

CRUISE REPORT

Cruise Number: MF05-02

FOCI Number: 2MF05

Ship: *Miller Freeman*

Area of Operations: Gulf of Alaska, Kodiak Island vicinity

Itinerary: Departed Kodiak, AK, Thursday, February 21, 2005

Arrived Dutch Harbor, AK, Friday, March 4, 2005

Participating Organizations: NOAA/Alaska Fisheries Science Center (AFSC)

Chief Scientist:

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Objectives of Cruise:

We conducted an ichthyoplankton survey in the contiguous waters around Kodiak Island, Alaska. This work was needed to describe larval fish assemblages on the shelf and slope in winter, and to study the transport and early life history of larval fishes in particular capelin (*Mallotus villosus*) and Pacific sandlance (*Ammodytes hexapterus*). We also conducted deep bongo tows on the outer continental shelf and upper slope to collect eggs and early larvae of arrowtooth flounder (*Atheresthes stomias*). Satellite tracked ARGOS drifters were deployed to monitor ocean currents as potential pathways for larval transport. Data on physical characteristics of the water column were also collected. In addition, we collected ichthyoplankton samples in the southeastern Bering Sea near Unimak Island for early larvae of northern sculpin (*Icelinus borealis*).

Summary of Operations:

<u>Operation</u>	<u>Tows</u>
60cm Bongo (standard MARMAP)	100
60cm Bongo (deep)	18
Seabird Sea CAT CTD	118
Sameoto neuston	51
CTD	7
CTD with bottle samples	9
ARGOS drifter deployments	4

Samples Collected:

60 cm bongo .505 mm mesh	118
60 cm bongo .333 mm mesh	14
Sameoto neuston	51
20 cm bongo .153 mm mesh	9
Microzooplankton from CTD with bottles	9

All samples were preserved in 5% formalin with sodium borate buffer.

Summary of Cruise:

Grid Survey: Departure from Kodiak, AK occurred at 1500 hrs on February 21, 2005. A standard MARMAP bongo tow was conducted at the first station (57° 39.39' N, 152° 21.98' W) in the vicinity of Chiniak Bay (Figure 1). At station 2, we began neuston sampling. Throughout the survey, neuston samples were collected at night at all stations occupied between ½ hour after sunset until ½ hour before sunrise. During the survey, deep bongo tows for eggs and early larvae of arrowtooth flounder (*Atheresthes stomias*), were conducted at several stations, typically at depths of 400 and 600 m (Figure 1). In addition, we deployed four ARGOS satellite tracker buoys at stations 10, 11, 15, and 18. Sampling at grid stations concluded at approximately 10:45 AM on February 17.

Additional sampling: We resumed sampling in the southeastern Bering Sea at 0745 hrs on March 4, 2005 at station 96 (54° 37.39' N, 165° 03.61' W) (Figure 2). Upon completion of the Bering Sea stations, we transited to Dutch Harbor, AK and arrived on March 4 at 1645 hrs.

Time lost to equipment failure – ½ hour, CTD electrical problem February 20.

Days lost due to weather – 0.5 (11.5 hrs) 0330-1500 hrs February 22 – high winds and swell.

Days lost (other) – 0.25 (6 hrs) to pick up replacement engineer in Kodiak 2020 hrs February 25 to 0230 hrs February 26.

Specifics of operations:

See Table 1 – [Cruise Summary For FOCI Cruise 2MF05 \(MF05-02\)](#)

Acknowledgments:

The scientific party would like to acknowledge the efforts and support of the officers and crew of NOAA ship *Miller Freeman*. All personnel performed their duties professionally and the success of the cruise was dependent, in large part, on their hard work. As a result of their efforts, all of the originally scheduled operations plus some additional sampling were completed.

Attachments:

Figure 1 – [Grid Survey area](#)

Figure 2 – [Additional sampling area](#)

Table 1 – [Cruise Summary For FOCI Cruise 2MF05 \(MF05-02\)](#)

Figure 1. Survey area.

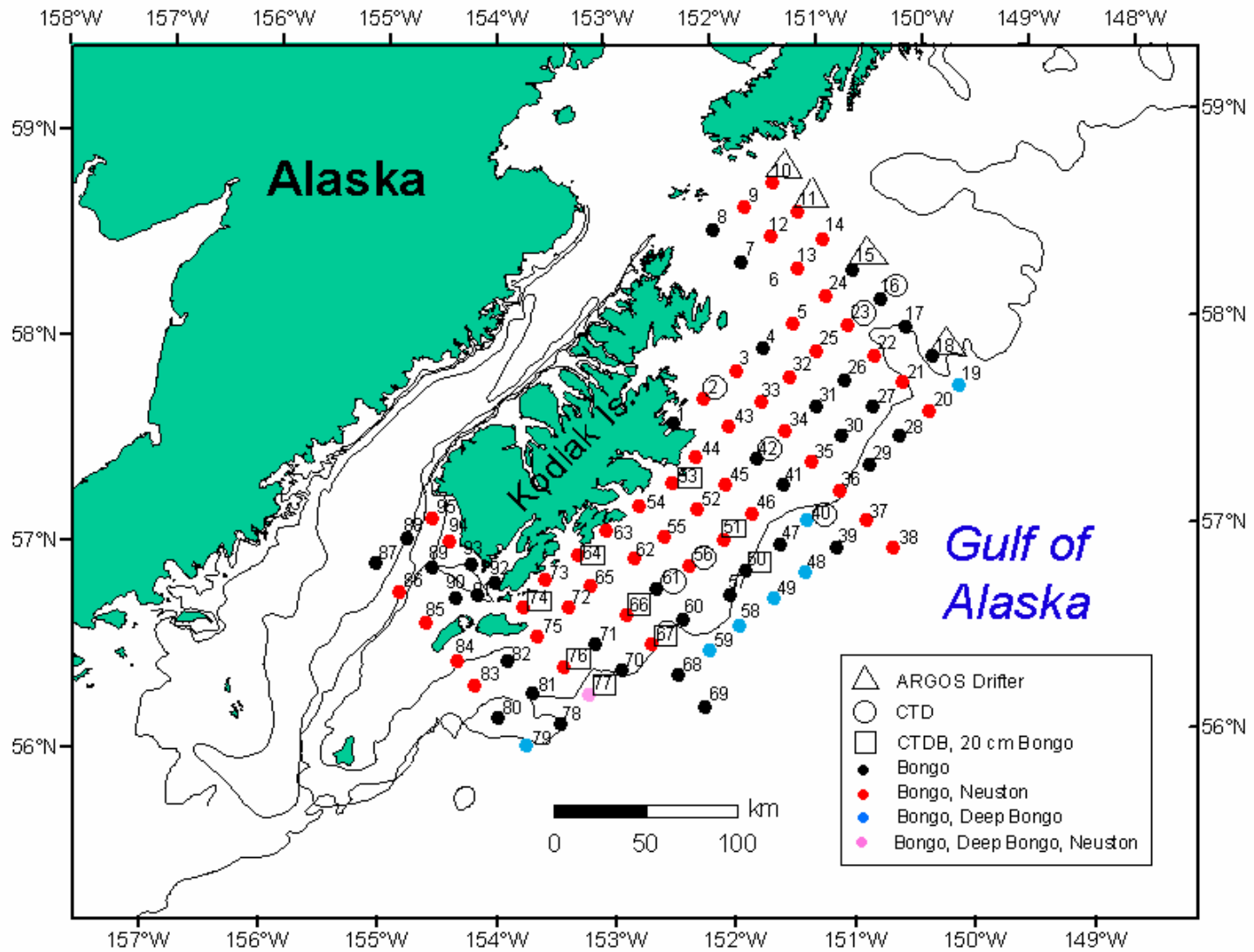


Figure 2. Additional sampling.

