30317

SAIC™

Science Applications International Corporation

MMS GULF OF MEXICO YEAR 5
PHYSICAL OCEANOGRAPHY PROGRAM
SUMMARY CRUISE REPORT NO 8:
FINAL MOORING RECOVERY AND HYDROGRAPHY

R/V PELICAN CRUISE PN8913
(28 October - 2 November 1988)

January 1989

SAIC Report Number:
SAIC-89/1094

Submitted to:

Minerals Management Service
Gulf of Mexico Regional 5 Office
Department of Interior
1201 Elmwood Park Boulevard
New Orleans, Louisiana 70123-2394

Submitted by:

James J. Singer
Science Applications International Corporation
4900 Water's Edge Drive, Suite 255
Raleigh, North Carolina 27606

TABLE OF CONTENTS

Section	Page
TABLE OF CONTENTS	1
LIST OF FIGURES	ii
Introduction	1
Meteorological and Oceanographic Conditions	1
Mooring Recoveries and Hydrography	L
Data Analysis	6
Acknowledgements	6
Appendix A, Cruise Event Summary	7
Appendix B, Weather Log with WMO Codes & Weather Forecast	10
Appendix C, XBT/Mooring Station Locations	18
Appendix D, Station and Sampling Summary	21
Appendix E, ROSCOP Forms	24

LIST OF FIGURES

Figure	Caption	Page
1	NOAA/NOS oceanographic analysis data product for 1 November 1988 by Jenifer Clark with hydrographic Section W-X along 92° W indicated	2
2	Composite horizontal plot of the 15°C surface from XBT and AXBT data collected between 17 and 31 October 1988	3
3	Map showing location of Moorings AA through GG for the MMS Gulf of Mexico Year 5 Physical Oceanography Program	4
	Map showing location of XBT stations occupied along Section W-X during R/V PELICAN Cruise PN8913 (28 October -2 November 1988)	5

Introduction

Between 28 October and 2 November 1988, as part of Year 5 of the Minerals Management Service (MMS) Gulf of Mexico Physical Oceanography Program, SAIC conducted a final mooring recovery and hydrographic cruise along or near 92°W longitude off the Louisiana coast. All seven current meter moorings and an inverted echo sounder (IES) were recovered. XBT drops were made along the length of the mooring line. The cruise event summary is presented in Appendix A.

Meteorological and Oceanographic Conditions

Weather conditions were generally favorable with easterly to northeasterly winds of 3 to 22 knots and one to four foot seas. However, on 1 November winds were northerly up to 35 knots, with 8 to 13 foot seas. These latter conditions briefly interrupted the mooring recovery effort. See Appendix B for the cruise weather log, WMO weather and sea state codes, and the pre-cruise weather forecast.

The oceanographic analysis presented in Figure 1 suggests that there were at least two warm-core rings in the Gulf at this time, and that the Loop Current was south of 26"30'N, and east of 87°00'W. The existence of both rings has since been confirmed from Argos drifter data, and XBT and AXBT data collected coincident with this time period (see Figure 2).

Mooring Recoveries and Hydrography

All seven moorings (AA-GG) and the inverted echo sounder (IES) (Figure 3) were recovered without incident. Mooring FF was recovered without its upper three instruments, as these had been retrieved earlier by a tuna fisherman on 22 September 1988 near 27°08'N 91°21'W. These data and the recovered mooring elements revealed that mooring failure occurred at approximately 600 m depth in a kevlar segment on 10 September.

An experimental instrument on Mooring GG was flooded resulting in no data recovery, and the tape advance mechanism on the bottom Aanderaa at Mooring FF ceased operating on 20 September, approximately 80 percent through the deployment. All other instruments exhibited the expected amount of tape transport.

Heavy fouling was observed only on instruments at Mooring AA. This was, in fact, the least fouling of shelf instrumentation observed for the entire 18 month field effort. One anchor was lost at AA when the recovery line parted, but two other anchor recoveries at BB and CC went without incident.

In addition to the mooring recoveries, thirty-two XBTS were dropped at five to ten nautical mile intervals (5 nautical miles on the shelf) while steaming along the mooring line (Figure 4 and Appendix C). No other hydrographic observations were made. A station and sampling summary is presented in Appendix D. The cruise ROSCOP forms have been submitted to NODC, and copies are presented in Appendix E.

