

CRUISE  
NUMBER

9835

DAILY LOG  
INSTITUTE OF OCEAN SCIENCES  
OCEAN PHYSICS

DATE

Sep. 21 - Oct. 5, 98

VESSEL

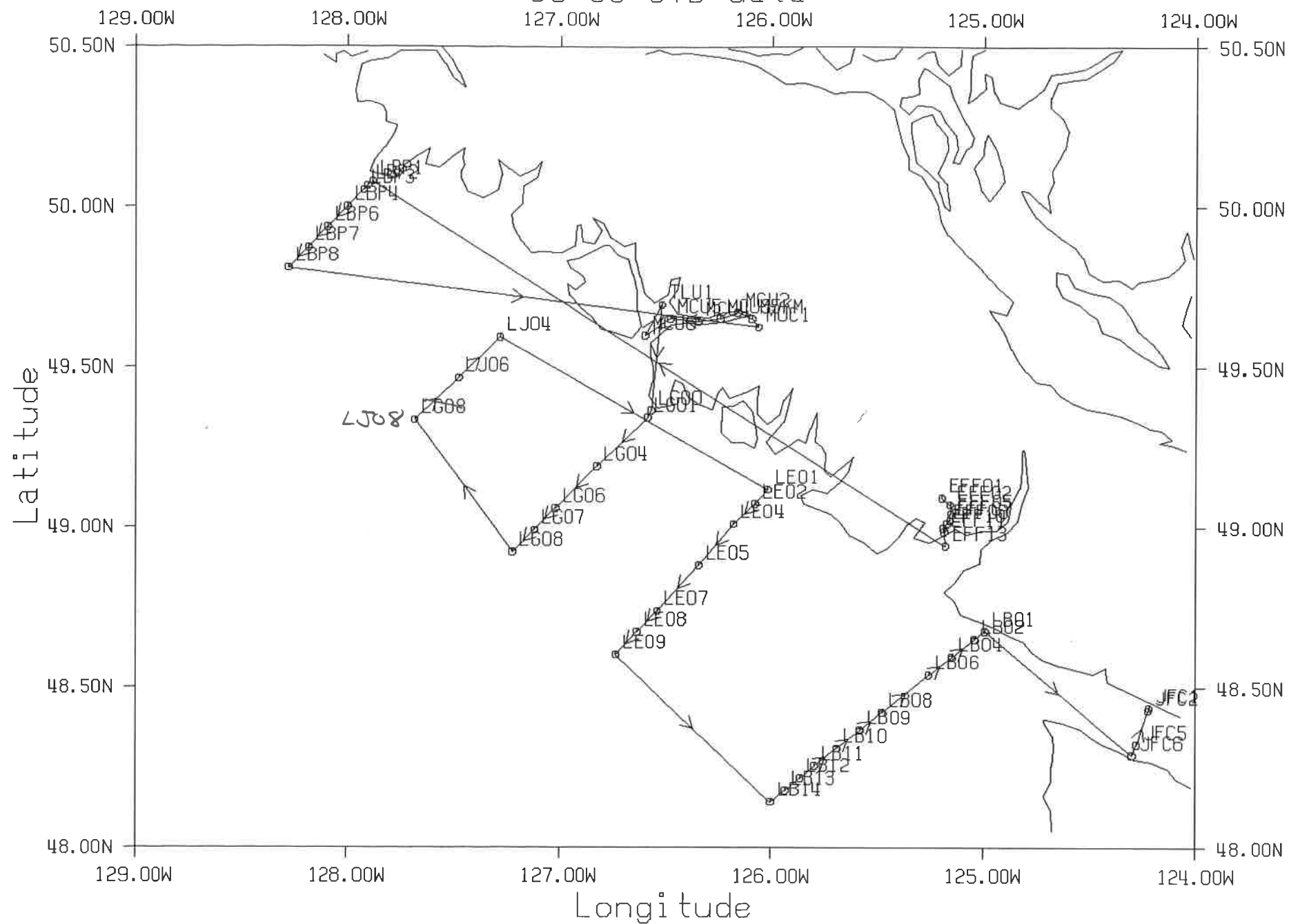
J. P. Tully

PROJECT

La Perouse / Globec / CRD /  
El Nino / Barkley Canyon / Juan de  
Fuca

PLOTTED: 19/OCT/1998 14:39:45

# 98-35 CTD data



Captain: \_\_\_\_\_

First Officer: \_\_\_\_\_

Second Officer: \_\_\_\_\_

Third Officer: \_\_\_\_\_

### Third Officer:

Second Officer:

### Cruise Participants / Agencies:

Scientific Personnel: Party Chief:

[illegible]

Second leg of cruise: Party Chief:

[illegible]

Data logging system: \_\_\_\_\_ Unit no.: \_\_\_\_\_

Program Name: \_\_\_\_\_  
Program version: \_\_\_\_\_

CTD deck unit make: \_\_\_\_\_ model: \_\_\_\_\_ serial no.: \_\_\_\_\_

Computer make: \_\_\_\_\_  
model: \_\_\_\_\_  
serial no.: \_\_\_\_\_

1st CTD make: \_\_\_\_\_ model: \_\_\_\_\_ serial no.: \_\_\_\_\_

Temperature sensor  
model: \_\_\_\_\_ serial no.: \_\_\_\_\_

coefficients: \_\_\_\_\_ slope: \_\_\_\_\_ offset: \_\_\_\_\_

Conductivity sensor  
model: \_\_\_\_\_ serial no.: \_\_\_\_\_

coefficients: slope: \_\_\_\_\_ offset: \_\_\_\_\_

Pressure sensor range: \_\_\_\_\_ psi  
serial no.: \_\_\_\_\_

coefficients: FSP: \_\_\_\_\_ dB  
offset: \_\_\_\_\_

Transmissometer  
model: \_\_\_\_\_ serial no.: \_\_\_\_\_

coefficients: slope: CTD 0443 offset: \_\_\_\_\_

Comments: PRI COND 1766

PRI TEMP 2095

SEC COND 1762

SEC. TEMP 2038



## Date      Time      (local)

Sep 22

0800

- science crew join ship prepare to sail

- #331 drag winch had reversed quick connect on hydraulic pipes. This had to be altered before sailing and the winch tested

0845

- depart 1.0.5. for a test cast in Spanish Inlet.

- immediately on departure, ship experienced engine problems with electrical system associated with the generators.

1100

- ship doing engine trials before we depart on cruise.

1440

- on station CRD5-N

- off station moving closer

1450

- on station CRD5-N

- directly over and moving off

ranges = 50 51 53

- drifting south with current ranges 100, 14/m

1456

- sent BCFG received positive response

1458 - sighted mooring on surface directly astern

- conditions calm sunny.

1515

- all on board - washing down

- mooring heavily fouled

1518

- on station CRD5A-N

- ranging - no response

- came out of generator mode and moved closer again.

- not receiving acoustic release

- tried pinger receiver and heard a loud sharp metal hitting metal noise which drowned out other signals. Notified ship and chief engineer came to investigate

- after several attempts and managed to barely hear pingers below the noise - the mooring is there.  
- lines were caught in prop on previous cruise and there may



Date Time (PDT)

Sep 22 1610

- on station again listening with chunking transducer.

1614

- sent ABCF received no response  
- sent ABCF several more times with same result.

- bridge sights mooring on surface but way off station.

we are at  $48^{\circ}23.345'$   
 $123^{\circ}19.755'$

(not directly on station but close enough. That drift would account for difference reasonably.)

- either mooring was deployed in the wrong position, the position entered was wrong or the mooring got dragged off station.

- mooring along side at  $48^{\circ}23.420'$ ,  
 $123^{\circ}20.511'$

- mooring seems to be on station  
- recovered heavily fouled rotors not turning by biofouling.

1920

- on station [F3A-A] for recovery

- range 313, 315

1925 - sent ABEG received positive response

1926 - sighted on surface on port side.

2030 - washed down moorings completed.

- heading for Tszantus Island. tide gauge.