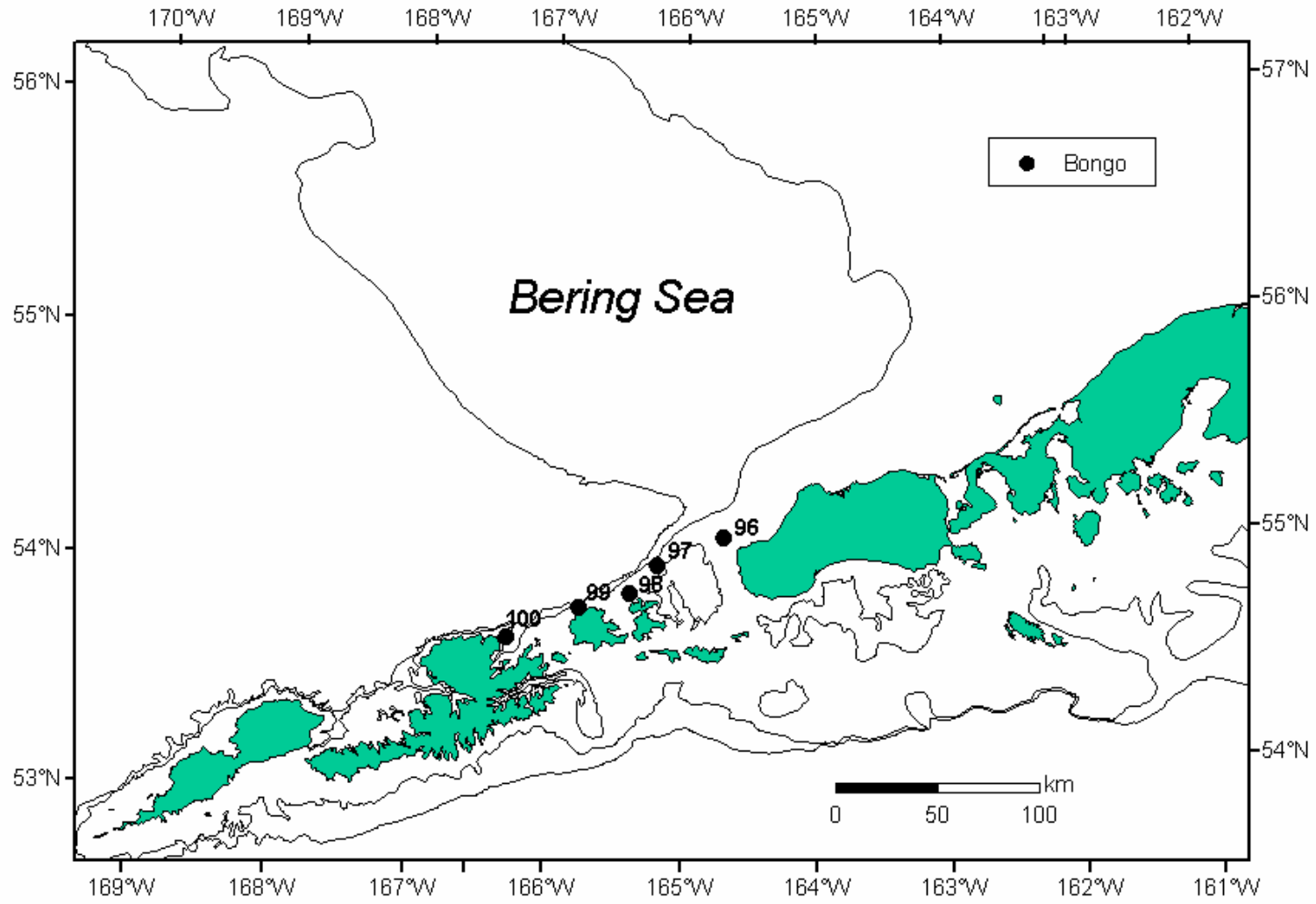


Table 1. Cruise Summary For FOCI Cruise 2MF05 (MF05-02)