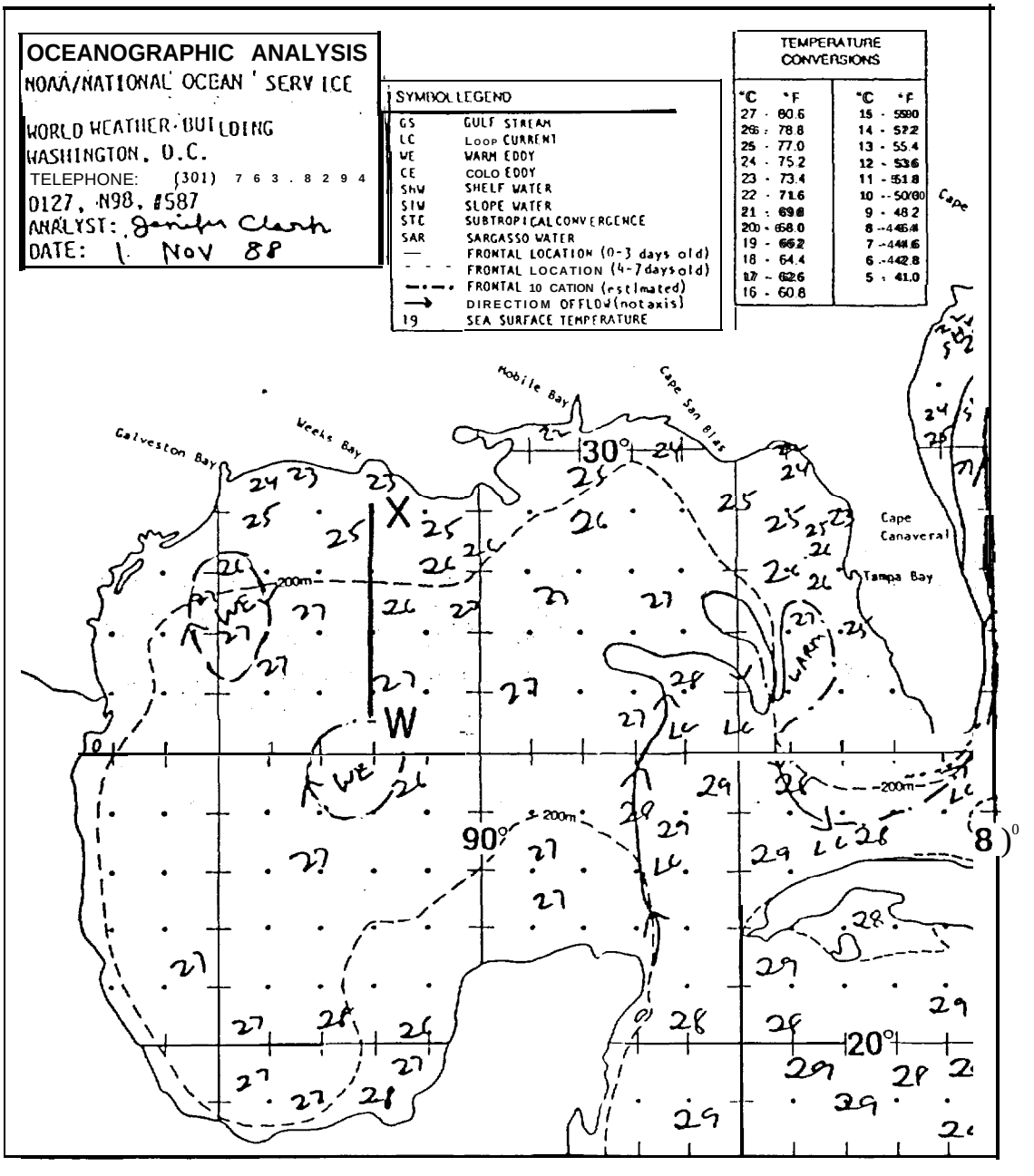

Figure 1. NOAA/NOS oceanographic analysis data product for 1 November 1988 by Jennifer Clark with hydrographic Section W-X along 92° W indicated.

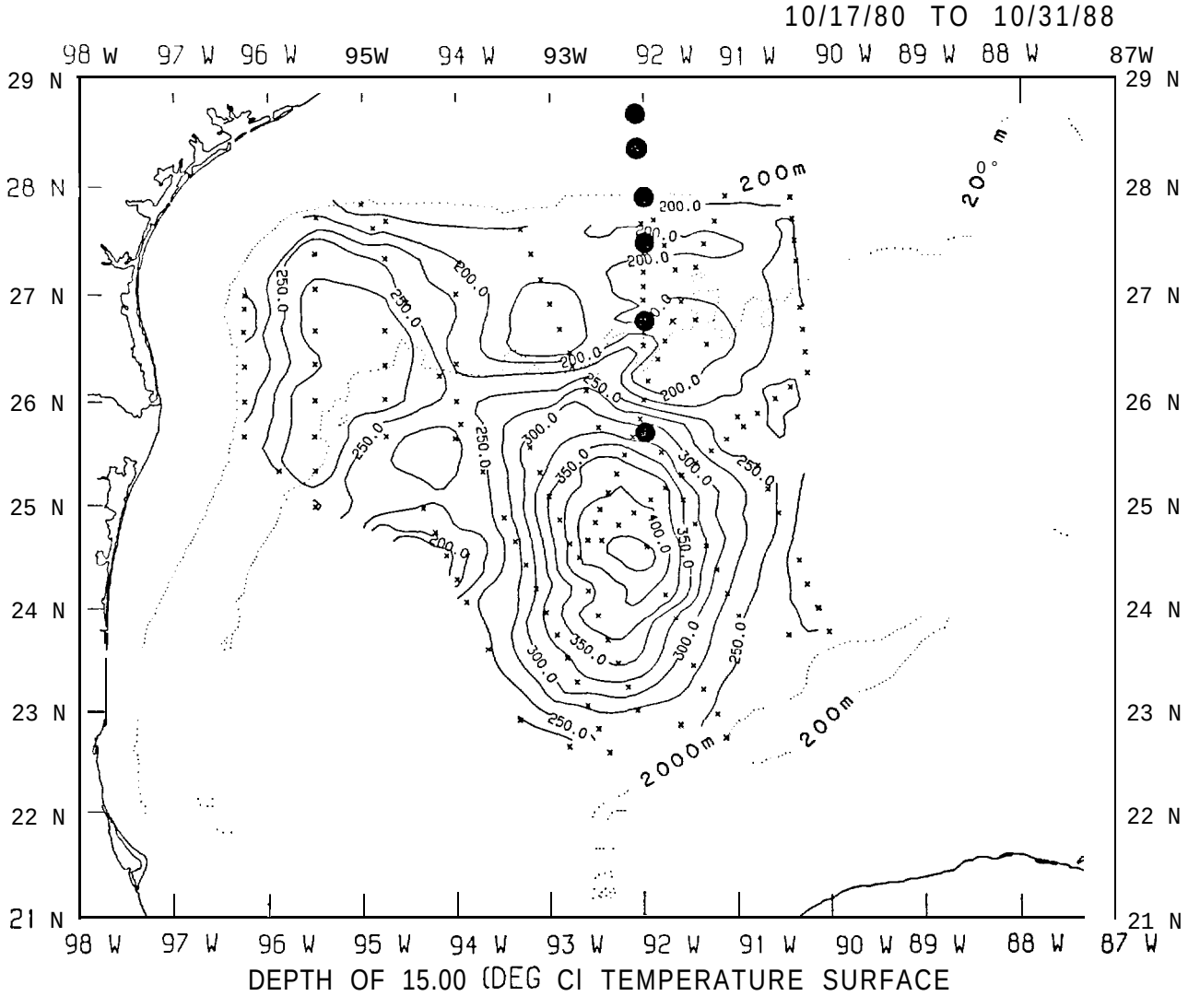

Figure 2. Composite horizontal plot of the 15°C surface from XBT and AXBT data collected between 17 and 31 October 1988.

