

REPORT AND INDEX OF
UNDERWAY MARINE GEOPHYSICAL DATA
WESTWARD EXPEDITION

LEG 6

(WEST06MV)

R/V MELVILLE

(Issued November 1994)

Ports:

Brisbane, Australia (30 August 1994)
to
Nuku'alofa, Tonga (30 September 1994)

Co-Chief Scientists:

LeRoy Dorman (Scripps Institution)
John Hildebrand (Scripps Institution)
Resident Marine Technician - Bob Wilson
Computer Technician - Todd Porteous

Post-Cruise Processing and Report Preparation by the
Geological Data Center, Scripps Institution of Oceanography
La Jolla, California 92093-0223

Data Collection and Processing Funded by:
NSF OCE94-00707

NOTE: *This is an index of underway geophysical data edited and processed 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 92093-0223*

GDC Cruise I.D.# 266

**REPORT AND INDEX OF NAVIGATION
AND UNDERWAY GEOPHYSICAL DATA**

Processed by the Geological Data Center
Scripps Institution of Oceanography

Contents:

Index Chart - gives track of cruise leg, dates, ports, and mileage of each type of data collected.

Track Charts - annotated with dates and hour ticks.

Profiles - depth, magnetic and gravity free air anomaly vs. distance. (Sections of track with seismic reflection data have a wide black line along the bottom of the profile.)

Sample Index - list of begin/end times and positions of all underway records as well as samples and measurements from other disciplines if collected on the cruise leg.

NOTE: One or more of the underway data types may not be collected on a given cruise leg. 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 92093-0223.

Phone: (619)534-2752, FAX: (619)534-5306, Internet email: ssmith@ucsd.edu

1. Files on Exabyte, DAT or 1/2 inch magnetic tape:
 - a) Separate time series ASCII files of navigation, single beam depth, gravity and magnetics.
 - b) These same data in a merged ASCII file in the MGD77 Exchange Format.
 - c) SeaBeam depth data (binary, Sun byte order) in SIO Swath Bathymetry Format (not available on 1/2" tape).
 - d) SeaBeam Sidescan data (not available on 1/2" tape).
2. Microfilm (35 mm flowfilm) or hard copies of:
 - a) Underway watch log book
 - b) SeaBeam vertical beam profile/Sidescan records.
 - c) Echosounder records - 3.5 kHz frequency.
 - d) Magnetometer records.
 - e) Seismic reflection profiler records.
3. Navigation listing with times and positions of fixes and course and speed changes.
4. Plots:
 - a) Copies of archived track plots.
 - b) Copies of archived SeaBeam contour plots.
 - c) Custom plots in Mercator projection:
 - 1) Track plots.
 - 2) SeaBeam depth contour plots.
 - 3) Depth, magnetic or gravity values printed or profiled along track.

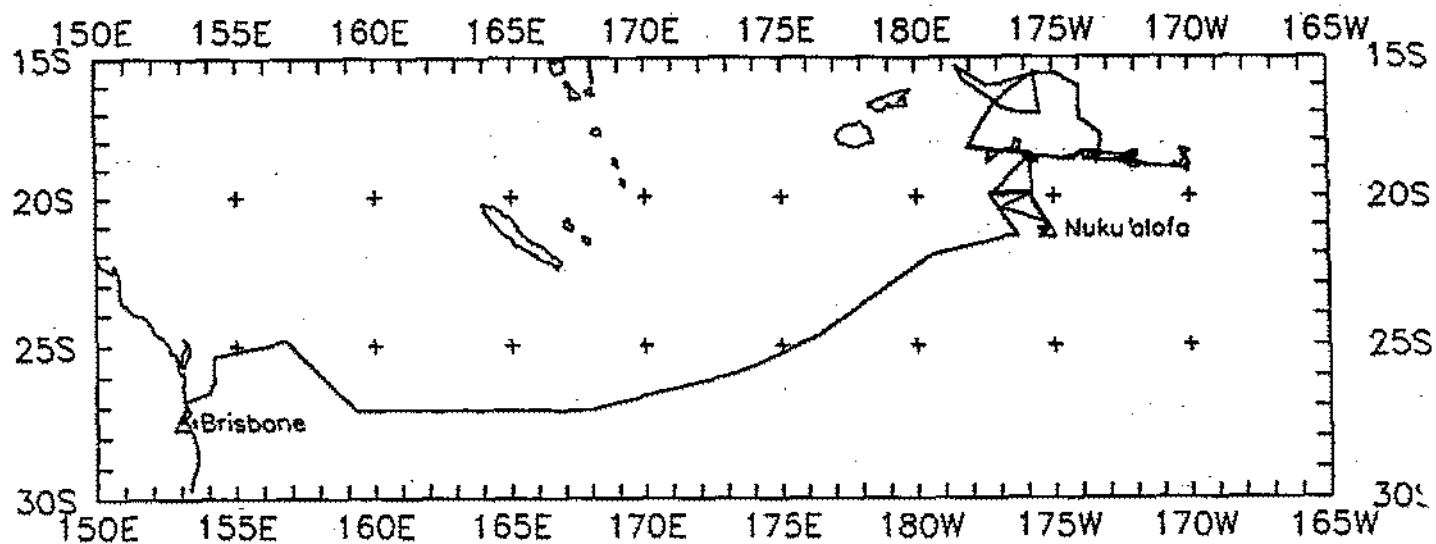
rev 7/93

SIO SEABEAM 2000 DATA INFORMATION

The following forms are available, subject to approval of the cruise leg chief scientist:

- 1) Hardcopy of realtime contour swath records and records with vertical beam and sidescan grayscale display are available for inspection at the data center.
- 2) Microfilm (35 mm flowfilm) of vertical beam/sidescan records.
- 3) SeaBeam merged tapes - SeaBeam data merged with GPS-based navigation.
(Navigation is edited to the extent that DR courses and speeds are edited and poor fixes are removed after inspection of speeds and drift vectors between fix pairs. No editing is done on the basis of adjusting to overlapping SeaBeam swaths.)
- 4) Archive contour plots - 8 inches/degree chart scale, with contour interval nominally 50 m, are generated for all transit lines. Some survey areas are plotted at appropriate scales as well. Available for inspection at data center; additional copies may be generated from plot files stored on tape.
- 5) Custom generated plots of SeaBeam swaths on Mercator projection in four colors at variable plot scales and contour intervals. There are provisions to adjust positions of individual track lines and to edit out beams (bad data or overlapping data on inside of turns.)

Revised February 1993



✱

WESTWARD EXPEDITION LEG 6 - =====

CO-CHIEF SCIENTISTS: LeRoy Dorman & John Hildebrand

Scripps Institution of Oceanography

PORTS: Brisbane, Australia - Nuku'alofa, Tonga

DATES: 30 August - 30 September 1994

SHIP: R/V Melville

TOTAL MILEAGE OF UNDERWAY DATA COLLECTED

Cruise - 6122 miles

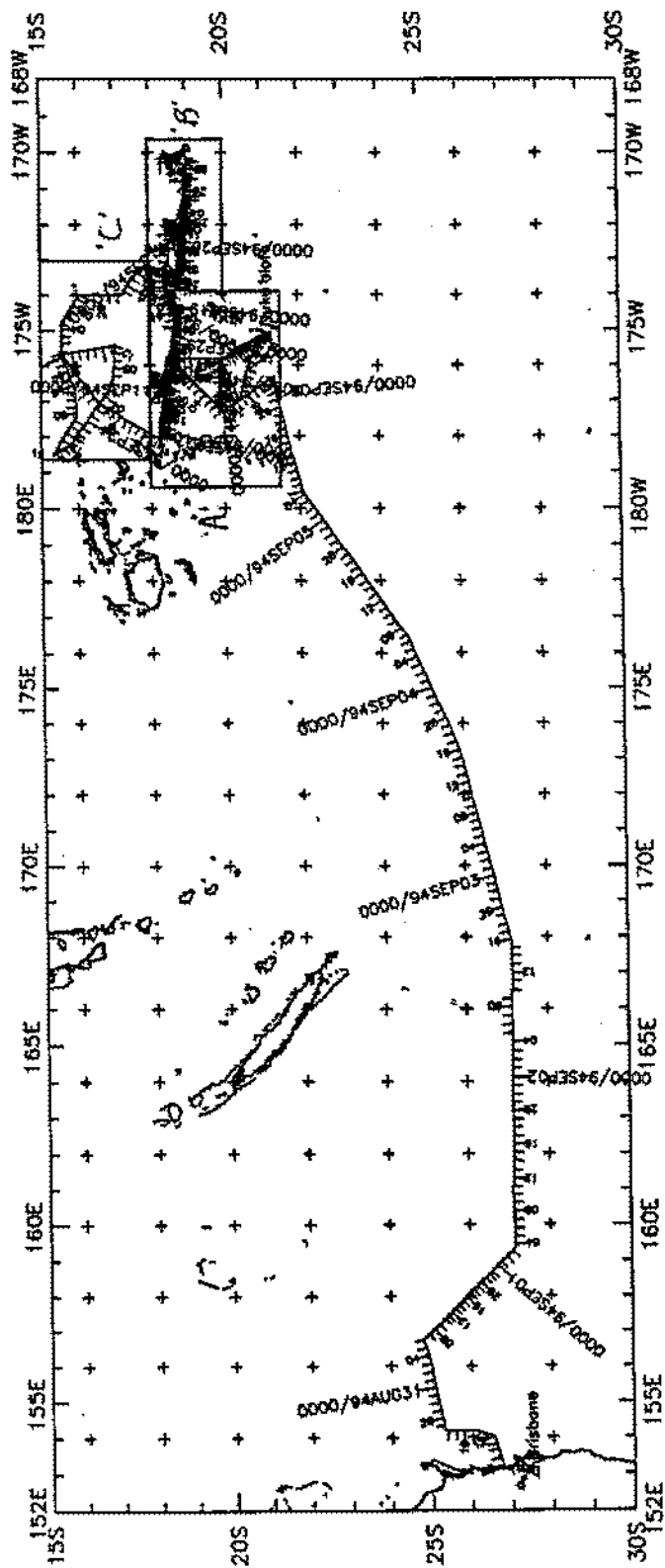
Magnetics - 4204 miles

Bathymetry - 5902 miles

Seismic Reflection - 340 miles

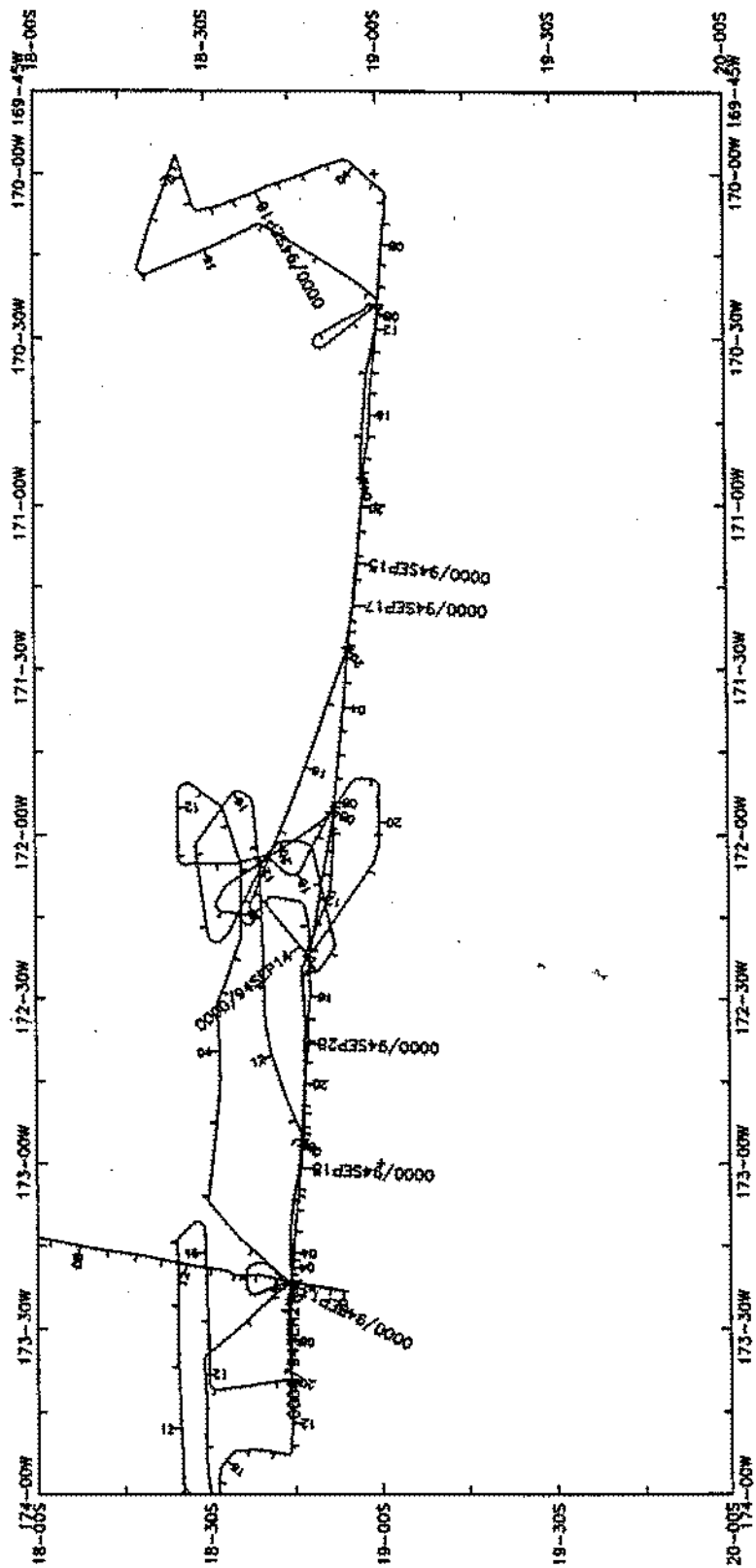
Sea Beam - 5902 miles

Gravity - 5800 miles



WESTWARD EXPEDITION LEG 06 (WEST06MV)

