58         | 13     | 1   | 70M9         | CTD017              | 70           | 57 19.27 N | 166 00.63 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 27-Sep-09     | 0:34          | 13     | 2   | 70M9         | BON009              | 70           | 57 19.36 N | 166 00.97 W | 20Bon | QTowF                  |   |
| 27-Sep-09     | 0:34          | 13     | 2   | 70M9         | BON009              | 70           | 57 19.36 N | 166 00.97 W | 60Bon | QTowF                  |   |
| 27-Sep-09     | 0:34          | 13     | 2   | 70M9         | BON009              | 70           | 57 19.36 N | 166 00.97 W | CAT   | CAT                    |   |
| 27-Sep-09     | 1:58          | 14     | 1   | 70M10        | CTD018              | 71           | 57 19.14 N | 166 19.60 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 27-Sep-09     | 3:27          | 15     | 1   | 70M11        | CTD019              | 70           | 57 26.12 N | 166 30.84 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 27-Sep-09     | 3:55          | 15     | 2   | 70M11        | BON010              | 69           | 57 25.95 N | 166 30.66 W | 20Bon | QTowF                  |   |
| 27-Sep-09     | 3:55          | 15     | 2   | 70M11        | BON010              | 69           | 57 25.95 N | 166 30.66 W | 60Bon | QTowF                  |   |
| 27-Sep-09     | 3:55          | 15     | 2   | 70M11        | BON010              | 69           | 57 25.95 N | 166 30.66 W | CAT   | CAT                    |   |
| 27-Sep-09     | 5:13          | 16     | 1   | 70M12        | CTD020              | 70           | 57 25.71 N | 166 48.85 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 27-Sep-09     | 7:04          | 17     | 1   | 70M13        | CTD021              | 71           | 57 30.93 N | 167 02.24 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 27-Sep-09     | 7:34          | 17     | 2   | 70M13        | BON011              | 71           | 57 31.00 N | 167 02.17 W | 20Bon | QTowF                  |   |
| 27-Sep-09     | 7:34          | 17     | 2   | 70M13        | BON011              | 71           | 57 31.00 N | 167 02.17 W | 60Bon | QTowF                  |   |
| 27-Sep-09     | 7:34          | 17     | 2   | 70M13        | BON011              | 71           | 57 31.00 N | 167 02.17 W | CAT   | CAT                    |   |
| 27-Sep-09     | 8:59          | 18     | 1   | 70M14        | CTD022              | 71           | 57 29.84 N | 167 20.78 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 27-Sep-09     | 10:34         | 19     | 1   | 70M15        | CTD023              | 73           | 57 30.03 N | 167 40.18 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 27-Sep-09     | 11:00         | 19     | 2   | 70M15        | BON012              | 72           | 57 30.04 N | 167 40.21 W | 20Bon | QTowF                  | 2 jellies removed from 60 bon net 1   |
| 27-Sep-09     | 11:00         | 19     | 2   | 70M15        | BON012              | 72           | 57 30.04 N | 167 40.21 W | 60Bon | QTowF                  | 2 jellies removed from 60 bon net 1   |
| 27-Sep-09     | 11:00         | 19     | 2   | 70M15        | BON012              | 72           | 57 30.04 N | 167 40.21 W | CAT   | CAT                    | 2 jellies removed from 60 bon net 1   |
| 27-Sep-09     | 12:17         | 20     | 1   | 70M16        | CTD024              | 72           | 57 29.98 N | 167 59.09 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 27-Sep-09     | 13:38         | 21     | 1   | 70M17        | CTD025              | 72           | 57 31.26 N | 168 18.30 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 27-Sep-09     | 13:56         | 21     | 2   | 70M17        | BON013              | 72           | 57 30.95 N | 168 18.32 W | 20Bon | QTowF                  |   |
| 27-Sep-09     | 13:56         | 21     | 2   | 70M17        | BON013              | 72           | 57 30.95 N | 168 18.32 W | 60Bon | QTowF                  |   |

## Cruise Summary For FOCI Cruise 2MF09 (MF0904L2)

| Date (GMT) | Time (GMT) | Statio | Hau | FOCI Grid | Alternat Station | Depth (m) | Latitude   | Longitude   | Gear   | SamplesCollected       | HaulComments                      |
|------------|------------|--------|-----|-----------|------------------|-----------|------------|-------------|--------|------------------------|-----------------------------------|
| 27-Sep-09  | 13:56      | 21     | 2   | 70M17     | BON013           | 72        | 57 30.95 N | 168 18.32 W | CAT    | CAT                    |                                   |
| 27-Sep-09  | 15:09      | 22     | 1   | 70M18     | CTD026           | 72        | 57 31.27 N | 168 36.98 W | CTDB   | Chlor, CTD, Fluor, PAR |                                   |
| 27-Sep-09  | 16:14      | 23     | 1   | M4S       | CTD027           | 72        | 57 35.89 N | 168 42.45 W | CTDB   | Chlor, CTD, Fluor, PAR | MOORING 4 SOUTH CORNER            |
| 27-Sep-09  | 16:39      | 23     | 2   | M4S       | BON014           | 71        | 57 36.28 N | 168 41.82 W | 20Bon  | QTowF                  | MOORING 4 SOUTH CORNER            |
| 27-Sep-09  | 16:39      | 23     | 2   | M4S       | BON014           | 71        | 57 36.28 N | 168 41.82 W | 60Bon  | QTowF                  | MOORING 4 SOUTH CORNER            |
| 27-Sep-09  | 16:39      | 23     | 2   | M4S       | BON014           | 71        | 57 36.28 N | 168 41.82 W | CAT    | CAT                    | MOORING 4 SOUTH CORNER            |
| 27-Sep-09  | 18:28      | 24     | 1   | M4        | CTD028B          | 72        | 57 51.16 N | 168 51.25 W | CTDB   | Chlor, CTD, Fluor, PAR | Mooring site 4                    |
| 27-Sep-09  | 18:53      | 24     | 2   | M4        | CAL004           | 72        | 57 51.19 N | 168 51.14 W | CalVET | QTowF                  | nets 1 and 2 combined             |
| 27-Sep-09  | 18:53      | 24     | 2   | M4        | CAL004           | 72        | 57 51.19 N | 168 51.14 W | CAT    | CAT                    | nets 1 and 2 combined             |
| 27-Sep-09  | 19:05      | 24     | 3   | M4        | CAL005           | 72        | 57 51.26 N | 168 51.08 W | CalVET | QTowF                  | nets 1 and 2 combined             |
| 27-Sep-09  | 19:05      | 24     | 3   | M4        | CAL005           | 72        | 57 51.26 N | 168 51.08 W | CAT    | CAT                    | nets 1 and 2 combined             |
| 27-Sep-09  | 19:15      | 24     | 4   | M4        | CAL006           | 72        | 57 51.31 N | 168 51.00 W | CalVET | QTowF                  | nets 1 and 2 combined             |
| 27-Sep-09  | 19:15      | 24     | 4   | M4        | CAL006           | 72        | 57 51.31 N | 168 51.00 W | CAT    | CAT                    | nets 1 and 2 combined             |
| 27-Sep-09  | 19:30      | 24     | 5   | M4        | BON015           | 72        | 57 51.07 N | 168 50.82 W | 20Bon  | QTowF                  | mooring site 4                    |
| 27-Sep-09  | 19:30      | 24     | 5   | M4        | BON015           | 72        | 57 51.07 N | 168 50.82 W | 60Bon  | QTowF                  | mooring site 4                    |
| 27-Sep-09  | 19:30      | 24     | 5   | M4        | BON015           | 72        | 57 51.07 N | 168 50.82 W | CAT    | CAT                    | mooring site 4                    |
| 27-Sep-09  | 20:30      | 24     | 6   | M4        |                  | 72        | 57 50.97 N | 168 51.97 W | Moor   | Recovery               | Mooring 09bsp-4a recovery         |
| 27-Sep-09  | 22:54      | 24     | 7   | M4        |                  | 72        | 57 50.78 N | 168 51.65 W | Moor   | Deploy                 | Mooring 09BS-4B DEPLOYMENT        |
| 28-Sep-09  | 0:30       | 24     | 8   | M4        |                  | 72        | 57 50.97 N | 168 51.97 W | Moor   | Deploy                 | Mooring 09BSP-4B                  |
| 28-Sep-09  | 2:22       | 24     | 9   | M4        |                  | 72        | 57 50.70 N | 168 52.11 W | Moor   | Deploy                 | Mooring 09BSIP-4B                 |
| 28-Sep-09  | 2:59       | 24     | 10  | M4        | CTD029           | 73        | 57 50.62 N | 168 51.77 W | CTDB   | Chlor, CTD, Fluor, PAR |                                   |
| 28-Sep-09  | 4:37       | 25     | 1   | M4E       | CTD030           | 71        | 57 46.49 N | 168 40.06 W | CTDB   | Chlor, CTD, Fluor, PAR | about 5mL spilled from 30m bottle |
| 28-Sep-09  | 5:04       | 25     | 2   | M4E       | BON016           | 72        | 57 46.10 N | 168 39.85 W | 20Bon  | QTowF                  |                                   |
| 28-Sep-09  | 5:04       | 25     | 2   | M4E       | BON016           | 72        | 57 46.10 N | 168 39.85 W | 60Bon  | QTowF                  |                                   |
| 28-Sep-09  | 5:04       | 25     | 2   | M4E       | BON016           | 72        | 57 46.10 N | 168 39.85 W | CAT    | CAT                    |                                   |
| 28-Sep-09  | 7:03       | 26     | 1   | M4N       | CTD031           | 71        | 57 55.30 N | 169 00.02 W | CTDB   | Chlor, CTD, Fluor, PAR | mooring 4 north corner            |
| 28-Sep-09  | 7:24       | 26     | 2   | M4N       | BON017           | 71        | 57 54.83 N | 169 00.07 W | 20Bon  | QTowF                  |                                   |
| 28-Sep-09  | 7:24       | 26     | 2   | M4N       | BON017           | 71        | 57 54.83 N | 169 00.07 W | 60Bon  | QTowF                  |                                   |
| 28-Sep-09  | 7:24       | 26     | 2   | M4N       | BON017           | 71        | 57 54.83 N | 169 00.07 W | 60Bon  | QTowF                  | mooring 4 north corner            |
| 28-Sep-09  | 7:24       | 26     | 2   | M4N       | BON017           | 71        | 57 54.83 N | 169 00.07 W | CAT    | CAT                    |                                   |
| 28-Sep-09  | 8:59       | 27     | 1   | M4W       | CTD032           | 64        | 57 46.14 N | 169 12.10 W | CTDB   | Chlor, CTD, Fluor, PAR | Mooring site 4 west side          |
| 28-Sep-09  | 9:21       | 27     | 2   | M4W       | BON018           | 63        | 57 45.95 N | 169 12.23 W | 20Bon  | QTowF                  | Mooring site 4 west corner        |
| 28-Sep-09  | 9:21       | 27     | 2   | M4W       | BON018           | 63        | 57 45.95 N | 169 12.23 W | 60Bon  | QTowF                  | Mooring site 4 west corner        |
| 28-Sep-09  | 9:21       | 27     | 2   | M4W       | BON018           | 63        | 57 45.95 N | 169 12.23 W | CAT    | CAT                    | Mooring site 4 west corner        |
| 28-Sep-09  | 10:58      | 28     | 1   | 70M23     | CTD033           | 69        | 57 54.27 N | 169 30.29 W | CTDB   | Chlor, CTD, Fluor, PAR |                                   |
| 28-Sep-09  | 12:24      | 29     | 1   | 70M24     | CTD034           | 71        | 58 02.72 N | 169 40.19 W | CTDB   | Chlor, CTD, Fluor, PAR |                                   |
| 28-Sep-09  | 12:44      | 29     | 2   | 70M24     | BON019           | 71        | 58 02.58 N | 169 40.58 W | 20Bon  | QTowF                  |                                   |
| 28-Sep-09  | 12:44      | 29     | 2   | 70M24     | BON019           | 71        | 58 02.58 N | 169 40.58 W | 60Bon  | QTowF                  |                                   |
| 28-Sep-09  | 12:44      | 29     | 2   | 70M24     | BON019           | 71        | 58 02.58 N | 169 40.58 W | CAT    | CAT                    |                                   |

