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CRUISE REPORT

FOR

M/V FARNELLA CRUISE
(F13-88-NC)

December 7-13, 1988

(Contract No. 14-12-0001-30262)

Vessel: M/V FARNELLA

Depart: Dec. 7, 1988 Northern California STRESS AREA

Return: Dec. 13, 1988 Redwood City, CA.

Objectives: This cruise was conducted as part of the sediment transport component of the MMS California OCS Phase II Monitoring Program. Data were successfully collected during the spring/summer of 1987. This cruise was designed to obtain data during the winter season. The specific objectives were:

1. Conduct side-scan survey at project sites R8, PJ1, and R9.
2. Deploy 2 surface guard buoys at each site (R8, PJ1 and R9).
3. Deploy 3 subsurface current meter moorings at R8, PJ1, and R9.
4. Deploy 2 GEOPROBE tripods at R8 and PJ1.
5. Collect box cores for detailed sediment analyses.
6. Collect hydrographic and suspended matter samples.

Personnel:	Dave Cacchione	USGS, Menlo Park
	Dave Drake	
	Jim Nicholson	
	George Tate	
	Rick Vail	
	Kevin O'Toole	
	Corky Ozanne	
	Kaye Kinoshita	
	Barbara Seekins	
	John Gann	
	Leda Beth Pickthorn	
	Brad Butman	USGS, Woods Hole
	Bill Strahle	
	Rick Rendigs	
	Rose Petracca	WHOI
	Char Fuller	
	Kevin Briggs	ONR
	Rick Ray	
	Giovanni Bortoluzzi (visiting scientist)	

Major Equipment List:

CTD system	USGS (Menlo)
GEOPROBES (2)	USGS (Menlo)
Guard buoys (6)	USGS (Woods Hole)
VACM moorings (3)	USGS (Woods Hole)
Side scan system	USGS (Menlo)

Box core	Battelle
Gravity core	USGS (Menlo)
Bottom camera	NORDA

Summary of Operations:

Owing to surprisingly good weather and no major equipment breakdowns, our CAMP winter-season deployment and sampling cruise was very successful. All of the primary objectives were completed. Tables 1 through 5 present the positions of the deployed systems, bottom samples and hydrographic stations. Navigation was by GPS and LORAN C and, based on an earlier comparison with a shore-based transponder system, our position accuracy is ± 25 meters.

A pair of surface guard buoys, with Coast Guard certified flashers, were deployed at R8, PJ1 and R9. Each pair was positioned on a north/south trend and separated by 0.2-0.3 nautical miles. A typical buoy mooring is shown in figure 1.

Subsurface VACM moorings were deployed at CAMP sites R8, PJ1 and R9 (see figures 2-4) approximately equidistant from the surface buoy pair. GEOPROBE bottom tripods were deployed within 200 m of the VACM moorings at sites R8 and PJ1. All deployments proceeded smoothly in large part because of the large, stable platform provided by M/V FARNELLA, the bow thruster propulsion, and the experience of the ship's crew.

Six box cores and one gravity core (for E. Crycelius, Battelle) were collected (table 4) and the box cores were processed and studied on board by scientists from WHOI/MIT. In addition, there was time during the cruise to obtain more than 30 trackline nmi. of side-scan sonar data to study relatively large bottom features near R8, PJ1 and R9. Finally, we occupied 13 hydrographic stations, 9 on a "central" line through R8-R7 and 4 on a "northern" line off San Luis Obispo Bay. CTD/light transmission profiles to 5 m above the sea floor were obtained at each hydro station and a total 33 water samples were filtered through membrane filters for particulate matter analyses.

Problems Encountered:

A malfunction in the power switching circuitry between the optical backscatter probe (OBS) system and its digital data logger became evident during the final check of the R8 GEOPROBE tripod. Deployment was delayed as long as possible while our electronics technicians attempted to isolate the problem. Unfortunately, the cause or causes remained a mystery and the R8 GEOPROBE had to be deployed without the OBS array. In order to partially offset the loss of the backscatter probes on this tripod, we added one Sea Tech transmissometer at 30 cm above bottom, which gives us a combined array of 4 LED transmissometers at 30 cm, 100 cm, 500 cm and 2000 cm above bottom at R8.