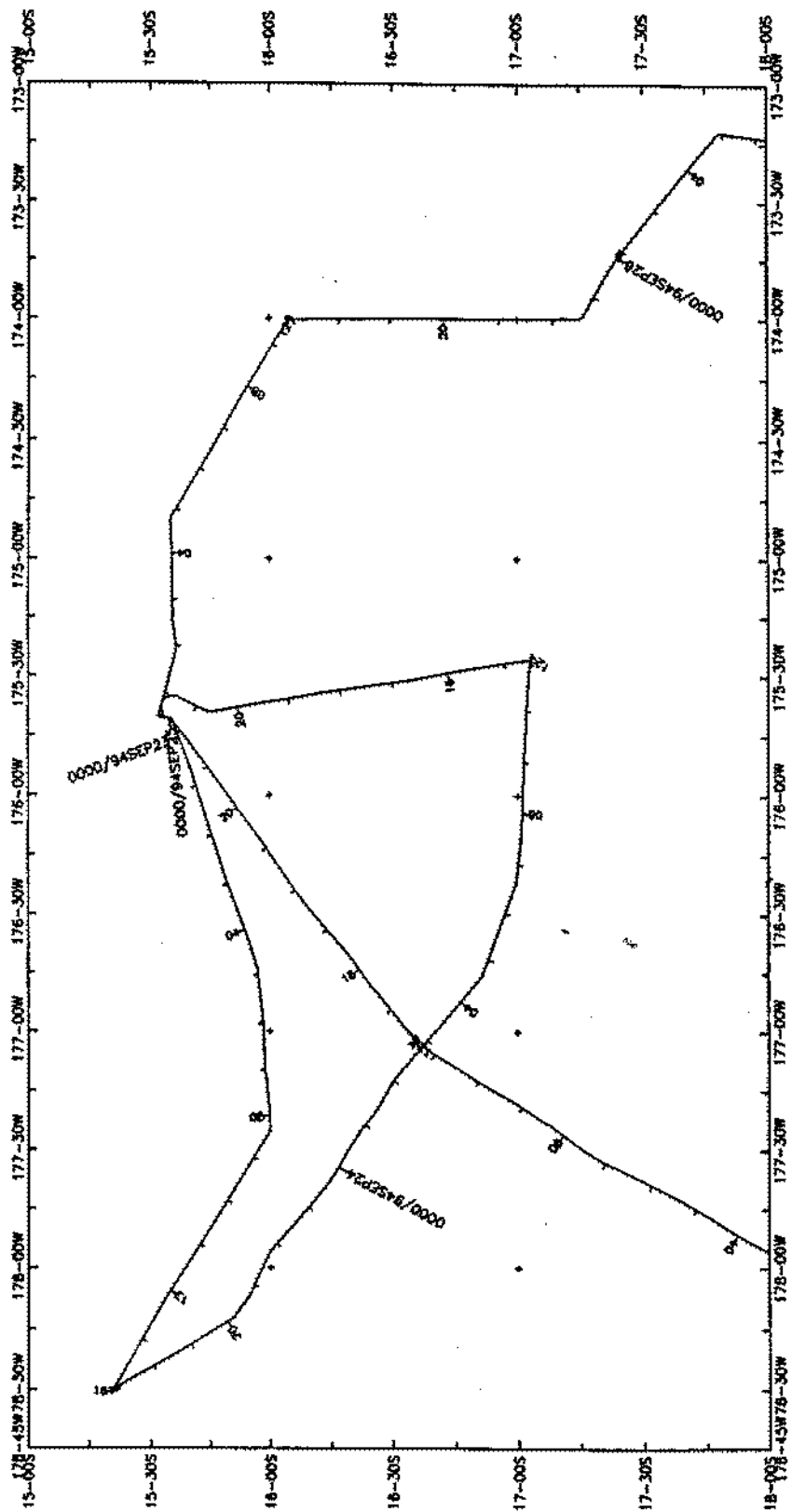
*



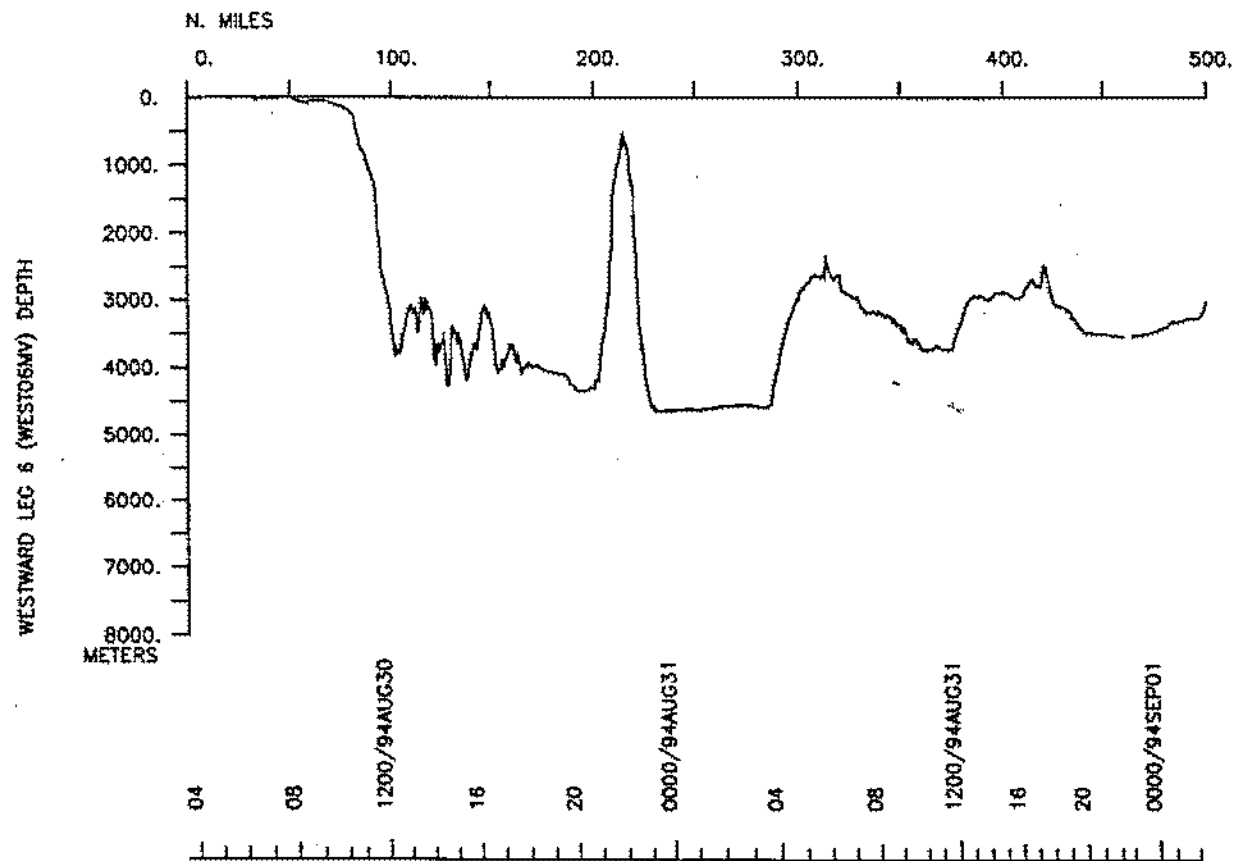
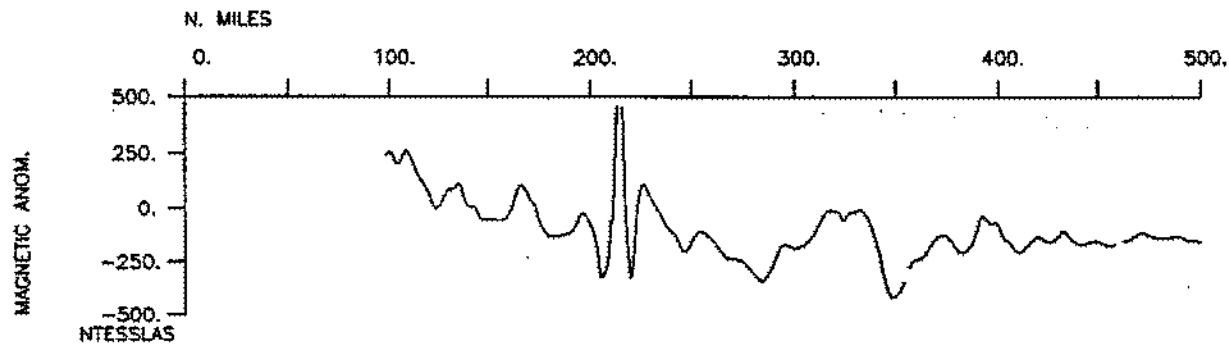
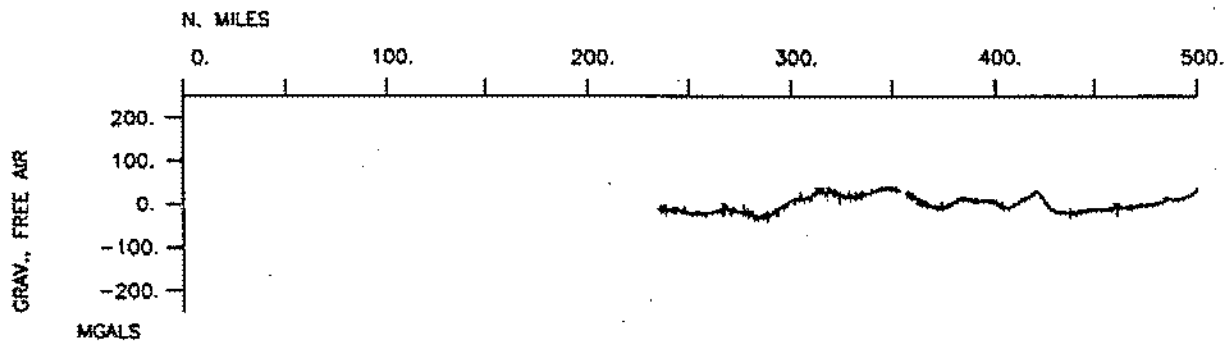
WESTWARD EXPEDITION LEG 05 (WEST06MV)

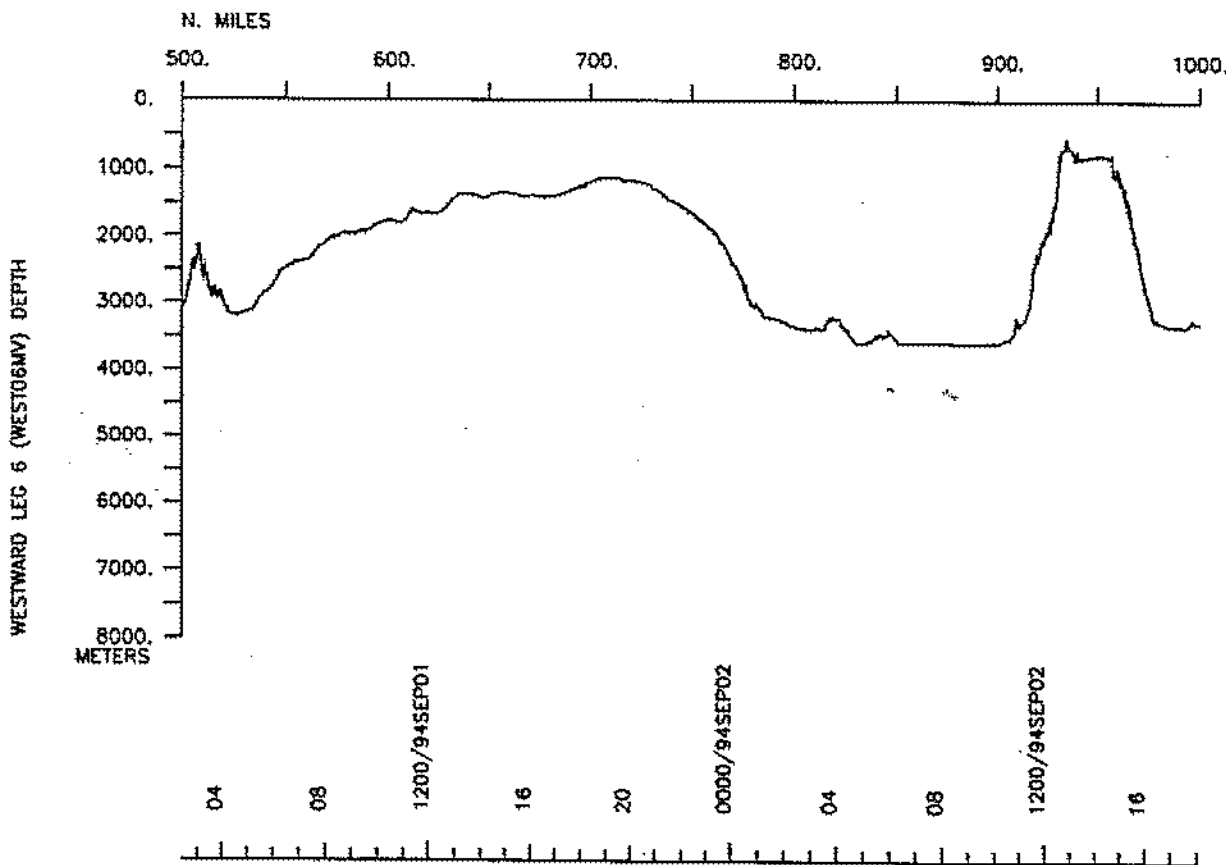
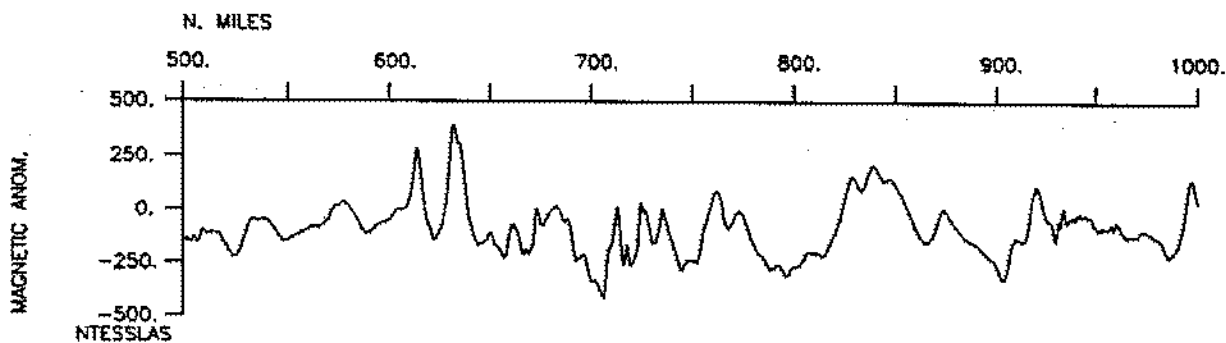
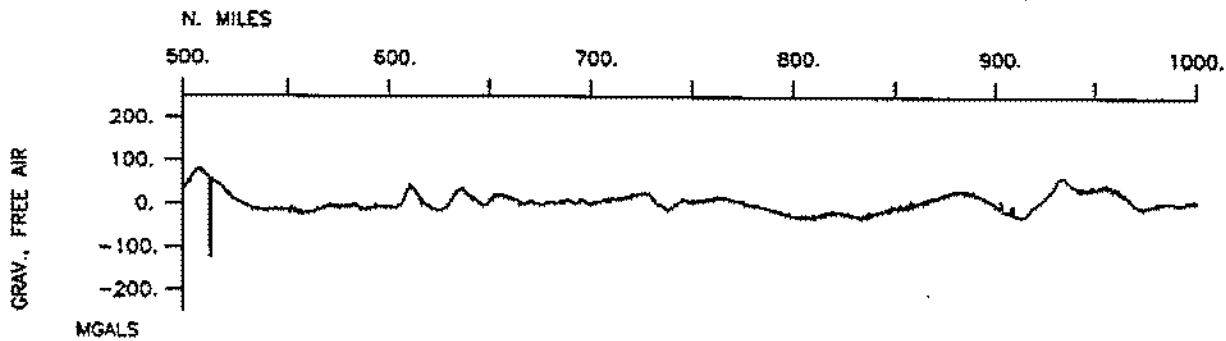
Survey area B