Date (GMT)	Time (GMT)	Station	Haul	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	Samples Collected	Haul Comments
22-Feb-05	02:43	1	1		BON001	90	57 39.39 N	152 21.98 W	60Bon	QTowF	
22-Feb-05	02:43	1	1		BON001	90	57 39.39 N	152 21.98 W	CAT	CAT	No salinity reading from SeaCat, unit replaced.
22-Feb-05	04:40	2	2		NEU001	100	57 47.15 N	152 03.01 W	Neu	QTowF	
22-Feb-05	05:09	2	3		CTD001	96	57 47.46 N	152 02.59 W	CTD	CTD	
22-Feb-05	05:31	2	4		BON002	94	57 47.34 N	152 02.98 W	60Bon	QTowF	
22-Feb-05	05:31	2	4		BON002	94	57 47.34 N	152 02.98 W	CAT	CAT	
22-Feb-05	07:04	3	1		NEU002	79	57 55.83 N	151 43.16 W	Neu	QTowF	
22-Feb-05	07:33	3	2		BON003	81	57 55.95 N	151 42.94 W	60Bon	QTowF	
22-Feb-05	07:33	3	2		BON003	81	57 55.95 N	151 42.94 W	CAT	CAT	
22-Feb-05	08:59	4	1		NEU003	119	58 03.28 N	151 25.56 W	Neu	QTowF	
22-Feb-05	09:18	4	2		BON004	119	58 03.31 N	151 25.57 W	60Bon	QTowF	
22-Feb-05	09:18	4	2		BON004	119	58 03.31 N	151 25.57 W	CAT	CAT	
22-Feb-05	10:47	5	1		NEU004	155	58 10.59 N	151 06.96 W	Neu	QTowF	
22-Feb-05	11:07	5	2		BON005	158	58 11.20 N	151 06.21 W	60Bon	QTowF	
22-Feb-05	11:07	5	2		BON005	158	58 11.20 N	151 06.21 W	CAT	CAT	
23-Feb-05	13:19	6	1		BON006	127	58 03.31 N	151 25.57 W	60Bon	QTowF	
23-Feb-05	13:19	6	1		BON006	127	58 03.31 N	151 25.57 W	CAT	CAT	
23-Feb-05	01:52	7	1		BON007	179	58 31.91 N	151 36.78 W	60Bon	QTowF	
23-Feb-05	01:52	7	1		BON007	179	58 31.91 N	151 36.78 W	CAT	CAT	
23-Feb-05	03:52	8	1		BON008	123	58 42.95 N	151 54.09 W	60Bon	QTowF	
23-Feb-05	03:52	8	1		BON008	123	58 42.95 N	151 54.09 W	60Bon	QTowF	Position from backup GPS system (Northstar).
23-Feb-05	03:52	8	1		BON008	123	58 42.95 N	151 54.09 W	CAT	CAT	
23-Feb-05	05:23	9	1		NEU005	134	58 50.79 N	151 34.60 W	Neu	QTowF	
23-Feb-05	05:47	9	2		BON009	103	58 50.33 N	151 34.19 W	60Bon	QTowF	
23-Feb-05	05:47	9	2		BON009	103	58 50.33 N	151 34.19 W	CAT	CAT	
23-Feb-05	07:22	10	1		NEU006	150	58 58.26 N	151 15.92 W	Neu	QTowF	
23-Feb-05	08:04	10	2		BON010	151	58 58.18 N	151 15.57 W	60Bon	QTowF	Position from backup GPS system (Northstar).
23-Feb-05	08:04	10	2		BON010	151	58 58.18 N	151 15.57 W	CAT	CAT	
23-Feb-05	08:25	10	3		BUOY001	155	58 58.09 N	151 15.27 W	SatBuoy	Deploy	Drifter number 53294.
23-Feb-05	10:02	11	1		NEU007	143	58 48.26 N	150 59.75 W	Neu	QTowF	
23-Feb-05	10:26	11	2		BON011	143	58 48.28 N	151 00.33 W	60Bon	QTowF	
23-Feb-05	10:26	11	2		BON011	143	58 48.28 N	151 00.33 W	CAT	CAT	
23-Feb-05	10:43	11	3		BUOY002	145	58 48.24 N	151 00.17 W	SatBuoy	Deploy	Drifter number 53298.
23-Feb-05	12:00	12	1		NEU008	184	58 40.93 N	151 17.26 W	Neu	QTowF	Position from backup GPS system (Northstar).
23-Feb-05	12:27	12	2		BON012	186	58 40.19 N	151 17.63 W	60Bon	QTowF	
23-Feb-05	12:27	12	2		BON012	186	58 40.19 N	151 17.63 W	CAT	CAT	
23-Feb-05	14:07	13	1		NEU009	74	58 29.49 N	151 04.24 W	Neu	QTowF	Position from backup GPS system (Northstar).
23-Feb-05	14:27	13	2		BON013	76	58 29.47 N	151 02.45 W	60Bon	QTowF	
23-Feb-05	14:27	13	2		BON013	76	58 29.47 N	151 02.45 W	CAT	CAT	
23-Feb-05	15:51	14	1		NEU010	147	58 38.49 N	150 45.40 W	Neu	QTowF	
23-Feb-05	16:23	14	2		BON014	204	58 38.70 N	150 44.32 W	60Bon	QTowF	Position from backup GPS system (Northstar).
23-Feb-05	16:23	14	2		BON014	204	58 38.70 N	150 44.32 W	CAT	CAT	
23-Feb-05	18:01	15	1		BON015	79	58 28.04 N	150 28.20 W	60Bon	QTowF	

Cruise Summary For FOCI Cruise 2MF05 (MF0502)

Date (GMT)	Time (GMT)	Station	Haul	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	Samples Collected	Haul Comments
23-Feb-05	18:01	15	1		BON015	79	58 28.04 N	150 28.20 W	CAT	CAT	
23-Feb-05	18:16	15	2		BUOY003	81	58 27.99 N	150 27.93 W	SatBuoy	Deploy	Drifter number 53317.
23-Feb-05	19:57	16	1		CTD002	54	58 17.76 N	150 11.61 W	CTD	CTD	
23-Feb-05	20:09	16	2		BON016	54	58 17.91 N	150 11.82 W	60Bon	QTowF	
23-Feb-05	20:09	16	2		BON016	54	58 17.91 N	150 11.82 W	CAT	CAT	
23-Feb-05	21:43	17	1		BON017	208	58 08.31 N	149 57.37 W	60Bon	QTowF	
23-Feb-05	21:43	17	1		BON017	208	58 08.31 N	149 57.37 W	CAT	CAT	
23-Feb-05	23:35	18	1		BON018	126	57 57.70 N	149 41.53 W	60Bon	QTowF	
23-Feb-05	23:35	18	1		BON018	126	57 57.70 N	149 41.53 W	CAT	CAT	
23-Feb-05	23:50	18	2		BUOY004	126	57 57.70 N	149 40.78 W	SatBuoy	Deploy	Drifter number 53295.
24-Feb-05	01:26	19	1		BON019	700	57 47.79 N	149 26.23 W	60Bon	QTowF	ATF - 1. Bottom depth from chart.
24-Feb-05	01:26	19	1		BON019	700	57 47.79 N	149 26.23 W	CAT	CAT	
24-Feb-05	02:07	19	2		BON020	710	57 47.78 N	149 26.17 W	60Bon	QTowF	ATF - 2. Bottom depth from chart.
24-Feb-05	02:07	19	2		BON020	710	57 47.78 N	149 26.17 W	CAT	CAT	
24-Feb-05	03:16	19	3		BON021	760	57 47.51 N	149 24.86 W	60Bon	QTowF	ATF - 3 Bottom depth from chart.
24-Feb-05	03:16	19	3		BON021	760	57 47.51 N	149 24.86 W	CAT	CAT	
24-Feb-05	05:39	20	1		NEU011	760	57 39.90 N	149 45.78 W	Neu	QTowF	
24-Feb-05	06:10	20	2		BON022	760	57 39.74 N	149 45.54 W	60Bon	QTowF	Bottom depth from chart.
24-Feb-05	06:10	20	2		BON022	760	57 39.74 N	149 45.54 W	CAT	CAT	
24-Feb-05	07:46	21	1		NEU012	235	57 49.92 N	150 01.10 W	Neu	QTowF	
24-Feb-05	08:34	21	2		BON023	240	57 50.07 N	150 00.62 W	60Bon	QTowF	
24-Feb-05	08:34	21	2		BON023	240	57 50.07 N	150 00.62 W	CAT	CAT	
24-Feb-05	10:01	22	1		NEU013	186	57 59.16 N	150 16.95 W	Neu	QTowF	
24-Feb-05	10:27	22	2		BON024	187	57 59.61 N	150 16.77 W	60Bon	QTowF	
24-Feb-05	10:27	22	2		BON024	187	57 59.61 N	150 16.77 W	CAT	CAT	
24-Feb-05	11:57	23	1		NEU014	126	58 09.48 N	150 32.36 W	Neu	QTowF	Stopwatch malfunction - used bridge MOA times.
24-Feb-05	12:21	23	2		CTD003	122	58 09.71 N	150 32.78 W	CTD	CTD	
24-Feb-05	12:45	23	3		BON025	117	58 09.87 N	150 33.02 W	60Bon	QTowF	
24-Feb-05	12:45	23	3		BON025	117	58 09.87 N	150 33.02 W	60Bon	QTowF	
24-Feb-05	12:45	23	3		BON025	117	58 09.87 N	150 33.02 W	CAT	CAT	
24-Feb-05	14:06	24	1		NEU015	65	58 19.56 N	150 45.38 W	Neu	QTowF	
24-Feb-05	14:35	24	2		BON026	64	58 19.88 N	150 45.70 W	60Bon	QTowF	
24-Feb-05	14:35	24	2		BON026	64	58 19.88 N	150 45.70 W	CAT	CAT	
24-Feb-05	16:40	25	1		NEU016	133	58 01.57 N	150 52.56 W	Neu	QTowF	
24-Feb-05	17:25	25	2		BON027	139	58 02.18 N	150 52.05 W	60Bon	QTowF	
24-Feb-05	17:25	25	2		BON027	139	58 02.18 N	150 52.05 W	CAT	CAT	
24-Feb-05	19:11	26	1		BON028	88	57 51.61 N	150 36.03 W	60Bon	QTowF	
24-Feb-05	19:11	26	1		BON028	88	57 51.61 N	150 36.03 W	CAT	CAT	
24-Feb-05	20:49	27	1		BON029	116	57 42.23 N	150 20.32 W	60Bon	QTowF	
24-Feb-05	20:49	27	1		BON029	116	57 42.23 N	150 20.32 W	CAT	CAT	
24-Feb-05	22:35	28	1		BON030	249	57 32.19 N	150 05.20 W	60Bon	QTowF	
24-Feb-05	22:35	28	1		BON030	249	57 32.19 N	150 05.20 W	CAT	CAT	