## Cruise Summary For FOCI Cruise 2MF09 (MF0904L2)

| Date<br>(GMT) | Time<br>(GMT) | Statio | Hau | FOCI<br>Grid | Alternat<br>Station | Depth<br>(m) | Latitude   | Longitude   | Gear  | SamplesCollected       | HaulComments                                      |
|---------------|---------------|--------|-----|--------------|---------------------|--------------|------------|-------------|-------|------------------------|---|
| 28-Sep-09     | 14:08         | 30     | 1   | 70M25        | CTD035              | 71           | 58 08.78 N | 169 55.18 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 28-Sep-09     | 15:28         | 31     | 1   | 70M26        | CTD036              | 72           | 58 17.13 N | 170 05.72 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 28-Sep-09     | 15:46         | 31     | 2   | 70M26        | BON020              | 73           | 58 16.96 N | 170 05.73 W | 20Bon | QTowF                  |   |
| 28-Sep-09     | 15:46         | 31     | 2   | 70M26        | BON020              | 73           | 58 16.96 N | 170 05.73 W | 60Bon | QTowF                  |   |
| 28-Sep-09     | 15:46         | 31     | 2   | 70M26        | BON020              | 73           | 58 16.96 N | 170 05.73 W | CAT   | CAT                    |   |
| 28-Sep-09     | 17:07         | 32     | 1   | 70M27        | CTD037              | 73           | 58 26.77 N | 170 11.42 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 28-Sep-09     | 18:34         | 33     | 1   | 70M28        | CTD038              | 71           | 58 37.51 N | 170 16.80 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 28-Sep-09     | 18:54         | 33     | 2   | 70M28        | BON021              | 73           | 58 37.24 N | 170 16.94 W | 20Bon | QTowF                  |   |
| 28-Sep-09     | 18:54         | 33     | 2   | 70M28        | BON021              | 73           | 58 37.24 N | 170 16.94 W | 60Bon | QTowF                  |   |
| 28-Sep-09     | 18:54         | 33     | 2   | 70M28        | BON021              | 73           | 58 37.24 N | 170 16.94 W | CAT   | CAT                    |   |
| 28-Sep-09     | 20:03         | 34     | 1   | 70M29        | CTD039              | 72           | 58 46.44 N | 170 17.83 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 28-Sep-09     | 21:28         | 35     | 1   | 70M30        | CTD040              | 71           | 58 57.11 N | 170 19.69 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 28-Sep-09     | 21:47         | 35     | 2   | 70M30        | BON022              | 71           | 58 57.00 N | 170 19.59 W | 20Bon | QTowF                  |   |
| 28-Sep-09     | 21:47         | 35     | 2   | 70M30        | BON022              | 71           | 58 57.00 N | 170 19.59 W | 60Bon | QTowF                  |   |
| 28-Sep-09     | 21:47         | 35     | 2   | 70M30        | BON022              | 71           | 58 57.00 N | 170 19.59 W | CAT   | CAT                    |   |
| 28-Sep-09     | 23:00         | 36     | 1   | 70M31        | CTD041              | 68           | 59 06.19 N | 170 14.44 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 29-Sep-09     | 0:17          | 37     | 1   | 70M32        | CTD042              | 69           | 59 14.92 N | 170 24.96 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 29-Sep-09     | 0:36          | 37     | 2   | 70M32        | BON023              | 69           | 59 14.71 N | 170 24.83 W | 20Bon | QTowF                  |   |
| 29-Sep-09     | 0:36          | 37     | 2   | 70M32        | BON023              | 69           | 59 14.71 N | 170 24.83 W | 60Bon | QTowF                  |   |
| 29-Sep-09     | 0:36          | 37     | 2   | 70M32        | BON023              | 69           | 59 14.71 N | 170 24.83 W | CAT   | CAT                    |   |
| 29-Sep-09     | 1:46          | 38     | 1   | 70M33        | CTD043              | 71           | 59 20.24 N | 170 39.40 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 29-Sep-09     | 3:01          | 39     | 1   | 70M34        | CTD044              | 73           | 59 25.85 N | 170 54.65 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 29-Sep-09     | 3:30          | 39     | 2   | 70M34        | BON024              | 73           | 59 26.05 N | 170 54.12 W | 20Bon | QTowF                  |   |
| 29-Sep-09     | 3:30          | 39     | 2   | 70M34        | BON024              | 73           | 59 26.05 N | 170 54.12 W | 60Bon | QTowF                  |   |
| 29-Sep-09     | 3:30          | 39     | 2   | 70M34        | BON024              | 73           | 59 26.05 N | 170 54.12 W | CAT   | CAT                    |   |
| 29-Sep-09     | 4:45          | 40     | 1   | 70M35        | CTD045              | 72           | 59 35.68 N | 170 55.41 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 29-Sep-09     | 6:07          | 41     | 1   | 70M36        | CTD046              | 73           | 59 43.17 N | 171 08.00 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 29-Sep-09     | 6:28          | 41     | 2   | 70M36        | BON025              | 72           | 59 42.83 N | 171 08.84 W | 20Bon | QTowF                  |   |
| 29-Sep-09     | 6:28          | 41     | 2   | 70M36        | BON025              | 72           | 59 42.83 N | 171 08.84 W | 60Bon | QTowF                  |   |
| 29-Sep-09     | 6:28          | 41     | 2   | 70M36        | BON025              | 72           | 59 42.83 N | 171 08.84 W | CAT   | CAT                    |   |
| 29-Sep-09     | 7:48          | 42     | 1   | M5S          | CTD047              | 74           | 59 42.14 N | 171 29.61 W | CTDB  | Chlor, CTD, Fluor, PAR | MOORING 5 SOUTH CORNER                            |
| 29-Sep-09     | 8:13          | 42     | 2   | M5S          | BON026              | 74           | 59 42.29 N | 171 29.44 W | 20Bon | QTowF                  | MOORING 5 SOUTH CORNER                            |
| 29-Sep-09     | 8:13          | 42     | 2   | M5S          | BON026              | 74           | 59 42.29 N | 171 29.44 W | 60Bon | QTowF                  | MOORING 5 SOUTH CORNER                            |
| 29-Sep-09     | 8:13          | 42     | 2   | M5S          | BON026              | 74           | 59 42.29 N | 171 29.44 W | CAT   | CAT                    | MOORING 5 SOUTH CORNER                            |
| 29-Sep-09     | 9:55          | 43     | 1   | M5E          | CTD048              | 72           | 59 38.89 N | 171 15.85 W | CTDB  | Chlor, CTD, Fluor, PAR | Mooring 5 east corner                             |
| 29-Sep-09     | 10:18         | 43     | 2   | M5E          | BON027              | 72           | 59 54.07 N | 171 15.68 W | 20Bon | QTowF                  | MOORING 5 EAST CORNER.                            |
| 29-Sep-09     | 10:18         | 43     | 2   | M5E          | BON027              | 72           | 59 54.07 N | 171 15.68 W | 60Bon | QTowF                  | MOORING 5 EAST CORNER.                            |
| 29-Sep-09     | 10:18         | 43     | 2   | M5E          | BON027              | 72           | 59 54.07 N | 171 15.68 W | 60Bon | QTowF                  | MOORING 5 EAST CORNER. 3 SMALL<br>JELLIES REMOVED |

