Revised Minutes of the

JOIDES Planning Committee Meeting
Reykjavik, 9 - 12 August 1994

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Participant List

Planning Committee - PCOM

R. Arculus	Australian National University, Canberra, Canada-Australia Consortium
W. Berger	University of California, San Diego, Scripps Institution of Oceanography
H. Dick	Woods Hole Oceanographic Institution
J. Fox	University of Rhode Island, Graduate School of Oceanography
R. Kidd	Dept. of Geology, University of Wales, Cardiff
H. Kudrass	Bundesanstalt für Geowissenschaften und Rohstoffe, Germany
M. Langseth	Columbia University, Lamont-Doherty Earth Observatory
H.-C. Larsen	Danish Lithosphere Center, Copenhagen, Denmark, ESF Consortium
B. Lewis	University of Washington, College of Ocean and Fishery Sciences
C. Mével	Laboratoire de Pétrologie, Université Pierre et Marie Curie, France
A. Mix	Oregon State University, College of Oceanography
J. Natland	University of Miami, Rosenstiel School of Marine and Atmospheric Science
T. Shipley	University of Texas at Austin, Institute for Geophysics
K. Suyehiro	Ocean Research Institute, Japan
B. Taylor	University of Hawaii, School of Ocean and Earth Science and Technology
J. Watkins	Texas A&M University, College of Geosciences and Maritime Studies

Liaisons

T. Francis	Science Operator (ODP-TAMU)
D. Goldberg	Wireline Logging Services (ODP-LDEO)
B. Malfait	US National Science Foundation
J. Austin	Joint Oceanographic Institutions, Inc.

Guests and Observers

P. Dauphin	US National Science Foundation
K. Ellins	JOI, US JOIDES Liaison, UK JOIDES Office
G. O. Fridleifsson	Geothermal Division, National Energy Authority, Reykjavik, Iceland
R. Flood	Leg 155 Co-Chief Scientist
C. Jacobs	NERC, Science Coordinator, UK JOIDES Office
E. Shanks	TEDCOM, Mobile Exploration, Dallas, Texas
D. Reudelhuber	ODP-TAMU

JOIDES Office

B. Collins	Executive Assistant and Non-US Liaison
K. Schmitt	Science Coordinator

Draft Summary of JOIDES Planning Committee Motions and Consensuses

FY96 PROSPECTUS

PCOM Motion, August 1994 - FY96 Prospectus

PCOM recommends that the following proposals be included in the FY96 Prospectus, PCOM watchdogs are assigned as follows:

Proposal	Document(s)	PCOM Watchdog
Caribbean Basalt Province	411-Rev	Catherine Mével
Sedimented Ridges II	SR-Rev3	Marcus Langseth
E Juan de Fuca Hydrothermal	440----/Add	Marcus Langseth
Caribbean Ocean History[1]	415-Rev2[1]	Alan Mix
California Margin	422-Rev 386-Rev2/Add/Add2/Add3	Wolf Berger
Western North Atlantic Sediment Drifts	404----/Add	Hermann Kudrass
Costa Rica	400-Rev2	Hans-Christian Larsen
Bahamas Transect	412----/Add3	Wolf Berger
Return to Iberia	461----	Brian Taylor
SE Greenland Margin	460----	Dick Arculus

1. One leg OHP focus encompassing the Cretaceous-Tertiary boundary event and Caribbean Paleoceanography.

BUDGET PLANNING

PCOM Motion, August 1994 - FY95 Budget Planning

PCOM accepts the budget changes for the FY95 Program Plan budget, as tabled by JOI. PCOM further recommends a reinstitution priority for computer and publications budgets followed by DCS budget in the case that the $44.0 M budget constraint is lifted.

PCOM Motion, August 1994 - Budget Prioritization

PCOM has received from NSF via EXCOM guidance that the ODP budget will not increase above $44.9M though 1998, provided there are six full partners. Given that fixed costs of the program will increase with inflation, there will be an corresponding decrease in operating budgets through 1998 requiring a restructuring of the flexible components of the program.

In light of the current funding situation, PCOM requests all panels to prioritize their needs regarding program services and facilities and identify areas where programmatic costs can be reduced.

LONG-RANGE PLANNING

JOIDES Office Action - Long Range Plan

JOIDES Office to collate the names of groups and contact persons for other geoscience groups to send to PCOM for review and addition.