System Recoveries:

Recovery of all deployed equipment will be accomplished by M/V FARNELLA

during 19 February to 26 February 1989. Inquiries regarding the present cruise report or the recovery cruise can be directed to:

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Dave Cacchione
USGS, Menlo Park
(415) 354-3097)

or

Brad butman
Cheryl Ann Butman
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Table 1: Surface Guard Buoys

SITE	LOCATION	COMMENT
northern buoy (R8)	34°55.71 120°45.80	Flashing light
southern buoy (R8)	34°55.50 120°45.80	Flashing light
northern buoy (PJ1)	34°55.11 120°49.82	Flashing light
southern buoy (PJ1)	34°54.88 120°49.83	Flashing light
northern buoy (R9)	34°53.93 120°59.18	Flashing
southern buoy (R9)	34°53.70 120°59.14	Flashing

Table 2: USGS (WOODS HOLE) VACM MOORINGS*

SITE	DEPTH	LOCATION	COMMENT
R8	92m	34°55.63 120°45.80	MOORING #330
PJ1	143m	34°54.99 120°49.85	MOORING #331
R9	350m	34°53.82 120°59.16	MOORING #332

*All moorings are subsurface.

Table 3: USGS GEOPROBE TRIPODS

SITE	Depth	LOCATION	COMMENT
R8	90m	34°55.63 120°45.79	0.13 nmi, 180° from north buoy
PJ1	143m	34°54.92 120°49.80	

