GULF OF MEXICO CONTINENTAL SLOPE STUDY

CONTRACT #lJ+-12-OOOl-30046

Bi-monthly Progress Report (March-April 1984) and Cruise II Summary Report

to

United States Department of the Interior
Minerals Management Service
Imperial Office Building
3301 N. Causeway Blvd.
Metairie, Louisiana 70003

from

LGL Ecological Research Associates, Inc.
1410 Cavitt Street
Bryan, Texas 77801

May 1984

REGISTERED

INTRODUCTION

During March-April 1984, the most significant accomplishment was the successful conduct of Cruise II during the period 3-20 April. All planned samples were obtained as scheduled despite less than perfect weather. Performance of Cruise II ensures that the program can be successfully completed within budgetary constraints. The entire Cruise Report is provided as Attachment I.

CRUISE II

Locations of the 15 sites sampled during Cruise II are shown by Table 1. Exceptional care was taken to ensure that good box cores were obtained as per criteria developed from the quality assurance analysis conducted on data collected during Cruise I. The results of these analysis will be briefly discussed in a later section below.

Trawling results were especially fruitful with large numbers of organisms being collected. In contrst to Cruise I samples, a high proportion of animals trawled were in a gravid state, suggesting reproductive seasonality. For most stations, the collections were of adequate size to obtain good samples for hydrocarbon analysis.

Examination of the test strips of film from the benthic photography were highly encouraging. There appear to be more usable slides (e.g. high resolution, animals or lebensspuren present) in the test strips than were represented in the entire film sample from Cruise I. The main reason for the improvement was the development of an expanded scale developed at Woods Hole which was used to more accurately monitor the altitude of the camera from the bottom. Using this scale, we were able to better maintain the camera system at the proper height off the bottom than was possible during Cruise I.

Quality Assurance Analysis

As described in our initial progress report we were concerned about the quality of some of the box core replicates due to possible washout during retrieval and overflow during seiving. To evaluate the box core

Table 1. Location of samples sites for Cruise II.

Stat ion	Replicate	Depth (m)	N. Latitude	W. Longitude
WI	1	366	27° 35.0′	93° 33.1'
	2	366	270 35.0'	93° 3 3 * 1 ′
	3	344	27° 35.2′	93° 33.0'
W2	1	605	270 24.9'	93° 20.5'
	2	603	27o 24.9'	93o 20.4'
	3	603	270 24.9'	930 20.5'
W3	1	860	270 10.6'	930 19.4'
	2	860	270 10.6'	930 19.4'
	3	841	270 10.3'	930 19.3'
W4	1	1419	26° 44.1'	93° 19.1'
	2	1405	26° 44.3'	930 19.1'
	3	1405	26° 44.3'	93° 19.1'
W5	1	2524	26° 17.0'	93° 19.3'
	2	2524	26° 17.0'	930 19.3'
	3	2470	26° 17.2'	930 19.2'
c l	1	358	28° 03.3'	90° 15.2'
	2	357	28° 03.3'	900 15.2'
	3	357	28° 03.3'	90° 15.2'
	4	348	28° 03.3'	90° 15.3′
	5	348	28° 03.3'	90° 15.3'
	6	348	28° 03.3'	900 15.6′
C2	1	595	270 54.4'	900 06.2′
	2	595	270 54.4'	90° 06.2'
	3	595	270 54.5'	900 06.2′
	4	595	27° 54.5′	90° 06.2'
	5	605	270 54.3'	90° 05.9'
	6	605	270 54.3'	9(30 05.9'

Table 1 (cent'd)

Station	Replicate	Depth (m)	N. Latitude	W. Longitude
C3	1	834,	27° 49.2'	90° 07.1'
	2	834	27° 49.2'	900 07.1'
	3	84o	27° 49.4'	90° 07. 0'
	4	84o	270 49.4'	90° 07.0'
	5	841	27° 49.6'	900 07.1'
	6	841	270 49.6'	9(-Jo 07.1'
C4	1	1390	270 28.4'	890 46.8'
	2	1390	270 28.4'	890 46.8'
	3	1394	270 28.3'	890 47.0'
	4	1394	270 28.3'	89o 47.0'
	5	1386	270 28.4'	890 46.9'
	6	1386	270 28.4'	890 46.9'
C5	1	2377	26o 56. 9'	89o 36.7'
	2	2400	260 57.7'	890 34.2'
	3	2400	26° 57.71	890 34.2'
	4	2377	260 57.9'	89o 35.1'
	5	2377	26o 57.9'	890 35.1'
	6	2400	26o 57.6'	89o 35.1'
El	1	347	280 27.7'	86o 01.0'
	2	357	280 27.6'	860 01.8'
	3	357	280 27.6'	860 01.8'
E2	1	625	280 16.7'	86° 15.1'
	2	625	280 16.7'	86° 15.1'
	3	650	28o 16.6'	860 15.2'
E3	1	845	280 09.6'	860 25.0'
	2	845	280 09.6'	860 25.0'
	3	847	280 09.5'	86o 26.2'

Table 1 (cent'd)

Station	Replicate	Depth (m)	N. Latitude	W. Longitude
E4	1	1330	28° 04.3'	86° 34.4'
	2	1358	28° 04.4'	86° 34.8'
	3	1358	280 04.4'	860 34.8'
E5	1	2853	280 00.4'	86° 38.8'
	2	2853	28o 00.4'	86° 38.8'
	3	2800	280 00.5'	860 38.9'
	4	2800	280 04.4'	86° 34.8'

samples, the macroinfauna component of the archived meiofauna cores (protected from washout and seived under controlled laboratory conditions) *was* analyzed. The basic assumption was that a "good" box core sample should have the same proportions of major taxa as was contained in meiofauna tubes from the same core. The paired samples (box and meiofaunal tubes) were thus analyzed for counts by *major* taxa (Tables 2 and 3).

Following Hessler and Jumars (1974) and Jumars (1980), aX2 test for proportions was used to evaluate significant departures from expectation. Results for each station and replicate are shown by Figure 1. In these Figures, the field-assigned quality designation is indicated by a 1, 2, or 3 representing an assumed "poor", "borderline", or "good" core, respectively. Only 7 of the 30 replicates taken were demonstrated to have been poor samples: Replicate 3 at Station 1; replicates 2, 4, 5 and 6 at Station 2; replicate 3 at Station 3 and replicate 5 at Station 5. In general, borderline and poor samples were characteristically better than *was* anticipated based upon field observations. We will, however, continue to apply strict criteria in the field in regard to accepting core as a good sample. The overall quality of Cruise II box core samples accepted was good.

Cruise I Samples

Since the last progress report, we have received taxonomic verification of the echinoids in macroinfauna samples and the decapod component of the trawl samples (see letter and list on following pages). Some 34 species of decapods were represented in the trawl samples including one species new to the Gulf of Mexico (Chacellus filiformis). Likewise, we have not found the sea urchin Schizaster orb ignvanus listed for the Gulf of Mexico.

Hessler, R.R. and P.A. Jumars. 1974. Abyssal community analysis from replicate box cores in the Central North Pacific. Deep-Sea Research. Vol. 21:185-209.

Jumars, D.A. 1980. Rank correlation and concordance in community analyses: an inappropriate null hypothesis. Ecology 61(6):1553-1554.

Table 2. Total counts by Station and Taxa: Macroinfauna (Box Cores).

Taxa	c1	c2	- J 3 -	C4	C5	Total	Percent	Cum. Per.
	Station							
Polychaeta	1290	1466	1156	1466	660	6038	.4113	.4113
Nematoda	320	422	234	802	1024	2802	.1908	.6021
Harpacticoidea	122	212	146	330	172	982	.0669	.6690
Ostracoda	56	256	430	158	36	936	.0638	.7327
Isopoda	398	112	122	112	62	806	.0549	.7876
Bivalvia	98	62	126	170	98	554	.0377	.8254
Tanaidacea	78	200	110	136	22	546	.0372	.8626
Sipunculida	66	92	122	126	18	424	.0289	.8914
Bryozoa	10	16	24	186	2	238	.0162	.9076
Amphipoda	52	92	56	34	2	236	.0161	.9237
Nemertini	40	22	38	42	22	164	.0112	.9349
Gastropoda	48	26	28	52	4	158	.0108	.9456
Aplacophora	38	32	38	18	6	132	.0090	.9546
Cumacea	58	16	14	34	2	124	.0084	.9631
Scaphopoda	8	12	26	42	20	108	.0074	.9704
Ophiuroidea	18	8	24	30	16	96	.0065	.9770
Gammarid	60	0	0	0	4	64	.0044	.9813
Porifera	4	4	2	18	20	48	.0033	.9846
Ascidiacea	0	0	10	38	0	48	.0033	.9879
Hydrozoa	4	2	2	16	0	24	.0016	.9895
Echinoidea	2	0	2	2	14	20	.0014	.9909
Unknown	2	0	4	14	0	20	.0014	.9922
Caprellid	18	0	0	0	0	18	.0012	.9935
Priapulida	0	0	2	0	14	16	.0011	.9946
Scyphozoa	12	0	0	2	0	14	.0010	.9955
Holothuroidea	0	0	4	10	0	14	.0010	.9965
Kinorhyncha	2	0	2	6	0	10	.0007	.9971
Anthozoa	2	0	0	6	0	8	.0005	.9977
Crustacea	0	4	0	4	0	8	.0005	.9982
Copepoda	0	0	6	0	0	6	.0004	.9986
Brachiopoda	0	6	0	0	0	6	.0004	.9990
Zoantharia	0	0	0	0	4	4	.0003	.9993
Cephalochordata	0	0	0	2	0	2	.0001	.9995
Decapoda	0	2	0	0	0	2	.0001	.9996
Turbellaria	0	0	2	0	0	2	.0001	.9997
Mysidacea	0	0	0	2	0	2	.0001	.9999
Pycnogonida	0	0	0	2	0	2	.0001	1.0000
Mullusca	0	0	0	0	0	0	0.0000	1.0000
Echinodermata	0	0	0	0	0	0	0.0000	1.0000
Asteroidea	0	0	0	0	0	0	0.0000	1.0000
Echiurida	0	0	0	0	0	0	0.0000	1.0000
Oligochaeta	0	0	0	0	0	0	0.0000	1.0000
Gastrotricha	0	0	0	0	0	0	0.0000	1.0000
Coelenterata	0	0	0	0	0	0	0.0000	1.0000
Total	2806	3064	2730	3860	2222	14682		

Tab 1e 3. Total counts by Station and Taxa: Macroinfauna (Meiofauna Tubes).

Taxa	Station c l	C2	C3	C4	C5	Total	Percent	Cum. Per.
Polychaeta	50	42	62	36	19	209	.3989	.3989
Nematoda	24	27	15	16	12	94	.1794	.5782
Harpacticoidea	16	41	9	7	4	77	.1469	.7252
Sipunculida	7	5	7	8	3	30	.0573	.7824
Tanaidacea	1	8	7	2	6	24	.0458	.8282
Ostracoda	1	6	7	1	3	18	.0344	.8626
Bivalvia	0	2	5	6	2	15	.0286	.8912
Isopoda	2	3	3	2	0	10	.0191	.9103
Scaphopoda	0	3	1	1	4	9	.0172	.9275
Nemertini	0	0	0	2	5	7	.0134	.9408
Cumacea	2	0	1	0	1	4	.0076	.9485
Amphipoda	1	1	1	1	0	4	.0076	.9561
Gastropoda	1	2	1	0	0	4	.0076	.9637
Aplacophora	0	2	1	0	1	4	.0076	.9714
Bryozoa	0	0	1	2	0	3	.0057	.9771
Porifera	0	0	0	0	2	2	.0038	.9809
Anthozoa	0	2	0	0	0	2	.0038	.9847
Holothuroidea	1	0	1	0	0	2	.0038	.9885
Ascidiacea	0	1	0	0	0	1	.0019	.9905
Scyphozoa	1	0	0	0	0	1	.0019	.9924
Crustacea	1	0	0	0	0	1	.0019	.9943
Unknown	1	0	0	0	0	1	.0019	.9962
Hydrozoa	1	0	0	0	0	1	.0019	.9981
Kinorhyncha	0	0	1	0	0	1	.0019	1.0000
Cephalochordata	0	0	0	0	0	0	0.0000	1.0000
Priapulida	0	0	0	0	0	0	0.0000	1.0000
Brachiopoda	0	0	0	0	0	0	0.0000	1.0000
Echinoidea	0	0	0	0	0	0	0.0000	1.0000
Echinodermata	0	0	0	0	0	0	000000	1.0000
Ophiuroidea	0	0	0	0	0	0	0.0000	1.0000
Asteroidea	0	0	0	0	0	0	0.0000	1.0000
Mullusca	0	0	0	0	0	0	0.0000	1.0000
Zoantharia	0	0	0	0	0	0	0.0000	1.0000
Gastrotricha	0	0	0	0	0	0	0.0000	1.0000
Oligochaeta	0	0	0	0	0	0	0.0000	1.0000
Echiurida	0	0	0	0	0	0	0.0000	1.0000
Pycnogonida	0	0	0	0	0	0	0.0-000	1.0000
Copepoda	0	0	0	0	0	0	0.0000	1.0000
Coelenterata	0	0	0	0	0	0	0.0000	1.0000
Mysidacea	0	0	0	0	0	0	0.0000	1.0000
Gammarid	0	0	0	0	0	0	0.0000	1.0000
Caprellid	0	0	0	0	0	0	0.0000	1.0000
Decapoda	0	0	0	0	0	0	0.0000	1.0000
Turbellaria	0	0	0	0	0	0	0.0000	1.0000
Total	110	145	123	84	62	524		

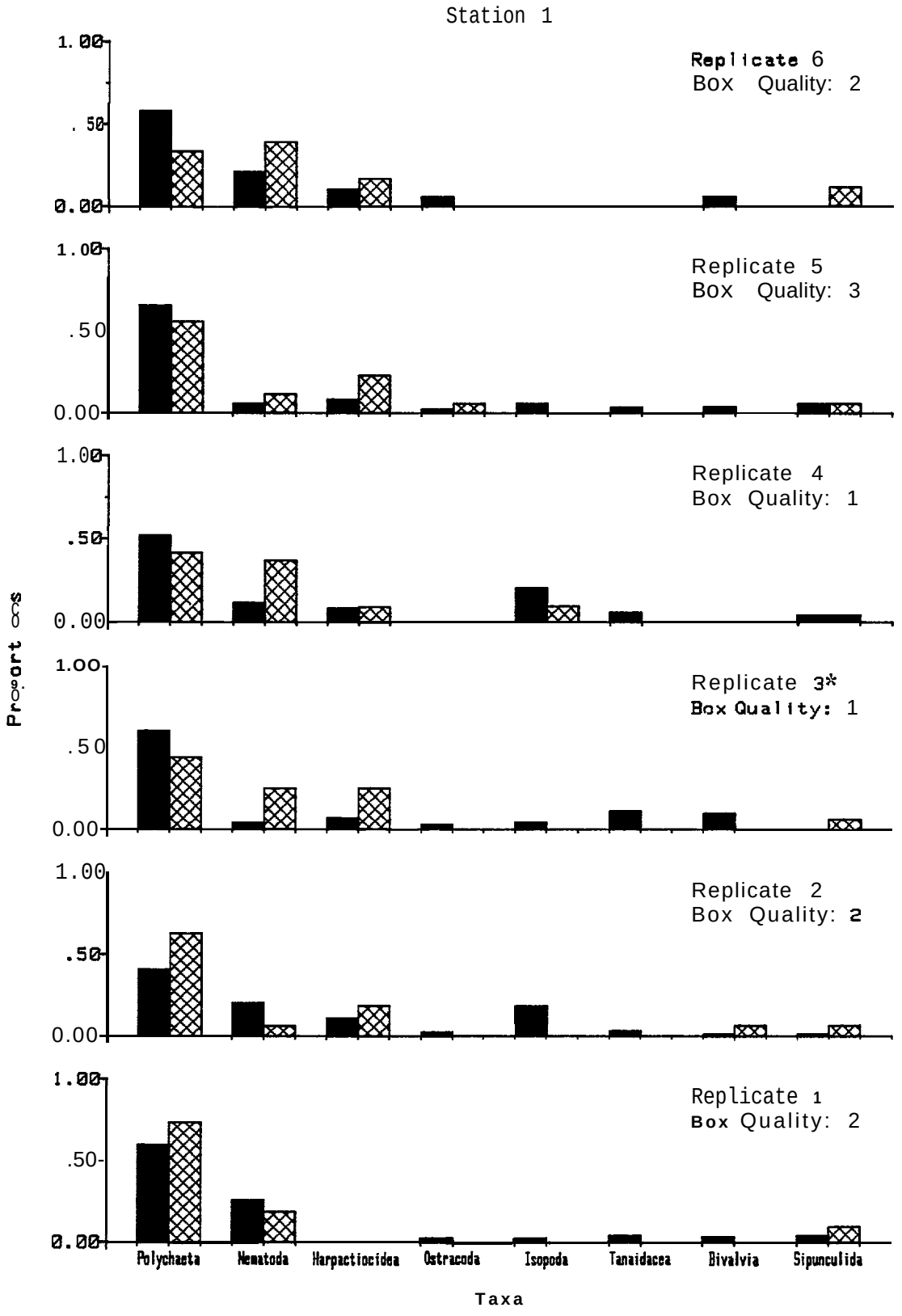

Figure 1. Relative proportions of taxa in box cores (black bars) versus meiofauna tubes (hatched bars). An asterisk represents a significant departure from expected (box core was a bad sample).

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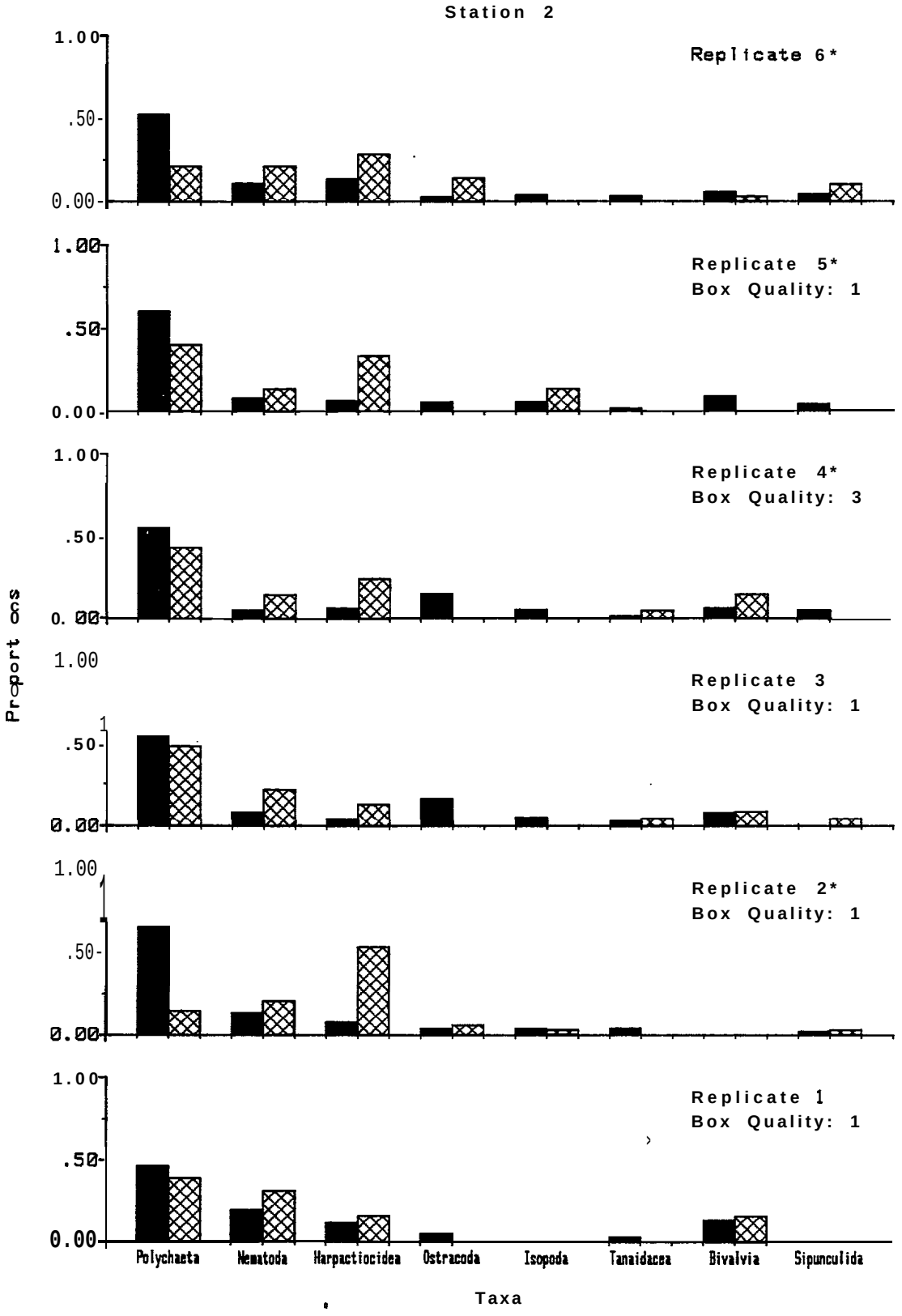

Figure 1 (cent'd)

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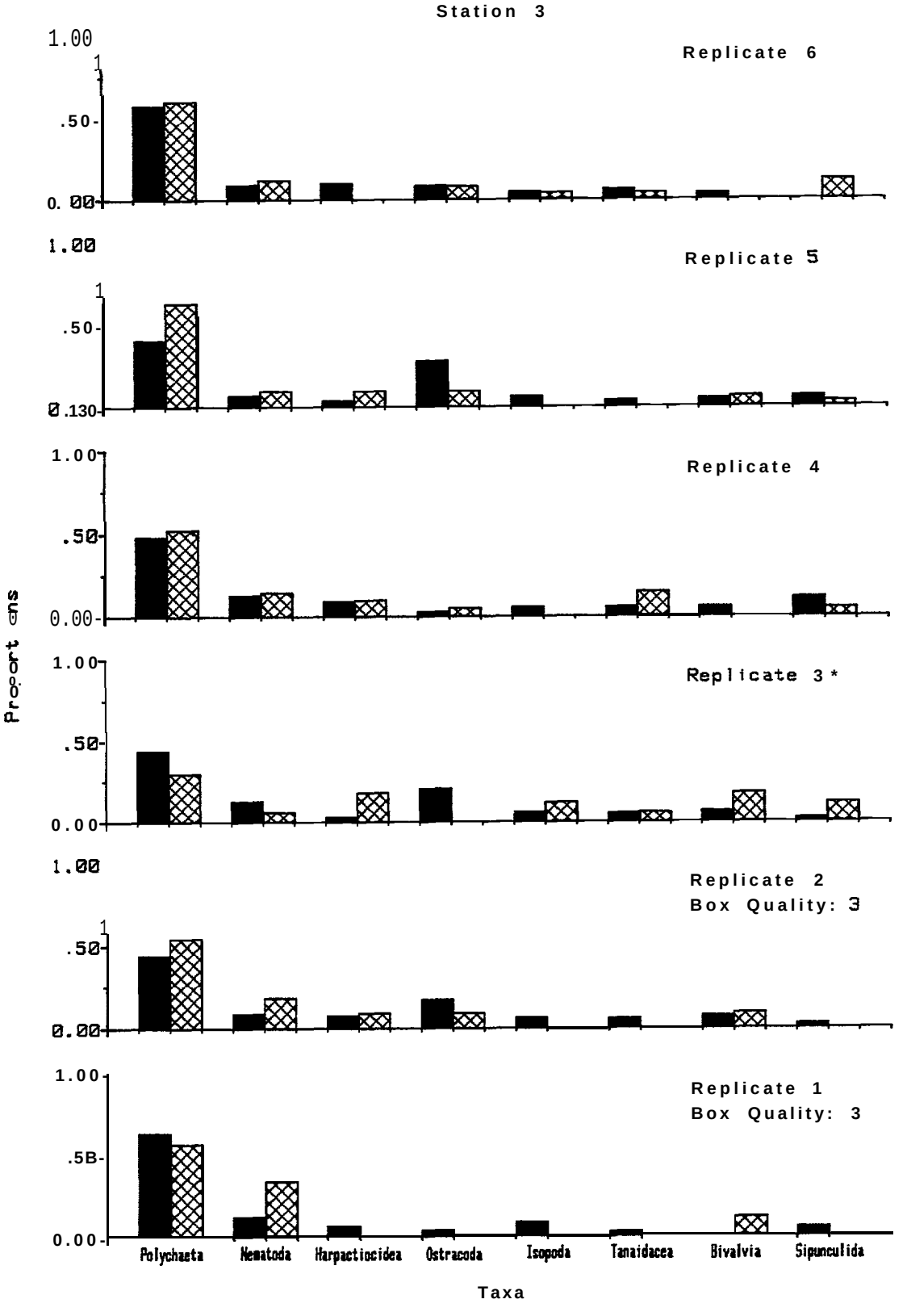

Figure 1 (cent'd)

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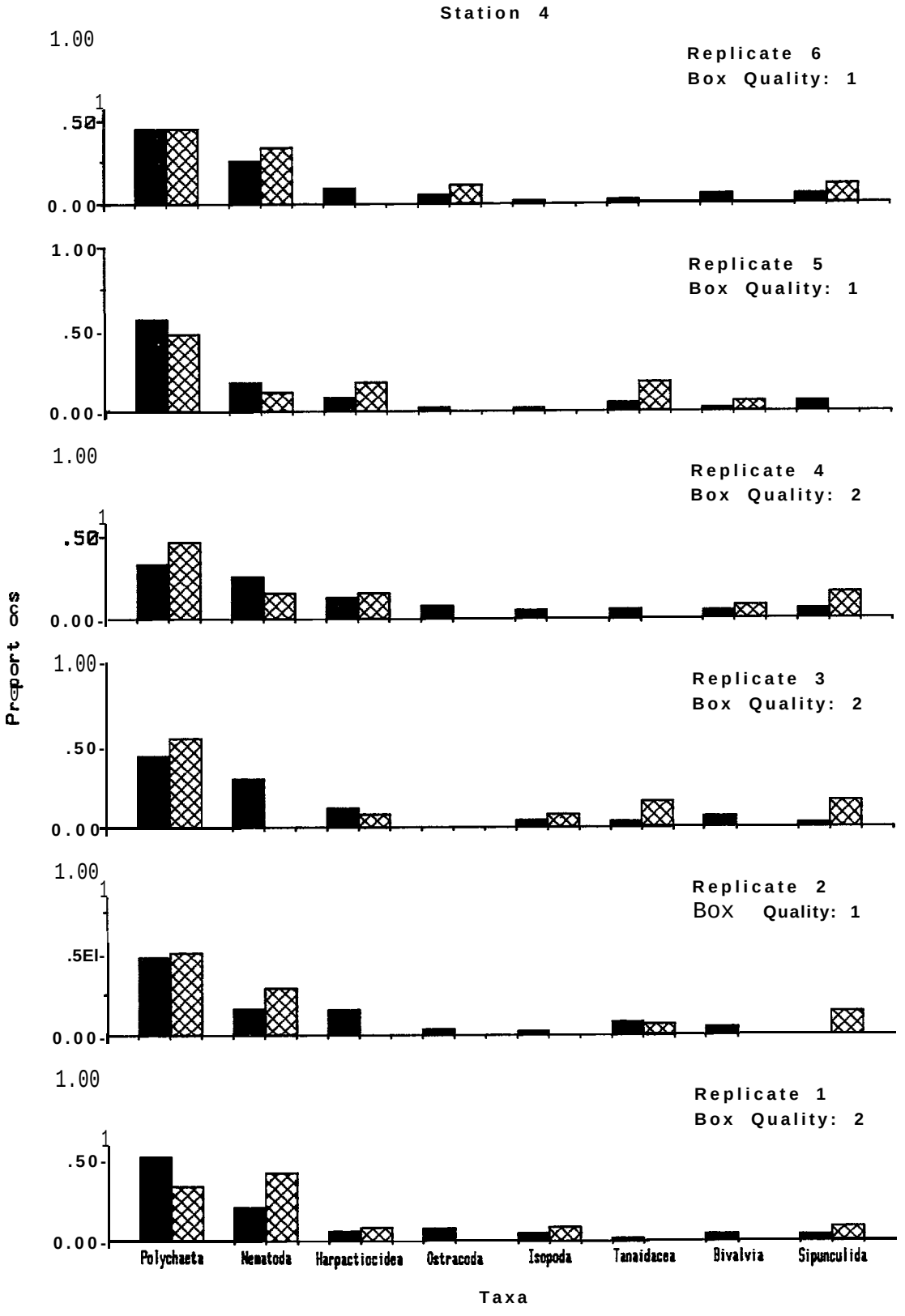

Figure 1 (cent'd)

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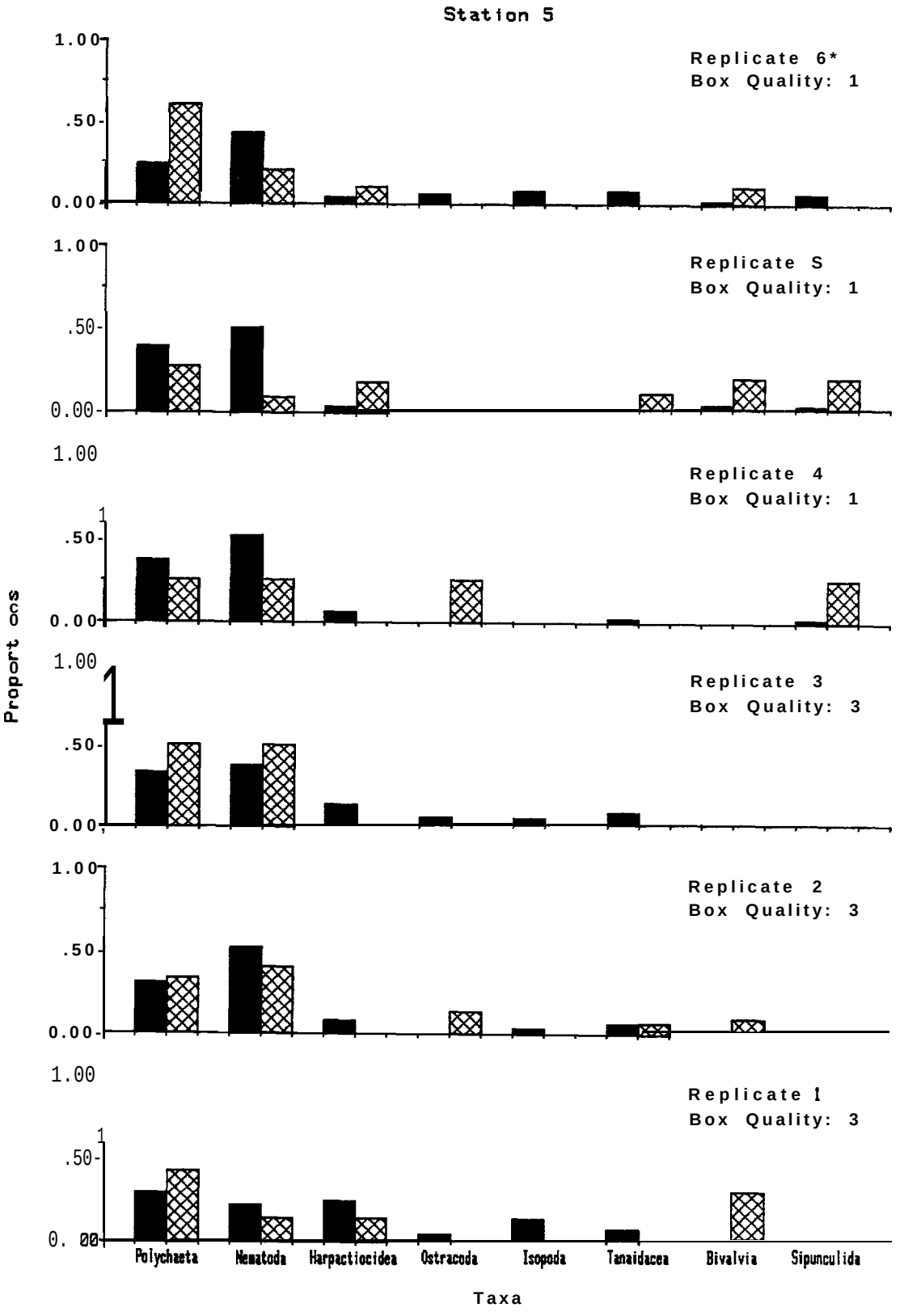


Figure 1 (cent'd)

Project P51

Room W323NHB
Smithsonian Institution,
Washington D.C. 20560.
May 13, 1984.

Mr. Randall Howard,
Ecological Research Associates,
1410 Cavitt St.,
Bryan,
Texas 77801.