## DAILY LOG

## OCEAN PHYSICS

## INSTITUTE OF OCEAN SCIENCES

| YEAR<br>1998 |               |              | MONTH<br>SEPT |              |                       | SHIP<br>TULLY |           |                  |                     | CRUISE<br>9815 9835       |                    |                 |      | PAGE                    | OF |
|--------------|---------------|--------------|---------------|--------------|-----------------------|---------------|-----------|------------------|---------------------|---------------------------|--------------------|-----------------|------|-------------------------|----|
| DAY<br>(UTC) | STATION<br>ID | CAST<br>TYPE | TIME<br>(UTC) | TIME<br>CODE | STD/HYDRO<br>CONSEC # | LATITUDE      | LONGITUDE | POSITION<br>CODE | BOTTOM<br>DEPTH (m) | MAX SAMPLING<br>DEPTH (m) | CONSEC<br>SAMPLE # | # OF<br>BOTTLES | INIT | COMMENTS                |    |
| 23           | EFF01         | ROS          | 18:25         | BE           | 001                   | 49 05.51      | 125 11.69 | ✓                | 35                  |                           | 1-4                | 4               |      |                         |    |
| 23           | EFF01         | ROS          | 18:26         | BO           | 001                   | 49 05.51      | 125 11.69 |                  |                     | 30                        |                    |                 |      |                         |    |
| 23           | EFF01         | ROS          | 18:28         | EN           | 001                   | 49 05.52      | 125 11.72 |                  |                     |                           |                    |                 |      |                         |    |
| 23           | EFF03         | ROS          | 19:12         | BE           | 002                   | 49 04.23      | 125 09.37 | ✓                | 120                 |                           | 5-12               | 8               |      |                         |    |
| 23           | EFF03         | ROS          |               | BO           | 002                   |               |           |                  |                     | 115                       |                    |                 |      |                         |    |
| 23           | EFF03         | ROS          | 19:05         | EN           | 002                   | 49 04.25      | 125 09.39 |                  |                     |                           |                    |                 |      |                         |    |
| 23           | EFF05         | ROS          | 19:48         | BE           | 003                   | 49 02.33      | 125 09.14 | ✓                | 207                 | 200                       |                    |                 |      | Possible bottom contact |    |
| 23           | EFF05         | ROS          | 19:52         | BO           | 003                   | 49 02.54      | 125 09.15 |                  |                     |                           | 13-23              | 11              |      |                         |    |
| 23           | EFF05         | ROS          | 19:59         | EN           | 003                   | 49 02.56      | 125 09.15 |                  |                     |                           |                    |                 |      |                         |    |
| 23           | EFF07         | ROS          | 20:24         | BE           | 004                   | 49 01.25      | 125 09.40 | ✓                |                     |                           | 24-31              | 8               |      |                         |    |
| 23           | EFF07         | ROS          | 20:26         | BO           | 004                   | 49 01.23      | 125 09.42 | ✓                |                     |                           |                    |                 |      |                         |    |
| 23           | EFF07         | ROS          | 20:35         | EN           | 004                   | 49 01.24      | 125 09.42 |                  | 120                 |                           |                    |                 |      |                         |    |
| 23           | EFF08         | ROS          | 20:53         | BE           | 005                   | 49 00.64      | 125 10.30 | ✓                | 88                  |                           | 32-38              | 7               |      |                         |    |
| 23           | EFF08         | ROS          | 20:55         | BO           | 005                   | 49 00.64      | 125 10.29 |                  |                     |                           |                    |                 |      |                         |    |
| 23           | EFF08         | ROS          | 21:03         | EN           | 005                   | 49 00.65      | 125 10.26 |                  |                     |                           |                    |                 |      |                         |    |
| 23           | EFF10         | ROS          | 21:22         | BE           | 006                   | 48 59.85      | 125 11.24 | ✓                | 100                 |                           | 39-45              | 7               |      |                         |    |
| 23           | EFF10         | ROS          | 21:24         | BO           | 006                   | 48 59.86      | 125 11.24 |                  |                     |                           |                    |                 |      |                         |    |
| 23           | EFF10         | ROS          | 21:32         | EN           | 006                   | 48 59.85      | 125 11.26 |                  |                     |                           |                    |                 |      |                         |    |

CAST TYPE -

BOT -  
CTD -  
MOR -bottle cast  
ctd  
mooringROS -  
NET -  
DRF -rosette  
net haul  
drifter

USW - sea water loop

TIME CODE -

BE -  
BO -  
EN -beginning time of cast  
bottom time of cast  
end of castDE -  
MR -  
RE -deployment time  
messenger release  
recover mooring

POSITION CODE -

RAD -  
GPS -  
LOR -RADAR  
GLOBAL  
LORAN



Date Time (PDT)

Sep 23 0805 - on station Tsaratus Is. TG - C app.

3 cables off

- no response from release

- moving closer.

0810

- on station - sent call ping + received faint response

- sent call ping several times received responses

- sent Code 05 received positive response

- moving sighted on surface.

- small boat dispatched for recovery.

- small boat returned all gear inside

- fouling relatively light.

0830

0845 - head to Effingham Inlet for CTDs called Rick for positions

1550

- completed stations in Effingham Inlet and head for Quatsino tide gauge for recovery - 17 hrs run up the coast

---

| cables | with | bottle salinities |
|--------|------|-------------------|
| 2      | ✓    | 8                 |
| 14     | ✓    | 18                |
| 16     |      | 3                 |
| 36     |      | 8                 |
| 46     |      | 15                |
| 50     |      | 6                 |



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| YEAR      |            | MONTH     |            | SHIP      |                    | CRUISE   |           | PAGE          |                  | OF                     |                 |              |      |          |
|-----------|------------|-----------|------------|-----------|--------------------|----------|-----------|---------------|------------------|------------------------|-----------------|--------------|------|----------|
| 1998      |            | Sept.     |            |           |                    | 9835     |           |               |                  |                        |                 |              |      |          |
| DAY (UTC) | STATION ID | CAST TYPE | TIME (UTC) | TIME CODE | STD/HYDRO CONSEC # | LATITUDE | LONGITUDE | POSITION CODE | BOTTOM DEPTH (m) | MAX SAMPLING DEPTH (m) | CONSEC SAMPLE # | # OF BOTTLES | INIT | COMMENTS |
| 23        | EFF11      | ROS       | 2150       | BE        | 007                | 48 59 12 | 125 11 06 | ✓             |                  |                        | 46-51           | 6.           |      |          |
| 23        | EFF11      | ROS       | 2152       | Bo        | 007                | 48 59 10 | 125 11 06 |               |                  |                        |                 |              |      |          |
| 23        | EFF11      | ROS       | 2201       | EN        | 007                | 48 59 10 | 125 11 06 |               |                  |                        |                 |              |      |          |
| 23        | EFF13      | ROS       | 2232       | BE        | 008                | 48 56 46 | 125 10 69 | ✓             |                  |                        | 52-58           | 7.           |      |          |
| 23        | EFF13      | ROS       | 2236       | Bo        | 008                | 48 56 46 | 125 10 67 |               | 106              |                        |                 |              |      |          |
| 23        | EFF13      | ROS       | 2246       | EN        | 008                | 48 56 46 | 125 10 67 |               |                  |                        |                 |              |      |          |
| 24        | LBP1       | ROS       | 2216       | BE        | 009                | 50 04 80 | 127 52 88 | ✓             |                  |                        |                 |              |      |          |
| 24        | LBP1       | ROS       | 2218       | Bo        | 009                | 50 04 83 | 127 52 83 |               |                  |                        | 59-63           | 5            |      | Loop #63 |
| 24        | LBP1       | ROS       | 2223       | EN        | 009                | 50 04 83 | 127 52 78 |               |                  | 42m                    |                 |              |      |          |
| 24        | LBP2       | ROS       | 2247       | BE        | 010                | 50 03 97 | 127 54 22 | ✓             |                  |                        |                 |              |      |          |
| 24        | LBP2       | ROS       | 2250       | Bo        | 010                | 50 03 95 | 127 54 17 |               | 100              | 94                     | 64-70           | 7            |      | Loop #71 |
| 24        | LBP2       | ROS       | 2257       | EN        | 010                | 50 03 97 | 127 54 12 |               |                  |                        |                 |              |      |          |
| 24        | LBP3       | CTD       | 23:17      | BE        | 011                | 50 03 15 | 127 55 35 | ✓             |                  |                        |                 |              |      |          |
| 24        | LBP3       | CTD       | 23:22      | Bo        | 011                | 50 03 15 | 127 55 23 |               | 170              |                        |                 |              |      | CTD ONLY |
| 24        | LBP3       | CTD       | 23:28      | EN        | 011                | 50 03 15 | 127 55 22 |               |                  |                        |                 |              |      |          |
| 24        | LBP4       | ROS       | 23:56      | BE        | 012                | 50 01 37 | 127 58 06 | ✓             | 1106             | 1098                   |                 |              |      | CTD 02   |
| 25        | LBP4       | ROS       | 00:10      | Bo        | 012                | 50 01 41 | 127 58 10 |               |                  |                        | 72-89           | 18           |      |          |
| 25        | LBP4       | ROS       | 00:59      | EN        | 012                | 50 01 39 | 127 58 06 |               |                  |                        |                 |              |      |          |

CAST TYPE -  
CTD -  
MOR -

bottle cast  
ctd  
mooring

ROS -  
NET -  
DRF -

rosette  
net haul  
drifter

LSW - sea water loop

TIME CODE -

BE -  
BO -  
EN -

beginning time of cast  
bottom time of cast  
end of cast

DE -  
MR -  
RE -

deployment time  
messenger release  
recover mooring

POSITION CODE -

RAD -  
GPS -  
LOR -

RADAR  
GLOBAL  
LORAN



Date Time (PDT)  
Sep. 24

0800 - on station BP1-AA for recovery.

- range 295

0805 - sent ADFH received positive response

0807 - sighted on surface

0830 - all on board cleaning up and heading for Quatsino TG

1125 - on station Quatsino TG

- call pinged + received response

1127 - sent 31 Code received response for release confirmation

1128 - sighted on surface and small boat dispatched to recover.

1135 - all on board heading out to deploy BP1-BB

- prepare mooring on deck.

- have to for boat + five drill

1436 - deployed mooring BP1-BB at 50° 03.738' 127° 53.507' in 101 m water corrected for draft.

