FINAL CRUISE INSTRUCTIONS
ECO-FOCI

NOAA Ship *Oscar Dyson*, OD-06-01
February 18 – March 2, 2006
Chief Scientist: Morgan S. Busby, NOAA/AFSC

1.0 FINAL CRUISE INSTRUCTIONS

1.1 Cruise Title – Ecosystem and Fisheries-Oceanography Coordinated Investigations (Eco-FOCI).

1.2 Cruise Numbers:

1.2.1 Cruise Number – OD-06-01

1.2.2 Eco-FOCI Number – 1OD06

1.3 Cruise Dates:

1.3.1 Departure – Depart Kodiak, Alaska, at 1500 hours on Saturday, February 18, 2006.

1.3.2 Arrival – Arrive Dutch Harbor, Alaska, at 0800 hours on Thursday, March 2, 2006.

1.4 Operating Area – Gulf of Alaska.

2.0 CRUISE OVERVIEW

2.1 Cruise Objectives – Examine physical and biological factors that contribute to ecosystem change. We will conduct an ichthyoplankton survey in the waters contiguous to Kodiak Island, Alaska. This work is 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, particularly the feeding and zooplankton prey of capelin (*Mallotus villosus*) and Pacific sand lance (*Ammodytes hexapterus*). Distribution and abundance of eggs and larvae of deep water spawning flatfishes such as arrowtooth flounder (*Atheresthes stomias)* and Pacific halibut (*Hippoglossus stenolepis*) are also of interest.

2.2 Applicability – These instructions, with ***FOCI Standard Operating Instructions for NOAA Ship OSCAR DYSON***, dated November 11, 2005, present complete information for this cruise. [Note that the standard operating instructions are from **NOAA Ship *MILLER FREEMAN*** and are in the process of being adapted for *Oscar Dyson*. Comments are welcome.]

2.3 Participating Organizations

NOAA – Alaska Fisheries Science Center (AFSC)
7600 Sand Point Way N.E.
Seattle, Washington 98115-0070

2.4 Personnel

2.4.1 Chief Scientist

Name	Gender	Affiliation	E-mail Address
Morgan S. Busby (206) 526-4113	Male	AFSC	Morgan.Busby@noaa.gov

2.4.2 Participating Scientists

Name	Gender	Affiliation	E-mail Address
Morgan S. Busby	Male	AFSC	Morgan.Busby@noaa.gov
Deborah M. Blood	Female	AFSC	Debbie.Blood@noaa.gov
Jay B. Clark	Male	AFSC	Jay.Clark@noaa.gov
Colleen Harpold	Female	AFSC	Colleen Harpold@noaaa.gov
Ann C. Matarese	Female	AFSC	Ann.Matarese@noaa.gov
Ingrid Spies	Female	AFSC	Ingrid.Spies@noaa.gov

2.5 Administration

2.5.1 Ship Operations

Marine Operations Center, Pacific
1801 Fairview Avenue East
Seattle, Washington 98102-3767
Telephone: (206) 553-4548
Fax: (206) 553-1109

Commander Mark P. Ablondi, NOAA
Chief, Operations Division, Pacific (MOP1)
Telephone: (206) 553-8705
Cellular: (206) 390-7527
E-mail: Mark.Ablondi@noaa.gov

Larry Mordock
Deputy Chief, Operations Division (MOP1x1)
Telephone – Work: (206) 553-4764
Home: (206) 365-3567
Cellular: (206) 465-9316
E-mail: Larry.Mordock@noaa.gov

2.5.2 Scientific Operations

Dr. Phyllis J. Stabeno, PMEL
Telephone: (206) 526-6453
E-mail: Phyllis.Stabeno@noaa.gov

Dr. Jeffrey M. Napp, AFSC
Telephone: (206) 526-4148
E-mail: Jeff.Napp@noaa.gov

3.0 OPERATIONS

3.1 Data To Be Collected – We will collect ichthyoplankton samples with 60-cm bongo arrays rigged with 505-µm mesh nets from a grid of approximately 100 stations in the waters contiguous to Kodiak Island, Alaska. At about half of these stations, a Sameoto neuston net with 505-µm mesh will also be used. In addition, deep bongo net samples for ichthyoplankton will be taken at approximately 13 stations on the outer continental shelf and upper slope at depths of 200, 400, and 600 meters to collect eggs and larvae of deep water spawning flatfishes.