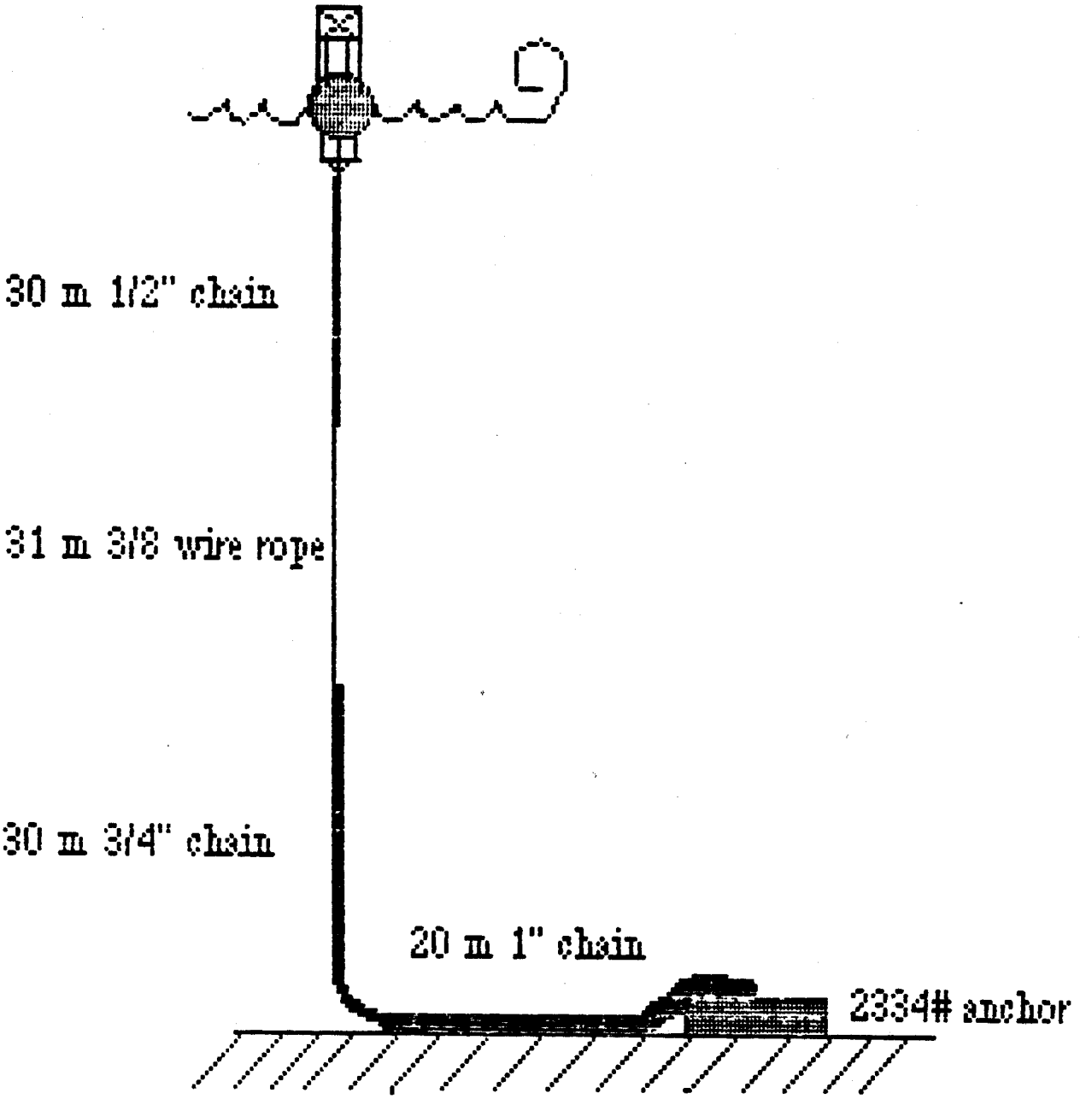
Table 4: SEDIMENT SAMPLES

SITE	DEPTH	LOCATION	COMMENT
R8	87m	34°55.29 120°45.87	C.A. Butman (WHOI)
R8	83m	34°55.35 120°45.80	"
PJ1	145m	34°55.82 120°49.90	"
PJ1	147m	34°55.88 120°49.94	"
R9	390m	34°53.68 120°59.11	"
R7	575m	34°52.80 121°10.33	"
PJ1	144m	34°55.80 120°49.92	Battelle-Eric Crycelius.

Table 5: CTD* STATIONS

Site	POSITION	COMMENT
Central Line (#1)	34°55.76 120°43.39	55m
(#2)	34°55.65 120°45.54	87m
(#3)	34°55.27 120°47.90	120m
(#4)	34°55.00 120°50.23	157m
(#5)	34°54.67 120°52.79	210m
(#6)	34°54.27 120°55.87	290m
(#7)	34°53.58 120°58.86	385m
(#8)	34°53.40 121°04.98	530m
(#9)	34°52.92 121°10.26	565m
Northern Line (#1)	35°05.75 120°45.26	62m
(#2)	35°05.61 120°49.23	100m
(#3)	35°05.47 120°53.30	167m
(#4)	35°04.98 121°00.94	420m

* NBIS MARK IIIB CTD and 25 cm pathlength sea tech transmissometer.