- calm conditions overcast + drizzling.

- head for BP1 CTD station + BP Line.

Winch NB - #1307 small main drive gear has teeth worn sharp - misalignment? - key way cut wrong?



| YEAR      |            | MONTH     |            | SHIP      |                    | CRUISE   |           | PAGE          |                  | OF                     |                 |              |      |                          |
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| 1998      |            | Sept.     |            | J P TULLY |                    | 9835     |           |               |                  |                        |                 |              |      |                          |
| DAY (UTC) | STATION ID | CAST TYPE | TIME (UTC) | TIME CODE | STD/HYDRO CONSEC # | LATITUDE | LONGITUDE | POSITION CODE | BOTTOM DEPTH (m) | MAX SAMPLING DEPTH (m) | CONSEC SAMPLE # | # OF BOTTLES | INIT | COMMENTS                 |
| 25        | LB05       | CTD       | 1:40       | BE        | 013                | 30 00.00 | 127 59.94 | ✓             | 1279             |                        |                 |              |      | CTD ONLY                 |
| 25        | LB05       | CTD       | 2:03       | BO        | 013                | 49 60.00 | 127 59.96 |               |                  | 1280                   |                 |              |      |                          |
| 25        | LB05       | CTD       | 2:20       | EN        | 013                | 49 59.99 | 127 59.93 |               |                  |                        |                 |              |      |                          |
| 25        | LB06       | ROS       | 3:24       | BE        | 014                | 49 56.20 | 128 05.48 | ✓             | 890              | 880                    |                 |              |      | * Sounder Malfunctioning |
| 25        | LB06       | ROS       |            | BO        | 014                |          |           |               |                  |                        | 91-108          | 18           |      |                          |
| 25        | LB06       | ROS       | 4:09       | EN        | 014                | 49 56.17 | 128 05.49 |               |                  |                        |                 |              |      |                          |
| 25        | LB07       | CTD       | 5:06       | BE        | 015                | 49 52.38 | 128 11.14 | ✓             | 2184             |                        |                 |              |      |                          |
| 25        | LB07       | CTD       | 5:48       | BO        | 015                | 49 52.40 | 128 11.07 |               |                  | 2190                   |                 |              |      |                          |
| 25        | LB07       | CTD       | 0612       | EN        | 015                | 49 52.40 | 128 11.05 |               |                  |                        |                 |              |      |                          |
| 25        | LB08       | ROS       | 0705       | BE        | 016                | 49 48.58 | 128 16.72 | ✓             |                  |                        |                 |              |      |                          |
| 25        | LB08       | ROS       | 0742       | BO        | 016                | 49 48.66 | 128 16.70 |               |                  | 2073                   | 109-129         | 21           |      | O <sub>2</sub> + SAL CAL |
| 25        | LB08       | ROS       | 0839       | EN        | 016                | 49 48.70 | 128 16.70 |               |                  |                        |                 |              |      | Bottle 16 (5m) did not   |
| 25        | MUC1       | ROS       | 1922       | BE        | 017                | 49 37.46 | 126 03.66 | ✓             | 130              |                        |                 |              |      | fine                     |
| 25        | MUC1       | ROS       | 1926       | BO        | 017                | 49 37.46 | 126 03.65 |               |                  | 120                    | 131-138         | 8            |      | loop #139                |
| 25        | MUC1       | ROS       | 1934       | EN        | 017                | 49 37.15 | 126 03.65 |               |                  |                        |                 |              |      |                          |
| 25        | M5km       | ROS       | 2000       | BE        | 018                | 49 39.01 | 126 05.48 | ✓             | 171              |                        | 140-148         | 10           |      | loop #150                |
| 25        | M5km       | ROS       | 2004       | BO        | 018                | 49 39.01 | 126 05.49 |               |                  | 161                    |                 |              |      |                          |
| 25        | M5km       | ROS       | 20:15      | EN        | 018                | 49 39.01 | 126 05.49 |               |                  |                        |                 |              |      |                          |

CAST TYPE - BOT - bottle cast  
CTD - ctd  
MOR - mooring

ROS - rosette  
NET - net haul  
DRF - drifter

USW - sea water loop

TIME CODE - BE - beginning time of cast  
BO - bottom time of cast  
EN - end of cast

DE - deployment time  
MR - messenger release  
RE - recover mooring

POSITION CODE - RAD - RADAR  
GPS - GLOBAL  
LOR - LORAN



## Date   Time   (PDT)

- Sep 25   1100   - at Goldriver jetty picking up  
Charonne Douglas and Chris  
Johnson
- head off to do MUC 1 - 6  
stations
- 1800   - on station Nootka TG-C to  
recover and service
- 1803   - sent call ping and received positive response  
- sent 10 Code received positive  
response
- 1805   - mooring sighted on surface + small  
boat dispatched to recovery  
- sunny 15-20 knot breeze  
some chop 1-2 ft.
- 2200   - completed MUC stations and  
anchored for app. 6 hrs. to  
allow engineers to effect repairs  
to engine controls and to the  
shaft revolution indicator system.
- ship heads out app. 0400 Sep. 26 to  
be on station E03-AA next morning.



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| 1998         |               |              | Sept          |              |                       | J P TULLY |       |           | 9835   |                  |                     |                           |                    |                 |      |            |
| DAY<br>(UTC) | STATION<br>ID | CAST<br>TYPE | TIME<br>(UTC) | TIME<br>CODE | STD/HYDRO<br>CONSEC # | LATITUDE  |       | LONGITUDE |        | POSITION<br>CODE | BOTTOM<br>DEPTH (m) | MAX SAMPLING<br>DEPTH (m) | CONSEC<br>SAMPLE # | # OF<br>BOTTLES | INIT | COMMENTS   |
| 25           | MUC2          | ROS          | 20:23         | BE           | 019                   | 49        | 40 16 | 126       | 09 48  | ✓                |                     |                           |                    |                 |      |            |
| 25           | MUC2          | ROS          | 20:51         | Bo           | 019                   | 49        | 40 16 | 126       | 09 49  |                  |                     |                           | 151-164            | 14              |      | loop 165   |
| 25           | MUC2          | ROS          | 21:08         | EN           | 019                   | 49        | 40 20 | 126       | 09 56  |                  |                     |                           |                    |                 |      |            |
| 25           | MUC3          | ROS          | 21:38         | BE           | 020                   | 49        | 38 97 | 126       | 14 55  | ✓                |                     |                           |                    |                 |      |            |
| 25           | MUC3          | ROS          | 21:45         | Bo           | 020                   | 49        | 38 96 | 126       | 14 56  |                  |                     |                           | 166-179            | 14              |      | loop 180   |
| 25           | MUC3          | ROS          | 22:00         | EN           | 020                   | 49        | 38 97 | 126       | 14 45  |                  |                     |                           |                    |                 |      |            |
| 25           | MUC4          | ROS          | 22:38         | BE           | 021                   | 49        | 38 49 | 126       | 20 62  | ✓                |                     |                           |                    |                 |      |            |
| 25           | MUC4          | ROS          | 22:46         | Bo           | 021                   | 49        | 38 49 | 126       | 20 62  |                  |                     |                           | 181-192            | 12              |      |            |
| 25           | MUC4          | ROS          | 22:59         | EN           | 021                   | 49        | 38 49 | 126       | 20 62  |                  |                     |                           |                    |                 |      |            |
| 25           | MUC5          | ROS          | 23:53         | BE           | 022                   | 49        | 39 00 | 126       | 28 54  | ✓                |                     |                           |                    |                 |      |            |
| 25           | MUC5          | ROS          | 23:59         | Bo           | 022                   | 49        | 39 03 | 126       | 28 60  |                  |                     |                           | 193-204            | 12              |      | loop 205   |
| 26           | MUC5          | ROS          | 00:10         | EN           | 022                   | 49        | 39 00 | 126       | 28 64  |                  |                     |                           |                    |                 |      |            |
| 26           | MUC6          | ROS          | 01:48         | BE           | 023                   | 49        | 35 82 | 126       | 35 70  | ✓                |                     |                           |                    |                 |      |            |
| 26           | MUC6          | ROS          |               | Bo           | 023                   | 49        | 35 80 | 126       | 35 71  |                  |                     | 116                       | 206-213            | 8               |      | loop 214   |
| 26           | MUC6          | ROS          | 01:59         | EN           | 023                   | 49        | 35 79 | 126       | 35 73  |                  |                     |                           |                    |                 |      |            |
| 26           | TLU1          | ROS          | 03:00         | BE           | 024                   | 49        | 41 61 | 126       | 30 89  | ✓                |                     |                           |                    |                 |      |            |
| 26           | TLU1          | ROS          |               | EN           | 024                   |           |       |           |        |                  |                     | 263                       | 215-226            | 12              |      | loop # 227 |
| 26           | TLU1          | ROS          | 03:21         | EN           | 024                   | 49        | 41 63 | 126       | 30 94  |                  |                     |                           |                    |                 |      |            |

CAST TYPE -

BOT -

bottle cast

CTD -

ctd

MOR -

mooring

ROS -

rosette

NET -

net haul

DRF -

drifter

USW -

sea water loop

TIME CODE -

BE -

beginning time of cast

BO -

bottom time of cast

EN -

end of cast

DE -

deployment time

MR -

messenger release

RE -

recover mooring

POSITION CODE -

RAD -

RADAR

GPS -

GLOBAL

LOR -

LORAN



## Date Time (PDT)

Sep 26 0800 - on station E03-AA for recovery.

