UNOLS 12/89

CRUISE REPORT
Ship Utilization Data

1. Ship Name
R/V OCEANUS

2. Operating Institution
W.H.O.I.

3. Cruise (leg) Number
#251

4. Dates of Project:
Begin: 7/20/92
End: 7/29/92

Port Calls

Place	Date
Woods Hole, MA	7/20/92
Woods Hole, MA	7/29/92

5. Number, Sea Days
10

6. Number, Port Days

8a. Area of Operations, Area Index and Geographic Description
NA6

8b. Research in Foreign Waters? No
Country:

7. Participating Personnel:

Code	Title, Name, Institution	Function on Cruise (Ch. Sci., Sci., Obs., Tech., Grad. Student, Undergrad., For. Obsv.)	Dates (If less than entire cruise)
1.	Dr. James M. Robb, USGS	Ch. Sci., Geologist	
2.	Dr. William C. Schwabb, USGS	Geophysicist	
3.	Mr. William W. Danforth, USGS	Operational Geologist	
4.	Ms. Jana L. DaSilva, USGS	Student	
5.	Ms. Marguerite H. Gowen, USGS	Student	
6.	Ms. Melissa B. Walden, USGS	Student	
7.	Mr. Thomas F. O'Brien, USGS	Project Chief	
8.	Ms. Jane F. Denny, USGS	Student	
9.	Mr. Denzel E. Gleason, Woods Hole Oceanographic Inst.	Res. Assoc.	
10.	Mr. Thomas Crook, Woods Hole Oceanographic Inst.	Sr. Eng. Asst.	
11.			
12.			
13.			
14.			

Use reverse if necessary

9. Primary Project(s)

a. Project Title, Principal Investigator, Institution	b. Sponsoring Agency/ Activity	c. Grant or Contract Number	d. Participating Personnel	e. Discipline
DWD 106 - Assessment: Environmental Studies of the 106 Mile Municipal Sewage Sludge Site - J. Robb	NOAA/USGS		1-10	Geology

10. Ancillary Project(s)

a. Project title, Principal Investigator, Institution	b. Sponsoring Agency/ Activity	c. Grant or Contract Number	d. Participating Personnel	e. Discipline

11. Science Party:
Scientists 5 Grad. Students
Undergrads 4 Technicians 1
Observers
Foreign Observers

12. Cost Allocation Data

a. Days Charged	b. Agency or Activity Charged	c. Grant or Contract No.
10	USGS/NSF	OCE-9000959