Dear Mr. Howard,

I have identified the echinoids (sea urchins) that you recently sent to me. The identifications are as follows:

C1/2/0-5	Hemiaster expergitus	Loven	1 specimen
C3/4/0-5	"	"	fragments
C4/5/0-5	"	"	fragments
C5/1/0-5	Schizaster orbignyanus	A. Agassiz	fragments
C5/2/0-5	Hemiaster expergitus	Loven	1 specimen
C5/5/0-5	"	"	1 specimen
C5/6/0-5	"	"	fragment
C5/6/5-10	"	"	fragment

The specimen of Schizaster orbignyanus is in several pieces and lacks some diagnostic characters. This identification is therefore tentative.

The specimens are being returned to you under separate cover.

Total time for identifications: 2 hours.

With best wishes,

Yours sincerely,

David L. Pawson.

DECAPOD CRUSTACEANS COLLECTED BY TRAWLING ON CRUISE I (NOVEMBER 1983). INCLUDES FROZEN SPECIMENS USED FOR HYDROCARBON ANALYSES. Identified by Linda Pequegnat.

TAXON	STATION 1	2	3	4	TOTAL
NATANTIA (SHRIMPS)					
Crangonidae					
Pontocaris caribbaeus	1	-	-	-	1
Pontophilus gracilis		6	-	-	6
*Prionocrangon pectinata		2	-	-	2
Glyphocrangonidae					
Glyphocrangon aculeata				1	1
Glyphocrangon alispina		12	-	-	12
Glyphocrangon nobilis		1	-	-	
Nematocarcinidae					
Nematocarcinus rotundus		13	6	2	21
Oplophoridae					
Acanthephyra armata		1	-	-	1
Pandalidae					
Parapandalus willisi	7	-	-	-	7
Plesionika holthuisi		13	-	-	13
Penaeidae					
Benthesicymus bartletti		-	s	-	5
Parapenaeus longirostris	37	-	-	-	37
Penaeopsis megalops	8	-	-	-	8
Plesiopenaeus edwardsianus			1	-	1
Solenocera necopina	1	-	-	-	1
Psalidopodidae					
Psalidopus barbouri		1	-	-	1
REPTANTIA (CRABS & LOBSTERS)					
Atelecyclidae					
Trichopeltarion nobile		1			1
Calappidae					
Acanthocarpus alexandri	6				6
Dorippidae					
Ethusa microphthalma	6	1			7
Galatheidae					
Munida forceps	1				1
Munida longipes	23				23
Munida valida		2	2		4
Geryonidae					
Geryon quinquedens			2		2
Goneplacidae					
Bathyplax typhla		13	2		15
Chacellus filiformis	1				1
Lithodidae					
Lithodes agassizii			1		1
Maj idae					
Collodes leptocheles	1				1
Pyromaia arachna	7				7
Rochinia umbonata	-		1		1

* Rare species, not previously known from the Gulf of Mexico.

DECAPOD CRUSTACEANS FROM CRUISE I TRAWLS (Continued)

TAXON	STATION 1	2	3	4	TOTAL
REPTANTIA (Cont'd.)					
Nephropidae					
Nephropsis rosea		1			1
Palicidae					
Palicus gracilis	1	-			1
Polychelidae					
Stereomastis sculpts		1	11	2	14
Porcellanidae					
Porcellana sigsbeiana	1	-			1
Portunidae					
Benthochascon schmitti	1	-			1
Raninidae					
Lyreidus bairdii	20	-			20

Cruise II Samples

Analysis has begun on samples obtained during Cruise II with some 15% of the box core samples having been rough sorted.

The trip to Woods Hole was made and represents the initiation of the benthic photography. The trip was very productive and resulted in the aforementioned improvements to the benthic photography sampling procedure.

WORK ANTICIPATED DURING NEXT TWO MONTHS

Sample analysis will proceed in all areas. Much of the analyses from Cruise I samples should be completed within this period. Dr. Lewbel will represent the project at the Ternary Meeting during June in Tampa Bay Florida.

PROBLEMS

No major problems have been encountered.

SCHEDULE

We continue to operate somewhat ahead of schedule.

BUDGET

As exhibited by the following voucher and graphic, we continue to operate within budget even considering unbilled costs.

Standard Form No. 1035
7 GAO Manual
1035-107

PUBLIC VOUCHER FOR PURCHASES AND SERVICES OTHER THAN PERSONAL

CONTINUATION SHEET

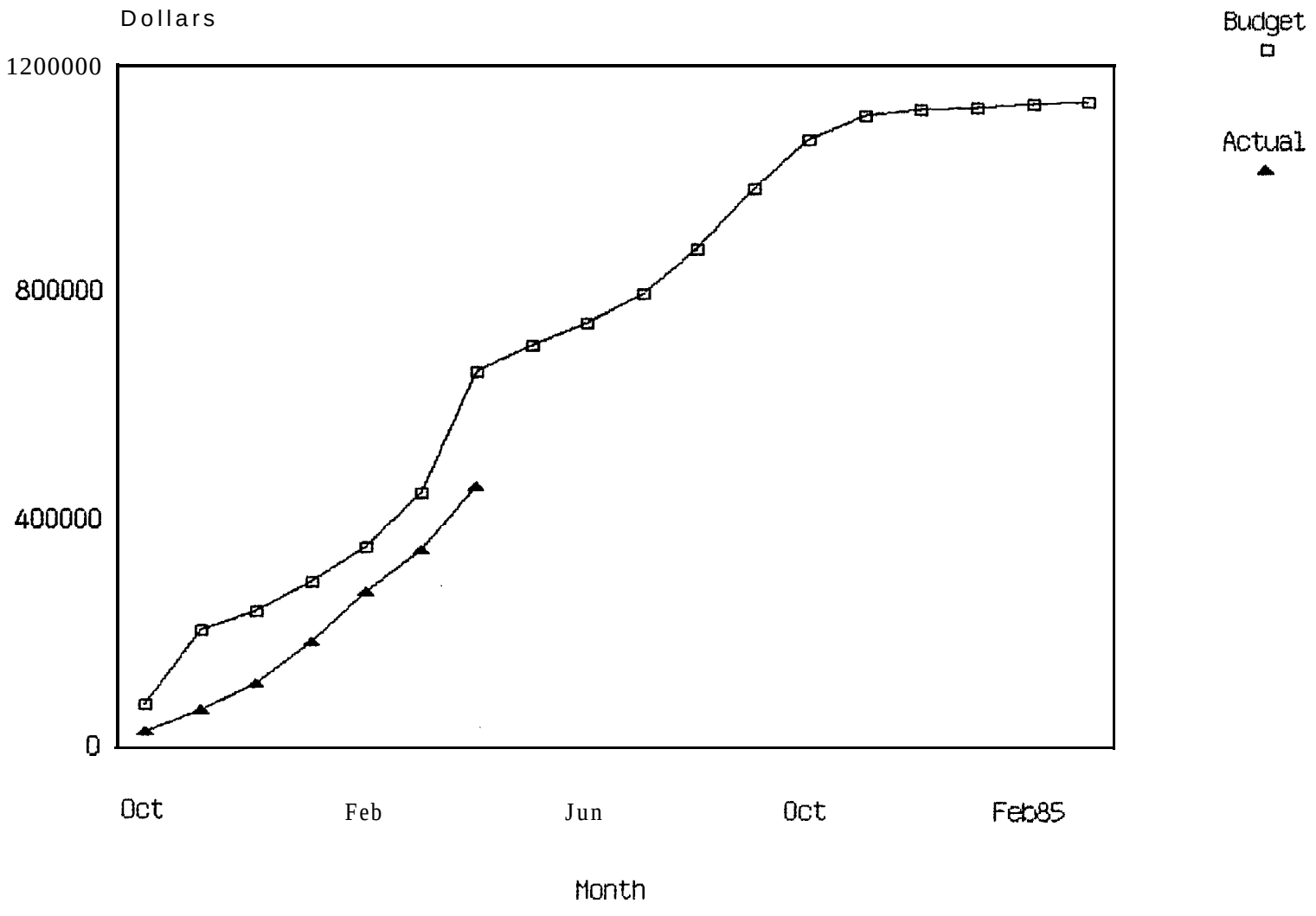
SHEET NO. 2

U.S. DEPARTMENT, BUREAU, OR ESTABLISHMENT

VOUCHER NUMBER P51-8

NUMBER AND DATE OF ORDER	DATE OF DELIVERY OR SERVICE	ARTICLES OR SERVICES (Enter description, i.e., number of contract or federal supply schedule, and other information deemed necessary)	QUANTITY	UNIT PRICE COST	UNIT PRICE PER	AMOUNT
		Contract # 14-12-0001-30046				
		LGL Ecological Research Associates, Inc. 1410 Cavitt Street Bryan, TX 77801				
		From 1 October 1983 - 30 April 1984				
		*Budget Categories		Curr Char	t s	Cumulative Charges
		I. Personnel		$ 18	94.25	$ 92,577.43
		Overhead		23	67.81	115,721.81
		II. Travel and Per Diem		2	68.18	14,527.22
		III. Subcontractors"		14	36.38	131,736.29
		IV. Other Direct Costs		44	43.7(	65,845.53
		Subtotal I-IV		$103	10.32	$420,408.28
		Fee (8.5%)		8	89.88	35,734.71
		Totals		$112	00.20	$456,142.99
		Less Withholdings (5%)		(5	10.01	(22,807.17)
		NET INVOICE		$106	90.15	$433,335.82
		*Cost breakdown provided for budget categories on following pages.				

Continental Slope Cumulative Budget vs Actual



ATTACHMENT I

CRUISE REPORT

MMS Slope Study
Cruise Report
Cruise 2
April 3-20, 1984
R/V *Gyre*

Roger R. Fay
Chief Scientist

May 8, 1984

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Section 6 . . . . . Sediment Characterization/Infauna

Section 7 . . . . . Otter Trawl Data Records

Summary

The second sampling for the MMS Slope Study was conducted on cruise 84-G-4 of the R/V *Gyre* (April 3-20, 1984). As with the previous sampling, ship time was shared to allow performance of NSF sponsored studies in the same and nearby areas. All three Planning Regions (Western, Central, and Eastern) were sampled on 5 station transects. The cruise commenced in Galveston and proceeded to the western transect beginning in the vicinity of 27°55′ 93040′. After selection of stations based on depth and sampling was performed in a shallowest to deepest transect, the ship proceeded to the central transect where stations sampled last November were reoccupied. The locations of the eastern transect stations were suggested by MMS. Prior to sampling we traversed the sampling line (deepest to shallowest) to confirm the anticipated bathymetry and make adjustments as necessary in the station locations so as to best maintain consistent sampling depths. The extremely steep slope on the eastern transect between station E-4 and E-5 (estimated to be greater than a 45° angle) necessitated moving station E-5 to deeper water in order to succeed in sampling the bottom. The station was moved seaward only as far as was required to get off the very steep slope. The station depth was still within the limits for the hydrobiological zone.

In addition to lengthening the trawl bridle and increasing bottom times on the trawling, extra trawl tows were made in the areas where the initial catch indicated very depauperate fauna. The beam trawl was also employed at depths to 2500 meters with good success. The beam trawl was deployed at the base of the escarpment near E-5 and towed all the way up

the slope to the point where the topography leveled off near E-4. The trawl yielded essentially no organisms, though this is somewhat expected for that type of bottom.

All stations were occupied and fully sampled as planned, and the cruise terminated in Venice, Louisiana April 20, 1984.

CHIEF SCIENTIST’S LOG

Date Apr. 2 Cruise 84-G-4 Chief Scientist R Fay Page 1 of 18

	Sampling	Dep./Rec. Gear	Reposition	Standby (Descrip.)	Steaming	Weather: Slowed	Weather: Stopped	Repairs: Sci. Equip.	Repairs: Ship's Gear	Repairs: Ship	Other
0000											
1000											
2000											
3000											
4000											
5000											
6000											
7009											
8000											
9000											
1000											
1100											
" 1200											scheduled departure
1300								Rigging			
1400								Ship and			
1500								sci. gear			
1600											Revised departure
1700							fog Bound in port				
limo											
1900											
2000											
2100											
2200											
2300											
2400											
Daily Totals											

Date Apr. 3 Cruise SI-6-4 Chief Scientist E. Fay Page 2 of 16

	Sampling	Dep./Rec. Gear	Reposition	Standby (Descrip.)	Steaming	Weather: Slowed	Weather: Stopped	Repairs: Sci. Equip.	Repairs: Ship's Gear	Repairs: Ship	Other
0000											
1000											
2000											
3000											
4000											
5000											
6000											
7000											
8000							Fog				
9000							Fog				
1000						Fog					
1100											
1200											
1300											
1400											
1500											
1600											
1700											
1800											
1900											
2000											
2100											
2200											
2300											
2400					1						
Daily Totals					15						

Date Apr. 4 Cruise 84G-4 Chief Scientist R. Fay Page 2 of 10

	Sampling	Dep./Rec. Gear	Reposition	Standby (Descrip.)	Steaming	Weather: Slowed	Weather: Stopped	Repairs: Sci. Equip.	Repairs: Ship's Gear	Repairs: Ship	Other
0000											
1000											
2000	STD.								Hyd winch		Stations
3000	CTD										
4000									Retrieving		Recovering
5000		Box core									No sample
		No sample	box								Only coral
		box core									rocks (2
6000		box core									(3rd) Same
7000											
8000	GCI										
9000		Camera									
	Camera										
1000		Camera									
1100				BC Ready							
		box core									stopped b
1200		box core									H2O too
											washed
1300		Trawl									
		Trawl									
1400		Depth									
	Trawl bottom										
1500		Trawl in							ship screws		
1600											
1700									depart for CALV.		
1800									keep this ship		
1900											
2000											
2100											
2200											
2300											
2400											
Daily Totals	4:10	4:45	3:5		2				1:15	8:45	

Date Apr 5 Cruise 84-G-4 Chief Scientist D Fay Page 3 of 18

	Sampling	Dep./Rec. Gear	Reposition	Standby (Descrip.)	Steaming	Weather: Slowed	Weather: Stopped	Repairs: Sci. Equip.	Repairs: Ship's Gear	Repairs: Ship	Other
0000											
1000					TD Galvan						
2000											
3000											
4000											
5000											
6000											
7000											
8000											
9000											
1000											
1100											IN Gal
1200											repair
1300											
1400											
1500											
1600											
1700											
1800											
1900											
2000											
2100											
2200											
2300											
2400											
Daily Totals					11:30					24	

Date Apr. 6 Cruise 84-G-4 Chief Scientist [illegible] Page 4 of 18

	Sampling	Dep./Rec. Gear	Reposition	Standby (Descrip.)	Steaming	Weather: Slowed	Weather: Stopped	Repairs: Sci. Equip.	Repairs: Ship's Gear	Repairs: Ship	Other
0000											
1 000											
2000											
3000											
4000											
5000											
6000											
7000											
8000											
9000											[illegible]
1000					To sta. W-2						
1100											
1200											
1300											
1400											
1500											
1600											
1700											
1800											
1900											
2000											
2100											
2200											
2300											
2400	STD										Arrive W-2
Daily Total	15 min				14 15					4 30	

Date Jan 7 Cruise 84-G-4 Chief Scientist RFay

	Sampling	Dep./Rec. Gear	Reposition	Standby (Descrip.)	Steaming	Weather: Slowed	Weather: Stopped	Repairs: Sci. Equip.	Repairs: Ship's Gear	Repairs: Ship	Other
0000											
0000	CTD										
1000											
1000											
2000											
2000											
3000											
3000											
4000											
4000											
5000											
5000											
6000											
6000											
7000		trawl									
7000											NO CON
8000											
8000											
9000											Only
9000											
1000		camera									
1000	CAMERA										
1100											
1100											
1200											
1200	BC 1-gal										
1300											
1300	Large BC										
1400											
1400	BC										
1500		TRAWL									
1500	TRAWL										
1400											
1400											
1700											TO-W 3
1700					TO STA. W-3						
1800											3.5 Kl
1800					winds	30-35					not work
1900					seas 10	12					
2000											
2000											
2100							work				
2100							TO T water				
2200											
2300											
2400											
Daily Totals	8 15	4 45	3 45		3 15	3 15	4				

Date 5 Jun. Cruise 84-G-4 Chief Scientist R. Fay Page 6 of 10

	Sampling	Dep./Ret. Gear	Reposition	Standby (Descrip.)	Steaming	Weather: Slowed	Weather: Stopped	Repairs: Sci. Equip.	Repairs: Ship's Gear	Repairs: Ship	Other
0000											
1000											
2000											
3000											
4000											
5000											
6000											
7000											
8000											
9000											
1000											
1100											
1200											
1300											
1400	BC										
1500											
1600											
1700	BC										
1800											
1900											
2000											
2100											
2200	CTD										
2300											
2400											
Daily Totals	8:40	2:40	1:10		6:30	2:30	5				

Date [illegible] Cruise 84-G-4 Chief Scientist [illegible] Page [illegible] of [illegible]

	Sampling	Dep./Rec. Gear	Reposition	Standby (Descrip.)	Steaming	Weather: Slowed	Weather: Stopped	Repairs: Sci. Equip.	Repairs: Ship's Gear	Repairs: Ship	Other
0000											
	BC										
1000											
		Camera									
2000											
3000											
4000											
	box core										
5000											
6000		trawl									
7000											
8000											
9000											
1000											
1100											
1200	PC										
1300											
1400											
1500											
1600	PC										
1700											
1800	CTD										
1900											
2000	BC										
2100											
2200	BC										
2300											
2400		Camera									
Daily Totals	11 50	5 30	3 35		3 05						

Date 10 Apr. Cruise 84-G-4 Chief Scientist R. FAY Page 6 of 18

	Sampling	Dep./Rec. Gear	Reposition	Standby (Descrip.)	Steaming	Weather: Slowed	Weather: Stopped	Repairs: Sci. Equip.	Repairs: Ship's Gear	Repairs: Ship	Other
0000											
1000		Sinker									
2000											
3000											
4900	B. core										
5000											
6000											
7000											
8000											
9000	Handling										
1000											
1100		Trawl									
1200											TO Cindi
1300											
1400											
1500											
1600											
1700											
1800											
1900											
2000											
2100											
2200											
2300											
2400											
Daily Totals	4 50	6 15	55m		12						

Date 11 Apr 89 Cruise 89-12-4 Chief Scientist R. Kay Page 7 of 12

	Sampling	Dep./Ret. Gear	Reposition	Standby (Descrip.)	Steaming	Weather: Slowed	Weather: Stopped	Repairs: Sci. Equip.	Repairs: Ship's Gear	Repairs: Ship	Other
0000											
1000											
2000											
3000	BCAMT										
4000											
5000											
6000											
7000											
8000											
9000											
1000											
1100											
1200											
1300											
1400											
1500											
1600											
1700											
1800											
1900											
2000											
2100											
2200	CTD										
2300											
2400											
Daily Total	10:15	3	1:25	20 min	8:15			45			

Date April 12 Cruise 84 G 7 Chief Scientist K. Ray Page 10 of 10

	Sampling	Dep./Ret. Gear	Reposition	Standby (Descrip.)	Steaming	Weather: Slowed	Weather: Stopped	Repairs: Sci. Equip.	Repairs: Ship's Gear	Repairs: Ship	Other
0000											
1000											
2000											
3000	box core										
4000	box core	trawl									
5000											
6000											
7000		trawl									
8000											
9000					to C3						
1000	box core										C-3
1100	CTD										
1200	B										
1300											
1400		TRA									
1500											
1600											
1700					BRD TO C2						
1800		Trawl									
1900	T-C-2										3RD TRAWL C-3
2000					To C-3						BETTER THAN WAL MART
2100											
2200											
2300					TO C-4						
2400											C-4
Daily Totals	9 15	8	3		3 45						

Date Apr. 13 Cruise 84-G-4 Chief Scientist R. Fay Page 11 of 12

	Sampling	Dep./Rec. Gear	Reposition	Standby (Descrip.)	Steaming	Weather: Slowed	Weather: Stopped	Repairs: Sci. Equip.	Repairs: Ship's Gear	Repairs: Ship	Other
0000					to CH						
1000											
2000											
3000	CONCORE										
4000	CTD										
5000											
6000											
7000	CONCORE										
8000											
9000		trawl									
1000	Trawl										
1100											
1200											
1300	BC										
1400											
1500		CAM									
1600	CAM										
1700		CAM									
1800	PC										
1900					to C-5						
2000											
2100											
2200	BC										AT C-3
2300	PC										only 1 core
2400	BC										
Daily Totals	12:55	2:55	2:40		5:30						

Date April 14 Cruise 84 G 4 Chief Scientist K Fay Page 12 of 9

	Sampling	Dep./Retr. Gear	Reposition	Standby (Descrip.)	Steaming	Weather: Slowed	Weather: Stopped	Repairs: Sci. Equip.	Repairs: Ship's Gear	Repairs: Ship	Other
0000											
1000	BC										
2000	CTD										
3000											
4000											
5000	BOXCORE										
6000											
7000		trawl									
8000											first trawl brought up very few fish (most not bottom dwellers)
9000											
1000											
1100		trawl									
1200		trawl Beam									
1300											
1400											
1500											
1600		Camera									
1700											
1800	Camera										
1900		Camera									
2000	BC										
2100											Complete C-5
2200					TO						
2300					Castle Island						
2400											
Daily Totals	11:25	6:30	3:15		2:50						

Date 15 Apr Cruise 84-G-4 Chief Scientist Riley Page 13 of 18

	Sampling	Dep./Rec. Gear	Reposition	Standby (Descrip.)	Steaming	Weather: Slowed	Weather: Stopped	Repairs: Sci. Equip.	Repairs: Ship's Gear	Repairs: Ship	Other
0000											
1000											
2000											
3000											
4000											
5000											
6000											
7000											
8000											
9000											
1000											
1100											
1200											
1300											
1400											Earthquake
1500											Listen [illegible]
1600											+ start [illegible]
1700											
1800											
1900											
2000											Arrive S.A.E.
2100	BTD										
2200	BC										1 wound 1 NA TKP
2300	B.C.										~~PDR~~
2400		Complete									
Daily Totals	240	30			2050						

Date 4.16.84 Cruise 84 G-T Chief Scientist K. Fay Page 14 of 16

	Sampling	Dep./Rec. Gear	Reposition	Standby (Descrip.)	Steaming	Weather: Slowed	Weather: Stopped	Repairs: Sci. Equip.	Repairs: Ship's Gear	Repairs: Ship	Other
0000											
1000											1 box [illegible]
2000	B.C										
3000											
4000	B.C										
5000											
6000		Trawl									
7000											
8000											
9000		Trawl									
1000	2nd Trawl										
1100					TO E-2						
1200											winds - 30- knots
1300	BC 2nd BC										single BC - other on [illegible]
1400	PR										
1500		Trawl									
1600											
1700											
1800											
1900	Aborted										
2000											
2100	CTD										
2200											
2300	BC										1st drop - [illegible]
2400	BC										
Daily Totals	11.15	4.50	5.45		2.10						

Date Apr 17, 84 Cruise 84-G-4 Chief Scientist Kiff Page 15 of 16

	Sampling	Dep./Rec. Gear	Reposition	Standby (Descrip.)	Steaming	Weather: Slowed	Weather: Stopped	Repairs: Sci. Equip.	Repairs: Ship's Gear	Repairs: Ship	Other
0000											
1000											To sta
2000	CTD,										
3000	B.C.										2 wat BC's-no
4000	BC										
5000											
6000	Camera										
7000											
8000	BC										
9000											
1000		TKMC									
1100	Trawl E-3										
1200											
1300											Camp to E
1400					TO E-4						
1500											
1600	BC 2 tires										Arrive 2 arm 1 cook
1700											
MOO											
1900	CTD										
2000	BC										both BC
2100											
2200					TO E-5 HINE-4				Hydrowire		
2300	BC-4th										
2400											
Daily Totals	14:20	2:30	2:50		4:20						

Date 18 Apr 84 Cruise 84-G-4 Chief Scientist R. Fay Page 16 of 18

	Sampling	Dep./Rec. Gear	Reposition	Standby (Descrip.)	Steaming	Weather: Slowed	Weather: Stopped	Repairs: Sci. Equip.	Repairs: Ship's Gear	Repairs: Ship	Other
0000											
	BC										
1000											
2000											
3000											
	TRAWL										
4000											
5000											
6000											
7000											
8000											
9000											
1000											Comp. rec. c...
											go to L 5
1100	CTD										
1200											
1300											
1400											
											Lorran cha... for cut-...
1500											
	BC										
1600											
1700											
1800											
1900											
2000											
2100											
	BC										
2200											
2300											
2400											
Daily Totals	13 45	5 25	3 20	60 min	30 min				30		

Date 19 Apr 84 Cruise 84-G-4 Chief Scientist Riley Page 12 of 14

	Sampling	Dep. /Ret. Gear	Reposition	Standby (Descrip.)	Steaming	Weather: Slowed	Weather: Stopped	Sci. Equip.	Repairs: Ship's Gear	Repairs: Ship	Other
0000											
1000											
2000											
3000											
4000											
5000											
6000		B. Trawl									
7000	B Trawl										
8000											
9000			E-4								
1000											
1100											
1200					TO						
1300											
1400											
1500											
1600											
1700											
1800											
1900											
2000											
2100											
2200											
2300											
2400											
Daily Totals	5.15	4	2.4		12.2						

Date 20 Apr 94 Cruise 94-G-4 Chief Scientist [illegible] Page 18 of 18

	Sampling	Dep./Rec. Gear	Reposition	Standby (Descrip.)	Steaming	Weather: Slowed	Weather: Stopped	Repairs: Sci. Equip.	Repairs: Ship's Gear	Repairs: Ship	Other
0000											
1000											
2000											
3000											
4000											
5000											
6000											
7000											
8000											
9000											
1000											
1100											
1200											
1300											
1400											
1500											
1600											
1700											
1800											
1900											
2000											
2100											
2200											
2300											
2400											
Daily Totals					10½						

BRIDGE LOG

RECORD OF POSITIONS AND STATIONS

Page No. 2

Vessel: R/V Gyre

Cruise No. 84-G-4

2D+G

Date	Time ~~GMT*~~ Local	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix L/C	DRIFT ON STATION Distance (miles) TC	DRIFT ON STATION Direction (degrees) TC	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/4/84	0200	W1	27 39.5	93 45.6	✓	[illegible]	[illegible]	Sta 1	[illegible]
✓	0257	✓	[illegible]	93 45.2	✓	25803.7	[illegible]	[illegible]	—
✓	0350	✓	27°39.8	93°45.5	✓	25801.2	46668.0	CTD Sta 1	[illegible]
✓	0449	✓	27°39.6	93°45.5	✓	25809.8	46668.8	☐ Cont H-[illegible]	—
	0520	✓	27°39.6	93°45.6	✓	[illegible]	46667.0	☐ Cont H-[illegible]	✓
	0558	✓	27°39.5	[illegible]	✓	[illegible]	[illegible]	[illegible]	✓
	0810	✓	27-35.0	93-33.1	✓	25916.9	46647.4	☐ @ Bottom 32 m	[illegible]
	0850	✓	27-34.7	93-33.5	✓	[illegible]	[illegible]	Camera @ Bottom 440 m	✓
	0910	✓	27-34.6	93-33.7	✓	[illegible]	[illegible]	✓ [illegible]	✓
	[illegible]	✓	27-34.4	93-33.6	✓	[illegible]	[illegible]	End Camera Run	✓
	0957	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—
	1141	✓	27-35.5	93-32.9	[illegible]	25918.2	[illegible]	☐ Cont @ Bottom	354 m
✓	1210	✓	27 35.2	93 33.0	✓	25918.5	[illegible]	[illegible]	[illegible]
✓	1241	✓	[illegible]	93 32.4	✓	[illegible]	[illegible]	[illegible]	[illegible]
	1245	✓	27 35.2	93 33.5	✓	[illegible]	[illegible]	[illegible]	✓
	125[illegible]	✓	[illegible]	[illegible]	✓	[illegible]	[illegible]	[illegible]	[illegible]

Rev: 03/83

RECORD OF POSITIONS AND STATIONS

Page No. 2

Vessel: [illegible]

Cruise [illegible]

Date	Time ~~GMT*~~ [illegible]	Station Number	POSITION Latitude [illegible]	POSITION Longitude [illegible]	Type of Fix [illegible]	DRIFT ON STATION Distance (miles) [illegible]	DRIFT ON STATION Direction (degrees) [illegible]	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
[illegible]	1332	[illegible]	2236.4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	1345	[illegible]	2736.5	9333.4	[illegible]	25920.0	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	2737.0	9333.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	1415	[illegible]	2732.4	9332.8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	1430	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	1445	[illegible]	2738.1	9334.2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	2738.5	9339.5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	1508	[illegible]	2738.8	9334.6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	1514	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	NR	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	'k'"	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	

RECORD OF POSITIONS AND STATIONS

Page No. 5

Vessel: GK[illegible]

Cruise No. 84-G-[illegible]

Date	Time GMT*	Station Number	POSITION Latitude	POSITION Longitude	Type of Fix	DRIFT ON STATION Distance (miles)	DRIFT ON STATION Direction (degrees)	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/17	[illegible]	[illegible]	27 25.0	93 [illegible]	[illegible]	[illegible]	46 [illegible]	[illegible]	[illegible]
✓	0213	✓	272[illegible]	93 [illegible]	✓	26 [illegible]	[illegible]	[illegible]	✓
✓	0235	✓	271[illegible]	[illegible]	✓	26 [illegible]	[illegible]	[illegible]	✓
✓	0300	✓	2722.0	9321.5	✓	[illegible]	46 18.1	[illegible]	✓
✓	[illegible]	✓	[illegible]	[illegible]	✓	[illegible]	[illegible]	[illegible]	✓
✓	[illegible]	[illegible]	[illegible]	[illegible]	✓	[illegible]	[illegible]	[illegible]	✓
✓	0400	✓	27°24.9	93°19.8	✓	26 [illegible]	46 [illegible]	[illegible] 165°	[illegible]
✓	0415	✓	27°24.7	93°19.3	✓	26 12.2	46 [illegible]	✓ 3° ✓	
✓	0430	✓	27°23.6	93°19.9	✓	26 14.2	46 [illegible]	✓ ✓ ✓	✓
✓	0445	✓	27°23.2	93°19.6	✓	26 16.2	46 [illegible]	[illegible]	✓
✓	0500	✓	27°22.6	93°18.1	✓	26 17.7	46 03.5	OFF THE BOTTOM [illegible]	✓
✓	0545	✓	27°21.6	93°17.4	✓	26 [illegible]	46 [illegible]	[illegible] OVER	✓
✓	0615	✓	27°24.5	93°19.5	✓	26 11.5	46 10.0	3 [illegible] [illegible] [illegible] DOWN	✓
✓	0630	✓	27°25.2	93°19.9	✓	26 10.9	[illegible]	✓ 3 321°	✓
✓	[illegible]	✓	272[illegible]	93 [illegible]	✓	26 [illegible]	[illegible]	ON THE BOTTOM	—
✓	0700	✓	27°[illegible]	93°[illegible]	✓	26 [illegible]	46 [illegible]	[illegible] 321°	[illegible]

RECORD OF POSITIONS AND STATIONS

Page No. 4

Vesse : [illegible]

Cruise No. [illegible]

Date	Time ~~GMT~~*	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix	DRIFT ON STATION Distance (miles) X	DRIFT ON STATION Direction (degrees) Y	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
[illegible]	0716	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	0722	✓	27°26.8	93°20.6	✓	[illegible]	[illegible]	[illegible]	✓
	0730	✓	27°27.0	93°20.8	✓	[illegible]	[illegible]	[illegible]	✓
	0737	✓	27°27.3	93°20.9	✓	[illegible]	4618.6	OFF THE [illegible]	✓
	0[illegible]				✓	26			✓
*	0825	✓	27-24.9	93-20.[illegible]	✓	[illegible]	[illegible]11.7	[illegible]	✓
	0921	✓	27-24.4	93-[illegible]	✓	[illegible]	[illegible]	[illegible]	✓
	0947	✓	27-24.4	93-20.0	✓	[illegible]	[illegible]	[illegible]	✓
	0952	✓	27-24.5	93-19.9	NAVSAT	27°EL	02 INT.	[illegible]	✓
	1030	✓	27-24.9	93-20.4	LORC	[illegible]	[illegible]	[illegible]	✓
	1100	✓	27-25.2	[illegible]	✓	[illegible]	[illegible]	[illegible]	✓
	1123	✓	27-25.4	93-21.2	✓	[illegible]	[illegible]	[illegible]	✓
	[illegible]	[illegible]	[illegible]	[illegible]	✓	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	✓	[illegible]	[illegible]	✓	[illegible]	[illegible]	[illegible]	✓
	[illegible]	✓	[illegible]	[illegible]	✓	[illegible]	[illegible]	[illegible]	✓