- ranged no response  
- sent BCE

- range 365, 431 429, 429  
- directly over mooring - moving off / cable  
for release.

0813 - 697, 702 - did not stop maneuvering  
and moved too far away  
- moving closer.

0817 - 419, 409, 407, 405, 401, 403  
49° 05.678' ~~Δ~~  
126° 55.896'

407, 423, 434, 455, 463

0826 - sent ACFG - received positive response

0827 - sighted on surface.

0940 - all onboard + cleaned up.

- setting up E03-BB on site

1150 - launched E03-BB in 398 m depth  
A (corrected for draft) at position:

49° 05.642' 126° 55.995'

1350 - on station E01-AA for recovery  
- ranges 115, 116, 112, 108, 106, 106  
drifting closer - as we drift over and away  
we will release.

- ranges 105, 107, 108, 109, 113, 125, 132

1400 - range 166 sending ABEH received  
positive response.

1401 - sighted on surface.

- recovered and cleaned on deck / on site.

1643 - deployed mooring E01-BB in 101 m  
corrected for draft at position:

49° 17.345' 126° 35.818'  
1730 - proceed to LG Line for CTD/Rosettes



| YEAR      |            |           | MONTH      |           |                    | SHIP        |           |               | CRUISE           |                        |                 | PAGE         | OF   |                                  |
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| 1998      |            |           | Sept.      |           |                    | J. P. Tully |           |               | 9835             |                        |                 |              |      |                                  |
| DAY (UTC) | STATION ID | CAST TYPE | TIME (UTC) | TIME CODE | STD/HYDRO CONSEC # | LATITUDE    | LONGITUDE | POSITION CODE | BOTTOM DEPTH (m) | MAX SAMPLING DEPTH (m) | CONSEC SAMPLE # | # OF BOTTLES | INIT | COMMENTS                         |
| 27        | LG00       | CTD       |            |           | 025                | 49 21.79    | 126 34.01 | ✓             |                  |                        |                 |              |      |                                  |
| 27        | LG01       | ROS       | 01:11      | BE        | 027*               | 49 20.51    | 126 35.04 | ✓             | 53               |                        | 278 - 283       | 5            |      | SUNNY AND CALM, WITH             |
| 27        | LG01       | ROS       | 01:13      | BO        | 027                | 49 20.51    | 126 35.05 |               |                  | 45                     |                 |              |      | THE SWEET D'PIZZA IN THE         |
| 27        | LG01       | ROS       | 01:17      | EN        | 027                | 42 20.52    | 126 35.07 |               |                  |                        |                 |              |      | AIR *THERE IS NO<br>98350026.DAT |
| 27        | LG1A       | CTD       | 01:38      | BE        | 028                | 49 19.58    | 126 36.55 |               | 80               |                        |                 |              |      |                                  |
| 27        | LG1A       | CTD       | 01:40      | BO        | 028                | 49 19.58    | 126 36.55 |               |                  | 75                     |                 |              |      |                                  |
| 27        | LG1A       | CTD       | 01:42      | EN        | 028                | 49 19.58    | 126 36.56 |               |                  |                        |                 |              |      |                                  |
| 27        | LG02       | CTD       | 02:05      | BE        | 029                | 49 18.64    | 126 38.15 |               | 102              |                        |                 | 1            |      |                                  |
| 27        | LG02       | CTD       | 02:08      | BO        | 029                | 49 18.62    | 126 38.15 |               |                  | 95                     |                 |              |      |                                  |
| 27        | LG02       | CTD       | 02:09      | EN        | 029                | 49 18.62    | 126 38.15 |               |                  |                        |                 |              |      |                                  |
| 27        | LG02A      | CTD       | 02:36      | BE        | 030                | 49 16.88    | 126 40.89 |               | 115              |                        |                 |              |      |                                  |
| 27        | LG02A      | CTD       | 02:39      | BO        | 030                | 49 16.86    | 126 40.91 |               |                  | 105                    |                 |              |      |                                  |
| 27        | LG02A      | CTD       | 02:41      | EN        | 030                | 49 16.85    | 126 40.92 |               |                  |                        |                 |              |      |                                  |
| 27        | LG03       | CTD       | 03:07      | BE        | 031                | 49 14.99    | 126 43.71 |               | 122              |                        |                 |              |      |                                  |
| 27        | LG03       | CTD       | 03:10      | BO        | 031                | 49 14.96    | 126 43.68 |               |                  | 112                    |                 |              |      |                                  |
| 27        | LG03       | CTD       | 03:13      | EN        | 031                | 49 14.95    | 126 43.65 |               |                  |                        |                 |              |      |                                  |
| 27        | LG04       | ROS       | 03:58      | BE        | 032                | 49 11.34    | 126 49.29 | ✓             | 145              |                        |                 |              |      |                                  |
| 27        | LG04       | ROS       | 04:01      | BO        | 032                | 49 11.30    | 126 49.23 |               |                  | 135                    | 284-292         | 9            |      | 100 293                          |

CAST TYPE - BOT - bottle cast  
CTD - ctd  
MOR - mooring

ROS - rosette  
NET - net haul  
DRF - drifter

USW - sea water loop

TIME CODE - BE - beginning time of cast  
BO - bottom time of cast  
EN - end of cast

DE - deployment time  
MR - messenger release  
RE - recover mooring

POSITION CODE - RAD - RADAR  
GPS - GLOBAL  
LOR - LORAN



Date Time (PDT)

Sep 27 1030 - on station ENP8-B for recovery

- have to in near gale force conditions  
until after lunch  
conditions - expecting better

1225 - move back on station (app 1 1/2 cable off)  
for recovery

1227 - sent range  
again - no response  
- 2577 } from # 452  
- 2550 }

- sent ABF

- range 2548

2549

2555

2557

2561

= 189 m away

= 257

1236 - range 2573

- sent AFGH

received positive response

- ranges { 2504 } mooring rising  
          { 2462 }

1315 - bottom floats sighted on surface

- winds dropping down

1620 - all onboard heading for offshore end of  
LS-Line for CTD / Rosettes

- gale force winds seas 4-5 m.  
Rosette cast suspended completed  
main stations of LS-Line using  
CTD only.



## DAILY LOG

## OCEAN PHYSICS

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| YEAR         |               | MONTH        |               |              | SHIP                  |          | CRUISE    |                  |                     |                           |                    | PAGE            |      | OF                               |  |
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| 1998         |               | Sept.        |               |              | J. P. Tully           |          | 9835      |                  |                     |                           |                    |                 |      |                                  |  |
| DAY<br>(UTC) | STATION<br>ID | CAST<br>TYPE | TIME<br>(UTC) | TIME<br>CODE | STD/HYDRO<br>CONSEC # | LATITUDE | LONGITUDE | POSITION<br>CODE | BOTTOM<br>DEPTH (m) | MAX SAMPLING<br>DEPTH (m) | CONSEC<br>SAMPLE # | # OF<br>BOTTLES | INIT | COMMENTS                         |  |
| 27           | LG04          | ROS          | 0416          | EN           | 032                   | 49 11.20 | 126 49.23 |                  |                     |                           |                    |                 |      |                                  |  |
| 27           | LG05          | CTD          | 04:57         | BE           | 033                   | 49 07.44 | 126 55.32 |                  | 274                 |                           |                    |                 |      |                                  |  |
| 27           | LG05          | CTD          | 05:02         | BO           | 033                   | 49 07.37 | 126 55.30 |                  |                     | 265                       |                    |                 |      |                                  |  |
| 27           | LG05          | CTD          | 05:07         | EN           | 033                   | 49 07.30 | 126 55.33 |                  |                     |                           |                    |                 |      |                                  |  |
| 27           | LG06          | ROS          | 05:54         | BE           | 034                   | 49 03.35 | 127 01 19 | ✓                |                     |                           |                    |                 |      |                                  |  |
| 27           | LG06          | ROS          |               | BO           | 034                   |          |           |                  | 960                 |                           | 294-310            | 17              |      |                                  |  |
| 27           | LG06          | ROS          | 0633          | EN           | 034                   | 49 03 50 | 127 01 17 |                  |                     |                           |                    |                 |      |                                  |  |
| 27           | LG07          | CTD          | 0723          | BE           | 035                   | 48 59 44 | 127 07 18 | ✓                |                     |                           |                    |                 |      |                                  |  |
| 27           | LG07          | CTD          |               | BO           | 035                   | 48 59    | 127 07    |                  | 1759                |                           |                    | 8               |      | loop 311                         |  |
| 27           | LG07          | CTD          | 0820          | EN           | 035                   | 48 59 43 | 127 07 19 |                  |                     |                           |                    |                 |      |                                  |  |
| 27           | LG08          | ROS          | 0914          | BE           | 036                   | 48 55 31 | 127 13 28 | ✓                |                     |                           |                    |                 |      |                                  |  |
| 27           | LG08          | ROS          | 0952          | BO           | 036                   | 48 55 33 | 127 13 27 |                  | 2074                |                           | 312-319            | 8               |      | Salinity calibration             |  |
| 27           | LG08          | ROS          | 1022          | EN           | 036                   | 48 55 30 | 127 13 26 |                  |                     |                           |                    |                 |      | Samples at select depth          |  |
| 28           | LJ08          | CTD          | 0617          | BE           | 037                   | 49 20 09 | 127 41 00 | ✓                |                     |                           |                    |                 |      | Lost depth on sounder stopped    |  |
| 28           | LJ08          | CTD          | 0636          | BO           | 037                   | 49 20 16 | 127 41 02 |                  | 1725                | 972                       |                    |                 |      | CTD only at crossover<br>prings. |  |
| 28           | LJ08          | CTD          |               | EN           | 037                   | 49 20 16 | 127 41 02 |                  |                     |                           |                    |                 |      | rough sea Cond                   |  |
| 28           | LS06          | CTD          | 0825          | BE           | 038                   | 49 27 95 | 127 28 54 |                  | 1000                | 1032                      | 321                | 8               |      | loop 321                         |  |
| 28           | LS06          | CTD          | 0856          | EN           | 038                   | 49 27 94 | 127 28 54 |                  |                     |                           |                    |                 |      |                                  |  |

