

82020rpt

Cruise Report

OCEANUS 122

July 6-15, 1982

Brad Butman
U.S. Geological Survey
Woods Hole, MA 02543

Cruise: OCEANUS 122
Area of Operation: Georges Bank, Lydonia Canyon
Dates of Operation: Depart Woods Hole 1100 July 6, 1982
Arrive Woods Hole 0930 July 15, 1982

Objectives:

1. Recover current moorings in Lydonia and Oceanographer Canyons.
2. Deploy current moorings in Lydonia Canyon and Lease Block 312.
3. Obtain surface grab samples on shelf and slope adjacent to Lydonia and Oceanographer Canyons.
4. Obtain hydrostatically damped cores at Lease Block 312, 410 and head of Lydonia Canyon.
5. Obtain piston cores at head of Lydonia Canyon.
6. Conduct hydrographic survey of shelf and slope adjacent to Lydonia and Oceanographer Canyons.
7. Recover and redeploy surface marker buoys as required.
8. Conduct bathymetric survey in Lydonia Canyon.

Personnel:

Brad Butman	USGS
Mike Bothner	USGS
Ethan Bleifus	USGS
Andy Eliason	Eliason Data Services
Eban Frank	WHOI
John Larson	USGS
John Moody	USGS
Frank Musialowski	USGS
Marlene Noble	USGS
Carol Parmenter	USGS
Polly Shoukimas	USGS
Bill Strahle	USGS

Equipment:

NBIS CTD with LED transmissometer
Northstar Loran-C 6000
XBT
Giffit echosounder
Hydrostatically damped cover
Piston core
.04 m² Van Veen Grab

Narrative:

July 6 1100 Depart Woods Hole. Underway to station GBS
 south of Nantucket to recover surface buoys
 1535 Arrive GBS.
 1610 Surface buoy C onboard.
 1708 Surface buoy F onboard. Recover anchor.
 Underway to Mud Patch.
 1800 c/c to Lydonia Canyon.

July 7 0630 Arrive station LCA.
 0715 CTD complete.
 0820 Complete ranges to tripod. Prepare to deploy surface buoy.
 0917 Surface buoy F deployed.
 1020 Recover tripod (mooring 241). Underway to LCL.
 1120 Arrive LCL. Tripod tipped.
 1215 Complete ranges to tripod for position.
 Underway to LCQ.
 1240 Arrive LCQ.
 1315 Complete CTD. Prepare to retrieve deep instrument package
 (mooring 243).
 1400 Mooring 243 on deck. Underway to LCR.
 1500 Mooring 244 on deck. Underway to LCO.
 1540 Mooring 247 on deck. Underway to LCS.
 1700 Mooring 245 on deck. Underway to LCT.
 1745 Mooring 246 on deck. Underway to LCB.
 1815 Arrive LCB. Complete CTD.
 2015 Mooring 241 on deck. Underway to LCU.
 2135 Surface buoy C deployed at LCU.
 Mooring work complete for night.
 2230 Start bathymetry around Lydonia Canyon.

July 8 0225 Complete bathymetry.
 0746 Deploy tripod at LCA (mooring 257).
 0845 Arrive LCB. Prepare to deploy 258.
 1000 Start to deploy mooring 258.
 1146 Anchor away.
 1215 Underway to LCU.
 1430 Deploy mooring 259 at LCU. Underway to LCL.
 1515 Arrive LCL and range to tripod. Prepare to drag.
 1710 Start dragging for tripod (mooring 251).
 1823 2nd pass caught ball and line in grappling hook.
 Ball flooded. Recovered through A-frame.
 1900 Tripod on deck. Underway to LCI.
 2030 Arrive LCI
 2200 Recovery of LCI (mooring 242). Cleanup for night.
 Start grab samples.

July 9 0415 Complete grab samples. Underway to OCC.
 0700 Arrive station OCC. Range to subsurface mooring 250.
 0840 Mooring 250 on deck. Underway to OCB.
 0910 Arrive OCB. Range to mooring 249.
 0950 Release mooring 249. Very foggy. Cannot locate surface ball. Determined mooring did not release.
 1050 Rig for dragging.
 1250 Ball on surface after 2nd pass.
 1320 Recovered upper portion of mooring 249. Continue dragging.
 1800 Ball on surface. Good job, Andy!
 1815 Mooring 249 on deck.
 1905 Underway to OCA.
 2015 Ranges to mooring 248 complete. Tripod tipped by fisherman. Begin to drag.
 2200 Tripod recovered. Good job, again, Andy! Hooked in leg with grappling hook.
 2300 Underway to grab samples.
 2339 Start grab samples.

July 10 0400 Continue grab samples.
 0830 Underway to OCA to recover surface buoys.
 0925 Surface buoy E on deck.
 1004 Surface buoy R on deck.
 1030 Underway to LB312. Three grabs enroute.
 1345 Arrive LB312. Prepare to deploy surface buoys.
 1425 Both surface buoys deployed. Underway to LCQ to recover surface buoys.
 1540 Arrive LCQ.
 1620 Surface buoy A on deck. Start bathymetry between buoys.
 1710 Complete bathymetry.
 1800 Surface buoy on deck. Grab sample. Underway to LB312.
 1915 Prepare to deploy two surface buoys.
 2015 Surface buoys deployed.
 2140 Deploy sediment-trap mooring 261 1 km west of LB312 drill site.
 2240 Deploy sediment-trap mooring 260 approximately 500 m west of drill site.

July 11 0000 Start grabs around head of Lydonia Canyon.
 0410 Complete grabs. Underway to LB410.
 0600 Take hydrostatically damped cores at LB410.
 0824 Begin grab sample transect across shelf from LB410 to station GBA.
 1040 Arrive GBA. Obtain 3 grabs for biology.
 1130 Complete grabs at GBA. Underway to LB312.
 1300 Arrive LB312. Prepare to deploy sediment trap mooring 262.
 1325 Deploy mooring 262.
 1400 Start hydrostatically damped cores (HDC) at LB312.
 1520 Underway to LCU for piston coring. HDC's washouts in sand.

July 11 1610 Arrive LCU.
 (cont.) 1645 Rig for piston coring. Obtain surface grab sample.
 1730 CTD cast for LCU mooring calibration.
 1815 Start piston coring.
 2140 Two piston cores complete. Very difficult to retain
 core sample. Approximately 15' penetration. Very fine sand.

July 12 0000 Start grab samples.
 0320 Complete grabs. Underway to LCU for HDC.
 1115 Start CTD survey.

July 13 0000 Continue CTD survey.
 0730 At LB312 along CTD survey track. Attempt to enable M253
 (sediment-trap mooring cut by Rowan Midland). No reply.
 Johnson Sealink on site with NMFS. They will look for
 release on dives (no success).
 0800 Continue CTD's
 0940 Complete CTD 41. Underway to LCU for final piston core.
 1020 Arrive core site.
 1053 Piston core. Underway to CTD transect.
 1145 Continue CTD's.
 2200 Terminate CTD's. Underway to LB312 to obtain HDC's.
 2315 Arrive LB312. Start HDC.

July 14 0000 Continue to try to obtain HDC in fine sand.
 Many washouts.
 0210 Core successful after modification of procedure.
 0245 HDC at BTF station 5-10.
 0340 HDC at BTF station 5-1. Underway to CTD transect.
 0450 Resume CTD transect.
 0920 Short cross-canyon bathymetry of OCB.
 Continue CTD's.
 2130 Complete CTD's and grab samples.
 Underway to Woods Hole.

July 15 0930 Arrive Woods Hole.

Tabulated Information:

Days at sea:	10
Moorings recovered:	14
Moorings deployed:	6
Surface buoys recovered:	6
Surface buoys deployed:	6
CTD stations:	67
XBT's	22
Salinity samples:	135
O ₂ samples	57
Surface grab samples:	63
Hydrostatically damped cores:	9
Piston cores:	4

Highlights:

All moorings were deployed and recovered as planned. Two tripods and one deep instrument package were recovered by dragging. Two tripod data loggers had slightly flooded. The cause has not been determined but may be linked to new penetrators in the data logger endcap. Approximately 1.5 months of data were collected prior to flooding. All VACM's were recovered.

The surface grab samples will enable us to prepare a detailed map of the surface sediment distribution along the shelf edge near Oceanographer and Lydonia Canyons. The HDC's obtained in LB312 and LB410 will be used to determine the metal concentrations with depth in the sediment.

The surface sediments at the head of Lydonia Canyon were very fine sand. Thus, the piston coring was difficult because the material washed out from the end of the core barrel. Several cores 3-4 m in length were obtained, however, which will be used to try to determine the rate of sediment accumulation in the canyon head.

The large scale CTD hydrographic survey will allow detailed mapping of the temperature, salinity, and nutrient fields along the shelf edge.

Table 1. Moorings and surface buoys deployed and/or recovered on OCEANUS 122.

Sta.	Latitude N.	Longitude W.	M O O R I N G S				S U R F A C E B U O Y S	
			Recover no.	type	Deploy no.	type	Deploy	Recover
<u>Lydonia Canyon:</u>								
LCA	40°33.8'	67°44.8'	240	T	257	T	1	
LCB	40°31.5'	67°42.8'	241	SS	258	SS		
LCI	40°23.1'	67°33.0'	242	SS				
LCL	40°32.4'	67°36.5'	251	T				
LCO	40°26.8'	67°39.7'	247	P				
LCQ	40°27.3'	67°38.3'	243	DIP				2
LCR	40°26.6'	67°38.8'	244	SS				
LCS	40°27.6'	67°40.0'	245	SS				
LCT	40°26.6'	67°40.6'	246	SS				
LCU	40°32.3'	67°44.3'			259	SS	1	
<u>Oceanographer Canyon:</u>								
OCH	40°30.8'	68°14.8'	248	T (DRAG)				2
OCB	40°29.4'	68°11.1'	249	SS/DIP				
OCC	40°24.9'	68°07.8'	250	SS				
<u>LB312:</u>								
LB312	40°39.5'	67°45.7'	253	SS	260	SS	2	
LB312	40°39.2'	67°46.2'	254	SS	261	SS		
LB312	40°39.8'	67°41.5'	255	SS (DRAG)	262	SS	2	
<u>Nantucket Shoals:</u>								
GBS	41°10.9'	70°12.3'						2

Table 2. Lydonia Canyon Moorings, Deployment 4

Station/ location	Moorings no.	Water depth (m)	Latitude N.	Longitude W.	Moor. type	Inst. type	Inst. depth (m)	Inst. sn.	Deployed YrMoDy	Recovered YrMoDy
LCA/ shelf	240	100	40°33.78'	67°44.76'	T	T	100		820128	820707
LCB/ canyon head	241	300	40°31.52'	67°42.83'	SS	ST	102	ST412	820131	820707
						VTC	108	V334TC		
						ST	242	ST404		
						V	248	V624		
						ST	218	ST403		
						VTC	294	V626TC		
ST	296	ST402								
LCI	242	249	40°23.05'	67°32.96'	SS	V	59	V506	820131	820708
						ST	99	ST415		
						ST	193	ST414		
						V	199	V541		
						VT	243	V443T		
						ST	245	ST413		
LCQ	243	185	40°27.25'	67°38.27'	SS	DIP	180	V518TC	820130	820707
						ST	180	ST416		
LCR	244	240	40°26.62'	67°38.80'	SS	V	183	V473	820130	820707
						V	215	V485		

Table 2. Lydonia Canyon Moorings, Deployment 4 (cont.)

Station/ location	Moorings no.	Water depth (m)	Latitude N.	Longitude W.	Moor. type	Inst. type	Inst. depth (m)	Inst. sn.	Deployed YrMoDy	Recovered YrMoDy
LCS	245	560	40°27.61'	67°40.03'	SS	ST	443	ST405	820129	820707
						ST	447	ST411		
						ST	449	ST411A		
						ST	451	ST410		
						ST	455	ST409		
						ST	457	ST409A		
						ST	459	ST408		
						ST	480	ST408B		
						ST	520	ST408A		
						ST	540	ST407		
						ST	540	ST407B		
						ST	552	407A		
						V	554	V516T		
						ST	556	ST406		
LCT	246	203	40°26.62'	67°40.61'	SS	V	178	V487	820102	820707
LCO	247	552	40°26.77'	67°39.72'	P	P	552		820202	820707
LCL	251	127	40°32.40'	67°36.52'	T	T	127		820131	820709

Table 3. Lydonia Canyon Moorings, Deployment 5

Sta/ location	Moor. No.	Water Depth (m)	Latitude N.	Longitude W.	Moor. type	Inst. type	Inst. Depth (m)	Inst. sn	Deployed	Recovered
LCA/ shelf	257	104	40°33.83'	67°44.21'	T	T	103	SD4	820708	
LCB/ canyon head	258	295	40°31.49'	67°42.29'	SS	ST	98	540	820708	
						V	104	442		
						ST	114	525T		
						ST	178	526T		
						ST	180	527		
						ST	184	528		
						ST	187	529T		
						ST	188	530		
						ST	191	531T		
						ST	192	532		
						ST	236	533T		
						ST	238	534		
						VTC	244	321		
						ST	269	535T		
						ST	274	536		
						ST	284	537T		
						VT	290	477		
						ST	290	538		
						ST	292	539T		
LCU	259	141	40°32.37'	67°44.37'	SS	ST	115	520T	820708	
						ST	120	521		
						ST	130	522T		
						VTC	134	322		
						ST	136	523		
						ST	139	524T		

Table 4. Oceanographer Canyon, Deployment 1

Station/ Location	Mooring no.	Water depth (m)	Latitude N.	Longitude W.	Moor. type	Inst. type	Inst. depth (m)	Inst. sn.	Deployed YrMoDy	Recovered YrMoDy
OCA	248	104	40°30.76'	68°14.83'	T	T	104		820127	820709
OCB	249	227	40°29.44'	68°11.06'	SS	ST	171	ST419	820128	820708
						V	177	V585		
						DIP	223	V335TC		
						ST	223	ST418		
OCC	250	560	40°24.93'	68°07.83'	SS	ST	454	ST421	820127	820708
						ST	480	421D		
						ST	520	4211C		
						ST	540	421B		
						ST	550	421A		
						VTC	554	V628TC		
						ST	556	ST420		
						ST	556	ST420A		

Table 5. Lease Block 312, Deployment 1

Station/ location	Mooring no.	Water depth (m)	Latitude N.	Longitude W.	Moor. type	Inst. type	Inst. depth (m)	Inst. sn.	Deployed YrMoDy	Recovered YrMoDy
312A	253	80	40°39.48'	67°45.67'	SS	ST	55	422	820201	Lost
						ST	76	423		
312B	754	81	40°39.16'	67°46.24'	SS	ST	56	424	820201	820611
						ST	77	425		
312C	255	78	40°39.76'	67°41.54'	SS	ST	53	426	820201	810611
						ST	74	427		

Table 6. LB312 Deployment 2

Station	Moor. No.	Water depth	Latitude	Longitude	Moor. type	Inst. type	Inst. Depth	Inst. sn	Deployed	Recovered
312A	260	79	40°39.39'	67°46.07'	SS	ST	54	501T	820710	
						ST	59	502		
						ST	69	503T		
						ST	74	504		
						ST	76	505T		
312B	261	79	40°39.48'	67°46.50'	SS	ST	54	506T	820710	
						ST	59	507		
						ST	69	508T		
						ST	74	509		
						ST	76	510T		
312C	262	77	40°39.74'	67°41.46'	SS	ST	52	511T	820711	
						ST	57	512		
						ST	67	513T		
						ST	72	514		
						ST	74	515T		

Table 7. Bathymetric Surveys, OC122

LYDONIA CANYON

1. East Canyon Edge
Start: 82 July 7-2236
End: 82 July 8-0225
2. East Side
Start: 82 July 12-1230
End: 82 July 12-1545
3. Upaxis and Cross-axis
Start: 82 July 12-1721
End: 82 July 12-2300
4. West Side
Start: 82 July 13-0955
End: 82 July 13-1600

OCEANOGRAPHER CANYON

1. South-North, Cross-axis
Start: 82 July 14-0735
End: 82 July 14-1040
2. West Side
Start: 82 July 14-1615
End: 82 July 14-1845

Table 8. OCEANUS 122 Grab Samples

No.	Date	Latitude	Longitude	Depth	Sampler
122-1	820708	40°21.94'	67°31.80'	405	.04 m ² VV
122-2	820708	40°24.14'	67°28.22'	275	.04 m ² VV
122-2A	820709	40°24.26'	67°27.81'	275	.04 m ² VV
122-3	820709	40°25.05'	67°28.97'	202	.04 m ² VV
122-4	820709	40°26.79'	67°30.42'	180	.04 m ² VV
122-5	820709	40°25.65'	67°36.55'	155	.04 m ² VV
122-6	820709	40°24.65'	67°37.27'	165	.04 m ² VV
122-7	820709	40°23.76'	67°38.05'	197	.04 m ² VV
122-8	820709	40°22.71'	67°38.82'	375	.04 m ² VV
122-9	820709	40°28.28'	68°19.78'	102	.04 m ² VV
122-10	820710	40°30.77'	68°14.73'	100	.04 m ² VV
122-11	820710	40°33.09'	68°08.92	100	.04 m ² VV
122-12	820710	40°30.01'	68°03.92'	120	.04 m ² VV
122-13	820710	40°30.32'	68°07.94'	121	.04 m ² VV
122-14	820710	40°29.38'	68°10.93'	227	.04 m ² VV
122-15	820710	40°27.46'	68°13.88'	107	.04 m ² VV
122-16	820710	40°25.95'	68°16.95'	103	.04 m ² VV
122-17	820710	40°22.94'	68°13.97'	137	.04 m ² VV
122-18	820710	40°24.28'	68°11.96'	140	.04 m ² VV
122-19	820710	40°24.98'	68°10.01'	150	.04 m ² VV
122-20A	820710	40°24.90'	68°07.73'	535	.04 m ² VV
122-20B	820710	40°24.63'	68°07.57'	535	.04 m ² VV
122-21	820710	40°24.90'	68°05.94'	148	.04 m ² VV
122-22	820710	40°24.87'	68°04.27'	145	.04 m ² VV
122-23	820710	40°24.84'	68°01.77'	144	.04 m ² VV
122-24	820710	40°28.28'	68°09.07'	375	.04 m ² VV
122-25	820710	40°29.84'	67°59.69'	119	.04 m ² VV
122-26	820710	40°32.56'	68°00.08'	100	.04 m ² VV
122-27	820710	40°32.61'	67°53.01'	98	.04 m ² VV
122-28	820710	40°27.19'	67°38.18'	270	.04 m ² VV
122-29	820711	40°33.00'	67°48.40'	106	.04 m ² VV
122-30	820711	40°31.62'	67°45.17'	120	.04 m ² VV
122-31	820711	40°32.97'	67°42.22'	120	.04 m ² VV

Table 8 (cont.). OCEANUS 122 Grab Samples

No.	Date	Latitude	Longitude	Depth	Sampler
122-32	820711	40°32.54'	67°39.55'	127	0.04 m ² VV
122-33	820711	40°30.71'	67°37.20'	134	0.04 m ² VV
122-34	820711	40°28.99'	67°28.96'	138	0.04 m ² VV
122-35	820711	40°33.97'	67°27.89'	108	0.04 m ² VV
122-36A	820711	40°34.36'	67°12.46'	134	Hydrostatic damped corer
122-36B	820711	40°34.36'	67°12.46'	134	Hydrostatic damped corer
122-37	820711	40°33.49'	67°13.44'	143	Hydrostatic damped corer
122-38	820711	40°36.41'	67°13.56'	114	0.04 m ² VV
122-39	820711	40°38.91'	67°15.38'	104	0.04 m ² VV
122-40	820711	40°41.00'	67°17.59'	95	0.04 m ² VV
122-41	820711	40°45.95'	67°20.44'	95	0.04 m ² VV
122-42A	820711	40°51.12'	67°24.43'	85	0.04 m ² VV
122-42B	820711	40°51.16'	67°24.44'	86	0.04 m ² VV
122-42C	820711	40°51.14'	67°24.35'	85	0.04 m ² VV
122-42D	820711	40°51.01'	67°24.44'	86	0.04 m ² VV
122-43	820711	40°32.37'	67°44.26'	143	Piston corer
122-44	820711	40°32.17'	67°44.51'	138	0.04 m ² VV
122-45	820711	40°32.33'	67°43.36'	148	Piston corer
122-46	820711	40°32.40'	67°43.41'	145	0.04 m ² VV
122-47	820711	40°30.99'	67°48.09'	111	0.04 m ² VV
122-48	820712	40°26.62'	67°39.50'	525	0.04 m ² VV
122-49	820712	40°24.00'	67°44.41'	145	0.04 m ² VV
122-50	820712	40°22.69'	67°44.26'	149	0.04 m ² VV
122-51	820712	40°21.36'	67°43.91'	220	0.04 m ² VV
122-52	820712	40°19.56'	67°43.89'	330	0.04 m ² VV
122-53	820712	40°32.17'	67°44.48'	140	Hydrostatic damped corer
122-54	820712	40°32.28'	67°43.23'	160	Hydrostatic damped corer
122-55A	820712	40°31.49'	67°39.68'	133	Hydrostatic damped corer
122-55B	820712	40°31.23'	67°39.51'	134	Hydrostatic damped corer
122-56	820712	40°32.24'	67°44.35'	148	Piston corer
122-57	820712	40°30.88'	67°39.18'	136	0.04 m ² VV
122-58	820713	40°32.36'	67°44.11'	149	Piston corer
122-59	820713	40°16.60'	67°59.61'	330	0.04 m ² VV

Table 8 (cont.). OCEANUS 122 Grab Samples

No.	Date	Latitude	Longitude	Depth	Sampler
122-60	820713	40°18.94'	67°59.79'	190	0.04 m ² VV
122-61	820713	40°18.91'	67°59.23'		0.04 m ² VV
122-62	820714	40°39.55'	67°46.23'	79	Hydrostatic damped corer
122-63	820714	40°39.55'	67°46.73'	79	Hydrostatic damped corer
122-64	820714	40°39.59'	67°45.89'	79	Hydrostatic damped corer
122-65	820714	40°15.88'	68°16.88'	280	0.04 m ² VV
122-66	820714	40°17.22'	68°17.48'	180	0.04 m ² VV
122-67	820714	40°19.30'	68°19.20'	142	0.04 m ² VV
122-68	820714	40°22.09'	68°20.82'	130	0.04 m ² VV
122-69	820714	40°25.45'	68°23.26'	113	0.04 m ² VV
122-70	820714	40°28.80'	68°25.60'	92	0.04 m ² VV
122-71	820714	40°33.44'	68°28.62'	81	0.04 m ² VV
122-72	820711	40°30.90'	67°42.77'	260	0.04 m ² VV

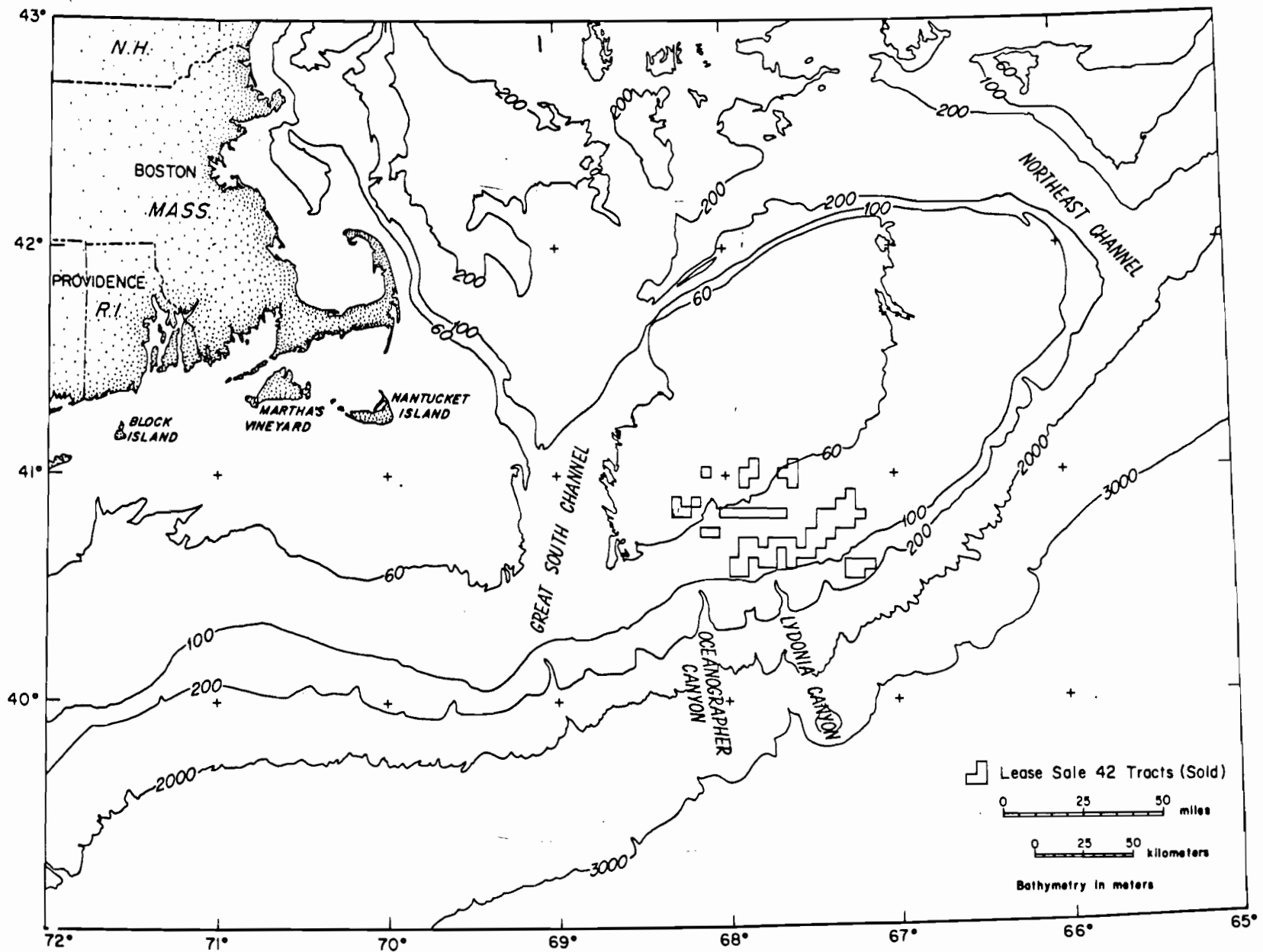


Figure 1. Location of Lydonia Canyon.

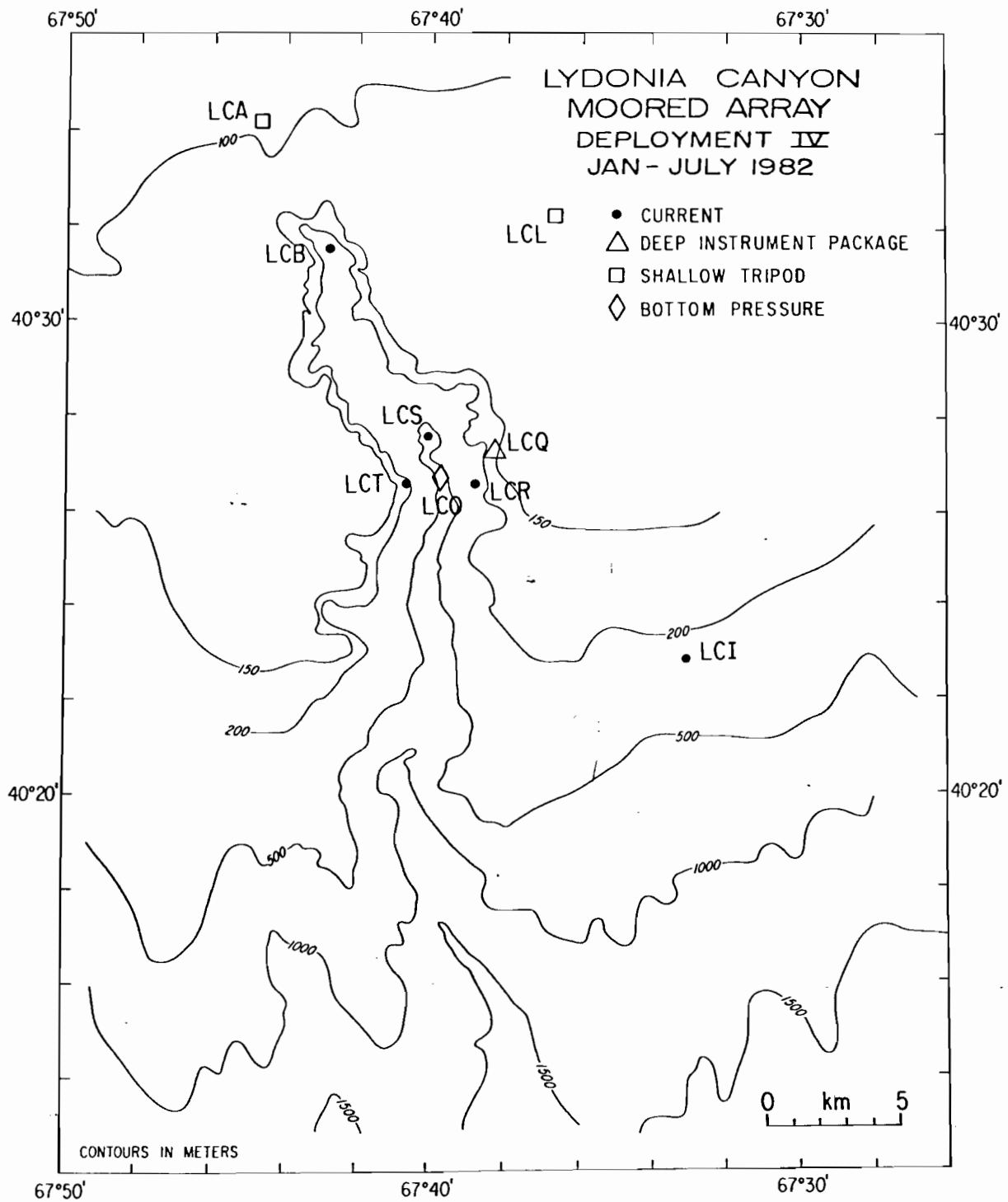


Figure 2. Lydonia Canyon deployment 4, recovered on OCEANUS 122.

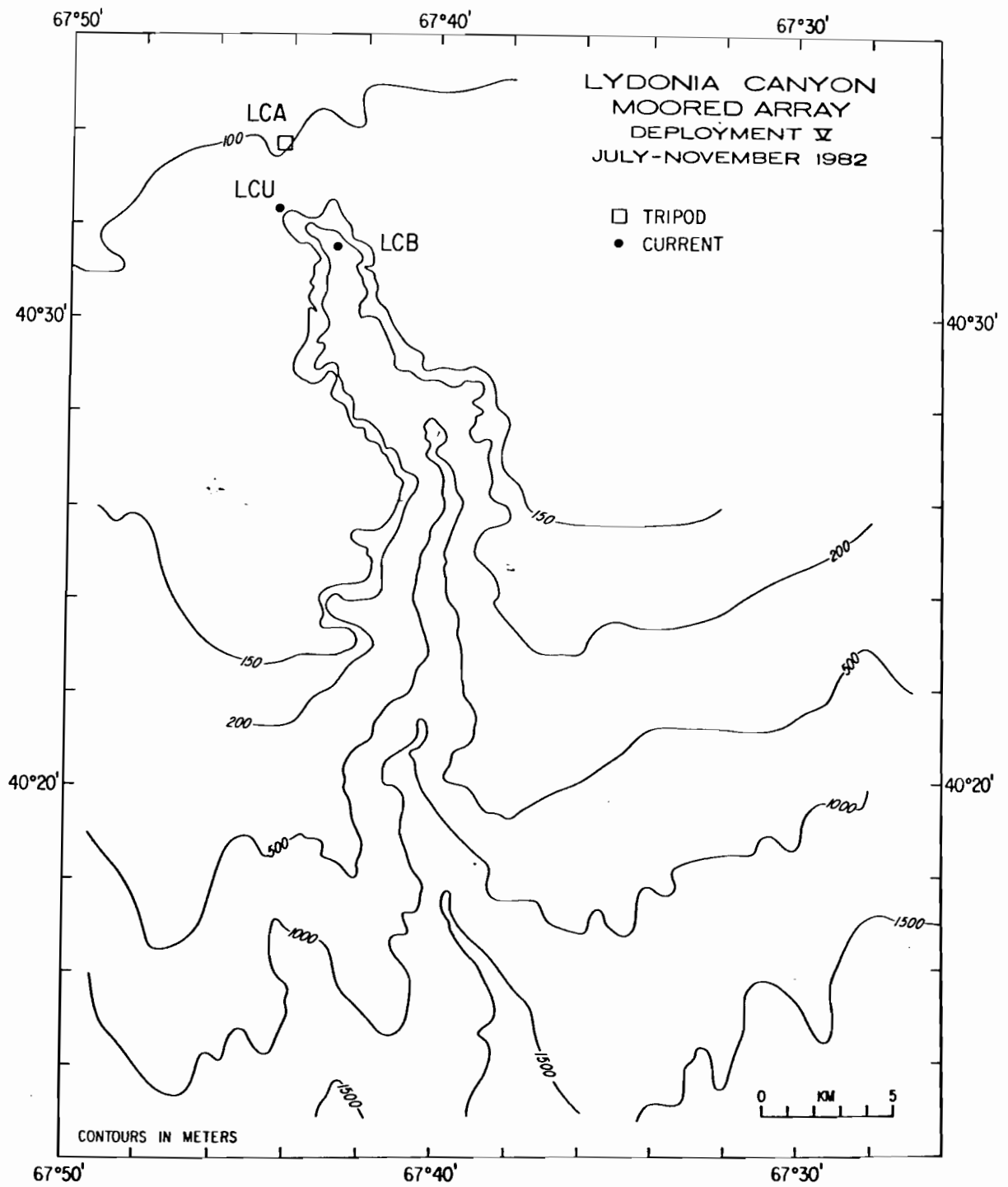


Figure 3. Lydonia Canyon deployment 5, deployed on OCEANUS 122.

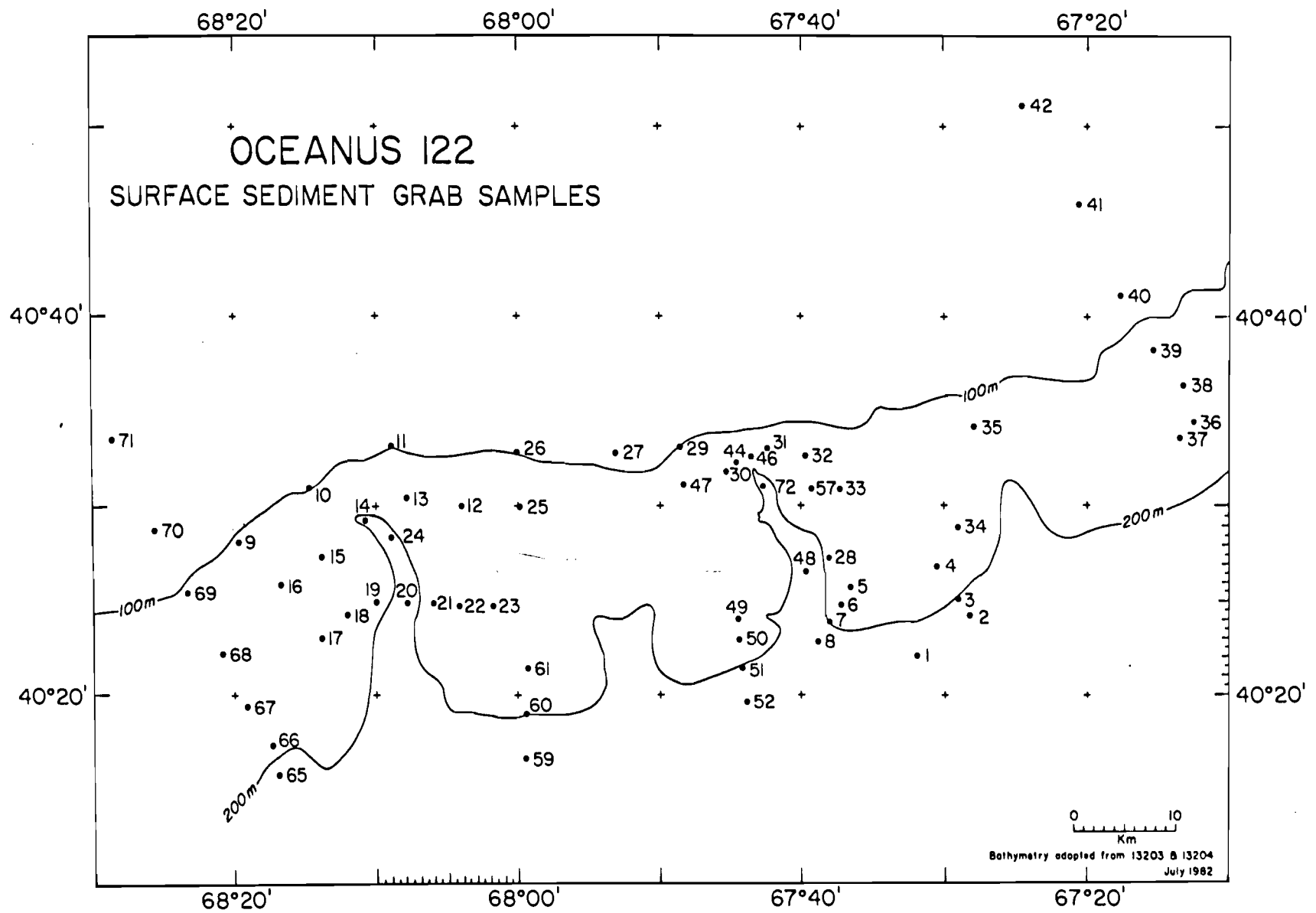


Figure 4. Grab sample locations, OCEANUS 122.

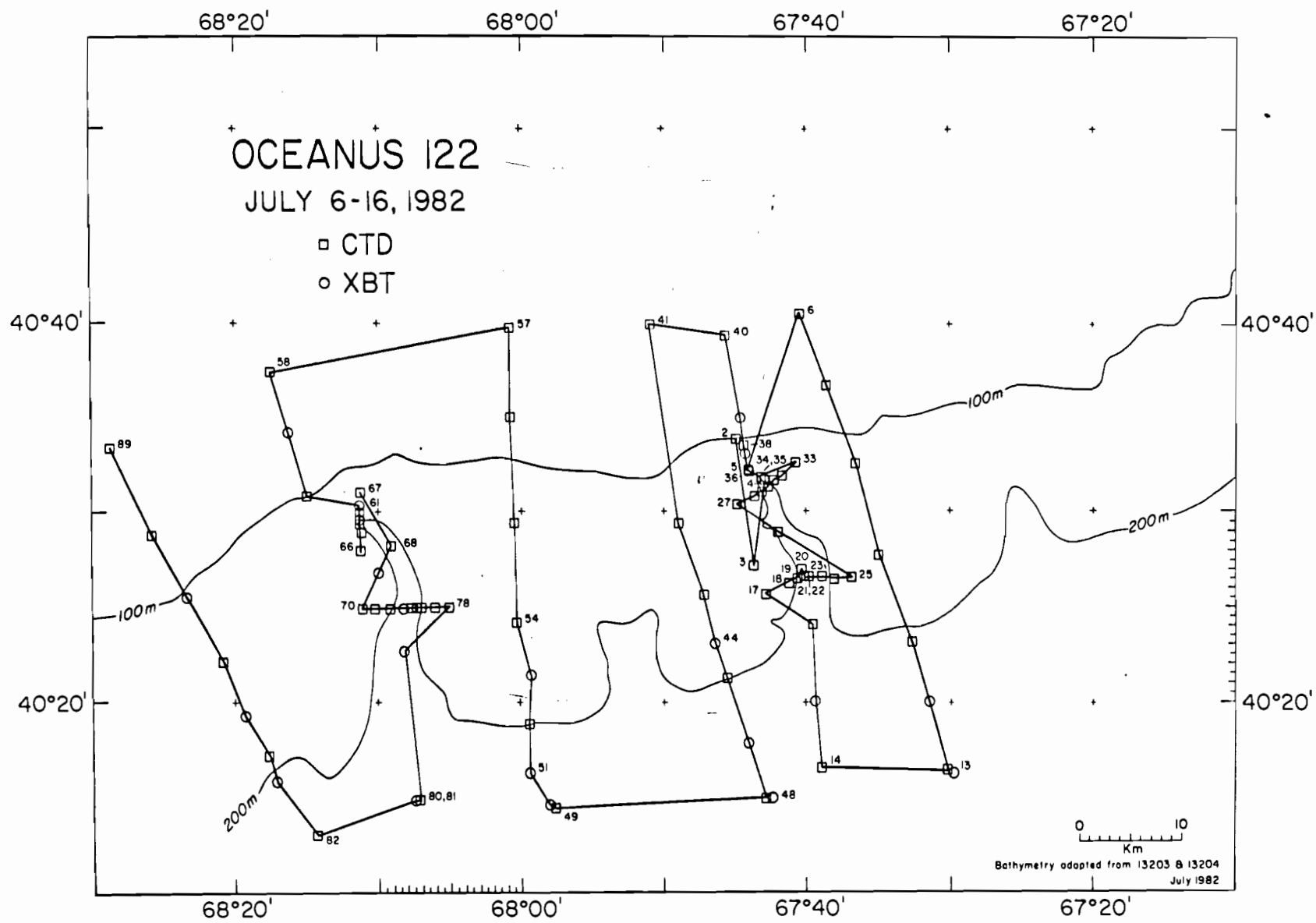


Figure 5. Hydrographic station locations, OCEANUS 122.

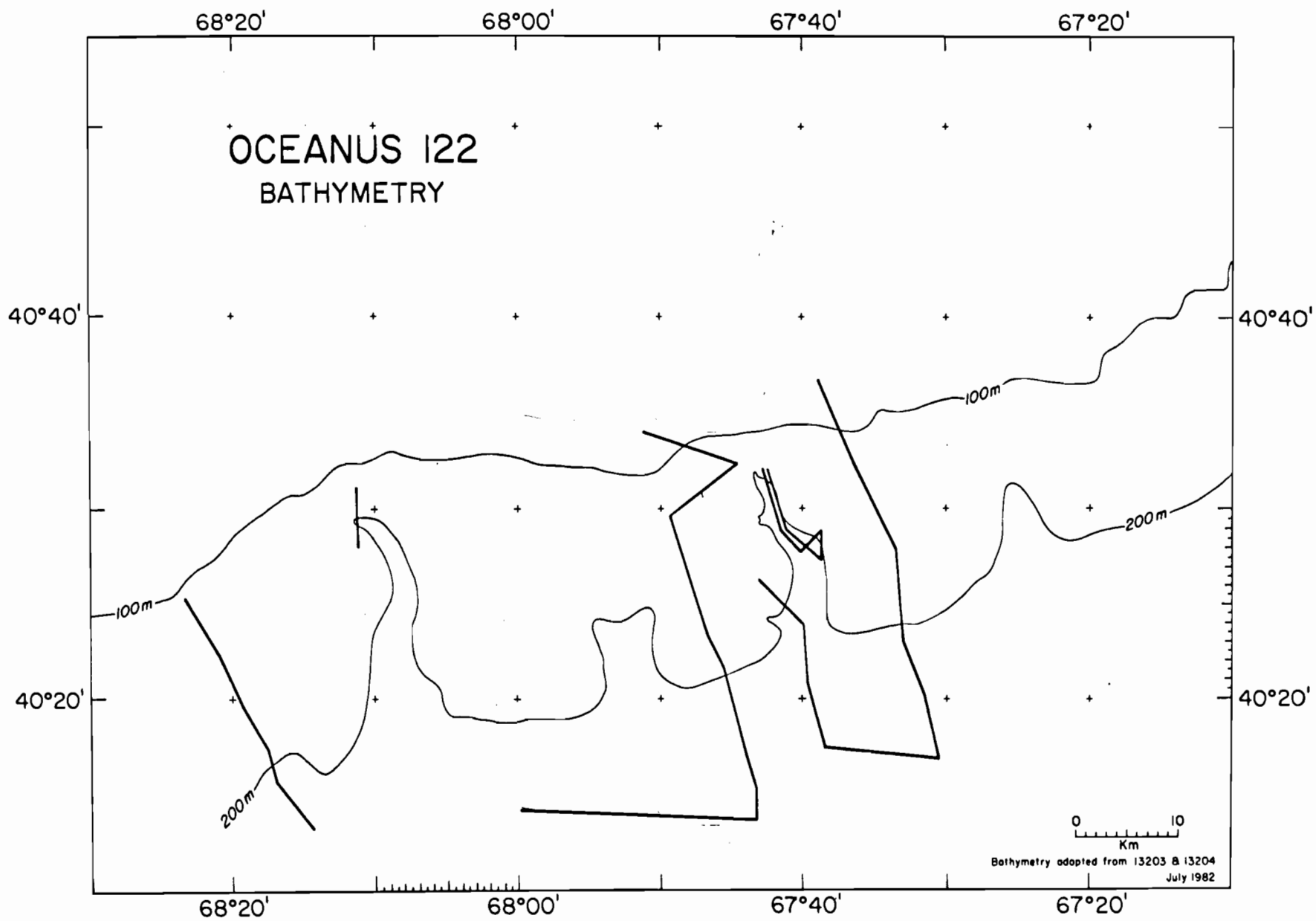


Figure 6. Bathymetry, OCEANUS 122.

APPENDIX

OCEANUS 122

July 6-15, 1982

T Y P	STA	E	DATE	TIME	LATITUDE	LONGITUDE	WATER DEPTH		SURFACE SAMPLE	BOTTOM DEPTH		SAMPLE.....		
							(M)	CTD	XBT	S	N	(M)	S	N	(ml/l) SS
	1	S	820706	2032	40 40.13	67 00.33	50	X		TEST CAST					
	2	S	820707	0654	40 33.84	67 44.99	100	X	AE02	X	88	AE01	X	5.04	
	3	S	820707	1246	40 27.28	67 38.04	155	X	AE03	X	147	AE06	X	X	
	3	E		1300	40 27.25	67 37.63									
B	4	S	820707	1845	40 31.51	67 42.82	287	X	AE07		265	AE08	X	4.60 X	
	4	E		1902	40 31.72	67 42.73									
	5	S	820711	1720	40 32.19	67 44.24	155	X	AE09		149				
U	5	B		1733	40 32.23	67 44.27									
	5	E		1738	40 32.22	67 44.28									
	6	S	820712	1120	40 40.45	67 40.50	78	X	AE10	X	75	AE11	X	5.47 X	
	6	E		1133	40 45.50	67 40.62									
	7	S	820712	1215	40 36.68	67 38.73	85	X	AE12	X	78	AE13	X	4.84	
	7	B		1219	40 36.62	67 38.81									
	7	E		1224	40 36.97	67 38.88									
	8	S	820712	1305	40 32.52	67 36.64	123	X	AE14	X	119	AE15	X	4.51	
	8	B		1310	40 32.53	67 36.66									
	8	E		1316	40 32.55	67 36.73									
	8	S	820712	1354	40 27.62	67 34.99	138	X	AE16	X	133	AE17	X	4.11 X	
	9	B		1358	40 27.85	67 35.07									
	9	E		1404	40 27.92	67 35.17									
I	10	S	820712	1444	40 23.12	67 32.89	235	X	AE18	X	229	AE19	X	4.00 X	
	10	B		1451	40 23.19	67 32.85									
	10	E		1459	40 23.27	67 32.75									
	11		820712	1530	40 20.06	67 31.72	730		X	AE20					
	12	B	820712	1612	40 16.62	67 30.43	1280	X		AE25	X	741	AE24	X	4.59
	12	E		1628	40 16.35	67 30.01									
	13	S	820712	1634	40 16.35	67 30.01	1200		X						
	14	S	820712	1725	40 17.49	67 39.08	1205	X		AE21	X	1144	AE22	X	4.16 X
	14	B		1750	40 17.60	67 38.83									
	15	S	820712	1832	40 20.90	67 39.54	675		X	AE26					
	16	S	820712	1902	40 24.06	67 39.71	635	X		AE28	X	392	AE27	X	4.56 X
	16	E		1921	40 24.19	67 39.43									
	17	S	820712	2003	40 25.84	67 43.00	139	X		AE30	X	135		X	4.39 X
	17	B		2010	40 25.81	67 42.94									
	17	E		2015	40 25.83	67 42.19									
	18	S	820712	2030	40 26.36	67 41.41	140	X		AE31	X	132	AE32	X	
	18	B		2034	40 26.37	67 41.32									
	18	E		2041	40 26.37	67 41.21									
	19	S	820712	2053	40 26.53	67 40.70	185	X		AE33	X	182	AE34	X	
	19	B		2058	40 26.57	67 40.62									
	20	B	820712	2102	40 26.97	67 40.52	223	X				AE34		4.14 X	
	20	E		2106	40 26.58	67 40.46									
	21	S	820712	2113	40 26.59	67 40.41	247	X		CD01	X	251	CD02	X	4.31
	21	B		2117	40 26.59	67 40.24									
	21	E	820712	2123	40 26.58	67 40.12	300								
	22	S	820712	2127	40 26.58	67 40.06	325	X		CD03	X	2500	CD04	X	4.89 X
	22	E		2215	40 26.60	67 39.29									
	23	S	820712	2221	40 26.59	67 39.18	350	X		CD05	X	283	CD06	X	4.45
	23	B		2228	40 26.58	67 39.05	300								
	23	E		2236	40 26.58	67 38.90	290	X							

T Y P	STA	E	DATE	TIME	LATITUDE	LONGITUDE	WATER DEPTH		SURFACE SAMPLE	BOTTOM DEPTH		SAMPLE.....	
							(M)	CTD XBT	S	N	(M)	S	N	(ml/l) SS
	24	S	820712	2255	40 26.52	67 39.29	175	X	CD07	X	154	CD08	X	4.35 X
	24	B		2239	40 26.48	67 39.18								
	24	E		2304	40 26.46	67 39.02								
	25	S	820712	2316	40 26.53	67 36.94	149	X	CD09	X	136			
	25	B		2320	40 26.53	67 36.88								
	25	E		2325	40 26.51	67 36.82								
	26	S	820713	0006	40 29.01	67 42.07	395	X	CD10	X	392	CD11	X	4.81 X
	26	B		0015	40 29.06	67 42.03								
	26	E		0027	40 29.17	67 42.05								
	27	S	820713	0053	40 30.36	67 44.88	127	X	CD12	X	119	CD13	X	4.18 X
	27	B		0057	40 30.39	67 44.88								
	27	E		0103	40 30.43	67 44.84								
	28	S	820713	0118	40 30.94	67 43.72	130	X	CD14	X	122			
	28	B		0122	40 30.95	67 43.69								
	28	E		0125	40 30.96	67 43.62								
	29	S	820713	0138	40 31.18	67 43.18	167	X	CD15	X	161	CD16	X	4.34
	29	B		0144	40 31.20	67 43.09								
	29	E		0150	40 31.24	67 43.08								
LC2	30	S	820713	0201	40 31.39	67 42.85	322	X		X	309	CD17	X	4.39 X
	30	B		0209	40 31.43	67 42.75								
	30	E		0222	40 31.47	67 42.54								
	31	S	820713	0235	40 31.65	67 42.34	145	X	CD18		139	CD19	X	4.40
	31	B		0240	40 31.72	67 42.36								
	31	E		0244	40 31.73	67 42.35								
	32	S	820713	0254	40 31.89	67 41.81	129	X	CD20	X	121			
	32	B		0257	40 31.87	67 41.76								
	32	E		0300	40 31.86	67 41.72								
	33	S	820713	0314	40 32.57	67 40.91	125	X	CD21	X	117	CD22	X	4.15 X
	33	B		0317	40 32.58	67 40.84								
	33	E		0321	40 32.64	67 40.81								
	34	S	820713	0344	40 31.77	67 43.39	217	X	CD23	X	212		X	
	34	B		0350	40 31.72	67 43.30								
	34	E		0356	40 31.67	67 43.19								
	35	S	820713	0400	40 31.65	67 43.13	265	X			230	CD24		4.41 X
	35	E		0410	40 31.59	67 42.98								
	36	S	820713	0452	40 32.10	67 44.22	167	X	CD26	X	159		X	4.46 X
	36	B		0452	40 32.10	67 44.17								
	37		820713	0520	40 33.13	67 44.43	120			X				
	38	S	820713	0537	40 33.56	67 44.47	108	X	CD28	X	97	CD28	X	5.07
	38	B		0541	40 33.53	67 44.29								
	39		820713	0602	40 35.02	67 44.60				X				
	40	S	820713	0657	40 39.41	67 45.66	78	X	CD31	X	74	SP04	X	5.40 X
	41	S	820713	0934	40 39.97	67 51.01	95	X	SP06	X	90	SP07	X	5.61 X
	41	E		0942	40 39.97	67 51.01								
	42	S	820713	1142	40 29.46	67 48.39	113	X	SP08	X	107	SP09	X	4.59 X
	42	B		1148										
	42	E		1151	40 29.45	67 48.07								
	43	S	820713	1224	40 25.59	67 47.31	147	X	SP10	X	145	SP11	X	4.10
	43	B		1229	40 25.59	67 47.36								
	43	E		1234	40 25.67	67 47.42								

T Y P	STA	E	DATE	TIME	LATITUDE	LONGITUDE	WATER DEPTH		SURFACE SAMPLE	BOTTOM DEPTH		SAMPLE.....		
							(M)	CTD	XBT	S	N	(M)	S	N	(ml/l)
	44		820713	1253	40 23.05	67 46.45	----		X	SP12					
	45	S	820713	1310	40 21.34	67 45.71	189	X		SP13	X	168	SP14	X	4.10 X
	45	B		1315	40 21.36	67 45.69									
	45	E		1320	40 21.38	67 45.64									
	46		820713	1344	40 18.01	67 44.22	770		X	SP15					
	47	S	820713	1404	40 15.14	67 42.97	1345	X		SP16	X	746	SP17	X	5.72
	47	B		1420	40 15.20	67 42.78									
	48		820713	1441	40 15.14	67 42.54	----		X						
	49	S	820713	1613	40 14.30	67 57.60	600	X		SP18	X	~720	SP19	X	5.72 X
	49	B		1630											
	49	E		1646	40 14.40	67 58.90									
	50		820713	1652	----	----	700		X	SP20	X				
	51		820713	1753	40 16.43	67 59.52	330		X	SP21	X				
	52	S	820713	1836	40 18.96	67 59.53	192	X		SP22	X	187	SP23	X	3.78 X
	52	E		1850	40 18.93	67 59.27									
	53		820713	1925	40 21.36	67 59.34	145		X	SP24					
	54	B	820713	1953	40 24.18	68 00.27	143	X		SP25	X	~135	SP26	X	4.25 X
	55	S	820713	2041	40 29.53	68 00.48	121	X		SP28	X	111	SP29	X	4.45
	55	E			40 29.55	68 00.57									
	56	S	820713	2151	40 35.02	68 00.57	93	X		SP30	X	84	SP31		4.96 X
	56	E		2158	40 35.04	68 00.60									
	57	S	820714	0450	40 39.94	68 00.68	85	X		SP32	X	80	SP33	X	5.08 X
	57	E		0457	40 39.94	68 00.67									
	58	S	820714	0630	40 37.38	68 17.53	83	X		SP34	X	78	SP35	X	5.34
	58	E		0638	40 37.22	68 17.47									
	59		820714	0700	40 34.12	68 16.21	93		X	MN01					
	60	S	820714	0720	40 30.73	68 14.85	99	X		MN02	X	96	MN05	X	4.61 X
	60	E		0727	40 30.53	68 14.85									
	61		820714	0757	40 30.28	68 11.08	119		X						
	62	S	820714	0808	40 30.02	68 11.08	127	X		MN03	X	118	MN04	X	4.37
	62	E		0815	40 29.88	68 11.18	130								
	63		820714	0825	40 29.50	68 11.05	----		X						
	64	S	820714	0828	40 29.44	68 11.10	195	X		MN06	X	196	MN07	X	4.07 X
	64	B		0834	40 29.35	68 11.21									
	65	S	820714	0850	40 28.97	68 11.05	150	X		MN08	X	147	MN09	X	3.95
	65	E		0859	40 28.91	68 11.04	158								
	66	S	820714	0911	40 27.93	68 11.1	120	X		MN10	X	119	MN11	X	4.10 X
	66	E		0918	40 27.79	68 11.16									
	67	S	820714	0950	40 30.99	68 11.11	110	X		MN12	X	94	MN13	X	4.69 X
	67	E		0957	40 30.96	68 11.16	110								
	68	S	820714	1016	40 28.28	68 09.04	380	X		MN14	X	323	MN15	X	4.67 X
	68	B		1025	40 28.08	68 09.12	335								
	68	E		1033	40 28.00	68 09.31									
	68		820714	1041	40 26.93	68 09.92	139		X						
	70	S	820714	1054	40 24.92	68 11.02	140	X		MN16	X	134	MN17	X	4.07 X
	70	E		1103	40 24.87	68 11.17	140								
	71	S	820714	1114	40 24.96	68 10.06	150	X		NONE		143	NONE	X	4.07
	71	E		1119	40 24.88	68 10.07	150								
	72	S	820714	1133	40 24.99	68 09.02	235	X		NONE		229	NONE	X	3.83
	72	B		1138	40 24.97	68 09.05	234								

STA	TYPE	DATE	TIME	LATITUDE	LONGITUDE	WATER DEPTH (M)	CTD	XBT	SURFACE SAMPLE	BOTTOM DEPTH		SAMPLE.....	
									S	N	(M)	S	N	(ml/l) SS
72	E		1144	40 24.93	68 09.10									
73	S	820714	1150	40 24.98	68 08.18	----		X						
74	S	820714	1154	40 24.99	68 07.84	520	X		MN18	X	514	MN19	X	3.21 X
74	B		1205	40 24.97	68 07.94									
75	S	820714	1225	40 25.00	68 07.36	~455		X						
76	S	820714	1231	40 25.01	68 07.04	285	X		NONE		275	NONE	X	3.95
76	B		1245	40 25.24	68 07.22									
76	E		1252	40 25.31	68 07.29									
77	S	820714	1306	40 25.04	68 05.97	148	X		NONE		143	NONE	X	4.02
77	B		1311	40 25.08	68 05.96									
77	E			40 25.16	68 05.98									
78	S	820714	1330	40 25.00	68 04.95	146	X		MN20	X	139	MN21	X	3.89 X
78	B		1334	40 25.13	68 04.98									
78	E		1339	40 25.16	68 05.00									
79	S	820714	1411	40 20.74	68 08.06	----		X	MN22					
80	S	820714	1450	40 15.02	68 07.10	1020	X		MN23	X	751	MN24	X	5.56
80	B		1505	40 15.06	68 07.22									
81	S	820714	1527	40 15.12	68 07.43	955		X	NONE					
82	S	820714	1600	40 13.10	68 14.23	575	X		MN25		531			
82	B		1610	40 13.22	68 14.34									
83	S	820714	1709	40 15.99	68 17.07	275		X						
84	S	820714	1737	40 17.21	68 17.57	175	X		NONE		NA	MN30	X	3.77 X
85	S	820714	1823	40 19.34	68 19.34	142		X	MN26					
86	S	820714	1850	40 22.10	68 20.78	118	X		MN29	X	114	MN28	X	4.22
86	E		1900	40 22.10	68 20.83	117								
87	S	820714	1932	40 25.50	68 23.35	103		X	MN35	X				
88	S	820714	2009	40 28.69	68 25.58	92	X		MN32	X	85	MN33	X	4.73 X
									MN34					
88	E		2016	40 28.64	68 25.56	92								
89	S	820714	2108	40 33.43	68 28.58	80	X		MN27	X	71	MN31	X	5.29 X
89	E		2112	40 33.42	68 28.53	80								

Date	Time	Z Sta.	TYPE +/-	FIM/F.D Reading	N Latitude	W Longitude	Remarks
	1115	1515					U/L FM UNKDS HOLE
	1400	1800	LC-7		41-11.70	70-37.55	POSIT
	1500	1900	LC-7		41-11.12	70-21.90	
	1615	2015	LC		41-10.9	70-12.3	BUOY 'C' AT STA '6BS' IS ABD
	1701	1901	UB		"	"	BUOY 'F' AT STA '6BS' IS ABD & @ 1710 END STA S/C 222°g @ 200R
	1806	2206	LC		41-02.5	70-22.0	1806 - CHANGE DESTIN 10N S/C 144°g
	1900	2300	LC		40-53.36	70-14.35	
	2000	0000	LC		40-44.09	70-05.77	
	2025	0025	LC		40-40.0	70-01.97	c/c 090-G 2030-H-T
	2052	0052			40-40.14	70-00.18	CTD 2107- S/c 090- @ 170R
	2200	0200	LC		40-40.07	69-45.13	
	2300	0300	LC		40-40.3	69-29.33	
	2350	0350	LC		40-40.0	69-15.94	c/c 101-F

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Date	+4 Time	Z Sta.	TYPE +/-	FIM/T-D Reading	N Latitude	W Longitude	Remarks
7/7	0100	0500	LC		40-37.12	68-58.04	
	0200	0600	LC		40-34.24	68-42.65	% 093°
	0300	0700	LC		40-32.55	68-27.18	% 097°
	0350	0750	LC		40-30.81	68-14.92	ALONG SIDE BOUY "E" EXTINGUISHER
	0400	0800	LC		40-31.88	68-16.01	
	0414	0814	LC		40-33.61	68-18.27	BOUY POSIT - EXTINGUISHER % 082°
	0500	0900	LC		40-33.84	68-07.77	
	0600	1000	LC		40-33.97	67-53.01	
	0629	1029	LC		40-33.92	67-46.16	0629 CL BY LYDONIA CANYON BOUY SITE - CME
	0652	1052	LC		40-33.84	67-45.51	JOB 66106 f @ 0652 CME CT 0714 END CTD
	0914	1314	LC	24997.7 43421.1	40-33.83	67-44.31	Set Surface Mooring
	1011	1411	LC		40-34.06	67-44.85	Recover Trawl - Site "A"
	1522				40-32.52	67-36.51	H-T - Site "L"

Date	+4 Time	Z Sta.	+/-	FIM/TD Reading	N Latitude	W Longitude	Remarks
7/7	1200	1600	LC7		40-32.48	67-36.59	NOON POSIT
	1244	1644	LC7		40-27.30	67-38.40	MANUEVERING SITE L C Q
	1251	1651	LC7		40-27.23	67-38.33	CMC CTD STA
	1305	1705	LC7		40-27.23	67-38.12	F/W CTD STA
	1336	1736	LC7		40-27.23	67-38.57	RECOVER SUB SURF L C Q
	1432	1832	LC7		40-26.50	67-38.92	RECOVER SUB SURF L C R
	1533	1933	LC7		40-26.74	67-39.91	RECOVER SUB SURF L C O
	1657	2057	LC		40 28.09	67.39.51	MOORING AOD 1657 (LCS) END STA S/C 212 y · 12.0 KTS
	1711	2211	LC		40-26.48	67-40.93	1711 HT @ 'LCT' 1738 ^{SE} BUOY ALONGSIDE
	1744	2144	LC		40-26.63	67-40.61	1744 MOORING AOD S/C 33 12.0 KTS (LCT)
	1821	2221	LC		40-31.51	67-43.20	1821 HT. 'LCB'
	1853	2253	LC		40-31.61	67-43.10	1853 CTD AT DEPTH 1900 RECOVER SUBSURF MOORING AT 'LCB'
	2132	0132	LC		40-32.34	67-44.62	Launch Surface Mooring
	2302	0302	LC	6000	40-32.00	67 42.97	Cine bathymetric survey Vae Co @ 4.0 kts
	2335	0335	LC	"	40-30.0	67-42.0	
	2353	0353	LC		28.8	41.36	

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Date	+4 Time	Z Sta.	TYPE +/-	FIM/TD Reading	N Latitude	W Longitude	Remarks
7/8	0000	0400	LC		40-28.27	67-41.16	
	0221	0621	LC		40-32.00	67-42.77	F/W SURVEY (BATHYMETRIC) H
	0300	0700	LC		40-32.28	67-42.72	POSIT
	0400	0800	LC		40-31.69	67-42.01	0530 CME JOGGING
	0602	1002	LC		40-33.73	67-44.67	0602 H.T. - SITE A
	0746	1146	7000 LC	13463.8 43421.3	40-33.81	67-44.54	0746 LAUNCH TRIPOD AT SITE A
	1008	1408	LC		40-32.94	67-42.23	Cme launch of SS moving Var ^o /ykt.
	1118	1518	6000 LC		40 31 97	67 43.24	
	1146	1546	7000 LC		40-31.49	67 43-08	Let go moving anchor
	1200	1600	LC 7		40-31.65	67-42.81	NOON POSIT
	1424	1824	LC 7		13470.4 40 32.36	43413.0 67-44.71	DEPLOY SUB SURFACE A/S AT SITE "LCU"
	1504	1904	LC 7		40-32.38	67-36.54	A T 'LCL' DRAG SITE VAR 1825-TRIPOD GRAPPLED
	1854	2254	LC		40 32.39	67 36.78	1854 TRIPOD ON DECK 1904 S/C 168g TO
	2052	0052	7000 LC		40-23.16	67-33.05	Reun SS LCI

Vessel OCEANUSPage 6Cruise 122LORAN LOG

FRIDAY JULY 9, 1982

Date	Time	Z Sta.	TYPE +/-	FIM/T.D. Reading	N Latitude	W Longitude	Remarks
7/9	0047	0447	LC6		40-25.04	67-29.23	LC GRAB #3
	0116	0516	LC6		40-26.81	67-38.26	LC " #4
	0158	0558	LC6		40-25.63	67-36.51	LC GRAB #5
	0224	0624	LC6		40-24.67	67-37.27	LC GRAB #6
	0248	0648	LC6		40-23.76	67-38.06	LC GRAB #7
	0321	0721	LC6		40-22.73	67-38.74	LC GRAB #8 LC GRAB #8A
	0500	0900	LC7		40-23.25	67-47.42	0419 S/C 275°g
	0600	1000	LC7		40-24.49	67-58.44	
	0653	1053	LC7		40-24.56	68-07.98	0653 H.T. @ OCC
	0811	1211	LC7		40-24.87	68-07.8	Recover SS-OCC
	1146	1546	LC-C		40-29.44	68-10.90	Drag for SS ^{OCC} mooring
	1200	1600	LC7		40-29.24	68-11.12	NOON POSIT
	1309	1709	LC7		40-29.78	68-11.12	RECOVER PARTIAL OCC SS GEAR
	1500	1900	LC7		40-29-55	68-10-78	POSIT
	1525	1925	LC7		40-29.37	68-11.35	POSIT

SAT JULY 10, 1982

Date	+4 Time	Z Sta.	TYPE +/-	FIM/ID. Reading	N Latitude	W Longitude	Remarks
7/10	0013	0413	LC6		40-30.76	68-14.77	GRAB STA OC #10
	0051	0451	LC6		40-33.12	68-08.97	" " " #11
	0133	0533	LC6		40-30.01	68-03.89	GRAB STA #12
	0202	0602	LC6		40-30.32	68-07.94	GRAB STA #13
	0229	0629	LC6		40-29.35	68-11.15	GRAB STA #14
	0258	0658	LC6		40-27.45	68-13.87	GRAB STA #15
	0324	0724	LC6		40-25.97	68-17.00	GRAB STA #16
	0354	0754	LC6		40-29.93	68-13.96	GRAB STA #17
/	0423	0823	LC6		40-24.31	68-12.01	GRAB STA #18
/	0452	0852	LC6		40-24.90	68-09.99	GRAB STA #19
/	0518	0918	LC6		40-24.88	68-07.70	GRAB STA #20
/	0549	0949	LC6		40-24.63	68-07.59	RETAKE ~ STA #20
/	0622	1022	LC6		40-24.93	68-05.99	STA #21
/	0630	1030	LC6		40-24.80	68-05.98	RETAKE #21

SAT, JULY 10, 1982

Date	Time	Sta.	+/-	FIM/T-D. Reading	Latitude	Longitude	Remarks
	+ 4	6MT			NORTH	WEST	SATURDAY JULY 10, 1982
	0648	1048	LC6		40-24.85	68-04.27	GRAB SAMPLE #22
	0718	1118	LC6		40-24.80	68-01.78	GRAB SAMPLE #23
	0812	1212	LC6		40-28.28	68-09.07	Grab #24
	0917	1317			40-30.87	68-14.94	Recover Surface Buoy
	0949	1349			40-33.78	68-17.92	Recover Surface Buoy 1020 Var Co to grab site
	1152	1552			40-29.82	68-59.71	Grab Sample #25
	1200	1600	LC7		40-30.67	67-59.93	NOON POSIT
	1216	1616	LC6		40-30.57	68-00.09	GRAB #26
	1255	1655	LC6		40-32.63	67-53.00	GRAB #27
	1352	1752	LC7	13449.9 43456.2	40-39.66	67-46.76	LAUNCH SURFACE BUOY # "R" LB 312
	1419	1819	LC7	13450.9 43454.6	40-39.39	67-46.79	LAUNCH SURFACE BUOY # "E" LB 312
	—	—	—	—	—	—	1/2 153° 1/5 165 RPM
	1545	1945	LC7		40-27.33	67-38.45	RECOVER BUOY "A" AT LC6

SUN, 11 JULY 1982

Date	+4 Time	Z Sta.	TYPE +/-	T.D's Reading	N Latitude	W Longitude	Remarks
	0000	0400	LC6		40-32.99	67-48.72	MIDNIGHT POS. IT
	0007	0407	LC ^b		40 33.01	67 48.38	GRAB STA # 29
	0032	0432	LC ^b		40 31.61	67 45.17	GRAB STA # 30
	0112	0512	LC ^b		40-30.89	67- 42.77	GRAB STA # 30.5
	0138	0538	LC ^b		40 32.96	67 42.22	GRAB STA # 31
	0201	0601	LC ^b		40-32.54	67-39.52	GRAB STA # 32
	0227	0627	LC ^b		40-30.71	67- 37.20	GRAB STA # 33
	0312	0712	LC ^b		40-29.02	67- 28.98	GRAB STA # 34
	0406	0806	LC ^b		40.34.10	67.28.00	0406 GRAB STA # 35
	0510	0910	LC ^b		40.34.40	67.12.41	0510 H.T. @ SITE # 410
	0550	0950	LC6000	13328.3 43406.8	40.34.2	67.12.3	HYDRAULIC MVD GRAB 0550 122-36A OC
	0640	1040	LC6000	13328.3 43406.8	40.34.2	67.12.3	HYDRAULIC MVD GRAB - # 3 0640 122-36B OC
	0727	1127	LC6000	13335.9 43402.6	40.33.5	67.13.8	HYDRAULIC MVD GRAB 0727 122-37 OC

SUN JULY 11, 1982

Date	Time	Sta.	+/-	Reading	Latitude	Longitude	Remarks
	+4	GMT			N	W	Sunday - July 11
	0821	1221	LC-6		40-36.41	67-13.51	Grab Sample # 38
	0852	1252	LC-6		40-38.89	67 15.4	Grab # 39
	0918	1318	LC 6		40-41 02	67-17.62	Grab # 40
	1002	1402	LC 6		40 45.95	67 20.47	Grab # 41
	1041	1441			40-51.13	67 24.46	# 42 - A
	1054	1454			40-51.15	67-24.46	# 42-B
	1102	1502			40-51.16	67-24.35	# 42-C
	1115	1515			40 .51.09	67 24.48	# 42-C
	1200	1600	LC		40-47.20	67-33.37	NOON POS. T
	1325	1725	LC 7	13428.1 43453.6	40-39.75	67-41.91	LAUNCH MOORING SS # 262 AT LB 312 C
	1411	1811	LC 7	13447.7 43454.9	40-39.51	67-46.23	H.T. CORING STA.
	1418	1818	LC 7	13447.4 43455.3	40-39.58	67-46.17	CORE # LC 43 (NG)
	1433	1833	LC 7	13447.7 43455.0	40-39.53	67-46.21	" " " 43 (NG)

Vessel OCEANUSPage 14Cruise 122LORAN LOG

MON, JULY 12 1982

Date	+4 Time	Z Sta.	TYPE +/-	TID'S Reading	N Latitude	W Longitude	Remarks
7/12	0108	0508	LC6		40-26.63	67-39.49	GRAB STA # 48
	0156	0556	LC6		40-23.99	67-44.40	GRAB STA # 49
	0215	0615	LC6		40-22.68	67-44.22	GRAB STA # 50
	0235	0635	LC6		40-21.38	67-43.93	GRAB STA # 51
	0302	0702	LC6		40-19.56	67-43.86	GRAB STA # 52
	0452	0852	LC6	13469.6 43411.8	40-32.19	67-44.06	BOTTOM HYDRAULIC CORE - N.C.
	0514	0914	LC6	13471.3 43411.9	40-32.17	67-44.47	BOTTOM HYDRAULIC CORE # 53
	0602	1002	LC6	13465.5 43411.7	40-32.25	67-43.20	BOTTOM HYDRAULIC CORE # 54
	0642	1042	LC6	13453.5 43405.3	40-31.47	67-39.97	BOTTOM HYDRAULIC CORE # 55A
	0718	1118	LC6	13453.9 43403.7	40-31.21	67-39.82	BOTTOM HYDRAULIC CORE # 55B
	0836	1236	LC6		40-30.88	67-39.19	Grab # 55-C
	0947	1347	LC6	13470.6 43412.2	40-32.22	67-44.33	Bury "C" ϕ 323-T - 10m Piston Core # 56
	1128	1528			40-40.5	67-40.6	CTD # 6

MON, JULY 12, 1982

Date	+4 Time	Z Sta.	TYPE +/-	TD'S Reading	N Latitude	W Longitude	Remarks
	1300	1600			40-36.48	67-38.66	NOON POSIT 147 CTD STA
	1220	1620	LC6		40-36.88	67-38.84	CTD # 7
	1309	1709	LC6		40-32.53	67-36.66	CTD # 8
	1359	1759	LC6		40-27.85	67-35.07	CTD # 9
	1451	1851	LC6		40-23.18	67-32.81	CTD # 10
*	1613	2013	LC6		40-16.63	67-30.40	CTD # 11
	1752	2252	LC6		40-17.61	67-38.80	CTD # 12
	1918	2318	LC6		40-24.13	67-39.34	CTD # 13
	2010	0010	LC-6		40-25.82	67-42.94	CTD # 14
	2035	0035	LC-6		40-26.36	67-41.31	CTD # 15
	2058	0058	LC-6		40-26.55	67-40.6	CTD # 16
	2117	0117	LC-6		40-26.57	67-40.23	CTD # 17
	2159	0159	LC-6		40-26.57	67-39.48	CTD # 18
	2228	0228	LC-6		40-26.59	67-39.08	CTD # 19

Vessel OCEANUSPage 17Cruise 122LORAN LOG

TUES, JULY 13, 1982

Date	Time	Sta.	+/-	Reading	Latitude	Longitude	Remarks
	0000	0400	LC6		40-29.01	67-42.06	MIDNIGHT POSIT.
	0018	0418	LC6		40-29.09	67-42.07	CTD # 26
	0100	0500	LC6		40-30.40	67-44.83	CTD # 27
	0124	0524	LC6		40-30.96	67-43.63	CTD # 28
	0142	0542	LC6		40-31.20	67-43.13	CTD # 29
	0210	0610	LC6		40-31.42	67-42.75	CTD # 30
	0240	0640	LC6		40-31.71	67-42.37	CTD # 31 (LCB)
	0257	0657	LC6		40-31.86	67-41.76	CTD # 32
	0318	0718	LC6		40-32.60	67-40.82	CTD # 33
	0350	0750	LC6		40-31.72	67-43.29	CTD # 34
	0402	0802	LC6		40-31.52	67-42.77	CTD # 35
	0452	0852	LC6		40-32.09	67-44.14	CTD # 36
	0550	0950	LCC		40-33.71	67-44.40	CTD # 37
	0707	1107	LC6		40-39.34	67-45.57	CTD # 38 V/C

Vessel OCEANUSPage 18Cruise 122LORAN LOG

TUES, JULY 13, 1982

Date	Time	Sta.	+/-	Reading	Latitude		Longitude	Remarks
					N	W		
	0937	1337			40-34.0	67-51.06		CTD #41
	1055	1455	LC-6	13469.1 43412.7	40-32 36	67-44.10		Piston Core #58
	1147	1548	LC-6	13502.0 43396.7	40-29.44	67-49.04		CTD #42
	1200	1600	LC6		40-28.57	67-49.02		NOON POSIT
	1232	1632	LC6		40-25.67	67-47.41		CTD # 43
	1315	1715	LC6		40 21-36	67 45-67		CTD # 44
	* 1420	1820	LC6		40-15.20	67-42.77		CTD # 45
	1640	2040	LC6		40-14.41	67-58.85		CTD #46
	1742	2142	LC6		40-16.60	67-59.58		MUD GRAB #59
	1844	2244	LC6		40-19.0	67 59.8		MUD GRAB #60
	1843	2243	LC6		40-18 95	67 59.41		CTD # 47
	1924	2324	LC6		40-21.36	67-59.43		CTD # MUD GRAB 61
	2044	0044	LC6		40 29 57	68 00 55		CTD 48

Vessel OCEANUSPage 20Cruise 122LORAN LOG

WED JULY 14, 1982

Date	+4 Time	Z Sta.	TYPE +/-	TD'S Reading	N Latitude	W Longitude	Remarks
7/14	0000	0400	LC6		40-39.46	67-46.26	MIDNIGHT POS. T
	0200	0600	LC6	13449.2 43455.4	40-39.55	67-46.23	HYDRO CORE # 62
	0236	0636	LC6	13451.4 43455.6	40-39.55	67-46.73	HYDRO CORE # 63
	0330	0730	LC6	13447.6 43455.4	40-39.59	67-45.89	FLW CORING HYDRO CORE # 64
	0456	0856	LC6	13511.2 43466.9	40-39.95	68-00.67	CTD # 57
	0636	1036	LC6		40-37.25	67-17.48	CTD # 58
	0728	1128	LC6		40-30.52	68-14.84	CTD # 59
	0811	1211	LC6		40-29.94	68-11.16	CTD # 60
	0835	1235	LC6		40-29.33	68-11.25	CTD # 61
	0855	1255	LC6		40-28.94	68-11.04	CTD # 62
	0915	1315	LC6		40-27.84	68-11.13	CTD # 62
	0954	1354	LC6		40-30.98	68-11.14	CTD # 63
	1025	1425			40-29.10	68-09.12	# 64

WED, JULY 14, 1982

Date	Time	Sta.	+/-	Reading	Latitude ^N	Longitude ^W	Remarks
	14	GMT			N	W	Wednesday July 14
	1058	1458	LC-6		40-24.9	68-11.11	CTD # 65
	1119	1519	"		40 24.92	68-10.04	CTD # 66
	1138	1538			40 24.97	68 09.05	CTD # 67
	1200	1600	LC6		40-24.95	68 07.90	NOON POSIT
	1206	1606	LC6		40-24.97	68-07.96	CTD # 68
	1246	1646	LC6		40-25.24	68 07.21	CTD # 69
	1312	1712	LC6		40-25.09	68-05.96	CTD # 70
	1334	1734	LC6		40-25.13	68-04.97	CTD # 71
	1411	1811	LC6		40-20.75	68-08.06	XBT
	1507	1907	LC6		40-15.07	68-07.22	CTD # 80
	1620	2020	LC6		40.13.21	68.14.86	CTD # 81
	1709	2109	LC6		40.15.90	68.17.17	MUD GRAB #85

Vessel OCEANUSPage 22Cruise 122LORAN LOG

WED JULY 14, 1982

Date	Time	Sta.	+/-	Reading	Latitude	Longitude	Remarks
	+4	GMT			NORTH	WEST	WED JULY 14, 1982
1730	2130	LC 6			40-17.18	68-17.99	MUD GRAB #66
1820	2220	LC 6			40-19.30	68-19.70	MUD GRAB #67
1845	2245	LC 6			40-22.09	68-20.8	MUD GRAB #68
1930	2330	LC 6			40-25.40	68-23.20	MUD GRAB #69
2007	0003	LC 6			40-28.79	68-25.61	Mud Grab #70
2013	0013	LC-6			40-28.66	68-25.59	CTD #88
2104	0104	LC-6			40-33 44	68-28-62	Grab # 71
2110	0110				40-33 44	68-28.55	CTD #89
2122	0122	LC-6			40-33 49	68-28 70	End Science Program S/C 271-G @ 195 RPM
2205	0205	LC-7			40 33.32	68-40.3	c/c 274-G
2304	0304				40-33.76	68-56.2	c/c 272
							2335 c/o 275-G

Vessel OCEANUSPage 23Cruise 122LORAN LOG

THURS, JULY 15, 1982

Date	Time	Z Sta.	TYPE +/-	Reading	N Latitude	W Longitude	Remarks
	0001	0401	LC7		40-34.10	69-11.55	Posit
	0100	0500	LC7		40-34.48	69-28.45	Posit
	0200	0600	LC7		40-34.95	69-45.85	Posit
	0253	0653	LC7		40-35.06	70-00.21	1/2 313°(T)
	0300	0700	LC7		40-36.22	70-01.82	Posit
	0400	0800	LC7		40-44.66	70-13.83	
	0500	0900	LC7		40-53.08	70-26.18	
	0600	1000	LC7		41-01.58	70-38.11	
	0700	1100	LC7		41-09.91	70-49.38	
	0712	1117	LC7		41-11.68	70-51.73	0712 SW SIGNAL BUOY 1.4 MI Ø 045 C/L 000 0715 C/L 354 0802 C/L 0470 DV. BR BUOY Ø 089°
	0915	1310	VIS	ARRIVAL	WN #1	S #2	1.0 MI.