RECORD OF POSITIONS AND STATIONS

Page No. 5

Vessel: GYR 13

Cruise No. 84-G-4

Date	Time GMT* LOCAL	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix L/C	DRIFT ON STATION Distance (miles) TO	DRIFT ON STATION Direction (degrees)	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
8/7/81	1320	W2	2724.9	9320.5	✓	26002.7	46611.9	Box Core	[illegible]
✓	1333	✓	2724.9	9320.4	✓	26003.1	46611.8	Hit NG	✓
✓	1354	✓	2724.9	9320.6	✓	26001.3	46611.8	Box Core	✓
✓	1406	✓	2724.9	9320.5	✓	26002.9	46612.1	Hit	✓
✓	1418	✓	2725.0	9320.2	✓	26005.7	46612.1	Trawl Overall 3.1 KTS 130°	✓
✓	1450	✓	2724.5	9318.9	✓	26017.7	46609.7	Vessel Trawl Fishing	✓
✓	1510	✓	2724.1	9318.0	✓	26025.3	46608.1	" "	✓
✓	1528	✓	2723.9	9317.3	✓	26031.2	46606.8	" "	✓
✓	1545	✓	2723.6	9316.6	✓	26037.5	46605.[illegible]	" "	✓
✓	1552	—	27°23.5	93°16.3	✓	26040.6	46605.4	Trawl Starts up	[illegible]
✓	1600	0'''	27°23.3	93°15.9	✓	26044.0	46604.2	Coming up	[illegible]
✓	1610	✓	27°23.2	93°15.4	✓	26047.9	46603.3	Off the Bottom	✓
	1645	W/W	0.5 180°	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4/6/84	2732	W-3	27°07.0	93°24.6	✓	25987.6	46646	Trawl [illegible]	[illegible]
	[illegible]	—	27-08.1	93-23.9	—	[illegible]	46[illegible]6.9	[illegible]	[illegible]
	0812	—	27-08.4	93-23.6	—	25995.0	46[illegible]7.4	Trawl at Bottom	[illegible]

RECORD OF POSITIONS AND STATIONS

Page No. 06

Vessel: GYRE

Cruise No. 84-G-1

+6h ZD

Date	Time ~~GMT*~~ LCT	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix LNWC	DRIFT ON STATION Distance (miles) X	DRIFT ON STATION Direction (degrees) Y	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/68	0830	W-3	27-08.9	93-23.1	✓	25911.6	46568.5	Travel at Bottom	
✓	0900	✓	27-09.5	93-22.4	✓	25921.5	46569.8	CMG-043.5° @ 2.0 kt	✓
✓	0930	✓	27-10.1	93-21.7	✓	25930.6	46570.9	✓ ✓ ✓	✓
✓	1000	✓	27-10.6	93-21.0	✓	25940.0	46571.9	✓ ✓ ✓	✓
✓	1030	✓	27-11.2	93-20.2	✓	25950.5	46573.1	✓ ~~2.9 kt~~	✓
✓	1051	✓	27-11.7	93-19.6	✓	25956.1	46574.0	Travel at Bottom	✓
✓	1111	✓	27-12.1	93-19.1	✓	25965.4	46574.8	Travel to Surface	✓
✓	1150	✓	27 11.1	93-20.3	✓	25948.5	46572.7	Gear in	✓
✓	1317	✓	27 10.6	93 19.5	✓	25954.7	[illegible]	[illegible]	✓
✓	[illegible]	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	✓
✓	1541	✓	27 10.[illegible]	93 19.4	✓	[illegible]	[illegible]	[illegible]	✓
✓	[illegible]	✓	[illegible]	[illegible]	✓	[illegible]	[illegible]	[illegible]	✓
✓	[illegible]	✓	27 11.2	[illegible]	✓	[illegible]	[illegible]	[illegible]	✓
✓	1600	✓	27° 11.4	93° 18.6	✓	25967.7	46572.3	Change Station	✓
✓	1615	✓	27° 11.4	93° 18.5	✓	25968.3	46572.3	✓ ✓	✓
✓	[illegible]	✓	27° 11.4	93° 18.5	✓	25968.4	46572.2	[illegible]	✓

RECORD OF POSITIONS AND STATIONS

Vessel: R/V Gyre

Page No. 07

Cruise No. EG-G-4

ZD +6

Date	Time ~~GMT*~~ LCT	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix	DRIFT ON STATION Distance (miles)	DRIFT ON STATION Direction (degrees)	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
9/8	1725	W-3	27 10.4	93 19.4	L/6	25955.6	46530.3	[illegible]	[illegible]
	1731		27°10.3	93°19.3	—	25956.2	46569.8	□ Cov H.T [illegible]	[illegible]
	1740	—	27°10.2	93°19.1	—	25957.8	46569.4	Start Tow Ball Tow	—
	1800	—	27°09.6	93°19.0	—	25956.5	46567.5	G 180° ± 2 Kts	—
	1804	—	27°-09.4	93°19.0	—	25956.2	46567.1	Coupling Tow Ball Tow	—
	1230	9/10	27°05.8	93°19.2	—	25939.9	46557.0	G 120 9.5 Kts	—
	1900	—	27°01.3	93°19.6	—	25918.4	46544.5	G 180° 9+ Kts	—
	1930	—	26°57.0	93°19.6	—	25900.8	46532.2	— —	—
	2000		26-52.5	93-19.5	—	25886.7	46519.6	— —	—
	2030	—	26-48.0	93-19.3	—	25871.9	46506.4	— —	—
	2100	—	26-43.7	93-19.2	—	25857.9	46494.2	— —	—
	2106							[illegible]	—
	2130	—	26-43.3	93-19.2	—	25846.6	46484.5	[illegible]	—
	2159	W-4	26-44.1	93-19.1	—	25860.0	46495.1	Stop for [illegible]	—
	2202	—	26-44.1	93-19.2	—	25859.6	46495.3	[illegible]	—
	2242	—	26-43.9	93-19.2	—	25858.5	46494.8	[illegible]	—

RECORD OF POSITIONS AND STATIONS

Page No. 08

Vessel: GYRE

Cruise No. 64-G-4

+6h ZD

Date	Time ~~GMT*~~ LCT	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix LORAN C	DRIFT ON STATION Distance (miles) X	DRIFT ON STATION Direction (degrees) Y	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/08	2344	W-4	26-43.5	93-19.0	✓	25858.8	46493.5	37D @ [illegible]	[illegible]
4/09	0008	✓	26 44.2	93 19.2	✓	25859.3	46495.6	Box core 1	[illegible]
✓	0031	✓	26 44.1	9319.1	✓	25860.2	46495.4	Lit	✓
✓	0119	✓	2644.4	9319.2	✓	25859.7	46496.2	[illegible]	—
	0150	✓	26 44.7	9319.3	✓	25859.5	46497.4	Tracking [illegible]	✓
✓	0220	✓	26 44.9	9319.4	✓	25859.5	46498.1	" "	✓
✓	0258	✓	26 45.1	9319.5	✓	25859.8	46498.9	" "	✓
✓	0323	✓	26 45.4	9319.5	✓	25860.5	46499.[illegible]	"	✓
✓	0330	✓	26 45.4	9319.5	✓	25860.9	46499.6	[illegible]	✓
✓	0420	✓	26°44.2	93°19.2	✓	25859.8	46495.7	Box Core over	[illegible]
✓	0444	✓	26°44.3	93°19.1	✓	25861.2	46495.9	Box Core [illegible]	[illegible]
✓	0610	✓	26°44.3	93°22.9	✓	25822.2	46499.2	Trawl over	✓
✓	0630	✓	26°44.4	93°22.0	✓	25831.5	46499.7	@ 090° 3.2 Kts	✓
✓	0645	✓	26° 44.5	93° 21.3	✓	25839.3	46498.4	✓ ✓	✓
✓	0700	✓	26° 44.5	93°20.6	✓	25847.8	46498.2	✓ ✓	✓
✓	0705	✓	26°44.6	93°20.4	✓	25848.4	46497.8	Trawl and Dettach	✓

AN

Page No. 07

V-----. Gyat

Cruise No. 54-G-4

Sn 46

Date	Time GMT* LCT	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix	DRIFT ON STATION Distance (miles)	DRIFT ON STATION Direction (degrees)	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/09/24	0715	W-4	26°44.5	93°20.0	Loran/C	25852.6	46497.4	4 Dg 090° 3 knots	[illegible]
	0720		26°44.5	93°19.5		25857.6	46496.8		
	0752		26-44.4	93-18.6		25866.3	46495.7	travel on Bottom 137	[illegible]
	0800		26-44.3	93-18.4		25868.4	46495.3		
	0830		26-44.2	93-17.2		25880.8	46493.8		
	0900		26-44.0	93-16.0		25891.9	46492.3	[illegible] 2 kn	
	09		26-43.9	93-15.6		25896.0	[illegible]91.9	Ch [illegible] 270	
	0930		26-43.1	93-15.8		25894.8	46491.7		
	1000		26-43.3	93-14.8		25904.5	46491.4		
	1010		26-44.4	93-13.4		25920.0	46491.9	travel at Bottom	
	1040		26-43.6	93-12.2		25932.8	46491.8	wt In Dock	
	1100		26-44.5	93-13.7		[illegible]	46492.8	c 270°	
	1125		26-44.3	93-19.1		25861.0	46496.0	[illegible]	
	1202		26 44.1	93 19.3		25857.7	[illegible]	Piston [illegible]	
	1217		26 44.0	93 19.1		25858.0	46496.3	[illegible]	
	[illegible]		26 43.8	93 19.4		25855.7	[illegible]	[illegible] Piston [illegible]	

RECORD OF POSITIONS AND STATIONS

Page No. 10

Vessel: GYRE

Cruise No. 84-G-4

+6^h 20

Date 2/6/84	Time GMT* Let	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix	DRIFT ON STATION Distance (miles)	DRIFT ON STATION Direction (degrees)	REMARKS *Show position & time of course & speed changes,' & beginning & end of all stations	O.O.W.
✓	1300	U/W	26.41.4	93 19.0	L/L	25852.0	46467.6	U/W	
✓	1330	"	26 36.4	93.19.0	✓	25834.1	46473.2	"	✓
✓	1400	"	26 31.5	93 18.9	✓	25818.9	46459.1	✓	✓
✓	1430	✓	26 26.4	93 19.1	✓	25799.8	46445.0	✓	✓
✓	[illegible]	✓	26 20.9	93 19.0	✓	25784.0	46428.9	✓	✓
✓	1511	✓	26 19.1	93 19.0	✓	25778.4	46423.9	Possible Stop?	✓
✓	1530	✓	26 16.0	93 19.0	✓	25768.8	46415.1	[illegible]	
			~~26 16.5~~	~~93 19.0~~	✓	~~25770.5~~	~~46416.6~~		
✓	WE	1545	26 16.6	93 18.9	✓	25771.6	46416.9	STA WS Piston Core Down	
✓	1616	W-5	26°-16.6	93°-19.3	✓	25768.3	46417.2	Piston Core Hit 2635	
	1645	✓	26°-16.6	93°-19.5	✓	25766.6	46417.4	Core on Deck	✓
✓	1705	"	26 16.6	93 17.9	✓	25761.9	46415.9	CTD WS IN	✓
✓	1726	✓	26 16.8	93 18.8	✓	25773.2	46417.1	CTD at Bottom	✓
✓	1940	✓	26 16.7	93 20.0	✓	25761.5	46418.1	CTD on Deck	✓
	1954	✓	26 16.6	93-19.3	✓	25767.7	46417.1	Stop ✓ Dr one gear	
	2035	✓	26-16.7	93-19.8	✓	25762.2	46417.9	☐ on Bottom 2670.	✓

RECORD OF POSITIONS AND STATIONS

Page No. 11

Vessel: GLADE

Cruise No. 84-G-4

+6h 20

Date	Time ~~GMT*~~ LCT	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix LORN 'C'	DRIFT ON STATION Distance (miles) X	DRIFT ON STATION Direction (degrees) Y	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/9	2123	W-5	26-16.8	93-20.5	—	25756.9	46418.9	☐ core on Board	[illegible]
—	2151	—	26-16.9	93-19.00	—	25771.6	46417.6	Stop & Put 17 cm core	—
—	2222	—	26-17.0	93-19.3	—	25768.8	46418.4	☐ core @ Bottom 2565 m	—
—	2307	—	26-17.2	93-19.9	—	25763.3	46419.4	☐ core missed	—
—	2332	—	26-16.6	93-17.9	—	25761.8	46415.7	Stop to Carry [illegible]	—
—	0044	—	26 17.1	93 18.7	—	25774.8	46418.0	on [illegible]	[illegible]
—	0150	—	26 17.4	93 19.1	—	25772.2	46419.5	[illegible]	—
—	0225	—	2617.6	93 19.3	—	25771.0	46420.3	[illegible]	—
—	0310	—	2618.0	93 19.5	—	25769.3	46421.4	[illegible]	—
—	0335	—	2616.9	93 19.1	—	[illegible]	[illegible]	[illegible]	—
—	0337	—	2616.8	93 19.0	—	25770.7	46417.5	[illegible]	[illegible]
—	[illegible]	—	26°17.2	93°19.2	—	25770.6	46418.6	☐ Core Hit 2630 m	[illegible]
—	[illegible]	—	26°17.6	93°19.2	—	25771.2	46419.6	☐ Core [illegible]	—
—	[illegible]	—	26°16.3	93°21.9	—	25741.0	46418.9	300° 10 kts	—
—	0600	—	26°17.1	93°27.1	—	25689.9	46426.0	210° —	—
—	0620	—	26°17.0	93°[illegible]	—	25673.7	46427.5	Net [illegible]	—

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RECORD OF POSITIONS AND STATIONS

Page No. 12

Vessel: R/V GYRE

Cruise No. 84-G-4

ZD 46

Date	Time ~~GMT*~~ LCT	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix	DRIFT ON STATION Distance (miles) X	DRIFT ON STATION Direction (degrees) Y	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/10/84	0630	W-5	26°17.1	93°28.4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	0655	✓	26°17.1	93°27.3	✓	25688.8	46426.1	Tar Ball Tow Stake	✓
	0700	✓	26°17.1	93°27.1	✓	25690.2	46426.0	Co 090° 2 kts	✓
	0715	✓	26°17.1	93°26.6	✓	25695.4	46425.4	Tar Ball Tow ABD	✓
	0730	✓	26°17.1	93°26.1	✓	25700.5	46425.0	Co 090° 3 kts	✓
	0800	✓	27-17.1	93-25.0	✓	25712.2	46423.9	✓	✓
	0815	✓	27-17.1	93-24.6	DR			tran to Bottom	
	0830	✓	26-17.2	93-24.0	✓	25721.7	46423.4	✓ ✓ ✓	✓
	0900	✓	[illegible]	[illegible]	✓	[illegible]	[illegible]		✓
	0930	✓	26-17.1	93-21.0	✓	25749.8	46420.0	✓ ✓ ✓	✓
	1000	✓	26-17.0	[illegible]	✓	[illegible]	46418.8	093° 2 Ab. Kts	✓
	1037	✓	26-17.1	93-18.7	✓	[illegible]	46418.1	[illegible]	✓
	1147	✓	26-17.2	93-18.4	✓	25816.3	[illegible]	[illegible]	✓
	1102	✓	26-17.3	93-17.9	✓	25823.6	46417.7	✓ ✓ ✓	✓
	1130	✓	26-17.3	93-18.8	✓	[illegible]	[illegible]	test on brake	✓
	1200	✓	26-18.2	93-14.4	✓	25821.2	46417.1	[illegible]	✓

RECORD OF POSITIONS AND STATIONS

Vessel: R/V GYRE

Page No. 13

Cruise No. 84-G-4

7P + 6

Date	Time ~~GMT*~~ LCT	Station Number	POSITION Latitude	POSITION Longitude	Type of Fix	DRIFT ON STATION Distance (miles)	DRIFT ON STATION Direction (degrees)	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
			N	W		X	Y		
4/10/84	1230	U/W	2621.5	9313.5	L/L	26872.0	46422.9	U/W 0 [illegible] 0 10K	[illegible]
✓	1300	✓	2624.9	9306.6	1'	25975.0	46[illegible]	"	✓
[illegible]	1330		2628.8	9301.5	✓	25986.6	46[illegible]5.2		✓
W	1400	✓	2631.7	9257.6	✓	26035.6	464398	" 10K.	✓
✓	1130	✓	2634.5	9253.6	✓	26085.2	46444.3	"	✓
✓	1500		2638.0	9248.6	✓	26[illegible]	[illegible]	"	✓
✓	1530	✓	2641.2	9244.1	✓	26105.5	46455.1	"	✓
✓	1600	✓	26°44.5	92°39.8	✓	26261.1	46460.7	✓ ✓	[illegible]
✓	1630	✓	26°47.9	92°35.2	✓	26319.6	46466.8	✓ 10.6	✓
✓	1700	✓	2651.0	9231.4	✓	26369.8	46472.7	✓	✓
✓	1730	✓	26°54.7	92°27.1	✓	26427.6	46480.0	✓ 10.0 Ks	✓
✓	1800	✓	26°58.3	92°22.9	✓	26488.0	46487.4	✓ ✓	—
✓	1830	✓	27°02.0	92°18.7	✓	26537.6	46494.8	✓ 10.0	✓
✓	1900	✓	27°05.6	92°14.5	✓	[illegible]	[illegible]	✓ ✓	✓
[illegible]	1930	✓	27°09.2	92°10.2	✓	26654.5	46509.8	✓ ✓	✓
✓	2000	✓	27-12.7	92-06.0	✓	[illegible]	46517.2	✓ ✓	[illegible]

RECORD OF POSITIONS AND STATIONS

Page No. 14

Vessel: GURE

Cruise No. 84-G-4

Date	Time ~~GMT*~~ LCT	Station Number U/W	POSITION Latitude N	POSITION Longitude W	Type of Fix LORAN'C	DRIFT ON STATION Distance (miles) X	DRIFT ON STATION Direction (degrees) Y	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/10	2030	✓	27-16.3	92-01.7	✓	26769.1	46524.7	ESE 047°-10.3 kn.	
/	2100	/	27-19.8	91-57.3	/	26877.7	46532.1	/ /	/
/	2130	/	27-23.3	91-52.9	/	26886.9	46529.7	/ / 10.5 kn	/
/	2200	/	27-26.8	91-48.3	/	26907.8	46547.1	/ /	/
/	2230	/	27-30.2	91-43.6	/	27002.4	46554.2	/ / 11.7 kn	/
/	2300	/	27-33.6	91-39.1	/	27067.	46561.	Course to 039°	/
/	2330	/	27-37.6	91-35.4	/	27123.6	46572.2	/ /	/
✓	0010	S4	2748.0	9131.3	✓	27183.8	46583.7	✓ Sta S-1	✓
4/11	0027	S1 ✓	2742.0	9131.2		27184.2	46583.39	Pick up gear ✓	
✓	0038	S-1 ✓	2742.1	9131.4	✓	27183.31	46584.0	Hit	✓
✓	0057	S-1	[illegible]	9131.6	✓	27182.4	[illegible]	[illegible]	✓
✓	0151	S-1	2742.7	9131.2	✓	[illegible]	[illegible]	[illegible]	✓
✓	0220	S-1	2743.1	9131.3	✓	27188.9	46587.3	[illegible] in [illegible]	✓
✓	0228	✓	2743.2	9131.4	✓	[illegible]	[illegible]	U/W [illegible]	✓
✓	[illegible]	[illegible]	2744.0	9130.7	✓	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]		2744.4	9130.2	✓	[illegible]	[illegible]	[illegible]	[illegible]

RECORD OF POSITIONS AND STATIONS

Page No. 1"5

Vessel: R/V GYRE

Cruise No. 84 G-4

+6h-ZD

Date	Time GMT* Cst.	Station Number	Position Latitude N	Position Longitude W	Type of Fix L/C	Drift on Station Distance (miles)	Drift on Station Direction (degrees)	Remarks *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/11/84	2330	U/W	27 44.9	91 28.7	✓	27222.5	46541.3	U/W 21 [illegible]	[illegible]
	2400	✓	27°46.0	91°23.6		27280.2	46590.9	— —	[illegible]
	2430	✓	27°47.2	91°17.9	✓	27341.8	46590.1	✓ —	✓
	0500	✓	27°48.4	91°12.3	✓	27402.4	46589.6	Z..----" ✓	✓
	0530	✓	27°49.7	91°06.4	✓	27467.8	46589.1	✓	✓
	0600	✓	27°50.9	91°00.7	✓	27530.3	46588.4	✓	✓
	0630	✓	27°52.7	90°54.7	✓	27598.9	46587.8	070° 10 kt	✓
	0700	✓	27°54.5	90°48.9	✓	27664.2	46591.0	✓ ✓	✓
	0730		27°56.2	90°42.8	✓	27730.4	46591.9	✓ ✓	✓
	0800	✓	27-57.9	90-36.6	✓	27800.0	46592.6	✓ ✓	✓
	1830	✓	27-59.5	90-30.6	✓	27869.2	46593.1	✓	✓
	0900	✓	28-01.2	90-24.7	✓	27935.4	46594.2	✓ 11.0 kt	✓
	0930	✓	28-02.9	90-19.0	✓	27999.2	46595.6	C/C 087	✓
	0955	1-1	28-03.2	90-14.1	✓	28049.0	46591.8	Stop for [illegible] # C-1	✓
	1033	✓	28-01.7	90-14.3	✓	28046.0	46588.3	CTD 1 [illegible]	✓
	1105	✓	28-01.8	90-13.9	✓	28044.3	46586.3	CTD @ [illegible] 300m	✓

RECORD OF POSITIONS AND STATIONS

Vessel: GYRE

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Cruise No. 84-G-4

Date	Time ~~GMT*~~ LCT	Station Number	Position Latitude N	Position Longitude W	Type of Fix	Drift on Station Distance (miles) X	Drift on Station Direction (degrees) Y	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/11	1144	C-1	2801.8	9013.4	✓	280492	46586.2	[illegible]	[illegible]
✓	1212	✓	2803.2	9015.2	✓	28038.0	46592.4	[illegible]	✓
✓	1217	✓	2803.3	9015.2	✓	28038.5	46593.5	Hit	✓
✓	1247	✓	2803.3	9015.3	✓	28038.0	46593.9	[illegible]	✓
✓	1252	✓	2803.3	9015.2	✓	28038.5	46593.9	Hit "	✓
✓	1310	✓	2803.16	9015.2	✓	28037.6	46592.9	[illegible]	✓
✓	1324	✓	2803.2	9015.0	✓	28039.6	46593.3	[illegible]	✓
✓	1339	✓	2803.3	9015.1	✓	28036.4	46593.8	On Bum [illegible]	✓
✓	1400	✓	2803.3	9015.8	✓	28032.1	46594.3	"	✓
✓	1500	✓	2803.5	[illegible]	✓	[illegible]	[illegible]		✓
✓	1500	✓	2803.5	[illegible]	✓	[illegible]	[illegible]		✓
✓	1605	✓	2803.3	9015.2	✓	28031.6	46596.6	[illegible] Hit	✓
✓	1643	✓	2803.3	9015.5	✓	28035.2	46593.6	Starts Down	✓
	1649	✓	2803.3	[illegible]	✓	28034.5	46593.8	Cone Hit 35m	✓
	1724	✓	2803.4	9015.7	✓	28034.2	46594.4	CTD over	✓
	1733	✓	2803.4	9015.7	✓	28034.4	46594.6	CTD [illegible]	✓

Vessel: Gyre

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Cruise No. 84-Q-4

ZD +6

Date	Time ~~GMT~~ LCT	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix	DRIFT ON STATION Distance (miles) X	DRIFT ON STATION Direction (degrees) X	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/11/84	1740	C-1	28°03.4	90°15.6	LRN C	28052	46594.5	Trawl Steels clear	
	1758		28°03.3	90°15.0		28040.6	46593.3	Trawl 180° 3.7 kts on Bottom	
	1830		28°03.1	90°14.0		28050.8	46591.3	100° 3.2 kts	
	1900		28°02.8	90°13.0		28058.6	46589.5		
	1903		28°02.8	90°12.9		28059.6	46589.3	off the Bottom	
	1911		28°02.8	90°12.6		28061.9	46588.9	Net at Surface	
	2000	U/W	27-57.9	90-09.8		28076.6	46576.5	c/c 138°	
	2036	C-2	27-54.3	90-06.3		28094.7	46558.3	Stop for Stn C-2	
	2043		27-54.3	90-06.2		28094.8	46558.5	☐ one stub down	
	2054		27-54.4	90-06.2		28095.5	46558.7	☐ one @ Bottom 605 n	
	2107		27-54.5	90-06.1		28097.0	46558.9	☐ one on deck	
	2129		27-54.7	90-05.9		28099.9	46559.4	CTD run	
	2151		27-54.9	90-05.7		28103.0	46560.0	CTD @ Bottom 620 n	
	2239		27-55.2	90-05.0		28110.5	46560.9	CTD on deck	
	2303		27-54.3	90-05.4		28093.6	[illegible]	☐ one stub down	
	2317		27-54.5	90-06.2		28095.4	46559.0	☐ @ bottom 605.	

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Vessel: GUPE

Cruise No. 84-G-4

16 ZD

Date	Time ~~GMT*~~ LCT	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix	DRIFT ON STATION Distance (miles) X	DRIFT ON STATION Direction (degrees) Y	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/11	2330	C-2	27-54.6	90-06.1	LRN'C'	28097.2	46557.3	[illegible] on deck	[illegible]
✓	2339	✓	27-54.7	90-06.0	✓	28098.4	46559.6	Camera [illegible]	✓
✓	2353	✓	27 54.7	90 06.1	✓	28092.4	46560.2	" on bottom	[illegible]
4/12/84	0100	✓	27 54.9	90 06.5	✓	28094.5	46561.3	"	✓
✓	0132	✓	27 55.2	90 06.3	SAT NAV			Lower out Bottom Sample on board Aft Rail	✓
✓	0143	✓	27 55.0	90 06.7	[illegible]	28083.6	46551.9	[illegible]	✓
✓	0213	✓	27 54.99	90 05.96	✓	28087.3	46549.3	[illegible]	✓
✓	0227	✓	27 54.2	90 05.7	✓	28089.9	46548.0	[illegible] NC	✓
✓	0300	✓	27 54.3	90 06.0	✓	[illegible]	[illegible]	Bov [illegible]	✓
✓	0311	✓	27 54.3	90 05.9	✓	[illegible]	[illegible]	[illegible]	✓
✓	0351	✓	27°55.3	90°07.0	✓	28081.8	46553.6	Tow 30° Sta 1 [illegible]	[illegible]
✓	0412	✓	27°54.7	90°06.2	✓	28086.1	46556.2	All 130° Rotation 32	✓
✓	0430	✓	27° 54.2	90°05.7	✓	28089.4	46547.5	130° 3.2	✓
✓	0435	✓	27° 54.0	90°05.5	✓	28090.6	46545.0	Tow full [illegible]	✓
✓	0500	✓	27° 53.1	90°04.5	✓	28096.7	46541.9	120° 2.2	✓
✓	0511	✓	27° 52.6	90°03.8	✓	28100.4	46538.9	[illegible]	✓

Vessel: R/V GYRE

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Cruise No. 84-G-4

20 ft

Date	Time ~~GMT~~ LCT	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix LRL/C	DRIFT ON STATION Distance (miles) X	DRIFT ON STATION Direction (degrees) Y	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/12/84	0530	C-2	27°52.1	90°03.4	—	28102.7	46536.7	~~NET on Surface~~ 6 130° 3.0 kts	
	0628	—	27°55.2	90°06.9	—	28082.4	46553.0	130° 3.2 kts TRAWL STARTS OVER	—
	0651	—	27°54.3	90°06.0	—	28087.5	46548.3	130° 3.0 kts TRAWL on Bottom	—
	0700	—	27°54.0	90°05.7	—	28089.0	46546.9	130° 3.0 kts	—
	0730	—	27°53.0	90°04.6	—	28094.5	46541.2	130° 3.0 kts	—
	0800	—	27-51.8	90-03.5	—	28099.9	46535.3	— —	—
	0814	—	27-51.1	90-02.9	—	28102.0	46532.1	Trawl off Bottom	—
	0825	—	27-50.3	90-02.2	—	28105.2	46528.1	Trawl on Deck	—
	0900	—	27-49.7	90-01.0	—	28079.3	46528.3	U/W @ 270°	—
	0919	C-3	27-49.2	90-07.2	—	28051.2	46529.3	Stop on C-3	—
	0922	—	27-49.2	90-07.2	—	28051.1	46529.2	□ on Deck	—
	[illegible]	—	27-49.2	[illegible]	—	[illegible]	[illegible]	□ on Bottom 890'	—
	0957	—	27-01.2	90-11.1	—	[illegible]	[illegible]	□ on Deck	—
	1022	—	27-49.2	90-11.9	—	28064.3	46528.9	CTD Start down	—
	1051	—	27-49.2	90-11.8	—	28055.6	46528.8	CTD @ Depth 8[illegible] m	—
	1145	—	27-49.2	[illegible]	—	28039	46528.6	CTD on Deck	

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RECORD OF POSITIONS AND STATIONS

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Vessel: GYRE

Cruise No. 84-G-4

+6

Date	Time GMT* CT	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix L/A	DRIFT ON STATION Distance (miles) α	DRIFT ON STATION Direction (degrees) ∨	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/12/84	1201	C-3	27.49.3	9007.1	✓	28052.9	46529.6	Posit Box Core	RL
✓	1222	✓	27.49.4	9007.0	✓	28053.8	46530.1	Hit, ☐ down.	—
✓	1309	✓	27.48.70	9007.6	✓	28055	46522.9	Trawl a water	—
✓	1349	✓	27.49.7	9006.7	✓	28058.8	46530.8	" on Btm	—
✓	1500	✓	2751.4	9005.0	.	28082.8	46535.7	[illegible]	—
✓	1600	✓	27°52.6	90°03.4		28104.2	46538.5	060° 3 kts	[illegible]
✓	1608	✓	27°52.7	90°03.2		28107.1	46538.8	Off the Bottom	—
✓	1722	✓	27°55.2	90°07.0		28081.4	46529	Trawl [illegible]	✓
✓	1748	✓	27°54.4	90°06.0		28087.5	46548.9	On 145° 3 kts the Bottom	—
✓	1810	✓	27°54.1	90°05.5		28096.8	46546.6	115° 2 kt	—
✓	1835	✓	27°53.2	90°04.6		28096.6	46542.7	115° 3 kt	—
✓	1853	✓	27°53.0	90°04.1		28097.3	46545.7	[illegible] the Bottom	—
✓	1914	✓	27°52.6	90°03.5		[illegible]	[illegible]	[illegible]	—
✓	1950	C-3	27-49.3	90-07.1		28052.4	[illegible]	Stn. [illegible] C-3	RL
✓	1956	✓	27-49.4	[illegible]	✓	28052.7	[illegible]	☐ [illegible] down	—
✓	2012	✓	27-49.6	[illegible]	✓	[illegible]	[illegible]	☐ [illegible] down	—

RECORD OF POSITIONS AND STATIONS

Vessel: GURE

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Cruise No. 84 - 9 - 4

16h ZD

Date	Time ~~GMT~~ LCT	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix	DRIFT ON STATION Distance (miles) X	DRIFT ON STATION Direction (degrees) Y	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/12	2034	C-3	27-49.8	90-07.0	—	28055.6	46531.2	[illegible]	[illegible]
	2044	—	27-49.9	90-07.0	—	28056.2	46531.8	[illegible]	—
	2252	—	27-50.1	90-07.4	NAVSAT	48°E	021T	[illegible]	—
	2207	—	27-50.2	90-07.4	—	48°E	021T	— —	—
	2120	—	27-50.1	90-07.5	LRN'C	28052.6	[illegible]	[illegible]	—
	2130	—	[illegible]	90-07.6	—	28051.7	[illegible]	— — —	—
	[illegible]	—	[illegible]	90-07.9	—	[illegible]	[illegible]	— — —	—
	2200	—	[illegible]	[illegible]	—	28049.9	[illegible]	— — —	—
	2240	—	27-50.4	[illegible]	—	28046.1	[illegible]	[illegible]	—
	2205	—	27-50.5	[illegible]	—	28044.6	[illegible]	[illegible]	—
	2350	—	27-48.3	90-06.2	—	28057.1	46524.2	[illegible] 135°	—
7/13	0000	[illegible]	27-44.7	90 02.3	—	[illegible]	46564.8	[illegible]	[illegible]
—	0020	—	2740.3	8958.6	—	28058.5	46481.2	" "	—
—	[illegible]	—	2736.8	8954.9	—	28112.7	46433.7		—
	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		
—	[illegible]	—	2729.2	8948.2	—	28140.9	46422		—

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RECORD OF POSITIONS AND STATIONS

Page No. 2 2.