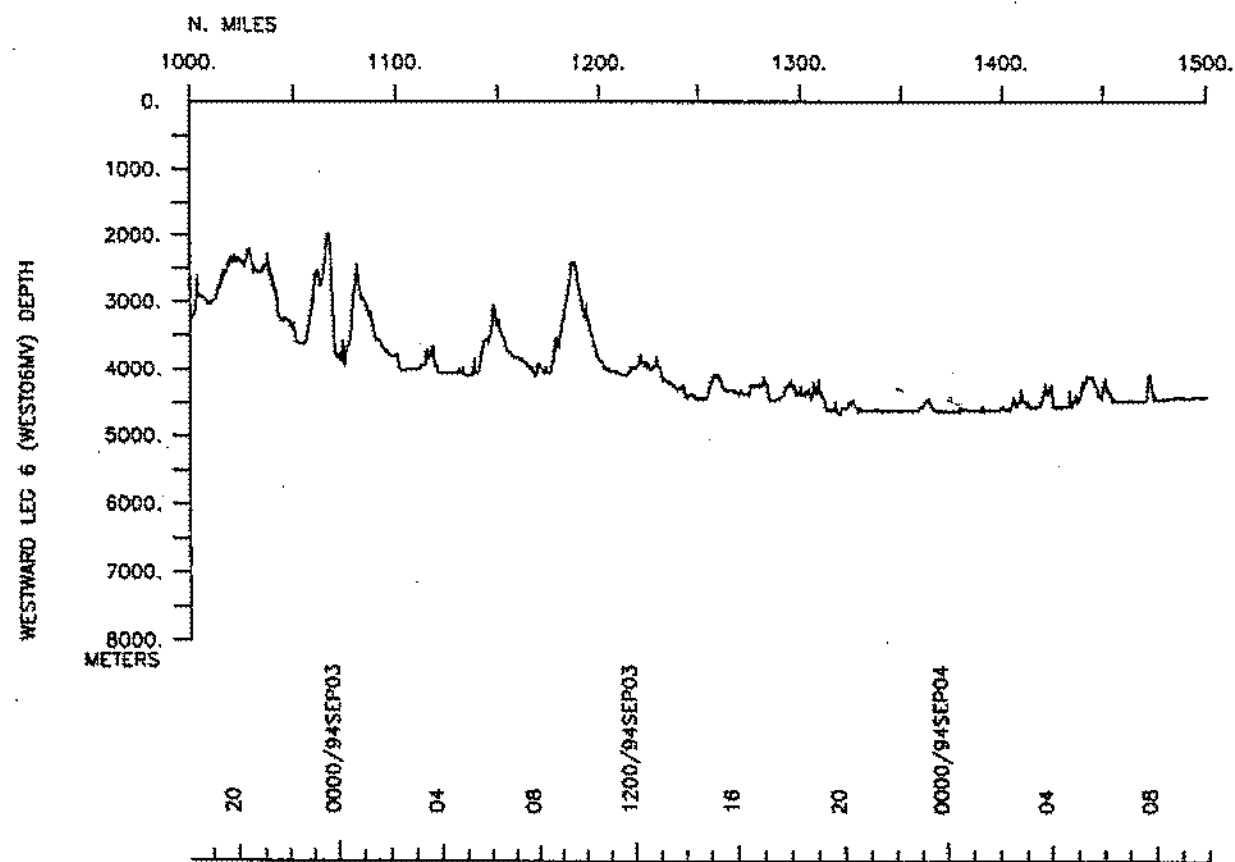
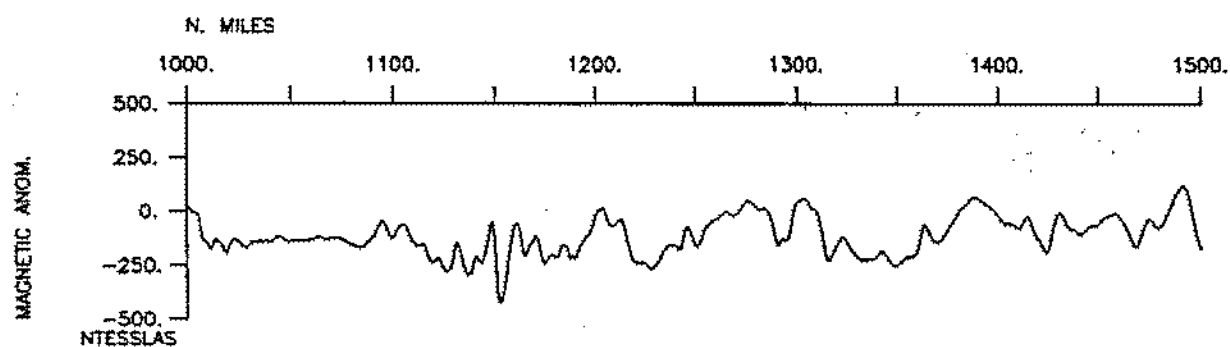
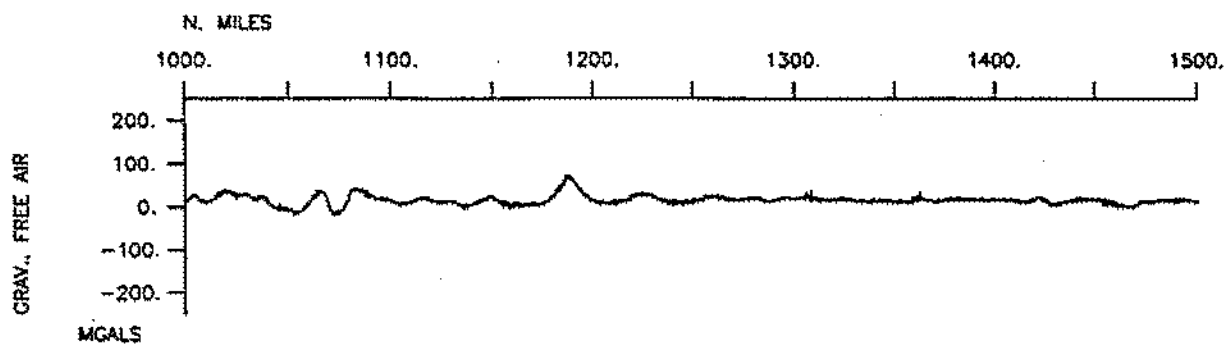
*

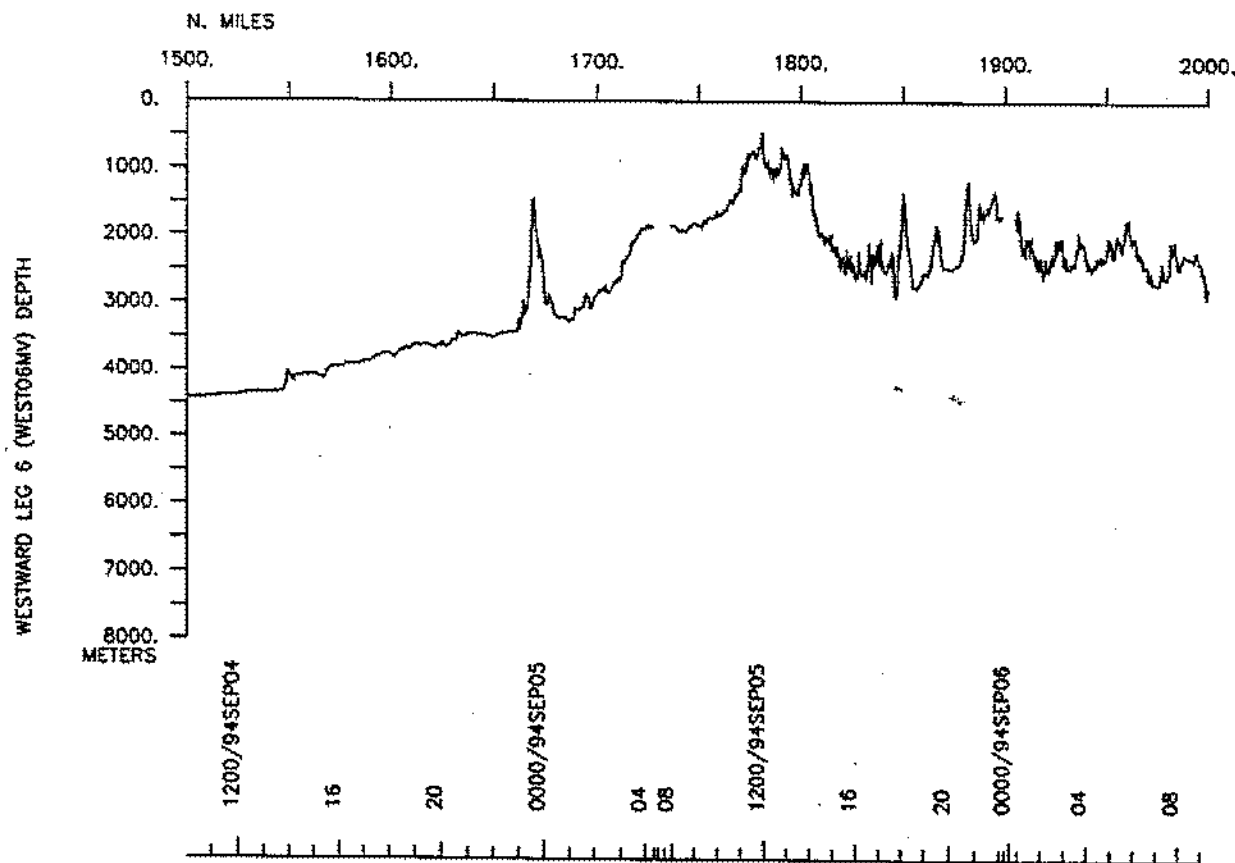
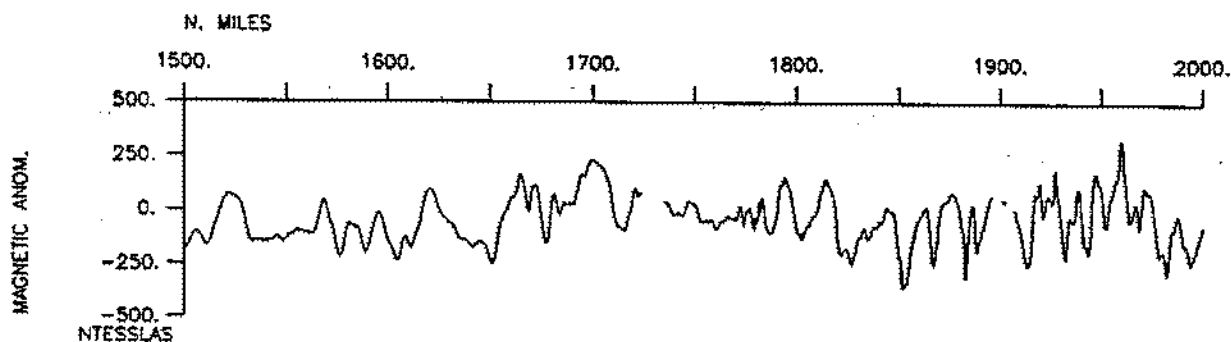
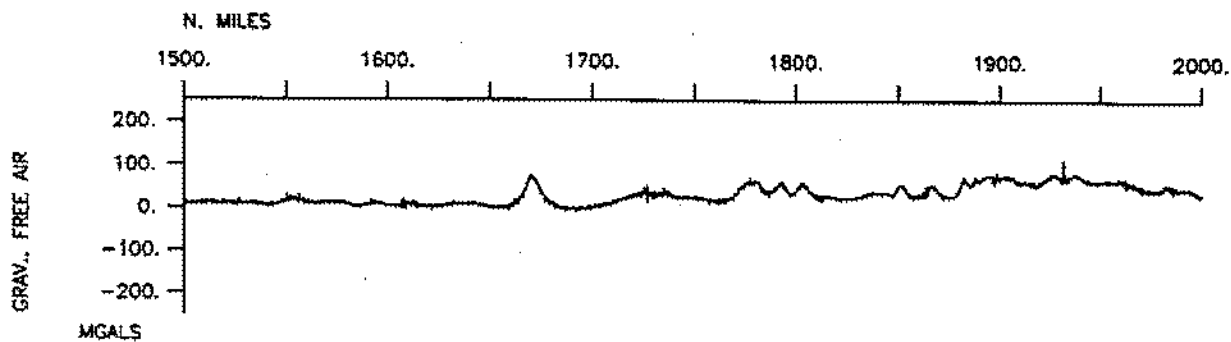