Lewis to draft a letter along with a fleshed-out revised LRP outline to submit to the groups for comment and reply by the November LRP Subcommittee meeting.

PCOM Motion, August 1994 - JOIDES/JAMSTEC Technology Working Group Report Recommendations

PCOM endorses the recommendations of the JOIDES/JAMSTEC Technology Working Group. Towards implementing Recommendation 3, PCOM requests TEDCOM evaluate what is

required for a full assessment of a feasibility of a 4 km riser system with BOP control at the seafloor and to report back to PCOM at the December PCOM meeting.

ENGINEERING DEVELOPMENT

PCOM Motion, August 1994 - DCS Development

PCOM recommends that ODP-TAMU continue with the current DCS development program through to a preliminary goal, that being a successful test of the secondary heave compensation software on the scaled model and computer simulators. The results of these tests will provide the data for TEDCOM to make an informed evaluation of the feasibility of building an ocean-going DCS. PCOM reaffirms the PCOM Motion of April 1994 that the DCS land test should not be initiated until completion of model and simulating tests to the satisfaction of TEDCOM.

The path to follow to get from the present to the preliminary goal will be defined at the August 25-26, 1994 TEDCOM DCS Subcommittee meeting at Parvus. This meeting will also establish performance-based objectives of effort.

As an example of the effort, the work statement provided by Parvus describes tasks required to meet this preliminary goal. The contractor to carry out this phase of the program will be selected in accord with the intent of the standardized JOIDES/ODP procedures set down by the EDRC. Some streamlining of these procedures is required because: (1) this is an existing project, and (2) the extremely short lead time.

PCOM Consensus, August 1994 - DCS Development

With Respect to the DCS program, PCOM:

1) asks Jim Natland (with help from Shipley and Langseth, the JOIDES Office, and ODP-TAMU) to assemble existing documentation on DCS project definition for the December 1994 meeting, and
2) notes that Francis will provide detail on ODP-TAMU's response to the EDRC report at the December PCOM meeting.

PCOM Motion, August 1994 - EDRC Motion

PCOM views the EDRC Report as an important milestone in the process of improving engineering development in ODP. PCOM will in the future define more carefully the scientific expectation and parameters for engineering projects. PCOM recommends to EXCOM:

1. That the recommendation that a member of the Engineering and Operations Department staff be a member of TEDCOM not be adopted. Otherwise, this establishes a precedent that clearly cannot be applied to other panels (e.g. BCOM, PCOM).
2. Regarding the recommendation that the TEDCOM chair attend all PCOM meetings, PCOM appreciates the intent of the recommendation and will evaluate the effectiveness of such a policy by inviting the TEDCOM chair to the next three PCOM meetings. PCOM will review the results at its December 1995 meeting before instituting it as formal policy.

LIAISON GROUPS

PCOM Motion, August 1994 - JOIDES Liaison Groups

PCOM recognizes the importance of effective communications between JOIDES and other global geosciences programs having an interest in ocean drilling. PCOM notes earlier motions (November 1989, April 1994) that allows the establishment of formal liaisons through a liaison group. PCOM hereby modifies the mandate regarding liaisons to other global geosciences programs in order to allow more effective implementation of the liaison process.

Recognizing that many members of PCOM are also active participants in other global geoscience programs, the following mandate is adopted:

Mandate for Liaisons to Global Geoscience Programs:

To facilitate effective and timely exchange of information, PCOM may designate a formal liaison to national or international initiatives in global geosciences. Liaisons may be proposed

to the PCOM Chair, and will be elected by a majority vote of PCOM. It is anticipated that PCOM members with appropriate expertise will be chosen as liaisons, but if a suitable panel member is not found, PCOM may seek a liaison who is not a member of PCOM. Liaisons will typically attend at least one meeting per year of the designated program, and will report to PCOM as scheduled by the PCOM Chair.

JOIDES POLICIES

PCOM Motion, August 1994 - Add-On Science Policy

Science with a budgetary impact which is introduced after the Program Plan is approved requires the review and approval of PCOM before it can be included as part of a scheduled leg and paid for through commingled funds.