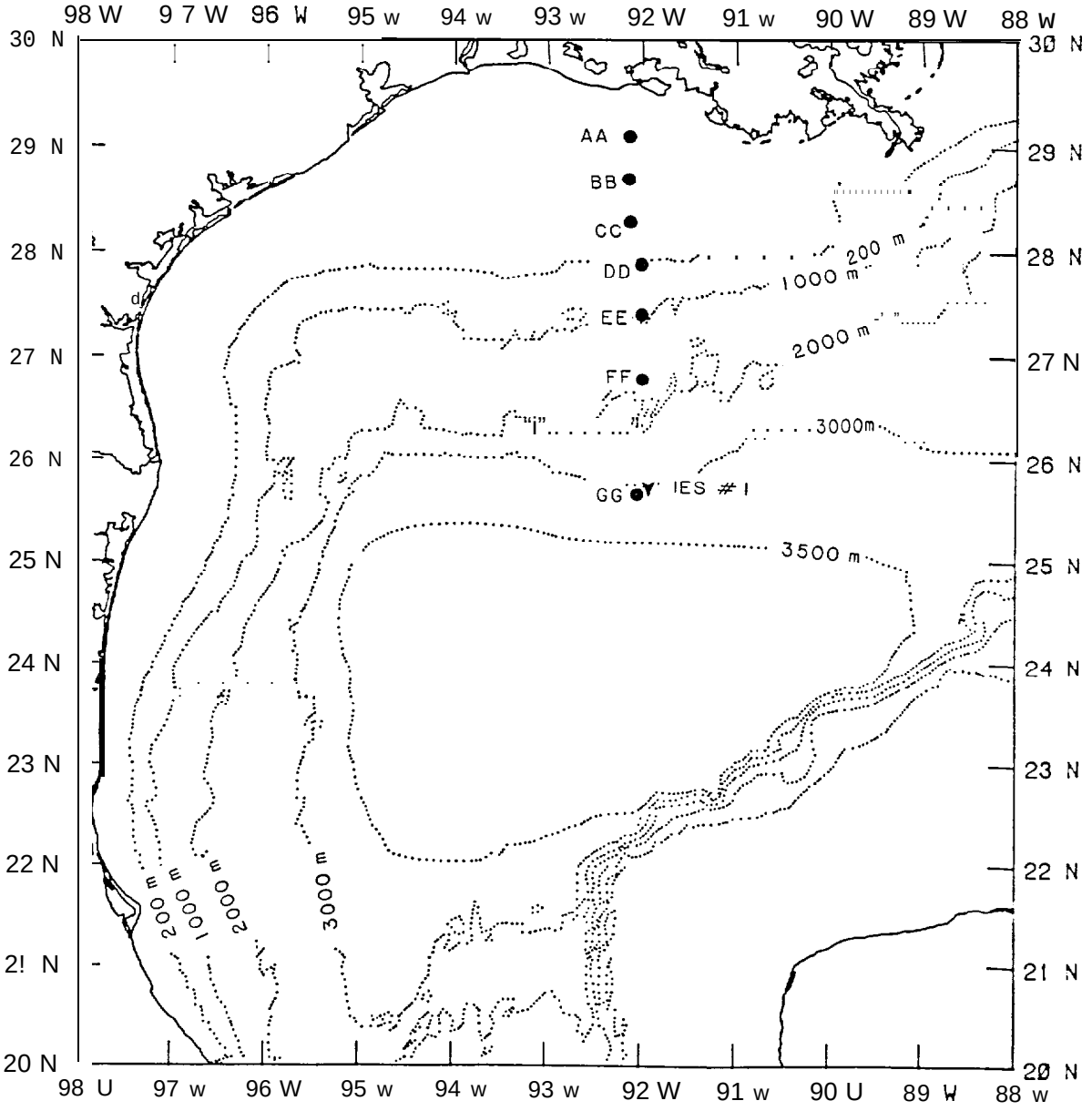

Figure 3. Map showing location of Moorings AA through GG for the MMS Gulf of Mexico Year 5 Physical Oceanography Program.

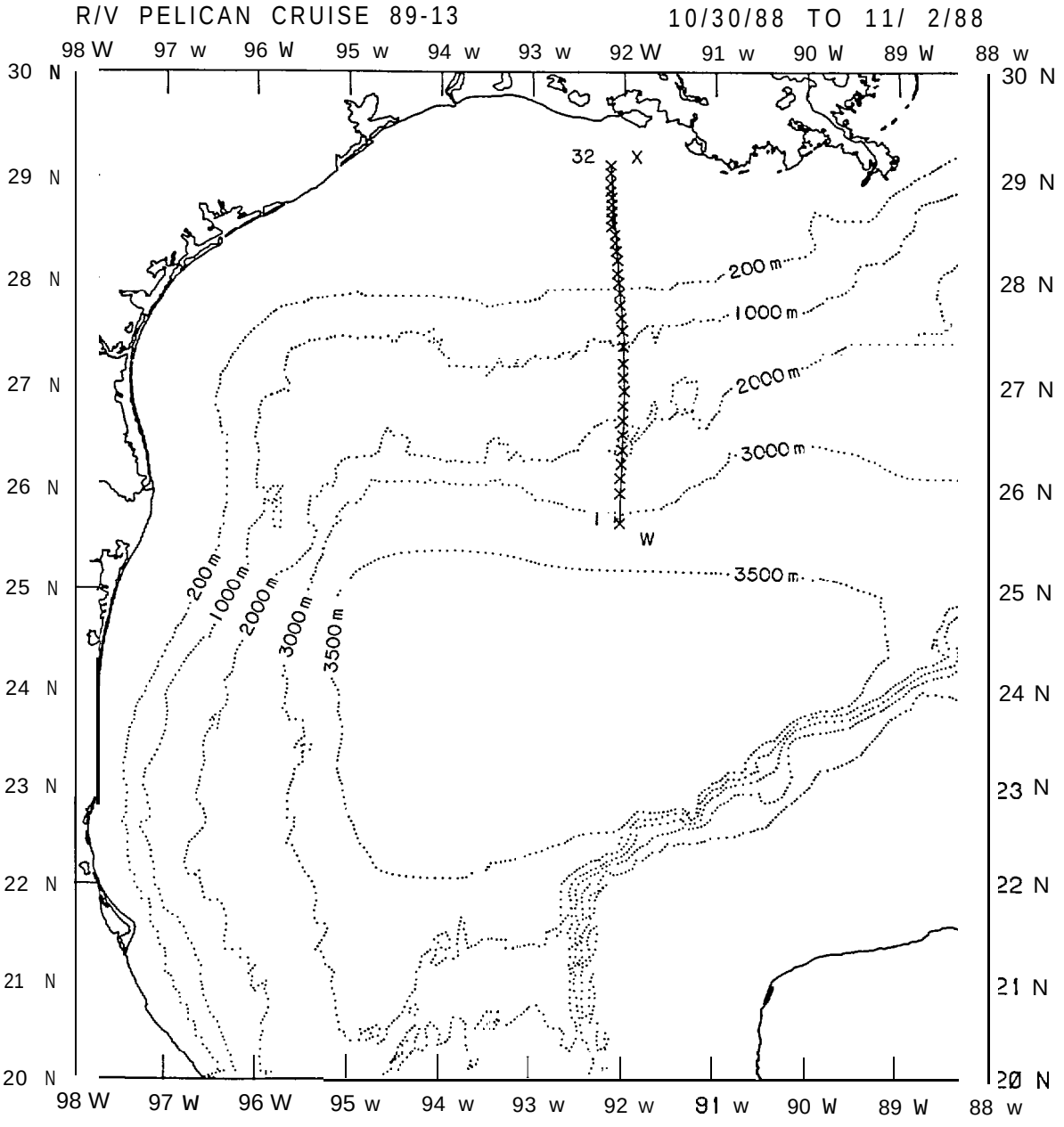

Figure 4. Map showing location of XBT stations occupied along Section W-X during R/V PELICAN Cruise PN8913 (28 October - 2 November 1988).