CAST TYPE -

BOT -

bottle cast

CTD -

ctd

MOR -

mooring

ROS -

rosette

NET -

net haul

DRF -

drifter

USW -

sea water loop

TIME CODE -

BE -

beginning time of cast

BO -

bottom time of cast

EN -

end of cast

DE -

deployment time

MR -

messenger release

RE -

recover mooring

POSITION CODE -

RAD -

RADAR

GPS -

GLOBAL

LOR -

LORAN



Date   Time   PDT

Sep 28   0930

- arrive Goldriver.  
- Charroune and Chris taken ashore.  
  using the launch.

- we head for Nootka TG site

- deployed Nootka TG - D in 18 m  
  water at Position  $49^{\circ} 35', 090'$   
                                   $126^{\circ} 33', 715'$

- head for Tofino TG site.

- deployed Tofino TG - A at  
  position:  $49^{\circ} 00.882'$  in 71 m  
               $126^{\circ} 07.755'$  water  
                                  corrected for  
                                  draft.

- head for near shore end of LE Line  
  for CTD / Rosettes

- seas calm    1 ft. chop. winds light  
  sky clear.



## DAILY LOG

## OCEAN PHYSICS

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| 1998      |            |           |            |           |                    |          |           |               | 9835             |                        |                 |              |      |                                             |  |
| DAY (UTC) | STATION ID | CAST TYPE | TIME (UTC) | TIME CODE | STD/HYDRO CONSEC # | LATITUDE | LONGITUDE | POSITION CODE | BOTTOM DEPTH (m) | MAX SAMPLING DEPTH (m) | CONSEC SAMPLE # | # OF BOTTLES | INIT | COMMENTS                                    |  |
| 28        | L504       | ROS       | 10:38      | BE        | 39                 | 49 35 55 | 127 16 82 | ✓             |                  |                        |                 |              |      |                                             |  |
| 28        | L504       | ROS       | 10:41      | BO        | 39                 | 49 35 56 | 127 16 83 |               | 163              |                        | 322 - 330       | 9            |      | 331 = LOOP SAL                              |  |
| 28        | L504       | ROS       | 10:51      | EN        | 39                 | 49 35 56 | 127 16 84 | P             |                  |                        |                 |              |      |                                             |  |
| 29        | LE01       | ROS       | 2:34       | BE        | 40                 | 49 07 05 | 126 00.99 | ✓             | 45               |                        |                 |              |      |                                             |  |
| 29        | LE01       | ROS       | 2:37       | BO        | 40                 | 49 07.06 | 126 00.92 |               |                  | 40                     | 332-336         | 5            |      |                                             |  |
| 29        | LE01       | ROS       | 2:40       | EN        | 40                 | 49 07.05 | 126 00.92 |               |                  |                        |                 |              |      |                                             |  |
| 29        | LE02       | ROS       | 3:17       | BE        | 41                 | 49 04.30 | 126 04.47 | ✓             | 58               |                        |                 |              |      |                                             |  |
| 29        | LE02       | ROS       | 3:18       | BO        | 41                 | 49 04.30 | 126 04.46 |               |                  | 50                     | 337 - 341       | 5            |      |                                             |  |
| 29        | LE02       | ROS       | 3:22       | EN        | 41                 | 49 04.31 | 126 04.46 |               |                  |                        |                 |              |      |                                             |  |
| 29        | LE03       | CTD       | 4:11       | BE        | 42                 | 49 00.54 | 126 10.64 | ✓             | 77               |                        |                 |              |      | * 98350042 Header should read LE03 depth 77 |  |
| 29        | LE03       | CTD       | 4:13       | BO        | 42                 | 49 00.52 | 126 10.64 |               |                  | 67                     |                 |              |      |                                             |  |
| 29        | LE03       | CTD       | 4:16       | EN        | 42                 | 49 00.52 | 126 10.63 |               |                  |                        |                 |              |      |                                             |  |
| 29        | LE04       | CTD       | 5:03       | BE        | 43                 | 48 56.00 | 126 15.13 |               | 121              |                        |                 |              |      |                                             |  |
| 29        | LE04       | CTD       | 5:05       | BO        | 43                 | 48 56.50 | 126 15.13 |               |                  | 107                    |                 |              |      |                                             |  |
| 29        | LE04       | CTD       | 5:08       | EN        | 43                 | 48 56.48 | 126 15.11 |               |                  |                        |                 |              |      |                                             |  |
| 29        | LE05       | ROS       | 5:53       | BE        | 44                 | 48 52.79 | 126 20.42 | ✓             | 158              |                        |                 |              |      |                                             |  |
| 29        | LE05       | ROS       | 5:56       | BO        | 44                 | 48 52.78 | 126 20.40 |               |                  | 152                    | 342 - 350       | 9            |      |                                             |  |
| 29        | LE05       | ROS       | 6:05       | EN        | 44                 | 48 52.74 | 126 20.42 |               |                  |                        |                 |              |      |                                             |  |

CAST TYPE -

BOT -  
CTD -  
MOR -bottle cast  
ctd  
mooringROS -  
NET -  
DRF -rosette  
net haul  
drifter

USW -

sea water loop

TIME CODE -

BE -  
BO -  
EN -beginning time of cast  
bottom time of cast  
end of castDE -  
MR -  
RE -deployment time  
messenger release  
recover mooring

POSITION CODE -

RAD -  
GPS -  
LOR -RADAR  
GLOBAL  
LORAN



UTC 29 09 98 Time 07:30

Note Thermocalmograph time in error by 14 min (slow)

Where does it get Nema time from?

Restart Seesave file 9835004 time is now correct

\* Wow - 11:05 UTC = 5+05 PDT = Jan & Steve are trappers!  
Especially Melvin



## DAILY LOG

## OCEAN PHYSICS

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| YEAR      |            | MONTH     |            | SHIP       |                    | CRUISE   |           | PAGE          |                  | OF                     |                 |              |      |                 |
|-----------|------------|-----------|------------|------------|--------------------|----------|-----------|---------------|------------------|------------------------|-----------------|--------------|------|-----------------|
| 1998      |            | Sept      |            | S.P. Tully |                    | 9835     |           |               |                  |                        |                 |              |      |                 |
| DAY (UTC) | STATION ID | CAST TYPE | TIME (UTC) | TIME CODE  | STD/HYDRO CONSEC # | LATITUDE | LONGITUDE | POSITION CODE | BOTTOM DEPTH (m) | MAX SAMPLING DEPTH (m) | CONSEC SAMPLE # | # OF BOTTLES | INIT | COMMENTS        |
| 29        | LE06       | CTD       | 0655       | Be         | 45                 | 48 48 49 | 126 26 29 |               | 212              |                        |                 |              |      |                 |
| 29        | LE06       | CTD       | 0659       | Bo         | 45                 | 48 48 52 | 126 26 31 |               |                  |                        |                 |              |      |                 |
| 29        | LE06       | CTD       | 0703       | En         | 45                 | 48 48 51 | 126 26 31 |               |                  |                        |                 |              |      |                 |
| 29        | LE07       | ROS       | 0755       | Be         | 46                 | 48 44 24 | 126 32 09 | ✓             |                  |                        |                 |              |      |                 |
| 29        | LE07       | ROS       |            | Bo         | 46                 | 48 44    | 126 32    |               | 521              |                        | 351-365         | 15           |      | loop #366       |
| 29        | LE07       | ROS       | 08:26      | En         | 46                 | 48 44 28 | 126 32 12 |               |                  |                        |                 |              |      |                 |
| 29        | LE08       | CTD       | 0935       | BE         | 47                 | 48 40 30 | 126 37 98 | ✓             |                  |                        |                 |              |      |                 |
| 29        | LE08       | CTD       | 0959       | Bo         | 47                 | 48 40 30 | 126 37 95 |               | 1297             |                        |                 |              |      |                 |
| 29        | LE08       | CTD       | 10:16      | En         | 47                 | 48 40 33 | 126 37 97 |               |                  |                        |                 |              |      |                 |
| 29        | LE09       | ROS       | 11:05      | BE         | 48                 | 48 36 01 | 126 43 90 | ✓             |                  |                        |                 |              |      |                 |
| 29        | LE09       | ROS       | 11:29      | Bo         | 48                 | 48 35 98 | 126 43 97 |               | 1436             |                        | 367-385         | 19           |      | loop #386       |
| 29        | LE09       | ROS       | 12:02      | En         | 48                 | 48 35 98 | 126 43 92 |               |                  |                        |                 |              |      |                 |
| 30        | LB14       | ROS       | 4:54       | BE         | 49                 | 48 08 50 | 125 59 97 | ✓             | 1180             |                        |                 |              |      |                 |
| 30        | LB14       | ROS       | 5:18       | Bo         | 49                 | 48 08 48 | 125 59 96 |               |                  |                        | 387-404         | 18           |      |                 |
| 30        | LB14       | ROS       | 5:54       | En         | 49                 | 48 08 45 | 125 59 99 |               |                  |                        |                 |              |      |                 |
| 30        | LB13       | ROS       | 0625       | BE         | 50                 | 48 10 59 | 125 56 06 | ✓             | 910              |                        | 405-410         | 6            |      | Salinity calib  |
| 30        | LB13       | ROS       | 0640       | Bo         | 50                 | 48 10 60 | 125 56 16 |               |                  |                        |                 |              |      | selected depths |
| 30        | LB13       | ROS       |            | En         | 50                 | 48 10 60 | 125 56 16 |               |                  |                        | 411             |              |      | loop #411.      |