## Cruise Summary For FOCI Cruise 2MF09 (MF0904L2)

| Date (GMT) | Time (GMT) | Statio | Hau | FOCI Grid | Alternat Station | Depth (m) | Latitude   | Longitude   | Gear   | SamplesCollected       | HaulComments  |
|------------|------------|--------|-----|-----------|------------------|-----------|------------|-------------|--------|------------------------|---|
| 29-Sep-09  | 10:18      | 43     | 2   | M5E       | BON027           | 72        | 59 54.07 N | 171 15.68 W | CAT    | CAT                    | MOORING 5 EAST CORNER.                              |
| 29-Sep-09  | 12:53      | 44     | 1   | M5N       | CTD049           | 58        | 60 04.51 N | 171 59.48 W | CTDB   | Chlor, CTD, Fluor, PAR | Mooring site 5 north corner                         |
| 29-Sep-09  | 13:18      | 44     | 2   | M5N       | BON028           | 64        | 60 04.47 N | 171 59.95 W | 20Bon  | QTowS                  | Mooring site 5 north corner                         |
| 29-Sep-09  | 13:18      | 44     | 2   | M5N       | BON028           | 64        | 60 04.47 N | 171 59.95 W | 60Bon  | QTowF                  | Mooring site 5 north corner                         |
| 29-Sep-09  | 13:18      | 44     | 2   | M5N       | BON028           | 64        | 60 04.47 N | 171 59.95 W | CAT    | CAT                    | Mooring site 5 north corner                         |
| 29-Sep-09  | 15:03      | 45     | 1   | M5        | CTD050           | 74        | 59 53.08 N | 171 42.76 W | CTDB   | Chlor, CTD, Fluor, PAR | Mooring 5 center station                            |
| 29-Sep-09  | 15:36      | 45     | 2   | M5        | CTD050B          | 73        | 59 53.07 N | 171 42.50 W | CTDB   | Chlor, CTD, Fluor, PAR | mooring site 5 center station                       |
| 29-Sep-09  | 15:52      | 45     | 3   | M5        | CAL007           | 71        | 57 53.07 N | 171 42.45 W | CalVET | QTowF                  | mooring site 5 center station                       |
| 29-Sep-09  | 16:06      | 45     | 4   | M5        | CAL008           | 72        | 59 53.17 N | 171 42.50 W | CalVET | QTowF                  | Mooring 5 site center station                       |
| 29-Sep-09  | 16:06      | 45     | 4   | M5        | CAL008           | 72        | 59 53.17 N | 171 42.50 W | CalVET | QTowF                  | Mooring 5 site center station/nets 1 and 2 combined |
| 29-Sep-09  | 16:06      | 45     | 4   | M5        | CAL008           | 72        | 59 53.17 N | 171 42.50 W | CAT    | CAT                    |   |
| 29-Sep-09  | 16:18      | 45     | 5   | M5        | CAL009           | 72        | 59 53.21 N | 171 42.64 W | CalVET | QTowF                  | Mooring site 5 center station/nets 1 and 2 combined |
| 29-Sep-09  | 16:18      | 45     | 5   | M5        | CAL009           | 72        | 59 53.21 N | 171 42.64 W | CAT    | CAT                    | Mooring site 5 center station/nets 1 and 2 combined |
| 29-Sep-09  | 16:37      | 45     | 6   | M5        | BON029           | 72        | 59 53.51 N | 171 41.45 W | 20Bon  | QTowF                  | mooring site 5 center station                       |
| 29-Sep-09  | 16:37      | 45     | 6   | M5        | BON029           | 72        | 59 53.51 N | 171 41.45 W | 60Bon  | QTowF                  | mooring site 5 center station                       |
| 29-Sep-09  | 16:37      | 45     | 6   | M5        | BON029           | 72        | 59 53.51 N | 171 41.45 W | CAT    | CAT                    | mooring site 5 center station                       |
| 29-Sep-09  | 17:45      | 45     | 7   | M5        |                  | 70        | 59 54.37 N | 171 42.43 W | Moor   | Recovery               | Mooring 5 recovery. 09-BS-5A                        |
| 29-Sep-09  | 19:15      | 45     | 8   | M5        |                  | 70        | 59 54.31 N | 171 43.05 W | Moor   | Recovery               | Mooring recovery 09-BSP-5A                          |
| 29-Sep-09  | 22:02      | 45     | 9   | M5        |                  | 70        | 59 55.00 N | 171 42.24 W | Moor   | Deploy                 | Mooring deployment 09-BS-5B                         |
| 30-Sep-09  | 23:06      | 45     | 10  | M5        |                  | 70        | 59 55.00 N | 171 42.50 W | Moor   | Deploy                 | mooring deployment 09-BSP-5B                        |
| 29-Sep-09  | 23:28      | 45     | 11  | M5        | CTD051           | 70        | 59 55.21 N | 171 42.41 W | CTDB   | Chlor, CTD, Fluor, PAR | 70m38   |
| 30-Sep-09  | 1:15       | 46     | 1   | 70M39     | CTD052           | 74        | 59 54.00 N | 172 10.04 W | CTDB   | Chlor, CTD, Fluor, PAR | M5W   |
| 30-Sep-09  | 2:00       | 46     | 2   | 70M39     | BON030           | 73        | 59 53.86 N | 172 09.61 W | 20Bon  | QTowF                  | M5W   |
| 30-Sep-09  | 2:00       | 46     | 2   | 70M39     | BON030           | 73        | 59 53.86 N | 172 09.61 W | 60Bon  | QTowF                  | M5W   |
| 30-Sep-09  | 2:00       | 46     | 2   | 70M39     | BON030           | 73        | 59 53.86 N | 172 09.61 W | CAT    | CAT                    | M5W   |
| 30-Sep-09  | 3:17       | 47     | 1   | 70M40     | CTD053           | 75        | 59 54.69 N | 172 25.72 W | CTDB   | Chlor, CTD, Fluor, PAR |   |
| 30-Sep-09  | 4:53       | 48     | 1   | 70M41     | CTD054           | 68        | 59 58.72 N | 172 44.63 W | CTDB   | Chlor, CTD, Fluor, PAR |   |
| 30-Sep-09  | 5:21       | 48     | 2   | 70M41     | BON031           | 69        | 59 58.29 N | 172 44.88 W | 20Bon  | QTowF                  |   |
| 30-Sep-09  | 5:21       | 48     | 2   | 70M41     | BON031           | 69        | 59 58.29 N | 172 44.88 W | 60Bon  | QTowF                  |   |
| 30-Sep-09  | 5:21       | 48     | 2   | 70M41     | BON031           | 69        | 59 58.29 N | 172 44.88 W | CAT    | CAT                    |   |
| 30-Sep-09  | 6:28       | 49     | 1   | 70M42     | CTD055           | 68        | 60 02.25 N | 173 00.47 W | CTDB   | Chlor, CTD, Fluor, PAR |   |
| 30-Sep-09  | 7:49       | 50     | 1   | 70M43     | CTD056           | 72        | 60 06.05 N | 173 19.04 W | CTDB   | Chlor, CTD, Fluor, PAR |   |
| 30-Sep-09  | 8:14       | 50     | 2   | 70M43     | BON032           | 71        | 60 06.17 N | 173 19.02 W | 20Bon  | QTowF                  |   |
| 30-Sep-09  | 8:14       | 50     | 2   | 70M43     | BON032           | 71        | 60 06.17 N | 173 19.02 W | 60Bon  | QTowF                  |   |
| 30-Sep-09  | 8:14       | 50     | 2   | 70M43     | BON032           | 71        | 60 06.17 N | 173 19.02 W | CAT    | CAT                    |   |
| 30-Sep-09  | 9:40       | 51     | 1   | 70M44     | CTD057           | 70        | 60 15.11 N | 173 30.87 W | CTDB   | Chlor, CTD, Fluor, PAR |   |
| 30-Sep-09  | 11:07      | 52     | 1   | 70M45     | CTD058           | 65        | 60 25.40 N | 173 35.47 W | CTDB   | Chlor, CTD, Fluor, PAR |   |