Vessel: G YLER

Cruise No. 84-C-y'

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Date	Time GMT* LCT	Station Number C-4	POSITION Latitude N	POSITION Longitude W	Type of Fix	DRIFT ON STATION Distance (miles)	DRIFT ON STATION Direction (degrees)	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/12	0215	✓	2728.3	8947.0	✓	28148.3	46417.3	47. Corr.	
✓	0239	✓	2728.4	8946.8	✓	28150.5	46417.5	[illegible]	✓
✓	0315	✓	2728.4	8946.2	✓	28156.0	46416.8	[illegible]	✓
✓	0326	✓	2728.4	8946.0	✓	28157.9	46416.5	CTD IN H2O	✓
✓	0418	✓	27°28.4	89°45.6	✓	28162.9	46415.7	CTD Shacks up	
✓	0526	✓	27°28.7	89°45.4	✓	28165.2	46416.8	CTD Shacks Back Down	
✓	0657	✓	27°28.7	89°45.5	✓	28164.7	46416.6	CTD Shacks up Again	✓
✓	0632	✓	27°28.6	89°45.3	✓	28163.7	46416.4	CTD [illegible]	✓
✓	0650	✓	27°28.3	89°47.0	✓	28148.0	46417.2	Core over	✓
✓	0713	✓	27°28.3	89°47.1	✓	28147.7	46417.0	Core Hit 1410m	✓
✓	0739	✓	27°28.2	89°47.1		28146.8	46417.0	Core [illegible]	✓
✓	0803	✓	27-28.5	89-45.3	✓	28155.2	46416.7	trawl going down	
✓	0830	✓	27-28.9	89-44.9	✓	28170.6	46416.6	✓ ✓ ✓	✓
✓	[illegible]	✓	27-28.3	89-45.8		[illegible]	[illegible]	[illegible]	✓
✓	0900	✓	27-28.3	89-45.7	✓	28179.3	46412.2	[illegible]	✓
✓	0914	✓	27-28.1	89-45.6	✓	[illegible]	[illegible]	[illegible]	✓
✓	0916	✓	27-28.1	89-45.2	✓	[illegible]			✓

RECORD OF POSITIONS AND STATIONS

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Vessel: GYRE

Cruise No. 89-G, #---

Date	Time ~~GMT*~~ LCT	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix	DRIFT ON STATION Distance (miles) X	DRIFT ON STATION Direction (degrees) Y	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/13	0933	C-4	27-27.4	89-42.8	LORAN C	28183.5	46407.1	trawl @ Bottom	
	0946		27-27.0	89-42.5		28184.6	46415.3	c/c 140°	
	1000		27-26.6	89-42.3		28184.6	46418.3	c/c 145	
	1015		27-26.1	89-42.2		28183.7	46400.8	c/c 20°/164.7	
	1030		27-25.8	89-41.7		28186.7	46398.8	090°	
	1100		27-26.0	89-40.5		28199.6	46399.1	c/c 70	
	1104		27-26.1	89-40.3		28201.6	46398.2	trawl on Bottom	
	1130		27-26.6	89-35.4		28211.9	[illegible]		
	1136		27-26.7	89-35.2		28215.4	46398.8	trawl on Bottom	
	1224		27-28.3	89-47.0		28142.6	[illegible]	Bottom	
	1306	W'	27-28.4	89-46.9	V'	28149.0	[illegible]	Lift	
	1320		[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	
	1400		[illegible]	[illegible]		[illegible]	46413.0	[illegible]	
	1500		[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	
	1600		27°27.8	89°45.1		28164.0	46412.1		
	1611		27°27.6	89°45.4		28165.2	46412.1	[illegible]	

RECORD OF POSITIONS AND STATIONS

Vessel: Gyre

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Cruise No. 84-1½-4

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Date	Time ~~GMT*~~ LCT	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix	DRIFT ON STATION Distance (miles) X	DRIFT ON STATION Direction (degrees) Y	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/13/84	1720	C-4	2727.4	8945.6	4/C	28154	46411.4	[illegible]	[illegible]
✓	1721	✓	2727.4	8945.6	4/C	28154	46411.4	[illegible]	✓
✓	1739	✓	27°27.3	89°45.8	✓	28155.0	46411.1	Piston Core HIT 1472	[illegible]
✓	1801	✓	27°27.2	89°45.9	✓	28153.5	46410.8	Piston Core no hook	✓
✓	1830	U/W	27°23.6	89°45.3	✓	28143.3	46375.5	Co 165° 10 kts	✓
✓	1900	✓	27°18.7	89°44.0	✓	28131.5	46371.9	✓ ✓	✓
✓	1930	✓	27°13.6	89°42.8	✓	28118.4	46348.8	✓ ✓	✓
✓	2000	✓	27-08.6	89-41.3	✓	28109.6	46325.2	✓ ✓	✓
✓	2030	✓	27-03.7	89-39.5	✓	28102.9	46301.7	~~CSE~~ Co ~~150°~~	✓
✓	2100	✓	26-59.0	89-37.1	✓	28102.5	46277.9	✓ ✓ ✓	✓
✓	2116	C-5	26-56.8	89-36.5	✓	28095.9	46267.5	Stopped on C-5	✓
✓	2121	✓	26-[illegible].9	89-36.5	✓	[illegible]	46267.6	Moving [illegible]	✓
✓	2252	✓	26-56.9	89-36.2			46267.6	☐ on @ Bottom 2220	✓
✓	2143	✓	26-57.0	89-36.2	NA BAT	16° EL	OR IT	Pull check in [illegible]	✓
✓	2247	✓	26-[illegible]	89-35.7	LOW C	28100.1	46267.6	☐ on deck	✓
✓	2249	✓	✓	✓		"	✓	[illegible]	✓

Vessel: GYRE

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Cruise No. 84 - G.4

Date	Time ~~GMT*~~ LCT	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix LORAN	DRIFT ON STATION Distance (miles) X	DRIFT ON STATION Direction (degrees) Y	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/13	2301	C-5	26 57.2	89 35.4	✓	28110.9	46267.6	Piston [illegible] down	[illegible]
✓	2327	✓	26 57.4	89 35.2	✓	28114.2	46267.7	Piston [illegible] bottom 2465	[illegible]
✓	0000	✓	26 57.6	89 34.7	✓	28119.0	46268.1	Piston [illegible] UP	[illegible]
✓	0003	✓	26 57.7	8934.7	✓	28119.6	46268.1	[illegible]	[illegible]
✓	0038	✓	26 57.7	8934.2	✓	28124.2	46267.6	Hit □ core. 2490 m	✓
✓	0118	✓	26 52.8	8933.7	✓	28129.2	[illegible]	□ core [illegible] work	✓
✓	0138	✓	26 57.9	8933.4	✓	28132.2	46266.8	CTD in	✓
✓	0239	✓	26 58.2	8933.4	✓	28134.4	46268.3	CTD [illegible]	✓
✓	0352	✓	26°58.8	89°33.6	✓	28135.4	46270.6	CTD [illegible]	[illegible]
✓	0425	✓	26°57.3	89°35.2	✓	28113.5	46267.3	□ Core over	✓
✓	0503	✓	26°57.5	89°35.1	✓	28115.6	46268.0	□ Core Hit 2429	✓
✓	0544	✓	26°57.8	89°34.9	✓	28118.4	46268.7	□ Core [illegible]	✓
✓	0614	✓	26°57.4	89°34.7	✓	28121.2	46268.9	Transit Starts 3 kts [illegible]	✓
✓	0630	✓	26°58.5	89°33.9	✓	28131.2	46270.1	[illegible] 2 kts	✓
✓	0700	✓	26°59.7	89°32.4	✓	28150.1	46272.6	045° 3.0 kts	✓
✓	0730	✓	27°00.6	89°31.3	✓	28165.3	46274.5	[illegible]	✓

RECORD OF POSITIONS AND STATIONS

Vessel: GYRE

Page No. #26

Cruise No. 84-G-4

20 +6

Date	Time ~~GMT*~~ LCT	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix	DRIFT ON STATION Distance (miles) X	DRIFT ON STATION Direction (degrees) Y	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/14/84	0755	C-5	27-01.3	89-30.3	Loran C	28177.7	46275.9	[illegible]	[illegible]
/	0757	/	27-01.4	89-30.3	/	28178.5	46276.0	Trawl @ Bottom	/
/	0800	/	27-01.4	89-30.2	/	28179.3	46276.1	/	/
/	0830	/	27-02.2	89-29.1	/	28193.3	46277.6	/	/
/	0900	/	27-03.0	89-27.9	/	28207.7	46276.6	[illegible]	/
/	0900	/	27-03.3	89-27.4	[illegible]	280 [illegible]	02 IT	[illegible]	/
/	0932	/	27-03.8	89-26.6	Loran C	28[illegible].0	[illegible]	[illegible]	/
/	1000	/	27-04.4	89-25.6	/	[illegible]	46280.9	[illegible] 2.5 KN.	/
/	1016	/	27-04.7	89-25.2	/	[illegible]	[illegible]	[illegible]	/
/	1030	/	27-05.1	89-24.6	/	[illegible]	[illegible]		/
/	1110	/	[illegible]	89-22.9	/	[illegible]	[illegible]	net on bottom	/
/	1134	/	[illegible]	89-22.1	/	[illegible]	[illegible]	[illegible]	/
✓	1212	✓	27-05.8	89-22.6	/	28219.4	46281.2	230° [illegible] 2.14 kts	/
✓	1240	✓	2705.0	8922.7		28205.3	46278.2	[illegible] 230°	/
✓	1313	✓	2704.0	8922.7		28160.0	46270.0	[illegible] 228°	✓
✓	1434	✓	2702.3	8923.5		28244.8	46268.1	ON DECK	✓

RECORD OF POSITIONS AND STATIONS

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Vessel: R/V GYRE

Cruise No. 84-G-4

+6h Z-D

Date	Time ~~GMT*~~ Lct	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix L/C	DRIFT ON STATION Distance (miles) X	DRIFT ON STATION Direction (degrees) Y	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/14/84	1553	C-5	27°00.8	89°30.5	✓	28173.8	46274.0	Camera Starts over	[illegible]
	1630	✓	27°00.1	89°30.8	✓	28167.1	46271.4	Going Down	[illegible]
	1700	✓	26°59.7	89°31.0	✓	28163.3	46270.1	Going Down	✓
	1710	✓	26°59.6	89°31.1	✓	28162.0	46269.8	Camera on Bottom	✓
	1730	✓	26°59.4	89°31.3	✓	28159.4	46269.1	Picture Taking	✓
	1800	✓	26°59.1	89°31.5	✓	28156.0	46268.3	Picture Taking	✓
	1830	✓	26°58.8	89°31.7	✓	28152.8	46267.4	✓	✓
	1835	✓	26°58.8	89°31.8	✓	28152.1	46267.3	Camera on Bottom	✓
	1920	✓	26°58.4	89°32.2	✓	28146.2	46266.6	Camera Aboard	✓
	1949	✓	26-57.4	89-35.3	✓	28112.4	46267.9	□ cor going over	[illegible]
	2036	✓	26-57.6	89-35.1	✓	28115.4	46268.4	□ on at bottom 2420m	✓
	2126	✓	26-57.8	89-34.7	✓	28132.5	46268.5	□ cor on deck	✓
	2200	U/W	26-58.1	89-31.1	✓	28157.7	46269.8	U/W cor [illegible]	✓
	2230	✓	27-03.6	89-26.0	✓	28215.1	46264.8	✓ ✓	✓
	2300	✓	27-02.7	89-20.7	✓	[illegible]	[illegible]	✓ ✓ 10.1 KN.	✓
	2330	✓	27-04.8	89-15.2	✓	28333.2	46263.6	✓ ✓	✓

RECORD OF POSITIONS AND STATIONS

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Vessel: GYRE

Cruise No. 84-G-4

Date	Time ~~GMT*~~ LCT	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix LORAN'C	DRIFT ON STATION Distance (miles) X	DRIFT ON STATION Direction (degrees) Y	REMARKS *Show position & time Of course & speed changes, & beginning & end of all stations	O.O.W.
4-15/6	0000	u/w	2707.0	8909.5	✓	28396.8	46262.8	✓/w 068° 11K.	[illegible]
✓	0030	✓	2709.0	8904.5	✓	28452.3	46262.4	" " "	✓
✓	0100	✓	2711.4	8858.6	✓	28517.9	46262.0	" "	✓
✓	0130	✓	2713.5	8852.9	✓	28579.8	46260.6	" "	—
	0200	✓	2715.8	8846.9	✓	28645.3	46257.8	" " 11K	✓
✓	0230	✓	2718.0	8841.0	✓	28[illegible]	46258.4	" "	[illegible]
✓	0300	✓	2720.0	8835.4	✓	28763.4	46256.6	" "	[illegible]
✓	0330	✓	2722.7	[illegible]	✓	28855.7	[illegible]		✓
✓	0400	✓	27°23.9	88°24.2	✓	28908	46257.4	✓ 109	[illegible]
✓	0430	✓	27°25.7	88°18.5	✓	28950.8	46246.2	✓ —	✓
✓	0500	✓	27°27.4	88°12.8	✓	29010.0	46244.3	070° 10.85	✓
✓	0530	✓	27°29.0	88°07.2	✓	29067.0	46239.9	✓ —	—
✓	0600	✓	27°30.5	88°01.6	✓	29123.6	46234.8	072° 10.6	✓
✓	0630	✓	27°32.1	87°56.0	✓	29180.4	46229.7	070° 10.6	—
✓	0700	✓	27°33.6	87°50.4	✓	29236.8	46224.4	✓ ✓	✓
✓	0730	✓	27°35.4	87°45.0	✓	29313.5	46220.5	68° 10.4	

RECORD OF POSITION DETERMINATIONS

Vessel: G YCE

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Cruise No. #99

20 +6

Date	Time ~~GMT*~~ LCT	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix	DRIFT ON STATION Distance (miles) X	DRIFT ON STATION Direction (degrees) Y	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/16/84	0800	U/W	27-37.1	87-39.6	LORAN'C	293 48.3	462 16.6	U/W CMG 070° - 10.2 K	
	0830		27-38.8	87-34.3		29402.6	46212.6		
	*0820.9		27-38.4	87-35.6	NAVSAT	61°E2	02 IT	Post Check.	
	0900		27-40.5	87-29.1	LORAN'C	29456.0	46208.5	070° 9.9 K	
	0930		27-42.3	87-23.9		29509.1	46204.5		
	1000		27-44.0	87-18.8		29561.1	46200.6	069° 9.8	
	*0928.7		27-42.3	87-24.0	NAVSAT	13°E2	02 IT	* 069.2° 9.7 K	between NAVSAT FIXES
	1030		27-45.9	87-13.7	LORAN'C	29613.0	46197.3		
	1100		27-47.7	87-08.7		29664.8	46194.2	067.4° 9.7	
	*1050.1		27-47.3	87-10.5	NAVSAT	30°E2	02 IT	* 067.2° 9.6	
	1132		27-49.5	87-[illegible]	[illegible]	29723.3	46190.8		
	1200		27518	86 58.[illegible]		29775.5	46187.9	067° 9.6 K	
	1234		27 54.[illegible]	86 51.9		2983[illegible]	[illegible]		
	1300		27 56.2	86 47.6		29882.9	46183.4	064° 10.2 K	
	1330		27 58.2	86 41.6		29936.2	46183.4		

* CMG Between NAVSAT FIXES - ALSO SPEED!

RECORD OF POSITIONS AND STATIONS

Page No. #29

Vessel: G/6.3.

Cruise No. 84-G-4

ZO + C

Date	Time GMT*	Station Number	POSITION Latitude	POSITION Longitude	Type of Fix	DRIFT ON STATION Distance (miles)	DRIFT ON STATION Direction (degrees)	RWKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/15/84	Zet		N	W	L/C	✓	✓		
	1340	Sunny	28000	86 40.0	✓	29[illegible]	[illegible]	[illegible]	
	1401		28 01.5	86 37.9	✓	19 989.5	46 186.2		
	1412		28 02.8	86 36.4	✓	20009.9	[illegible]	-	
b-"	1508	Sunny	28 04.0	86 35.0		300 27.717%f77.9		UE 55	
	[illegible]	✓	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	
	1558		28°07.9	86°27.6				Cont #4	
	1606	✓	28°09.2	86°25.6	✓	30131.0	46196.2	UBE 3	✓
	1630	✓	28°11.5	86°22.6	✓	30168.9	46201.4	U/W	✓
	1700	✓	28°14.7	86°18.9	✓	30223.2	46207.0	U/W	✓
	1720	✓	28°17.0	86 15.1	✓	30258	46213.3	LB E 2	—
	1735	✓	28°18.5	86 13.0	✓	30283.8	46216.3	Center E-2	✓
	1745	✓	28° 19.7	86° 11.3		30303.2	46219.9	UB E 2	✓
	1800	✓	28°21.1	86°09.4	✓	30326.0	46222.0	C45°	Mark ✓
	1830	✓	28 24.4	86°05.0	✓	30378.9	46227.5	-	✓
	1900	✓	28°27.8	86°01.1		30429.6	46237.8	✓	✓
	1930	✓	28° 31.4	85°57.6	✓	30477.8	46252.1	-	—

RECORD OF POSITIONS AND STATIONS

Vessel: Tyde

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Cruise No. EY-84-4

2021

Date	Time GMT* LCT	Station Number	Position Latitude N	Position Longitude W	Type of Fix	Drift on Station Distance (miles) X	Drift on Station Direction (degrees) X	Remarks *Show position & time of course & speed changes, & beginning & end of all	O.O.W.
7/15/84	1941	Survey	28°32.7	85°36.2	LKN/C	304	462	LB E-1	
	1951	/	28-34.0	85-55.1	/	30512.5	46263.7	E-1	
	2000	/	28-39.9	85-55.7	/	30507.3	46264.4	U/W	
	2020	/	28-30.0	85-59.1	/	30457.1	46248.1	/	
	2048	E-1	28-27.8	86-01.0	/	30429.4	46239.4	Stop for Sta E-1	
	2055	/	28-27.7	86-01.0	/	30428.9	46239.2	CTD Starts pre	
	2121	/	28-27.8	86-01.6	/	30425.9	46241.1	CTD @ Depth	
	2208	/	28-27.7	86-02.7	/	30417.7	46245.1	CTD on deck	
	2222	/	28-27.6	86-03.0	/	30414.9	46245.5	☐ one Starts down	
	2232	/	28-27.5	86-03.0	/	[illegible]	[illegible]	☐ @ Bottom 365m	
	2246	/	28-27.5	86-03.4	/	[illegible]	46246.2	☐ one on deck	
	2308	/	28-27.7	86-01.0	/	[illegible]	[illegible]	[illegible]	
	2315	/	28-27.7	[illegible]	/	[illegible]	[illegible]	☐ one @ Bottom [illegible]	
	2324	/	28-27.7	86-01.2	/	[illegible]	[illegible]	[illegible]	
	2339	/	27-01.8	86-01.4	/	[illegible]	[illegible]	[illegible]	
	~~2355~~								

Rev: 03/83

RECORD OF POSITIONS AND STATIONS

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Vessel: Gyrr

Cruise No. 84-G-4

Date	Time GMT*	Station Number	POSITION Latitude	POSITION Longitude	Type of Fix	DRIFT ON STATION Distance (miles)	DRIFT ON STATION Direction (degrees)	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/15/84	GMT	E-1	N	W	L/L	X	Y		
	2355	✓	2827.8	8601.6	✓	30425.0	46241.9	Continue Trawl picks	L."---
✓	0120	✓	2826.9	8603.8	✓	30404.1	46242.8	[illegible]	L.....''
✓	0218	W'....	2827.9	8601.1	✓	30429.6	46241.2	☐ Gear come in	✓
	0229	6"	2827.8	8601.3	✓	30428.1	46241.2	Hit NG	—
✓	0343	✓	2827.6	8601.6	✓	30424.3	46241.3	☐ Cone in	✓
✓	0356	✓	28°27.6	86°01.8	—	30423.3	46240.9	☐ Cone 11.5	[illegible]
✓	0359	✓	28°27.5	86°01.8	✓	30422.0	46240.3	☐ Cone 1120.	✓
✓	0518	✓	2822.3	85°55.8	✓	30427.6	46178.6	Trawl Starts over	✓
✓	0530	✓	28°22.3	85°56.4	✓	30423.7	46181.0	Changing Direction	✓
✓	0600	✓	28°23.5	85°57.5	✓	30424.8	46194.7	CMG 320° 3.0 kts HDG 320° Spd 3.9 since 0530	✓
✓	0630	✓	28°24.7	85°58.8	✓	30424.2	46208.0	318° 3.2 kts	✓
✓	0700	✓	28°25.7	86°00.2	✓	30421.1	46221.3	315° 3.2	✓
✓	0707	✓	28°26.0	86°00.6	✓	30420.2	46224.4	315° 5:2m 3.2 kts	✓
✓	0717	✓	28°26.2	86°01.1	✓	30418.9	46228.4	Take Bail Net over	✓
✓	0725	✓	28°26.6	86°01.5	✓	30417.8	46232.3	Time Bail on deck Trawl on Deck	✓
✓	0802	—	27°24.6	86°00.9	✓	30409.4	46215.9	Net is in water	✓

AN

Vessel: Tyre

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Cruise No. 84-G-4

2046

Date	Time ~~GMT*~~ LCT	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix	DRIFT ON STATION Distance (miles) X	DRIFT ON STATION Direction (degrees) Y	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	% O.W.
9/16	0830	E-1	28-25.1	86-02.7	LAN'CI	30480.0	46226.1	trawl [illegible] down	[illegible]
	0845	—	28-25.7	86-03.3	—	30399.7	46237.4	—	—
	0900	—	28-26.3	86-03.6	—	30401.8	46238.6	—	—
	0909	—	28-26.5	86-03.1	—	30406.3	46238.0	ASC 0730 [illegible] ?	—
	0930	—	28-26.4	86-02.4	—	30410.0	46234.6	CMG 099° 1.7 KN.	—
	1000	—	28-26.4	86-01.2	—	30419.0	46229.4	" 090° 2.7 KN	—
	1025	—	28-26.2	86-00.1	—	30426.5	46225.0	" [illegible] 090° 2.4 KN	—
	1033	—	28-26.3	85-59.7	—	30428.7	46223.8	TAIL TAW OVER	—
	1046	—	28-26.3	85-59.1	—	30432.7	46221.5	trawl on board	—
	1050	—	28-26.3	85-58.9	—	30434.2	46220.8	TAIL [illegible]	—
	1100	—	28-25.8	85-59.4	—	30440.0	46218.8	W/W c 236°	—
	1130	—	28-23.2	86-03.4	—	30382.6	46214.9	—	—
	1200	—	28-20.8	86-07.5		30332.3	46213.1	W/W 236° [illegible]	—
	[illegible]		28-18.2	86-12.2		30280.0	46211.3	" "	—
	1250	E-2	28-17.7	86-14.2		30269.0	46215.2	STR E2 [illegible]	—
	1316	—	28-17.7	86-14.0		30263.0	[illegible]	[illegible]	—

RECORD OF POSITIONS AND STATIONS

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Vessel: GYRE.

Cruise No. 84-G-Y

16h ZD

Date	Time GMT*	Stat ion Number	POSITION Latitude	POSITION Longitude	Type of Fix	DRIFT ON STATION Distance (miles)	DRIFT ON STATION Direction (degrees)	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/16/84	LCT	E-2	N	W	L/C	K	V		
✓	0143	✓	28 16.9	86 14.9	✓	30259.0	46212.6	[illegible] dock in	✓
✓	1401	✓	28 16.7	86 15.1	✓	30256.1	46211.9	Hit [illegible] dock.	✓
✓	1500	✓	28 18.0	86 12.3	✓	30285.5	46210.8	Trawl E-2	✓
✓	1510	✓	28 18.0	86 12.8	✓	30281.3	46212.2	Trawl in H2O	✓
✓	1554	✓	28°17.6	86°14.8	✓	30264.5	46216.3	Fishing at 1800 M	✓
✓	1600	✓	28°17.5	86°15.0	✓	30262.7	46216.6	220° 2.5 Kts	✓
✓	1630	✓	28°17.1	86°16.2	✓	30251.0	46217.8	CMG 248° 2.2 Kts	✓
✓	1653	✓	28°16.8	86°17.2	✓	30241.8	46218.9	249° off Bottom 2.3 Kts	✓
✓	1735	✓	28°16.3	86°19.1	✓	30225.2	46222.4	On Deck	✓
✓	1824	✓	28°17.3	86°13.2	✓	30274.1	46208.8	Camera Stn. Tech.	✓
✓	1842	✓	28°17.3	86°13.6	✓	30270.7	46209.8	Camera on Bottom	✓
✓	1930	✓	28°17.0	86°14.4	✓	30263.0	46210.4	247° 1.0 Kts	✓
✓	2000	✓	28-16.7	86-14.8	✓	30258.4	46210.2	229° 1.0 KN	✓
✓	2022	✓	28-16.6	86-15.2	✓	30255.1	46211.1	Change of course 254° 1.1 KN	✓
✓	2044	✓	28-16.6	86-15.7	✓	30251.2	46212.4	Camera on deck	✓
✓	2101	✓	28-16.7	86-15.2	✓	30256.0	46211.6	[illegible]	✓

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Vessel: GYRE

Cruise No. 84-G-4

+6h ZD

Date	Time ~~GMT*~~ LCT	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix	DRIFT ON STATION Distance (miles) X	DRIFT ON STATION Direction (degrees) Y	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/16	2136	E-2	28-16.5	86-15.6	LRNC	30251.9	46211.5	CTD at depth	
	2229		28-16.2	86-16.3		30244.3	46211.9	CTD on deck	
	2246		28-16.7	86-15.0		30257.2	46210.8	☐ core Starts down	
	2258		28-16.6	86-15.2		30255.0	46210.6	☐ core @ bottom 656	
	2312		28-16.5	86-15.4		30252.7	46210.4	☐ core on deck	
	2320		28-16.7	86-15.0		30257.1	46211.2	☐ core Starts down	
	2332		28-16.6	86-15.2		30255.6	46211.0	☐ core @ Bottom 656	
4/17	0005	✓	28-16.1	86 15.1		30244.4	46216.6	U/W Camera E-3	
	0030	✓	28 13.9	86 18.7		30212.2	46204.8	U/W "CSC 131°" 9.6	✓
	0100	✓	28 11.1	86 23.0	✓	30189.2	46197.1	" "CSC 240° 9.6	✓
✓	0125	E-3	28 09.5	86 25.2	✓	30135.8	46197.1	Sta E-3 CTD	✓
✓	0247	✓	28 08.7	86 25.9	✓	30125.8	46196.0	C-D UP	✓
✓	0300	✓	28 09.6	86 25.2	✓	30136.3	46197.2	☐ dia [illegible]	✓
	0320	✓	28 09.5	86 25.5	✓	30133.4	46197.5	☐ core [illegible]	✓
	0405	✓	28°09.6	86°25.1	✓	30137.2	46196.6	☐ CTD [illegible]	
	0422	✓	28°09.6	86°25.6	✓	30137.3	46196.6	☐ Core [illegible]	

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RECORD OF POSITIONS AND STATIONS

Vessel: [illegible]

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Cruise No. [illegible]

ZD 46

Date	Time GMT* KT	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix	DRIFT ON STATION Distance (miles) X	DRIFT ON STATION Direction (degrees) Y	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/17/84	0437	E-3	28°09.5	86°25.1	Hyp/C	30136.1	46196.4	[illegible]	[illegible]
✓	0517	✓	28°09.5	86°24.1	✓	30143.9	46192.4	CAMERA STATIONS [illegible]	
✓	0546	✓	28°09.4	86°24.5	✓	30140.1	46193.5	ON BOTTOM 0.8 KTS	✓
✓	0600	✓	28°09.4	86°2[illegible]		30138.6		TAKING BOTTOM	
✓	0630	✓	28°09.4	86°25.[illegible]	✓	30126.2	0	CRG 070° 0.8 Kts	✓
✓	0700	✓	28°09.6	86°25.5	✓	30134.4	46197.3	CRG 285° 0.8 Kts	✓
✓	0728	✓	28°09.4	86°25.9	✓	30129.8	46195.1	CRG 270° - 1.1 M 0.8 Kts	✓
✓	0748	✓	28-09.3	86-26.2	✓	30127.0	46198.6	[illegible]	✓
✓	0812	✓	28-09.5	86-25.0	✓	30137.6	46196.1	[illegible]	✓
	0827		28-09.5	86-25.2	✓	30135.9	46196.[illegible]	[illegible]	✓
✓	0845	✓	28-09.4	86-25.3		30134.5	46196.[illegible]	[illegible]	✓
	0859		28-10.5	86-26.4		30118.9	46210.[illegible]	[illegible]	✓
✓	1019	✓	28-10.8	86-27.4	✓	30120.0	46210.5	[illegible]	✓
✓	[illegible]	✓	[illegible]	[illegible]	✓	[illegible]	[illegible]	[illegible]	✓
✓	1036	✓	28-10.8	86-26.3	✓	30134.8	46210.3	[illegible]	
✓	1039	✓	28-10.8	86-26.4		[illegible]	[illegible]	[illegible]	✓

RECORD OF POSITIONS AND STATIONS

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Vessel: GURE

Cruise No. 84-G-4

+6" ZD

Date	Time ~~GMT*~~ LCT	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix	DRIFT ON STATION Distance (miles) X	DRIFT ON STATION Direction (degrees) Y	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/17	1055	E-3	28-10.7	86-25.6	LORC	30140.8	46206.3	haul at Bottom	# 1
	1100	/	28-10.7	86-25.4	/	30142.2	46205.3	/ / /	/ /
	1130	/	28-10.4	86-24.0	/	30150.8	46198.5	CMG 101.6° 2.4 KN. (DEP. 1120)	
	1200	✓	2810.1	8622.6	✓	30158.9	46192.2	CMG 103° 2.6K	
	1230	✓	2809.9	8621.3	✓	30167.2	46186.0	CMG 100° 2.4K.	
	1300	✓	2809.7	8620.1	✓	30174.4	46180.7	CMG 100° 2.2K.	
	1309	✓	2809.7	8619.8	✓	30176.8	46179.2	OFF BTM.	
	1350	✓	2809.6	8618.0	✓	30188.8	46172.0	ALL FREE.	✓
	1500	U/W	2807.0	8623.1	✓	30135.3	46172.9	U/W EN route 254-8KTS E-4	
	1530		2805.7	8627.5		30098.7	46179.1	" " 256° 8.2K	
	1600	✓	28°04.6	86°31.8	✓	30055.2	46188.3	252° 8.1Kts	
	1623	E4	28°04.1	86°34.7	✓	30028.7	46192.7	□ CORE OVER	
	1720	✓	2804.4	8634.7	✓	30036.2	46192.8	□ CORE OVER	✓
	1743	✓	2804.3	8634.4	✓	30033.8	46193.4	□ HIT 133 Fm	✓
	1807	✓	2804.3	8634.8	✓	30030.8	46193.8	□ PIPE	✓
	1824	✓	2804.4	8634.2	✓	30036.5	46192.8	CTD OVER	✓

RECORD OF POSITIONS AND STATIONS

GYRE

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Cruise No. 84-G-4

ZD 46

Date	Time ~~GMT*~~ LCT	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix LRN/C	DRIFT ON STATION Distance (miles) X	DRIFT ON STATION Direction (degrees) Y	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/10/84	1908	E-4	28°04.2	86°34.6	—	30031.7	46193.0	CTD at Depth 1400 m	[illegible]
—	1913	—	28°04.2	86°34.7	—	30031.3	46192.9	CTD Start up 1420 m	—
—	2003	—	28-04.1	86-35.3	—	30026.0	46194.2	CTD on Deck	—
—	2021	—	28-04.4	86-34.2	—	30036.6	46192.7	☐ Core Stab down	—
—	2021	—	28-04.5	86-34.2	NAVSAT	46°LL	02 IT	—	—
—	2050	—	28-04.3	86-34.5	LRN/C	30033.2	46291.9	☐ core @ bottom 1378	—
—	2040	—	28-04.4	86-34.3	NAVSAT	35° LL	02 IT	Posit check	—
—	2204	UW	28-03.2	86-36.1	LRN/C	30014.8	46191.1	Posit check PDR C 04	—
—	2231	E-4	28-04.4	86-34.5	—	30035.2	46193.2	☐ Core Stab down	—
—	2248	—	28-04.4	86-34.4	NAVSAT	30°LL	02 IT	POSIT check	—
1'"	2258	—	28-04.25	86-34.75	"C"	30031.0	46193.7	☐ core @ bottom 1416 m	—
—	2302	—	28-04.27	86-34.85	NAVSAT	52°EL	02 IT	Posit Check	—
—	2330	—	28-04.00	86-35.05	"C"	30025.7	46193.6	☐ core on deck	—
	2345	—	28-04.4	86-34.1	—	30036.3	46192.6	☐ core in	[illegible]
4/10/84	0012	—	[illegible]	86-34.4	—	30033.9	[illegible]	Hit [illegible] core	—
	0046	—	[illegible]	[illegible]	—	[illegible]	[illegible]	[illegible]	—

RECORD OF POSITIONS AND STATIONS

Vessel: R/V GYRE

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Cruise No. [illegible]