We will collect data on the physical environment using the Sea-Bird Electronics SBE-19 SEACAT Profiler to relate larval fish assemblage structure to environmental variables (temperature and salinity). We will also conduct CTD casts using a Sea-Bird Electronics SBE 911*plus* CTD system at approximately 17 stations. At nine of these stations we will collect zooplankton with a 333-µm mesh net on one side of the 60-cm Bongo frame, a 20-cm Bongo with 153-µm mesh, and a California Cooperative Oceanic Fisheries Investigation (CalCOFI) Vertical Egg Tow (CalVET) with 53-µm mesh. This cruise will provide new information on larval fish assemblages and diets on the shelf off Kodiak Island during winter.

3.1.1 Scientific Computer System (SCS) – The ship's SCS shall operate throughout the cruise, acquiring and logging data from navigation, meteorological, and oceanographic sensors. See ***FOCI Standard Operating Instructions*** (SOI 5.2 and 5.3) for specific requirements.

3.2 Staging Plan – The majority of the equipment necessary for the cruise will be loaded onto **NOAA Ship *OSCAR DYSON*** when the ship is in Seattle, Washington, January 2006. We will require dedicated use of the chemistry, hydrographic, wet, and dry labs for sample and equipment preparation and request as much counter and cabinet space as possible. We will use the Dry lab for SEACAT operations.

3.3 De-staging Plan – We will offload our equipment and plankton samples after the ship returns to Dutch Harbor, Alaska on March 2, 2006 for transfer to Factory Trawlers Supply.

3.4 Cruise Plan – The cruise will depart from Kodiak, Alaska, on Saturday, February 18, 2006, and occupy a series of approximately 100 stations. Station positions and a figure of the working area are in Sections 9.2 OD-06-01 – Station Locations and 9.3 OD-06-01 – Cruise Chartlet, respectively.

3.4.1 Grid Survey – During the survey, a Marine Assessment Monitoring and Prediction (MARMAP) Bongo tow (SOI 3.2.2) with two, 505-µm mesh nets will be first conducted at most stations. At grid stations, the Bongo net will be deployed to a depth of 200 meters, or to 10 meters off bottom, whichever is shallower. At 9 stations, a 333µm nesh net will be put on one side of the bongo frame. The SBE-19+ SEACAT will be attached to the wire above the net frame.

The sample from Bongo Net 1 will be preserved in its entirety in 1.8% buffered formaldehyde solution (5% formalin) and the sample from Net 2, whenever time allows, will be rough sorted for ichthyoplankton, contents identified, and then discarded with the exception of nine stations where the contents will be preserved for zooplankton.

Two other collections will be made at nine stations: small zooplankton – 20-cm Bongo with 153-µm mesh – and microzooplankton – California Cooperative Oceanic Fisheries Investigation (CalCOFI) Vertical Egg Tow (CalVET)(SOI 3.2.6) with 53 µm mesh. One sample from the 20-cm Bongo and both the CalVET samples combined will be preserved in 1.8% buffered formaldehyde solution. Selected grid stations have been chosen for Sameoto neuston tows – see Section 3.6.1 Neuston Net Tows – to collect surface ichthyoplankton at night – between 30 minutes after sunset until 30 minutes before sunrise. At these stations, the neuston tow and/or CTD cast will precede the MARMAP Bongo tow.

3.4.2 **Arrowtooth Flounder Egg and Early Larvae Tows (ATF Stations)** – At these stations, Bongo tows will be deployed to 10 meters off bottom at depths of approximately 200, 400, and 600 meters. At stations with depths greater than 600 meters, Bongo tows will be deployed to 600 meters.

3.5 **Station Locations** – See Section 9.2 OD-06-01 – Station Locations.

3.6 **Station Operations** – The following are operations to be conducted on this cruise. The procedures for these operations are listed in the ***FOCI Standard Operating Instructions*** (SOI). Operations not addressed in the SOI and changes to standard procedures are addressed below.

- CTD/Water Sample Operations (SOI 3.2.1),
- MARMAP Bongo Tows (SOI 3.2.2), and
- CalVet Tows (SOI 3.2.6)

3.6.1 **Neuston Net Tows**

3.6.1.1 **Description** – Neuston nets are used for sampling the upper few centimeters of the water column. There are many frame styles that may be used; we use a Sameoto sampler made of stainless steel. The mouth opening is 30-cm x 50-cm and is designed to fish half in and half out of the water.