CAST TYPE -

BOT -  
CTD -  
MOR -bottle cast  
ctd  
mooringROS -  
NET -  
DRF -rosette  
net haul  
drifter

USW - sea water loop

TIME CODE -

BE -  
BO -  
EN -beginning time of cast  
bottom time of cast  
end of castDE -  
MR -  
RE -deployment time  
messenger release  
recover mooring

POSITION CODE -

RAD -  
GPS -  
LOR -RADAR  
GLOBAL  
LORAN



Date      Time      PDT

Sep 29 0800    - on station mooring ENP4-B for recovery.  
- manouver closer.

0815    - on station  
- range no response  
- sent CDF  
- range 1289, 1297, 1297, 1298  
0827    - 1297 range  
- sent ADCF

0828    - sighted on surface  
0845    - bottom package sighted on surface. \* 17 min rise time.

1020    - all aboard - heading for recovery of A1 and A2

1225    - on station A1-AA for recovery  
- range 490 m = 98 m distance  
- moving off.

- ranging as we move off.  
- 488 487 485 483  
- moving over mooring 479 range and continuing  
- 491 501 522 668

1235    - sent BCEH    - received positive response

1236    - sighted on surface

1410    - on station A2-AA for recovery  
- sent xpd    - no reply  
- sent ABD  
- range 497 = 128 m distance  
- range 506, 508 = 178 m distance.  
- stopping up, range 538m = 242m away

1415    - sent ABCD    - received positive response  
1417    - sighted on surface



Date Time (PDT)

Sep 29 1642 - deployed mooring A2-BB in 498m  
depth at position:

48° 29.050' 126° 13.115'

1904 - deployed mooring A1-BB in 502m  
depth at position:

48° 31.950' 126° 12.270'

- calm seas, light wind couldn't be  
better.

- stayed on site of each mooring deployment  
observing that mooring submerged and  
stayed down.



## DAILY LOG

## OCEAN PHYSICS

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[illegible]

|             |       |             |       |          |       |                |
|-------------|-------|-------------|-------|----------|-------|----------------|
| CAST TYPE - | BOT - | bottle cast | ROS - | rosette  | USW - | sea water loop |
|             | CTD - | ctd         | NET - | net haul |       |                |
|             | MOR - | mooring     | DRF - | drifter  |       |                |

|             |      |                        |
|-------------|------|------------------------|
| TIME CODE - | BE - | beginning time of cast |
|             | BO - | bottom time of cast    |
|             | EN-  | end of cast            |

|    |   |                   |
|----|---|-------------------|
| DE | - | deployment time   |
| MR | - | messenger release |
| RE | - | recover mooring   |

|                 |       |        |
|-----------------|-------|--------|
| POSITION CODE - | RAD - | RADAR  |
|                 | GPS - | GLOBAL |
|                 | LOR - | LORAN  |



## Date    Time (PDT)

Sep 30 - 0800 - on station BCWASP-C for recovery

\* →  
- FOGGY!

- range 268, 271 = 127

0810 - sighting ACGH

- ranges 196, 178, 160, 147, 119 rising

- sighted on surface.

0920 - Wasp cleared + disassembled from frame  
- ready for next station.

\* →  
- nearly on station range 372, 375, 377  
BCO1-C for recovery  
- moved off ranges 460, 467

0935 - sent BDFG - received positive response

0937 - sighted on surface.

\* → 1050 - on station BCO2-C for recovery.

- ranges 556, 555 ~~FOGGY~~ = distance is 170 m

- 547 = 135 m. too close

- range 553 = 157 m

1055 - range 565 = 195

- sent ABCD - received positive response  
1056 - sighted on surface.

1235 - on station BCO3-C for recovery

- ranges show we are immediately over the mooring 521, 522 m

- moving off 523, 563 m.

1240 - sent ABEF - received positive response

- range 506, 491, 485 mooring rising.

1241 - sighted on surface.



## Date Time (PDT)

Sep 30 - 1510 - launched mooring B003-D  
in 551 m corrected depth  
at position:

48° 21.003'  
125° 56.381'

- set up for WASP profile below CTD  
Rosette.

- completed WASP cast (see notes  
back of this page.) CTD consecutive  
cast # 55

- proceeded to complete LB Line  
LB 08 - LB 01



Wasp

For - George

Calibration cast is attached to the Resette frame below the CTD.

All the connectors on the WASP have been cleaned and the transducers cleaned off with dish washing detergent. The decent rate is  $0.2 \text{ m/s}$  (this seems to be the slowest stable speed of the which, - ascent rate was  $.5 \text{ m/sec}$ ).

$$\begin{array}{r} 23 \text{ m} \\ 60 \\ \hline 1380 \text{ sec} \\ 2 \\ \hline 276 \end{array} \quad 138$$



## DAILY LOG

## OCEAN PHYSICS

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| YEAR 1998 |            |           | MONTH OCT  |           |                    | SHIP J.P. TULLY |           |               |                  | CRUISE 9835            |                 |              |      | PAGE             | OF |
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| DAY (UTC) | STATION ID | CAST TYPE | TIME (UTC) | TIME CODE | STD/HYDRO CONSEC # | LATITUDE        | LONGITUDE | POSITION CODE | BOTTOM DEPTH (m) | MAX SAMPLING DEPTH (m) | CONSEC SAMPLE # | # OF BOTTLES | INIT | COMMENTS         |    |
| 1         | WASP       | CTD       | 00:06      | BE        | 55                 | 48 20.87        | 125 56.14 |               |                  |                        |                 |              |      | WASP CALIBRATION |    |
| 1         | WASP       | CTD       | 0029       | BO        | 55                 | 48 21.11        | 125 55.95 |               |                  |                        |                 |              |      | WASP ATTACHED TO |    |
| 1         | WASP       | CTD       |            | EN        | 55                 |                 |           |               |                  |                        |                 |              |      | CTD DOWN at 2m/s |    |
| 1         | LB08       | ROS       | 0247       | BE        | 56                 | 48 25.28        | 125 28.58 | ✓             | 137              |                        |                 |              |      | Up at 0.5 m/s    |    |
| 1         | LB08       | ROS       | 0253       | BO        | 56                 | 48 25.28        | 125 28.55 |               |                  | 125                    | 450-458         | 9            |      |                  |    |
| 1         | LB08       | ROS       | 0257       | EN        | 56                 | 48 25.28        | 125 28.52 |               |                  |                        |                 |              |      |                  |    |
| 1         | LB07       | CTD       | 0345       | BE        | 57                 | 48 28.68        | 125 22.11 |               | 158              |                        |                 |              |      |                  |    |
| 1         | LB07       | CTD       | 0349       | BO        | 57                 | 48 28.69        | 125 22.14 |               |                  | 150                    |                 |              |      |                  |    |
| 1         | LB07       | CTD       | 0351       | EN        | 57                 | 48 28.69        | 125 22.14 |               |                  |                        |                 |              |      |                  |    |
| 1         | LB06       | ROS       | 0441       | BE        | 58                 | 48 32.32        | 125 15.36 | ✓             | 116              |                        |                 |              |      |                  |    |
| 1         | LB06       | ROS       | 0444       | BO        | 58                 | 48 32.36        | 125 15.37 |               |                  | 106                    | 459-466         | 8            |      |                  |    |
| 1         | LB06       | ROS       | 0449       | EN        | 58                 | 48 32.42        | 125 15.40 |               |                  |                        |                 |              |      |                  |    |
| 1         | LB05       | CTD       | 0517       | BE        | 59                 | 48 34.02        | 125 11.97 |               | 102              |                        |                 |              |      |                  |    |
| 1         | LB05       | CTD       | 0520       | BO        | 59                 | 48 34.04        | 125 11.97 |               |                  | 92                     |                 |              |      |                  |    |
| 1         | LB05       | CTD       | 0522       | EN        | 59                 | 48 34.04        | 125 11.97 |               |                  |                        |                 |              |      |                  |    |
| 1         | LB04       | ROS       | 0552       | BE        | 60                 | 48 35.71        | 125 08.87 | ✓             | 113              |                        | 467-473         | 7            |      |                  |    |
| 1         | LB04       | ROS       | 0555       | BO        | 60                 | 48 35.73        | 125 08.91 |               |                  | 101                    |                 |              |      |                  |    |
| 1         | LB04       | ROS       | 0559       | EN        | 60                 | 48 35.74        | 125 09.01 |               |                  |                        |                 |              |      |                  |    |