Data Analysis

At present, the hydrographic data have been processed and plotted, and made available to the investigators. In addition, the final current meter records are being processed and will be concatenated with earlier records, before being supplied to the PIs. This should be accomplished shortly.

Acknowledgements

SAIC thanks captain Bob Cutting and the crew of the R/V PELICAN for their cooperation and assistance, not only in the successful completion of this cruise, but for the entire 18 month field effort. Thanks also are extended to each member of the scientific party and earlier party members from other cruises for their participation and contributions to the success of this field program.

APPENDIX A

CRUISE EVENT SUMMARY

PN8913

CRUISE SUMMARY
R/V PELICAN CRUISE
28 October - 2 November 1988

	CDT	
Friday 28 October	1805	. Depart Cocodrie with: . Jim Singer (SAIC/Raleigh) - Chief Scientist · Craig Boyd (Independent) - Oeck Chief · Art Sundberg (U Del) - Deck Hand/Electronics Technician · Paul Higley (S01) - IES Recovery/Navigation
Saturday 29 October	0605	▪ Change course to respond to May Day from jack-up-rig.
	0700	▪ Return to course for Mooring BB site as jack-up-rig crew removed by another vessel.
	0825	▪ Arrive Mooring BB site.
	0832	▪ Acoustic re lease activated; mooring on surface
	0907	▪ Anchor on board: very little fouling observed on instruments and flotation.
	0915	▪ Begin steaming for Mooring DD site.
	1430	▪ Arrive Mooring DD site.
	1436	▪ Acoustic release activated; ❑ ooring on surface.
	1520	▪ Mooring on board, upper two G.O. CMS fouled with fishing line; steam for Mooring GG site.
	CST	
Sunday 30 October	0500	▪ Arrive Mooring GG site.
	0637	▪ Acoustic release activated: mooring on surface.
	0828	▪ Mooring on board; steam for IES site.
	1019	▪ IES release command sent.
	1051	Release confirmed.
	1155	▪ IES sighted on surface
	1209	▪ IES on board.
	1228	▪ Begin XBT section.
	2330	Stop XBT work; steam for Mooring FF site.

	GST	
Monday October 31	0640	▪ Arrive Mooring FF site.
	0701	▪ Acoustic release activated.
	0723	Mooring on surface.
	0815	▪ Mooring on board; steam for Mooring EE site.
	1230	Resume XBT section.
	1309	▪ Arrive Mooring EE site
	1314	▪ Release activated.
	1315	▪ Mooring on surface.
	1350	▪ Mooring on board.
	1355	▪ Steaming for Mooring AA site while dropping XBTs.
Tuesday 1 November	0700	▪ Arrive at Mooring AA site
	0730	. Elect to standby as winds NW at 30 knots .
	1443	Acoustic release activated; mooring on surface.
	1503	· Mooring on board; resume XBT section while steaming offshore to Mooring CC site ; anchor parted from line during recovery.
	----	Arrive at Mooring CC site: standby till morning,
Wednesday 2 November	0655	▪ Acoustic release activated; ❑ ooring on surface,
	0733	Mooring on board.
	0836	· Fouling experiment; C.O. instruments in water; steaming 180 deg. @ approx. 1.5 knots.
	0849	· Ship speed: 460 RPM (approx. 2.1 knots)
	0852	Ship speed: 610 646 RPM (approx. 3.5 knots)
	0903	· Ship speed: 616 RPM @ 165 deg.
	09L0	Ship speed: 460 RPM - changing direction to 270 deg.
	0925	· Ship speed: 520 RPM (approx. 2.9 knots) , maintaining heading at 270 deg.
	0940	· Ship speed changed to drifting towards 010 deg. (engines stopped), approx. O. 5 knots drift.
	LOOO	· Ship speed changed to 'bumping ahead' at 090 deg.
	1025	. Engines stopped; bringing instruments on board.
	1027	· Instruments on deck; steaming for Cocodrie.
	2225	· Arrive Cocodrie, IA.

APPENDIX B

WEATHER LOG WITH WMO CODES,
WEATHER FORECAST
AND
OFFSHORE PLATFORM DATA

PN8913
WEATHER LOG
R/V PELICAN CRUISE
28 October-2 November 1988

Station	Time (GMT)	Day (Ott-Nov)	Wind Speed (Knots)	Wind Direction (Degrees)	Waves *Sea State (Code)	Waves Direction (Degrees)	Barometric Pressure (Inches)	Temp Air ("c)	WMo 4501 Weather (Code)
BB	1507	29	12	030	3	030	30.01	23.9	2
DD	2118	29	7	075	3	090	30.05	27.2	1
GG	1110	30	5	068	3	068	29.97	26.7	2
GG	1428	30	7	068	3	068	30.07	26,7	1
IES1	1810	30	22	068	3	068	30.00	26.7	
Ix	1828	30	20	068	4	068	30.00	26.7	1
2x	1930	30	15	085	4	085	29.97	27.2	1
3x	2030	30	12	090	4	090	29.97	27.8	1
4X	2130	30	12	100	4	100	29,97	27.2	1
5x	2230	30	10	110	3	110	29.97	27.2	1
6x	2330	30	9	120	3	110	29.97	26.7	1
7x	0030	31	8	120	3	110	29.98	26.7	1
8X	0130	31	8	115	3	110	29.98	24.4	1
9x	0230	31	8	115	3	110	30.00	24.4	1
lox	0330	31	8	115	3	110	30.00	24.4	6
1 lx	0430	31	8	100	3	100	30.00	24.4	6
12X	0530	31	22	090	3	095	30.00	23,9	6
FF	1220	31	10	135	3	135	29.95	24,4	6
FF	1413	31	5	095	3	090	29.95	22.2	6
13x	1830	31	5	010	2	010	29,91	24.4	5
EE	1910	31	7	040	2	040	29,91	24.4	2
EE	1950	31	7	040	2	040	29.91	25.6	2
14X	2030	31	7	040	2	040	29.90	27.2	1
15X	2130	31	7	030	2	030	29.90	25.6	2
16X	2230	31	15	030	4	030	29.90	25.0	2
17X	2330	31	15	030	4	030	29.90	23.9	2
18X	0030	1	20	030	4	030	29.90	22.8	2
19X	0130	1	19	031	4	031	29.90	22.8	2
20X	0230	1	20	000	4	000	29.90	23,3	2
2 lx	0330	1	30	000	4	000	29.95	22,2	1
22x	0430	1	35	000	5	000	29.95	22.2	1
23X	0530	1	35	000	5	000	29,95	22.2	1
AA	1305	1	30	020	4	020	30.01	16.7	1
M	1530	1	30	020	4	020	30,01	16.7	1
AA	1800	1	17	010	4	OID	30.07	17.8	1
AA	2038	L	13	010	3	010	30.01	20.0	1
24X	2110	1	13	010	3	010	30,01	20.6	1
25X	2200	1	10	010	3	010	30,00	20.6	1
26X	2300	1	8	010	3	010	30.00	20.0	0
27X	0000	2	8	010	3	010	30.01	20.6	0
28X	0100	2	8	010	3	010	30.03	21.1	0
29x	0200	2	8	015	3	015	30.06	21.7	0
30X	0300	2	7	015	3	015	30.08	21.7	0
31x	0400	2	5	030	2	030	30.01	21.1	0
32X	0500	2	4	035	2	030	30.01	21.1	0
cc	1256	2	3	130	1	130	30.02	22.8	0
cc	1333	2	3	130	L	130	30.02	22,8	0