3.6.1.2 **Rates/Fishing** – The vessel should be moving slowly ahead, about 1.5 to 2.0 knots, so that the net is fishing half in and half out of the water. The exact speed necessary varies with sea conditions and is a learning process. Lower the neuston net to the surface with a crane and pay out 10 to 15 meters of wire. It may be necessary to adjust the ship's speed to maintain the proper skimming action.

Start the stopwatch when the net starts to fish and tow the net for approximately 9.5 minutes, unless otherwise instructed. After 9.5 minutes, decrease vessel speed to retrieve the net. Read and record flow meter revolutions, duration of tow, and any comments on the COD form.

3.6.1.3 Preservation – The Neuston sample should be preserved immediately, as specified in the ***FOCI Field Manual*** or sample collection request forms.

3.6.1.4 Maintenance – Check net for holes and fill flow meter with water.

3.7 Underway Operations – The following are underway operations to be conducted on this cruise. The procedures for these operations are listed in the ***FOCI Standard Operating Instructions*** (SOI). Operations not addressed in the SOI and changes to standard procedures are addressed below:

- Scientific Computer System (SOI 5.2), and
- Thermosalinograph Monitoring (SOI 5.3).

3.8 Applicable Restrictions – None.

3.9 Small Boat Operations – None.

4.0 FACILITIES

4.1 Equipment and Capabilities Provided by Ship

- Hydrographic winch with slip rings and 3-conductor cable terminated for CTD,
- Hydrographic winch with slip rings and 3-conductor cable terminated for the SBE-19 + SEACAT, for net tow operations,
- Sea-Bird Electronics' SBE-19+ SEACAT system,
- Sea-Bird Electronics SBE 911plus CTD system with stand, each CTD system should include underwater CTD, weights, and pinger. There should be one deck unit for the two systems,
- Conductivity and temperature sensor package to provide dual sensors on the CTD (primary),
- Underway fluorometer,
- Wire speed indicators and readout for both hydrographic winches visible in Dry Lab or where SEACAT operations occur,
- For meteorological observations: 2 anemometers (one R. M. Young system interfaced to the SCS), calibrated air thermometer (wet-and dry-bulb) and a calibrated barometer and/or barograph,
- Freezer space for storage of biological and chemical samples (both blast and storage freezers, -20° C and -80° C) turned on and operating,
- SIMRAD ES-60 and SIMRAD EK-60 echosounders,
- Use of Pentium PC in Dry and/or Computer Lab for data analysis,
- Scientific Computer System (SCS),
- Video monitors in Dry, Chemistry, and Wet labs for viewing SCS and Electronic MOA output,
- Laboratory space with exhaust hood, sink, lab tables, and storage space,
- Sea-water hoses and spray nozzles to wash nets (quarterdeck and aft deck),
- Adequate deck lighting for night-time operations,
- Navigational equipment including GPS and radar,
- Safety harnesses for working on starboard sampling station/hero platform and fantail, and

- Ship's crane(s) used for loading and/or deploying gear and supplies.

4.2 **Equipment and Capabilities Provided by Scientists** – See Section 9.1 OD-06-01 – Equipment Inventory for weights and dimensions.

- Sea-Bird Electronics SBE 911plus CTD system (backup) (PMEL),
- Sea-Bird Electronics' SBE-19+ SEACAT system, (backup) (AFSC),
- PMEL PC with SEASOFT software for CTD data collection and processing,
- Fluorometer and light meter to be mounted on CTD,
- CTD stand modified for attachment of fluorometer,
- Conductivity and temperature sensor package to provide dual sensors on the CTD (backup),
- CTD rosette sampler,
- 20-cm and 60-cm Bongo sampling arrays,
- Sameoto neuston net and frame,
- CalVET nets and frame,
- Manual wire-angle indicator,
- Spare manual wire angle indicator,
- Miscellaneous scientific sampling and processing equipment,
- Microscope for examining, sorting, and measuring fish eggs and larvae,
- Cruise Operations Database (COD) software and forms.

5.0 DISPOSITION OF DATA AND REPORTS

5.1 The following data products will be included in the cruise data package:

- **NOAA Form 77-13d –** ***Deck Log – Weather Observation Sheets***,
- Electronic Marine Operations Abstracts,
- SCS backup,
- Calibration Sheets for all ship's and scientific instruments used,
- CTD Cast Information/Rosette Log,

5.2 **Pre- and Post-cruise Meetings** – Cruise meetings may be held in accordance with ***FOCI Standard Operating Instructions*** (SOI 5.5).