## Cruise Summary For FOCI Cruise 2MF09 (MF0904L2)

| Date (GMT) | Time (GMT) | Statio | Hau | FOCI Grid | Alternat Station | Depth (m) | Latitude   | Longitude   | Gear  | SamplesCollected       | HaulComments                                  |
|------------|------------|--------|-----|-----------|------------------|-----------|------------|-------------|-------|------------------------|---|
| 30-Sep-09  | 11:24      | 52     | 2   | 70M45     | BON033           | 65        | 60 25.70 N | 173 35.61 W | 20Bon | QTowF                  |   |
| 30-Sep-09  | 11:24      | 52     | 2   | 70M45     | BON033           | 65        | 60 25.70 N | 173 35.61 W | 60Bon | QTowF                  |   |
| 30-Sep-09  | 11:24      | 52     | 2   | 70M45     | BON033           | 65        | 60 25.70 N | 173 35.61 W | CAT   | CAT                    |   |
| 30-Sep-09  | 12:33      | 53     | 1   | 70M46     | CTD059           | 69        | 60 34.48 N | 173 38.47 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 30-Sep-09  | 13:51      | 54     | 1   | 70M47     | CTD060           | 73        | 60 44.03 N | 173 38.91 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 30-Sep-09  | 14:09      | 54     | 2   | 70M47     | BON034           | 73        | 60 44.27 N | 173 39.29 W | 20Bon | QTowF                  |   |
| 30-Sep-09  | 14:09      | 54     | 2   | 70M47     | BON034           | 73        | 60 44.27 N | 173 39.29 W | 60Bon | QTowF                  |   |
| 30-Sep-09  | 14:09      | 54     | 2   | 70M47     | BON034           | 73        | 60 44.27 N | 173 39.29 W | CAT   | CAT                    |   |
| 30-Sep-09  | 15:32      | 55     | 1   | 70M48     | CTD061           | 81        | 60 54.53 N | 173 49.52 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 30-Sep-09  | 16:50      | 56     | 1   | 70M49     | CTD062           | 78        | 61 03.65 N | 173 50.03 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 30-Sep-09  | 17:06      | 56     | 2   | 70M49     | BON035           | 79        | 61 03.83 N | 173 49.86 W | 20Bon | QTowF                  |   |
| 30-Sep-09  | 17:06      | 56     | 2   | 70M49     | BON035           | 79        | 61 03.83 N | 173 49.86 W | 60Bon | QTowF                  |   |
| 30-Sep-09  | 17:06      | 56     | 2   | 70M49     | BON035           | 79        | 61 03.83 N | 173 49.86 W | CAT   | CAT                    |   |
| 30-Sep-09  | 18:31      | 57     | 1   | 70M50     | CTD063           | 75        | 61 15.02 N | 173 44.52 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 30-Sep-09  | 19:58      | 58     | 1   | 70M51     | CTD064           | 76        | 61 24.60 N | 173 44.42 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 30-Sep-09  | 20:31      | 58     | 2   | 70M51     | BON036           | 76        | 61 24.56 N | 173 44.40 W | 20Bon | QTowF                  |   |
| 30-Sep-09  | 20:31      | 58     | 2   | 70M51     | BON036           | 76        | 61 24.56 N | 173 44.40 W | 60Bon | QTowF                  |   |
| 30-Sep-09  | 20:31      | 58     | 2   | 70M51     | BON036           | 76        | 61 24.56 N | 173 44.40 W | CAT   | CAT                    |   |
| 30-Sep-09  | 21:43      | 59     | 1   | 70M52     | CTD065           | 73        | 61 33.61 N | 173 42.69 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 30-Sep-09  | 23:01      | 60     | 1   | 70M53     | CTD066           | 72        | 61 43.62 N | 173 50.97 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 30-Sep-09  | 23:21      | 60     | 2   | 70M53     | BON037           | 72        | 61 43.81 N | 173 51.63 W | 20Bon | QTowF                  |   |
| 30-Sep-09  | 23:21      | 60     | 2   | 70M53     | BON037           | 72        | 61 43.81 N | 173 51.63 W | 60Bon | QTowF                  |   |
| 30-Sep-09  | 23:21      | 60     | 2   | 70M53     | BON037           | 72        | 61 43.81 N | 173 51.63 W | CAT   | CAT                    |   |
| 01-Oct-09  | 0:35       | 61     | 1   | 70M54     | CTD067           | 73        | 61 51.82 N | 174 05.75 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 01-Oct-09  | 1:43       | 62     | 1   | 70M55     | CTD068           | 74        | 61 56.62 N | 174 21.82 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 01-Oct-09  | 2:05       | 62     | 2   | 70M55     | BON038           | 74        | 61 56.80 N | 174 22.31 W | 20Bon | QTowF                  |   |
| 01-Oct-09  | 2:05       | 62     | 2   | 70M55     | BON038           | 74        | 61 56.80 N | 174 22.31 W | 60Bon | QTowF                  |   |
| 01-Oct-09  | 2:05       | 62     | 2   | 70M55     | BON038           | 74        | 61 56.80 N | 174 22.31 W | CAT   | CAT                    |   |
| 01-Oct-09  | 3:30       | 63     | 1   | M8S       | CTD069           | 76        | 61 58.58 N | 174 36.57 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 01-Oct-09  | 3:50       | 63     | 2   | M8S       | BON039           | 76        | 61 58.46 N | 174 36.69 W | 20Bon | QTowF                  |   |
| 01-Oct-09  | 3:50       | 63     | 2   | M8S       | BON039           | 76        | 61 58.46 N | 174 36.69 W | 60Bon | QTowF                  |   |
| 01-Oct-09  | 3:50       | 63     | 2   | M8S       | BON039           | 76        | 61 58.46 N | 174 36.69 W | CAT   | CAT                    |   |
| 01-Oct-09  | 5:58       | 64     | 1   | M8W       | CTD070           | 79        | 62 11.84 N | 175 08.39 W | CTDB  | Chlor, CTD, Fluor, PAR | About 15ml spilled from the 10m chloro sample |
| 01-Oct-09  | 6:17       | 64     | 2   | M8W       | BON040           | 80        | 62 11.96 N | 175 08.78 W | 20Bon | QTowF                  |   |
| 01-Oct-09  | 6:17       | 64     | 2   | M8W       | BON040           | 80        | 62 11.96 N | 175 08.78 W | 60Bon | QTowF                  |   |
| 01-Oct-09  | 6:17       | 64     | 2   | M8W       | BON040           | 80        | 62 11.96 N | 175 08.78 W | CAT   | CAT                    |   |
| 01-Oct-09  | 8:17       | 65     | 1   | M8N       | CTD071           | 73        | 62 25.02 N | 174 42.44 W | CTDB  | Chlor, CTD, Fluor, PAR | mooring site 8 north corner                   |
| 01-Oct-09  | 8:41       | 65     | 2   | M8N       | BON041           | 73        | 62 25.25 N | 174 42.61 W | 20Bon | QTowF                  | mooring site 8 North corner                   |