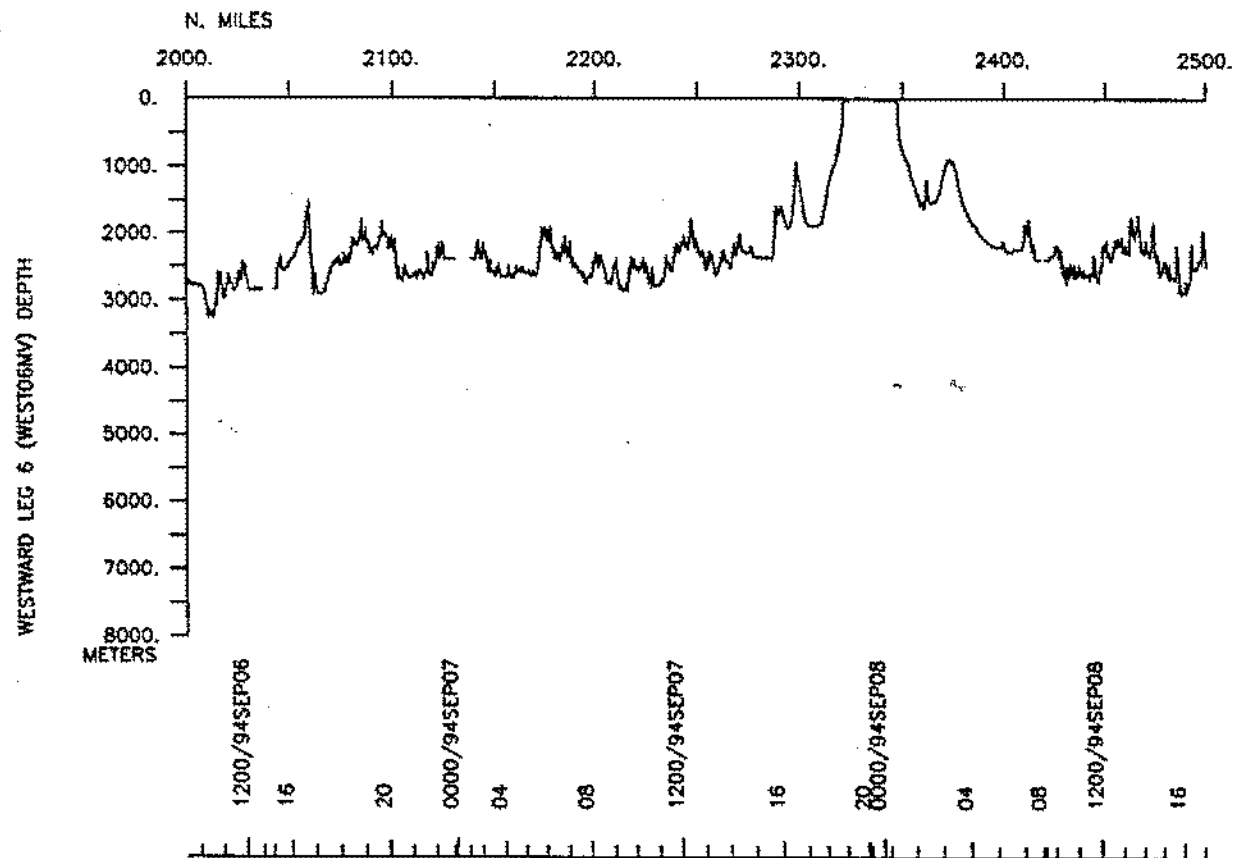
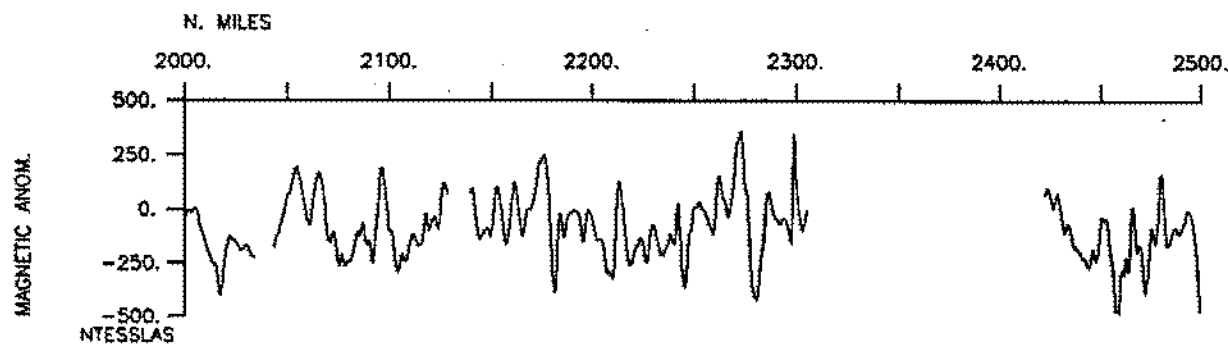
WESTWARD EXPEDITION LEG 06 (WESTO644V)
Survey area C

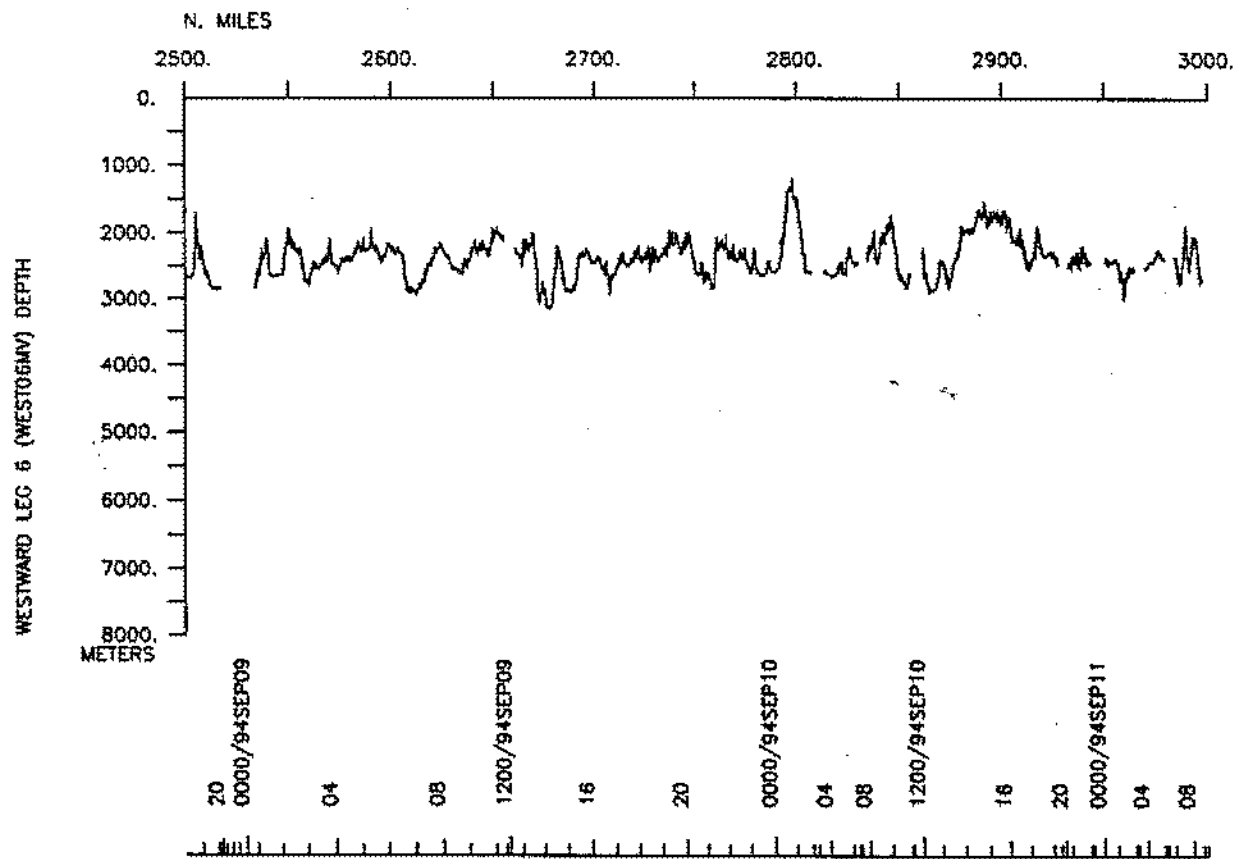
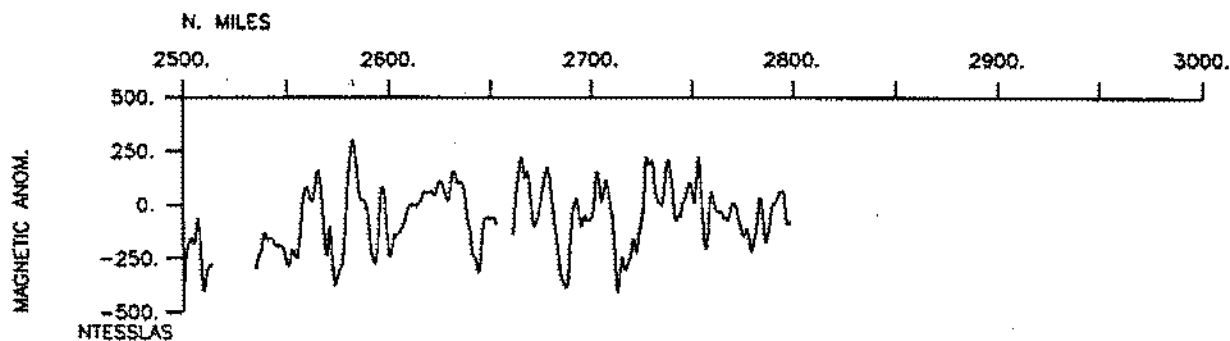
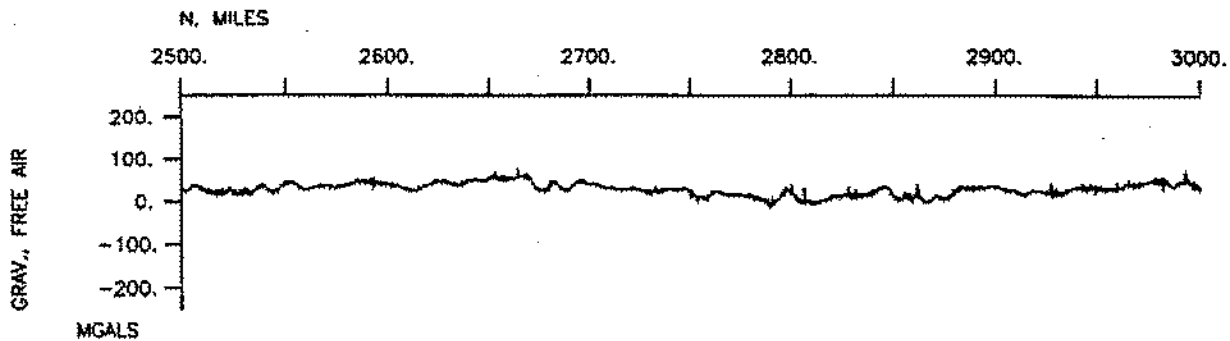