6.0 ADDITIONAL PROJECTS

6.1 **Definition** – Ancillary and piggyback projects are secondary to the objectives of the cruise and should be treated as additional investigations. The difference between the two types of secondary projects is that an ancillary project does not have representation aboard and is accomplished by the ship's force.

6.2 **Ancillary Projects** – Any ancillary work done during this project will be accomplished with the concurrence of the Chief Scientist and on a not-to-interfere basis with the programs described in these instructions and in accordance with the ***NOAA Fleet Standing Ancillary Instructions***.

6.3 Piggyback Projects – None.

7.0 HAZARDOUS MATERIALS

7.1 Inventory – See Section 9.4 OD-06-01 – HAZMAT Inventory.

7.2 Material Safety Data Sheet (MSDS) – Submitted separately.

8.0 MISCELLANEOUS

8.1 Communications – Specific information on how to contact **NOAA Ship *OSCAR DYSON*** and all other fleet vessels can be found at:

http://www.moc.noaa.gov/phone.htm

8.2 Important Telephone and Facsimile Numbers and E-mail Addresses

8.2.1 Pacific Marine Environmental Laboratory (PMEL)

Eco-FOCI – Ocean Environmental Research Division (OERD2):
- (206) 526-4700 (voice)
- (206) 526-6485 (fax)

Administration:
- (206) 526-6810 (voice)
- (206) 526-6815 (fax)

E-Mail: FirstName.LastName@noaa.gov

8.2.2 Alaska Fisheries Science Center (AFSC)

Eco-FOCI – Resource Assessment and Conservation Engineering (RACE):
- (206) 526-4171 (voice)
- (206) 526-6723 (fax)

E-Mail: FirstName.LastName@noaa.gov

8.2.3 NOAA Ship *OSCAR DYSON* – Telephone methods listed in order of increasing expense.

Homeport – Kodiak, Alaska:
- Numbers yet to be determined

United States Coast Guard – Kodiak, Alaska:
- (907) 487-9752
- (907) 487-9753
- (907) 487-4397
- (907) 487-4398

Cellular:

- (206) 604-7122 (CO)
- (206) 295-0775 (XO)
- (206) 295-0550 (OPS)
- (206) 295-0670 (CME)

Wavetalk

- 1-800-668-4950-toll free

INMARSAT B:

- 011-872-336-995-910 (voice line 1)
- 011-872-336-995-920 (voice line 2)
- 011-872-336-995-911 (fax)

Iridium:

- (808) 659-5684
- 011-8816-7631-0050

E-Mail: Noaa.Ship.Oscar.Dyson@noaa.gov (mention the person's name in SUBJECT field.)

8.2.4 Marine Operations Center, Pacific (MOP)

Operations Division (MOP1)

- (206) 553-4548 (voice)
- (206) 553-1109 (facsimile)

E-Mail: FirstName.LastName@noaa.gov

E-Mail to Radio Room: Radio.Room@noaa.gov

9.0 APPENDICES

9.1 OD-06-01 – Equipment Inventory

Equipment	Quantity	Dimension	Weight
Larval Supply Trunk	1	20" x 22" x 36"	80-lbs
Formaldehyde Containers	1 x 20-Liter		20-lbs
Carboy, Saturated Sodium Borate	1 x 20-Liter		40-lbs
Miscellaneous Gear Trunks	4	20" x 22" x 36"	80-lbs (ea.)
60-cm Bongo Frame	2	8" x 26" x 60"	20-lbs
Sameoto Neuston Frame	1	24" x 48"x 12"	20-lbs
CalVET tub	1		10-lbs
Cases, Glass Jars, 32-oz	12 cases	8" x 12" x 15"	18-lbs
Cases, Glass Jars, 16-oz	5 cases	4"x12"x15"	4-lbs