## Cruise Summary For FOCI Cruise 2MF09 (MF0904L2)

| Date (GMT) | Time (GMT) | Statio | Hau | FOCI Grid | Alternat Station | Depth (m) | Latitude   | Longitude   | Gear   | SamplesCollected       | HaulComments  |
|------------|------------|--------|-----|-----------|------------------|-----------|------------|-------------|--------|------------------------|---|
| 01-Oct-09  | 8:41       | 65     | 2   | M8N       | BON041           | 73        | 62 25.25 N | 174 42.61 W | 60Bon  | QTowF                  | mooring site 8 North corner   |
| 01-Oct-09  | 8:41       | 65     | 2   | M8N       | BON041           | 73        | 62 25.25 N | 174 42.61 W | CAT    | CAT                    | mooring site 8 North corner   |
| 01-Oct-09  | 11:56      | 66     | 1   | M8E       | CTD072           | 69        | 62 12.14 N | 174 18.26 W | CTDB   | Chlor, CTD, Fluor, PAR | Mooring site 8 east corner  |
| 01-Oct-09  | 12:17      | 66     | 2   | M8E       | BON042           | 69        | 62 12.14 N | 174 18.19 W | 20Bon  | QTowF                  | mooring site 8 east corner  |
| 01-Oct-09  | 12:17      | 66     | 2   | M8E       | BON042           | 69        | 62 12.14 N | 174 18.19 W | 60Bon  | QTowF                  | mooring site 8 east corner  |
| 01-Oct-09  | 12:17      | 66     | 2   | M8E       | BON042           | 69        | 62 12.14 N | 174 18.19 W | CAT    | CAT                    | mooring site 8 east corner  |
| 01-Oct-09  | 13:34      | 67     | 1   | M8        | CTD073           | 74        | 62 11.65 N | 174 38.72 W | CTDB   | Chlor, CTD, Fluor, PAR | mooring site 8 center   |
| 01-Oct-09  | 13:58      | 67     | 2   | M8        | CAL010           | 74        | 62 11.92 N | 174 38.79 W | CalVET | QTowF                  | mooring site 8 center nets1&2 combined                                  |
| 01-Oct-09  | 13:58      | 67     | 2   | M8        | CAL010           | 74        | 62 11.92 N | 174 38.79 W | CAT    | CAT                    |   |
| 01-Oct-09  | 14:14      | 67     | 3   | M8        | CAL011           | 73        | 62 12.09 N | 174 39.14 W | CalVET | QTowF                  | mooring sit 8 center / nets 1 and 2 combined / net 1 flowmeter low revs |
| 01-Oct-09  | 14:14      | 67     | 3   | M8        | CAL011           | 73        | 62 12.09 N | 174 39.14 W | CAT    | CAT                    | mooring sit 8 center / nets 1 and 2 combined / net 1 flowmeter low revs |
| 01-Oct-09  | 14:32      | 67     | 4   | M8        | CAL012           | 74        | 62 12.18 N | 174 39.62 W | CalVET | QTowF                  | mooring site 8 center / nets 1 and 2 combined                           |
| 01-Oct-09  | 14:32      | 67     | 4   | M8        | CAL012           | 74        | 62 12.18 N | 174 39.62 W | CAT    | CAT                    | mooring site 8 center / nets 1 and 2 combined                           |
| 01-Oct-09  | 15:05      | 67     | 5   | M8        | BON043           | 74        | 62 12.13 N | 174 40.66 W | 20Bon  | QTowF                  | mooring site 8 center   |
| 01-Oct-09  | 15:05      | 67     | 5   | M8        | BON043           | 74        | 62 12.13 N | 174 40.66 W | 60Bon  | QTowF                  | mooring site 8 center   |
| 01-Oct-09  | 15:05      | 67     | 5   | M8        | BON043           | 74        | 62 12.13 N | 174 40.66 W | CAT    | CAT                    | mooring site 8 center   |
| 01-Oct-09  | 18:08      | 67     | 6   | M8        |                  | 74        | 62 11.86 N | 174 41.06 W | Moor   | Recovery               | Mooring site 8. Recover 09BSV-8A  |
| 01-Oct-09  | 20:01      | 67     | 7   | M8        |                  | 74        | 62 11.57 N | 174 40.95 W | Moor   | Recovery               | Mooring site 8 - recover 08BS-8A  |
| 01-Oct-09  | 21:44      | 67     | 8   | M8        |                  | 74        | 62 11.70 N | 174 39.79 W | Moor   | Recovery               | Mooring recovery 08BSP-8A   |
| 01-Oct-09  | 23:51      | 67     | 9   | M8        |                  | 74        | 62 11.61 N | 174 40.05 W | Moor   | Deploy                 | Mooring deployed 09BS-8a  |
| 02-Oct-09  | 0:52       | 67     | 10  | M8        |                  | 74        | 62 11.75 N | 174 39.54 W | Moor   | Deploy                 | Mooring deployed 09BSP-8A   |
| 02-Oct-09  | 1:12       | 67     | 11  | M8        | CTD074           | 74        | 62 11.67 N | 174 39.38 W | CTDB   | Chlor, CTD, Fluor, PAR |   |
| 02-Oct-09  | 18:29      | 68     | 1   | SL1BB     | CTD075           | 34        | 61 44.96 N | 168 30.00 W | CTDB   | Chlor, CTD, Fluor, PAR |   |
| 02-Oct-09  | 18:47      | 68     | 2   | SL1BB     | BON044           | 34        | 61 44.98 N | 168 29.36 W | 20Bon  | QTowF                  |   |
| 02-Oct-09  | 18:47      | 68     | 2   | SL1BB     | BON044           | 34        | 61 44.98 N | 168 29.36 W | 60Bon  | QTowF                  |   |
| 02-Oct-09  | 18:47      | 68     | 2   | SL1BB     | BON044           | 34        | 61 44.98 N | 168 29.36 W | CAT    | CAT                    |   |
| 02-Oct-09  | 21:17      | 69     | 1   | SL1AA     | CTD076           | 40        | 61 48.07 N | 169 10.50 W | CTDB   | Chlor, CTD, Fluor, PAR |   |
| 03-Oct-09  | 17:34      | 70     | 1   | SL1       | CTD077           | 45        | 61 50.93 N | 169 51.08 W | CTDB   | Chlor, CTD, Fluor, PAR |   |
| 03-Oct-09  | 17:51      | 70     | 2   | SL1       | BON045           | 45        | 61 50.86 N | 169 51.52 W | 20Bon  | QTowF                  |   |
| 03-Oct-09  | 17:51      | 70     | 2   | SL1       | BON045           | 45        | 61 50.86 N | 169 51.52 W | 60Bon  | QTowF                  |   |
| 03-Oct-09  | 17:51      | 70     | 2   | SL1       | BON045           | 45        | 61 50.86 N | 169 51.52 W | CAT    | CAT                    |   |
| 03-Oct-09  | 19:53      | 71     | 1   | SL2A      | CTD078           | 48        | 61 53.98 N | 170 32.38 W | CTDB   | Chlor, CTD, Fluor, PAR |   |
| 03-Oct-09  | 21:59      | 72     | 1   | SL4A      | CTD079           | 51        | 61 56.67 N | 171 13.88 W | CTDB   | Chlor, CTD, Fluor, PAR |   |
| 03-Oct-09  | 22:15      | 72     | 2   | SL4A      | BON046           | 52        | 61 56.78 N | 171 13.92 W | 20Bon  | QTowF                  | 20bon net 1 revs are low  |
| 03-Oct-09  | 22:15      | 72     | 2   | SL4A      | BON046           | 52        | 61 56.78 N | 171 13.92 W | 60Bon  | QTowF                  | 20bon net 1 revs are low  |
| 03-Oct-09  | 22:15      | 72     | 2   | SL4A      | BON046           | 52        | 61 56.78 N | 171 13.92 W | CAT    | CAT                    | 20bon net 1 revs are low  |
| 04-Oct-09  | 0:20       | 73     | 1   | SL6A      | CTD080           | 53        | 61 59.86 N | 171 55.08 W | CTDB   | Chlor, CTD, Fluor, PAR |   |