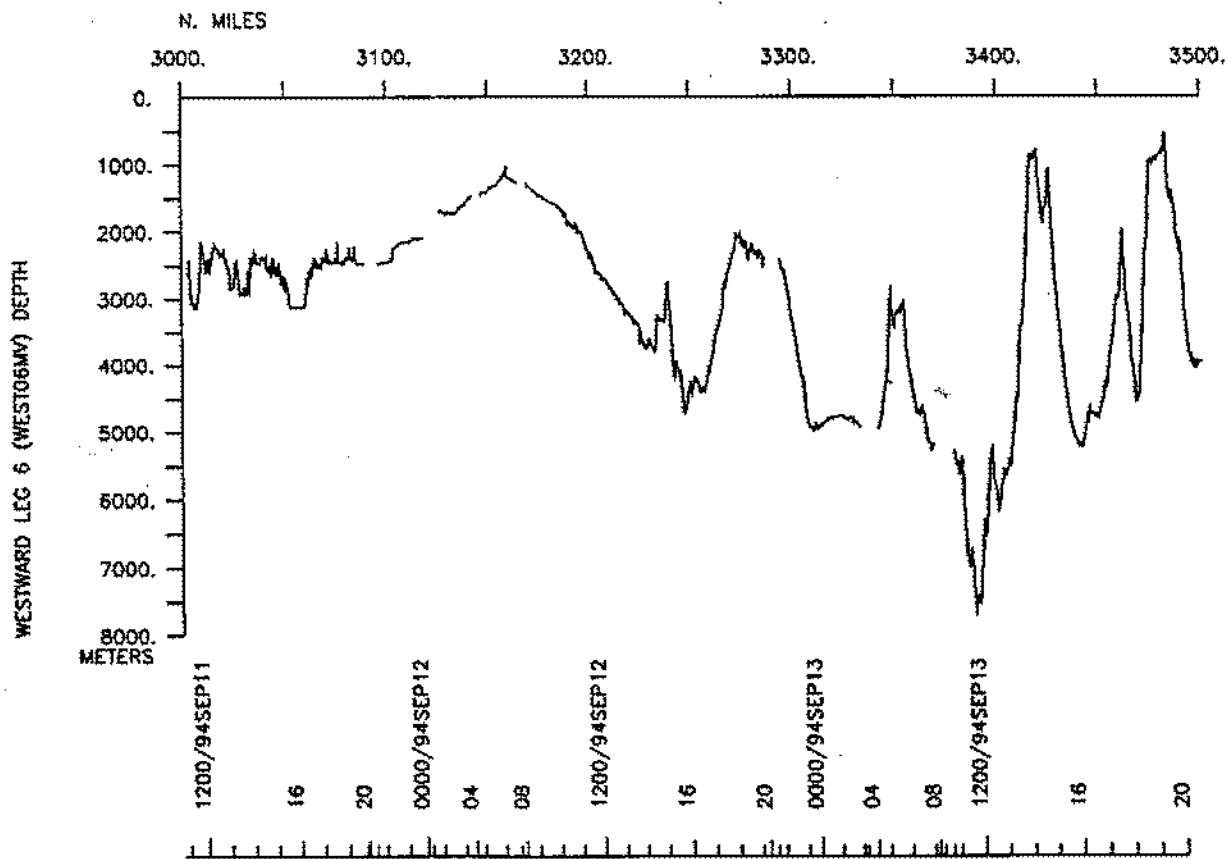
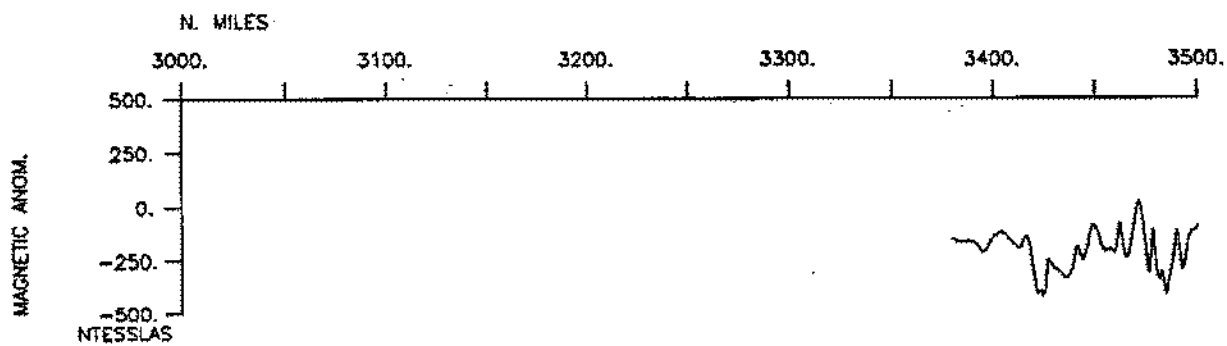


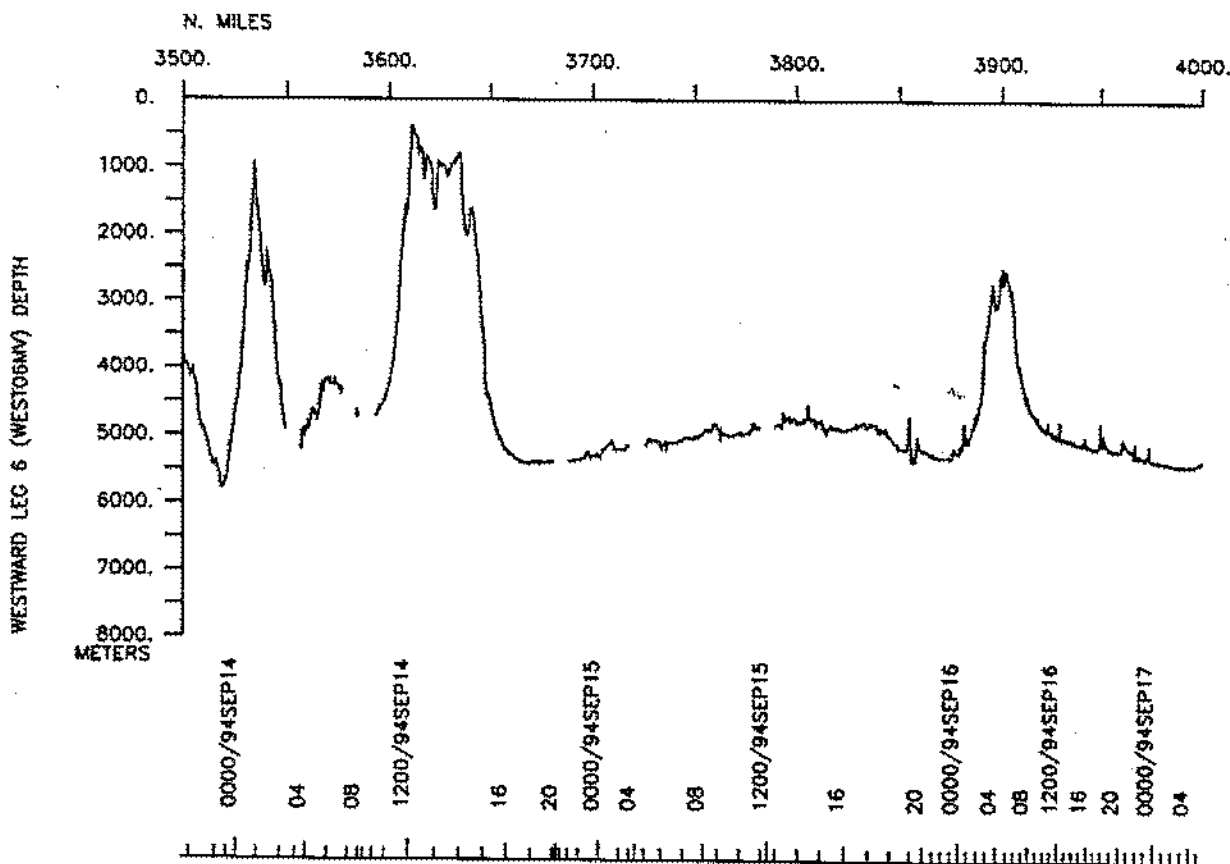
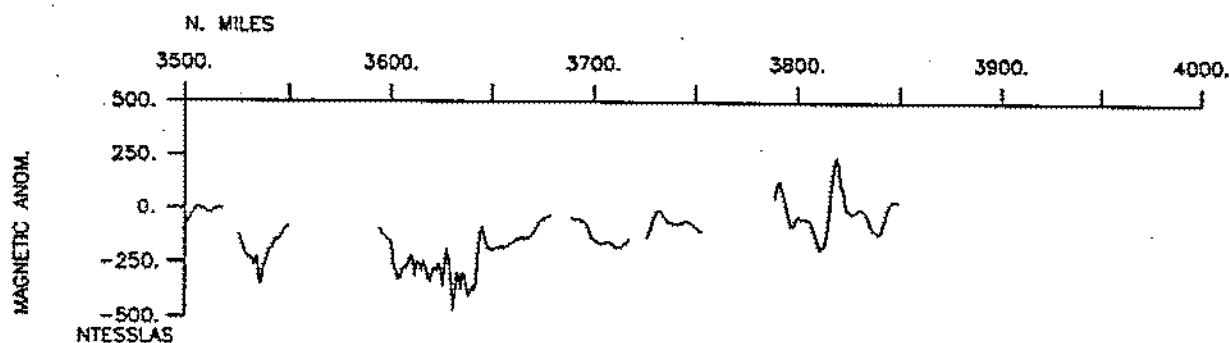
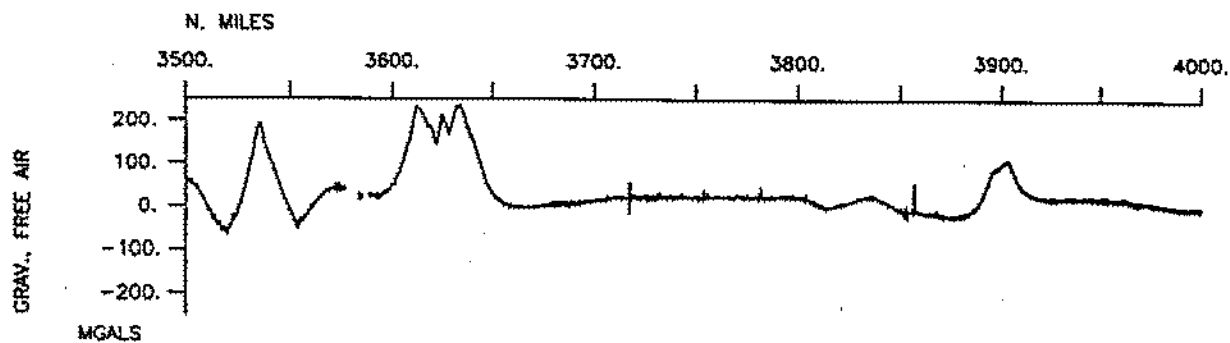


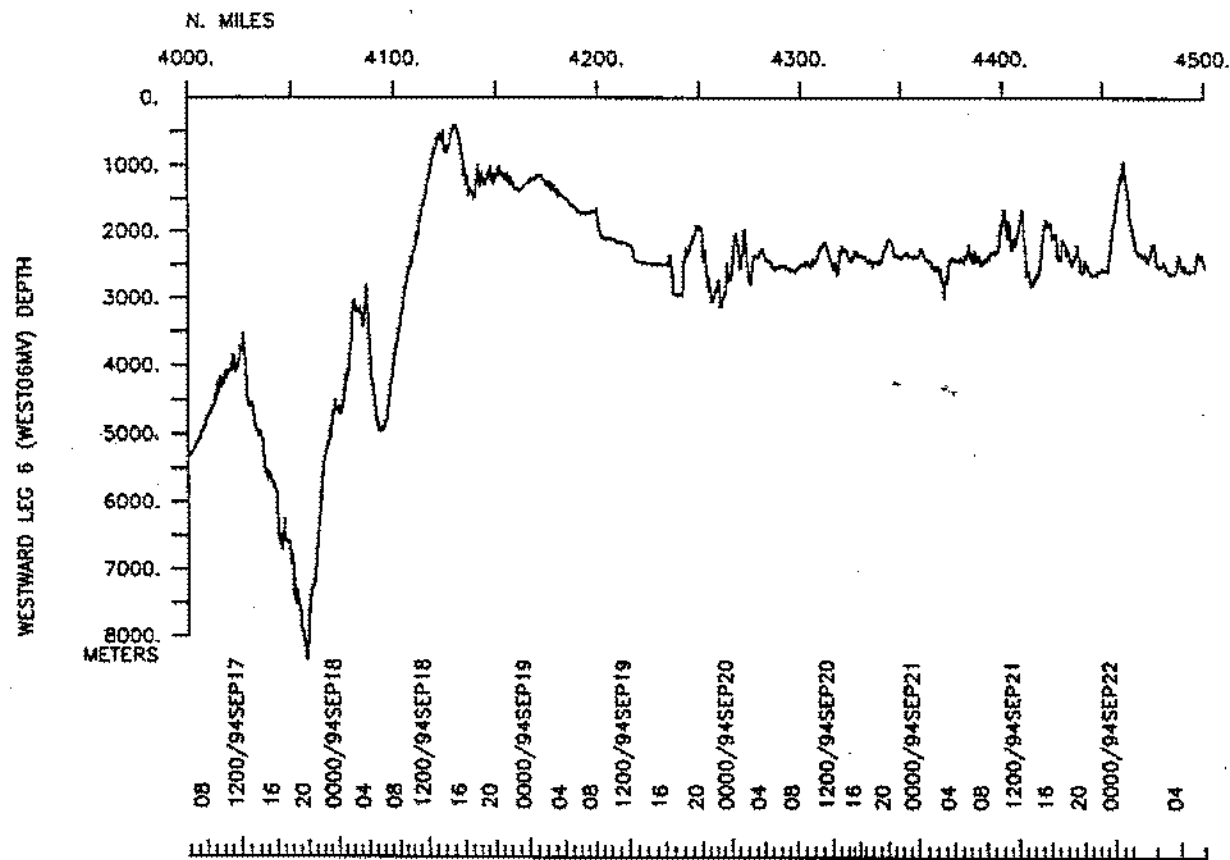
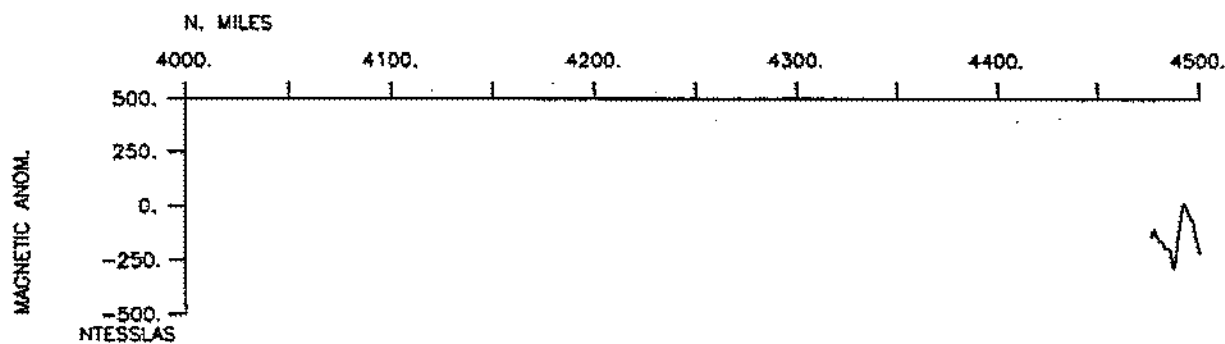
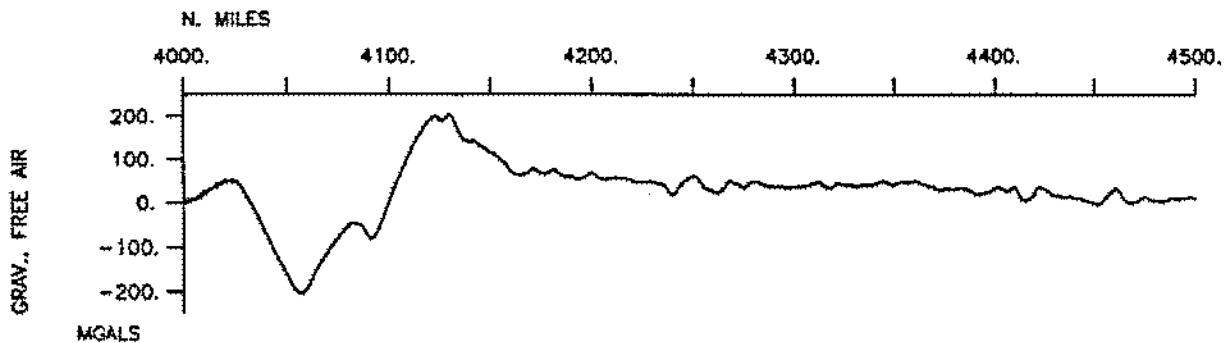