Cruise Summary For FOCI Cruise 2MF05 (MF0502)

Date (GMT)	Time (GMT)	Station	Haul	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	Samples Collected	Haul Comments
25-Feb-05	00:09	29	1		BON031	223	57 23.16 N	150 23.78 W	60Bon	QTowF	
25-Feb-05	00:09	29	1		BON031	223	57 23.16 N	150 23.78 W	CAT	CAT	
25-Feb-05	01:56	30	1		BON032	101	57 33.37 N	150 40.04 W	60Bon	QTowF	
25-Feb-05	01:56	30	1		BON032	101	57 33.37 N	150 40.04 W	CAT	CAT	
25-Feb-05	03:28	31	1		BON033	79	57 43.31 N	150 54.83 W	60Bon	QTowF	
25-Feb-05	03:28	31	1		BON033	79	57 43.31 N	150 54.83 W	CAT	CAT	
25-Feb-05	05:12	32	1		NEU017	68	57 53.02 N	151 09.22 W	Neu	QTowF	
25-Feb-05	05:26	32	2		BON034	67	57 53.39 N	151 09.71 W	60Bon	QTowF	
25-Feb-05	05:26	32	2		BON034	67	57 53.39 N	151 09.71 W	CAT	CAT	
25-Feb-05	06:53	33	1		NEU018	56	57 45.58 N	151 27.92 W	Neu	QTowF	
25-Feb-05	07:03	33	2		BON035	57	57 45.49 N	151 28.42 W	60Bon	QTowF	
25-Feb-05	07:03	33	2		BON035	57	57 45.49 N	151 28.42 W	CAT	CAT	
25-Feb-05	08:32	34	1		NEU019	68	57 35.53 N	151 13.87 W	Neu	QtowF	
25-Feb-05	08:54	34	2		BOM036	69	57 35.55 N	151 13.94 W	60Bon	QTowF	
25-Feb-05	08:54	34	2		BOM036	69	57 35.55 N	151 13.94 W	CAT	CAT	
25-Feb-05	10:32	35	1		NEU020	97	57 25.13 N	150 58.74 W	Neu	QTowF	
25-Feb-05	10:51	35	2		BON037	96	57 24.59 N	150 58.03 W	60Bon	QTowF	
25-Feb-05	10:51	35	2		BON037	96	57 24.59 N	150 58.03 W	CAT	CAT	
25-Feb-05	12:21	36	1		NEU021	502	57 14.78 N	150 43.63 W	Neu	QTowF	
25-Feb-05	12:55	36	2		BON038	502	57 14.79 N	150 42.94 W	60Bon	QTowF	Bottom depth from chart.
25-Feb-05	12:55	36	2		BON038	502	57 14.79 N	150 42.94 W	CAT	CAT	
25-Feb-05	14:29	37	1		NEU022	1456	57 04.69 N	150 27.37 W	Neu	QTowF	Bottom depth from chart.
25-Feb-05	14:54	37	2		BON039	1456	57 03.93 N	150 26.42 W	60Bon	QTowF	
25-Feb-05	14:54	37	2		BON039	1456	57 03.93 N	150 26.42 W	CAT	CAT	
25-Feb-05	16:24	38	1		NEU023	2457	56 55.13 N	150 12.31 W	Neu	QTowF	Bottom depth from chart.
25-Feb-05	16:54	38	2		BON040	2457	56 55.22 N	150 12.43 W	60Bon	QTowF	Bottom depth from chart.
25-Feb-05	16:54	38	2		BON040	2457	56 55.22 N	150 12.43 W	CAT	CAT	
25-Feb-05	19:09	39	1		BON041	1820	56 56.25 N	150 46.24 W	60Bon	QTowF	
25-Feb-05	19:09	39	1		BON041	1820	56 56.25 N	150 46.24 W	CAT	CAT	
25-Feb-05	21:10	40	1		CTD004	574	57 05.73 N	151 03.28 W	CTD	CTD	
25-Feb-05	21:48	40	2		BON042	640	57 06.16 N	151 02.40 W	60Bon	QTowF	ATF - 4 Bottom depth from chart.
25-Feb-05	21:48	40	2		BON042	640	57 06.16 N	151 02.40 W	CAT	CAT	
25-Feb-05	22:23	40	3		BON043	616	57 06.07 N	151 02.66 W	60Bon	QTowF	ATF - 5 Bottom depth from chart.
25-Feb-05	22:23	40	3		BON043	616	57 06.07 N	151 02.66 W	CAT	CAT	
25-Feb-05	23:54	40	4		BON044	609	57 06.27 N	151 02.10 W	60Bon	QTowF	ATF - 6 Bottom depth from chart.
25-Feb-05	23:54	40	4		BON044	609	57 06.27 N	151 02.10 W	CAT	CAT	
26-Feb-05	01:22	41	1		BON045	151	57 17.70 N	151 17.04 W	60Bon	QTowF	
26-Feb-05	01:22	41	1		BON045	151	57 17.70 N	151 17.04 W	CAT	CAT	
26-Feb-05	02:55	42	1		CTD005	129	57 26.56 N	151 32.34 W	CTD	CTD	
26-Feb-05	03:12	42	2		BON046	124	57 26.58 N	151 32.09 W	60Bon	QTowF	
26-Feb-05	03:12	42	2		BON046	124	57 26.58 N	151 32.09 W	CAT	CAT	
26-Feb-05	04:57	43	1		NEU024	118	57 37.65 N	151 48.20 W	Neu	QtowF	
26-Feb-05	05:16	43	2		BON047	116	57 37.64 N	151 47.92 W	60Bon	QTowF	