CAST TYPE -

BOT -

bottle cast

ROS -

rosette

USW -

sea water loop

TIME CODE -

BE -

beginning time of cast

DE -

deployment time

POSITION CODE -

RAD -

RADAR

CTD -

ctd

NET -

net haul

BO -

bottom time of cast

MR -

messenger release

GPS -

GLOBAL

MOR -

mooring

DRF -

drifter

EN -

end of cast

RE -

recover mooring

LOR -

LORAN



Date      Time      PDT

Oct. 1      0800      - on station JF2C for deployment  
0947      - deployed mooring JF2C-B in  
140m depth at position:

48° 21.155' 124° 12.182'

- move to JF3A site + prepare mooring.

1151 - deployed mooring JF3A-B in 187m  
depth at position:

48° 17.796' W ?  
123° 59.987' W ?

- move to JF2D-B + prep. mooring

1401 - deployed mooring JF2D-B in 215m depth  
at position:

48° 19.050' 124° 13.367'

- move to JF2E site + prep. mooring

1522 - deployed JF2E-B in 171m depth  
at position:

48° 17.198' 124° 14.501'

- plotted station on JFW JFC JFE lines.  
ship proceeded to north end JFW  
station JFW1 for CTD/RoseHe  
casts.



65 &amp; 71 not on zip.

## DAILY LOG

## OCEAN PHYSICS

## INSTITUTE OF OCEAN SCIENCES

| YEAR         |               |              | MONTH         |              |                       | SHIP      |            |           | CRUISE           |                     |                           |                    |                 | PAGE |           | OF             |  |
|--------------|---------------|--------------|---------------|--------------|-----------------------|-----------|------------|-----------|------------------|---------------------|---------------------------|--------------------|-----------------|------|-----------|----------------|--|
| 1998         |               |              | OCTOBER       |              |                       |           |            |           |                  |                     |                           |                    |                 |      |           |                |  |
| DAY<br>(UTC) | STATION<br>ID | CAST<br>TYPE | TIME<br>(UTC) | TIME<br>CODE | STD/HYDRO<br>CONSEC # | LATITUDE  |            | LONGITUDE | POSITION<br>CODE | BOTTOM<br>DEPTH (m) | MAX SAMPLING<br>DEPTH (m) | CONSEC<br>SAMPLE # | # OF<br>BOTTLES | INIT | COMMENTS  |                |  |
| 1            | LB03          | CTD          | W             | BE           | 61                    | 48° 37.58 | 125° 5.59' |           |                  |                     |                           |                    |                 |      |           |                |  |
| 1            | LB03          | CTD          | D             | BO           | 61                    | 48° 37.33 | 125° 5.67' |           |                  |                     |                           |                    |                 |      |           |                |  |
| 1            | LB03          | CTD          | S!            | EN           | 61                    | 48° 37.32 | 125° 5.71' |           |                  |                     |                           |                    |                 |      |           |                |  |
| 1            | LB02          | ROS          | 0711          | BE           | 62                    | 48° 39.01 | 125° 2.45  | ✓         |                  |                     |                           | 475-479            | 5               |      | logs 480  |                |  |
| 1            | LB02          | ROS          | 0715          | BO           | 62                    | 48° 39.05 | 125° 2.50  |           |                  |                     |                           |                    |                 |      |           |                |  |
| 1            | LB02          | ROS          | 0719          | EN           | 62                    | 48° 39.09 | 125° 02.56 |           |                  |                     |                           |                    |                 |      |           |                |  |
| 1            | LB01          | ROS          | 07:46         | BE           | 63                    | 48° 40.44 | 124° 59.53 | ✓         |                  |                     |                           | 481-484            | 4               |      | logs #485 |                |  |
| 1            | LB01          | ROS          | 07:48         | BO           | 63                    | 48°       | 125°       |           |                  |                     |                           |                    |                 |      |           |                |  |
| 1            | LB01          | ROS          | 07:52         | EN           | 63                    | 48° 40.49 | 124° 59.56 |           |                  |                     |                           |                    |                 |      |           |                |  |
| 2            | JFW1          | CTD          | 0046          | BE           | 64                    | 48 31.74  | 124 29.24  |           |                  | 51                  |                           |                    |                 |      |           |                |  |
| 2            | JFW1          | CTD          | 0048          | BO           | 64                    | 48 31.73  | 124 29.26  |           |                  |                     |                           |                    |                 |      |           | Loop.          |  |
| 2            | JFW1          | CTD          | 0052          | EN           | 64                    | 48 31.72  | 124 29.26  |           |                  |                     |                           |                    |                 |      |           |                |  |
| 2            | JFW2          | CTD          | 0109          | BE           | 65                    | 48 31.16  | 124 29.54  |           |                  | 98                  |                           |                    |                 |      |           | RAIN-FOLY PLAT |  |
| 2            | JFW2          | CTD          | 0112          | BO           | 65                    | 48 31.16  | 124 29.50  |           |                  |                     |                           |                    |                 |      |           | CALM           |  |
| 2            | JFW2          | CTD          | 0114          | EN           | 65                    | 48 31.17  | 124 29.49  |           |                  |                     |                           |                    |                 |      |           |                |  |
| 2            | JFW3          | CTD          | 0151          | BE           | 66                    | 48 29.32  | 124 31.15  |           |                  | 204                 |                           |                    |                 |      |           |                |  |
| 2            | JFW3          | CTD          | 0156          | BO           | 66                    | 48 29.32  | 124 31.22  |           |                  |                     | 190                       |                    |                 |      |           |                |  |
| 2            | JFW3          | CTD          | 0202          | EN           | 66                    | 48 29.37  | 124 31.28  |           |                  |                     |                           |                    |                 |      |           |                |  |

CAST TYPE - BOT - bottle cast  
CTD - ctd  
MOR - mooring

ROS - rosette  
NET - net haul  
DRF - drifter

USW - sea water loop

TIME CODE -

BE - beginning time of cast  
BO - bottom time of cast  
EN - end of cast

DE - deployment time  
MR - messenger release  
RE - recover mooring

POSITION CODE - RAD - RADAR  
GPS - GLOBAL  
LOR - LORAN



Date      Time      PLT

Oct. 2      0800      - on station JF1A for deployment  
- prepare mooring on deck

0921      - deployed mooring JF1A-B in 206 m  
water at position:

48° 22.867' 124° 19.252'

- move to JF2A site + prep mooring.

1100      - deployed mooring JF2A-B in 105 m  
water at position:

48° 24.801' 124° 09.992'

- move to JF2B site

1301      - deployed mooring JF2B-B in 165 m  
depth at position:

48° 22.966' 124° 11.021'

1330      - head for I.O.S. to pick up Mary  
and sediment traps required for  
Georgia Strait program.