## Cruise Summary For FOCI Cruise 2MF09 (MF0904L2)

| Date (GMT) | Time (GMT) | Statio | Hau | FOCI Grid | Alternat Station | Depth (m) | Latitude   | Longitude   | Gear  | SamplesCollected       | HaulComments  |
|------------|------------|--------|-----|-----------|------------------|-----------|------------|-------------|-------|------------------------|---|
| 04-Oct-09  | 2:28       | 74     | 1   | SL8A      | CTD081           | 55        | 62 02.50 N | 172 36.53 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 04-Oct-09  | 2:46       | 74     | 2   | SL8A      | BON047           | 55        | 62 02.69 N | 172 36.63 W | 20Bon | QTowF                  |   |
| 04-Oct-09  | 2:46       | 74     | 2   | SL8A      | BON047           | 55        | 62 02.69 N | 172 36.63 W | 60Bon | QTowF                  |   |
| 04-Oct-09  | 2:46       | 74     | 2   | SL8A      | BON047           | 55        | 62 02.69 N | 172 36.63 W | CAT   | CAT                    |   |
| 04-Oct-09  | 5:05       | 75     | 1   | SL9A      | CTD082A          | 60        | 62 05.81 N | 173 17.37 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 04-Oct-09  | 7:32       | 76     | 1   | SL11A     | CTD083A          | 65        | 62 08.38 N | 173 58.38 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 04-Oct-09  | 7:51       | 76     | 2   | SL11A     | BON048           | 64        | 62 08.66 N | 173 58.50 W | 20Bon | Discard                | Tow was stopped at surface, bongo net 2 came off frame                |
| 04-Oct-09  | 7:51       | 76     | 2   | SL11A     | BON048           | 64        | 62 08.66 N | 173 58.50 W | 60Bon | Discard                | Tow was stopped at surface, bongo net 2 came off frame                |
| 04-Oct-09  | 7:51       | 76     | 2   | SL11A     | BON048           | 64        | 62 08.66 N | 173 58.50 W | CAT   | CAT                    | Tow was stopped at surface, bongo net 2 came off frame                |
| 04-Oct-09  | 8:07       | 76     | 3   | SL11A     | BON048A          | 65        | 62 08.99 N | 173 59.08 W | 20Bon | QTowF                  |   |
| 04-Oct-09  | 8:07       | 76     | 3   | SL11A     | BON048A          | 65        | 62 08.99 N | 173 59.08 W | 60Bon | QTowF                  |   |
| 04-Oct-09  | 8:07       | 76     | 3   | SL11A     | BON048A          | 65        | 62 08.99 N | 173 59.08 W | CAT   | CAT                    |   |
| 04-Oct-09  | 9:33       | 77     | 1   | SL12A     | CTD084           | 68        | 62 12.10 N | 174 17.09 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 04-Oct-09  | 10:56      | 78     | 1   | SL12      | CTD085           | 73        | 62 12.12 N | 174 37.31 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 04-Oct-09  | 12:43      | 79     | 1   | SL14      | CTD086           | 79        | 62 11.97 N | 175 09.01 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 04-Oct-09  | 14:11      | 80     | 1   | SL15      | CTD087           | 84        | 62 11.72 N | 175 32.60 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 04-Oct-09  | 14:33      | 80     | 2   | SL15      | BON049           | 85        | 62 11.89 N | 175 32.75 W | 20Bon | QTowF                  |   |
| 04-Oct-09  | 14:33      | 80     | 2   | SL15      | BON049           | 85        | 62 11.89 N | 175 32.75 W | 60Bon | QTowF                  |   |
| 04-Oct-09  | 14:33      | 80     | 2   | SL15      | BON049           | 85        | 62 11.89 N | 175 32.75 W | CAT   | CAT                    |   |
| 04-Oct-09  | 15:54      | 81     | 1   | SL16      | CTD088           | 92        | 62 11.78 N | 175 55.85 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 05-Oct-09  | 5:05       | 82     | 1   | MN18      | CTD089           | 144       | 59 54.06 N | 178 11.93 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 05-Oct-09  | 7:12       | 83     | 1   | MN17      | CTD090           | 138       | 59 53.84 N | 177 35.72 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 05-Oct-09  | 7:33       | 83     | 2   | MN17      | BON050           | 138       | 59 53.85 N | 177 36.10 W | 20Bon | QTowF                  |   |
| 05-Oct-09  | 7:33       | 83     | 2   | MN17      | BON050           | 138       | 59 53.85 N | 177 36.10 W | 60Bon | QTowF                  |   |
| 05-Oct-09  | 7:33       | 83     | 2   | MN17      | BON050           | 138       | 59 53.85 N | 177 36.10 W | CAT   | CAT                    |   |
| 05-Oct-09  | 9:45       | 84     | 1   | MN16      | CTD091           | 136       | 59 54.25 N | 177 00.35 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 05-Oct-09  | 11:59      | 85     | 1   | MN15      | CTD092           | 140       | 59 54.14 N | 176 24.22 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 05-Oct-09  | 12:23      | 85     | 2   | MN15      | BON051           | 140       | 59 53.82 N | 176 24.23 W | 20Bon | QTowF                  | 4 jellies removed form 60Bon net 1                                    |
| 05-Oct-09  | 12:23      | 85     | 2   | MN15      | BON051           | 140       | 59 53.82 N | 176 24.23 W | 60Bon | QTowF                  | 4 jellies removed form 60Bon net 1                                    |
| 05-Oct-09  | 12:23      | 85     | 2   | MN15      | BON051           | 140       | 59 53.82 N | 176 24.23 W | CAT   | CAT                    | 4 jellies removed form 60Bon net 1                                    |
| 05-Oct-09  | 14:26      | 86     | 1   | MN14      | CTD093           | 130       | 59 54.09 N | 175 48.33 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 05-Oct-09  | 16:27      | 87     | 1   | MN13      | CTD094           | 120       | 59 54.10 N | 175 11.39 W | CTDB  | Chlor, CTD, Fluor, PAR |   |
| 05-Oct-09  | 16:47      | 87     | 2   | MN13      | BON052           | 120       | 59 54.09 N | 175 11.54 W | 20Bon | QTowF                  | 3 jellies removed from 60Bon net 1. 1 jelly removed from 20Bon net 1. |
| 05-Oct-09  | 16:47      | 87     | 2   | MN13      | BON052           | 120       | 59 54.09 N | 175 11.54 W | 60Bon | QTowF                  | 3 jellies removed from 60Bon net 1. 1 jelly removed from 20Bon net 1. |
| 05-Oct-09  | 16:47      | 87     | 2   | MN13      | BON052           | 120       | 59 54.09 N | 175 11.54 W | CAT   | CAT                    | 3 jellies removed from 60Bon net 1. 1 jelly removed from 20Bon net 1. |