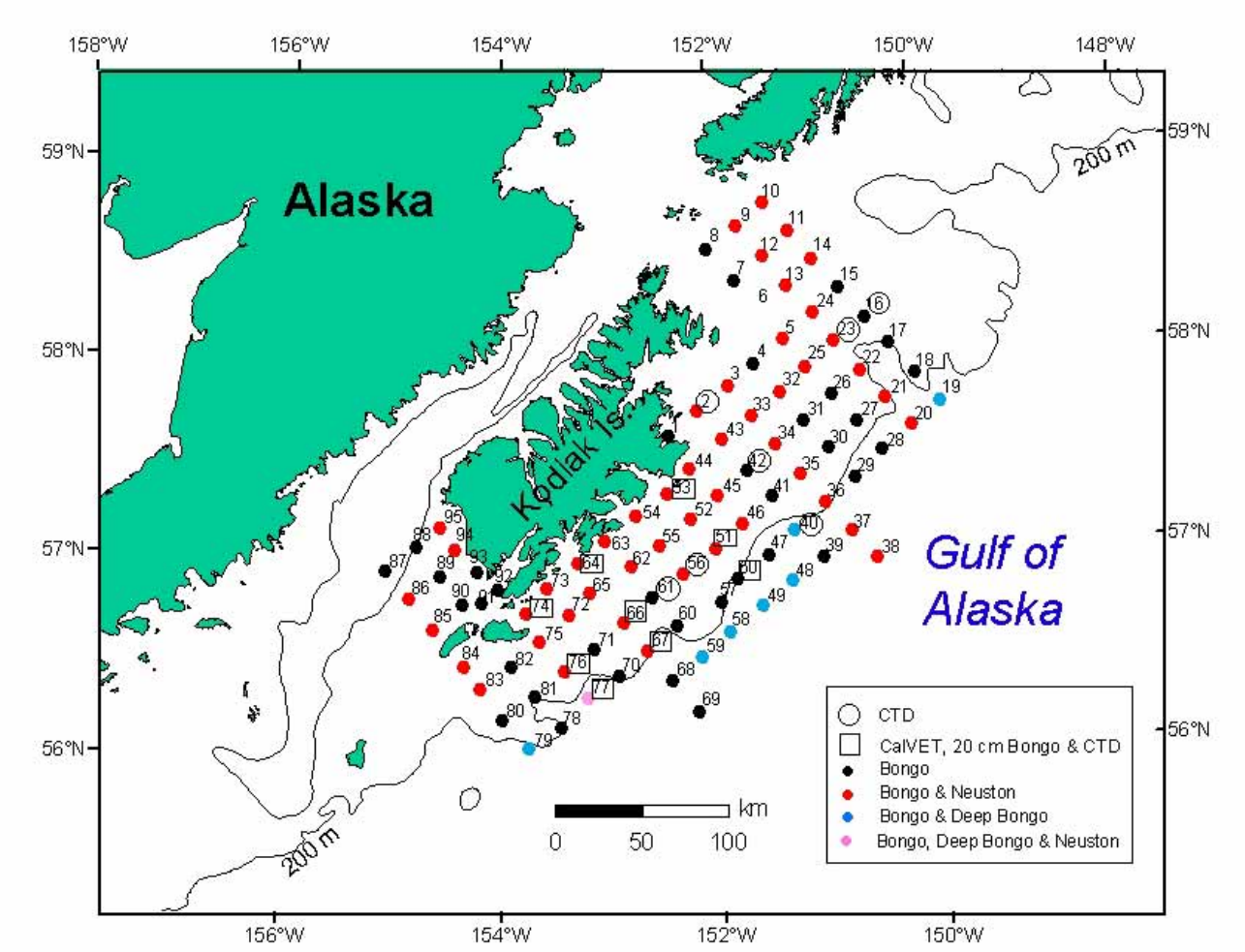
9.2 OD-06-01 – Station Locations

Stn	Operation	Activity	Latitude	Longitude
1	GRID	Bongo	57° 38.760' N	152° 21.720' W
2	GRID	Bongo/Neuston/CTD	57° 47.400' N	152° 02.700' W
3	GRID	Bongo/Neuston	57° 55.920' N	151° 42.780' W
4	GRID	Bongo/Neuston	58° 03.300' N	151° 25.080' W
5	GRID	Bongo/Neuston	58° 11.220' N	151° 06.180' W
6	GRID	Bongo/Neuston	58° 22.200' N	151° 22.500' W
7	GRID	Bongo/Neuston	58° 31.680' N	151° 36.300' W
8	GRID	Bongo	58° 42.900' N	151° 53.100' W
9	GRID	Bongo	58° 50.520' N	151° 34.200' W
10	GRID	Bongo	58° 58.080' N	151° 15.300' W
11	GRID	Bongo	58° 48.300' N	150° 59.520' W
12	GRID	Bongo	58° 40.200' N	151° 17.580' W
13	GRID	Bongo	58° 29.520' N	151° 02.820' W
14	GRID	Bongo/Neuston	58° 38.700' N	150° 44.520' W
15	GRID	Bongo/Neuston	58° 28.020' N	150° 27.900' W
16	GRID	Bongo/Neuston/CTD	58° 17.700' N	150° 11.580' W
17	GRID	Bongo/Neuston	58° 08.220' N	149° 56.880' W
18	GRID	Bongo/Neuston	57° 57.720' N	149° 40.800' W
19	GRID/ATF 1-3	Bongo/Deep Bongos	57° 47.700' N	149° 25.620' W
20	GRID	Bongo	57° 39.780' N	149° 45.480' W
21	GRID	Bongo	57° 49.920' N	150° 00.300' W
22	GRID	Bongo	57° 59.520' N	150° 16.380' W
23	GRID	Bongo/Neuston/CTD	58° 09.780' N	150° 32.400' W
24	GRID	Bongo/Neuston	58° 19.980' N	150° 45.720' W
25	GRID	Bongo/Neuston/CTD	58° 01.800' N	150° 52.080' W
26	GRID	Bongo/Neuston	57° 51.480' N	150° 36.000' W
27	GRID	Bongo/Neuston	57° 42.120' N	150° 19.680' W

Stn	Operation	Activity	Latitude	Longitude
28	GRID	Bongo	57° 31.920' N	150° 04.680' W
29	GRID	Bongo	57° 22.920' N	150° 23.520' W
30	GRID	Bongo	57° 33.000' N	150° 39.720' W
31	GRID	Bongo	57° 43.320' N	150° 54.480' W
32	GRID	Bongo	57° 53.220' N	151° 09.600' W
33	GRID	Bongo	57° 45.540' N	151° 28.140' W
34	GRID	Bongo/Neuston	57° 35.220' N	151° 13.500' W
35	GRID	Bongo/Neuston	57° 24.780' N	150° 58.320' W
36	GRID	Bongo/Neuston	57° 14.580' N	150° 43.080' W
37	GRID	Bongo/Neuston	57° 04.020' N	150° 26.700' W
38	GRID	Bongo/Neuston	56° 55.020' N	150° 12.120' W