Sea State

WMO Code 3700

Description	Height* Feet**	Code
Calm-glassy	o	0
Calm-rippled	o - 1/3	1
Smooth-wavelet	1/3 - 1 2/3	2
Slight	1 2/3 - 4	3
Moderate	4 - 8	4
Rough	8 - 1 3	5
Very rough	13 - 20	6
High	20 - 30	7
Very high	30 - 45	8
Phenomenal	> 45	9

*The average wave height as obtained from the larger well-formed waves of the wave system being observed.

**The exact bounding height is to be assigned for the lower code figure, e.g. a height of 13 feet is coded as 5.

Present Weather

WMO Code 4501

Code	
0	Clear (no cloud at any level)
1	Partly cloudy (scattered or broken)
2	Continuous layer(s) of cloud(s)
3	Sandstorm, duststorm, or blowing snow
4	Fog, thick dust or haze
5	Drizzle
6	Rain
7	Snow, or rain and snow mixed
8	Shower(s)
9	Thunderstorm(s)

ATTN: JIM SINGER THURSDAY 27-OCT-88 1300 EDT

FORECAST FOR THE AREA 24.0N - 29.0 NORTH, 90.0 - 93.0 WEST:

TIME EDT	TEMP	WIND AVR-MAX	WAVE FT/SEC	SWELL DIR	SWELL FT/SEC	SEAS FT	MOS FT	WEA	VIS MLS
THURSDAY 27-OCT-88									
1400	78-82	S 10-15	2/2	SE	2/5	3	6	P CLDY	6
2000	77-81	SW 10-15	2/2	SE	2/5	3	6	P CLDY	6
FRIDAY 28-OCT-88									
0200	76-80	SE 8-15	1/2	SE	2/5	2	4	P CLDY	6
0800	76-80	ESE 8-15	2/2	SE	1/5	2	4	P CLDY	6
1400	79-83	ESE 10-15	2/2	SE	1/6	2	4	P CLDY	6
2000	77-81	ESE 10-15	2/2	ESE	1/6	2	4	P CLDY	6
SATURDAY 29-OCT-88									
0200	75-79	E 12-18	3/3	ESE	1/6	3	6	CLOUDY	5
0800	75-79	ENE 15-20	3/3	ESE	2/6	4	7	CLOUDY	5
1400	78-82	ENE 12-18	3/3	ESE	2/6	4	7	CLOUDY	5
2000	76-80	ENE 12-18	3/3	E	2/6	4	7	M CLDY	5
SUNDAY 30-OCT-88									
	77-81	E 12-18	3/3	E	2/6	4	7	M CLDY	6
MONDAY 31-OCT-88									
	77-81	ESE 10-15	2/2	E	3/6	4	7	P CLDY	6

SUMMARY: WEAK FRONTAL SYSTEM CURRENLY DYING ALONG THE LA COASTAL WATERS SHOULD NOT BE A FACTOR, WITH WEAK RIDGEOF HIGH PRESSURE HOLDING ACROSS THE NORTHERN GULF. COLD FRONT DROPPING INTO KANSAS AT THIS TIME SHOULD STALL ALONG THE TX/LA COAST LATE TOMORROW RATHER THAN PUSH WELL OFFSHORE WITH NO SHARP INCREASE IN WINDS. HIGH PRESSURE OVER THE PLAINS WILL BRIDGE WITH HIGH IN THE GULF AS FRONT DISSIPATES, AND THEN THE WHOLE SYSTEM WILL DRIFT OFF TO THE EAST LATE IN THE PERIOD. THERE ARE NO SIGNIFICANT WEATHER SYSTEMS IN THE TROPICAL ATLANTIC, CARIBBEAN OR GULF OF MEXICO.

STATION: 42002 TODAY'S DATE: 27-OCT-88

TIME	DATE	TMP	WTR	WIND	PRS	WAVE
12AM(04Z)	27	78	80	1210	134	0601
1AM(05Z)	27	78	80	1210	132	0601
2AM(06Z)	27	77	80	1316	124	0601
3AM(07Z)	27	77	80	1416	119	0601
4AM(08Z)	27	77	80	1612	119	0501
5AM(09Z)	27	78	80	1614	115	0603
6AM(10Z)	27	78	80	1712	118	0603
7AM(11Z)	27	78	79	1712	123	0603
8AM(12Z)	27	78	79	1800	128	0601
9AM(13Z)	27	78	79	1706	135	0603
10AM(14Z)	27	79	79	1706	143	0603
11AM(15Z)	27	79	80	1706	149	0501
12PM(16Z)	27	79	80	1606	150	0601

****
****

SXUS1 KLCH 271531
WEATHER REPORT CONOCO AUTOMATIC OBSERVING STATION
1007AM OCT 27 1988

STATION	PRES MBS	TEMP	WIND DIR	WIND KNOTS	SIGNS WAVE	MAX WAVE	WAVE PERIOD	LOCATION	
WC 66C			ENE	11G	12			29.7N	93.1W
EC 42B			W	12G	15			29.5N	92.8W
VR 119G			E	12G	14			29.1N	92.5W
WC 459A	150	80	S	10G	12	1.5	2.3	4.1	28.3N 93.0W
SS 158C	173	82	S	4G	5	2.0	2.6	16.3	28.7N 91.0W
SM 136B	150	85	N	8G	8	2.1	3.0	4.1	28.2N 92.0W
VR 242A	133	75	WSW	7G	9	2.4	3.0	6.1	28.6N 92.6W
EC 97A	153	73	E	7G	9	ERR	ERR	14.3	29.2N 92.8W