Cruise Summary For FOCI Cruise 2MF05 (MF0502)

Date (GMT)	Time (GMT)	Station	Haul	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	Samples Collected	Haul Comments
26-Feb-05	05:16	43	2		BON047	116	57 37.64 N	151 47.92 W	CAT	CAT	
26-Feb-05	11:38	44	1		NEU025	57	57 27.90 N	152 09.20 W	Neu	QTowF	
26-Feb-05	11:59	44	2		BON048	53	57 27.79 N	152 08.76 W	60Bon	QTowF	
26-Feb-05	11:59	44	2		BON048	53	57 27.79 N	152 08.76 W	CAT	CAT	Discrepancy between EQ50 depth (43) and EK500 (53). So chose more conservative
26-Feb-05	13:25	45	1		NEU026	70	57 18.28 N	151 51.95 W	Neu	QTowF	Discrepancy between EQ50 depth (43) and EK500 (53). So chose more conservative
26-Feb-05	13:51	45	2		BON049	69	57 18.36 N	151 51.83 W	60Bon	QTowF	
26-Feb-05	13:51	45	2		BON049	69	57 18.36 N	151 51.83 W	CAT	CAT	
26-Feb-05	15:09	46	1		NEU027	113	57 08.54 N	151 36.11 W	Neu	QTowF	
26-Feb-05	15:36	46	2		BON050	94	57 08.41 N	151 35.47 W	60Bon	QTowF	
26-Feb-05	15:36	46	2		BON050	94	57 08.41 N	151 35.47 W	CAT	CAT	
26-Feb-05	17:05	47	1		BON051	8554	56 57.72 N	151 20.39 W	60Bon	QTowF	
26-Feb-05	17:05	47	1		BON051	8554	56 57.72 N	151 20.39 W	CAT	CAT	
26-Feb-05	18:32	48	1		BON052	1456	56 48.32 N	151 05.87 W	60Bon	QTowF	ATF - 7 Bottom depth from chart.
26-Feb-05	18:32	48	1		BON052	1456	56 48.32 N	151 05.87 W	CAT	CAT	
26-Feb-05	19:10	48	2		BON053	1456	56 48.28 N	151 05.97 W	60Bon	QTowF	ATF - 8 Bottom depth from chart.
26-Feb-05	19:10	48	2		BON053	1456	56 48.28 N	151 05.97 W	CAT	CAT	
26-Feb-05	20:05	48	3		BON054	1456	56 48.08 N	151 06.10 W	60Bon	QTowF	ATF - 9 Bottom depth from chart.
26-Feb-05	20:05	48	3		BON054	1456	56 48.08 N	151 06.10 W	CAT	CAT	
26-Feb-05	21:48	49	1		BON055	1000	56 40.32 N	151 25.04 W	60Bon	QTowF	ATF - 10 Bottom depth from chart.
26-Feb-05	21:48	49	1		BON055	1000	56 40.32 N	151 25.04 W	CAT	CAT	
26-Feb-05	22:36	49	2		BON056	1000	56 40.23 N	151 25.08 W	60Bon	QTowF	ATF - 11 Bottom depth from chart.
26-Feb-05	22:36	49	2		BON056	1000	56 40.23 N	151 25.08 W	CAT	CAT	
26-Feb-05	23:57	49	3		BON057	1000	56 40.24 N	151 25.23 W	60Bon	QTowF	ATF - 12 Bottom depth from chart.
26-Feb-05	23:57	49	3		BON057	1000	56 40.24 N	151 25.23 W	CAT	CAT	
27-Feb-05	02:18	50	1		CTD006	280	56 49.57 N	151 40.77 W	CTDB	CTD, MZ	All MZ samples integrated into one 32 oz jar.
27-Feb-05	02:44	50	2		BON058	258	56 49.73 N	151 41.14 W	20Bon	QTowF	
27-Feb-05	02:44	50	2		BON058	258	56 49.73 N	151 41.14 W	60Bon	QTowF	
27-Feb-05	02:44	50	2		BON058	258	56 49.73 N	151 41.14 W	CAT	CAT	
27-Feb-05	04:16	51	1		CTD007	84	57 00.18 N	151 53.86 W	CTDB	CTD, MZ	All MZ samples integrated into one 32 oz jar.
27-Feb-05	04:28	51	2		NEU028	84	57 00.24 N	151 53.61 W	Neu	QTowF	
27-Feb-05	04:56	51	3		BON059	82	56 59.79 N	151 53.79 W	20Bon	QTowF	
27-Feb-05	04:56	51	3		BON059	82	56 59.79 N	151 53.79 W	60Bon	QTowF	
27-Feb-05	04:56	51	3		BON059	82	56 59.79 N	151 53.79 W	CAT	CAT	
27-Feb-05	06:28	52	1		NEU029	83	57 10.78 N	152 09.06 W	Neu	QTowF	
27-Feb-05	06:41	52	2		BON060	82	57 10.65 N	152 09.33 W	60Bon	QTowF	
27-Feb-05	06:41	52	2		BON060	82	57 10.65 N	152 09.33 W	CAT	CAT	
27-Feb-05	08:04	53	1		CTD008	61	57 19.56 N	152 24.03 W	CTDB	CTD, MZ	All MZ samples integrated into one 32 oz jar.
27-Feb-05	08:18	53	2		NEU030	66	57 19.47 N	152 25.37 W	Neu	QtowF	
27-Feb-05	08:47	53	3		BON061	60	57 19.38 N	152 23.50 W	20Bon	QTowF	
27-Feb-05	08:47	53	3		BON061	60	57 19.38 N	152 23.50 W	60Bon	QTowF	
27-Feb-05	08:47	53	3		BON061	60	57 19.38 N	152 23.50 W	CAT	CAT	