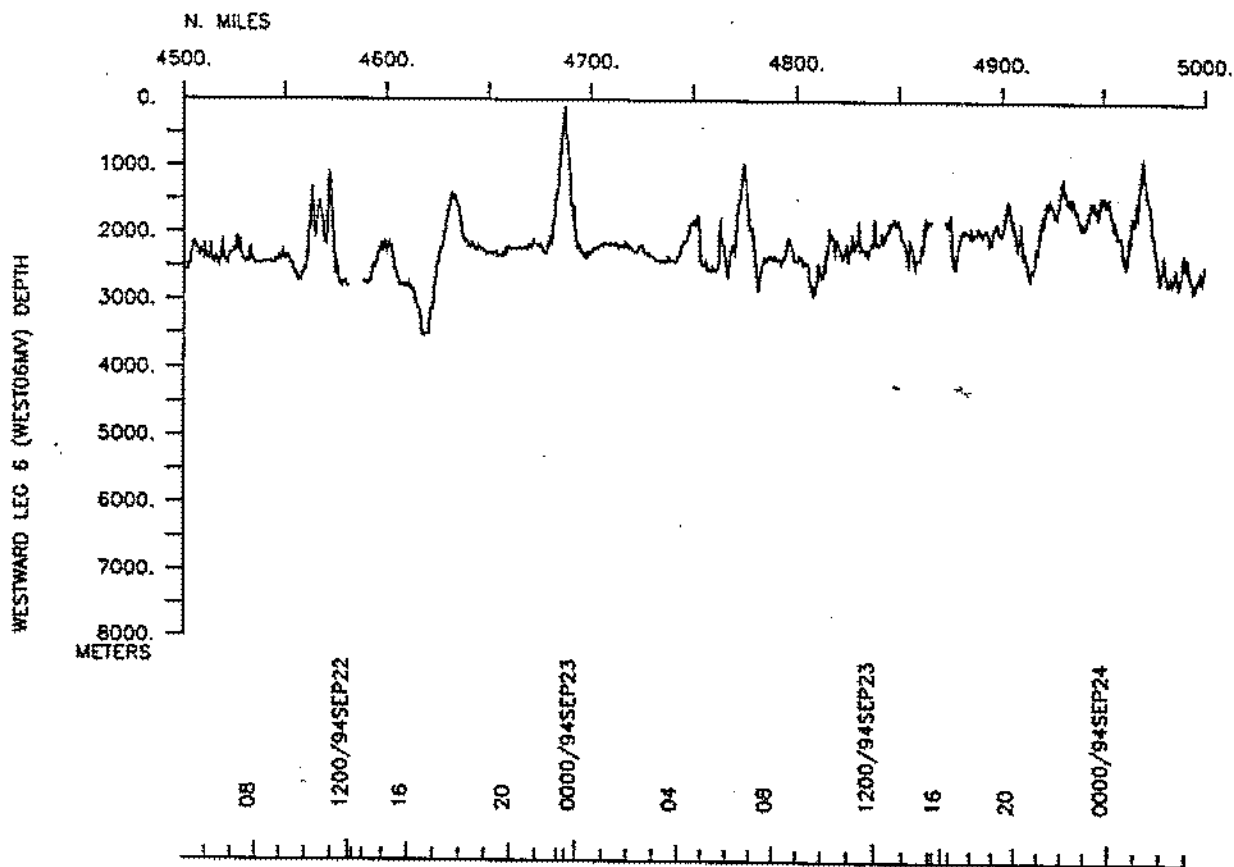
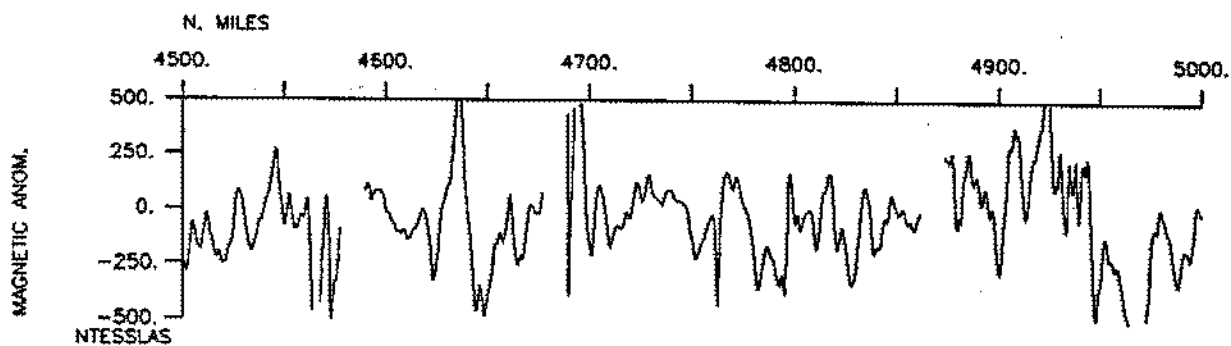
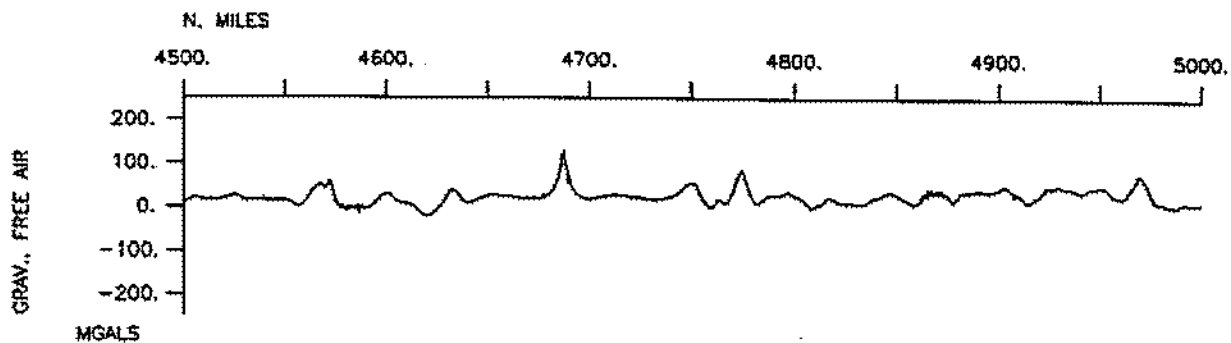


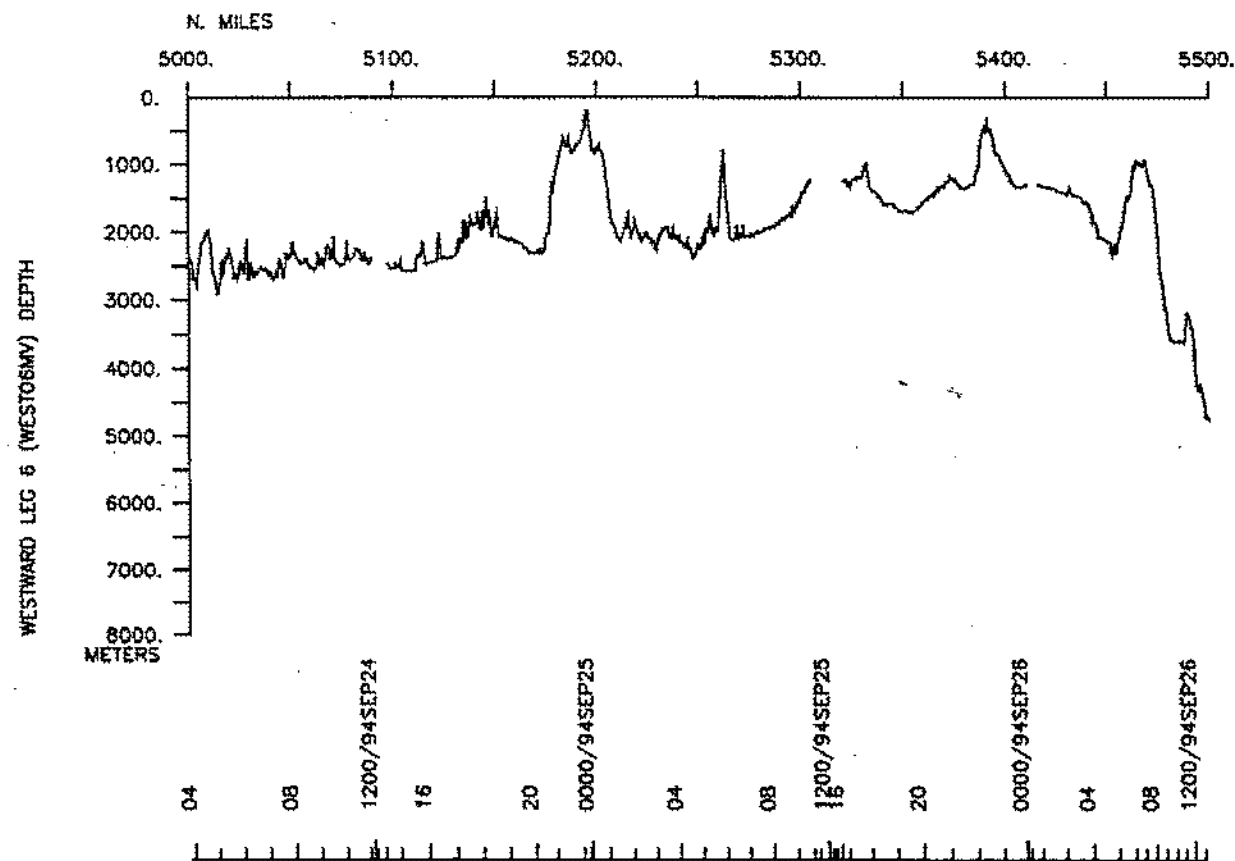
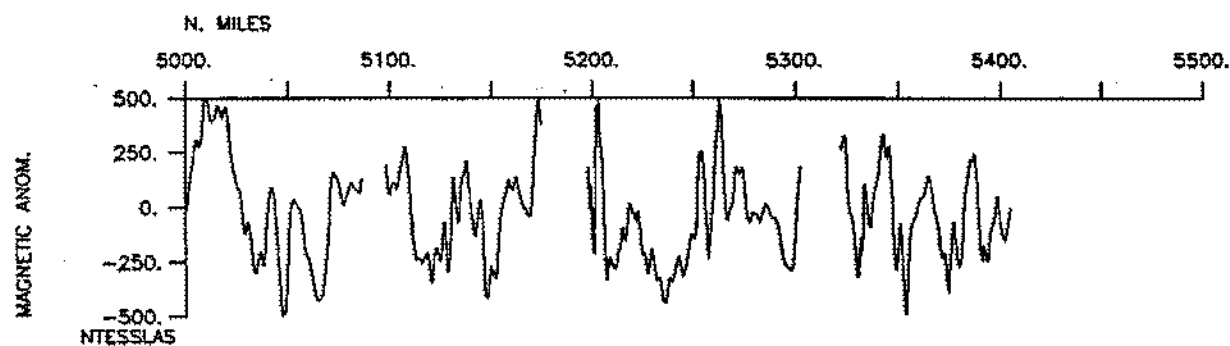
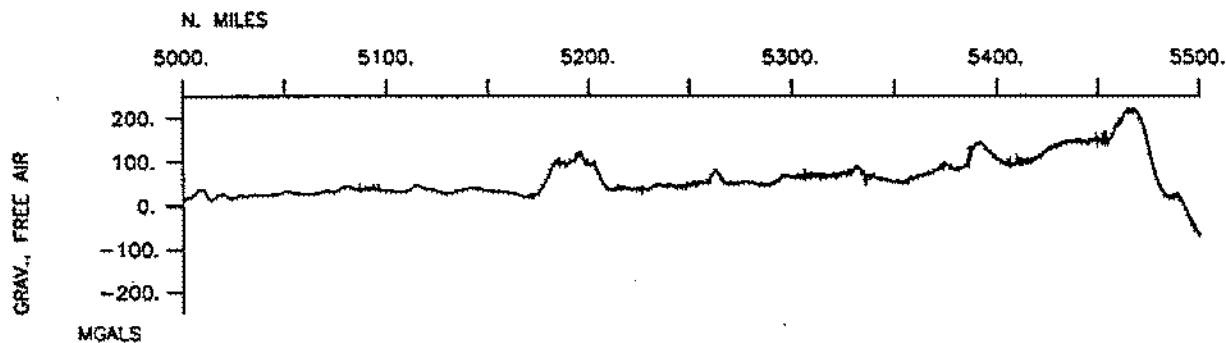