## Cruise Summary For FOCI Cruise 2MF09 (MF0904L2)

| Date (GMT) | Time (GMT) | Statio | Hau | FOCI Grid | Alternat Station | Depth (m) | Latitude   | Longitude   | Gear  | SamplesCollected       | HaulComments   |
|------------|------------|--------|-----|-----------|------------------|-----------|------------|-------------|-------|------------------------|--|
| 05-Oct-09  | 18:40      | 88     | 1   | MN12      | CTD095           | 112       | 59 54.04 N | 174 35.75 W | CTDB  | Chlor, CTD, Fluor, PAR |  |
| 05-Oct-09  | 20:35      | 89     | 1   | MN11      | CTD096           | 102       | 59 53.87 N | 173 59.42 W | CTDB  | Chlor, CTD, Fluor, PAR |  |
| 05-Oct-09  | 21:00      | 89     | 2   | MN11      | BON053           | 102       | 59 54.12 N | 173 59.57 W | 20Bon | QTowF                  |  |
| 05-Oct-09  | 21:00      | 89     | 2   | MN11      | BON053           | 102       | 59 54.12 N | 173 59.57 W | 60Bon | QTowF                  |  |
| 05-Oct-09  | 21:00      | 89     | 2   | MN11      | BON053           | 102       | 59 54.12 N | 173 59.57 W | CAT   | CAT                    |  |
| 05-Oct-09  | 22:53      | 90     | 1   | MN10      | CTD097           | 86        | 59 54.06 N | 173 24.03 W | CTDB  | Chlor, CTD, Fluor, PAR |  |
| 06-Oct-09  | 0:52       | 91     | 1   | MN9       | CTD098           | 74        | 59 54.15 N | 172 48.82 W | CTDB  | Chlor, CTD, Fluor, PAR | Preserved jar from 0 meter bottle for Coccolithophores |
| 06-Oct-09  | 1:10       | 91     | 2   | MN9       | BON054           | 74        | 59 54.17 N | 172 48.84 W | 20Bon | QTowF                  |  |
| 06-Oct-09  | 1:10       | 91     | 2   | MN9       | BON054           | 74        | 59 54.17 N | 172 48.84 W | 60Bon | QTowF                  |  |
| 06-Oct-09  | 1:10       | 91     | 2   | MN9       | BON054           | 74        | 59 54.17 N | 172 48.84 W | CAT   | CAT                    |  |
| 06-Oct-09  | 3:06       | 92     | 1   | MN8       | CTD099           | 73        | 59 53.92 N | 172 11.89 W | CTDB  | Chlor, CTD, Fluor, PAR | Preserved jar from 0 meter bottle for Coccolithophores |
| 06-Oct-09  | 4:58       | 93     | 1   | MN7       | CTD100           | 71        | 59 54.02 N | 171 35.66 W | CTDB  | Chlor, CTD, Fluor, PAR |  |
| 06-Oct-09  | 5:13       | 93     | 2   | MN7       | BON055           | 71        | 59 54.00 N | 171 35.92 W | 20Bon | QTowF                  |  |
| 06-Oct-09  | 5:13       | 93     | 2   | MN7       | BON055           | 71        | 59 54.00 N | 171 35.92 W | 60Bon | QTowF                  |  |
| 06-Oct-09  | 5:13       | 93     | 2   | MN7       | BON055           | 71        | 59 54.00 N | 171 35.92 W | CAT   | CAT                    |  |
| 06-Oct-09  | 7:07       | 94     | 1   | MN6       | CTD101           | 70        | 59 53.90 N | 170 59.79 W | CTDB  | Chlor, CTD, Fluor, PAR |  |
| 06-Oct-09  | 9:02       | 95     | 1   | MN5       | CTD102           | 63        | 59 53.98 N | 170 23.84 W | CTDB  | Chlor, CTD, Fluor, PAR |  |
| 06-Oct-09  | 9:19       | 95     | 2   | MN5       | BON056           | 63        | 59 53.95 N | 170 23.97 W | 20Bon | QTowF                  |  |
| 06-Oct-09  | 9:19       | 95     | 2   | MN5       | BON056           | 63        | 59 53.95 N | 170 23.97 W | 60Bon | QTowF                  |  |
| 06-Oct-09  | 9:19       | 95     | 2   | MN5       | BON056           | 63        | 59 53.95 N | 170 23.97 W | CAT   | CAT                    |  |
| 06-Oct-09  | 11:14      | 96     | 1   | MN4       | CTD103           | 52        | 59 53.81 N | 169 48.34 W | CTDB  | Chlor, CTD, Fluor, PAR |  |
| 06-Oct-09  | 13:08      | 97     | 1   | MN3       | CTD104           | 45        | 59 53.73 N | 169 12.34 W | CTDB  | Chlor, CTD, Fluor, PAR |  |
| 06-Oct-09  | 13:20      | 97     | 2   | MN3       | BON057           | 45        | 59 53.84 N | 169 12.37 W | 20Bon | QTowF                  |  |
| 06-Oct-09  | 13:20      | 97     | 2   | MN3       | BON057           | 45        | 59 53.84 N | 169 12.37 W | 60Bon | QTowF                  |  |
| 06-Oct-09  | 13:20      | 97     | 2   | MN3       | BON057           | 45        | 59 53.84 N | 169 12.37 W | CAT   | CAT                    |  |
| 06-Oct-09  | 15:14      | 98     | 1   | MN2       | CTD105           | 39        | 59 54.09 N | 168 35.97 W | CTDB  | Chlor, CTD, Fluor, PAR |  |
| 06-Oct-09  | 15:26      | 99     | 1   | MN1       | CTD106           | 30        | 59 54.08 N | 168 35.32 W | CTDB  | Chlor, CTD, Fluor, PAR |  |
| 06-Oct-09  | 17:19      | 99     | 2   | MN1       | BON058           | 30        | 59 54.05 N | 168 00.22 W | 20Bon | QTowF                  |  |
| 06-Oct-09  | 17:19      | 99     | 2   | MN1       | BON058           | 30        | 59 54.05 N | 168 00.22 W | 60Bon | QTowF                  |  |
| 06-Oct-09  | 17:19      | 99     | 2   | MN1       | BON058           | 30        | 59 54.05 N | 168 00.22 W | CAT   | CAT                    |  |
| 07-Oct-09  | 22:00      | 100    | 1   | CN2       | CTD107           | 47        | 57 38.18 N | 163 16.57 W | CTDB  | Chlor, CTD, Fluor, PAR |  |
| 07-Oct-09  | 22:17      | 100    | 2   | CN2       | BON059           | 47        | 57 38.03 N | 163 16.15 W | 20Bon | QTowF                  |  |
| 07-Oct-09  | 22:17      | 100    | 2   | CN2       | BON059           | 47        | 57 38.03 N | 163 16.15 W | 60Bon | QTowF                  |  |
| 07-Oct-09  | 22:17      | 100    | 2   | CN2       | BON059           | 47        | 57 38.03 N | 163 16.15 W | CAT   | CAT                    |  |
| 08-Oct-09  | 0:33       | 101    | 1   | CN3       | CTD108           | 53        | 57 22.76 N | 163 31.89 W | CTDB  | Chlor, CTD, Fluor, PAR |  |
| 08-Oct-09  | 2:28       | 102    | 1   | CN4       | CTD109           | 67        | 57 07.76 N | 163 47.79 W | CTDB  | Chlor, CTD, Fluor, PAR |  |
| 08-Oct-09  | 2:45       | 102    | 2   | CN4       | BON060           | 67        | 57 07.84 N | 163 47.62 W | 20Bon | QTowF                  |  |

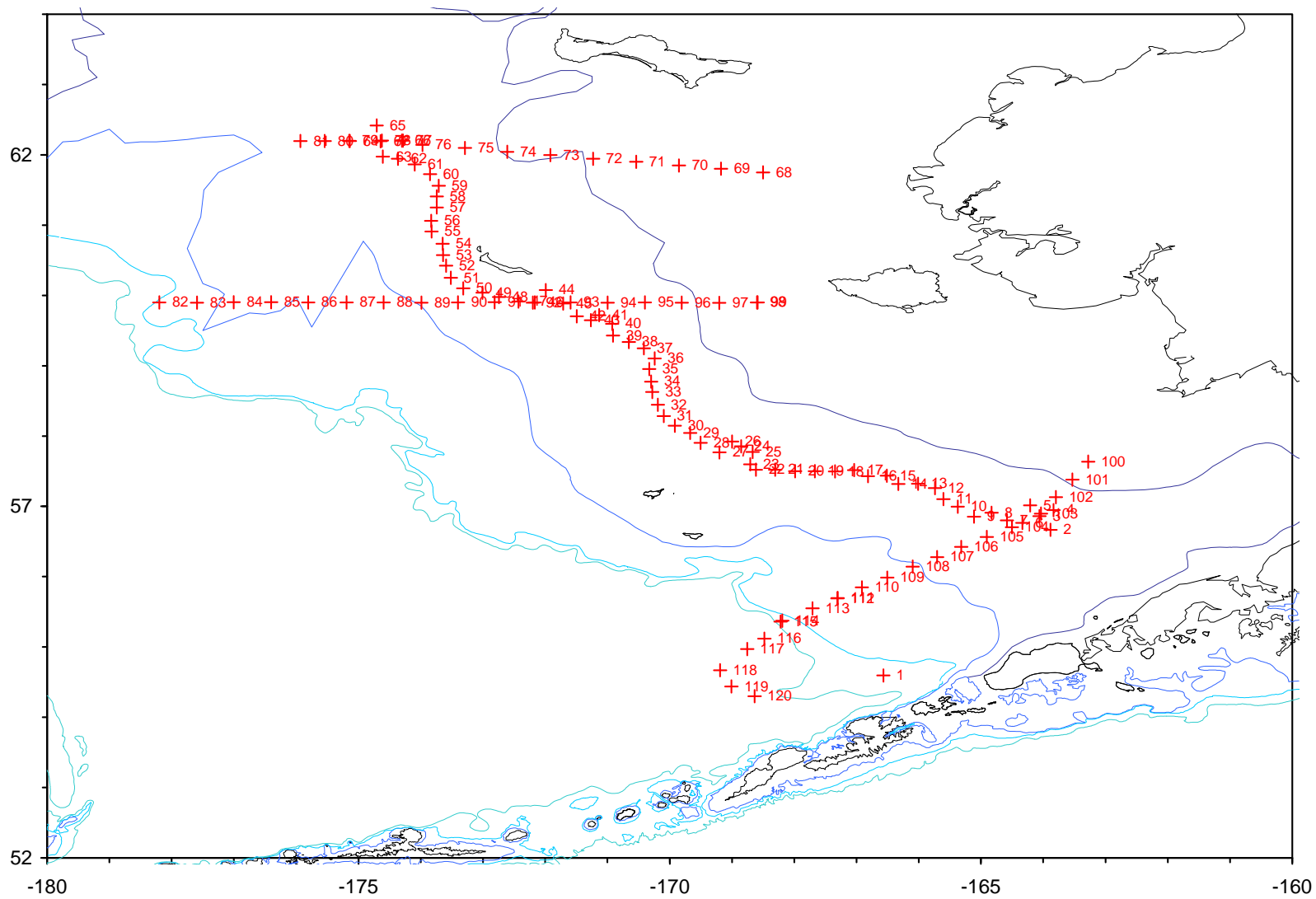
## Cruise Summary For FOCI Cruise 2MF09 (MF0904L2)