Cruise Summary For FOCI Cruise 2MF05 (MF0502)

Date (GMT)	Time (GMT)	Station	Haul	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	Samples Collected	Haul Comments
27-Feb-05	10:11	54	1		NEU031	143	57 11.85 N	152 44.00 W	Neu	QTowF	
27-Feb-05	10:40	54	2		BON062	133	57 12.18 N	152 44.80 W	60Bon	QTowF	Used EQ50 depth reading.
27-Feb-05	10:40	54	2		BON062	133	57 12.18 N	152 44.80 W	CAT	CAT	
27-Feb-05	12:01	55	1		NEU032	145	57 01.53 N	152 29.17 W	Neu	QTowF	
27-Feb-05	12:28	55	2		BON063	137	57 01.72 N	152 29.24 W	60Bon	QTowF	EQ50 read 137m and EK500 read 145m. Used more conservative depth.
27-Feb-05	12:28	55	2		BON063	137	57 01.72 N	152 29.24 W	CAT	CAT	
27-Feb-05	13:57	56	1		NEU033	94	56 51.91 N	152 13.18 W	Neu	QTowF	
27-Feb-05	15:01	56	2		CTD009	94	56 51.69 N	152 14.33 W	CTD	CTD	
27-Feb-05	15:21	56	3		BON064	94	56 51.80 N	152 13.83 W	60Bon	QTowF	Wire angles high at beginning of tow.
27-Feb-05	15:21	56	3		BON064	94	56 51.80 N	152 13.83 W	CAT	CAT	
27-Feb-05	16:46	57	1		BON065	52	56 41.85 N	151 51.05 W	60Bon	QTowF	
27-Feb-05	16:46	57	1		BON065	52	56 41.85 N	151 51.05 W	CAT	CAT	
27-Feb-05	18:06	58	1		BON066	1820	56 31.52 N	151 45.83 W	60Bon	QTowF	ATF - 13 Bottom depth from chart.
27-Feb-05	18:06	58	1		BON066	1820	56 31.52 N	151 45.83 W	CAT	CAT	
27-Feb-05	19:29	58	2		BON067	1820	56 32.10 N	151 45.31 W	60Bon	QTowF	ATF - 14 Bottom depth from chart.
27-Feb-05	19:29	58	2		BON067	1820	56 32.10 N	151 45.31 W	CAT	CAT	
27-Feb-05	19:30	58	3		BON068	1820	56 32.10 N	151 45.31 W	60Bon	QTowF	ATF - 15 Bottom depth from chart.
27-Feb-05	19:30	58	3		BON068	1820	56 32.10 N	151 45.31 W	CAT	CAT	
27-Feb-05	21:31	59	1		BON069	1900	56 23.37 N	152 04.04 W	60Bon	QTowF	ATF - 16 Bottom depth from chart.
27-Feb-05	21:31	59	1		BON069	1900	56 23.37 N	152 04.04 W	CAT	CAT	
27-Feb-05	22:08	59	2		BON070	1900	56 23.69 N	152 04.09 W	60Bon	QTowF	ATF - 17. Bottom depth from chart..
27-Feb-05	22:08	59	2		BON070	1900	56 23.69 N	152 04.09 W	CAT	CAT	
27-Feb-05	23:04	59	3		BON071	1900	56 23.08 N	152 04.34 W	60Bon	QTowF	ATF - 18. Bottom depth from chart.
27-Feb-05	23:04	59	3		BON071	1900	56 23.08 N	152 04.34 W	CAT	CAT	
28-Feb-05	01:02	60	1		BON072	100	56 33.87 N	152 18.95 W	60Bon	QTowF	
28-Feb-05	01:02	60	1		BON072	100	56 33.87 N	152 18.95 W	CAT	CAT	
28-Feb-05	02:34	61	1		CTD010	137	56 44.14 N	152 34.38 W	CTD	CTD	
28-Feb-05	02:48	61	2		BON073	140	56 44.35 N	154 34.20 W	60Bon	QTowF	
28-Feb-05	02:48	61	2		BON073	140	56 44.35 N	154 34.20 W	CAT	CAT	
28-Feb-05	04:22	62	1		NEU034	117	56 54.62 N	152 47.71 W	Neu	QTowF	
28-Feb-05	04:38	62	2		BON074	108	56 54.04 N	152 48.28 W	60Bon	QTowF	
28-Feb-05	04:38	62	2		BON074	108	56 54.04 N	152 48.28 W	CAT	CAT	
28-Feb-05	05:59	63	1		NEU035	41	57 03.48 N	153 03.57 W	Neu	QTowF	
28-Feb-05	06:21	63	2		BON075	41	57 03.79 N	153 03.95 W	60Bon	QtowF	
28-Feb-05	06:21	63	2		BON075	41	57 03.79 N	153 03.95 W	CAT	CAT	
28-Feb-05	08:11	64	1		CTD011	52	56 55.82 N	153 21.28 W	CTDB	CTD, MZ	All MZ samples integrated into one 32 oz jar.
28-Feb-05	08:26	64	2		NEU036	57	56 55.76 N	153 21.91 W	Neu	QTowF	
28-Feb-05	08:52	64	3		BON076	64	56 55.55 N	153 21.01 W	20Bon	QTowF	
28-Feb-05	08:52	64	3		BON076	64	56 55.55 N	153 21.01 W	60Bon	QTowF	
28-Feb-05	08:52	64	3		BON076	64	56 55.55 N	153 21.01 W	CAT	CAT	
28-Feb-05	10:03	65	1		NEU037	132	56 45.94 N	153 13.41 W	Neu	QTowF	

Cruise Summary For FOCI Cruise 2MF05 (MF0502)