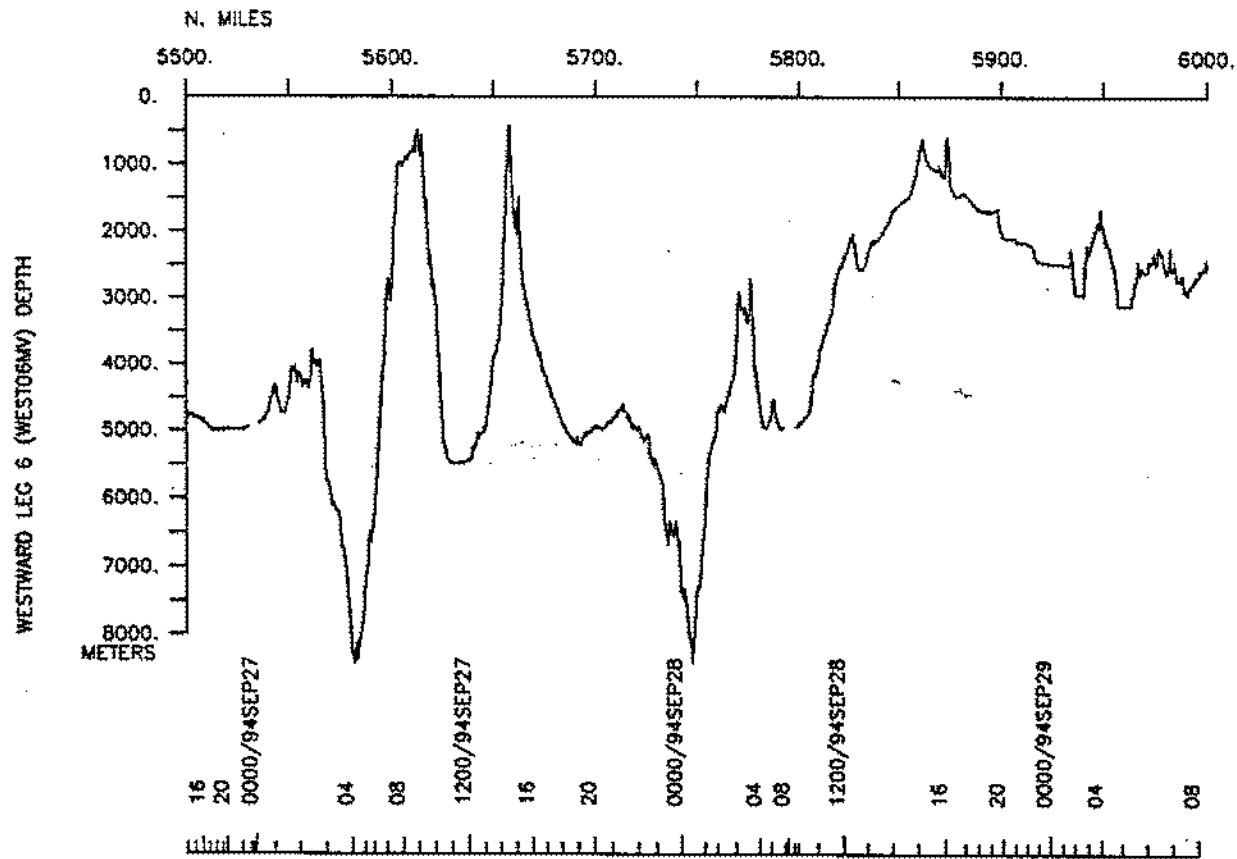
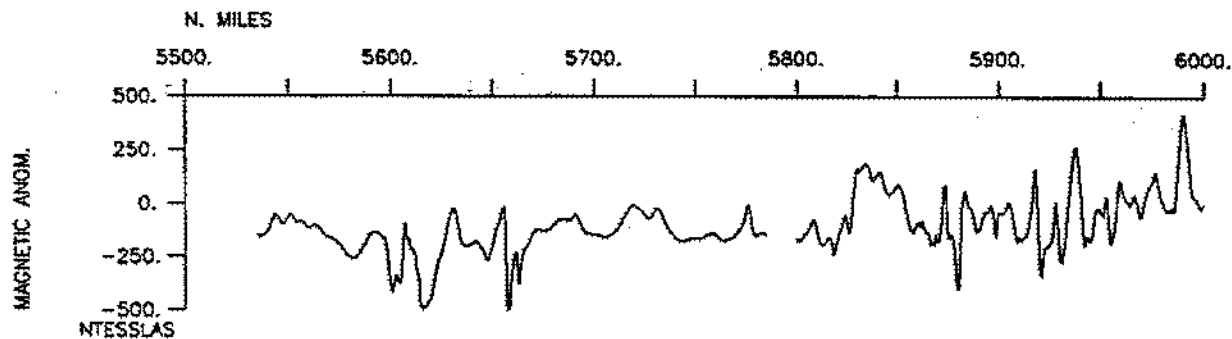
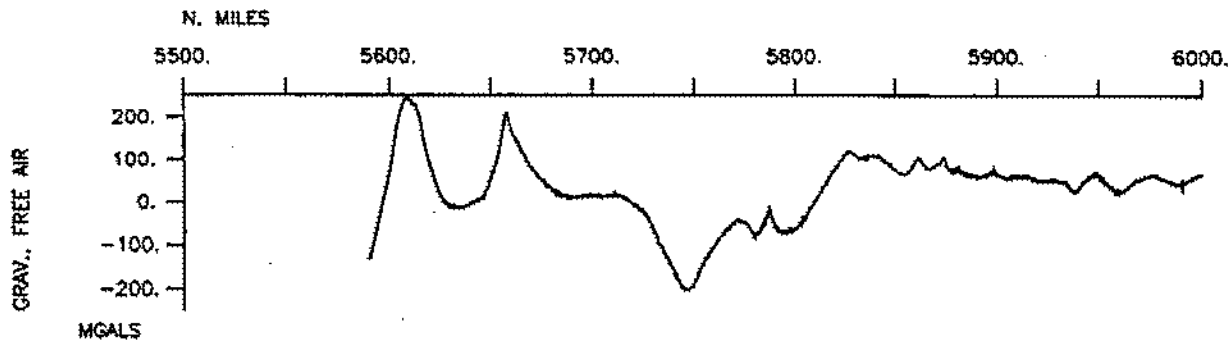


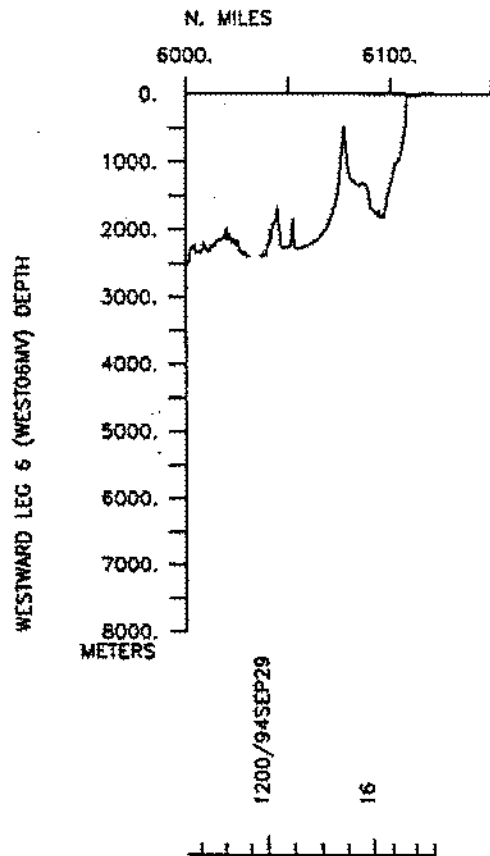
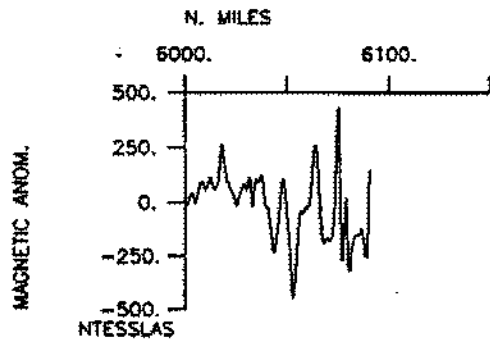
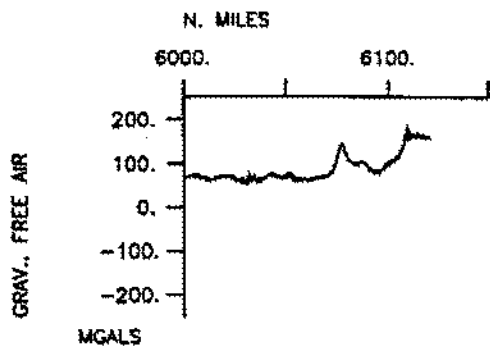












S.I.O. SAMPLE INDEX

(Issued November 1994)

WESTWARD EXPEDITION

Leg 6 (WEST06MV)

R/V Melville

**Brisbane, Australia (30 August 1994)
to
Nuku'alofa, Tonga (30 September 1994)**

Co-Chief Scientists:

LeRoy Dorman (Scripps Institution)

John Hildebrand (Scripps Institution)

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 marine 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 lines. 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.)

GDC Cruise I.D.# 266

#*** Ports ***

0300	300894	LGPT B Brisbane, Australia	27-28.00S 153-02.00E f	WEST06MV
1900	290994	LGPT E Nuka'alofa, Tonga	21-08.00S 175-12.00W f	WEST06MV
1700	070994	LGSS B Nuka'alofa, Tonga	21-08.00S 175-12.00W f	WEST06MV
2300	070994	LGSS E Nuka'alofa, Tonga	21-08.00S 175-12.00W f	WEST06MV
2230	220994	LGSS B Niua Fo'ou, Tonga	15-35.98S 175-42.18W g	WEST06MV
2339	220994	LGSS E Niua Fo'ou, Tonga	15-35.98S 175-42.18W g	WEST06MV
2230	240994	LGSS B Niua Fo'ou, Tonga	15-35.15S 175-40.89W g	WEST06MV
0020	250994	LGSS E Niua Fo'ou, Tonga	15-35.35S 175-40.60W g	WEST06MV

#*** Personnel ***

#	*****NAME*****	*****TITLE*****	*****AFFILIATION*****	**CRID**
---	----------------	-----------------	-----------------------	----------

PECS GRD	Dorman, L.	Co-chief scientist	Scripps Institution	WEST06MV
PECS MPL	Hildebrand, J.	Co-chief scientist	Scripps Institution	WEST06MV
PESP SIO	Bradley, C.	Programmer	Scripps Institution	WEST06MV
PEAT STS	Crampton, P.	Geophysical eng	Scripps Institution	WEST06MV
PESP SIO	Crawford, W.	Postdoc	Scripps Institution	WEST06MV
PESP MPL	Escher, S.	Programmer	Scripps Institution	WEST06MV
PESP SIX	Fatai, T.	Observer	Tonga	WEST06MV
PESP SIX	Hill, P.	Geologist	Australian Geol.Sur.	WEST06MV
PEST SIO	Porras, J.	Grad student	Scripps Institution	WEST06MV
PECT STS	Porteous, T.	Computer engineer	Scripps Institution	WEST06MV
PESP MPL	Sauter, A.	Specialist	Scripps Institution	WEST06MV
PEST SIO	Sohn, R.	Grad student	Scripps Institution	WEST06MV
PESP MPL	Webb, S.	Researcher	Scripps Institution	WEST06MV
PESP SIX	Wiens, D.	Professor	Washington Univ.	westo6mv
PEST SIO	Williams, K.	Grad student	Scripps Institution	WEST06MV
PERT STS	Wilson, R.	Resident tech	Scripps Institution	WEST06MV

#*** 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 a particular leg, (moored 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. Positions are in tenths of minutes.