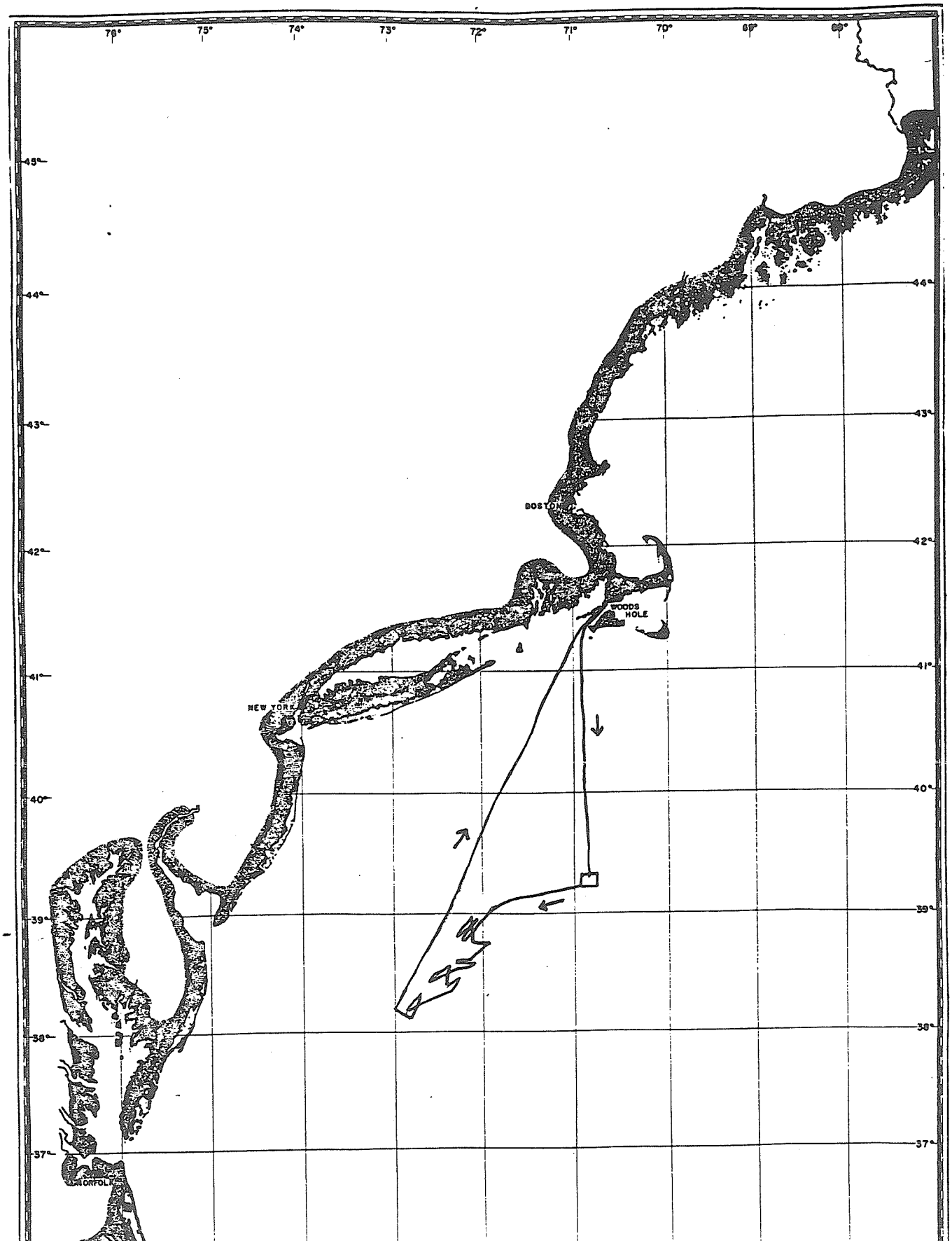
13. Ruth Goldsmith 11-10-92

Title, Signature, Operating Institution Official

Date

Attach Page Size Track Chart

R/V OCEANUS
VOYAGE 251
20 JULY - 29 JULY 1992
[WOODS HOLE - WOODS HOLE]



Ruth Goldsmith

U. S. Geological Survey
Branch of Atlantic Marine Geology
Woods Hole, MA 02543
Update: 16 June 1992

~~00101~~ 2359

Project number for Ruth's report

To: Cruise staff, Captain Howland, T. Aldrich

From: Jim Robb

Subject: Pre-cruise Update: Oceanus 251, 20-29 July 1992

Ship/cruise: R. V. Oceanus 251

Dates and ports: 20-29 July 1992,
Woods Hole - Woods Hole

Parent Project: USGS cooperation with "Processes governing the fate and effects of material flux on deep-sea communities at a long-term ecosystem laboratory (LEO-2500) on the continental slope off New Jersey." NOAA Undersea Research Program to Fred Grassle, Rutgers University. More succinctly known as DWD-106 Sewage sludge investigation.

USGS Project Number: 9470-~~64042~~ 62044

Area of Operations: New York Bight, continental rise, around municipal sludge dumpsite, SW of 39o00'N 73o00'W; also in control and sample sites to east and southwest. (map is attached)

Scientific Purpose: Sidescan imaging of selected sites for Alvin/coring support and for studies of geologic history and processes.

The parent project is investigating effects of municipal sludge dumping in the deep sea, and is first establishing how and where the sludge can be identified on the sea bottom, chemically and biologically. The geological effort has included mapping the bathymetry using seabeam, to locate places such as closed depressions, where the fine-grained dumped materials have a greater chance of collecting, in support of Alvin dive planning and core sampling; our tasks are also to identify evidence of geologic processes that could affect the sludge distribution, and to provide a geologic background study of this part of the continental rise.

A physical oceanographic model of water motions predicts a wide distribution of sludge deposition on the bottom, as the particles waft about for three days or so as they settle through the water after they are dumped (see map). So far, chemical and biological indicators (e.g. silver, presumably from amateur photographic processing, and spores of a bacterium that lives in mammalian guts) support the model.