JOIDES PANEL RECOMMENDATIONS AND ACTIONS

PCOM Consensus, August 1994 - White Papers

PCOM acknowledges the efforts of all four thematic panels and requests that the JOIDES Office publish the LITHP, SGPP and OHP White Papers in the October 1994 *JOIDES Journal*. PCOM will task the TECP liaisons to go back to TECP with specific recommendations on modification to their White Paper. PCOM expects that the TECP White Paper to be ready for publication in the February 1995 *JOIDES Journal*.

PCOM Consensus, August 1994 - VIT Survey

PCOM agreed to recommend that JOI direct ODP-TAMU to collect the appropriate data to accompany VIT surveys and to submit it to the Site Survey Data Bank.

PCOM Motion, August 1994 - Site Survey Data from ODP Legs

PCOM adopts the SSP recommendation that ODP-TAMU be directed to provide survey data (seismic, magnetic, 3.5 kHz, video) to the ODP Site Survey Data Bank as soon as possible after the cruise, rather than waiting until the one-year moratorium has expired.

PCOM Motion, August 1994 - Third Party Tools

PCOM endorses the DMP recommendations for the following third-party development tools, noting that PCOM also waives the condition of the passage of six months required by the third party tools guidelines in order that these tools may be used on Leg 158 (TAG).

- Pressure/Temperature Memory Tool
- High-Temperature Borehole Instrument
- CSMA Resistivity Tool

In addition use of these tools on Leg 158 will be subject to the concurrence of the Co-Chief scientists.

PCOM Motion, August 1994 - Service Panel and TEDCOM Membership Rotation

PCOM notes that the present guidelines for the rotation schedule for Thematic Panels has worked well and should be applied to SMP, IHP, SSP, DMP and TEDCOM. PCOM recommends to EXCOM that the Terms of Reference for membership and rotation of Chairs for SMP, IHP, SSP, DMP and TEDCOM be modified to reflect the following:

- panelists will serve four years, with one-fourth of the panelists being replaced each year
- the Chairs are appointed by PCOM
- panel membership is recommended to PCOM by the panel Chair
- panels meet at least twice a year, but may meet more frequently as requested by PCOM
- PCOM convenes the panel meetings and approves their meeting dates, locations, and agendas

In some circumstances panelists may be asked by PCOM to serve more than one term, or for longer than four years.

This modification to the guidelines will provide a uniform policy for all panels and committees reporting to PCOM, thereby not only getting the best expertise into JOIDES, but also making implementation simpler and more effective. A staggered rotation should be implemented over the next four years.

Revised Draft Minutes of the JOIDES Planning Committee Meeting Reykjavik, 9 - 12 August 1994

Tuesday, August 9	*8:30 am*

A. Initial Business

1. Introductions

PCOM was welcomed to Reykjavik by the meeting host, Gudmundur Omar Fridleifsson of the Geothermal Division of the National Energy Authority, Reykjavik, Iceland. Introductions were made around the table and Larsen then filled everyone in on the ESF-hosted social activities planned during the meeting.

2. Approval of the Agenda for the Meeting

Lewis asked to modify the agenda to add an item for contingency budget planning on Thursday afternoon.

> **PCOM Motion, August 1994 - Approval of the Agenda**
>
> PCOM adopts the agenda for the August 1994 meeting with the addition of an item for contingency budget planning on Thursday afternoon.

Taylor moved, Natland seconded *vote: 16 in favor*

3. Approval of the Minutes of the April 1994 PCOM Meeting

The Revised Draft Minutes, Agenda Book page 27, contain all revisions received in the JOIDES Office as of July 1, 1994.

a) Corrections/Changes noted

Kidd noted a typographical error in the motion on the results of the Kyoto Workshop.

Larsen noted that his affiliation was now with the Danish Lithosphere Center.

Mével noted that her previous correction to the minutes was not correct and that the minutes should read:

> Mével noted that in the present budget situation all of these objectives would be difficult to achieve. All European partners held a meeting to investigate whether something could be done in the framework of the European Community to increase the budget. Mével reported that French science budgets had been cut recently and that it would be very difficult to renew the program.

> **PCOM Motion, August 1994 - Approval of the Minutes**
>
> PCOM adopts the Revised Draft Minutes with the above noted corrections.