SXUS1 KLCH 271217
WEATHER REPORT CONOCO AUTOMATIC OBSERVING STATION
712AM OCT 27 1988

STATION	PRES MBS	TEMP	WIND DIR	WIND KNOTS	SIGNS WAVE	MAX WAVE	WAVE PERIOD	LOCATION	
GRD CHN			SE	2G	3			29.8N	93.0W
WC 66C			E	7G	9			29.7N	93.1W
EC 42B			WSW	14G	16			29.5N	92.8W
VR 119G			ENE	9G	10			29.1N	92.5W
WC 459A	133	80	SSE	7G	7	1.7	2.4	4.1	28.3N 93.0W
SM 102G	ER	RR	ERR	999G	999	ERR	ERR	ERR	28.4N 92.0W
SS 158C	156	78	S	3G	5	2.0	3.2	12.3	28.7N 91.0W
SM 136B	135	84	N	3G	4	2.2	2.9	4.1	28.2N 92.0W
VR 242A	116	75	S	999G	999	2.2	2.7	8.2	28.6N 92.6W
EC 97A	132	71	ENE	4G	8	4.8	9.2	7.1	29.2N 92.8W

SXUS1 KLCH 271120
WEATHER REPORT CONOCO AUTOMATIC OBSERVING STATION
601AM OCT 27 1988

STATION	PRES MBS	TEMP	WIND DIR	WIND KNOTS	SIGNS WAVE	MAX WAVE	WAVE PERIOD		LOCATION	
GRD CHN			SSE	3G	3				29.8N	93.0W
WC 66C			ENE	10G	12				29.7N	93.1W
EC 42B			SW	12G	15				29.5N	92.8W
VR 119G			ENE	10G	10				29.1N	92.5W
WC 459A	127	80	SSE	8G	9	1.8	3.3	4.1	28.3N	93.0W
SM 108G	ER	75	ERR	4G	8	ERR	ERR	ERR	28.4N	92.0W
SS 158C	145	78	S	3G	7	2.0	2.7	8.2	28.7N	91.0W
SM 136B	125	83	ERR	5G	5	2.0	2.9	4.1	28.2N	92.0W
VR 242A	109	75	SSW	999G	999	2.6	3.1	7.1	28.6N	92.6W
EC 97A	122	71	ENE	5G	9	6.7	9.8	7.1	29.2N	92.8W

SXUS1 KLCH 270943
WEATHER REPORT CONOCO AUTOMATIC OBSERVING STATION
435AM OCT 27 1988

STATION	PRES MBS	TEMP	WIND DIR	WIND KNOTS	SIGNS WAVE	MAX WAVE	WAVE PERIOD		LOCATION	
GRD CHN			SSE	1G	2				29.8N	93.0W
WC 66C			ENE	10G	11				29.7N	93.1W
EC 42B			SSW	10G	14				29.5N	92.8W
VR 119G			NE	10G	12				29.1N	92.5W
WC 459A	122	80	SSE	9G	9	1.7	2.7	4.1	28.3N	93.0W
SM 108G	ER	RR	ERR	999G	999	ERR	ERR	ERR	28.4N	92.0W
SS 158C	145	78	S	3G	5	2.6	2.9	6.1	28.7N	91.0W
SM 136B	125	83	ERR	4G	5	2.2	3.2	4.1	28.2N	92.0W
VR 242A	107	75	SSW	7G	10	2.2	2.9	7.1	28.6N	92.6W
EC 97A	124	71	ENE	3G	9	7.6	9.9	16.3	29.2N	92.8W

SXUS1 KLCH 270814
WEATHER REPORT CONOCO AUTOMATIC OBSERVING STATION
308AM OCT 27 1988

STATION	PRES MBS	TEMP	WIND DIR	WIND KNOTS	SIGNS WAVE	MAX WAVE	WAVE PERIOD		LOCATION	
GRD CHN			SE	4G	8				29.8N	93.0W
WC 66C			ENE	10G	11				29.7N	93.1W
EC 42B			WSW	12G	16				29.5N	92.8W
VR 119G			S	999G	0				29.1N	92.5W
WC 459A	124	79	SSE	9G	10	1.8	2.6	4.1	28.3N	93.0W
SM 108G	ER	RR	ERR	999G	999	ERR	ERR	ERR	28.4N	92.0W
SS 158C	145	77	SSW	3G	5	2.9	3.4	5.1	28.7N	91.0W
SM 136B	125	82	ERR	8G	9	2.2	3.4	4.1	28.2N	92.0W
VR 242A	110	75	S	9G	10	2.2	2.8	7.1	28.6N	92.6W
EC 97A	125	74	S	2G	4	12.0	10.8	33.7	29.2N	92.8W

SXUS1 KLCH 270707
WEATHER REPORT CONOCO AUTOMATIC OBSERVING STATION
203AM OCT 27 1988

STATION	PRES MBS	TEMP	WIND DIR	WIND KNOTS	SIGNS WAVE	MAX WAVE	WAVE PERIOD		LOCATION	
GRD CHN			ESE	5G	9				29.8N	93.0W
WC 66C			NE	10G	14				29.7N	93.1W
EC 42B			SSW	15G	16				29.5N	92.8W

SXUS1 KLCH 270631

WEATHER REPORT CONOCO AUTOMATIC OBSERVING STATION

126AM OCT 27 1988

STATION	PRES MBS	TEMP	WIND DIR	KNOTS	SIGNS WAVE	MAX WAVE	WAVE PERIOD	LOCATION	
GRD CHN			SE	7G	10			29.8N	93.0W
WC 66C			NE	10G	14			29.7N	93.1W
EC 42B			S	11G	15			29.5N	92.8W
VR 119G			SSW	5G	8			29.1N	92.5W
WC 459A	129	79	SSE	10G	11	1.8	2.7	4.1	28.3N	93.0W
SM 108G	ER	RR	ERR	999G	999	ERR	ERR	ERR	28.4N	92.0W
SS 158C	148	77	SSW	4G	8	2.8	3.5	5.1	28.7N	91.0W
SM 136B	125	81	ERR	7G	9	2.5	3.9	4.1	28.2N	92.0W
VR 242A	115	74	SSW	9G	10	2.2	2.7	10.2	28.6N	92.6W
EC 97A	130	73	ESE	3G	3	13.0	10.3	ERR	29.2N	92.8W