Intended Operations:

Deep-towed sidescan-sonar images of ocean bottom using

WHOI's AMS-120 system. (Test cruise for 30-kHz sidescan-sonar system under construction by Datasonics will follow this one.) We will do short survey transects in preparation for Alvin dives planned for the August cruise of the Atlantis II at 4 places, a control site to the east of the dumpsite and 3 sites to the southwest of the dumpsite. Around and within the dumpsite area we will be imaging some bottom features of the dumpsite area to try to determine whether they were created by offshore-directed turbidity flows or by massive landslides, as well as assembling background information for coring and other Alvin dives there. We need to do as much processing and mosaicking at sea as we can because the Atlantis II will depart for Alvin work and coring on 6 August.

I am told that the New York Times had a story on the recent discontinuation of ocean dumping, so honey-barge traffic in the dumpsite lanes should not be a problem to our operations.

Significant Equipment:

WHOI (DSL) AMS-120 sidescan-sonar vehicle, with coax wire; the system is to include a vehicle-mounted sub-bottom profiler that can be normalized to total depth.
WHOI Kresge? winch.
USGS-owned Trackpoint short-baseline navigation system for the sonar vehicle.
USGS topside equipment for at-sea sidescan-sonar processing (Q-MIPS, Masscomp, Thermal printer)
Loran C and GPS navigation aboard Oceanus.
3.5kHz echo-sounder and graphic recorder aboard Oceanus.

Tentative Cruise Plan:

i. Depart 1000 Monday, 20 August. Dockside equipment checks and rehearsal as needed.

ii. Transit to "control site" near 39°N15'W 70°40'W.

I. 18-20 hrs: Bottom-characterization transects (2 or 3 passes with 12kHz unit) at 2600 m water depth. Water depth and local topography will determine site.

II. 4-5 days: Vehicle-operating time in local investigation areas in DWD-106 dumpsite study area (SW of 39°N, 72°W).

III. 20 hrs operating time in two sites 26 nmi. SW of dumpsite (water depths 2600 and 2800 m, one location to be near OC 227 Sta 16, which was at 38°34.19N, 72°29.52W., in 2640 m.)

IV. 18-20 hrs operating time at a site 50 nmi. SW of dumpsite, 2600 m water depth.

terminus: Home transit, tentatively to arrive late morning of Wednesday, 29 July.

Scientific Watches

Fish Flying/Deck
Tom Crook, Skip Gleason

ET/Computer support
Tom Obrien, Bill Danforth

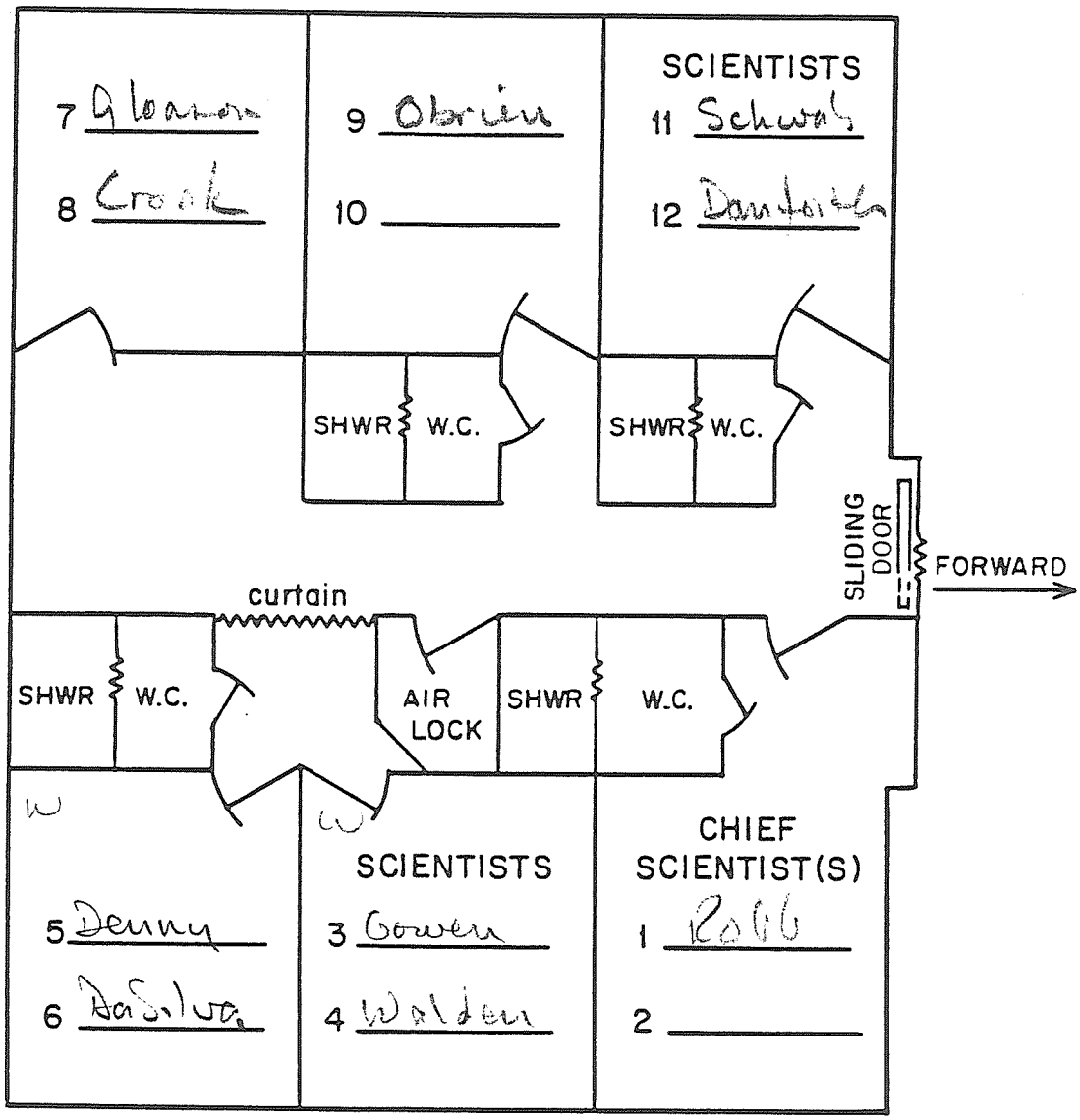
12 on/12 off watches:

	morning:	afternooon:
Navigators	Molly Gowen	Mellissa Walden
Data Processing	Jane Denny	Jana DaSilva
Q-Mips/Mosaic	Bill Schwab	Jim Robb

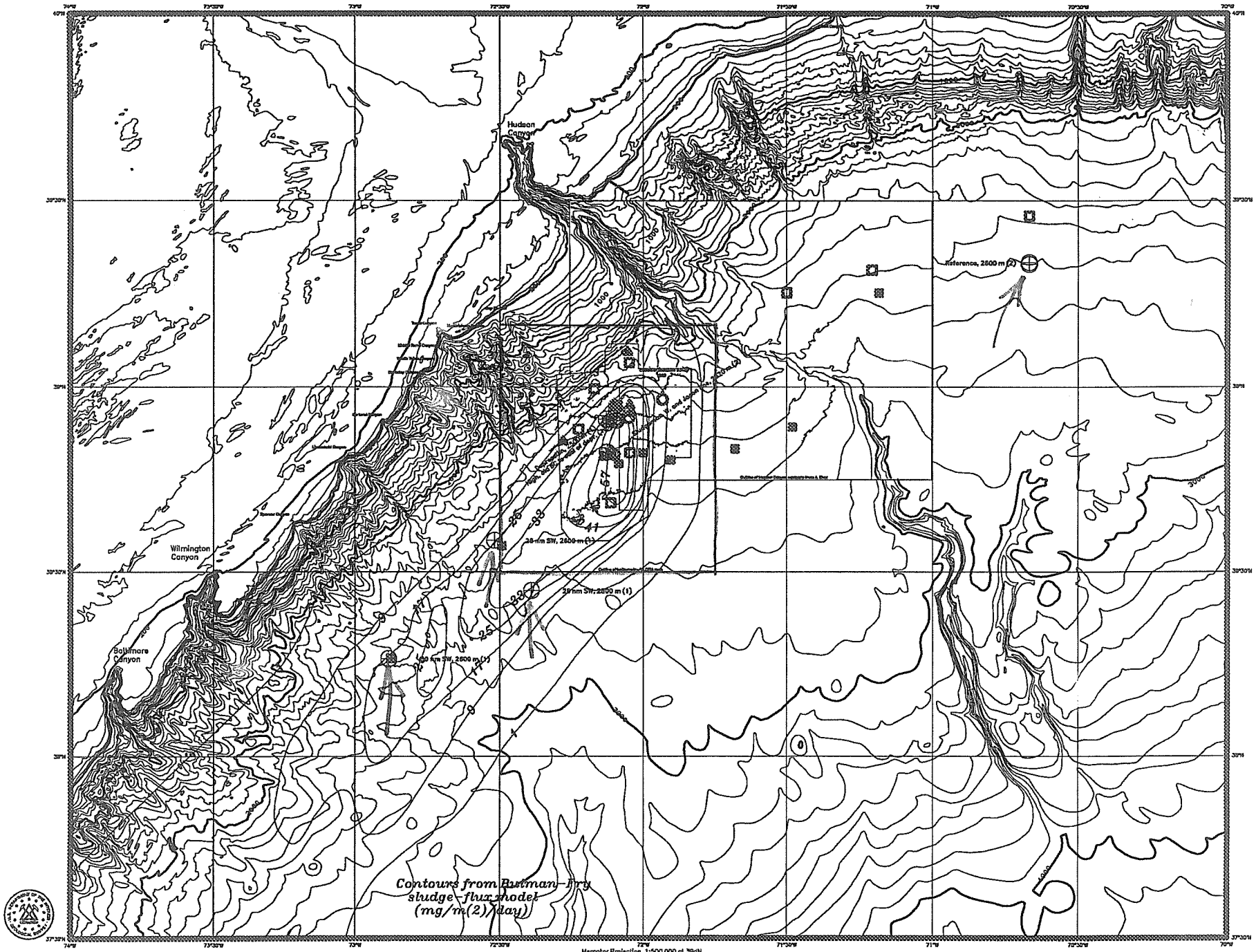
Bunk assignments posted on hatch to scientists' quarters.