Kidd moved, Dick seconded *vote 16 in favor*

B. Reports of Liaisons

1. NSF

Malfait reported on the ODP Council Meeting held in July in Washington, DC. (Appendix 1.0). At this meeting, it was determined that there was no support from any of the international partners for an increase in the contribution level in 1996. Instead, the Council established budget guidelines for JOIDES and JOI that indicated there must be an examination and redefinition of scientific, operational and financial priorities within current budget levels. EXCOM/ODPC requested an update from PCOM on their revision of the *Long Range Plan* for the January EXCOM meeting in Hawaii. ODPC began the process for a "mid-term" review for the 1999-20003 time period, the review would be completed by January 1996. ODPC also met with STA/JAMSTEC to discuss OD21 planning.

Malfait noted that NSF recently approved the $600K increase for the computer/data base upgrade to bring the FY94 ODP budget up to $44.9M (Appendix 1.1). He noted NSF's continued concerns on process and procedures for monitoring the project development.
Malfait reported that the FY95 target figure had been reduced by NSF to $44.0M. The reasons were (a) the uncertainty in the Can-Aus situation, and (b) the possibility of only five partners. With six full partners the budget would be restored to $44.9M. Because of the lead time required for staffing decisions and the present uncertainty of the Can-Aus membership, Can-Aus scientists were no longer being invited to participate beyond Leg 158.
The FY95 budget was still in Congress, Malfait felt that the ODP budget was likely to be level or have a slight increase (Appendix 1.2). Malfait reviewed NSF-supported field programs for ODP in FY95.

2. JOI

Austin reviewed the mandate of the Engineering Development Review Committee (EDRC), its membership, and the history of the review that they provided to JOI (Appendices 2.0-2.1). Austin explained how funds were reprogrammed to provide the LWD program on Leg 156 (Appendix 2.2). Austin cited this as a good example of how flexibility in the program could accommodate high-priority scientific needs and he warned that the upcoming budget reductions would reduce this type of flexibility. Austin outlined the Performance Evaluation Committee (PEC) IV process, the PEC mandate and the timetable that the review would have (Appendix 2.2).

3. ODP-TAMU

Francis reviewed operations on Legs 155 and 156 (Appendices 3.0-3.3). Francis noted that Leg 156 had a large number of new operations take place (Appendix 3.1). Francis explained that Leg 156 was unusual because the scientific party interests were largely core-related but most of scientific operations on the leg were concerned with downhole measurements (Appendix 3.3).
Francis updated PCOM on the Leg 157 operations underway (Appendices 3.4-3.6). Francis reviewed operational planning for Leg 158 at TAG (Appendix 3.7); a triple-cased re-entry hole was planned using a hard-rock guide base (Appendix 3.8). Austin noted that the *New York Times* would run a story on the TAG drilling in its Science Times section.
Francis presented the updated schedule for Leg 156-164, noting a change in the scheduled date for leaving Dakar (Appendix 3.9). Scientific staffing for Legs 158-160 were reviewed (Appendix 3.10). The planned sites for Leg 159 were outlined (Appendix 3.11). Francis noted that operations on Leg 159 were in an area of offshore piracy, terrorism and sabotage and ODP-TAMU would be taking appropriate precautions (Appendix 3.12).
Francis reviewed the operations planning and staffing for Legs 160-163 (Appendices 3.13-13.14). He was pleased to announce that there had been two offers for ice-support boats to be made available for the NAAG leg, one from the Norsk Polar Institute, the other from the Danish Navy.
PCOM discussed if there had been adequate prioritization of NAAG sites by the Thematic Panels, given the possibility that there was a support boat that could improve the possibility of getting the high-latitude sites. Kidd thought that the NAAG report had done a thorough job of prioritizing the sites. Taylor agreed that pre-cruise planning could possibly differ from Thematic Panel priorities. Lewis suggested that after the pre-cruise meeting, OHP review the site planning. Mix agreed to see that OHP review the proposed NAAG II sites and report to PCOM on how the planning addresses their thematic priorities.
Francis reported on the opening of the Bremen core repository (Appendix 3.15). He noted that, at the end of Leg 156, ODP had passed the DSDP figures for total amount of core collected (Appendix 3.16).
Francis explained that the MST was one of the most routinely-used devices used on board the *JOIDES Resolution* and he reviewed the current system on board (Appendix 3.17). Francis reviewed ODP-TAMU's planned upgrade of the MST and the timeline for having a new system being on the ship by the end of 1995 (Appendix 3.18). Francis noted recent progress on the *Fossilist* program, an evolution from *Rawhide*, on *4D*. This program had been well received in Beta testing on Leg 157 (Appendix 3.19). Francis concluded with the shipboard participant tally for Legs 101-156 (Appendix 3.20).