SXUS1 KLCH 270541

WEATHER REPORT CONOCO AUTOMATIC OBSERVING STATION

1219AM OCT 27 1988

STATION	PRES MBS	TEMP	WIND DIR	KNOTS	SIGNS WAVE	MAX WAVE	WAVE PERIOD	LOCATION	
WC 66C			NE	10G	10			29.7N	93.1W
EC 42B			S	10G	12			29.5N	92.8W
VR 119G			S	8G	10			29.1N	92.5W
WC 459A	133	79	SE	11G	11	1.8	3.0	4.1	28.3N	93.0W
SS 158C	151	77	S	7G	10	2.8	3.7	6.1	28.7N	91.0W
SM 136B	132	82	N	2G	3	2.4	4.2	4.1	28.2N	92.0W
VR 242A	119	74	S	8G	12	2.2	2.4	7.1	28.6N	92.6W
EC 97A	130	73	SE	5G	7	5.0	8.9	12.3	29.2N	92.8W

SXUS1 KLCH 270424

WEATHER CONDITIONS AT 23:11 CDT 26-OCT-88

MOBIL LOCATION	BARO PRESS	AMBIENT TEMP/DP	WIND DIR	WIND SPD/KT	LOCATION LAT/LONG	
P30 (WC533)	1008	MM/MM	149	4	28.3N	93.0W
P12 (WC353)	1013	70/MM	92	9	29.0N	93.5W
P26 (GI94)	1013	76/MM	150	11	28.5N	90.1W
(GC13)	994	78/MM	135	8	27.9N	91.0W

APPENDIX C

XBT/MOORING STATION LOCATIONS

PN 8913
XBT/MOORING STAT ION LOCATIONS
R/V PELICAN CRUISE
28 October-2 November 1988

Station	Depth (m)	Time Began Station (GMT)	Time End Station (GMT)	Day (GMT) Ott-Nov	Begin Location Loran C	Begin Location Calculated	End Location Loran C	End Location Calculated
BB	40	1507		29	11277.0 27095.6	24°40.55'N 92°06.21'W		
DD	184	2118		29	11435.1 26942.3	25°52.78'N 91°52.98'W		
GG	3000	1110	1428	30	11735.9 26416.5	25°39.16'N 92°00.00'W	11744.2 26441.9	25°39.32'N 91°59.30'W
IES1	3000	1810	1815	30	11737.0 26419.8	25°39.31'N 92°01.67'W		
1X	3000	1828	1833	30	11734.9 64061.1	25°39.32'N 92°02.08'W		
2x	2378	1930	1935	30	11716.6 64065.0	25°48.17'N 92°02.65'W		
3x	2159	2030	2035	30	11704,0 64067.9	25°56.80'N 92°01.51'W		
4x	2122	2130	2135	30	11587.1 64071.1	26"05.35'N 92°01.31'W		
5x	2104	2230	2235	30	11671.8 64073.7	26°13.50'N 92°00.90'W		
6x	1957	2330	2335	30	11654.9 64076.4	26°22.27'N 92"00.48'W		
7X	1848	0030	0035	31	11636.5 64078.9	26"30.90'N 92°00.41'W		
8X	1829	0130	0135	31	11619.6 64081.0	26°39.33'N 91°59.87'W		
9x	1628	0230	0235	31	26673.6 64082.9	26°47.88'N 91°59.75'W		
lox	1591	0330	0335	31	11580.7 26707.6	26°56.46'N 91°59.69'W		
13.X	1555	0430	0435	31	11561.8 26735.0	27°04.05'N 91°59.96'W		
12X	1518	0530	0535	31	11540.6 26763.8	27°12.17'N 92°00.36'W		
FF	1750	1220	1413	31	11607.3 26659,8	26°44.76'N 92°00.09'W	11608.3 26662.1	26°44.70'N 91°59.86'W
13x	1171	1830	1835	31	46544,0 26810,6	27°22.61'N 92°00.00'W		
EE	825	1910	1950	31	46561.8 26834.3	2728.15'N 91°59.97'W	46561.5 26828.7	27°27.90'N 92°00.42'W
14X	777	2030	2035	31	46574.1 26837.8	27°31.64'N 92°01.07'W		
15X	795	2130	2135	31	46598.2 26864.3	27°39.03'N 92°01.58'W		
16x	677	2230	2235	31	46620.7 26887.9	27°45.89'N 92°02.18'W		
17X	195	2330	2335	31	46642.2 26912.3	27°52.55'N 92°02.66'W		
18X	120	0030	0035	1	11407.5 26935.7	27°59.01'N 92°03.34'W		

Station	Depth (m)	Time Began Station (GMT)	Time End Station (GMT)	Day (GMT) Ott -Nov	Begin Location Loran C	Begin Location Calculated	End Location Loran C	End Location Calculated
19X	95	0130	0135	1	11390.1 26955.8	28°04.60'N 92°03.65'W		
20X	70	0230	0235	1	11367.0 26985.4	28°12.15'N 92°04.08'W		
23.x	64	0330	0335	1	11349,2 27004.9	28°17.69'N 92°04.64'W		
22x	55	0430	0435	1	11332.9 27021.5	28°22.64'N 92°05.22'W		
23x	52	0530	0535	1	11317.1 27043.4	28°27.26'N 92°05.38'W		
AA	14	1305	1530	1	11188,3 27199,3	29°07.80'N 92°08.55'W	11193.6 27181.2	29°05.56'N 92°09.29'W
AA	14	1800	2038	1	11193,6 27181.4	29°05.44'N 92°09.07'W	11189.1 27194.5	29°07.24'N 92°08.59'W
24X	15	2110	2115	1	11189.6 27192.1	29°07.01'N 92°08.73'W		
25X	19	2200	2205	1	11204.4 27173.6	29°02.35'N 92°08.41'W		
26X	23	2300	2305	1	11222.4 27149.5	28°56.66'N 92°08.16'W		
27x	29	0000	0005	2	11236.1 27128.2	28°52.15'N 92°08.19'W		
28x	32	0100	0105	2	11248.5 27114.5	28°48.40'N 92"07.83'W		
29X	35	0200	0250	2	11260.6 27101.5	28°44.71'N 92°07.41'W		
30X	38	0300	0305	2	11273.2 27081.4	28°40.56'N 92°07.47'W		
31X	40	0400	0405	2	11285.5 27057.1	28°36.19'N 92"07.88'W		
32x	49	0500	0505	2	11299.9 27041.1	28°31.77'N 92°07.44'W		
cc	64	1256	1333	2	11344.3 26998.0	28°18.46'N 92°05.71'W	11344.0 26997.7	28°18.48'N 92°05.70'W