39	GRID	Bongo/Neuston	56° 56.400' N	150° 46.680' W
40	GRID/ATF 4-6	Bongo/Deep Bongos/CTD	57° 06.180' N	151° 02.220' W
41	GRID	Bongo	57° 17.580' N	151° 17.400' W
42	GRID	Bongo/Neuston/CTD	57° 26.580' N	151° 32.700' W
43	GRID	Bongo/Neuston	57° 37.680' N	151° 47.700' W
44	GRID	Bongo/Neuston	57° 27.780' N	152° 08.340' W
45	GRID	Bongo/Neuston	57° 18.180' N	151° 51.720' W
46	GRID	Bongo/Neuston	57° 08.400' N	151° 35.580' W
47	GRID	Bongo	56° 58.020' N	151° 20.400' W
48	GRID/ ATF 7-9	Bongo/ Deep Bongos	56° 48.180' N	151° 06.120' W
49	GRID/ ATF 10-12	Bongo/ Deep Bongos	56° 40.380' N	151° 25.200' W
50	GRID	Bongo/20-cm bongo/CalVET/CTD	56° 49.620' N	151° 40.680' W
51	GRID	Bongo/20-cm bongo/CalVET/CTD	57° 00.120' N	151° 53.880' W
52	GRID	Bongo/Neuston	57° 10.620' N	152° 09.120' W
53	GRID	Bongo/Neuston/20-cm bongo/CalVET/CTD	57° 19.500' N	152° 23.880' W
54	GRID	Bongo/Neuston	57° 12.180' N	152° 44.880' W
55	GRID	Bongo/Neuston	57° 01.920' N	152° 29.280' W
56	GRID	Bongo/Neuston/CTD	56° 51.900' N	152° 14.280' W
57	GRID	Bongo	56° 41.820' N	151° 58.980' W
58	GRID/ ATF 13-15	Bongo/ Deep Bongos	56° 31.980' N	151° 45.420' W
59	GRID/ ATF 16-18	Bongo/ Deep Bongos	56° 23.580' N	152° 03.780' W
60	GRID	Bongo	56° 33.900' N	152° 18.720' W
61	GRID	Bongo/CTD	56° 44.100' N	152° 34.500' W
62	GRID	Bongo/Neuston	56° 54.000' N	152° 48.420' W
63	GRID	Bongo/Neuston	57° 03.720' N	153° 03.900' W
64	GRID	Bongo/Neuston/20-cm bongo/ CalVET/CTD	56° 55.800' N	153° 22.320' W
65	GRID	Bongo/Neuston	56° 45.600' N	153° 13.320' W
66	GRID	Bongo/Neuston/20-cm bongo/CalVET/CTD	56° 35.520' N	152° 52.500' W
67	GRID	Bongo/Neuston/20-cm bongo/CalVET/CTD	56° 25.920' N	152° 37.620' W
68	GRID	Bongo	56° 15.480' N	152° 22.920' W
69	GRID	Bongo	56° 04.620' N	152° 07.680' W
70	GRID/ ATF 19-21	Bongo/ Deep Bongos	56° 17.400' N	152° 55.980' W
71	GRID	Bongo/Neuston	56° 26.400' N	153° 11.520' W
72	GRID	Bongo/Neuston	56° 38.220' N	153° 27.300' W
73	GRID	Bongo/Neuston	56° 47.700' N	153° 41.100' W
74	GRID	Bongo/Neuston/20-cm bongo/CalVET/CTD	56° 38.580' N	153° 53.520' W