20 + C

Date	Time ~~GMT*~~	Station Number	POSITION Latitude	POSITION Longitude	Type of Fix	DRIFT ON STATION Distance (miles)	DRIFT ON STATION Direction (degrees)	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/18/81	LCT	E-4	✓	✓	LK	×	✓		[illegible]
✓	0142	✓	28°07.6	86°38.7	✓	30022.3	46222.2	Posit Fix [illegible]	✓
✓	0147	✓	2807.5	8638.4	✓	30023.8	46227.5	Not in H.O	✓
✓	0215	✓	2807.1	8637.4	✓	30029.1	46221.5	125° PGC	✓
	0230	✓	28°06.8	8636.9	✓	30031.4	46218.1	124°	2.0 K ✓
	0300	✓	28°06.2	8635.7	✓	30030.5	46210.2	120°	2.4 Kts ✓
	0311	✓	28°06.0	8635.3	✓	[illegible]	[illegible]	[illegible]	2.5 K. Fishing
	0330	✓	28°05.6	8634.6	✓	[illegible]	[illegible]	121°	2.2 K
	0400	✓	28°05.0	86°33.3	✓	30046.5	46193.9	119°	2.5 Kts
	0430	✓	28°04.3	86°31.9	✓	30053.3	46183.9	119°	2.5 Kt ✓
	0452	✓	28°04.0	86°31.2	✓	30063	46183.2	118 START TRAIL	2.0 Kts ✓
	0516	✓	28°03.6	86°31.2	✓	30061.1	46174.3	OFF THE BOTTOM	✓
	0531	✓	28°03.4	86°29.6	✓	30064.0	46170.3	TAG BALL LAST CHAR.	✓
	0543	✓	28°03.1	86°29.1	✓	30066.2	46166.9	TAG BALL AND	✓
	0657	✓	28°03.6	86°33.8	✓	30034.7	46186.2	CAMERA STARTED DOWN	✓
	0730	✓	28°03.5	86°33.2	✓	30037.1	46184.0	CAMERA GOING DOWN	✓
	0739	✓	28°03.5	86°33.2	✓	30037.7	46182.5	CAMERA @ BOTTOM	✓

RECORD OF POSITIONS AND STATIONS

Vessel: GUARE

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84 G 4

+6 h ZD

Date	Time ~~GMT*~~ LCT	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix	DRIFT ON STATION Distance (miles) X	DRIFT ON STATION Direction (degrees) Y	REMARKS *Show position & time of course & speed changes, & beginning & end of all	O.O.W.
4/16	0800	E-4	28-03.5	86-33.0	LRN'C'	30039.2	46182.6	camera at bottom	
	0830		28-03.4	86-32.7		30041.4	46181.3	CMG 110.4° @ 0.6 KN.	
	0900		28-03.4	86-32.4		30043.5	46180.1	090° 0.6 KN	
	0919		28-03.4	86-32.2		30044.9	46179.7	0900 0.6 KN camera off bottom	
	0953		28-03.4	86-31.9		30047.5	46178.6	camera on deck	
	1030	4/W	28-02.1	86-36.4		30000.0	46184.9	4/W CSE 2510	
	1047	E-5	28-01.4	86-38.3		29986.5	46186.8	CTD on.	
	1107		28-01.1	86-31.6	WAASAT	59°LL	02 IT		
	1[illegible]		28 00.4	86 38.9	[illegible]	[illegible] 18	[illegible]	[illegible]	
	1417		2759.1	86 40.8	[illegible]	NK		[illegible]	
	150[illegible]		28 00.0	86 37.7	[illegible]	[illegible]		[illegible]	
	1507		28 00.4	[illegible]	[illegible]	FIX	[illegible] IT		
	1551		28 00.4	[illegible]	[illegible]	[illegible]	46181.6	☐ Core hit [illegible]	
	1617		28 00.4	86 38.3		[illegible]	[illegible]	☐ [illegible]	
	1705		28 00.4	86 38.0		[illegible]	[illegible]	[illegible]	
	1726		28 00.5	86 37.7		[illegible]	[illegible]	[illegible]	

004° 0.6 kn

RECORD OF POSITIONS AND STATIONS

Vessel: GYRE

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Cruise No. 84-G-4

2026

Date	Time GMT* LCT	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix	DRIFT ON STATION Distance (miles) X	DRIFT ON STATION Direction (degrees) Y	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/18/84	1800	E-5	28°00.6	86°37.5	LRNC	29987.3	46179.0	(since 1537) 080° 0.6 kts	
	1815	✓	28°00.6	86°37.5	✓	29987.8	46178.9	Camera on Bottom	✓
	1830	✓	28°00.6	86°37.4	✓	29988.5	46178.7	080° 0.5 kts	✓
	1900	✓	28°00.7	86°37.2	✓	29989.9	46178.3	078° 0.5 kts	✓
	1930	✓	28°00.7	86°37.1	✓	29991.0	46177.8	078° 0.4 kt	✓
	1953	✓	28-00.7	86-37.0	✓	29991.7	46177.5	camera off bottom 090° 0.26 kt	
	2030	✓	28-00.7	86-36.8	✓	29992.8	46177.0	camera comes up	✓
	2055	✓	28-00.7	86-36.7	✓	29993.9	46176.7	camera on deck	✓
	2116	✓	28-00.4	86-38.9	✓	29975.5	46181.7	□ core Sub down	✓
	2117	✓	28-00.5	86-38.8	NAVSAT	15° EL	02 IT	Port clock	✓
	2205	✓	28-00.5	86-38.9	"C"	29976.1	46182.6	□ core @ Bottom 2930 m	✓
	2159	✓	28-00.5	86-38.9	NAVSAT	14° EL	02 IT	Port clock	✓
	2301	✓	28-00.8	86-39.0	"C"	29977.3	46184.9	□ core on deck	✓
	2336	✓	27-59.4	86-37.4	"C"	29980.2	46179.5	travel gear over	✓
4/19/84	0[illegible]	✓	27.59.4	[illegible]	✓	29979.1	46179.[illegible]	[illegible] 1.75 K	✓
✓	0030	✓	28.00.7	[illegible]	✓	29990.[illegible]	[illegible]	CMG 318. SMG 2.2	✓

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Date	Time GMT*	Station Number	POSITION Latitude	POSITION Longitude	Type of Fix	DRIFT ON STATION Distance (miles)	DRIFT ON STATION Direction (degrees)	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/18/84	24	E-5	N	W	L/L	X	Y		
✓	0100	✓	2801.7	8639.8	✓	29926.5	46195.7	CMG 318° 2.6 Kt.	✓
✓	0108	✓	2801.9	8640.1	✓	29926.1	46195.3	[illegible] 318 2.6K.	✓
✓	0130	✓	2802.5	8642.7	✓	29925.1	46222.1	[illegible] 315° 2.2K	
✓	0200	✓	2803.5	8641.7	✓	29973.1	46211.6	CMG 318° 2.6K	✓
✓	0230	✓	2804.4	8642.8	✓	29974.9	46221.4	CMG 312° 2.6K	✓
	0250	✓	2805.2	8643.5	✓	29974.7	46228.3	CMG 320° FROM BACK 3.K	
✓	0300	✓	2805.5	8643.8	✓	29[illegible]	[illegible]	HEAD FROM CMG 321° 2.8K	
✓	0320	✓	2806.2	8644.5	✓	29968.0	46237.8	OFF BAR 320° 2.9K.	✓
✓	0320	✓	2806.5	8644.5	✓	29981	46241.2	[illegible]	
✓	0400	✓	2807.6	86°45.8	✓	29967.2	46251.1	[illegible]	
✓	0430	✓	2808.8	86°46.9	✓	29966.3	46262.0	[illegible]	
✓	0530	✓	2809.7	86°48.1	✓	29957.7	46272.5	BRING TIA. THE [illegible]	✓
✓	0600	✓	2810.5	86°48.2	✓	[illegible]	46277.0	0180 COMG DOWN 1.6 Kts	✓
✓	0612	✓	2810.7	86°48.2		29968.0	46278.4	ON THE [illegible]	✓
✓	0630	✓	2811.1	86°48.2		29971.2	46281.0	015° 1.4Kts	✓
✓	0700	✓	2812.0	86°48.0		29978.0	46285.8	015° 1.5Kts	✓

Vessel: Gyor

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ZD 46

Date	Time GMT* LCT	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix	DRIFT ON STATION Distance (miles) X	DRIFT ON STATION Direction (degrees) Y	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
7/19/84	0730	E-5	28° 12.8	86°47.8	Loran	29989.9	46290.9	011° 16kts	[illegible]
	073	✓	8°	86 8		98.8	91.6	OFF Title Bottle	✓
	0800	✓	28° 13.2	86 47		29988.3	462 6	ABD Depth 8	✓
	0830	4/W	8 8	86 4 8	✓	3	4626 6	29	✓
	0900	✓	28-07.7	86-38.1	✓	30027.2	46222.0	✓	✓
	0930	E-4	28-04.24	86-34.76	✓	30030.9	46193.6	☐ core Starts down	✓
	0957	✓	28-04.0	86-34.6	✓	30030.3	46191.6	☐ core @ Bottom 1555	✓
	1022	✓	28-03.9	86-34.5	✓	30030.6	46190.1	☐ core on Deck	✓
	1033	✓	28-04.5	86-35.0	✓	30030.8	46196.3	☐ core Starts down	✓
	1058	✓	28-04.4	86-34.8	✓	30031.2	46194.8	☐ core @ Bottom 1015	M ✓
	1121	✓	28-04.3	86-34.7	✓	30032.0	46193.7	☐ core on Deck	✓
	1130	4/W	28-04.6	86-35.6	✓	30026.8	46198.8	4/W ASE 292°	✓
	1200	4/W	28 06.4	86 40.3	✓	30051.8	46226.4	" " " 9.5K	✓
	1230	✓	2808.2	86 45.0	✓	29972.0	46252.8	" 9.0	✓
	1300	✓	28 10.0	86 49.7	✓	29951.5	46279.0	" 9 0	✓
	1330	✓	28 11.9	86 54.4	✓	29926.6	[illegible]	9 0	✓

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Vessel: R/V Gyre.

Cruise No. 84-G-4

+6 hr -ED

Date	Time GMT*	Station Number	POSITION Latitude	POSITION Longitude	Type of Fix	DRIFT ON STATION Distance (miles)	DRIFT ON STATION Direction (degrees)	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations		O.O.W.
9/19/84	24	U/W	N	W	L/C	X	Y			
~~1413~~	1413	✓	28 14.4	87 00.9	•	29889.0	46338.3			✓
✓	1430	✓	28 15.3	87 03.3	✓	29874.9	46350.2		8.7	✓
✓	1500	✓	28 17.8	87 07.6	✓	29855.5	46376.6		8.7	✓
✓	1530	✓	28 18.8	87 12.2	✓	29822.7	46394.1		8.0	
✓	1600	✓	28 19.6	87°16.8	✓	29789.2	46410.3	282°	8.3	
✓	1630	✓	28 20.5	87°21.4	✓	29755.5	46425.8	281.5	8.3	✓
✓	1710	✓	28 22.2	87 27.5	✓	29713.0	46449.5	(FROM 1630)		✓
✓	1730	✓	28°23.1	87°30.5	✓	29691.8	46460.9	287.5	8.5	✓
✓	1800	✓	28 24.2	87°35.1	✓	29658.4	46476.7	286.6	8.5	✓
✓	1830	✓	28 25.5	87°39.8	✓	29624.5	46493.3	287.0 % 290°	8.5	✓
✓	1900	✓	28 27.0	87°44.3	✓	29593.1	46510.7	290.4	8.6	
✓	1930	✓	28°28.6	87°48.9	✓	29560.8	46527.9	291°	8.6	✓
✓	2000	✓	28-30.3	87-53.6	✓	29527.6	46545.5	✓		
	2030	✓	28-32.1	87-58.4	✓	29494.1	46562.9	292°	9.3	✓
✓	2100	✓	28-33.9	88-03.2	✓	29460.1	46580.4	✓		✓
✓	2130	✓	28-35.9	88-08.1		29425.5	46599.9	293.6°	9.4	✓

RECORD OF POSITIONS AND STATIONS

Page No. 44

Vessel: GYRE

Cruise No. 84-G-4

+6h ZD

Date	Time ~~GMT*~~ LCT	Station Number	POSITION Latitude N	POSITION Longitude W	Type of Fix	DRIFT ON STATION Distance (miles) X	DRIFT ON STATION Direction (degrees) Y	REMARKS *Show position & time of course & speed changes, & beginning & end of all stations	O.O.W.
4/19	2200	U/W	28-38.0	88-13.1	LRN'C'	29389.7	46616.0		
/	2230	/	28-40.2	88-18.2	/	29353.8	46633.9	295.5° 9.9 KN	/
/	2300	/	28-41.9	88-23.0	/	29317.7	46640		/
/	2330	/	28-43.7	88-28.0	/	29280.1	46663.7	292.0° 9.3	/
4/20	0300	/	28-45.4	88-33.0	/	29240.7	46678.2	LAST POSITI TO	
								BE LOGGED!	
								RICK:	
								PLEASE BUNDLE	
								UP THE ORI-	
								GINAL COPIES	
								OF THESE LOG	
								SHEETS TO PASS	
								ON TO ROGER.	
								Respectfully	

WEATHER RECORDS

CRUISE WEATHER RECORD

Cruise 84-G-4

TIME LOCAL

Day/Time	4/4 0000	4/0400	4/0800	4/1200	4/1600
Air Temp. (°C)					
Dew Point					
Cloud Cover %	0.0	0.0	0.0	-0-	-0-
Wind Speed (M/S) and direction	N-15	N-[illegible]	N 20	320°/18	NNW 18-20
Rel. Humidity (%)					
Atmos. Press. (mb)	10.13	10.11	10.16	10.17	10.15
Rainfall (cm.)	—				
Wave Height (m)	1-2	2-4	1-2	2-3	2-4
Wave Direct. (mag.)	N	N	N	NW	NW
Position	27-51.0	2739.5	2[illegible]	27-55.0	2738.8
	92-01.0	9346.0	9234.0	92-23.1	[illegible]
Comments	Small [illegible]	[illegible]	/		
		[illegible]		STA W-1	STA [illegible]

CRUISE WEATHER RECORD

Cruise 81-5-4

				W-2	
Day/Time	4/7 [illegible]	4/7 [illegible]	4/7 [illegible]	4/7 1200	4/7 [illegible]
Air Temp. ("C)					
Dew Point					
Cloud Cover %	0,3	,3	100	[illegible]	1,0
Wind Speed (M/S) and direction	20 S	2- [illegible]	16-18 SSE	[illegible]	30-35 [illegible]
Rel. Humidity (%)					
Atmos. Press. (mb)	1014.5	1012	1014.5	1013.0	1007
Rainfall (cm.)					
Wave Height (m)	2-3	2-4	1-2	2-4	6-9
Wave Direct. (mag.)	S	S	SE	SE	SE
Position	27-25.1	27-16.7	27-27.3	27 25.5	27.24.1
	93-21.7	93-21.2	93-20.9	93-21.2	93-1[illegible]
Comments				[illegible]	[illegible]

CRUISE WEATHER RECORD

Cruise 84-G-4

				W-3	
Day/Time	4/7 1200	4/8 [illegible]	[illegible]	4/8 1200	4/9 [illegible]
Air Temp. (°C)					
Dew Point					
Cloud Cover %	100%		Cloudy	OVC hg	HE CLR
Wind Speed (M/S) and direction	20 SSE	20-30 SSE	SE 7	SW-5 SW/NNW	[illegible]
Rel. Humidity (%)					
Atmos. Press. (mb)	1002.5	1005.	1007	1009.5	1008
Rainfall (cm.)	--				
Wave Height. (m)	4.6	4-8	[illegible] 10	SW [illegible]	[illegible]
Wave Direct. (mag.)	8-15	[illegible] 8-15	SE	[illegible]	SE [illegible]
Position	27°64.4		27 17.8	27.[illegible]	[illegible]
	73°14.0		4322.3	93.3	93.1
Comments	VERY ROUGH	[illegible]	[illegible]	[illegible] 8-15'	[illegible]

CRUISE WEATHER RECORD

Cruise E4-Q-4

		W-4			W-4
Day/Time	[illegible]	4/[illegible] [illegible]	4/9 0400	4/9 [illegible]	4/9-1200
Air Temp. (°C)					
Dew Point					
Cloud Cover %	—	—	—		
Wind Speed (M/S) and direction	6.5 [illegible] [illegible]-8	[illegible] 5	SW 5	NNE 4-6	SW 5 [illegible]
Rel. Humidity (%)					
Atmos. Press. (mb)	1009	1011	1010.5	1011	1012
Rainfall (cm.)					
Wave Height (m)	<1	<1	<1	<1	<1
Wave Direct. (mag.)	SW 2-1	[illegible]	[illegible] 4-6	[illegible] 3-4	SW 2-4
Position	26°50.10	26°43.3	26 45.2	26°44.5	26°41.3
	73°51.6	93°11.1	93 19.5	73°[illegible]	73°11.1
Comments				NICE DAY	

CRUISE WEATHER RECORD

Cruise 84-G-4

			N/S		
Day/Time	4/9 1200	4/9 2200	4/10 0000	4/10 [illegible]	4/10 [illegible]
Air Temp. (*C)					
Dew Point					
Cloud Cover %	CLR	CLR	[illegible]	[illegible]	SCT
Wind Speed (M/S) and direction	5-8 KTS	NIL	[illegible] 10-12	[illegible]	[illegible]
Rel. humidity (%)					
Atmos. Press. (mb)	1010	1009	1010	[illegible]	[illegible]
Rainfall (cm.)					
Wave Height (m)	[illegible]	CALM	[illegible] Ripple	[illegible]	CALM
Wave Direct. (mag.)	[illegible] 2-4	Con 3-4	[illegible]	[illegible]	[illegible] 1-3
Position	26°20.[illegible]	26°16.7	26-15.6	26°17.[illegible]	26°17
	93°17.0	93°20.0	93-12.9	[illegible]	93°24
Comments		CALM -	[illegible]		[illegible] DRY

CRUISE WEATHER RECORD

Cruise 74-C-4

	W-5		W/S		
Day/Time	7/15 1200	[illegible]	7/15-2000	7/16 [illegible]	[illegible]
***Air* Temp. (°C)**					
Dew **Point**					
Cloud Cover **%**	0.05	[illegible]	CLR	[illegible]	[illegible]
Wind Speed **(M/S)** and direction	SE 12-15	SE 15	SE 10	[illegible]	[illegible]
Rel. Humidity (%)					
Atmos. Press. (rob)	[illegible]	[illegible]	1013.5	[illegible]	1000
Rainfall **(cm.)**					
Wave **Height (m)**	1-2	1-2	1	1	1-2
Wave Direct. **(mag.)**	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Position	26-11.3	26-49.6	27-10.8	27-42.0	[illegible]
	93-16.0	[illegible]	92-08.4	91-31.0	91.[illegible]
Comments	[illegible]	[illegible]		[illegible]	

NE 050°

CRUISE WEATHER RECORD

Cruise [illegible]

		C-1			C-2
Day/Time	4/11 [illegible]	4/11 1200	[illegible]	4/12 [illegible]	4/12 2000
Air Temp. (°C)					
Dew Point					
Cloud Cover %	30%	[illegible]	[illegible]	SCT	SCT 0.4
Wind Speed (M/S) and direction	SE 12	110° 15 [illegible]	[illegible]	E 8-18	120°T 10 [illegible]
Rel. Humidity (%)					
Atmos. Press. (mb)		10[illegible]	[illegible]	10[illegible]	10[illegible]
Rainfall (cm.)					
Wave Height (m)	1	2	2-3	1	1-2
Wave Direct. (mag.)	[illegible] 2-3	[illegible]	[illegible]	[illegible] 2-3	[illegible]
Position	15[illegible]	2[illegible]	[illegible]	24[illegible]	21[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Comments					[illegible]

CRUISE WEATHER RECORD

Cruise 84- G-4

	C 2	C 2	C-3	C-3	C-3
Day/Time	4/12 0400	4/12 0800	4/12 1200	4/12 1600	4/12 [illegible]
Air Temp. **(°C)**					
Dew Point					
Cloud **Cover %**	[illegible] .2	OVC 12 0.8	SCT 12 0.3	SCT 12 .4	CLR
Wind Speed (M/S) **and** direction	ESE 1-2	ESE 10	ESE 5-10	ESE 10	E 5
Rel. Humidity **(%)**					
Atmos. Press. (mb)	1007	1010.5	1011.5	1010	[illegible]
Rainfall **(cm.)**					
Wave **Height (m)**	[illegible]	ESE 1	ESE 1	[illegible] 1	E 1
Wave Direct. **(mag.)**	[illegible]	[illegible] 2-3	[illegible] 2-3	[illegible] 2-4	[illegible] 2-4
Position	[illegible] 27 54.3	70°52.9	[illegible] 44.3	27 51.4	97 49.3
	90 05.7	90 04.6	90 [illegible]	90 05.0	90 07.1
Comments			VISIBILITY 4-6 mi. in haze.	[illegible]	[illegible]

CRUISE WEATHER RECORD

Cruise 84-G-4

	C/L		C4	C4	C-4
Day/Time	4/13 [illegible]	4/14 [illegible]	4/13 [illegible]	4/12 [illegible]	4-13 [illegible]
Air Temp. (°C)					
Dew Point					
Cloud Cover %	0.5 [illegible]	CLR	1/2	Sct. 1/2	[illegible]
Wind Speed (M/S) and direction	SSE 8	NE 6-10	NE 4-6	SSE 11-14	NNE 12
Rel. Humidity (%)					
Atmos. Press. (mb)	1011	1010	1012.5	1012	1011
Rainfall (cm.)					
Wave Height (m)	1'	<1	<1	1	1-2
Wave Direct. (mag.)	SE 2-4'	SE swell 1-3	SE swell 2-3	[illegible]	SE swell 2-3
Position	27°-43.'	27°-28	27°-28.3	27°-27'	27°-28.5
	90°-02'	89°-16	89°-17.1	89°-37'	89°-44.5
Comments	Snowed C3 to C4	H+ S.R.	H2	[illegible]	VIS 6-10

VIS 6-+

CRUISE WEATHER RECORD

Cruise 84-G-4

		C-5	C-5	C-5 *	C-5
Day/Time	4/13 2000	4/14 0000	4/14/1400	4/14 0800	4/14 1200
Air Temp. (°C)					
Dew Point					
Cloud Cover %	.6	0.2	.1	1.0	1.0
Wind Speed (M/S) and direction	ESE 10	[illegible] 10	CALM	AIRS	NW 8-12
Rel. Humidity (%)					
Atmos. Press. (mb)	1010	1010	1010	1010	1010.5
Rainfall (cm.)					
Wave Height (m)	1	1	<1	<1	<1
Wave Direct. (mag.)	SE Swell 2-3	[illegible]	Swell 1 SE	Swell 1-3 SE	[illegible] 2
Position	27°10'	27-51N	26 58.3	27 01	27-06
	27°41'	89-35N	89.33.4	89 31	89-23
Comments			Wind Variable	High Fog -	[illegible]

*C-5 4/14 - 0845 weather same as 4/14 - 0000 [illegible] - But wind shift to NNW at 0845

CRUISE WEATHER RECORD

Cruise 84-G-4

	G/5		U/W		U/W
Day/Time	4/14 1600	4/14 2400	4/15 0000	[illegible]	4/16 0800
Air Temp. (°C)					
Dew Point					
Cloud Cover %	AC/Cu 1.0	AC/Cu 1.0	A/Cu 0.3	[illegible]	Cu .6
Wind Speed (M/S) and direction	N 18-20	NE 8-10	NNW 12	NW 15	NNW 13
Rel. Humidity (%)					
Atmos. Press. (mb)	1010	1011	1011	1010	1008.5
Rainfall (cm.)					
Wave Height (m)	N 2-4	N 1-2	NNW <1	N 1-3	NNW 1-2
Wave Direct. (mag.)	Swell Con 2-4	Con Swell 2-4	Con 3-5	[illegible]	N 3-4
Position	26592	26°57.3	27-06	[illegible]	27°35'
	89275	89°36.2	89-06	[illegible]	87°50'
Comments	OVC Rain	Hazy light rain	U/W C 068° 10.1 KN.	068° 11 KTS. CLR	WIND [illegible]

CRUISE WEATHER RECORD

Cruise 84-8-4

Day/Time	4/5 1200	[illegible]	4/5 [illegible]	4 [illegible]	[illegible]
Air Temp. ("C)					
Dew Point					
Cloud Cover %	0.4	[illegible] 16	[illegible]	[illegible]	1.
Wind Speed (M/S) and direction	NW 12-15		[illegible] 15	[illegible] 15 [illegible]	[illegible]
Rel. Humidity (%)					
Atmos. Press. (mb)	1011	[illegible]	1012	[illegible]	[illegible]
Rainfall (cm.)					
Wave Height (m)	1-2	[illegible]	1-2 [illegible]	2-4	[illegible]
Wave Direct. (mag.)	[illegible] 2-4	[illegible] 2-4	[illegible] 2-4	[illegible]	[illegible]
Position	27-51N	28.[illegible]	[illegible]	[illegible]	[illegible]
	87-0J.	8C 36.1	[illegible]		[illegible]
"comments		Sailing			

CRUISE WEATHER RECORD

Cruise E4-G-4

	Route E-2		E-2		
Day/Time	4/6 0800	[illegible]	4/6 2000	4/7 2200	[illegible]
Air Temp. (°C)					
Dew Point					
Cloud Cover %	.4	.5	.6	0.5	[illegible]
Wind Speed (M/S) and direction	NW 25-30	W 25-30	WNW 20	[illegible] 15-22	[illegible]
Rel. Humidity (%)					
Atmos. Press. (mb)	1012	1010.5	1011	1011.5	[illegible] 11
Rainfall (cm.)					
Wave Height (m)	2-4	2-4	2-4	3-6	[illegible]
Wave Direct. (mag.)	Com 4-8	Com 4-6	Com 4-8	[illegible]	[illegible]
Position	28 23	28 18.0	28°17.0	28-15	[illegible]
	86 04	86 11.6	86°14.4	86-15	[illegible]
Comments	Rough	Rough	Rough	Rough	[illegible]

CRUISE WEATHER RECORD

Cruise 84-G-4

	E-3	E-3	[illegible]	E4	E-4
Day/Time	4/17 0800	4/17 [illegible]	4/17 1200	4/17 [illegible]	4/18 [illegible]
Air Temp. (°C)					
Dew Point					
Cloud Cover %	.6	0.4 cu	.4 cu	.3 cu	[illegible]
Wind Speed (M/S) and direction	VR WNW 20-25	WNW 18-20	WNW 18-20	W 18-20	W 18-20
Rel. Humidity (%)					
Atmos. Press. (mb)	1013	1012	1013	1014	1015
Rainfall (cm.)					
Wave Height (m)	2-4	2-4	2-4	1-3	2-3
Wave Direct. (mag.)	Con 4-8	[illegible]	[illegible]	[illegible]	[illegible]
Position	28 09	28.13	[illegible]	28 04	[illegible]
	86 27	86-20	[illegible]	86 35	[illegible]
Comments	[illegible]		[illegible]	[illegible]	

CRUISE WEATHER RECORD

Cruise 84-G-4

	E-4	E-4	E-5	E-5	E-5
Day/Time	4/18 [illegible]	4/18 0360	4/18 [illegible]	4/18 [illegible]	4/18 [illegible]
Air Temp. (°C)					
Dew Point					
Cloud Cover %	SCT CU 11	CLR	CLR	CLR	CLR
Wind Speed (M/S) and direction	WNW 15-18	W 10-12	W 12	W 12	AIRS
Rel. Humidity (%)					
Atmos. Press. (mb)	1010	1017	10[illegible]16	1017	1017
Rainfall (cm.)					
Wave Height (m)	2-3	W 1-2	W 1-2	1-2	RIPPLE
Wave Direct. (mag.)	[illegible] 4-6	W 3-5	CAM 2-4	[illegible] 1-3	CAM 1-3
Position	28 05.3N	28°03	28-01	[illegible]	28°01
	86 33W	86 33	86-38	[illegible]	86°37
Comments	LLR	CLR [illegible] DAY		TEMP DAY [illegible]	CALM

Temp

CRU ISE WEANER RECORD

Cruise 84-4-1

	E-5	E-5	E-5	4/11	[illegible]
Day/Time	4/17-[illegible]	4/17 [illegible]	4/17 [illegible]	4/17-[illegible]	[illegible]
Air Temp. (°C)					
Dew Point					
Cloud Cover %	CLR	[illegible]	BKN	[illegible]	[illegible]
Wind Speed (M/S) and direction	5 12-	[illegible]	5 [illegible]	5 [illegible]	[illegible]
Rel. Humidity (%)					
Atmos. Press. (mb)	1016.5	[illegible]	1015	1017	[illegible]
Rainfall (cm.)					
Wave Height (m)	<1	[illegible]	<1	1-2	[illegible]
Wave Direct. (mag.)	[illegible]	[illegible]	Swell [illegible]	[illegible] 2-3	[illegible]
Position	27-51.5	[illegible]	28° 14	28.07	28 11
	[illegible]	[illegible]	86° 48	86-40	[illegible]
Comments	[illegible]	[illegible]			[illegible]

CRUISE WEATHER RECORD

Cruise 84- Q-4

	4/20	4/20			
Day/Time	[illegible]	4/20 [illegible]			
Air Temp. (°C)					
Dew Point					
Cloud Cover %	.4	.2 [illegible]			
Wind Speed (M/S) and direction	[illegible] 4-6	SW 10			
Rel. Humidity (%)					
Atmos. Press. (mb)	1015	1012.5			
Rainfall (cu.)	"				
Wave Height (m)	1-2'	1-2			
Wave Direct. (mag.)	[illegible] 3-6	[illegible] 3-6			
Position	[illegible]	23-45			
	27°49	05-34			
Comments	[illegible]				

HYDROGRAPHIC DATA LOG

CRUISE DATA LOG

Station W-1

Cruise 84-6-4

Lat. 27 39.4 N

Long. 93 45.7 W

Water Depth 340 m

Cast Depth 340 m

Transmissometer in air 4.587

Loran

Time 09-01-00

Date 4-4 - 84

Bucket Temperature 19.6°C

Bottle #	1	2	3	4	5	6	7	8	9	10	11	12
Sample Depth m	345	345	345	334	275	225	173	24.4	19.5	14.4	9.2	[illegible]
Reversing Thermometer C	11.65											10.36
Salinity Bottle ‰	35.364	35.369	35.397	35.425	35.011	35.805	36.050	36.304	36.270	36.231	36.123	35.852
Phosphate ug-at/l	2.17	2.00	2.01	1.92	.58	0.74	1.05	[illegible]	0.30	0.18	0.32	0.04
Nitrate ug-at/l	26.15	26.01	25.72	25.40	22.95	19.40	16.5	12.5	5.80	3.16	0	0
Silicate ug-at/l	13.4	13.4	13.1	12.8	10.9	8.25	6.76	4.80	2.72	2.08	0.96	[illegible]
Nitrite ug-at/l	0.25	0.19	0.28	0.20	0.25	[illegible]	0.70	[illegible]	0.20	0.21	0.12	0.11
Oxygen (dissolved) ml/l	2.747	2.658	2.619	2.687	2.720	2.775	2.866	2.976	3.153	4.297	4.772	5.171

← Bottle Temp. Sensor

‰

CTD OUT OF H2O at 27°39.4' N 93°45.7' W

[illegible] Nitrate [illegible] Hypothesis → [illegible] system [illegible]. The [illegible] - results may not be good!