#GMT	DDMMYY	SAMP	B	SAMPLE	DISP				p	CRUISE
#TIME	DATE	TZ	CODE	E IDENTIFIER	CODE	LATITUDE	LONGITUDE		C	LEG-SHIP

**** Underway data curator - S. M. Smith ext. 42752

**** Log books****

0300	300894		LEBW	B	underway watch log	GDC	27-26.81S	153-04.74E	g	WEST06MV
1900	290994		LEBW	E	underway watch log	GDC	21-08.08S	175-10.97W	g	WEST06MV
0300	300894		LBSC	B	Dorman's lab log	LMD	27-26.81S	153-04.74E	g	WEST06MV
1900	290994		LBSC	E	Dorman's lab log	LMD	21-08.08S	175-10.97W	g	WEST06MV
0300	300894		LBSC	B	Hildebrand's log	MPL	27-26.81S	153-04.74E	g	WEST06MV
1900	290994		LBSC	E	Hildebrand's log	MPL	21-08.08S	175-10.97W	g	WEST06MV

**** Expendable Bathythermographs ****

0349	310894	0	BTXP	01		GDC	24-57.25S	156-15.09E	g	WEST06MV
2343	020994	0	BTXP	02		GDC	26-43.97S	169-38.97E	g	WEST06MV
0114	040994	0	BTXP	03		GDC	25-08.40S	175-16.84E	g	WEST06MV
0141	050994	0	BTXP	04		GDC	22-23.15S	179-58.20E	g	WEST06MV
2259	060994	0	BTXP	05		GDC	19-56.36S	175-48.62W	g	WEST06MV
2314	080994	0	BTXP	06		GDC	19-57.01S	177-20.07W	g	WEST06MV
0152	100994	0	BTXP	07		GDC	18-18.52S	177-57.59W	g	WEST06MV
0200	110994	0	BTXP	08		GDC	18-28.24S	176-30.03W	g	WEST06MV
0010	130994	0	BTXP	09		GDC	18-43.59S	173-22.02W	g	WEST06MV
0531	220994	0	BTXP	10		GDC	17-37.02S	177-41.93W	g	WEST06MV
0028	260994	0	BTXP	11		GDC	17-24.72S	173-43.21W	g	WEST06MV

**** Sea Beam Records (vertical beam and side scan) ****

1104	300894		MBSR	B	v.beam&sidescan r-01	GDC	26-35.62S	153-50.31E	g	WEST06MV
2228	040994		MBSR	E	v.beam&sidescan r-01	GDC	22-45.77S	179-23.40E	g	WEST06MV
2248	040994		MBSR	B	v.beam&sidescan r-02	GDC	22-43.56S	179-27.05E	g	WEST06MV
1150	220994		MBSR	E	v.beam&sidescan r-02	GDC	16-35.25S	177-02.45W	g	WEST06MV
1213	220994		MBSR	B	v.beam&sidescan r-03	GDC	16-35.27S	177-02.70W	g	WEST06MV
1810	290994		MBSR	E	v.beam&sidescan r-03	GDC	21-02.08S	175-12.13W	g	WEST06MV

#GMT	DDMMYY	SAMP	B	SAMPLE	DISP				p	CRUISE
#TIME	DATE	TZ	CODE	E IDENTIFIER	CODE	LATITUDE	LONGITUDE		C	LEG-SHIP
#*** Echo Sounder Records ***										
2240	150994		DPR3	B epc 3.5khz r-01	GDC	18-34.18S	170-05.36W	g	WEST06MV	
0600	180994		DPR3	E epc 3.5khz r-01	GDC	18-44.39S	173-24.23W	g	WEST06MV	
0606	180994		DPR3	B epc 3.5khz r-02	GDC	18-44.38S	173-24.63W	g	WEST06MV	
0620	250994		DPR3	E epc 3.5khz r-02	GDC	15-44.67S	174-34.00W	g	WEST06MV	
0633	250994		DPR3	B epc 3.5khz r-03	GDC	15-45.96S	174-31.83W	g	WEST06MV	
0600	290994		DPR3	E epc 3.5khz r-03	GDC	18-55.60S	175-49.70W	g	WEST06MV	
#*** Seismic Reflection Records ***										
0530	270994		SPRS	B epc r-01 slow	GDC	18-31.77S	172-30.83W	g	WEST06MV	
0401	290994		SPRS	E epc r-01 slow	GDC	18-33.60S	175-49.77W	g	WEST06MV	
0530	270994		SPRF	B epc r-01 fast	GDC	18-31.77S	172-30.83W	g	WEST06MV	
0401	290994		SPRF	E epc r-01 fast	GDC	18-33.60S	175-49.77W	g	WEST06MV	
#*** Magnetism (Earth Total Field) Records ***										
1041	300894		MGRA	B magnetism r-01	GDC	26-36.53S	153-45.50E	g	WEST06MV	
1708	070994		MGRA	E magnetism r-01	GDC	20-51.21S	175-26.55W	g	WEST06MV	
0942	080994		MGRA	B magnetism r-02	GDC	19-55.82S	175-49.43W	g	WEST06MV	
1953	220994		MGRA	E magnetism r-02	GDC	15-52.69S	176-04.39W	g	WEST06MV	
2003	220994		MGRA	B magnetism r-03	GDC	15-51.49S	176-02.68W	g	WEST06MV	
1601	290994		MGRA	E magnetism r-03	GDC	20-44.03S	175-23.14W	g	WEST06MV	
#*** Continuous Digitally Recorded Gravity ***										
0300	300894		GVCR	B digital gravity	GDC	27-26.81S	153-04.74E	g	WEST06MV	
1900	290994		GVCR	E digital gravity	GDC	21-08.08S	175-10.97W	g	WEST06MV	
#*** Seismic Refraction/Reflection ***										
2120	150994		SRCS	B ur ag ob dg	MPL	18-28.78S	170-06.70W	g	WEST06MV	
0100	210994		SRCS	E ur ag ob dg	MPL	18-28.69S	176-25.12W	g	WEST06MV	

#GMT	DDMMYY	SAMP B	SAMPLE	DISP				P	CRUISE
#TIME	DATE	TZ	CODE E	IDENTIFIER	CODE	LATITUDE	LONGITUDE	C	LEG-SHIP
#*** Ocean Bottom Seismometers ***									
#*** MPL OBSs belong to Spahr Webb ***									
0436	050994		SBOB B	nelson	1856m MPL	22-04.64S	179-33.80W	g	WEST06MV
1900	290994		SBOB C	nelson	1856m MPL	21-08.08S	175-10.97W	g	WEST06MV
2238	050994		SBOB B	helmut	1710m MPL	21-24.04S	176-45.93W	g	WEST06MV
1900	290994		SBOB C	helmut	1710m MPL	21-08.08S	175-10.97W	g	WEST06MV
1301	060994		SBOB B	lmd3	2841m LMD	19-57.00S	177-19.78W	g	WEST06MV
2157	080994		SBOB E	lmd3	2841m LMD	19-59.99S	177-17.13W	g	WEST06MV
2338	070994		SBOB B	lmd4	2398m LMD	19-57.05S	175-49.20W	g	WEST06MV
0923	080994		SBOB E	lmd4	2398m LMD	19-57.09S	175-49.30W	g	WEST06MV
0010	080994		SBOB B	lmd8	2399m LMD	19-57.05S	175-49.20W	g	WEST06MV
0804	080994		SBOB E	lmd8	2399m LMD	19-57.16S	175-49.36W	g	WEST06MV
0702	080994		SBOB B	lmd2	2398m LMD	19-57.13S	175-49.15W	g	WEST06MV
1900	290994		SBOB C	lmd2	2398m LMD	21-08.08S	175-10.97W	g	WEST06MV
1949	080994		SBOB B	lmd6	2841m LMD	19-56.99S	177-19.78W	g	WEST06MV
1900	290994		SBOB C	lmd6	2841m LMD	21-08.08S	175-10.97W	g	WEST06MV
1046	090994		SBOB B	evita	2055m MPL	18-32.87S	175-46.78W	g	WEST06MV
1900	290994		SBOB C	evita	2055m MPL	21-08.08S	175-10.97W	g	WEST06MV
0149	100994		SBOB B	lmd3	2578m LMD	18-18.51S	177-57.53W	g	WEST06MV
1900	290994		SBOB C	lmd3	2578m LMD	21-08.08S	175-10.97W	g	WEST06MV
0549	100994		SBOB B	hillery rodham	2473m MPL	18-20.66S	177-40.41W	g	WEST06MV
1900	290994		SBOB C	hillery rodham	2473m MPL	21-08.08S	175-10.97W	g	WEST06MV
1007	100994		SBOB B	lmd8	2636m LMD	18-22.79S	177-18.02W	g	WEST06MV
1900	290994		SBOB C	lmd8	2636m LMD	21-08.08S	175-10.97W	g	WEST06MV
1822	100994		SBOB B	slick	2464m MPL	18-25.70S	176-55.13W	g	WEST06MV
1900	290994		SBOB C	slick	2464m MPL	21-08.08S	175-10.97W	g	WEST06MV
2213	100994		SBOB B	lmd4	2441m LMD	18-25.72S	176-43.89W	g	WEST06MV
1900	290994		SBOB C	lmd4	2441m LMD	21-08.08S	175-10.97W	g	WEST06MV
0158	110994		SBOB B	francois	2560m MPL	18-24.69S	176-36.40W	g	WEST06MV
1900	290994		SBOB C	francois	2560m MPL	21-08.08S	175-10.97W	g	WEST06MV

#GMT	DDMMYY	SAMP B	SAMPLE	DISP		p	CRUISE
#TIME	DATE	TZ	CODE E IDENTIFIER	CODE	LATITUDE	LONGITUDE	C LEG-SHIP
0514	110994		SBOB B maggie	2366m MPL	18-29.40S	176-19.82W	g WEST06MV
1900	290994		SBOB C maggie	2366m MPL	21-08.08S	175-10.97W	g WEST06MV
0858	110994		SBOB B lmd1	2714m LMD	18-31.39S	176-06.28W	g WEST06MV
1900	290994		SBOB C lmd1	2714m LMD	21-08.08S	175-10.97W	g WEST06MV
1807	110994		SBOB B lmd9	2472m LMD	18-36.00S	175-24.50W	g WEST06MV
1900	290994		SBOB C lmd9	2472m LMD	21-08.08S	175-10.97W	g WEST06MV
2351	110994		SBOB B sid	2100m MPL	18-37.75S	175-01.23W	g WEST06MV
1900	290994		SBOB C sid	2100m MPL	21-08.08S	175-10.97W	g WEST06MV
0338	120994		SBOB B lmd14	1471m LMD	18-40.23S	174-40.80W	g WEST06MV
1900	290994		SBOB C lmd14	1471m LMD	21-08.08S	175-10.97W	g WEST06MV
0648	120994		SBOB B jean	1267m MPL	18-41.98S	174-22.22W	g WEST06MV
1900	290994		SBOB C jean	1267m MPL	21-08.08S	175-10.97W	g WEST06MV
2054	120994		SBOB B lmd11	2440m LMD	18-45.18S	173-39.73W	g WEST06MV
1900	290994		SBOB C lmd11	2440m LMD	21-08.08S	175-10.97W	g WEST06MV
2324	120994		SBOB B ron	4974m MPL	18-44.26S	173-22.31W	g WEST06MV
2358	260994		SBOB e ron	4974m MPL	18-44.63S	173-21.94W	g WEST06MV
0722	130994		SBOB B lmd10	5179m LMD	18-46.47S	172-55.59W	g WEST06MV
1900	290994		SBOB C lmd10	5179m LMD	21-08.08S	175-10.97W	g WEST06MV
2324	130994		SBOB B george	5133m MPL	18-47.83S	172-22.43W	g WEST06MV
1900	290994		SBOB C george	5133m MPL	21-08.08S	175-10.97W	g WEST06MV
0707	140994		SBOB B lmd5	4698m LMD	18-52.32S	171-55.63W	g WEST06MV
1900	290994		SBOB C lmd5	4698m LMD	21-08.08S	175-10.97W	g WEST06MV
1822	140994		SBOB B carlos	5390m MPL	18-54.93S	171-26.01W	g WEST06MV
1900	290994		SBOB C carlos	5390m MPL	21-08.08S	175-10.97W	g WEST06MV
0157	150994		SBOB B lmd7	5178m LMD	18-57.92S	170-55.00W	g WEST06MV
1900	290994		SBOB C lmd7	5178m LMD	21-08.08S	175-10.97W	g WEST06MV
0822	150994		SBOB B fw	4906m MPL	19-00.27S	170-24.06W	g WEST06MV
1900	290994		SBOB C fw	4906m MPL	21-08.08S	175-10.97W	g WEST06MV
1201	220994		SBOB B lmd15	2797 LMD	16-35.05S	177-02.86W	g WEST06MV
1900	290994		SBOB C lmd15	2797 LMD	21-08.08S	175-10.97W	g WEST06MV

#GMT	DDMMYY	SAMP B	SAMPLE	DISP				p	CRUISE
#TIME	DATE	TZ	CODE E IDENTIFIER	CODE	LATITUDE	LONGITUDE		C	LEG-SHIP
1415	230994		SBOB B nancy	1798m MPL	15-20.95S	178-30.02W	g	WEST06MV	
1900	290994		SBOB C nancy	1798m MPL	21-08.08S	175-10.97W	g	WEST06MV	
1124	240994		SBOB B lana	2401m MPL	17-03.55S	175-25.21W	g	WEST06MV	
1900	290994		SBOB C lana	2401m MPL	21-08.08S	175-10.97W	g	WEST06MV	
0952	250994		SBOB B indira	1240m MPL	16-04.86S	174-00.07W	g	WEST06MV	
1900	290994		SBOB C indira	1240m MPL	21-08.08S	175-10.97W	g	WEST06MV	
0020	260994		SBOB B lmd12	1304m LMD	17-24.68S	173-43.18W	g	WEST06MV	
1900	290994		SBOB C lmd12	1304m LMD	21-08.08S	175-10.97W	g	WEST06MV	
0550	280994		SBOB B ron	4944m MPL	18-44.49S	173-21.60W	g	WEST06MV	
1900	290994		SBOB C ron	4944m MPL	21-08.08S	175-10.97W	g	WEST06MV	
#			End Sample Index					WEST06MV	