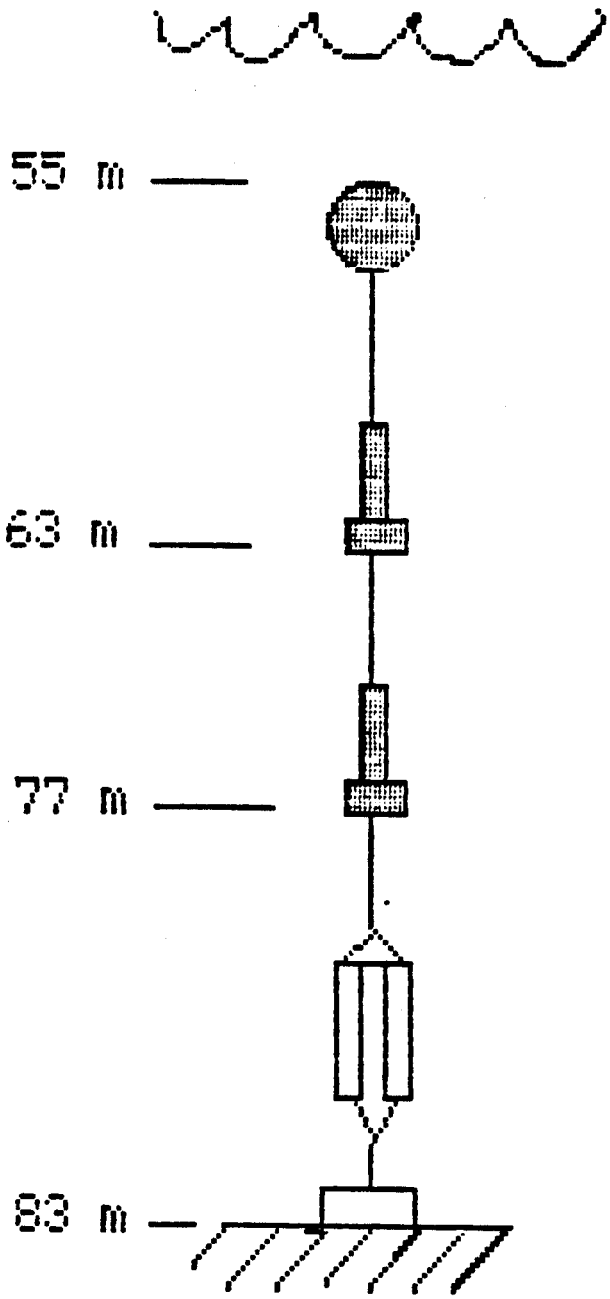


Surface Buoy - R8

Winter Deployment

2 each

FIGURE 1



41" Steel Sphere w/Radio and Light

5 m. 3/8" chain

VACM - TCT

11 m. 3/8" chain

VACM - TCT

2 m. 3/8" chain

Dual Release Package

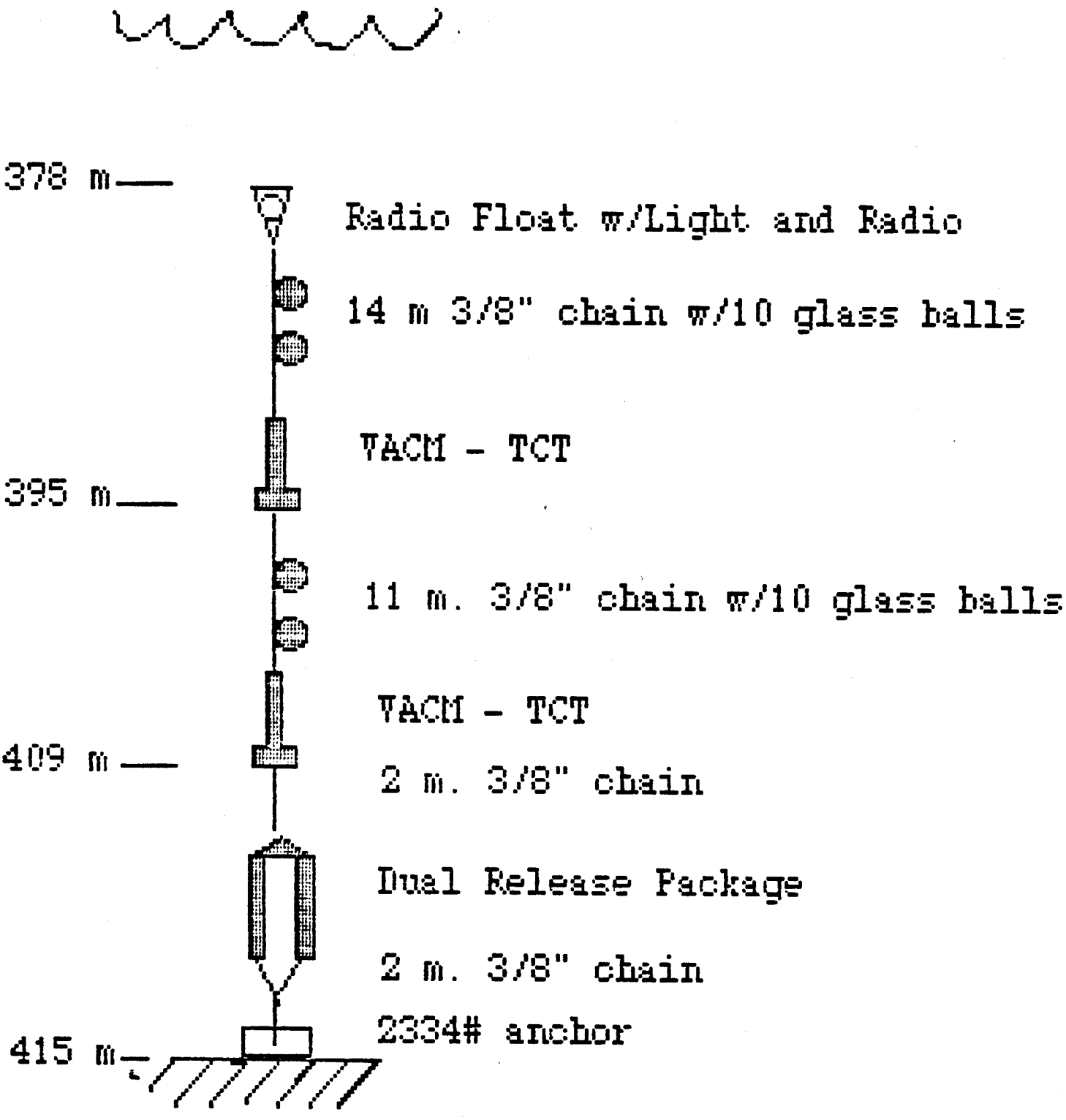
2 m. 3/8" chain

1950# anchor

USGS MOORING R8

WINTER DEPLOYMENT

FIGURE 2



USGS MOORING R9
WINTER DEPLOYMENT

FIGURE 4