CRUISE DATA LOG

Station W-7

Cruise 84-G-4

Lat. 27.25.0 N 27° 24.9

Long. 93.21.711 93° 20.9

Water Depth 654 m

Cast Depth 647 m

Transmissometer in air 4.548

Loran 25998.5 46612.2

Time 05 52 46 Z

Date 4-7-84

Bucket Temperature 20.2 C

Bottle #	1	2	3	4	5	6	7	8	9	10	11	12
Sample Depth	647	635	484	397	300	250	199	149	100.6	59.6	19.6	5.2
Reversing Thermometer C	6.135											[illegible]
Salinity Bottle ‰		34.908	34.908	35.053	35.215	35.492	35.643	35.890	36.207	[illegible]	36.[illegible]	36.[illegible]
Phosphate	1.97	1.94	1.93	1.80	1.63	1.34	1.22	1.00	0.68	[illegible]	0.34	0.18
Nitrate	29.75	29.78	29.56	29.14	25.71	22.27	20.86	17.74	13.96	3.8	4.9	—
Silicate	25.2	25.2	24.8	18.1	15.2	11.8	10.2	[illegible]	[illegible]	[illegible]	[illegible]	1.11
Nitrite	0.35	0.22	0.04	0.06	0.04	0.13	0.14	0.26	0.14	0.36	[illegible]	[illegible]
Oxygen (Dissolved) ml/l	3.366	3.380	3.290	2.781	2.588	2.722	2.800	2.838	3.332	4.113	3.191	5.202

(CTD out of H2O at 27°24.9 N [illegible])

Note: PO4 was still [illegible] incorrectly

Note: Reversing thermometer tripped at a depth of [illegible]

CRUISE DATA LOG

Stat ion: W-2

Cruise: 84-6-4

Lat.: 27° 11.1 N

Long.: 93° 20.3 W

Water Depth: 880 m

Cast Depth: 925 m

Transmissometer in air: 4.672

Loran: 25944.5 46572.7

Time: 11:50 Local

Date: 4-8-84

Bucket Temperature: 22.5

Bottle #	1	2	3	4	5	6	7	8	9	10	11	I 12
Sample Depth	745	363.9	724.7	600.2	499	397.7	298.8	224.7	149.8	101.7	49.6	27.8
Reversing Thermometer												20. [illegible]
Salinity % Bottle		34. 935	34. 424	34. 895	34. 929	35. 016	35. 205	35. 485	35. 802	36. 219	36. 204	35. 001
Phosphate µg-at/l		1. 70	1.73	1. 92	1. 88	1. 83	1. 62	1. 34	1. 05	[illegible]	0. 24	0. 15
Nitrate µg-at/l		29. 6	29. 3	31. 8	29. 3	26. 3	24. 2	20. 4	17. 4	12. 6	3. [illegible]	[illegible]
Silicate µg-at/l		25. 6	26. 2	24. 5	21. 6	18. 0	14. 9	11. 3	8. 19	[illegible]	[illegible]	1. [illegible]
Nitrite µg-at/l		0. 08	0. 14	0. 11	0. 11	0. 12	0. 13	0. 10	0. 15	[illegible]	0. 10	0. 09
Oxygen ml/l	5. 133	4. 670	3. 981	3. 421	2. 972	2. 776	2. 614	2. 617	2. 777	[illegible]	4. 392	5. 187

CTD out of H20 at 27°10.1 N [illegible] N

Crew Hook

CRUISE DATA LOG

Station: N-4

Cruise: 84-6-4

Lat.: 26° 44.1 N

Long.: 93° 19.1 W

Water Depth: 1464 m

Cast Depth: 1458

Transmissometer in air: 4.532

Loran: 25860.0 46495.1

Time: 21.59 [illegible]

Date: 4-8-84

Bucket Temperature: 20°.9 C

Bottle #	1	2	3	4	5	6	7	8	9	10	11	12
Sample Depth	1457.8 2	1444.1 3	[illegible] 4	1100.7 5	[illegible] 6	772.4 7	572.6 8	400. 9	274.5 10	174.1 11	49.1 12	51.8 1
Reversing Thermometer	.											20.65
Salinity ‰ Bottle	34.970	34.971	34.965	34.949	34.916	34.898		35.158	35.532	36.061	36.290	36.076
Phosphate ug-at/l	1.23	1.34	1.42	0.35	1.52	1.47		1.63	1.28	0.90	0.46	0.03
Nitrate ug-at/l	23.9	25.1	23.9	23.8	26.2	27.0		26.2	20.4	14.2	6.29	0.08
Silicate ug-at/l	25.8	25.5	25.8	26.0	25.7	25.2		[illegible]	[illegible]	[illegible]	[illegible]	1.36
Nitrite ug-at/l	0.13	0.17	0.07	0.02	0.03	0.13		0.01	0.02	0.02	0.03	0.01
Oxygen ml/l	4.844	4.920	4.849	4.521	3.957	3.570		2.723	2.853	3.679	3.732	5.199

OXY NOT TRIP

NOTE: #2 is reading 3 [illegible] 4 [illegible]

[illegible] of boat 26°43.5 N [illegible]

CRUISE DATA LOG

Station 1-5 [illegible]

cruise 84-6-4

Lat. 26° 1[illegible].6 N

Long. 93° 17.9[illegible]

Water Depth 2460

Cast Depth 2451

Transmissometer in air 41 537

Loran 25731.9 4[illegible]5.7

Time [illegible]

Date 4-9-84

Bucket Temperature 21.2 C

Bottle #	1	2	3	4	5	6	7	8	9	10	11	12
Sample Depth	451.0	1490.6	2300.1	[illegible]	1500.2	[illegible]	800.1	300.3	300.2	150.1	15.4	15.0
Reversing Thermometer	4.25											
Salinity ‰ Bottle	34.993	34.961	34.979	34.971	34.974	34.951		34.951	35.257	36.037	35.[illegible]	36.[illegible]
Phosphate µg-at/l	1.42	1.50	1.46	1.47	1.50	1.57		1.91	1.57	0.75	0.18	0.12
Nitrate µg-at/l	18.7	19.4	20.1	21.1	21.9	23.0		28.0	23.8	10.0	1.14	—
Silicate µg-at/l	23.8	24.1	24.4	24.5	24.7	25.3		20.6	14.3	4.95	1.29	1.03
Nitrite µg-at/l	0.01	—	—	—	—	—	—	—	0.01	0.04	0.27	
Oxygen ml/l	5.039	5.032	5.070	5.031	4.928	4.58[illegible]		2.559	2.554	3.[illegible]	4.752	[illegible]

note: reversing thermometer tripped at a depth of 2451 — closer to #2 [illegible]

[illegible] of Rig [illegible] 26° 1.7 N [illegible]

CRUISE DATA LOG

Station S-1

Cruise 84-6-4

Lat. 27.42.4 N

Long. 91° 31.6 W

Water Depth [illegible] m

Cast Depth [illegible] m

Transmissometer in air [illegible]

Loran [illegible] [illegible]

Time [illegible] LOCAL

Date 4-[illegible]-84

Bucket Temperature 20.4 C

Bottle #	1	2	3	4	5	6	7	8	9	10	11	12
Sample Depth	682	682	682	[illegible]	[illegible]	[illegible]	672	672	657	657	[illegible]	[illegible]
Reversing Thermometer												
Salinity Bottle ‰	34.892	34.892	34.898	34.899	34.900	34.900	34.899	34.899	34.906	34.905	34.896	34.896
Phosphate µg at/l	1.70	1.70	1.69	1.69	1.68	1.68	1.69	1.69	1.68	1.68	1.68	1.68
Nitrate µg at/l	29.9	29.9	29.8	29.8	29.7	29.7	29.5	29.5	29.3	29.3	29.4	29.4
Silicate µg at/l	24.5	24.5	24.7	24.7	24.6	24.6	24.6	24.6	24.3	24.3	23.8	23.8
Nitrite µg at/l	0	0	0.05	0.05	0.06	0.06	0.06	0.06	0.03	0.03	0.02	0.02
Oxygen ml/l	3.394	3.394	3.401	3.401	3.383	3.383	3.391	3.391	3.316	3.316	3.266	3.266

[illegible] 27° 42.7 N [illegible]

CRUISE DATA LOG

Station C - 1

Cruise [illegible]

Lat. 28° 01.7 N

Long. 95° 14.8 W

Water Depth 384

Cast Depth 380 m

Transmissometer in air 1.626

Loran [illegible]

Time 1033 LOCAL

Date 4/11 [illegible]

Bucket Temperature [illegible] C

	12	3	4	5	6	7	8	9	10	11	12	1
Bottle #	1	2	3	4	5	6	7	8	9	10	11	12
Sample Depth	380	370.	274.6	224.6	174.4	149.3	124.3	99.5	76.0	49.1	24.5	[illegible]
Reversing Thermometer												
Salinity Bottle ‰	35.227	35.233	35.582	35.764	35.[illegible]	35.[illegible]	[illegible]164	36.250	36.102	35.471	35.[illegible]21	35.633
Phosphate ug-at/l	1.32	1.33	1.03	0.83	0.55	0.68	0.61	0.46	0.13	0.06	0.06	0.10
Nitrate ug-at/l	27.8	24.6	22.0	20.1	18.5	17.1	15.7	13.2	3.[illegible]	0.41	0	0.[illegible]
Silicate ug-at/l	15.4	15.1	11.6	9.90	8.[illegible]	7.26	7.26	4.95	2.64	1.[illegible]	[illegible]	1.32
Nitrite ug-at/l	0.07	0.07	0.09	0.08	0.08	0.05	0.07	0.05	0.08	0.23	0.04	0.21
Oxygen ml/l	2.730	2.745	2.757	2.65[illegible]	2.[illegible]1	3.024	2.984	3.121		5.183	5.313	5.630
Sample #	2	3	4	5	6	7	8	9	10	11	12	1

CTD out of H2O at 28° 01.0 N [illegible] W
33.412 [illegible]

O2 - 10 was Broken

CRUISE DATA LOG

Stat ion C-2

Cruise 84-6-4

Lat. 27° 54.7 N

Long. 90° 05.9 W

Water Depth 630

Cast Depth 625

Transmissometer in air 4.626

Loran [illegible]

Time 2129

Date 4-11-84

Bucket Temperature 21°C

Bottle #	1	2	3	4	5	6	7	8	9	10	11	12
Sample Depth m	624.5	614.3	[illegible]	[illegible]	217.4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	19.6	10.1
Reversing Thermometer												
Salinity Bottle ‰	34.909	34.919	34.902	34.978	35.162	35.481	35.[illegible]	35.638	36.051	36.311	36.127	35.162
Phosphate µg-at/l	1.74	1.71	1.75	1.67	0.93	1.22	1.08	0.83	0.72	0.50	0.14	0.06
Nitrate µg-at/l	30.6	29.7	30.5	30.5	28.3	24.4	22.6	19.3	16.3	13.0	2.76	0
Silicate µg-at/l	21.5	21.2	21.4	18.5	14.7	10.5	9.01	7.90	6.27	4.49	2.14	0.[illegible]
Nitrite µg-at/l	0.07	0.06	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.07	0.03	[illegible]
Oxygen ml/l	3.177	3.176	3.102	2.863	2.623	2.757	2.799	2.958	3.053	2.766	4.671	[illegible]

[illegible] 27°54.7 [illegible] 2101 LOCAL
2810.0 [illegible]

CTD [illegible] ON BOARD at 27°55.2 [illegible] 90°05.6 W
[illegible]
2[illegible] LOCAL

CRUISE DATA LOG

Station C-3

Cruise [illegible]

Lat. 27° [illegible]

Long. [illegible]

Water Depth 570 m

Cast Depth 567 m

Transmissometer in air [illegible]

Loran [illegible]

Time 1020 local

Date [illegible]

Bucket Temperature 7() .5 C

Bottle #	1	2	3	4	5	6	7	8	9	10	11	12
Sample Depth	107.7	255.6	423.5	570.5	4[illegible].5	399	191	[illegible]	[illegible]	[illegible]	[illegible]	25.[illegible]
Reversing Thermometer	33.37											19.535
Salinity Bottle ‰		34.720	34.818	34.917	35.001	35.231	35.467	35.700	36.006	36.264	36.[illegible]	35.[illegible]
Phosphate µg-at/l	1.58	1.58	1.72	1.74	1.55	0.14	1.22	0.92	0.[illegible]	0.[illegible]	0.09	0.09
Nitrate µg-at/l	26.5	26.4	27.91	29.0	27.8	1.20	22.0	17.2	13.3	[illegible].60	0.60	0
Silicate µg-at/l	26.6	26.8	25.9	22.7	22.0	1.82	11.9	8.61	6.01	4.[illegible]7	1.68	1.16
Nitrite µg-at/l	0.14	0.16	0.09	0.13	0.13	0.12	[illegible]	[illegible]	[illegible]	[illegible]	0.42	0.01
Oxygen ml/l	3.957	3.957	3.55[illegible]	3.051	2.845	5.233	5.867	3.[illegible]	3.275	[illegible]	5.[illegible]	5.474

CTD on bottom at 1145 local [illegible] 1.2N [illegible]

Note: Bottle #6 had reversing [illegible] 0 [illegible]
It most likely didn't trip at 399 m.

Note: ON reversing thermometer tripped at a depth of 652 m, as pressure due to bottles 3+4

CRUISE DATA LOG

Station C-4

Cruise 84-6-4

Lat. 27° 28.4 N

Long. 89° 46.0 W

Water Depth 1430 m

Cast Depth 1430 m

Transmissometer in air 4.704

Loran 28157.9 46416.5

Time 0326 LOCAL

Date 7-15-84

Bucket Temperature 20°.8 C

Bottle #	1	2	3	4	5	6	7	8	9	10	11	12
Sample Depth	1430.5	1421.8	1300	1099.8	900.4	775	574.3	400.4	273.5	173.8	99.5	51.1
Reversing Thermometer	4.33											19.875
Salinity Bottle												
Phosphate µg-at/l	1.50	1.46	1.47	1.54	1.63	1.74	1.74	1.50	1.12	0.71	0.40	0.09
Nitrate µg-at/l	27.1	26.8	26.2	27.5	29.1	32.0	33.2	30.7	24.4	17.3	7.29	0
Silicate µg-at/l	25.3	24.9	26.2	26.0	26.5	26.0	22.4	16.7	11.0	6.76	3.46	1.08
Nitrite µg-at/l	0.06	0.07	0.09	0.06	0.07	[illegible]	[illegible]	0.05	[illegible]	[illegible]	0.06	0.02
Oxygen ml/l	4.595	4.495	4.834	4.497	3.986	3.678	3.030	2.607	[illegible]	[illegible]	[illegible]	[illegible]

CTD HIT BOTTOM AT 1437m

CTD ON BOARD SHIP AT 0632 LOCAL 27°28.6N 89°45.5W
28163.7 46416.4

Note! On Deep Reversing thermometer tripped at 399m - making [illegible]

CRUISE DATA LOG

Station 1-5

Cruise 84-6-4

Lat. 26°57.91 N

Long. 89° 33.4 W

Water Depth 2503 m

Cast Depth 2595 m

Transmissometer in air 4.704

Loran 28132.2 46266.5

Time 0138 Local

Date 4-14-84

Bucket Temperature 21°.9 C

Bottle #	1	2	3	4	5	6 (*)	7	8	9	10	11	12
Sample Depth	2495.2	2484.7	2302.3	1899.2	1499.6	1099.5	800.4	500.3	299.8	149.7	75.2	26
Reversing Thermometer	4.26					(*)						10.435
Salinity Bottle												
Phosphate µg-at/l	1.09	1.13	1.13	1.14	1.17	0 .04	1.35	1.33	0.90	0.41	0.06	0.07
Nitrate µg-at/l	21.90	22.0	21.8	22.2	22.8	0 .30	28.1	27.9	20.9	11.7	0.19	0
Silicate µg-at/l	23.8	24.2	24.2	24.5	24.6	1 .10	24.8	17.5	10.0	4.43	0.98	1.26
Nitrite µg-at/l	0.01	0	0	0	0	1 .50	0	0.01	0	0.02	0.01	0
Oxygen ml/l	4.978	5.061	5.136	5.062	4.918	5.091	3.524	2.743	2.809	3.247	5.[illegible]	[illegible]

CTD ONBOARD AT 0352 LOCAL 26°56.8N 89°33.6 28135.4 46270.6

bottle #6 did not close at that depth. – most likely near surface. !! (again !!
The water was warm as of the bottle #12

Note on the reversing thermometer – [illegible] 2464 close to bottle #2

I put in the computer 28°02.7N

CRUISE DATA LOG

Station C-1

Cruise 84-6-4

Lat. 28°27.7N

Long. 86°01.0W

Water Depth 368 m

Cast Depth 360 m

Transmissometer in air 4.704

Loran 30428.9 46239.2

Time 2105 LOCAL

Date 4-15-84

Bucket Temperature 15.5 C

Bottle #	1	2	3	4	5	6	7	8	9	10	11	12
Sample Depth	360.4	355.7	274.3	224.6	175.7	150.6	125	99.9	75.3	50.6	25.2	10.6
Reversing Thermometer °C	8.34											17.04
Salinity Bottle ‰	35.246	35.246	35.475									
Phosphate µg-at/l	1.41	1.40	1.18	0.95	[illegible]	0.49	0.39	0.27	0.16	0.07	0.09	0.11
Nitrate µg-at/l	[illegible]	[illegible]	[illegible]	15.5	11.4	[illegible]	5.75	1.66	1.11	0	0	0
Silicate µg-at/l	15.4	15.4	11.6	6.75	6.20	4.63	3.01	1.47	1.16	[illegible]	0.70	0.70
Nitrite µg-at/l	0.02	0.03	[illegible]	0.03	0.02	[illegible]	0.03	0.03	0.03	0.09	0	0
Oxygen ml/l	2.709	2.728	2.754	2.885	3.152	3.770	3.956	4.233	4.910	5.230	[illegible]	[illegible]

Rough weather!

CTD on bottom at 2222 Local 28°27.7N 86°01.0W 30414.9 46245.5

Note: only Reversing thermometer - tripped at a depth of [illegible]

CRUISE DATA LOG

Station E-2

Cruise 84-6-4

Lat. 28° 16.7N

Long. 86° 15.2 W

Water Depth 655 m

Cast Depth 651 m

Transmissometer in air 4.744

Loran 30256.0 46211.6

Time 2101 Local

Date 4-16-84

Bucket Temperature 18.8 C

Bottle #	1	2	3	4	5	6	7	8	9	10	11	12
Sample Depth	651	641.4	496.3	403.2	299.5	244.4	200.2	148.5	99.8	60.0	20.1	11.3
Reversing Thermometer	5.376											19.33
Salinity Bottle												
Phosphate µg-at/l	1.[illegible]	1.[illegible]	1.65	1.55	1.36	1.12	0.[illegible]	0.60	0.33	0.14	0.[illegible]	0.03
Nitrate µg-at/l	20.5	[illegible]	20.9	20.1	20.4	22.9	19.1	15.7	10.1	[illegible]	[illegible]	0
Silicate µg-at/l	23.0	23.2	22.9	19.9	16.3	17.3	1.00	7.20	4.[illegible]	[illegible]	1.19	[illegible]
Nitrite µg-at/l	0.[illegible]	0.08	0.11	0.09	0.07	0.07	0.04	0.06	0.06	0.[illegible]	0.28	[illegible]
Oxygen												

↑ 3m

CTD on bottom at 2229 Local 28°16.2N 86°16.5W
30244.3 46211.7

Note: on Deep reversing thermometer tripped at a depth of 21 [illegible] in 200 E2.

CRUISE DATA LOG

Station E-3

Cruise 84-6-4

Lat. 28°09.5 N

Long. 86° 25.2 W

Water Depth 875 m

Cast Depth 867 m

Transmissometer in air 4.673

Loran 30 135.8 46 177.1

Time 0125 local

Date 4-17-84

Bucket Temperature 21.0 C

Bottle #	1	2	3	4	5	6	7	8	9	10	11	12
Sample Depth	867.4	857.2	726.7	600.8	500.5	400.2	300.2	255.3	150.2	100.2	50.7	26.4
Reversing Thermometer °C	5.62											[illegible]
Salinity Bottle												
Phosphate µg-at/l	1.42	1.40	1.39	1.39	1.40	1.41	1.15	0.27	[illegible]	[illegible]	[illegible]	0.04
Nitrate µg-at/l	26.9	27.1	26.4	26.8	27.8	25.8	[illegible]	16.3	8.1	4.14	1.59	0
m		26.7	[illegible]	23.2	19.9	16.2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nitrite µg-at/l	0.04	0.04	0.04	0.04	0.04	0.04	0.01	0.01	0.01	0.03	0.20	[illegible]
Oxygen												

CTD up AT 0247 LOCAL 28°08.7N 86°25.7W
30135.6 46174.0

Note: Reversing thermometer was tripped at 859m — closer to bot #2.

CRUISE DATA LOG

Station E-4

Cruise 84-6-4

Lat. 28° 04.4 N

Long. 86° 34.2 W

Water Depth 1420 m

Cast Depth 1414.9 m

Transmissometer in air 61.700

Loran 30036.5 41172.8

Time 1824 LOCAL

Date 4-17-84

Bucket Temperature 19.5 C

Bottle #	1	2	3	4	5	6	7	8	9	10	11	12
Sample Depth	1414.9	1402.3	1298.8	1091.7	900.6	775.3	572.6	400.2	275.0	174.1	99.7	50.8
Reversing Thermometer	4.35											19.245
Salinity Bottle												
Phosphate µg-at/l	1.06	1.08	1.12	1.23	1.34	1.40	1.43	1.18	0.77	[illegible]	0.24	[illegible]
Nitrate µg-at/l	35.9	35.2	[illegible]	34.5	29.5	31.1	32.4	29.2	23.4	16.0	[illegible]	0.18
Silicate µg-at/l	24.1	24.5	24.6	25.2	15.1	24.5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.32
Nitrite µg-at/l	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.01	0.03	0.02	0.03	0.12
Oxygen												

CTD ON BOARD AT 2003 LOCAL 28°04.4N [illegible] W
30026.0 41172.2

NOTE: FOR Reversing Thermometer the 4.35°C temp tripped at 1100 m
that means it probably tripped not at the bottom !!!

CRUISE DATA LOG

Station E-5

Cruise 84-6-4

Lat. 28°01.4 N

Long. 86°38.3 W

Water Depth 2990 m

Cast Depth 2986.4 m

Transmissometer in air 4.689

Loran 29986.5 46[illegible]

Time 1047 LOCAL

Date 4-18-84

Bucket Temperature 21°.4 C

Bottle #	1	2	3	4	5	6	7	8	9	10	11	12
Sample Depth	2986.4	2975.8	2498.9	2100.4	1699.5	1299.6	900.2	599.8	400.1	199.6	99.7	25.8
Reversing Thermometer °C	4.32											20.75
Salinity Bottle												
Phosphate µg-at/l	1.02	1.07	1.10	1.10	1.10	1.18	1.34	1.44	1.10	0.52	0.07	0
Nitrate µg-at/l	28.8	28.3	[illegible]	23.3	23.9	[illegible]	26.4	32.1	28.5	17.9	[illegible]	0.07
Silicate µg-at/l	23.2	25.1	26.7	24.8	25.1	25.4	26.0	22.2	19.1	6.03	2.56	0.74
Nitrite µg-at/l	0.01	0.01	[illegible]	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.02	0
Oxygen												

CTD ON BOARD AT 1417 ~ Loran C down — This are for Sattilite NAV 27°59.1 N 86°40.6 W

The last Sattilite Fix was at 1256 Local 28°00.4 N 86°38.9 W

SEDIMENT CHARACTERIZATION/INFAUNA

SAMPLE COLLECTION

SEDIMENT CHARACTERIZATION/INFAUNA/MEIOFAUNA

Cruise 84·G·4 Date April 4th, 1984 Station W1

311m=PDR

Replicate 1 Wire Depth 344 m Time on Bottom 0520
Position: 27° 39.6 Lat. 93° 45.6 Long 25808.7 46667.0 Loran
Depth of Penetration _____ Temp. Sed _____ Water _____
Sieved Horizons A. 0-5 cm _____ #containers _____ By _____
B. 5-10 cm _____ #containers _____ By _____
C. 10-__ cm _____ #containers _____ By _____
D.
Meiofauna Tubes 5 cm. Reps. 1_ 2 3 4 _____
Seal. Char. Jar _____
Hydrocarbon Jar _____
Description of condition Core contained only a few pieces of hard coral or rock Moving to slightly different position.

No good

311=PDR

Replicate 2 Wire Depth 344m Time on Bottom 0520
Position: 27° 39.6 Lat. 93° 45.6 Long 25808.7 46670 Loran
Depth of Penetration _____ Temp. Sed _____ Water _____
Seived Horizons A. 0-5 cm _____ #containers _____ By _____
B. 5-10 cm _____ #containers _____ By _____
c. 10- Cal _____ #containers _____ By _____
D.
Meiofauna Tubes 5cm Reps. 1 _____ 2 _____ 3 _____ 4 _____
Seal. Char. Jar _____
Hydrocarbon Jar _____
Description of condition same as above

No good

84·G·4 April 4th 1984 W1

Replicate 3 Wire 385' Time on Bottom 0558
Position: 27° 29.5' Lat. 93° 45.' Long. 25810.4 46667.4 Loran
Depth of Penetration _____ Temp. Sed _____ Water _____
Sieved Horizons A. 0-5 cm _____ #containers _____ By _____
B. 5-10 cm _____ #containers _____ By _____
C. 10- cm _____ #containers _____ By _____
D.
Meiofauna Tubes 5cm Reps. 1 _____ 2 _____ 3 _____ 4 _____
Seal. Char. Jar _____
Hydrocarbon Jar _____
Description of condition [illegible]

No good

PDR = 352m.

SAMPLE COLLECTION

SEDIMENT CHARACTERIZATION/INFAUNA/MEIOFAUNA

Cruise 84-G-4 Date April 4th, 1984 Station W1

PDR = 352m

Replicate 1 Wire Depth 385 m Time on Bottom 0556

Position: 27° 39.5 Lat. 93° 47.7 Long 25810.1 46664.4 Loran

Depth of Penetration _____ Temp. Sed _____ Water _____

Sieved Horizons A. 0-5 cm _____ #containers _____ By _____

B. 5-10 cm _____ #containers _____ By _____

C. 10-__ cm _____ #containers _____ By _____

D.

Meiofauna Tubes 5 cm. Reps. 1____ 2____ 3____ 4____

Sed. Char. Jar _____

Hydrocarbon Jar _____

Description of condition core contained only [illegible] rock & hard coral. Moving to new position where sediment is expected.

No good

366m = PDR Station W1

Replicate ~~2~~ 1 Wire Depth 385 m Time on Bottom 0310

Position: 27°35.0' Lat. 93°33.1' Long. 25916.9 46647.4 Loran

Depth of Penetration 31 cm Temp. Sed. 13°C Water 18°C

Seived Horizons A. 0-5 cm ✓ #containers 2 By [illegible]

B. 5-10 cm ✓ #containers 2 By [illegible]

C. 10-20 cm ✓ #containers 4 By [illegible]

D.

Meiofauna Tubes 5cm Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓

Sed. Char. Jar ✓

Hydrocarbon Jar ✓

Description of condition core was slumped on one side probably caused by hitting the bottom at an angle

Cast 1 box 2

366m = PDR Station W1

Replicate ~~2~~ 2 Wire Depth 385 m Time on Bottom [illegible]

Position: 27°35.0' Lat. 93°33.1' Long. [illegible] Loran

Depth of Penetration 28 cm Temp. Sed 14°C Water _____

Sieved Horizons A. 0-5 cm ✓ #containers 2 By _____

B. 5-10 cm ✓ #containers 2 By _____

C. 10-20 cm ✓ #containers 3 By _____

D.

Meiofauna Tubes 5cm Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓

Seal. Char. Jar ✓

Hydrocarbon Jar ✓

Description of condition core was slumped on one side because it hit bottom at an angle

Cast 1 box 1

SAMPLE COLLECTION

SEDIMENT CHA.RACTERIZATION/ INFAUNA/MEIOFAUNA

Cast 2 box 1

Cruise 84.G.4 Date 4.4.84 Station W1

PDR 344 m

Replicate 3 Wire Depth 354 m Time on Bottom 1210

Position: 27°35.2'N Lat. 93°33.0'W Long 25918.3 46648.1 Loran

Depth of Penetration 27 cm Temp. Sed 12°C Water 18.5°C

Sieved Horizons A. 0-5 cm ✓ #containers ____ By ____

B. 5-10 cm ✓ #containers ____ By ____

C. 10-20 cm ✓ #containers ____ By ____

D.

Meiofauna Tubes 5 cm. Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓

Sed. Char. Jar ✓

Hydrocarbon Jar ✓

Description of condition ____

Cast 1 box 1

84 G.4 27°24.9'N 4.7.84 26 004.2 W2 PDR 600 m

Replicate 2 Wire Depth 625 m. Time on Bottom ~~0119~~ 0213

Position: ~~27°25.0'~~ N Lat. 93°20.4'W Long. ~~25603.8~~ 46611.8 Loran

Depth of Penetration ____ Temp. Seal. ____ Water ____

Seived Horizons A. 0-5 cm ____ {lContainers ____ By ____

B. 5-10 cm ____ #containers ____ By ____

C. 10- cm ____ #containers ____ By ____

D.

Meiofauna Tubes 5cm Reps. 1 ____ 2 ____ 3 ____ 4 ____

Seal. Char. Jar ____

Hydrocarbon Jar ____

Description of condition ____

Cast box 2

84.G.4 4.7.84 Stn W2 PDR = 600

Replicate 3 Wire Depth 625 m. Time on Bottom 0213

Position: 27°24.9 Lat. 93°20.4' Long 26004.2 46611.8 Loran

Depth of Penetration ____ Temp. Sed ____ Water ____

Sieved Horizons A. 0-5 cm ____ #containers ____ By ____

B. 5-10 cm ____ #containers ____ By ____

C. 10- cm ____ #containers ____ By ____

D.

Meiofauna Tubes 5cm Reps. 1 ____ 2 ____ 3 ____ 4 ____

Sed. Char. Jar ____

Hydrocarbon Jar ____

Description of condition ____

NO SAMPLE

SAMPLE COLLECTION

SEDIMENT CHARACTERIZATION/INFAUNA/MEIOFAUNA

Cruise 84 G-4 hate 4.7.84 Station W2
PDR 605 m

box 1 — cast

Replicate 1 Wire Depth 615 m Time on Bottom 0855
Position: 27°24.9 Lat. 93°20.5 Long 26003.6 46611.7 Loran
Depth of Penetration 19.5 cm Temp. Sed 8° Water 18°
Sieved Horizons A. 0-5 cm ✓ #containers I By
B. 5-10 cm ✓ #cent-ainers I By
C. 10-19.5 cm ✓ #containers I By
D.
Meiofauna Tubes 5 cm. Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓ no sample in 1 tu
Seal. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition soft mud, no + much sample in box core or tubes

---

cast 2 box

84.G.4 4.7.84 Stn. W2 PDR = 603 m

Replicate 2 Wire Depth 615 m Time on Bottom 12:56
Position: 27°24.9' Lat. 93°20.4' Long. 26003.5 46611.9 Loran
Depth of Penetration 20 cm Temp. Sed. 9° Water 19°
Seived Horizons A. 0-5 cm ✓ #containers By
B. 5-10 cm ✓ #containers By
C. 10-20 cm ✓ #containers By
D.
Meiofauna Tubes 5cm Res. 1 2 3 4
Seal, Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition soft grey mud, good core

---

cast 3 box 1

84.G.4 4.7 84 Stn W2 PDR = 603

Replicate 3 Wire Depth 628 m Time on Bottom 14:06
Position: 27°.24'.9"N Lat. 93°.20'.5" W Long. 2600.2.9/4661.2 Loran
Depth of Penetration cm Temp. Sed 8.5° Water 19°
Sieved Horizons A. 0-5 cm ✓ #containers 2 By
B. 5-10 cm ✓ #containers 1 By
C. 10- cm #containers 2 By
D.
Meiofauna Tubes 5cm Reps. 1 2 ✓ 3 ✓ 4 ✓
Seal. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition soft gray

SAMPLE COLLECTION

SEDIMENT CHARACTERIZATION/ INFAUNA/MEIOFAUNA

Cruise 84-G4 Date 4/8/84 Station G3

cast 1 box 1

PDR 860

Replicate 1 Wire Depth 870 Time on Bottom 13:41
Position: 27 10.6 Lat. 93 19.4 Long 25956.0 46570.7 Loran
Depth of Penetration 32 cm Temp. Sed 6°C Water 20°C
Sieved Horizons A. 0-5 cm ✓ #containers 1 By RA
B. 5-10 cm ✓ #containers 1 By
C. 10- cm ✓ #containers 1 By
D.
Meiofauna Tubes 5 cm. Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓
Seal. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition soft brown mud

cast 1 box 2

84-G4 PDR 860m 4884 Sta. W3

Replicate 2 Wire Depth 870m Time on Bottom 13:41
Position: 27° 10.6' Lat. 93°19.4' Long. 25956.0 46570.7 Loran
Depth of Penetration 32cm Temp. Sed. 6°C Water 18°C
Seived Horizons A. 0-5 cm ✓ #containers 1 By RA
B. 5-10 cm ✓ #containers 1 By
C. 10- cm ✓ #containers 1 By
D.
Meiofauna Tubes 5cm Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓
Seal. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition soft brown mud

cast 2 box 2

PDR 841

Replicate 3 Wire Depth 857 m Time on Bottom 17:21
Position: 27 10.3 Lat. 93 19.3 Long. 25956.2 42569.8 Loran
Depth of Penetration 24 cm Temp. Sed 12°C Water 18°C
Sieved Horizons A. 0-5 cm ✓ #containers 1 By
B. 5-10 cm ✓ #containers 1 By
C. 10- Cm ✓ #containers 1 By
D.
Meiofauna Tubes 5cm Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓
Seal. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition soft mud on top 5-10 cm, hard clay under.