4. ODP-LDEO

Goldberg reviewed recent logging operations and preliminary scientific results from Legs 155-156 (Appendices 4.0-4.4). LWD had been the highlight of operations on Leg 156, Goldberg noted the great success of LWD on Leg 156 compared to previous Leg 110 logging program results. LWD went very smoothly and allowed the upper 50 m sections of the holes to be logged for the first time (Appendices 4.5-4.6).

Goldberg reviewed the planning for Legs 157-158 (Appendix 4.7), he outlined the high-temperature tool development for TAG (Appendix 4.8). Ongoing initiatives at BRG included tape backup, CD-ROM, and education—including a Special Session at Fall AGU on recent advances in the integration of downhole, core and seismic data: applications to paleoclimate, stratigraphy, hydrogeology, and crustal evolution (Appendix 4.9).

Coffee break ..... *10:30 - 10:50 am*

C. JOIDES Panel Reports

1. EXCOM

Lewis reported on the Engineering Development Review Committee (EDRC) Report presented by Keir Becker to EXCOM in June (Appendix 5.0). EXCOM referred the EDRC Report to PCOM for comment and PCOM would take up the issue on Thursday. EXCOM had also passed a motion with guidelines for the PEC IV mandate. The FY95 Program had been adopted by EXCOM but there had been some discussion and dissent over the Program Plan based on the issue of removing the Return to 735B program from the FY95 schedule.
EXCOM had endorsed the OD21 presentation that Omata from STA had made to EXCOM/ODPC (Appendix 5.1). EXCOM had agreed to a working group to address management issues. In addition, EXCOM requested PCOM address the planning questions raised by potential multiplatform operations.

2. BCOM

Lewis reviewed the two BCOM meetings and the issues that were resolved by BCOM at their May meeting (Appendix 6.0). At the end of the BCOM meeting in May, a vendor for the computer/database upgrade was approved (Appendix 6.1). BCOM's approval was conditional on the implementation of a Steering Committee for oversight of the process. BCOM also addressed base-budget cuts at ODP-TAMU, and ODP-LDEO (Appendix 6.2).

3. SSP

Lewis noted that SSP had submitted revised site survey data requirements to PCOM for approval in July for publication in the *JOIDES Journal* Special Issue. PCOM had voted by e-mail in July and approved the SSP Site Survey Guidelines. Dick reported that issues that PCOM needed to address for SSP were (1) positioning and navigation data for seafloor surveys with the VIT, and (2) data collected on ODP legs as site survey and access for SSP to use the data.
After reviewing the situations that were of concern to SSP, Dick asked that PCOM endorse the specific SSP recommendations on these two issues. After brief discussion, PCOM adopted the following consensus statement and motion:

PCOM Consensus, August 1994 - VIT Survey

PCOM agreed to recommend that JOI direct ODP-TAMU to collect the appropriate data to accompany VIT surveys and to submit it to the Site Survey Data Bank.

PCOM Motion, August 1994 - Site Survey Data from ODP Legs

PCOM adopts the SSP recommendation that ODP-TAMU be directed to provide survey data (seismic, magnetic, 3.5 kHz, video) to the ODP Site Survey Data Bank as soon as possible after the cruise, rather than waiting until the one-year moratorium has expired.

Kidd moved, Taylor seconded *vote: 16 in favor*

Dick raised his concern that SSP was relying too heavily on him as a source of information on hard-rock drilling. He felt strongly that SSP needed a member with hard-rock geology/petrology expertise. PCOM agreed to consider adding a new member to SSP during the discussion of panel membership under Agenda Item M-1.

4. PPSP

Lewis reported that PPSP reviewed Legs 160-161 and pre-reviewed the Costa Rica proposal sites at its last meeting. All sites on Legs 160-161 were approved and no potential safety problems were identified with the Costa Rica sites (Appendix 7.0).