Date	Time	FOCI	Alternate	Depth							
(GMT)	(GMT)	Station	Haul	Grid	Station	(m)	Latitude	Longitude	Gear	Samples Collected	Haul Comments
28-Feb-05	10:21	65	2		BON077	132	56 45.37 N	153 13.16 W	60Bon	QTowF	
28-Feb-05	10:21	65	2		BON077	132	56 45.37 N	153 13.16 W	CAT	Discard	
28-Feb-05	12:16	66	1		CTD012	86	56 35.65 N	152 52.50 W	CTDB	CTD, MZ	All MZ samples integrated into one 32 oz jar.
28-Feb-05	12:36	66	2		NEU038	87	56 35.54 N	152 52.30 W	Neu	QtowF	
28-Feb-05	13:00	66	3		BON078	85	56 35.45 N	152 52.27 W	20Bon	QTowF	
28-Feb-05	13:00	66	3		BON078	85	56 35.45 N	152 52.27 W	60Bon	QTowF	
28-Feb-05	13:00	66	3		BON078	85	56 35.45 N	152 52.27 W	CAT	CAT	
28-Feb-05	14:54	67	2		CTD013A	131	56 25.76 N	152 38.04 W	CTDB	CTD, MZ	Repeat of CTD013. All MZ samples integrated into one 32 oz jar.
28-Feb-05	15:09	67	3		NEU039	130	56 25.83 N	152 37.98 W	Neu	QtowF	
28-Feb-05	15:31	67	4		BON079	138	56 25.96 N	152 37.19 W	20Bon	QTowF	
28-Feb-05	15:31	67	4		BON079	138	56 25.96 N	152 37.19 W	60Bon	QTowF	
28-Feb-05	15:31	67	4		BON079	138	56 25.96 N	152 37.19 W	CAT	CAT	
28-Feb-05	17:02	68	1		BON080	1860	56 15.57 N	152 22.84 W	60Bon	QTowF	ATF - 19 Bottom depth from chart.
28-Feb-05	17:02	68	1		BON080	1860	56 15.57 N	152 22.84 W	CAT	CAT	
28-Feb-05	17:41	68	2		BON081	1820	56 15.01 N	152 23.50 W	60Bon	QTowF	ATF - 20 bottom depth from chart
28-Feb-05	17:41	68	2		BON081	1820	56 15.01 N	152 23.50 W	CAT	CAT	
28-Feb-05	18:53	68	3		BON082	1820	56 15.20 N	152 22.89 W	60Bon	QTowF	ATF - 21 Bottom depth from chart.
28-Feb-05	18:53	68	3		BON082	1820	56 15.20 N	152 22.89 W	CAT	CAT	
28-Feb-05	20:53	69	1		BON083	1400	56 04.70 N	152 07.41 W	60Bon	QTowF	Bottom depth from chart.
28-Feb-05	20:53	69	1		BON083	1400	56 04.70 N	152 07.41 W	CAT	CAT	Bottom depth from chart.
28-Feb-05	23:49	70	1		BON084	180	56 17.37 N	152 55.83 W	60Bon	QTowF	
28-Feb-05	23:49	70	1		BON084	180	56 17.37 N	152 55.83 W	CAT	CAT	
01-Mar-05	01:25	71	1		BON085	29	56 26.34 N	153 11.41 W	60Bon	QTowF	
01-Mar-05	01:25	71	1		BON085	29	56 26.34 N	153 11.41 W	CAT	CAT	
01-Mar-05	04:49	72	1		NEU040	100	56 38.53 N	153 26.58 W	Neu	QTowF	
01-Mar-05	05:17	72	2		BON086	103	56 38.34 N	153 27.38 W	60Bon	QtowF	
01-Mar-05	05:17	72	2		BON086	103	56 38.34 N	153 27.38 W	CAT	CAT	
01-Mar-05	06:46	73	1		NEU041	80	56 47.68 N	153 40.82 W	Neu	QTowF	
01-Mar-05	07:09	73	2		BON087	75	56 47.64 N	153 41.28 W	60Bon	QTowF	
01-Mar-05	07:09	73	2		BON087	75	56 47.64 N	153 41.28 W	CAT	CAT	
01-Mar-05	08:27	74	1		CTD014	75	56 38.67 N	153 53.56 W	CTDB	CTD, MZ	All MZ samples integrated into one 32 oz jar.
01-Mar-05	08:42	74	2		NEU042	77	56 38.80 N	153 53.11 W	Neu	QTowF	
01-Mar-05	09:07	74	3		BON088	77	56 38.83 N	153 53.39 W	20Bon	QTowF	
01-Mar-05	09:07	74	3		BON088	77	56 38.83 N	153 53.39 W	60Bon	QTowF	
01-Mar-05	09:07	74	3		BON088	77	56 38.83 N	153 53.39 W	CAT	CAT	
01-Mar-05	10:22	75	1		NEU043	87	56 29.29 N	153 45.32 W	Neu	QTowF	
01-Mar-05	10:45	75	2		BON089	90	56 29.21 N	153 45.39 W	60Bon	QTowF	
01-Mar-05	10:45	75	2		BON089	90	56 29.21 N	153 45.39 W	CAT	CAT	
01-Mar-05	12:17	76	1		CTD015	68	56 18.91 N	153 30.10 W	CTDB	CTD, MZ	All MZ samples integrated into one 32 oz jar.
01-Mar-05	12:30	76	2		NEU044	68	56 18.91 N	153 29.99 W	Neu	QTowF	
01-Mar-05	12:58	76	3		BON090	71	56 18.76 N	153 29.80 W	20Bon	QTowF	
01-Mar-05	12:58	76	3		BON090	71	56 18.76 N	153 29.80 W	60Bon	QTowF	
01-Mar-05	12:58	76	3		BON090	71	56 18.76 N	153 29.80 W	CAT	CAT	

Cruise Summary For FOCI Cruise 2MF05 (MF0502)