SAMPLE COLLECTION

SEDIMENT CHARACTERIZATION/ INFAUNA/MEIOFAUNA

Cruise 84·G·4 Date 4·9·84 Station W4

PDR=1419m

Replicate 4 Wire Depth 1460m Time on Bottom 0031
Position: 26°44.1'N Lat Lat. 93°19.1'W Long 25860.2 46495.4 Loran
Depth of Penetration 33 cm Temp. Sed 6° Water 20°
Sieved Horizons A. 0-5 cm #containers _____ By _____
B. 5-10 cm _____ #containers _____ By _____
C. 10- cm _____ #cent.ai.ners _____ By _____
D.
Meiofauna Tubes 5 cm Reps. 1 _ 2 . 3 ____ 4 ____
Seal. Char. Jar _____
Hydrocarbon Jar _____
Description of condition slightly slumped on side opposite tube soft, brown mud at surface.

cast 1 box 1 -Q

84·G·4 PDR=1405m. 4·9·84 stn W4

Replicate 5 Wire Depth 1440 m Time on Bot Lom 0444
Position: 26°44.3' La t. 93°19.1 Long. 25861.2 46495.8 Loran
Depth of Pene tration 34cm Temp. Sed. 5° Water 20°
Seived Horizons A. 0-5 cm ✓ #containers _____ By _____
B. 5-10 cm ✓ #containers _____ By _____
C. 10-20 cm ✓ #containers _____ By _____
D.
Meiofauna Tubes 5cm Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓
Sed. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition The top ≈ 5cm was slumped. This is probably due to hitting the side of the ship on the way up. Soft, brown mud.

cast 2 box 1

PDR=1405

Replicate -6 Wire Depth 1440 m Tiime on Bottom 0444
Position: 26°44.3' Lat. 93°19.1' Long. 25861.2 46495.8 Loran
Depth of Penetration 33.5 cm Temp. Sed 5°C Water 18°C
Sieved Horizons A. 0-5 cm ✓ #containers _____ By _____
B. 5-10 cm ✓ #containers _____ By _____
C. 10-20cm ✓ #containers _____ By _____
D.
Meiofauna Tubes 5 Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓
Seal. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition same as above

cast 2 box 2

2123 26161.8 9330.5

25755.9 46418.9

SAMPLE COLLECTION

SEDIMENT CHARACTERIZATION/ INFAUNA/MEIOFAUNA

Cruise 84-G-4 Date 4-9-84 Station W5

PDR = 2652 m.

Replica te 4 Wire Depth 2670 m. Time.. Bottom 20:35

Position: 26.16.7 Lat. 93.19.8 Long 257[illegible]2 / 46417.9 Loran

Depth of Penetration _____ Temp.Sed _____ Water _____

Sieved Horizons A. 0-5 cm _____ #containers _____ By _____

B. 5-1o cm _____ #containers _____ By _____

C. 10- cm _____ #containers _____ By _____

D.

Meiofauna Tubes 5 cm Reps. 1 _ 2 . 3 _ 4 _____

Seal. Char. Jar _____

Hydrocarbon Jar _____

Description of condition WOSHED OUT AT SURFACE NO SAMP

Cast 1 BOX 1

84-G-4 4-9-84 STO W5

PDR = 2524

Replicate 5 Wire Depth 2565 m. Time on Bot tom 2222

Posi Lion: 26° 17.0' Lat. 93° 19.3' Long. 25768.8 46418.4 Loran

Depth of Penetration 2 2 cm Temp. Sed. 5° Water 19

Seived Horizons A. 0-5 cm _____ #containers _____ By _____

B. 5-10 cm _____ #containers _____ By _____

C. 10- cm _____ #containers _____ By '__"

D.

Meiofauna Tubes 5cm Reps. 1 ____ 2 ____ 3 ____ 4 ____

Seal. Char. Jar _

Hydrocarbon Jar _____

Description of condition Not [illegible]

Cast 1 box 1

84-G-4 4-9-84 STO @J'-

PDR = 2524

Replicate 6 Wire Depth 2565 Time on Bottom 2222

Position: 26° 17.0' [illegible] Long. 25768.8 46418.4 Loran

Depth of Penetration 21 Temp. Sed 6° Wa ter 15°

Sieved Horizons A. 0-5 cm _____ #containe rs _____ By _____

B. 5-10 cm #containers _____ By _____

C. 10- cm _____ {/containers _____ By _____

D.

Meiofauna Tubes 5cm Reps. 1 ____ 2 ____ 3 ____ 4 ____

Seal. Char. Jar _____

Hydrocarbon Jar _____

Description of condition SAME AS ABOVE

Cast 1 box 2

SAMPLE COLLECTION

SEDIMENT CHARACTERIZATION/ INFAUNA/MEIOFAUNA

Cruise 84.G.4 Date April 10, 1984 Station W5
PDR = 2470 m.

Replicate 4 Depth 2630m Time on Bottom 0420
Position: 26° 17.2' Lat. 93° 19.2 Long 25770.6 46418.6 Loran
Depth of Penetration 23cm Temp. Sed 5°C Water 19°C
Sieved Horizons A. 0-5cm ✓ #containers 1 small By
B. 5-10 cm ✓ #containers 1 large By
C. 10-20cm ✓ #containers 1 large By
D.
Meiofauna Tubes 5 cm. Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓
Seal. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition soft brown mud; slightly slumped

cast 2 box 1

84.G.4 April 11, 1984 Stn C I

Replicate 1 Wire Depth 357 PDR = 358m Time on Bottom 12:17
Position: 28"0?.3 Lat. 90°15.2 Long. 28038.5 46593.5 Loran
Depth of Penetration 50cm Temp. Sed. 11°C Water 19°C
Seived Horizons A. 0-5 cm ✓ #containers 1 By
B. 5-10 cm ✓ #containers 1 By
C. 10-20cm #containers 1 By
D.
Meiofauna Tubes 5cm Reps. 1 ✓ 2 ✓ 3 ✓ , ✓
Seal. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition sediment was almost to the top of th box core (+ the other core was overflowing so it could not be kept). Soft brown mud

cast 1 box 1

84.G.4 April 11, 1984 Stn C1

Replicate 2 Wire Depth 357 PD Time on Bottom 12:52
Position: 28°03.3' Lat. 90°15.2' Long. 28038.5 46593.9 Loran
Depth of Penetration 45 Temp. Sed 11 Water 19.2
Sieved Horizons A. 0-5 cm ✓ #containers 1 By
B. 5-10 cm ✓ #containers 1 By
C. 10- cm ✓ {containers 1 By
n.
Meiofauna Tubes 5cm Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓
Seal. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition

cast 2 box 1

SAMPLE COLLECTION

SEDIMENT CHARACTERIZATION/INFAUNA/MEIOFAUNA

Cruise 84 G 4 Date April 11 1984 Station C1

cast 2 box 2

Replicate 5 Wire Depth -35"7 Time on Bottom 12:52
Position: 28° 03.3 Lat. 90°15.2 Long 28°03.85 46593.7 Loran
Depth of Penetration 41 Temp. Sed 11.5° Water 18.9
Sieved Horizons A. 0-5 cm ✓ #containers 1 By
B. 5-10 cm ✓ #containers 1 By
C. 10- cm ✓ {/containers 1 By
D.
Meiofauna Tubes 5 cm. Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓
Seal. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition

cast 3

Replicate 5 Wire Depth PDR 348 358 Time on Bottom 16:25
Position: 28°03.3 Lat. 90°15.2 Long. 28°03.5 46593.6 Loran
Depth of Penetration 28.5 cm Temp. Seal. 10.5" Water 17
X Seived Horizons A. 0-5 cm #containers By
B. 5-10 cm #containers By
C. 10- cm #containers By
D.
Meiofauna Tubes 5cm Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓
Seal. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition

cast 3 box 2

Replicate 5 Wire Depth PDR 348 358 Time on Bottom 16:25
Position: 28°03.3 Lat. 90°15.3 Long. 28°03.5 46593.6 Loran
Depth of Penetration 30.0 cm Temp. Sed 11.0° Water 16
Sieved Horizons A. 0-5 cm #containers By
B. 5-10 cm #containers By
C. 10- cm #containers By
D.
Meiofauna Tubes 5cm Reps. 1 ✓ 2 ✓ 3 ✓ 4 Spilled in Deck
Seal. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition

SAMPLE COLLECTION

SEDIMENT CHARACTERIZATION/INFAUNA/MEIOFAUNA

Cruise 18 G-4 Date 4/11/84 Station C-1

Replicate ~~4~~ 6 Wire Depth 348 Time on Bottom 1649
Position: 2803.3 Lat. 9015.6 Long 28 [illegible] 45 [illegible] Loran
Depth of Penetration 30 Temp. Sed 11 Water 88.5
Sieved Horizons A. 0-5 cm ✓ #containers 1 By
B. 5-10 cm ✓ {Containers 1 By
C. 10- cm " <containers 1 By
D.
Meiofauna Tubes 5 cm. Reps. 1 2 ✓ 3 ✓ 4
Seal. Char. Jar ✓ } 1 lost used 3 to replace
Hydrocarbon Jar ✓
Description of condition

Cost 4

Replicate 5 Wire Depth Time on Bottom
Position: Lat. Long Loran
Depth of Penetration Temp. Sed. Water
Seived Horizons A. 0-5 cm #containers By
B. 5-10 cm #containers By
C. 10- cm #containers By
D.
Meiofauna Tubes 5cm Reps. 1 2 3 4
Seal. Char. Jar
Hydrocarbon Jar
Description of condition

Replicate 6 Wire Depth Time on Bottom
Position: Lat. Long. Loran
Depth of Penetration Temp. Sed Water
Sieved Horizons A. 0-5 cm #containers By
B. 5-10 cm #containers By
C. 10- cm #containers By
D
Meiofauna Tubes 5cm Reps. 1 2 3 4
Seal. Char. Jar
Hydrocarbon Jar
Description of condition

SAMPLE COLLECTION

SEDIMENT CHARACTERIZATION/INFAUNA/MEIOFAUNA

Cruise 84-64 Date 11 April Station C2

Box 1 CAST 1

Replicate 1 PDR = 595 Wire Depth 605 Time on Bottom 2054
Position: 27°54.4 Lat. 90°06.2 Long 28095.5 46558.7 Loran
Depth of Penetration 32.0 Temp. Sed 7 Water 18.5°C
Sieved Horizons A. 0-5 cm #containers By
B. 5-10 cm ✓ #containers 7 By
C. 10-_ cm ✓ #containers 1 By
D.
Meiofauna Tubes 5 cm Reps. 1 / 2 ✓ 3 4. spilled
Seal. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition

Box 2 CAST 2

Replicate 2 PDR 595 Wire Depth 605 Time on Bottom 20:54
Position: 27°54.4 Lat. 90°06.2 Long. 28095.5 46558.7 Loran
Depth of Penetration 28.0 Temp. Sed. 7° Water 17°C
Seived Horizons A. 0-5 cm #containers By
B. 5-10 cm //containers By
C. 10- cm #containers By
D.
Meiofauna Tubes 5cm Reps. 1 2 3 4
Seal. Char. Jar
Hydrocarbon Jar
Description of condition

Box 3 CAST 3

Replicate 3 PDR = 595 Wire Depth 605 Time on Bottom 23:17
Position: 27°54.5 Lat. 90°06.2 Long. 28095.4 46555.0 Loran
Depth of Penetration 310 cm Temp. Sed 7° C. Water 19 C
Sieved Horizons A. 0-5 cm #containers By
B. 5-10 cm #containers By
C. 10- cm #containers By
D.
Meiofauna Tubes 5cm Reps. 1 2 3 4
Seal. Char. Jar
Hydrocarbon Jar
Description of condition

SAMPLE COLLECTION

SEDIMENT CHARACTERIZATION/INFAUNA/MEIOFAUNA

Cruise 84-G-4 Date 4/11/84 Station C -A

Replicate 4 Wire Depth PDR 595 605 Time on Bottom 23:17
Position: 27°54.5 Lat. 90°06.2 Long 28095.4 46555.0 Loran
Depth of Penetration 30.0cm Temp. Sed 7°c Water 17°c
Sieved Horizons A. 0-5 cm #containers By
B. 5-10 cm #containers By
C. 10- cm //containers By
D.
Meiofauna Tubes 5 cm Reps. 1 2 3 4
Seal. Char. Jar
Hydrocarbon Jar
Description of condition

Box 1 Cont

84.G.4 April 12, 1984 Stn C2 PDR=605

Replicate 5 Wire Depth 617m Time on Bottom 0311
Position: 27° 54.3' Lat. 90° 05.9' Long. 28088.3 46548.5 Loran
Depth of Penetration 32cm Temp. Sed. 7°C Water 19°
Seived Horizons A. 0-5 cm ✓ #containers 1 By
B. 5-10 cm ✓ #containers 1 By
C. 10-20cm ✓ #containers 1 By
D.
Meiofauna Tubes 5cm Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓
Seal. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition soft, brown mud becoming thicker at bottom

Box 2 Cont

84.G.4 April 12, 1984 Stn. C2 PDR=605

Replicate 6 Wire Depth 617m Time on Bottom 0311
Position: 27° 54.3' Lat. 90° 05.9' Long. 28088.3 [illegible] Loran
Depth of Penetration 32cm Temp. Sed 7°C Water 17°
Sieved Horizons A. 0-5 cm ✓ #containers 1 By
B. 5-10 cm ✓ #containers 1 By
C. 10-20cm ✓ #containers 1 By
D.
Meiofauna Tubes 5cm Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓
Sed. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition soft, brown mud becoming thicker at bottom

SAMPLE COLLECTION

SEDIMENT CHARACTERIZATION/INFAUNA/MEIOFAUNA

Cruise 84-G-4 Date April 12, 1984 Station C3

box 1 cast

PDR = 834m.

Replicate ~~4~~ 1 Wire Depth 840m. Time on Bottom 0937
Position: 27°49.2' Lat. 90°07.1' Long 28051.9 4652 o.D. Loran
Depth of Penetration 41cm Temp. Sed 7°C Water 19.5°C
Sieved Horizons A. 0-5 cm ✓ #containers 1 By
B. 5-10 cm ✓ #containers 1 By
C. 10-20cm ✓ #containers 1 By
D.
Meiofauna Tubes 5 cm. Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓
Seal. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition good ore essentially no slumping soft brown mud

box 2 cast

84-G-4 April 12, 1984 Stn C3

PDR = 834m

Replicate ~~5~~ 2 Wire Depth 840m Time on Bottom 0937
Position: 27°49.2' Lat. 90°07.1' Long. 28051.9 4652 6.0 Loran
Depth of Penetration 35cm Temp. Sed. 7°C Water 12°C
Sieved Horizons A. 0-5 cm. ✓ #containers 1 By
B. 5-10 cm ✓ #containers 1 By
C. 10-20cm ✓ #containers 1 By
D.
Meiofauna Tubes 5cm Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓
Seal. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition good box, essentially unslumped soft brown mud

cast 2 box

84-G-4 April 12, 1984 Stn C3

PDR 8440

Replicate ~~6~~ 3 Wire Depth 854m Time on Bottom 1022
Position: 27°49.4 Lat. 90°07.0 Long. 28 5 3.8 4652 0 Loran
Depth of Penetration 46 0cm Temp. Sed 5.5°C Water 20°C
Sieved Horizons A. 0-5 cm #containers By
B. 5-10 cm #containers By
C. 10- cm #containers By
D.
Meiofauna Tubes 5cm Reps. 1 2 3 4
Seal. Char. Jar
Hydrocarbon Jar
Description of condition

SAMPLE COLLECTION

SEDIMENT CHARACTERIZATION/ INFAUNA/MEIOFAUNA

Cruise 84-G-4 Date April 12, 1984 Station C3

CAST 2 Box 2

Replicate 4 Wire Depth PDR 840 854 Time on Bottom 12:22
Position: 27'49.4 Lat. 90° 07.0 Long 28053.8 46530.1 Loran
Depth of Penetration 410 cm Temp. Sed 6 °C Water 18.5
Sieved Horizons A. 0-5 cm #containers By
B. 5-10 cm {/containers By
C. 10- cm {lContainers By
D.
Meiofauna Tubes 5 cm Reps. 1 2 3 4
Seal. Char. Jar
Hydrocarbon Jar
Description of condition

CAST 2 Box 1

Replicate 5 Wire Depth PDR 841 860 m Time on Bottom 20:12
Position: 27°49.6 Lat. 90°07.1 Long. 28054.1 46530.4 Loran
Depth of Penetration 42.0 cm Temp. Seal. 5°C Water 19.5
Seived Horizons A. 0-5 cm #containers By
B. 5 10 cm #containers By
C. 10- cm #containers By
D.
Meiofauna Tubes 5cm Reps. 1 2 3 4
Seal. Char. Jar
Hydrocarbon Jar
Description of condition

CAST 2 Box 2

Replicate 6 Wire Depth PDR 841 860 m Time on Bottom 20:12
Position: 27' 49.6 Lat. 90° 07.1 Long. 28054.1 46530.4 Loran
Depth of Penetration 42.0 cm Temp. Sed 6° C Water 18.5°C
Sieved Horizons A. 0-5 cm #containers By
B. 5-10 cm #containers By
C. 10- cm #containers By
D.
Meiofauna Tubes 5cm Reps. 1 2 3 4
Seal. Char. Jar
Hydrocarbon Jar
Description of condition

SAMPLE COLLECTION

SEDIMENT CHARACTERIZATION/ INFAUNA/MEIOFAUNA

Cruise 84·G·4 PDR=1350 my the 13th Station C4

cast 1 box 1

Replicate 1 Wire Depth 1415 m Time on Bottom 0239
Position: 28.4' Lat. 89°46.8 Long 28150.5 46417.5 Loran
Depth of Penetration 21.5cm Temp. Sed 7°C Water 20°C
Sieved Horizons A. 0-5 cm ✓ #containers 1 By
2 B. 5-10 cm ✓ #containers 1 By
C. 10-20 cm ✓ #containers 2 By
D.
Meiofauna Tubes 5 cm Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓
Seal. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition soft, brown mud. slightly slumped on two sides

cast 1 box 2

84-G-4 4-13-84 C4 PDR= 139

Replicate 2 Wire Depth 1415 m Time on Bottom 0239
Position: 27°28.4' Lat. 89°46.8' Long. 28150.5 46417.5 Loran
Depth of Penetration 23cm Temp. Sed. 7°C Water 18°C
Seived Horizons A. 0-5 cm ✓ #containers 1 By
B. 5-10 cm ✓ #containers 1 By
C. 10-20cm ✓ #containers 2 By
D.
Meiofauna Tubes 5cm Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓
Sed. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition same as above

cast 2 box 1

84·G 4 4·13·84 C4 PDR=1394m

Replicate 3 Wire Depth 1410m Time on Bottom 0713
Position: 27° 28.3' Lat. 89° 47.0' Long. 28147.7 46417.0 Loran
Depth of Penetration 34cm Temp. Sed 5.5°C Water 19.5°C
Sieved Horizons A. 0-5 cm ✓ #containers 1 By
B. 5-10 cm ✓ #containers 1 By
C. 10-20cm ✓ #containers 1 By
D.
Meiofauna Tubes 5cm Reps. 1 2 ✓ 3 ✓ 4 ✓
Seal. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition soft brown mud; good surface; no slumping

SAMPLE COLLECTION

SEDIMENT CHARACTERIZATION/INFAUNA/MEIOFAUNA

Cruise 84 G [redacted] C4

Cast 2 box 2

Replica te 14 Wire Depth 1410m Time on Bottom 0713
Position: 27°28.3' Lat. 89°47.0' Long 28147.7 46417.0 Loran
Depth of Penetration 36cm Temp. Sed 5°C Water 17°C
Sieved Horizons A 0-5 cm 0-5 cm ✓ #containers 1 By
B. 5-10 cm ✓ #containers 1 By
C. 10-20 cm ✓ #containers 1 By
D.
Meiofauna Tubes 5 cm Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓
Seal. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition soft brown mud; slumped on one side

Cast 3 box 1

84.G.4 4.13.84 Stn C4 PDR 1386

Replicate 25 Wire Depth 1414m Time on Bottom 1306
Position: 27°28.4' Lat. 89°46.9' Long. 28149.0 46417.5 Loran
Depth of Penetration 31.0 Temp. Sed. 4 Water 5.0°C
Seived Horizons A. 0-5 cm ✓ #containers 1 By
B. 5-10 cm ✓ {Containers 1 By
c. 10-_ cm ✓ #containers 2 By
D.
Meiofauna Tubes 5cm Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓
Seal. Char. Jar ✓
Hydrocarbon Jar .
Description of condition brown mud slumped on 1 side

Cast 3 Box 2

PDR = 1386

Replicate 26 Wire Depth 1414 Time on Bottom 1300
Position: 27°28.4 Lat. 89°46.9 Long. 28149.0 46417.5 Loran
Depth of Penetration 23.0 Temp. Sed 8 Water 17.5°C
Sieved Horizons A. 0-5 cm ✓ #containers 1 By
B. 5-10 cm ✓ #containers 1 By
C. 10- _ Cm ✓ #containers 2 By
D.
Meiofauna Tubes 5cm Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓
Seal. Char. Jar
Hydrocarbon Jar ✓
Description of condition brown mud, slumped on 1 side

SAMPLE COLLECTION

SEDIMENT CHARACTERIZATION/ INFAUNA/MEIOFAUNA

Cruise 84 G4 Date 13 Apr Station C5

PDR 2377

Replicate 1 Wire Depth 2420 Time on Bottom 2202
Position: 26 56.9 Lat. 89 36.2 Long 28 1021 46267.5 Loran
Depth of Penetration 42 cm Temp. Sed 10 $ ' " - - 2 2
Sieved Horizons A. 0-5 cm ✓ #containers 1 By
B. 5-10 cm ✓ #containers 1 By
C. 10-_ cm ✓ #containers 1 By
11.
Meiofauna Tubes 5 cm. Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓
Seal. Char. Jar ✓
Hydrocarbon Jar ✓ } 1 tube full of sed.
Description of condition

1 Box

---

84 G 4 PDR 2400m. Stn C5

Replicate 2 Wire Depth 2470m Time on Bottom 0038
Position: 26° 57.7' Lat. 89° 34.2' Long. 28124.2 46267.6 Loran
Depth of Penetration 42cm Temp. Sed. 10°C Water 21°C
Seived Horizons A. 0-5 cm ✓ #containers 1 By
B. 5-10 cm ✓ #containers 1 By
C. 10-20 cm ✓ #containers 1 By
D.
Meiofauna Tubes 5cm Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓
Seal. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition very soft, brown mud. Good surface, not slumped

Cast 2 Box

---

84 G 4 PDR = 2400m Stn C5

Replicate 3 Wire Depth 2470m Time on Bottom 0038
Position: 26° 57.7' Lat. 89° 34.2' Long. 28124.2 46267.6 Loran
Depth of Penetration 41 cm Temp. Sed 5°C Water 19.5°C
Sieved Horizons A. 0-5 cm ✓ #containers 1 By
B. 5-10 cm ✓ #containers 1 By
C. 10-20 cm ✓ #containers 1 By
D.
Meiofauna Tubes 5cm Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓
Seal. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition same as above

Cast 2 Box

SAMPLE COLLECTION

SEDIMENT CHARACTERIZATION/INFAUNA/MEIOFAUNA

Cast 3 box 1

Cruise 84-G-4 Date April 14, 1984 Station C5

PDR 2377 m

Replicate 1 Wire Depth 2429 Time on Bottom 0503

Position: 26° 57.9' Lat. 89° 35.1' Long 28115.6 46268.0 Loran

Depth of Penetration 44 cm Temp. Sed 5°C Water 20°C

Sieved Horizons A. 0-5 cm ✓ #containers ____ By ____

B. 5-10 cm ✓ #containers ____ By ____

C. 10-20 cm ✓ #containers ____ By ____

D.

Meiofauna Tube 5 cm. Reps. 1s. 1 ✓ 2 ✓ 3 ✓ 4 ✓

Seal. Char. Jar ✓

Hydrocarbon Jar ✓

Description of condition soft brown mud good surface

Cast 3 box 2

84-G-4 April 14th Stn C5 PDR = 2377 m

Replicate 2 Wire Depth 2429 m Time on Bottom 0503

Position: 26° 57.9' Lat. 89° 35.1' Long. 28115.6 46268.0 Loran

Depth of Penetration 46 cm Temp. Sed. 5°C Water 19°C

Seived Horizons A. 0-5 cm ✓ #containers ____ By ____

B. 5-10 cm ✓ #containers ____ By ____

C. 10-20 cm ✓ #containers ____ By ____

D.

Meiofauna Tubes 5cm Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓

Sed. Char. Jar ✓

Hydrocarbon Jar ✓

Description of condition soft, brown mud.. good surface

Cast 4 Apr. 14 Stn C-5 box 2

Replicate 3 Wire Depth 2420 Time on Bottom 2036

Position: 2657.6 Lat. 89 35.# Long. 28115.4 46268.4 Loran

Depth of penetration 34.0 Temp. Sed 7° Water 19°C

Sieved Horizons A. 0-5 cm ✓ #containers 1 By ____

B. 5-10 cm ✓ #containers 1 By ____

C. 10-_ cm ✓ #containers --f-.--- By -----

D.

Meiofauna Tubes 5cm Reps. 1 ✓ 2 — 3 ✓ 4 ✓

Seal. Char. Jar ✓

Hydrocarbon Jar ____

Description of condition ____

SAMPLE COLLECTION

SEDIMENT CHARACTERIZATION/ INFAUNA/MEIOFAUNA

Cruise 84-G-4 Date 4/15 Station E 1

PDR = 347m

Replicate 1, Wire Depth 365 Time on Bottom 0315
Position: 2'6027.7 Lat. 86° 01.0 Long 30428.8 46238.3 Loran
Depth of Penetration 15.0, -1 Temp. Sed 10°C Water 18°C
Sieved Horizons A. O-5 cm ✓ #containers By
B. 5-10 cm ✓ #containers 1 By
C. 10-_ cm ✓ #containers 1 By
n.
Meiofauna Tubes 5 cm. Reps. 1 ✓ 2 3 4 lost
Seal. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition Sandy/Brown bags on 2 of lost

2 box 1 cast 2 box 2 cast

84-G-4 PDR = 357 4-16-84 Stn E1

Replicate 2 Wire Depth 372m Time on Bottom 0350
Position: 28°27.6' Lat. 86° 01.8' Long. 30423.3 46240.9 Loran
Depth of Penetration 26cm Temp. Sed. 11°C Water 18°C
Seived Horizons A. 0-5 cm ✓ #containers 1 1g By
B. 5-10 cm ✓ #containers ↓ By
C. 10-20 cm ✓ #containers ↓ By
D.
Meiofauna Tubes 5cm Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓
Sed. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition Slightly slumped on one side but we were lucky to get it w/ the seas kicking up. Grey, sandy sediment.

84-G-4 PDR = 357m 4-16-84 Stn. E1

Replicate 3 Wire Depth 372m Time on Bottom 0350
Position: 28° 27.6' Lat. 86° 01.8' Long 30423.3 46240.9 Loran
Depth of Penetration 23cm Temp. Sed 11°C Water 17°C
Sieved Horizons A. 0-5 cm ✓ #containers 1 1g By
B. 5-10 cm ✓ #containers ↓ By
C. 10-20 cm ✓ #containers ↓ By
D.
Meiofauna Tubes 5cm Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓
Sed. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition same as above

SAMPLE COLLECTION

SEDIMENT CHARACTERIZATION/INFAUNA/MEIOFAUNA

Cast 2 Bot 1 (first cast no good)

Cruise 84.G.4 **Date** 4/16/84 **Station** E2

Replicate 1 Wire PDR 625m Depth 643m Time on Bottom 14:01
Position: 28°16.7 Lat. 86°15.1 Long 30256.1 46211.9 Loran
Depth of Penetration 22.0 cm Temp. Seal 7°C Water 19°C
Sieved Horizons A. 0-5 cm ✓ #containers 2 By
B. 5-10 cm ✓ #containers 1 By
C. 10-_ cm ✓ #containers 1 By
D.
Meiofauna Tubes 5 cm. Reps. 1 ✓ 2 ✓ 3 4
Seal. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition

Cast 2 Bot 2

Replicate 2 Wire PDR 625m Depth 643 m Time on Bottom 14:01
Position: 28°16.7 Lat. 86°15.1 Long. 30256.1 46211.9 Loran
Depth of Penetration 21.0 cm Temp. Sed. 7°C Water 18°C
Seived Horizons A. 0-5 cm ✓ #/containers 1 By
B. 5-10 cm ✓ {/containers 1 By
C. 10-_ cm ✓ //containers 1 By
D.
Meiofauna Tubes 5cm Reps. 1 2 3 4
Seal. Char. Jar
Hydrocarbon Jar - - + = - -
Description of condition

Cast 3 (not good)

Replicate 3 Wire 630 wire 650m Time on Bottom 23:32
Position: 28°16.6 Depth Lat. 86°15.2 Long. 30 255.6 46311.0 Loran
Depth of Penetration 45.0 cm Temp. d 8°C Water 18°C
Sieved Horizons A. 0-5 cm ✓ #containers 1 By
B. 5-10 cm ✓ #containers 1 By
C. 10-_ cm ✓ #containers 4 By
D.
Meiofauna Tubes 5cm Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓
Seal. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition good undisturbed

SAMPLE COLLECTION

SEDIMENT CHARACTERIZATION/ INFAUNA/MEIOFAUNA

Cruise 84 G.4 Date April 17, 1984 Station E3
PDR = 845

cast 1 box 1

Replicate 1 Wire Depth 864 Time on Bottom 0422
Position: 28° 09.6' Lat. 86° 25.0 Long 30137.3 46196.6 Loran
Depth of Penetration 31cm Temp. Sed 6°C Water 20°C
Sieved Horizons A. 0-5 cm ✓ #containers 1 By
B. 5-10 cm ✓ #containers By
C. 10-20cm ✓ #containers 1 By
D.
Meiofauna Tubes 5 cm. Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓
Sed. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition Soft, brown mud at surface becoming grey and sandier at the bottom

---

84.G.4 PDR = 845m 4.17.84 Sta E3

cast 1 box 2

Replicate 2 Wire Depth 864m Time on Bottom 0422
Position: 28° 09.6' Lat. 86°25.0' Long. 30137.3 46196.1 Loran
Depth of Penetration 30.5cm Temp. Sed. 7°C Water 18°C
Seived Horizons A. 0-5 cm ✓ #containers 1 By
B. 5-10 cm ✓ #containers By
C. 10-20 cm ✓ #containers 1 By
D.
Meiofauna Tubes 5cm Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓
Sed. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition Same as above

84-G.4 PDR = 847 4/17/84 Sta E3

cast 2 box 1

Replicate 3 Wire Depth 875m. Time on Bottom 0828
Position: 28° 09.5 Lat. 86° 25.2 Long. 30135.9 46196.2 Loran
Depth of Penetration 26cm Temp. Sed 6°C Water 19°C
Sieved Horizons A. 0-5 cm #containers By
B. 5-10 cm #containers By
C. 10-__ cm #containers By
D.
Meiofauna Tubes 5cm Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓
Sed. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition Soft brown mud at surface becoming grey w/ more sand w/ depth.

SAMPLE COLLLCTION

SEDIMENT CHARACTERIZATION/INFAUNA/t'IEIOJ'AUNA

Box I

Cruise 84-G-4 Date Aug 17, 1984 Station Z-"'

1330 m

Replicate 1 Wire Depth 1338 Time on Bottom 1743
Position: 28° 04.3 Lat. 86° 34.4 Long 30037.8 40193.4 Loran
Depth of Penetration 17.0 cm Temp. Sed 5°C Water 15°C
Sieved Horizons A. 0-5 cm #containers 1 By
B. 5-1o cm - - % - - - #containers 1 By
C. 10-__ cm #containers 1 By
D.
Meiofauna Tubes 5 cm. Reps. 1 2 3 4
Seal. Char. Jar
Hydrocarbon Jar
Description of condition Soft mud over hard clay - foram

Box 1

Replicate 2 Wire Depth 1410 Time on Bottom 2300
Position: 28°04.25 Lat. 86°34.75 Long. 30031.0 40137 Lora
Depth of penetration Temp. Seal Water
Seived Horizons A. 0-5 cm #containers 1 By
B. 5-10 cm #containers 1 By
c. 10-_ cm #containers 1 By
D.
Meiofauna Tubes 5cm Reps. 1 2 3 4
Seal. Char. Jar
Hydrocarbon Jar
Description of condition

1335 PDP

Replicate 3 'ire Depth 1374 Time on Bottom 0012
Position: Lat. 28 04.1 Long. 86 34.4 30033 Lora
Depth of -Penetration Temp. Sed Water
Sieved Horizons A. 0-5 cm #containers 1 By albu / contents
B. 5 10 cm #containers By
C. 10- cm #containers By
D.
Meiofauna Tubes 5cm Rep. 1 2 3 4
Seal. Char. Jar
Hydrocarbon Jar
Description of condition Sample washed out of surface but retained

SAMPLE COLLECTION

SEDIMENT CHARACTERIZATION/INFAUNA/MEIOFAUNA

Cruise 84-G -4 Date 4/18/84 Station E 5

PDR 2853m

Replicate 1 Wire Depth 2987m Time on Bottom 15:51
Position: 28° 00.4 Lat. 86° 38 -9 Long 29976.0 46181.6 Loran
Depth of Penetration 20.0 cm Temp. Sed 5°C Water 18°C
Sieved Horizons A. 0-5 cm ✓ #containers _ By _____
B. 5-10 cm ✓ #containers 1 By _____
C. 10- cm ✓ #containers 1 By _____
D.
Meiofauna Tubes 5 cm Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓
Seal. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition Washed out in surface & U not recovered

CAST 1 Box 8

PDR 2853m

Replicate 2 Wire Depth 2987m Time on Bottom 15:51
Position: 9° 00.4 Lat. 86°-3.8 Long. 29976.0 46181.6 Loran
Depth of Penetration 26.0 cm Temp. Seal. 5°C Water ter 17°C
Seived Horizons A. 0-5 cm ✓ #containers 1 By _____
B. 5-10 cm ✓ {/containers 1 By _____
C. 10- cm ✓ #containers 1 By _____
D.
Meiofauna Tubes 5cm Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓
Sed. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition Good Brown Mud, [illegible] clay under

CAST 1 Box 8

Replicate 3 Wire Depth _____ Time on Bottom _____
Position: _____ Lat. _____ Long. _____ _____ Loran
Depth of Penetration _____ Temp. Sed _____ Water _____
Sieved Horizons A. 0-5 cm _____ #containers _____ By _____
B. 5-10 cm _____ #containers _____ By _____
C. 10-_ cm _____ #containers _____ By _____
D.
Meiofauna Tubes 5cm Reps. 1 _____ 2 _____ 3 _____ 4 _____
Seal. Char. Jar _____
Hydrocarbon Jar _____
Description of condition _____

SAMPLE COLLECTION

SEDIMENT CHARACTERIZATION/INFAUNA/MEIOFAUNA

Cruise 84-G-4 Date 18 Apr 84 Station E-5

2800 PDR

Replicate ~~1~~ 3 Wire Depth 2930 m Time on Bottom -0-

Position: 28° 00.5 Long 29976.1 46192.6 Loran

Depth of Penetration Lat 86° 38.9 Temp. Sed Water

Sieved Horizons A. 0-5 cm ✓ #containers 1 By

B. 5-10 cm ✓ #/containers 1 By

C. 10- cm - #containers By

D.

Meiofauna Tubes 5 cm Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓

Seal. Char. Jar ✓

Hydrocarbon Jar ✓

Description of condition

2800 PDR

Replicate ~~2~~ 4 Wire Depth 2930 Time on Bottom 2000

Position: 28° 00.5 Lat. 86° 38.9 Long. 29976.1 46192.6 Loran

Depth of Penetration 32 cm Temp. Seal. 5 Water 17

Seived Horizons A. 0-5 cm ✓ #containers 1 By

B. 5-10 cm ✓ #containers I By

C. 10- cm ✓ #containers 1 By

D.

Meiofauna Tubes 5cm Reps. 1 ✓ 2 ✓ 3 ✓ 4

Seal. Char. Jar ✓

Hydrocarbon Jar ✓

Description of condition

84-G-4 A 5m. Stn. E4

Replicate ~~3~~ 4 Wire Depth Time on Bottom 1058

Position: 28° 04.4 Long 30031.2 46194.8 Loran

Depth of Penetration 1 5 Water 19

Sieved Horizons A. 0-5 cm By

B. 5-10 cm ✓ #containers By

C. 10-20 cm #containers By

D.

Meiofauna Tubes 5cm Reps. 1 ✓ 2 ✓ 3 ✓ 4 ✓

Seal. Char. Jar ✓

Hydrocarbon Jar ✓

Description of condition soft, light brown mud

Box 1 Box 2 Box 4

SAMPLE COLLECTION

SEDIMENT CHARACTERIZATION/ INFAWA/~IOFAUNA

Cruise 84.G.4 Date April 19, 1984 Station Stn. E4
PDR = 1358m.

Cast 4 box 2

Replica te 1 Wire Depth 1415m Time on Bottom 1058
Position: 28°04.4 Lat. 86°34.8 Long 30031.2 41019 4.8 Loran
Depth of Penetration 20cm Temp. Sed 5 Water 6
Sieved Horizons A. 0-5 cm ✓ #containers _____ By _____
B. 5-10 cm ✓ #containers _____ By _____
C. 10-20 cm ✓ #containers _____ By _____
D. ✓
Meiofauna Tubes m/Rep Re s. 1 _ 2 . 3 ✓ 4 ✓
Seal. Char. Jar ✓
Hydrocarbon Jar ✓
Description of condition soft, light brown mud

Replicate 2 Wire Depth _____ Time on Bottom _____
Position: _____ Lat. _____ Long. _____ Loran
Depth of Penetration _____ Temp. Seal. _____ Wate r _____
Seived Horizons A. 0-5 cm _____ #containers _____ By _____
B. 5-10 cm _____ #containers _____ By _____
C. 10-__ cm _____ #containers _____ By _____
D.
Meiofauna Tubes 5cm Reps. 1 _____ 2 _____ 3 _____ 4 _____
Seal. Char. Jar _____
Hydrocarbon Jar _____
Description of condition _____

Replicate 3 Wire Depth _____ Time on Bottom _____
Position: _____ Lat. _____ Long. _____ Loran
Depth of Penetration _____ Temp. Sed _____ Water _____
Sieved Horizons A. 0-5 cm _____ #containers _____ By _____
B. 5-10 cm _____ #containers _____ By _____
C. 10-__ cm _____ #containers _____ By _____
D.
Meiofauna Tubes 5cm Reps. 1 _____ 2 _____ 3 _____ 4 _____
Seal. Char. Jar _____
Hydrocarbon Jar _____
Description of condition _____

OTTER TRAWL DATA RECORDS

SAMPLE COLLECTION - OTTER TRAWL

Cruise 84.G.4 **Date** 4/4/84 **Station** W1

DEPLOYMENT: Time 13:35 **Lat.** 27.36.4 **Long.** 93.33.2 W **Loran** [illegible]

Depth 190 FATHOMS **Heading** 330 SPEED 3 KNOTS [illegible]

ON BOTTOM: **Heading** 330 **Speed** 3 KNOTS

END: **Time** 15:08 **Lat.** 2738.8 **Long.** [illegible] **Loran** [illegible]

START: **Time** 14:00 **Lat.** 2737.0N **Long.** 9333.6W **Loran** 25920.1 / 46655.3

Duration _____ Distance _____

RECOVERY: **Time:** 15:21 **ON BOARD**

WIRE – 800 m

DESCRIPTION OF CONTENTS: **Photographed?** yes

wide selection of fish, crustaceans, sponges, [illegible]
many shells

Preservation for Taxonomy: 10 **Buckets w/formalin;** 2 **w/alcohol**

Any counted & discarded? 5 gal shell hash (clams

Aliquots for hydrocarbons **Aluminum foil & frozen** Whole

Species	**# Individual /sample**	**Samples**

SAMPLE COLLECTION - OTTER TRAWL

Cruise 84-G-4 Date APR. 7, 1984 Station W-2

DEPLOYMENT: Time local 0500 Lat. 27°27.0 Long. 93°21.5 Loran 26001.3

Depth 588 m Heading 155° 3knots 46618.1

ON BOTTOM: Heading 153°-156° Speed 3.1 knts

END: Time ~~0440~~ 0500 Lat. 27° ~~23.7~~ 22.6' Long. 93° ~~16.6~~ 18.1' Loran ~~26015.7~~ 26017.7 ~~46605.8~~ 46605.5

START: Time 0338 Lat. 27 25.7 Long. 93°20.4'W Loran 26006.7

153° 3.1 knts 46613.9

Duration ~~62~~ 82 min Distance

RECOVERY: Time: 0520 ON BOARD

wire 1332

DESCRIPTION OF CONTENTS: lagic Photographed? L

only 6 fish - will try again towing in [illegible]

Preservation for Taxonomy: _____ Buckets w/formalin; _____ w/alcohol

Any counted & discarded? _____

Aliquots for hydrocarbons - Aluminum foil & frozen whole,

Species	# Individual/sample	Samples

SAMPLE COLLECTION - OTTER TRAWL

Cruise 84.G.4 Date 4.7.84 Station W2

DEPLOYMENT: Time 0615 Lat. 27°24.5′ Long. 93°19.5′ Loran 26011.5

Depth 560 m Heading 321° 3Knots 46610.0

ON BOTTOM: Heading 321° Speed 3 Knots

END: Time ~~0720~~ 0730 Lat. ~~27°26.6~~ 27 27.3′ Long. ~~93°20.5~~ 93 20.9′ Loran ~~26001.7~~ 26009.2 ~~46610.0~~ 46618.6

START: Time 0640 Lat. 27°25.5 Long. 93°20.0 Loran 26010.6 46613.1

Duration ~~40~~ min. Distance

RECOVERY: Time: ON BOARD

wire 1160 m

DESCRIPTION OF CONTENTS: Photographed?

The wire for one of the doors was broken during the tow. No sample obtained. The door was not lost because the ropes held.

Preservation for Taxonomy: Buckets w/ formalin; w/alcohol

Any counted & discarded?

Aliquots for hydrocarbons - Aluminum foil & frozen who 1 e.

Species	# Individual/ sample	Samples

SAMPLE COLLECTION - OTTER TRAWL

Cruise 84-G-4 Date 7 Apr 1984 Station W-2

DEPLOYMENT: Time 1419 Lat. 27°24.3' Long. 93°20.5' Loran 2[illegible]

Depth 550 m Heading 128° [illegible]

ON BOTTOM: Heading 128° Speed [illegible]

END: Time 1552 Lat. 27° 23.5 Long. 93°16.3' Loran 26040.6 46605.4

1225 m towed START: Time 1450 Lat. 27°24.5 Long. 93°18.9 Loran 26017 46601

Duration 62 min Distance

RECOVERY: Time: ON BOARD

wire out 1[illegible]

DESCRIPTION OF CONTENTS: Photographed? ✓

few individuals of several species

Preservation for Taxonomy: Buckets w/formalin; w/alcohol

Any counted & discarded? NO

Aliquots for hydrocarbons - Aluminum foil &frozen whole.

Species	# Individual/sample	Samples

SAMPLE COLLECTION - OTTER TRAWL

Cruise 84-G-4 Date 8 Aug 84 Station W-3

DEPLOYMENT: Time 0740 Lat. 27 07.0 Long. 93 37.5 Loran 25517.0 / 46564.6

Depth 74/.5 m Heading 034 4.0 kts

ON BOTTOM: Heading 034° Speed 3.5 kts

END: Time 1051 Lat. 27 11.7 Long. 93 19.6 Loran 25455.1 / 46574.0

START: Time 0812 Lat. 27 08.4 Long. 93 23.6 Loran 25405.0 / 46567.4

Duration _____ Distance _____

RECOVERY: Time: _____ ON BOARD

wire 1883

DESCRIPTION OF CONTENTS: Photographed? f.'''

Preservation for Taxonomy: 3 Buckets w/formalin; 2 w/alcohol

Any counted & discarded? _____

Aliquots for hydrocarbons - Aluminum foil & frozen whole.

Species	# Individual/sample	Samples
1 - Species A Fish (rat tail ch dm)	2 large fish	in jar
2 - Sp B Fish (long nosed dummy lt color fish)	4	2 samples in 2 jars
3 - Sp C Fish blunt nose lt color fish	2	1 jar

(over)

4- sp D- dark bristled white — 9 fish — 1 package wrapped in fo

5- Large Red crab → 2 wrapped in foil

6- Type A shrimp (spiny Macrura shrimp) lt pink — total = 15 → in 2 jars

7- Type B shrimp bt. red prawns — total 18 → 1 jar

8- Stereomatis — total 17 — 7 3 jars

9. Bathead crabs — total 6 → 2 jars

84 G 4 April 8, 1984 STATION 03,

SAMPLE COLLECTION - OTTER TRAWL

Cruise 84-G-4 Date 9 Jan. Station (1)-[illegible]

DEPLOYMENT: Time 0615 Lat. 26°44.3 Long. 13[illegible] Loran [illegible]

Depth 1370 m Heading 073 [illegible]

ON BOTTOM: Heading 108.6 Speed [illegible]

Depth 137 END: Time 1010 Lat. [illegible]44.4 Long. [illegible] Loran [illegible]

Depth 1372 m START: Time 0752 Lat. 26°44.4 Long. 93°18.6 Loran 25366.3 / 46495.7

Duration _____ Distance _____

RECOVERY: Time: 1030 ON BOARD

wire 3151

DESCRIPTION OF CONTENTS:

1 Scaphobranchid
1 Macrouriid
1 Geryon
2 Halosauri
1 Ipnops

Photographed? _____

many [illegible]
[illegible]
also [illegible]

Preservation for Taxonomy: _____ Buckets w/formalin; _____ w/alcohol

Any counted & discarded? _____

Aliquots for hydrocarbons - Aluminum foil & frozen whole.

Species	# Individual/sample		Samples
✓ Shrimp	22	(15 not photoed)	
✓ Stereomastis sculpta	5	(2 not photoed)	
Geryon	1	Not enough to bother	
eel	1		
Microuriid	1		
? fish	2		
Bryozoan	1		
Glyphocrangon aculeata	1		

SAMPLE COLLECTION - OTTER **TRAWL**

Cruise 84 G.4 **Date** April 10, 1984 Station W5

DEPLOYMENT: Time 0620 Lat. 26° 17.0' Long. 93° 28.8' Loran 25673

Depth 23 22 m ~25 fathoms **Heading** 090 3 Knots 46427

ON BOTTOM : **Heading** 090° **Speed** 2.2 - 3 knts

END: **Time** 1047 **Lat.** 26° 17.2 **Long.** 93° 18.4' **Loran** 25228.5 46417.9

DR position

START: **Time** 0815 **Lat.** -26° 17.1 N **Long.** -93° 24.6 W **Loran** -

Duration 157 min **Distance**

RECOVERY: Time: 130 ON BOARD

5000 m [illegible] IN mud [illegible]

DESCRIPTION OF CONTENTS: **Photographed?** No

few in [illegible] photographed

Tar balls

Preservation for Taxonomy: 1 vial & 190 ~~buckets~~ w/formalin; None w/alcohol

Any counted **& discarded?** No

Aliquots for hydrocarbons - Aluminum foil & frozen whole.

Tar balls (only)

Species	# Individual/sample	Samples
No		

& - c

SAMPLE COLLECTION - ~~OTTER TRAWL~~ BEAM TRAWL

Cruise 84-G-4 Date 11 Apr. 84 Station S-1 [illegible]

DEPLOYMENT: Time 0200 Lat. _____ Long. _____ Loran _____

Depth 385 ~~m~~ fm Heading _____ _____

ON BOTTOM: Heading 073° Speed ~~27~~ 2.5 kt

430 fm END: Time 0301 Lat. 27°44.0 Long. 91°30.7 Loran 27[illegible].5 / 45[illegible].8

385 fm START: Time 0223 Lat. 27°43.2 Long. 91°31.[illegible] Loran 27182.3 / 45[illegible]7.9

Duration 30 min Distance _____

RECOVERY: Time: 0320 ON BOARD

DESCRIPTION OF CONTENTS: Photographed? _____

- Sample [illegible] for SD purposes, since station was in [illegible]

preservation for Taxonomy: _____ Buckets w/ formalin; _____ w/alcohol

Any counted & discarded? _____ _____

Aliquots for hydrocarbons - Aluminum foil & frozen whole.

Species	# Individual/sample	Samples
Carangidae - fish	4	1 jar
Scombridae - fish	1	1 jar
Dasyatidae octonemus - fish	4	1 jar
Sharks	1	1 jar
Eel	1	1 jar
Cuttlefish	1	[illegible]

angler fish	1	1 jar
Hermit crabs	8	1 jar
Brittle stars	2	1 jar
Banded crab	1	1 jar
Spider crab	2	1 jar
Shrimp	3	1 jar
Anemonian	3	1 jar

84.6.4 April 11, 1984 Station 51

SAMPLE COLLECTION - OTTER TRAWL

Cruise 84-6-4 Date 11 Apr 84 Station C1

DEPLOYMENT: Time 1745 Lat. _____ Long. _____ Loran _____

Depth 324-347m Heading 100° _____

ON BOTTOM: Heading 100° Speed 3.5

END: Time 1903 Lat. 28°02.8 Long. 90°12.9 Loran 28051.6 / 46583.3

183 f START: Time 1758 Lat. 2803.3 Long. 90 15.0 Loran 28040.6 / 46593.3

Duration 1 hr 5 min Distance _____

RECOVERY: Time: 1920 ON BOARD

DESCRIPTION OF CONTENTS: Photographed? yes

? 2000

Preservation for Taxonomy: _____ Buckets w/formalin; _____ w/alcohol

Any counted & discarded? _____

Aliquots for hydrocarbons - Aluminum foil & frozen whole.

Species	# Individual/sample	Samples
Hake	4	
macrouridae ? Nezumia	3	
flounder	5	
Geryon crabs	6	
pointed nose fish in photo #4	10	

SAMPLE COLLECTION - OTTER TRAWL

Cruise 84G4 Date April 12, 1984 Station C2

DEPLOYMENT: Time 0357 Lat. 27°55.3' Long. 90°07.0' Loran 28081.

Depth 584 ft, 741m M. Heading 130° 3 Knots 46553

ON BOTTOM: Heading 130° Speed 3 knts

END: Time 0517 Lat 27°52.6 N Long. 90°03.8 W Loran 28100.4 46538.

START: Time 0412 Lat 27°54.7 N Long. 90°06.3 W Loran 28056 46580.

Duration 65 min Distance

RECOVERY: Time: 0539 IN BOARD wire out 300/ 400/ 500/ 745 when off bottom

DESCRIPTION OF CONTENTS: Photographed? NO

(4) soleidae (flat fish)
(1) mid water fish
(1) sea star (brittle skN--)
(1) mole crab
(1) tunicate ?
(1) egg case

(1) crab
(1) clam

Preservation for Taxonomy: (1) jar Buckets w/formalin; w/alcohol

Any counted & discarded? NO

Aliquots for hydrocarbons - Aluminum foil & frozen whole. Not enough to hydrocarbons

Species	# Individual/sample	Samples

Second trawl at Stn. C2 due to insufficient sample from first trawl

SAMPLE COLLECTION - OTTER TRAWL

Cruise 84-G-4 Date April 12, 1984 Station C2

DEPLOYMENT: Time 0528 Lat. 27°55.2 Long. 90°06.9 Loran 28082.-

Depth ~575m Heading 130° 3.2 Knots 46553.

ON BOTTOM: Heading 130° Speed 3 Knots

END: Time 0814 Lat 27°51.1'N Long. 90°02.9'W Loran 28102.0 46532.1

START: Time 0651 Lat. 27°54.3 Long. 90°06.0 Loran 28087.5 46548.3

Duration ? Distance 130° 3k

RECOVERY: Time: 0835 ON BOARD 27°50.3 90°02.2 28105.2 46528.1

wire out 1465

DESCRIPTION OF CONTENTS: Photographed? No

(10) tunicates ?
(1) soleidae
(5) isopods ?
(6) hyperiid amphipod
(5) shrimp
(1) crab

(4 1/2) fish [pelagic]

Preservation for Taxonomy: (2) mason jar buckets w/ formalin; _____ w/alcohol

Any counted & discarded? _____ _____

Aliquots for hydrocarbons - Aluminum foil & frozen whole.

Insufficient amount for hydrocarbons

Species	#Individual/ sample	Samples

SAMPLE COLLECTION - OTTER TRAWL

Cruise 8464 Date 12 Apr 84 Station C-3

DEPLOYMENT: Time 1309 CST Lat. 27°48.7'N Long. 90° 07.6'W Loran 28045.5

Depth _____ Heading 055 @ ~2.9 3 knots 46527.

ON BOTTOM: Heading 055 " Speed, 2.9 Knots

Start ~~END:~~ Time 1349 Lat 27°49.7'N Long 90°06.7'W Loran 28058.8 46530.8

END ~~START:~~ Time 1608 Lat. 27°52.7 Long. 90°03.2 Loran 28107.1 46538.8

Duration 2hr. 19 min Distance _____

RECOVERY: Time: 16:25 ON BOARD

DESCRIPTION OF CONTENTS: Photographed? _____

Presentation for Taxonomy: _____ Buckets w/formalin; _____ w/alcohol

Any counted & discarded? _____

Aliquots for hydrocarbons - Aluminum foil & frozen whole.

Species	# Individual/sample	Samples
galathea lobsters. (3)		
Deep water eels (3)		

SAMPLE COLLECTION - OTTER TRAWL

THIRD ATTEMPT A SUCCESS

Cruise 84-G-4 Date 4/12/84 Station C-2

DEPLOYMENT: Time 17:22 Lat. 27°55.2 Long. 90°07.0 Loran 28081.4 46552.9

Depth 603 Heading 115

ON BOTTOM: Heading 119 Speed 3 KNOTS

END: Time 1852 Lat. 27°53.0 Long. 90°04.1 Loran 28079.3 46540.9

START : Time 17:48 Lat. 27°54.4 Long. 90°06.0 Loran 28087.5 46548.7

Duration _____ Distance _____

RECOVERY: Time: 19:10 ON BOARD

DESCRIPTION OF CONTENTS: Photographed? _____

Preservation for Taxonomy: _____ Buckets w/formal in; _____ w/alcohol

Any counted & discarded? _____ _____

Aliquots for hydrocarbons - Aluminum foil & frozen whole.

Species	# Individual/sample	Samples
3 crabs (Trichopelterion nobile)		2 eels.
4 fishes (pointed nose)		
1 fish " " (big)		
2 sharks		
2 galathea		

SAMPLE COLLECTION - OTTER TRAWL

Cruise 84·G·4 Date 4·13·84 Station C4

DEPLOYMENT: Time 0803 Lat. 27°28.5'N Long. 89°46.3'W Loran 28156

Depth 1390 Heading 067° 2.9 Knots 46416.

ON BOTTOM: Heading 127° Speed ~3 Knots

END: Time 1104 Lat. 27°26.1'N Long. 89°40.3'W Loran 28201.
Wire out 2045 46398.

START: Time 0904 Lat. 27°28.1' Long. 89°43.6 Loran 28180.
Wire out 3050m depth 1358m. 46411.5

Duration 120 min Distance

RECOVERY: Time: 1140 ON BOARD

wire 3050

DESCRIPTION OF CONTENTS : Photographed? yes

Preservation for Taxonomy: 2-1gal Buckets w/ formalin; _____ w/alcohol

Any counted & discarded? No

Aliquots for hydrocarbons - Aluminum foil & frozen whole.

Species	# Individual/sample	Samples
2 CRABS (Geryon tarbulla)		

SAMPLE COLLECTION - OTTER TRAWL

Cruise 84 G 4 Date April 14, 1984 Station C5

DEPLOYMENT: Time 0614 Lat. 26°57.9' Long. 89°34.7 Loran 28121.2 46268

Depth 2380m Heading 045° 3Knots

ON BOTTOM: Heading ~~045°~~ 053° Speed ~~2.7~~ 2.6 Knots

END: Time 1013 Lat 27°04.7'N Long 89°25.2'W Loran 28241.2 ~~46281.2~~

-26 2412m START: Time 0757 CST Lat. 27°01.4'N Long. 89°30.3'W Loran 28178.5 46276.0

IRC 4293m Post calc

Duration _____ Distance _____

RECOVERY: Time: _____ ON BOARD

DESCRIPTION OF CONTENTS : Photographed? _____

Preservation for Taxonomy: _____ Buckets w/ formalin; _____ w/alcohol

Any counted & discarded? _____ _____

Aliquots for hydrocarbons - Aluminum foil & frozen whole.

Species	# Individual/sample	Samples

Second attempt at this station

SAMPLE COLLECTION - ~~OTTER~~ Beam TRAWL

Cruise 84·G·4 Date April 14, 1984 Station C5

DEPLOYMENT: Time ' " Lat . " Long . Loran

Depth 2381 m Heading 230° ≈ 2

ON BOTTOM: Heading 231° Speed 2.5 knots

END: Time 1314 Lat. 27° 04.0 Long 89° 22.7 Loran 28260.0
1239 27° 05.0'N 89° 22.7'W 46270.0
28265.

Leo said hit bottom re but lie on the bridge r the winch. START: Time ~~1212~~ Lat. ~~27° 05.8~~ Long. ~~89° 22.6~~ Loran ~~28219~~
wire out 2400 depth 2,377 ~~46235~~
46278,

Duration 35 min Distance

RECOVERY: Time: 1403 ON BOARD

wire out 4200

DESCRIPTION OF CONTENTS: Photographed?

Much mud retained - frame vent bridle kinked
Very few organisms - 1 fish, 1 crustacean

Preservation for Taxonomy: Buckets w/ formal in; w/alcohol

Any counted & discarded?

Aliquots for hydrocarbons Aluminum foil & frozen whole.

none taken

Species	# Individual/sample	Samples

SAMPLE COLLEXTION - OTTER TRAWL

Cruise 84-G-4 Date 16 Apr 84 Station E-1

DEPLOYMENT: Time 0518 Lat. 28°22.3'N Long. 85°55.8'W Loran 30427.6 / 46178.6

Depth 373- Heading 320°

ON BOTTOM: Heading 320° Speed 3 knots made good

END: Time 0707 Lat. 28°26.0' Long. 86°02.6 Loran 30420.2 / 46224.4

START: Time 0600 Lat. 28°23.5'N Long. 85°57.5'W Loran 30424.8 / 46194.7

Duration 67 min. Distance

RECOVERY: Time: 0730 ON BOARD

wire out 800 m 50 ft. bottom

DESCRIPTION OF CONTENTS: Photographed?

Nothing - net obviously not on bottom

Preservation for Taxonomy: _____ Buckets w/formalin; _____ w/alcohol

Any counted & discarded? _____ _____

Aliquots for hydrocarbons - Aluminum foil & frozen whole.

Species	# Individual/sample	Samples

SAMPLE COLLECTION - OTTER TRAWL

Cruise 84-G-4 Date 16 Apr. 84 Station E-1

DEPLOYMENT: Time 0800 Lat. _____ Long. _____ Loran _____

Depth 390 m Heading 303°

ON BOTTOM: Heading ~~073°~~ 099° made good Speed ~~?~~ 1.7 Knots made go

END: Time 1026 Lat. 28°26.3 Long. 86°00.1 Loran _____

START: Time 0909 Lat. 28°26.5'N Long. 86°03.1'W Loran 30406.3 46238.0

Duration _____ Distance _____

RECOVERY: Time: _____ ON BOARD

wire 1400 m off bottom at 630

DESCRIPTION OF CONTENTS: Photographed? _____

Best catch to date - in mud
many fish of many kinds
many crustaceans

Preservation for Taxonomy: _____ Buckets w/ formal in; _____ w/alcohol

Any counted & discarded? _____ _____

Aliquots for hydrocarbons - Aluminum foil & frozen whole.

Species	# Individual/sample	Samples
(2) lg. crabs	(3) hake	
(6) sm. orange legged crabs	(17) shrimp	
(1) tar ball sample		
(3) bat fish		
(5) gramistidaes (?)		

SAMPLE COLLECTION - OTTER TRAWL

Cruise 84-G-4 Date 16 Apr. 84 Station E-2

DEPLOYMENT: Time 1512 Lat. 28°18' Long. 86°12.3 Loran 30285 / 46210

Depth 676 m Heading 270 Speed 2.5

ON BOTTOM: Heading 268 Speed 2.6

1288 wire 6 tow END: Time 1653 Lat. 28°16.8 Long. 86°17.2 Loran 30241.8 / 46218.9 Speed 2.7

1279 m

wire out 1800 m depth 605 m START: Time 1554 Lat. 28°17.6 Long. 86 14.8 Loran 30264.5 / 46216.3

STAT - retrieved @ 1641

Duration 1 hr. Distance 2.3 KT (nm)

RECOVERY: Time: 1720 ON BOARD

wire 1800 m

DESCRIPTION OF CONTENTS: Photographed? yes

Preservation for Taxonomy: 1 Buckets w/formalin; _____ w/alcohol

Any counted & discarded? No

Aliquots for hydrocarbons - Aluminum foil & frozen whole.

Species	# Individual/sample	Samples
4 batfish (Chaunax)		
12 deep water shrimp		
3 small lobsters		
4 macrourid fish (small)		

SAMPLE COLLECTION - OTTER TRAWL

Cruise 84-G-4 Date Aug. 17 1984 Station E-3

DEPLOYMENT: Time 1000 Lat. 28° 10.5 N 29° 11.07 Long. 86° 28.4 W 86° 27.5 Loran 30118.9 46214.

Depth 840 m Heading 071

ON BOTTOM: Heading 101° Speed 2.4 thru water/[illegible]

wire out 2600 m

END: Time 1309 Lat. 28°09.7 Long. 86°11.8 Loran 30176.5 46174.2

Depth 815m

START: Time 1055 Lat. 28°10.7 Long. 86°25.6 Loran 30140.2 46206.3

Duration 2 hrs 14 min Distance

RECOVERY: Time: 1400 GN BOARD

wire 2600

DESCRIPTION GF CONTENTS: **Photographed?** ✓

Preservation for **Taxonomy:** _____ **Buckets** w/formalin; _____ w/alcohol

Any counted & discarded? _____

Aliquots for hydrocarbons - Aluminum foil & frozen whole.

Species	# Individual/sample	Samples
Stereomastis		
Hyphsarugon		
Ichyon		
eels		
shrimp		

SAMPLE COLLECTION - OTTER TRAWL

Cruise 84-6-4 Date 18 Apr 84 Station E 4

DEPLOYMENT: Time 0147 Lat. 28 07.5 Long. 86 38.4 Loran 30023.8 46227.

Depth 1225m Heading 126.8

ON BOTTOM: Heading 130 Speed 3.2

END: Time 0511 Lat. 28°03.6 Long. 86°30.2 Loran 30061.1 46174.3
heading 118° 2.5 Knots depth 1174m

START: Time 0310 Lat. 28 06.0 Long. 86°35.3 Loran 30038.3 46207.3

Duration 127 min Distance

RECOVERY: Time: 0600 ON BOARD

wire 2726

DESCRIPTION OF CONTENTS: Photographed? yes

Preservation for Taxonomy: 3 Buckets w/formalin; 0 w/alcohol

Any counted & discarded?

Aliquots for hydrocarbons - Aluminum foil & frozen whole.

Species	# Individual/sample	Samples
(5) synaphobranchid eel		
(3) dark head, pointy snout & light body		
(5) diamond shaped scales dark long filamenic pelvics (benthosaurus		
(4) white, long tapered tale, irridescent blue head		
(3) long snouted, skinny eels (nettostamidae)		
(5) prominent bony head w/ lg glassy eye & scaly rough body		

→

(4) tapered body, long filamentic black pectoral (gadidae)
(3) Queen crabs
(14) brt. red shrimp
(5) pink lobsters

84·G4 April 18, 1984 Station E4

SAMPLE COLLECTION - OTTER TRAWL

Cruise 8 Y 2 4 Date 18 April Station E5

DEPLOYMENT: Time 2336 Lat. 27°59'4 Long. 86 37 4 Loran 39483.2 46170.5

Depth 2884 Heading 313°

ON BOTTOM : Heading 318° Speed 2.6

END : Time 0320 Lat. 28°06.2 Long. 86°44.5 Loran 29968.6 46337.8

START: Time 0108 Lat. 28°01.9 Long. 86°40.1 Loran 29976.1 46196.3

Duration _____ Distance _____

RECOVERY: Time: 0450 ON BOARD

Wire out 4700

DESCRIPTION OF CONTENTS: Photographed? _____

Very sparse trash [illegible] stuff, (some were moderate) & a few fish

Preservation for Taxonomy: _____ Buckets w/formalin; _____ w/alcohol

Any counted & discarded? _____ _____

Aliquots for hydrocarbons - Aluminum foil & frozen whole.

Species	# Individual/sample	Samples

SAMPLE COLLECTION - ~~OTTER~~ BEAM TRAWL

Cruise 84-G-4 Date 19 Apr 84 Station E. Slope-1

DEPLOYMENT: Time 0530 Lat. 28 09.7 Long. 86°[illegible] Loran [illegible]

Depth 1520 fm 2900 m Heading 026 [illegible]

ON BOTTOM: Heading 018 Speed 1.6 kts. or less (0.4)

END: Time 0708 START HAUL IN at depth of 1460 m Lat. _____ Long. _____ Loran _____

START: Time 0600 ~~[illegible]~~ Lat. 28° 10.5 ~~[illegible]~~ Long. 86°48.2 Loran 79964 / 46247.0

wire 2709 wire out.

Duration _____ Distance _____

RECOVERY: Time: _____ ON BOARD

DESCRIPTION OF CONTENTS: Photographed? _____

Preservation for Taxonomy: _____ Buckets w/formalin; _____ w/alcohol

Any counted & discarded? _____ _____

Aliquots for hydrocarbons Aluminum foil & frozen whole.

Species	# Individual/sample	Samples