5. DMP

Lewis reviewed the two groups of DMP recommendations regarding: (1) in situ stress measurements, and (2) third-party tools. He asked PCOM to review the DMP recommendations because they would be taken up for action under Agenda Item I-4. Dick asked to point out to PCOM that DMP's recommendations treated the von Herzen tool differently than the two other third-party tools scheduled for Leg 158. He did not think that this was a fair application of policy for a tool that the Co-Chiefs would like to use on the leg. Lewis explained the DMP's position that they had to enforce the Third-Party Guidelines where it seemed appropriate and DMP's recommendation was not to make an exception to the guidelines in the case of the von Herzen tool.

Lewis noted that DMP also wanted a full-time person hired at ODP-LDEO to manage third-party tools. PCOM discussed the DMP's recommendation regarding full-time employees at ODP-LDEO. Austin stressed that JOI was not in favor of DMP advising on employees at BRG and JOI would not endorse panels getting involved in this type of program management. Goldberg reviewed the BRG's position on this recommendation and agreed that, while more technical support was desirable, full-time support for specific third-party tools could not be accommodated.

Lewis explained that DMP was indirectly asking PCOM how serious PCOM was about the Third-Party Tool Guidelines and tool development? Kidd thought that guidelines were just that—guidelines; decisions could be made to overrule them if the situation warranted. Taylor asked that PCOM defer action on the DMP recommendations until Wednesday under the appropriate agenda item. Kidd was tasked with forming a small subcommittee to review PCOM's options and make a recommendation for PCOM action in this situation.

D. Science Group Liaison Reports

1. InterRidge

Mével reported that InterRidge had organized two workshops of particular interest to ODP:

1. 4-D Architecture of the Oceanic Lithosphere, Boston, MA; September 23-24, 1994
2. Active Processes Workshop: Event Detection and Response & A Ridge-Crest Observatory, Paris, France; January 16-18, 1995

Mével would be attending the workshop on the 4-D structure of the crust and wanted to encourage other PCOM members to attend these workshops to promote ODP and to enhance ODP interactions with InterRidge.

Langseth added that he was planning to convene an InterRidge workshop that was relevant to ODP planning:

3. Arctic Ridges: Results and Planning Workshop, Kiel, Germany; 15-17 November, 1994

Natland was planning to be at the Active Processes InterRidge workshop in Paris to promote ridge drilling, Dick was also planning to attend. Austin asked PCOM to formalize the ODP liaison to these specific meetings. Taylor agreed because these meetings would be used by the InterRidge community to formulate an experimental strategy that included drilling.

Lunch Break ..... *12:30 - 1:30 pm*

2. International Ocean Network (ION)/Ocean Seismic Network (OSN)

Suyehiro reviewed the structure of IUGG: IASPEI and the goals of ION (Appendix 8.0). Suyehiro explained that ION's goals were similar to FDSN but ION was still a small international group. He then outlined the three-phase strategy that ION had formulated to establish the international ocean network (Appendix 8.1). Suyehiro pointed out the geographic areas that had priority for deployment of seismic stations (Appendix 8.2). Suyehiro reported on recent planning activities and operations for ION and OSN. OSN was planning an experiment at OSN-1 to compare results with OBS results (Appendices 8.3-8.4).

Suyehiro illustrated the seismic network that the Japan universities wanted to build in the period of five years between 1996-2001 (Appendix 8.5). After installation, there were plans for a period of five years of observation with the network. The Japanese group would find out if they were funded in September. Three of the Japan sites would require ODP holes.

Suyehiro reviewed recent progress in pilot experiments, sensor development, downhole installations, and data collection (Appendices 8.6-8.7). Kidd asked what the needs were for deep holes for borehole seismic experiments? Suyehiro explained that the holes OSN needed had to be several hundred meters deep and cased to basement.

3. MESH

Mix reported that, since his last report, MESH had become an organization and had published the MESH Program Plan. IMAGES was the international component and this group was sponsored by IGBP/PAGES. Mix reviewed the US and international program structures surrounding MESH/IMAGES (Appendix 9.0).

Mix explained that MESH incorporated ODP projects in its program, IMAGES did not. This was because IMAGES projects used shallow cores of sediment from the last few thousand years where drilling was not required. He noted that IMAGES was a coordinating agency and did not yet have funding. MESH now had funds to convene workshops.

Mix described several MESH programs of interest, including meridianal and depth transects, and high-resolution stratigraphy (Appendices 9.1-9.2). Workshops were being organized for next spring to develop proposals in these areas. Mix stressed that MESH wanted to provide guidance on how ODP programs could be integrated to solve global problems and not just be individual legs. Workshops were the preferred forum to get programs to work together to produce answers to some of the problems of Earth history. The OHP White Paper resembled MESH goals and objectives in that respect.

E. Leg Reports

1. Leg 155 - Amazon Fan

Flood reviewed the overall scientific objectives of the Amazon Fan program (Appendices 10.0-10.6). The purpose of the leg was to gain a process-oriented understanding of the mud-dominated deep-sea fan deposited off the Amazon River. One of the primary unknowns in the models of Amazon Fan development is the relationship of channel-levee development to changes of sea level. The Amazon Fan was a good candidate to study this relationship because the stratigraphic section was young enough to have a relatively good isotopic sea level record (Appendix 10.7).

Flood reviewed the study area, shipboard party, and operational planning for the leg (Appendices 10.8-10.10). He explained the philosophy that was used for siting holes, which was intended to maximize the core recovery and the scientific party's ability to sample the cores (Appendix 10.11-10.13).

Flood reviewed the preliminary scientific results of the drilling and logging programs for Sites 931-946 (Appendices 10.14-10.34). Flood explained that, while final results will depend on extensive analysis of samples and logs, the high sedimentation rates had provided well-preserved foram, magnetic, and lithologic records. He was confident that the shipboard party would be very successful in reaching the

pre-cruise objectives of understanding the relationships between Amazon Fan sedimentation history and changes in sea level.

Coffee break ..... *3:10 - 3:30 pm*

2. Leg 156 Barbados

Shipley outlined the scientific context and objectives of the Barbados program. The plan for the leg was to drill three cased holes through the décollement and incipient detachment.. Shipley noted that this had been an unusual leg in that a large number of new operations had been planned, including logging-while-drilling (LWD). The primary objectives of the leg were to determine what the pore pressure and permeability of fluids were along the décollement. The post-leg monitoring program planned for the holes was designed to be able to determine the nature of fluid flow along the décollement through time—i.e., was flow slow and continuous or was it more episodic (Appendix 11.0).

Shipley reviewed the study area, shipboard party, and operational planning for the leg (Appendices 11.1-11.2), including the mini-leg planned for the LWD operations. He explained the philosophy that was used for siting holes, which was intended to allow penetration of the amplitude anomaly along the décollement that had been modeled as a high pore-fluid pressure zone.

Shipley reported on the preliminary scientific results of the drilling and logging programs for Sites 947-949 (Appendices 11.3-11.6). Shipley explained that, despite the complex operations involved, the LWD program had been very successful in recovering log data from the drill sites. VSPs were run at Sites 948 and 949 (Appendices 11.7-11.8). Shearwave VSPs were also conducted at Site 949 using bottom shot explosives deployed from the *JOIDES Resolution* (Appendix 11.9). Shipley stressed that a lot of effort by ODP personnel had gone into deploying explosives from the *JOIDES Resolution*.

Shipley reviewed the structure and configuration of the sensors and CORKs deployed at Sites 948 and 949 (Appendix 11.10). He explained how the thermister string were deployed at both sites. Problems encountered in cleaning the holes and setting the CORKs at these sites were described. Shipley described Miriam Kastner's Mechanical Continuous Fluid Sampler that was deployed at Site 949 (Appendix 11.11), which would sample fluids for several years. Shipley concluded by summarizing the primary results and operational lessons of the leg (Appendix 11.12).

End of Day 1 ..... *4:30 pm*

Wednesday, August 10 ***8:30 am***

F. Long-Range Planning

1. Status of Proposed Riser Drilling—OD21

Lewis reported on the meeting of the JOIDES-JAMSTEC Working Group meeting in Japan that looked at riser drilling technology. He explained that in the preliminary discussions on riser drilling, JAMSTEC had expressed their concern about having a blow-out preventor on a riser-equipped drill ship to ensure safety during drilling in hydrocarbon-prone environments. Workshop participants agreed that, by adopting the assumption that a BOP would be incorporated into the design of the proposed riser drillship, the size and specifications of the riser were constrained. The workshop reviewed the specifications a 2 km riser with BOP. Preliminary feasibility studies by JAMSTEC had shown that a 3-4 km riser was possible to build but would be very much more expensive than a 2 km system.