Stn	Operation	Activity	Latitude			Longitude		
75	GRID	Bongo/Neuston	56°	28.920'	N	153°	45.420'	W
76	GRID	Bongo/Neuston/20-cm bongo/CalVET/CTD	56°	18.780'	N	153°	29.880'	W
77	GRID/ATF 22-24	Bongo/Deep Bongos/Neuston/20-cm bongo/CalVET/CTD	56°	09.780'	N	153°	15.000'	W
78	GRID	Bongo	56°	00.000'	N	153°	32.280'	W
79	GRID/ ATF 25-27	Bongo/ Deep Bongo	55°	52.620'	N	153°	51.480'	W
80	GRID	Bongo	56°	01.980'	N	154°	08.400'	W
81	GRID	Bongo/Neuston	56°	10.200'	N	153°	48.300'	W
82	GRID	Bongo/Neuston	56°	20.580'	N	154°	03.000'	W
83	GRID	Bongo/Neuston	56°	12.780'	N	154°	21.600'	W
84	GRID	Bongo/Neuston	56°	23.040'	N	154°	36.420'	W
85	GRID	Bongo/Neuston	56°	33.300'	N	154°	51.180'	W
86	GRID	Bongo	56°	43.380'	N	155°	06.780'	W
87	GRID	Bongo	56°	53.100'	N	155°	21.420'	W
88	GRID	Bongo	57°	01.320'	N	155°	03.120'	W
89	GRID	Bongo	56°	51.780'	N	154°	47.400'	W
90	GRID	Bongo	56°	41.880'	N	154°	33.180'	W
91	GRID	Bongo	56°	40.380'	N	154°	21.900'	W
92	GRID	Bongo/Neuston	56°	47.580'	N	154°	09.300'	W
93	GRID	Bongo/Neuston	56°	54.480'	N	154°	22.200'	W
94	GRID	Bongo/Neuston	57°	01.380'	N	154°	35.100'	W
95	GRID	Bongo/Neuston	57°	08.280'	N	154°	48.060'	W

9.3 OD-06-01 – Cruise Chartlet



9.4 ODMF-06-02 – Hazardous Materials Inventory

Chemical	CAS Number	Respondee	Org.	Qty	H	F	R	Storage Color Code	Hazard Class	Packing Group Number	UN	Reportable Quantity	Response Indices
Formaldehyde, 37%	50-00-0	Busby	AFSC	20-L	3	2	2	Flammable	3 & 8	III	1198	100 LBS	1
Sodium Borate	1330-43-4	Busby	AFSC	500-g	1	0	0	General	Not regulated				2
Sodium Borate Solution, Saturated	mix	Busby	AFSC	20-L	1	0	0	General	Not regulated				2

Spill Response 1: Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, or earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. **Do not flush to sewer!** If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures. U.S. Regulations (CERCLA) requires reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the U.S. Coast Guard National Response Center is (800) 424-8802.

Spill Response 2: Ventilate area of leak or spill. Wear appropriate personal protective equipment. Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust.