

INFORMAL REPORT AND INDEX OF
NAVIGATION, DEPTH AND MAGNETIC DATA

(Issued February 1982)

PLUTO EXPEDITION

LEG 4

Manzanillo, Mexico (5 November 1981)
to
San Diego, Calif. (1 December 1981)

R/V Melville

Chief Scientist - H. Craig (SIO)

Resident Marine Tech - R. Comer

Post-Cruise Processing and Report Preparation
by S.I.O. Geological Data Center

Data Collection Funded by NSF
Grant Number OCE80-24472

Data Processing Funded by SIA, NSF and ONR

NOTE

This is an index of underway geophysical data edited and processed shortly after the completion of the cruise leg and is intended primarily for informal use within the institution. This document is not to be reproduced or distributed outside Scripps without prior approval of the chief scientist or the Geological Data Center, Scripps Institution of Oceanography, La Jolla, California 92093.

INFORMAL REPORT AND INDEX OF NAVIGATION, DEPTH, MAGNETIC *
AND SUBBOTTOM PROFILER DATA

Contents:

- Index Chart - gives track of cruise leg and boundaries of depth compilation plots (see below).
- Track Charts - annotated with dates (day/month) and hour ticks. The scale is .3 in/degree longitude.
- Profiles - depth and magnetic anomaly vs. distance. Dates (day/month) and positions of major course changes (greater than 30 degrees) are annotated. Sections of track having subbottom profiler (airgun) records have a solid black line along the bottom of the profile.

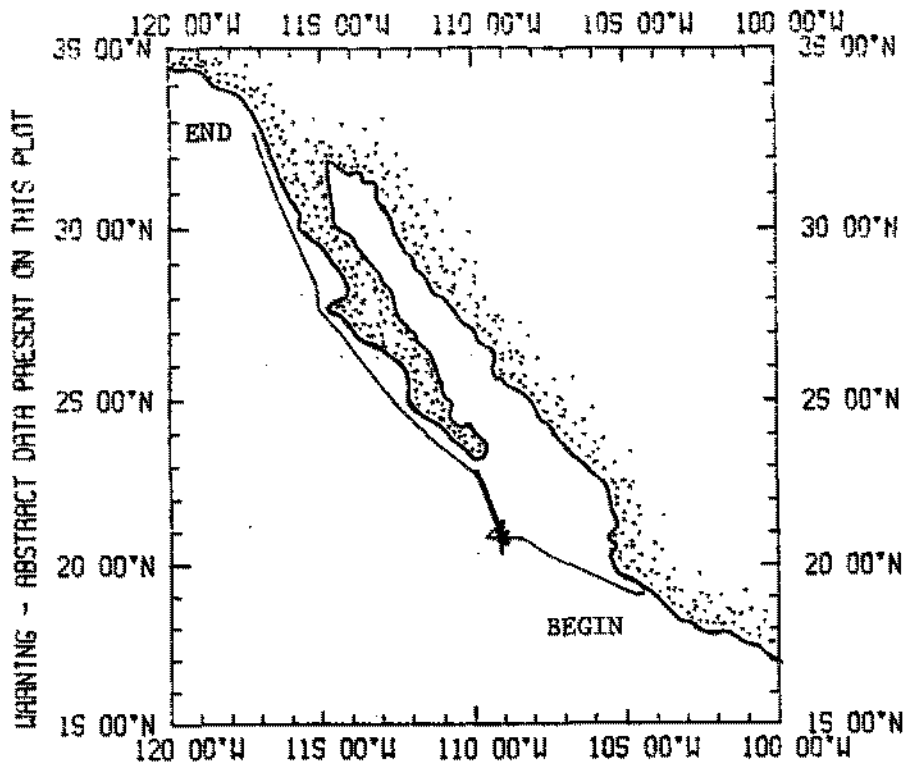
For information on the availability and reproduction costs of data in the following forms, contact S. M. Smith, Curator, Geological Data Center, Scripps Institution of Oceanography, La Jolla, California 92093. Phone (714) 452-2752.

1. Navigation listing of times and positions of course and speed changes, fixes and drift velocity.
2. Depth compilation plots - in fathoms (assumed sound velocity of 800 fm/sec) or meters (assumed sound velocity of 1500m/sec) at approximately 1 mile spacing, plotted at 4in/degree with standard U. S. Navy Oceanographic Office BC series boundaries (see index chart).
3. Plots of magnetic anomaly profiles along track - map scale = 1.2inch/degree, anomaly scale between 15N and 15 S latitude = 500 gamma/inch, anomaly scale north of 15N and south of 15S = 1000 gamma/inch, from values retrieved at approximately 1 mile spacing and regional field removed using the 1975 IGRF.
4. Card decks of navigation, depth and magnetics (for specific formats, contact S. M. Smith, Geological Data Center).
5. S.I.O. Sample Index - list of beginning and end times and positions of all underway records as well as all other samples (geology, biology, physical oceanography, etc.) collected on the cruise leg.
6. Microfilm or Xerox copies of:
 - a. Echosounder records - 12 and 3.5 kHz frequency
 - b. Subbottom profiler records (airgun)
 - c. Magnetometer records
 - d. Underway data log

*No underway data collected on this leg. Navigation processed to provide track charts and positions for Sample Index.

PLT004MV

TRACK (ABSTRACT FILE) AT .1632IN/DEGME



PLUTO EXPEDITION
LEG 4

Chief Scientist: H. Craig (SIO)
Ports: Manzanillo, Mexico - San Diego, Calif.
Dates: 6 November - 1 December, 1981
Ship: R/V Melville

TOTAL MILEAGE OF UNDERWAY DATA COLLECTED

- 1) Cruise - 990 miles of digitized navigation
- 2) Bathymetry - none collected
- 3) Magnetics - none collected
- 4) Seismic Reflection - none collected
- 5) Gravity - none collected

PLT004MV

SCALE = .312IN/DEGREE

120 00"W

115 00"W

110 00"W

105 00"W

100 00"W

35 00"N

35 00"N

30 00"N

30 00"N

25 00"N

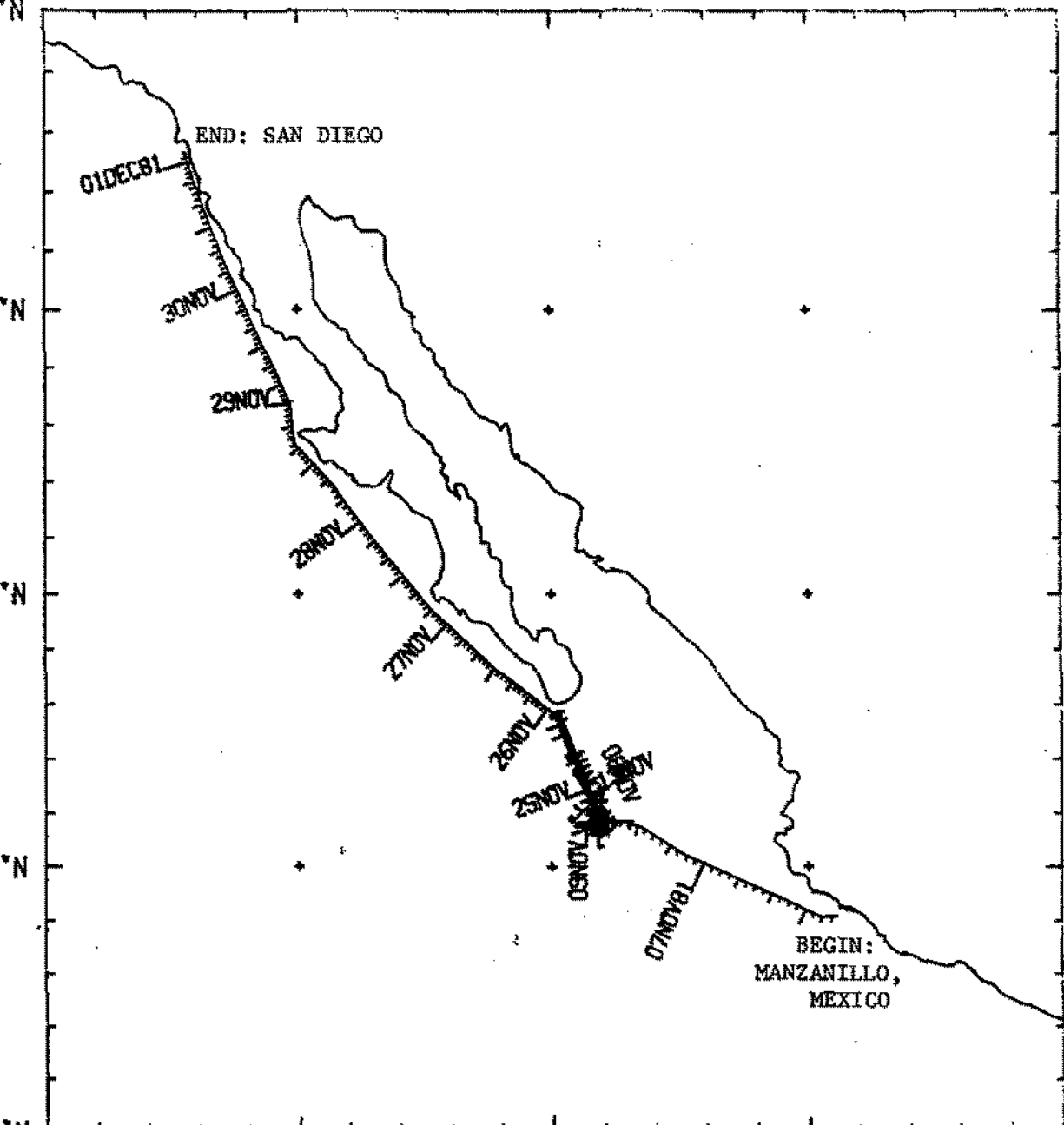
25 00"N

20 00"N

20 00"N

15 00"N

15 00"N



UNPRINTING - ABSORPTION DATA PRESENT ON THIS PLOT

S.I.O. Sample Index
(Issued February 1982)

PLUTO EXPEDITION

Leg 4

Manzanillo, Mexico (6 November 1981)
to
San Diego, Calif. (1 December 1981)

R/V Melville

Chief Scientist - H. Craig (SIO)

Post-Cruise Processing and Report Preparation
by S.I.O. Geological Data Center

Index Encoding Funded by NSF
Grant Number OCE80-22996
Index Processing and Report Preparation
funded in part by SIA

The Sample Index is a first level interdisciplinary listing of time, position, sample identification and disposition of all samples, records and measurements collected on this cruise leg. The index data are encoded at sea by the resident technician and processed on shore by the S.I.O. Geological Data Center shortly after the completion of the cruise leg.

Positions are interpolated on the basis of sample time by comparison to a single, edited navigation file. Samples beginning at one time and position and ending at another are entered on two consecutive cards. Disposition and sample type are represented by three and four character codes to permit future computer searches on these parameters. (Listings defining these codes are available from the Geological Data Center.)

NUMBER OF SAMPLES OF CLASS 'TYPE' GOING TO DESTINATION 'DISP'

DISP	TYPE										TOTAL	
	CA	GC	GD	HC	HF	LB	PE	SD	SS			
FNC	1						2				1	2
GCR	1		2								1	2
GRD	1			16		1	3				1	20
HOU	1						1				1	1
JPN	1						1				1	1
MBD	1						1				1	1
MIT	1		8	16		2	4			3	1	33
MTG	1						1				1	1
ORD	1						1				1	1
OSU	1							2			1	2
SCG	1						1				1	1
SIX	1						3				1	3
UCS	1						1				1	1
WHO	1	10				1		7			1	18
TOTAL	1	10	8	2	32	1	3	26	2	3	1	87

SAMPLE 'TYPE' CODES USED ABOVE

CA = CAMERA
 GC = GEOCHEMICAL SAMPLING
 GD = GEOLOGICAL SAMPLE
 HC = HYDROGRAPHIC CAST
 HF = HEAT PROBE
 LB = LOG BOOKS
 PE = PERSONNEL IN SCIENTIFIC PARTY
 SD = SEDIMENT TRAP
 SS = SURFACE SAMPLE

SAMPLE 'DISP' CODES USED ABOVE

FNC = FRANCE
 GCR = GEOLOGICAL CURATING FACILITY -- W. RIEDEL, (EXT. 4386)
 GRD = GEOLOGICAL RESEARCH DIVISION (EXT. 3360)
 HOU = HARVARD UNIVERSITY
 JPN = JAPAN
 MBD = MARINE BIOLOGY RESEARCH DIVISION (EXT. 4245)
 MIT = MASS. INST. TECHNOLOGY
 MTG = MARINE TECHNOLOGY GROUP (EXT 4194)
 ORD = OCEAN RESEARCH DIVISION (EXT. 2857)
 OSU = OREGON STATE UNIVERSITY
 SCG = SHIPBOARD COMPUTER GROUP (EXT. 4195)
 SIX = SCRIPPS INSTITUTION NON-EMPLOYEE - CONTACT D. UTTER (EXT. 3675)
 UCS = UNIV. CALIF. SANTA BARBARA
 WHO = WOODS HOLE OCEANOGRAPHIC INSTITUTION

04MAR82 PAGE 1

GNT D /M /Y	LOC LOC	CODE	SAMPLE IDENT.	CODE	LAT.	LONG.	LEG-SHIP
TIME DATE	TIME TZ	SAMP		DISP			CRUISE

SAMPLE INDEX PLUTO 4

PLT004MV

*** PORTS ***

0733	6/11/81		LGPT B MANZANILLO, MEXICO		19 03. N	104 20. W	F PLT004MV
0230	1/12/81		LGPT E SAN DIEGO, CALIF		32 43. N	117 11. W	F PLT004MV
1248	12/11/81		LGUS B CABO SAN LUCAS, MEX.		22 52. N	109 53. W	F PLT004MV
1415	12/11/81		LGUS E CABO SAN LUCAS, MEX.		22 52. N	109 53. W	F PLT004MV
1711	25/11/81.		LGUS B CABO SAN LUCAS, MEX.		22 52. N	109 53. W	F PLT004MV
2122	25/11/81		LGUS E CABO SAN LUCAS, MEX.		22 52. N	109 53. W	F PLT004MV

PERSONNEL

*** NAME ***

*** TITLE ***

*** AFFILIATION ***

1	CRAIG,DK.H.	CHIEF SCIENTIST	SCRIPPS INSTITUTION OF OCEANOGRAPHY, LA JOLLA	CAL. 92093
2	BALLARD,DR.R.	SCIENTIST	WOODS HOLE OCEANOGRAPHIC INSTITUTION	
3	LUPTON,DR.J.	RESEARCH ASSOC.	UNIV. CALIF. SANTA BARBARA	
4	HORIBE,DR.Y.	ORSERVER	JAPAN	
5	MEASURES,DR.C.	RESEARCH ASSOC.	MASS. INST. TECHNOLOGY	
6	MERCAADO,DR.S.	ORSERVER	SCRIPPS INSTITUTION NON-EMPLOYEE - CONTACT D. UTTER (EXT.3675)	
7	WELHAN,DR.J.	RESEARCH ASSOC.	SCRIPPS INSTITUTION OF OCEANOGRAPHY, LA JOLLA	CAL. 92093
8	FINKLE,DR.R.	RESEARCH CHEMIST	SCRIPPS INSTITUTION OF OCEANOGRAPHY, LA JOLLA	CAL. 92093
9	FEVRIER,DR.M.	SCIENTIST	FRANCE	
10	COMER,R.L.	RESIDENT TECH	SCRIPPS INSTITUTION OF OCEANOGRAPHY, LA JOLLA	CAL. 92093
11	MOE,R.	COMPUTER TECH	SCRIPPS INSTITUTION OF OCEANOGRAPHY, LA JOLLA	CAL. 92093
12	YOUNG,E.	RESEARCH ASSOC.	WOODS HOLE OCEANOGRAPHIC INSTITUTION	
13	MICHEL,J.L.	ENGINEER	FRANCE	
14	COLLINS,C.	COMPUTER TECH	WOODS HOLE OCEANOGRAPHIC INSTITUTION	
15	GRANT,B.	RESEARCH STAFF	MASS. INST. TECHNOLOGY	
16	SMITHEY,W.	STAFF RESH ASSOC	SCRIPPS INSTITUTION OF OCEANOGRAPHY, LA JOLLA	CAL. 92093
17	MEIER,G.	ELECTRONIC TECH.	WOODS HOLE OCEANOGRAPHIC INSTITUTION	
18	CROOK,T.	COMPUTER TECH	WOODS HOLE OCEANOGRAPHIC INSTITUTION	
19	GREENBURG,L.	COMPUTER TECH	WOODS HOLE OCEANOGRAPHIC INSTITUTION	
20	FYE,E.	PHOTO TECH	WOODS HOLE OCEANOGRAPHIC INSTITUTION	
21	HUESTED,S.	RESEARCH STAFF	MASS. INST. TECHNOLOGY	
22	KIM,K.R.	STUDENT	SCRIPPS INSTITUTION OF OCEANOGRAPHY, LA JOLLA	CAL. 92093
23	CONVERSE,D.	STUDENT	HARVARD UNIVERSITY	
24	VON DAMM,K.	STUDENT	MASS. INST. TECHNOLOGY	
25	ACUNA USCANGA,A.	ORSERVER	SCRIPPS INSTITUTION NON-EMPLOYEE - CONTACT D. UTTER (EXT.3675)	
26	BALLARD,C.	VOLUNTEER	SCRIPPS INSTITUTION NON-EMPLOYEE - CONTACT D. UTTER (EXT.3675)	

NOTES

AN 'X' IN THE (B)EGIN/(E)ND COLUMN FOLLOWING THE SAMPLE CODE INDICATES NO SAMPLE OR DATA RECOVERED .
 A 'C' INDICATES CONTINUATION OF DATA COLLECTION FROM BEFORE THE BEGINNING OR AFTER THE END OF THIS LEG. (HOOKED BOTTOM INSTRUMENTS, FOR EXAMPLE).
 THE NUMBER APPEARING IN THE COLUMNS BETWEEN THE SAMPLE IDENTIFIER AND THE DISPOSITION CODE, FOR MANY SAMPLE ENTRIES, IS THE WATER DEPTH IN CORRECTED METERS.

GMT TIME	D / M / Y DATE	LOC TIME	LOC TZ	CODE SAMP	SAMPLE IDENT.	CODE DISP	LAT.	LONG.	LEG-SHIP CRUISE
----------	----------------	----------	--------	-----------	---------------	-----------	------	-------	-----------------

*** LOG BOOKS ***

0730	6/11/81			LBSC B	HYDRO CAST LOG P4-49	GRD 19	03.8N	104 26.1W	S PLT004MV
1815	24/11/81			LBSC E	ISOTOPE LAB CRAIG	GRD 21	02.9N	109 06.2W	S PLT004MV
0850	7/11/81			LBSC B	PB + SURFACE SAMPLE	MIT 20	48.9N	108 27.5W	S PLT004MV
2030	19/11/81			LBSC E	LOG BOOK P 1-17	MIT 20	54.7N	109 01.6W	S PLT004MV
1129	7/11/81			LBSC B	VARIOUS LOGBOOKS FOR	MIT 20	48.9N	108 29.2W	S PLT004MV
1910	24/11/81			LBSC E	NUTRIENTS + METALS	MIT 21	02.9N	109 06.7W	S PLT004MV

HEAT FLOW

1630	10/11/81			HFTV B	CABLED REMOTE AUX	WHO 20	54.0N	109 05.5W	S PLT004MV
2327	10/11/81			HFTV E	PACKAGE TEMP SURV 01	WHO 20	49.4N	109 06.6W	S PLT004MV

*** GEOLOGICAL SAMPLE ***

0820	20/11/81			GDXX	ROCKS ANUS-5 2573M	GCR 20	47.0N	109 08.5W	S PLT004MV
0930	21/11/81			GDXX	ROCKS ANUS-6 2564M	GCR 20	44.6N	109 11.5W	S PLT004MV

*** CAMERA ***

0930	16/11/81			CATB B	CAMERA ANUS-01	WHO 20	50.2N	109 06.0W	S PLT004MV
1323	16/11/81			CATB E	CAMERA ANUS-01	WHO 20	50.6N	109 07.1W	S PLT004MV
0330	17/11/81			CATB B	CAMERA ANUS-02	WHO 20	50.3N	109 05.1W	S PLT004MV
0916	17/11/81			CATB E	CAMERA ANUS-02	WHO 20	48.6N	109 07.0W	S PLT004MV
0326	18/11/81			CATB B	CAMERA ANUS-03	WHO 20	48.9N	109 06.6W	S PLT004MV
1048	18/11/81			CATB E	CAMERA ANUS-03	WHO 20	46.9N	109 08.5W	S PLT004MV
0255	19/11/81			CATB B	CAMERA ANUS-04	WHO 20	47.9N	109 07.7W	S PLT004MV
1301	19/11/81			CATB E	CAMERA ANUS-04	WHO 20	44.9N	109 10.7W	S PLT004MV
0601	20/11/81			CATB B	CAMERA ANUS-05	WHO 20	46.4N	109 09.7W	S PLT004MV
0855	20/11/81			CATB E	CAMERA ANUS-05	WHO 20	47.1N	109 08.5W	S PLT004MV
1114	20/11/81			CATB B	CAMERA ANUS-05A	WHO 20	47.2N	109 09.2W	S PLT004MV
1605	20/11/81			CATB E	CAMERA ANUS-05A	WHO 20	45.9N	109 10.7W	S PLT004MV
0112	21/11/81			CATB B	CAMERA ANUS-06	WHO 20	46.3N	109 09.9W	S PLT004MV
1148	21/11/81			CATB E	CAMERA ANUS-06	WHO 20	44.4N	109 11.2W	S PLT004MV
0238	22/11/81			CATB B	CAMERA ANUS-07	WHO 20	46.7N	109 08.6W	S PLT004MV
1230	22/11/81			CATB E	CAMERA ANUS-07	WHO 20	50.0N	109 06.8W	S PLT004MV

GMT TIME	D / M / Y DATE	LOC TIME	LOC TZ	CODE SAMP	SAMPLE IDENT.	CODE DISP	LAT.	LONG.	LEG-SHIP CRUISE
----------	----------------	----------	--------	-----------	---------------	-----------	------	-------	-----------------

0249	23/11/81			CATB B	CAMERA ANUS-08	WHO 20	50.7N	109 07.4W	S PLT004MV
0908	23/11/81			CATB E	CAMERA ANUS-08	WHO 20	49.6N	109 07.0W	S PLT004MV
0203	24/11/81			CATB B	CAMERA ANUS-09	WHO 20	50.4N	109 05.8W	S PLT004MV
1005	24/11/81			CATB E	CAMERA ANUS-09	WHO 20	50.3N	109 06.0W	S PLT004MV

SEDIMENT TRAP

2204	22/11/81			SDTR B	DROP SED TRAP 2590M	DSU 20	50.5N	109 05.9W	S PLT004MV
0230	1/12/81			SDTR C	SED TRAP 2590M	DSU 32	40.0N	117 13.9W	S PLT004MV

HYDROGRAPHIC CAST

1129	7/11/81			HCNI	TSO I HC01 STA-01 15	GRD 20	48.9N	108 29.2W	S PLT004MV
1520	7/11/81			HCNI	TSO I HC02 STA-01 15	GRD 20	49.7N	108 28.7W	S PLT004MV
0949	8/11/81			HCNI	TSO I HC01 STA-02 15	GRD 20	48.1N	109 07.7W	S PLT004MV
1617	9/11/81			HCNI	TSO I HC01 STA-03 15	GRD 21	20.3N	109 05.3W	S PLT004MV
0945	10/11/81			HCNI	TSO I HC01 STA-04 15	GRD 20	22.7N	109 06.9W	S PLT004MV
1723	11/11/81			HCNI	TSO I HC01 STA-05 8	GRD 20	40.2N	108 53.6W	S PLT004MV
2108	11/11/81			HCNI	TSO I HC01 STA-06 7	GRD 20	37.7N	109 05.1W	S PLT004MV
1833	15/11/81			HCNI	TSO I HC01 STA-07 9	GRD 21	05.9N	109 06.6W	S PLT004MV
1857	16/11/81			HCNI	TSO I HC01 STA-08 9	GRD 20	50.7N	109 22.8W	S PLT004MV
1801	17/11/81			HCNI	TSO I HC01 STA-09 10	GRD 20	48.8N	109 06.2W	S PLT004MV
1810	18/11/81			HCNI	TSO I HC01 STA-10 10	GRD 20	49.6N	108 48.5W	S PLT004MV
2021	20/11/81			HCNI	TSO I HC01 STA-11 10	GRD 20	34.3N	109 05.8W	S PLT004MV
1841	21/11/81			HCNI	TSO I HC01 STA-12 10	GRD 21	00.6N	108 53.9W	S PLT004MV
2214	23/11/81			HCNI	TSO I HC01 STA-13 15	GRD 20	50.7N	109 05.9W	S PLT004MV
1527	24/11/81			HCNI	TSO I HC01 STA-14 10	GRD 21	02.7N	109 18.0W	S PLT004MV
1910	24/11/81			HCNI	TSO I HC01 STA-15 10	GRD 21	02.9N	109 06.7W	S PLT004MV
1129	7/11/81			HCNI	NI HC01 STA-01 15	MIT 20	48.9N	108 29.2W	S PLT004MV
1520	7/11/81			HCNI	NI HC02 STA-01 15	MIT 20	49.7N	108 28.7W	S PLT004MV
0949	8/11/81			HCNI	NI HC01 STA-02 15	MIT 20	48.1N	109 07.7W	S PLT004MV
1617	9/11/81			HCNI	NI HC01 STA-03 15	MIT 21	20.3N	109 05.3W	S PLT004MV
0945	10/11/81			HCNI	NI HC01 STA-04 15	MIT 20	22.7N	109 06.9W	S PLT004MV
1723	11/11/81			HCNI	NI HC01 STA-05 8	MIT 20	40.2N	108 53.6W	S PLT004MV
2108	11/11/81			HCNI	NI HC01 STA-06 7	MIT 20	37.7N	109 05.1W	S PLT004MV
1833	15/11/81			HCNI	NI HC01 STA-07 9	MIT 21	05.9N	109 06.6W	S PLT004MV
1857	16/11/81			HCNI	NI HC01 STA-08 9	MIT 20	50.7N	109 22.8W	S PLT004MV
1801	17/11/81			HCNI	NI HC01 STA-09 10	MIT 20	48.8N	109 06.2W	S PLT004MV
1810	18/11/81			HCNI	NI HC01 STA-10 10	MIT 20	49.6N	108 48.5W	S PLT004MV
2021	20/11/81			HCNI	NI HC01 STA-11 10	MIT 20	34.3N	109 05.8W	S PLT004MV
1841	21/11/81			HCNI	NI HC01 STA-12 10	MIT 21	00.6N	108 53.9W	S PLT004MV
2214	23/11/81			HCNI	NI HC01 STA-13 15	MIT 20	50.7N	109 05.9W	S PLT004MV
1527	24/11/81			HCNI	NI HC01 STA-14 10	MIT 21	02.7N	109 18.0W	S PLT004MV
1910	24/11/81			HCNI	NI HC01 STA-15 10	MIT 21	02.9N	109 06.7W	S PLT004MV

SURFACE SAMPLE

0850	7/11/81			SSXX	SURFACE SAMP PB-01	MIT 20	48.9N	108 27.5W	S PLT004MV
2150	15/11/81			SSXX	SURFACE SAMP PB-16	MIT 20	54.4N	109 05.9W	S PLT004MV

GMT D /M /Y TIME DATE	LOC LOC TIME TZ	CODE SAMP	SAMPLE IDENT.	CODE DISP	LAT.	LONG.	LEG-SHIP CRUISE
2030 19/11/81		SSXX	SURFACE SAMP PB-33	MIT 20	54.7N	109 01.6W	S PLT004MV

GEOCHEMICAL STATION - SMALL VOLUME

0906 7/11/81		GCSV X	HC01 STA1 PB-02	01	MIT 20	48.1N 108 30.0W	S PLT004MV
0230 9/11/81		GCSV	HC01 STA2 PB-03	01	MIT 20	50.0N 109 37.2W	S PLT004MV
0330 9/11/81		GCSV	HC02 STA2 PB4-8	05	MIT 20	50.0N 109 37.0W	S PLT004MV
1200 9/11/81		GCSV	HC02 STA3 PB9-11	05	MIT 21	20.6N 109 05.8W	S PLT004MV
1006 10/11/81		GCSV	HC02 STA4 PB12-15	05	MIT 20	23.0N 109 07.1W	S PLT004MV
2200 15/11/81		GCSV	HC7A PB17-20	05	MIT 20	54.7N 109 06.0W	S PLT004MV
2224 16/11/81		GCSV	HC8A PB21-24	04	MIT 20	51.0N 109 14.4W	S PLT004MV
2100 17/11/81		GCSV	HC9A PB25-29	05	MIT 20	48.9N 109 05.9W	S PLT004MV
2030 19/11/81		GCSV	HC10A PB30-33	04	MIT 20	54.7N 109 01.6W	S PLT004MV

99

END SAMPLE INDEX

PLT004MV