Date (GMT)	Time (GMT)	Station	Haul	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	Samples Collected	Haul Comments
01-Mar-05	14:41	77	1		CTD016	1274	56 09.64 N	153 15.25 W	CTDB	CTD, MZ	All MZ samples integrated into one 32 oz jar. Bottom depth from chart.
01-Mar-05	15:13	77	2		NEU045	1274	56 09.77 N	153 15.50 W	Neu	QTowF	
01-Mar-05	15:46	77	3		BON091	1274	56 09.83 N	153 14.67 W	20Bon	QTowF	
01-Mar-05	15:46	77	3		BON091	1274	56 09.83 N	153 14.67 W	60Bon	QTowF	ATF - 22. Bottom depth from chart.
01-Mar-05	15:46	77	3		BON091	1274	56 09.83 N	153 14.67 W	CAT	CAT	
01-Mar-05	16:31	77	4		BON092	1274	56 09.80 N	153 14.74 W	60Bon	QTowF	ATF - 23. Bottom depth from chart.
01-Mar-05	16:31	77	4		BON092	1274	56 09.80 N	153 14.74 W	CAT	CAT	
01-Mar-05	17:33	77	5		BON093	1274	56 09.83 N	153 15.31 W	60Bon	QTowF	ATF - 24. Bottom depth from chart.
01-Mar-05	17:33	77	5		BON093	1274	56 09.83 N	153 15.31 W	CAT	CAT	
01-Mar-05	19:36	78	1		BON094	218	55 59.93 N	153 32.03 W	60Bon	QTowF	
01-Mar-05	19:36	78	1		BON094	218	55 59.93 N	153 32.03 W	CAT	CAT	
01-Mar-05	19:36	79	1		BON095	800	55 59.93 N	153 32.03 W	60Bon	QTowF	ATF - 25. Bottom depth from chart.
01-Mar-05	19:36	79	1		BON095	800	55 59.93 N	153 32.03 W	CAT	CAT	
01-Mar-05	21:56	79	2		BON096	800	55 52.77 N	153 51.64 W	60Bon	QTowF	ATF - 26. Bottom depth from chart.
01-Mar-05	21:56	79	2		BON096	800	55 52.77 N	153 51.64 W	CAT	CAT	
01-Mar-05	23:05	79	3		BON097	800	55 52.85 N	153 51.67 W	60Bon	QTowF	ATF - 27. Bottom depth from chart.
01-Mar-05	23:05	79	3		BON097	800	55 52.85 N	153 51.67 W	CAT	CAT	
02-Mar-05	01:06	80	1		BON098	154	56 02.28 N	154 08.18 W	60Bon	QTowF	
02-Mar-05	01:06	80	1		BON098	154	56 02.28 N	154 08.18 W	CAT	CAT	
02-Mar-05	02:42	81	1		BON099	238	56 10.28 N	153 48.13 W	60Bon	QTowF	
02-Mar-05	02:42	81	1		BON099	238	56 10.28 N	153 48.13 W	CAT	CAT	
02-Mar-05	04:13	82	1		BON100	80	56 20.67 N	154 03.17 W	60Bon	QTowF	
02-Mar-05	04:13	82	1		BON100	80	56 20.67 N	154 03.17 W	CAT	CAT	
02-Mar-05	05:40	83	1		NEU046	113	56 12.81 N	154 22.32 W	Neu	QTowF	
02-Mar-05	06:04	83	2		BON101	119	56 12.79 N	154 21.51 W	60Bon	QTowF	
02-Mar-05	06:04	83	2		BON101	119	56 12.79 N	154 21.51 W	CAT	CAT	
02-Mar-05	07:21	84	1		NEU047	53	56 20.65 N	154 32.39 W	Neu	QTowF	
02-Mar-05	07:32	84	2		BON102	53	56 20.72 N	154 32.14 W	60Bon	QTowF	
02-Mar-05	07:32	84	2		BON102	53	56 20.72 N	154 32.14 W	CAT	CAT	
02-Mar-05	13:15	85	1		NEU048	32	56 33.32 N	154 51.63 W	Neu	QTowF	
02-Mar-05	13:43	85	2		BON103	30	56 33.53 N	154 51.64 W	60Bon	QTowF	
02-Mar-05	13:43	85	2		BON103	30	56 33.53 N	154 51.64 W	CAT	CAT	
02-Mar-05	15:32	86	1		NEU049	81	56 43.45 N	155 06.94 W	Neu	QTowF	
02-Mar-05	16:00	86	2		BON104	74	56 43.57 N	155 06.69 W	60Bon	QTowF	
02-Mar-05	16:00	86	2		BON104	74	56 43.57 N	155 06.69 W	CAT	CAT	
02-Mar-05	17:24	87	1		BON105	244	56 53.19 N	155 21.72 W	60Bon	QTowF	
02-Mar-05	17:24	87	1		BON105	244	56 53.19 N	155 21.72 W	CAT	CAT	
02-Mar-05	19:07	88	1		BON106	180	57 01.32 N	155 03.03 W	60Bon	QTowF	
02-Mar-05	19:07	88	1		BON106	180	57 01.32 N	155 03.03 W	CAT	CAT	
02-Mar-05	20:31	89	1		BON107	45	56 51.67 N	154 47.85 W	60Bon	QTowF	
02-Mar-05	20:31	89	1		BON107	45	56 51.67 N	154 47.85 W	CAT	CAT	
02-Mar-05	22:39	90	1		BON108	22	56 41.93 N	154 33.33 W	60Bon	QTowF	
02-Mar-05	22:39	90	1		BON108	22	56 41.93 N	154 33.33 W	CAT	CAT	
02-Mar-05	23:43	91	1		BON109	27	56 42.60 N	154 21.13 W	60Bon	QTowF	

Cruise Summary For FOCI Cruise 2MF05 (MF0502)

Date (GMT)	Time (GMT)	Station	Haul	FOCI Grid	Alternate Station	Depth (m)	Latitude	Longitude	Gear	Samples Collected	Haul Comments
02-Mar-05	23:43	91	1		BON109	27	56 42.60 N	154 21.13 W	CAT	CAT	
03-Mar-05	00:46	92	1		BON110	50	56 46.89 N	154 10.85 W	60Bon	QTowF	
03-Mar-05	00:46	92	1		BON110	50	56 46.89 N	154 10.85 W	CAT	CAT	
03-Mar-05	02:30	93	1		BON111	54	56 52.99 N	154 24.18 W	60Bon	QTowF	
03-Mar-05	02:30	93	1		BON111	54	56 52.99 N	154 24.18 W	CAT	CAT	
03-Mar-05	04:54	94	1		NEU050	36	57 00.24 N	154 37.55 W	Neu	QTowF	
03-Mar-05	05:07	94	2		BON112	36	57 00.53 N	154 37.99 W	60Bon	QTowF	
03-Mar-05	05:07	94	2		BON112	36	57 00.53 N	154 37.99 W	CAT	CAT	
03-Mar-05	06:13	95	1		NEU051	79	57 08.26 N	154 47.98 W	Neu	QTowF	
03-Mar-05	06:34	95	2		BON113	78	57 08.31 N	154 47.85 W	60Bon	QTowF	
03-Mar-05	06:34	95	2		BON113	78	57 08.31 N	154 47.85 W	CAT	CAT	
04-Mar-05	17:03	96	1		BON114	73	54 37.39 N	165 03.61 W	60Bon	QTowF, RC1cel	
04-Mar-05	17:03	96	1		BON114	73	54 37.39 N	165 03.61 W	CAT	CAT	
04-Mar-05	19:05	97	1		BON115	98	54 27.24 N	165 31.84 W	60Bon	QTowF, RC1cel	
04-Mar-05	19:05	97	1		BON115	98	54 27.24 N	165 31.84 W	CAT	CAT	
04-Mar-05	20:21	98	1		BON116	81	54 18.58 N	165 42.08 W	60Bon	QTowF, RC1cel	
04-Mar-05	20:21	98	1		BON116	81	54 18.58 N	165 42.08 W	CAT	CAT	
04-Mar-05	21:51	99	1		BON117	73	54 12.41 N	166 03.21 W	60Bon	QTowF, RC1cel	
04-Mar-05	21:51	99	1		BON117	73	54 12.41 N	166 03.21 W	CAT	CAT	
04-Mar-05	23:56	100	1		BON118	121	54 01.16 N	166 33.72 W	60Bon	QTowF, RC1cel	
04-Mar-05	23:56	100	1		BON118	121	54 01.16 N	166 33.72 W	CAT	CAT	