| Date (GMT) | Time (GMT) | Statio | Hau | FOCI Grid | Alternat Station | Depth (m) | Latitude   | Longitude   | Gear  | SamplesCollected       | HaulComments                                     |
|------------|------------|--------|-----|-----------|------------------|-----------|------------|-------------|-------|------------------------|--|
| 08-Oct-09  | 2:45       | 102    | 2   | CN4       | BON060           | 67        | 57 07.84 N | 163 47.62 W | 60Bon | QTowF                  |  |
| 08-Oct-09  | 2:45       | 102    | 2   | CN4       | BON060           | 67        | 57 07.84 N | 163 47.62 W | CAT   | CAT                    |  |
| 08-Oct-09  | 5:08       | 103    | 1   | CN5       | CTD110           | 72        | 56 53.88 N | 164 02.14 W | CTDB  | Chlor, CTD, Fluor, PAR |  |
| 08-Oct-09  | 8:40       | 104    | 1   | CN6       | CTD111           | 76        | 56 42.15 N | 164 30.16 W | CTDB  | Chlor, CTD, Fluor, PAR |  |
| 08-Oct-09  | 8:55       | 104    | 2   | CN6       | BON061           | 76        | 56 42.18 N | 164 29.93 W | 20Bon | QTowF                  | 3 jellies removed from 60Bon net 1.              |
| 08-Oct-09  | 8:55       | 104    | 2   | CN6       | BON061           | 76        | 56 42.18 N | 164 29.93 W | 60Bon | QTowF                  | 3 jellies removed from 60Bon net 1.              |
| 08-Oct-09  | 8:55       | 104    | 2   | CN6       | BON061           | 76        | 56 42.18 N | 164 29.93 W | CAT   | CAT                    | 3 jellies removed from 60Bon net 1.              |
| 08-Oct-09  | 10:38      | 105    | 1   | CN7       | CTD112           | 78        | 56 33.77 N | 164 54.35 W | CTDB  | Chlor, CTD, Fluor, PAR |  |
| 08-Oct-09  | 12:16      | 106    | 1   | CN8       | CTD113           | 85        | 56 25.39 N | 165 19.01 W | CTDB  | Chlor, CTD, Fluor, PAR |  |
| 08-Oct-09  | 12:38      | 106    | 2   | CN8       | BON062           | 85        | 56 25.17 N | 165 18.95 W | 20Bon | QTowF                  |  |
| 08-Oct-09  | 12:38      | 106    | 2   | CN8       | BON062           | 85        | 56 25.17 N | 165 18.95 W | 60Bon | QTowF                  |  |
| 08-Oct-09  | 12:38      | 106    | 2   | CN8       | BON062           | 85        | 56 25.17 N | 165 18.95 W | 60Bon | QTowF                  | 1 jelly removed from 20Bon and 2 jellies removed |
| 08-Oct-09  | 12:38      | 106    | 2   | CN8       | BON062           | 85        | 56 25.17 N | 165 18.95 W | CAT   | CAT                    | from 60Bon                                       |
| 08-Oct-09  | 14:19      | 107    | 1   | CN9       | CTD114           | 91        | 56 16.72 N | 165 42.19 W | CTDB  | Chlor, CTD, Fluor, PAR |  |
| 08-Oct-09  | 16:02      | 108    | 1   | CN10      | CTD115           | 109       | 56 08.51 N | 166 05.81 W | CTDB  | Chlor, CTD, Fluor, PAR |  |
| 08-Oct-09  | 16:22      | 108    | 2   | CN10      | BON063           | 109       | 56 08.44 N | 166 05.93 W | 20Bon | QTowF                  |  |
| 08-Oct-09  | 16:22      | 108    | 2   | CN10      | BON063           | 109       | 56 08.44 N | 166 05.93 W | 60Bon | QTowF                  |  |
| 08-Oct-09  | 16:22      | 108    | 2   | CN10      | BON063           | 109       | 56 08.44 N | 166 05.93 W | CAT   | CAT                    |  |
| 08-Oct-09  | 18:16      | 109    | 1   | CN11      | CTD116           | 128       | 55 59.19 N | 166 30.32 W | CTDB  | Chlor, CTD, Fluor, PAR |  |
| 08-Oct-09  | 20:11      | 110    | 1   | CN12      | CTD117           | 135       | 55 50.87 N | 166 54.81 W | CTDB  | Chlor, CTD, Fluor, PAR |  |
| 08-Oct-09  | 20:33      | 110    | 2   | CN12      | BON064           | 135       | 55 50.76 N | 166 54.46 W | 20Bon | QTowF                  |  |
| 08-Oct-09  | 20:33      | 110    | 2   | CN12      | BON064           | 135       | 55 50.76 N | 166 54.46 W | 60Bon | QTowF                  |  |
| 08-Oct-09  | 20:33      | 110    | 2   | CN12      | BON064           | 135       | 55 50.76 N | 166 54.46 W | CAT   | CAT                    |  |
| 08-Oct-09  | 22:21      | 111    | 1   | CN13      | CTD118           | 137       | 55 41.78 N | 167 18.26 W | CTDB  | Chlor, CTD, Fluor, PAR |  |
| 09-Oct-09  | 9:11       | 112    | 1   | CN13      | CTD119           | 137       | 55 41.49 N | 167 18.28 W | CTD   | CTD, Fluor, PAR        |  |
| 09-Oct-09  | 11:09      | 113    | 1   | CN14      | CTD120           | 136       | 55 32.91 N | 167 42.38 W | CTDB  | Chlor, CTD, Fluor, PAR |  |
| 09-Oct-09  | 11:47      | 113    | 2   | CN14      | BON065           | 137       | 55 33.19 N | 167 41.70 W | 20Bon | QTowF                  |  |
| 09-Oct-09  | 11:47      | 113    | 2   | CN14      | BON065           | 137       | 55 33.19 N | 167 41.70 W | 60Bon | QTowF                  |  |
| 09-Oct-09  | 11:47      | 113    | 2   | CN14      | BON065           | 137       | 55 33.19 N | 167 41.70 W | CAT   | CAT                    |  |
| 09-Oct-09  | 14:23      | 114    | 1   | CN16      | CTD121           | 551       | 55 22.45 N | 168 11.49 W | CTDB  | Chlor, CTD, Fluor, PAR |  |
| 09-Oct-09  | 16:53      | 115    | 1   | CN17      | CTD122           | 1039      | 55 21.60 N | 168 13.09 W | CTDB  | Chlor, CTD             |  |
| 09-Oct-09  | 17:37      | 115    | 2   | CN17      | BON066           | 966       | 55 21.67 N | 168 12.69 W | 20Bon | QTowF                  |  |
| 09-Oct-09  | 17:37      | 115    | 2   | CN17      | BON066           | 966       | 55 21.67 N | 168 12.69 W | 60Bon | QTowF                  |  |
| 09-Oct-09  | 17:37      | 115    | 2   | CN17      | BON066           | 966       | 55 21.67 N | 168 12.69 W | CAT   | CAT                    |  |
| 09-Oct-09  | 20:19      | 116    | 1   | CN19      | CTD123           | 1715      | 55 06.99 N | 168 28.77 W | CTDB  | Chlor, CTD             | No 0 m bottle was tripped                        |
| 09-Oct-09  | 23:00      | 117    | 1   | CN20      | CTD124           | 2018      | 54 58.22 N | 168 45.38 W | CTDB  | Chlor, CTD             |  |
| 10-Oct-09  | 0:03       | 117    | 2   | CN20      | BON067           | 2035      | 54 57.94 N | 168 45.55 W | 20Bon | QTowF                  |  |
| 10-Oct-09  | 0:03       | 117    | 2   | CN20      | BON067           | 2035      | 54 57.94 N | 168 45.55 W | 60Bon | QTowF                  |  |

## Cruise Summary For FOCI Cruise 2MF09 (MF0904L2)

| Date<br>(GMT) | Time<br>(GMT) | Statio | Hau | FOCI<br>Grid | Alternat<br>Station | Depth<br>(m) | Latitude   | Longitude   | Gear | SamplesCollected | HaulComments |
|---------------|---------------|--------|-----|--------------|---------------------|--------------|------------|-------------|------|------------------|--------------|
| 10-Oct-09     | 0:03          | 117    | 2   | CN20         | BON067              | 2035         | 54 57.94 N | 168 45.55 W | CAT  | CAT              |              |
| 10-Oct-09     | 3:08          | 118    | 1   | CN21         | CTD125              | 1688         | 54 40.10 N | 169 11.42 W | CTDB | Chlor, CTD       |              |
| 10-Oct-09     | 5:59          | 119    | 1   | CN22         | CTD126              | 1666         | 54 26.27 N | 169 00.61 W | CTDB | Chlor, CTD       |              |
| 10-Oct-09     | 8:48          | 120    | 1   | CN23         | CTD127              | 1806         | 54 18.00 N | 168 38.16 W | CTDB | Chlor, CTD       |              |

Chartlet:



2MF09 Stations