## DAILY LOG

## OCEAN PHYSICS

## INSTITUTE OF OCEAN SCIENCES

| YEAR 1998 |            |           | MONTH Oct  |           |                    | SHIP Tully |           |               | CRUISE 9835      |                        |                 |              | PAGE | OF       |
|-----------|------------|-----------|------------|-----------|--------------------|------------|-----------|---------------|------------------|------------------------|-----------------|--------------|------|----------|
| DAY (UTC) | STATION ID | CAST TYPE | TIME (UTC) | TIME CODE | STD/HYDRO CONSEC # | LATITUDE   | LONGITUDE | POSITION CODE | BOTTOM DEPTH (m) | MAX SAMPLING DEPTH (m) | CONSEC SAMPLE # | # OF BOTTLES | INIT | COMMENTS |
| 2         | JFW4       | ROS       | 2:29       | BE        | 67                 | 48 27.78   | 124 32.55 |               | 234              |                        |                 |              |      |          |
| 2         | JFW4       | ROS       | 2:34       | BO        | 67                 | 48 27.81   | 124 32.50 |               |                  | 226                    | 486-497         | 12           |      |          |
| 2         | JFW4       | ROS       | 2:44       | EN        | 67                 | 48 27.90   | 124 32.41 |               |                  |                        |                 |              |      |          |
| 2         | JFW5       | CTD       | 3:21       | BE        | 68                 | 48 26.30   | 124 33.82 |               | 248              |                        |                 |              |      |          |
| 2         | JFW5       | CTD       | 3:26       | BO        | 68                 | 48 26.36   | 124 33.73 |               |                  | 238                    |                 |              |      |          |
| 2         | JFW5       | CTD       | 3:30       | EN        | 68                 | 48 26.40   | 124 33.68 |               |                  |                        |                 |              |      |          |
| 2         | JFW6       | CTD       | 4:05       | BE        | 69                 | 48 24.30   | 124 35.51 |               | 109              |                        |                 |              |      |          |
| 2         | JFW6       | CTD       | 4:07       | BO        | 69                 | 48 24.28   | 124 35.48 |               |                  | 99                     |                 |              |      |          |
| 2         | JFW6       | CTD       | 4:09       | EN        | 69                 | 48 24.28   | 124 35.49 |               |                  |                        |                 |              |      |          |
| 2         | JFW7       | CTD       | 4:31       | BE        | 70                 | 48 23.61   | 124 36.14 |               | 50               |                        |                 |              |      |          |
| 2         | JFW7       | CTD       | 4:32       | BO        | 70                 | 48 23.62   | 124 36.14 |               |                  | 42                     |                 |              |      |          |
| 2         | JFW7       | CTD       | 4:33       | EN        | 70                 | 48 23.63   | 124 36.15 |               |                  |                        |                 |              |      |          |
| 2         | JFC7       | ROS       | 0627       | BE        | 71                 | 48 16.41   | 124 18.12 |               |                  |                        |                 |              |      |          |
| 2         | JFC7       | ROS       |            | BO        | 71                 |            |           |               | 54               |                        | 498-502         | 5            |      | loop 503 |
| 2         | JFC7       | ROS       | 0632       | EN        | 71                 | 48 16.43   | 124 18.08 |               |                  |                        |                 |              |      |          |
| 2         | JFC6       | ROS       | 0655       | BE        | 72                 | 48 17.27   | 124 17.69 | ✓             | 106              | 101                    |                 |              |      |          |
| 2         | JFC6       | ROS       | 0658       |           | 72                 | 48 17.29   | 124 17.69 |               |                  |                        | 504-510         | 7            |      | loop 511 |
| 2         | JFC6       | ROS       | 0703       | EN        | 72                 | 48 17.29   | 124 17.69 |               |                  |                        |                 |              |      |          |

CAST TYPE - BOT - bottle cast  
 CTD - ctd  
 MOR - mooring  
 ROS - rosette  
 NET - net haul  
 DRF - drifter  
 USW - sea water loop

TIME CODE - BE - beginning time of cast  
 BO - bottom time of cast  
 EN - end of cast  
 DE - deployment time  
 MR - messenger release  
 RE - recover mooring

POSITION CODE - RAD - RADAR  
 GPS - GLOBAL  
 LOR - LORAN



Date   Time   PDT

Oct 3   0800   - on station GSCM3 for recovery.  
- completed CTD & bottles for filter water for traps

0835   - moving back on station for recovery

0840   - app.  $1\frac{1}{2}$  cable off station  
- sent Xpond   - no reply  
- sent BCDH  
- sent range 352, then 346, 344  
- 340-350 ranges meant we are directly on top.  
- moving off another cable. ranges 355, 357, 359, 368, 380 = 170 m distance.  
- launch small boat to stretch out mooring.  
- no wind flat calm - mooring would tangle on surface.

0853   - work boat launched.

- range 442, 444 = 280m distance.  
- sent BCDH - received positive response  
0855   - sighted on surface  
- recovered mooring, clean up and prep. for redeployment

1319   - deployed mooring GSCM3-I in 351m corrected depth at position:  
49° 06.255' 123° 30.952'

- packing up for off-loading

1630   - arrive off I.O.S.

- berthing complications due to Open House + customs clearance  
1830   - come alongside

- offload lab equipment only into box van.

Oct. 4   - ship crew off load mooring equipment from back deck



Cast 78 down cast 79 upcast at GSEM3 mooring site.

Two bottles Tripped at 300 metres for water samples for Traps.



## DAILY LOG

## OCEAN PHYSICS

## INSTITUTE OF OCEAN SCIENCES

| YEAR         |               | MONTH        |               |              |                       | SHIP      |            |           |  | CRUISE           |                     |                           |                    | PAGE            |      | OF                    |  |
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| 1998         |               | OCTOBER      |               |              |                       | JP TULLY  |            |           |  | 9835             |                     |                           |                    |                 |      |                       |  |
| DAY<br>(UTC) | STATION<br>ID | CAST<br>TYPE | TIME<br>(UTC) | TIME<br>CODE | STD/HYDRO<br>CONSEC # | LATITUDE  |            | LONGITUDE |  | POSITION<br>CODE | BOTTOM<br>DEPTH (m) | MAX SAMPLING<br>DEPTH (m) | CONSEC<br>SAMPLE # | # OF<br>BOTTLES | INIT | COMMENTS              |  |
| 2            | JFC5          | ROS          | 0730          | BE           | 73                    | 48 19 28  | 124 16 58  |           |  |                  |                     |                           |                    |                 |      |                       |  |
| 2            | JFC5          | ROS          | 0734          | BO           | 73                    | 48 19 30  | 124 16 56  |           |  |                  |                     |                           |                    |                 |      |                       |  |
| 2            | JFC5          | ROS          | 0743          | EN           | 73                    | 48 19 36  | 124 16 53  |           |  |                  |                     |                           | 512-522            | 11.             |      | loop 523              |  |
| 2            | SFC4          | ROS          | 0806          | BE           | 74                    | 48 21 33  | 124 15 53  |           |  |                  |                     |                           |                    |                 |      |                       |  |
| 2            | SFC4          | ROS          |               | BO           | 74                    | 48 21     | 124 15     |           |  |                  |                     |                           |                    |                 |      |                       |  |
| 2            | SFC4          | ROS          | 0824          | EN           | 74                    | 48 21 37  | 124 15 46  |           |  |                  | 224                 | 5                         | 524-534            | 11.             |      | Loop 535              |  |
| 2            | JFC3          | ROS          | 0855          | BE           | 75                    | 48° 23 51 | 124° 14 38 |           |  |                  |                     |                           |                    |                 |      |                       |  |
| 2            | JFC3          | ROS          | 0859          | BO           | 75                    | 48° 23 54 | 124° 14 37 |           |  |                  |                     |                           |                    |                 |      |                       |  |
| 2            | JFC3          | ROS          | 0910          | EN           | 75                    | 48° 23 53 | 124° 14 38 |           |  | 182              |                     |                           | 537-547            | 11.             |      | loop 548.             |  |
| 2            | JFC2          | ROS          | 0938          | BE           | 76                    | 48 25 67  | 124 13 37  |           |  |                  |                     |                           |                    |                 |      |                       |  |
| 2            | JFC2          | ROS          | 0940          | BO           | 76                    | 48 25 67  | 124 13 36  |           |  |                  |                     |                           |                    |                 |      |                       |  |
| 2            | JFC2          | ROS          | 0947          | EN           | 76                    | 48 25 67  | 124 13 36  |           |  | 106              |                     |                           | 549-555            | 7.              |      | loop 556              |  |
| 2            | JFC1          | ROS          | 1007          | BE           | 77                    | 48 26 18  | 124 13 10  |           |  |                  |                     |                           |                    |                 |      |                       |  |
| 2            | SFC1          | ROS          |               | BO           | 77                    |           |            |           |  |                  |                     |                           | 557-561            | 5               |      | Small position change |  |
| 2            | SFC1          | ROS          | 1012          | EN           | 77                    | 48 26 17  | 124 13 06  |           |  | 53               |                     |                           |                    |                 |      | to get deeper water   |  |
| 3            | GSCM3         | ROS          | 1519          | BE           | 78                    | 49 06 33  | 123 29 80  |           |  |                  |                     |                           |                    |                 |      | loop 562              |  |
|              | GSCM3         | ROS          | 1526          | BO           | 78/79                 | 49 06 28  | 123 29 84  |           |  |                  |                     |                           |                    |                 |      |                       |  |
|              | GSCM3         | ROS          | 1535          | EN           | 79                    | 49 06 27  | 123 29 88  |           |  | 349              |                     |                           | 562-563            | 2.              |      | 2 bottle tipped at    |  |
|              |               |              |               |              |                       |           |            |           |  |                  |                     |                           |                    |                 |      | at 300 m              |  |

CAST TYPE -

BOT -  
CTD -  
MOR -

bottle cast  
ctd  
mooring

ROS -  
NET -  
DRF -

rosette  
net haul  
drifter

USW -

sea water loop

TIME CODE -

BE -  
BO -  
EN -

beginning time of cast  
bottom time of cast  
end of cast

DE -  
MR -  
RE -

deployment time  
messenger release  
recover mooring

POSITION CODE -

RAD -  
GPS -  
LOR -

RADAR  
GLOBAL  
LORAN

CAST TYPE -  
CTD -  
MOR -

BOT -  
CTD -  
MOR -

bottle cast  
ctd  
mooring

ROS -  
NET -  
DRF -

rosette  
net haul  
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USW - sea water loop

TIME CODE -

BE -  
BO -  
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beginning time of cast  
bottom time of cast  
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deployment time  
messenger release  
recover mooring

POSITION CODE -

RAD -  
GPS -  
LOR -

RADAR  
GLOBAL  
LORAN