APPENDIX D

STATION AND SAMPLING SUMMARY

PN8913
STATION SUNMARY
R/V PELICAN CRUISE
(28 October - 2 November 1988)

Section	Date (GMT)	Station Numbers
W-X	**30 Oct. - 2 Nov.**	**1X,** 2X, 3X, 4X, 5X, 6X, 7X, 8x, 9X, 10X, 11X, 12X, 13X, 14X, 15X, 16x, 17X, 18X, 19X, 20X, 21X, 22X, 23X, 32X, 31X, 30X, 29x, 28X, 27X, 26X, 25X, 24X

PN8913
SAMPLING SUMMARY
R/V PELICAN CRUISE
SECTION W-X
(30 October - 2 November 1988)

XBT	XBT Probe Type	XBT Probe S/N
l x	T-5	197488
2X	T-7	595846
3x	T-5	197490
4x	T-7	602252
5x	T-5	197489
6X	T-7	602251
7X	T-5	197491
8X	T-7	595847
9x	T-5	197492
lo x	T-7	595921
1 lx	T-5	197493
12X	T-7	595922
13X	T-5	197496
14X	T-7	595923
15X	T-5	197494
16X	T-7	595926
17x	T-7	595924
18X	T-7	595925
19X	T-7	595927
20X	T-7	595928
2 lx	T-7	595929
22x	T-7	595930
23x	T-7	595931
24X	T-7	595932
25X	T-7	596053
26X	T-7	596048
27X	T-7	596047
28X	T-7	596044
29x	T-7	596043
3 ox	T-7	596042
3 lx	T-7	596046
32x	T-7	596045

APPENDIX E

ROSCOP FORMS

FORM APPROVED: OMB NO 41-R2765 - EXPIRES 12-31-79

NOAA FORM 24-23 (1-76)

NATIONAL OCEANIC U. S. DEPARTMENT OF COMMERCE AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEANOGRAPHIC DATA CENTER

A00 DATA CENTER

OCEANOGRAPHY - GENERAL CRUISE INVENTORY
(ROSCOP - II)

A40 REFERENCE NUMBER

A01 EXPEDITION/PROJECT: Gulf Of Mexico Physical Oceanogr. Prog

All CRUISE NUMBER OR....: PN8913

A02 SHIP OR PLATFORM: R/V PELICAN

A12 PLATFORM TYPE: Research Ship (01)

A03 COUNTRY: USA

A04 ORGANIZATION: Minerals Management Service

A05 CHIEF SCIENTIST(S): Jim Singer (SAIC)

	YES	NO	PART	
A91 Decla red national program?	X			
A81 Exchange restricted?		X		
A92 Co-operati ve program?		X		A72 NAME
A82 Co-ordinated internationally?		X		A62 BY WHOM?

A06 NAME AND ADDRESSES OF ORGANIZATIONS AND PERSONS WHOM TO QUERY

A1 Bob Wayland (SAIC)
4900 Water's Edge Drive Suite 255
Raleigh, N.C. 27606

D1

E1

FINAL DISPOSITION OF DATA

A2 Same as A1

B2 NODC

C2 MMS

D2

E2

DATE	DAY	MONTH	YEAR
A07 FROM	28	10	88
A17 TO	02	11	88

A08 GENERAL OCEAN AREAS: 26 (Gulf of Mexico)

A09 TYPE(S) OF MARINE ZONE(S): 07

GEOGRAPHIC AREA
If all data were collected at a fixed station, fill in the co-ordinates

A10 LATITUDE ° ' " N/S

A20 LONGITUDE ° ' " E/W

A15 FEDERAL SUPPORT: MMS

A25 REMARKS

This cruise was a final mooring recovery effort along 92°W from approximately 29° 10'N to 25°40'N in the Gulf of Mexico. Thirty two XBT drops were made. Seven current meter moorings and one Inverted Echo Sounder were recovered.

DISCIPLINE AND TYPE OF MEASUREMENTS		Index x 10° x 10° Qc	L	G	G	INDEX 1° x 1°	DISCIPLINE AND TYPE OF MEASUREMENTS		Index 10. . 10° Qc	L	G	G	INDEX 1° x 1°
. DIØ, MØ5	B	7	2	Ø	9	42, 71, 52, 51, 62, 61, 72, 82, 92.	A	B					
A DØ1	B	7	Z	Ø	9	92 82 42, 71, 52, 62, 72	A	B					
. H13	B	7	Z	Ø	9	52, 62, 61, 71, 72, 82, 92	A	B					
A	B						A	B					
A	B						A	B					
A	B						A	B					
A	B						A	B					

H-HYDROGRAPHY									
HS SURFACE	NUMBER		L	FORMAT	**HC** CHEMICAL	NUMBER			FO....
H01 Continuous temperature recording					H26 Silicates				
H02 Continuous salinity recording					H27 Alkalinity				
H03 Discrete temperature measurements					H28 pH				
H04 Discrete salinity measurements					H29 Chlorinity				
NEAR SEAFLOOR (≤10 m)					H30 Trace elements				
H05 Continuous temperature recording					H31 Radioactivity				
H06 Continuous salinity recording					H32 Isotopes				
HO? Discrete temperature measurements					H33 Dissolved gases				
H08 Discrete salinity measurements					H90 Ocher measurements				
HP PHYSICAL									
H09 Classical oceanographic stations									
H10 Vertical profiles (STD/CTD)					P - POLLUTION				
H11 Sub-surface measurements underway					PO I Suspended solids				
H12 Mechanical bathythermograph (No. of drops)					P02 Heavy metals				
H13 i3arhvchermograPn -expandable (No. of drops)	32	A1	A2 B2	7	P03 Petroleum residues				
H14 Sound velocity stations					P04 Chlorinated hydrocarbons				
H15 Acoustic stations					**P05** Other dissolved substances				
H16 Transparency					**P06** Thermal pollution				
H17 Optics					P07 Waste water: BOD				
H18 Diffusion (Dynamic)					P08 Waste water: Nitrates				
H80 Other measurements					P09 Waste water: Microbiology				
					P10 Waste water: Other				
					P11 Discolored water				
					P12 Bottom deposits				
HC CHEMICAL					P13 Contaminated organisms				
H21 Oxygen					P90 Other mess.cemem.				
H22 Phosphates									
H23 Total-P									
H24 Nitrates									
H25 Nitrites									

NOAA FORM 24-23 (1-76)