Bon voyage.

SCIENTIST BERTHING PLAN



R/V OCEANUS



USGS
Woods Hole, MA

Map compiled by Ken Robb, June 1992
Bathymetry Contour Sources
E. Ecowitz et al., 1992, digitized NOAA Cambers
A. Shor, University of Hawaii, Hudson Canyon quadrangle
Bathymetry data, Atlantis II 128, 1989

DSRV Alvin dives (Sep 1989)
RV Atlantis II, Cruise 128 stations (1989)
RV Oceanus, Cruise 228 stations (1990)
RV Oceanus, Cruise 237 stations (1990)
Seismic Reflection Sites, 1992

⊕ dive sites for AII in August

Craig E. Dorman
Director

Woods Hole
Massachusetts
02543
508 - 548 - 1400

15 July 1992

Captain Paul Howland
Research Vessel *Oceanus*
Woods Hole, Massachusetts

Dear Captain Howland:

On or about 20 July 1992, your vessel being ready for sea and weather permitting, you will depart Woods Hole, Massachusetts for Voyage #251. This cruise is for the Woods Hole office of the U.S. Geological Survey.

This cruise is undertaken as a component of a project studying the processes governing the fate and effects of material flux on deep-sea communities at municipal sludge dumpsite DWD-106. The purpose is to obtain sidescan sonar images of sites proposed for future DSV ALVIN diving operations and for studies of geologic history and processes of the area. Scientific operations will be limited to continuous towing of the AMS-120 sidescan system in the general vicinity of 39°-00'N, 73°-00'W.

The scientific personnel participating on this cruise, under the direction of Mr. James Robb, Chief Scientist, are:

Voyage #251
Woods Hole - Woods Hole
20 July - 29 July

Mr. James Robb, Chief Scientist, U.S. Geological Survey
Dr. William Schwab, U.S. Geological Survey
Mr. William Danforth, U.S. Geological Survey
Ms. Jana DaSilva, U.S. Geological Survey
Ms. Marguerite Gowen, U.S. Geological Survey
Ms. Melissa Walden, U.S. Geological Survey
Mr. Thomas O'Brien, U.S. Geological Survey
Ms. Jane Denny, U.S. Geological Survey
Mr. Danzel E. Gleason, Woods Hole Oceanographic Institution
Mr. Thomas Crook, Woods Hole Oceanographic Institution

Please advise the Port Office of all personnel changes prior to departure and maintain the daily schedule with KXC-713 on S.S.B. on assigned frequencies or via satellite, and submit to the Port Office at radio contact on Mondays and Thursdays a situation report from Master and Chief Scientist.

I wish you a pleasant and successful voyage.

Yours very truly,

Craig E. Dorman
Director