Lewis noted that one of the conclusions of the workshop was that TEDCOM should begin to evaluate how TEDCOM could assist in the design of the riser. Takagawa, a JAMSTEC engineer in charge of the riser development, was also on TEDCOM. Lewis asked that PCOM task TEDCOM to look into the design of a 4 km riser.

Taylor questioned whether or not the JOIDES panel system had adequately discussed the slimline vs. the "oil-industry-type" riser requirement. Taylor accepted that without the riser/BOP there would be things that could not be drilled but he wanted more discussion on the cost/benefit ratio of the riser with a BOP. Austin stressed that not having a riser was not seen as an option by the Japanese. He felt that ODP's position should be that ODP had no problem with JAMSTEC developing a system like this as long as it didn't limit the science that was done from the ship.

Taylor pointed out that the Working Group had concluded that the oil industry type of 2 and 4 km riser should be pursued and that the slimline development should not be pursued. He was worried about committing to one design at this point when the cost was not known for any system. Austin stressed that at a certain level JOIDES could not specify what the Japanese built, the Japanese wanted this type of riser because of its full BOP capability. Dick cautioned that ODP should continue to evaluate all possible options to allow maximum flexibility given the ever-present uncertainty in vessel development. He thought that the ODP-TAMU proposal to upgrade the *JOIDES Resolution* was another option that should continue to be investigated.
Taylor asked to clarify what PCOM was asking TEDCOM to evaluate, riser designs in general or the Japanese design in particular. Austin thought that there needed to be an ongoing effort by JOIDES that showed our continuing support for the Japanese effort. He saw TEDCOM having a dialog and discussion with the Japanese on designs. Suyehiro agreed that feedback and dialog with JOIDES about the proposed Japanese riser system was important, continued interest by JOIDES would be required for the project to succeed. He explained that the science should drive the engineering and JOIDES should always clearly state their scientific needs so that the design can be made useful for the science.
PCOM discussed the wording of their charge to TEDCOM, and at the conclusion of the discussion passed the following motion:

> **PCOM Motion, August 1994 - JOIDES/JAMSTEC Technology Working Group Report Recommendations**
>
> PCOM endorses the recommendations of the JOIDES/JAMSTEC Technology Working Group. Towards implementing Recommendation 3, PCOM requests TEDCOM evaluate what is required for a full assessment of a feasibility of a 4 km riser system with BOP control at the seafloor and to report back to PCOM at the December PCOM meeting.

Dick moved, Berger seconded *vote: 15 in favor, 1 absent*

3. Updating the *Long Range Plan*

Lewis presented a suggested outline for the updated *Long Range Plan* and then asked for PCOM to go into executive session in order to encourage a free-ranging discussion on the strategies and plans for revising the *Long Range Plan* (Executive Session: 10:00 am-12:00 pm).
At the conclusion of the executive session, PCOM agreed to send a letter to other international geoscience programs with interests in ODP asking for feedback on the planned revision of the *Long Range Plan*. Summaries of the White Papers written by PCOM members would also be included in the letter. PCOM agreed that they wanted to stress the need for these other geoscience groups to work cooperatively with ODP to ensure that the drillship would continue to be a useful research tool for the geoscience research community. Lewis agreed to flesh out his proposed outline on the updated LRP (Appendix 12.0) based on PCOM's discussion and to prepare a draft of a letter to go out to relevant geoscience groups as soon as possible. He asked that the PCOM LRP Subcommittee review his draft letter and make suggestions for improvement.
PCOM discussed which geoscience groups PCOM wanted to approach for feedback on LRP revision. PCOM members with contacts in other geoscience groups agreed to give feedback directly to the JOIDES Office on which international geoscience groups to approach for feedback.

> **JOIDES Office Action, August 1994** - JOIDES Office to collate the names of groups and contact persons for other geoscience groups to send to PCOM for review and addition.
>
> Lewis to draft a letter along with a fleshed-out revised LRP outline to submit to the groups for comment and reply by the November LRP Subcommittee meeting.

Lunch break ..... *12:30 - 2:00 pm*

G. FY96 Prospectus

1. Four-Year Plan Affirmation

Lewis reviewed the Four-Year Plan motion that PCOM adopted in April (Appendix 13.0). Lewis reviewed the recent history of the FY95 schedule, including the decision to implement the contingency plan because the drydock was not scheduled in Capetown, South Africa. The contingency plan removed the Return to 735B program from the FY95 schedule. Lewis explained that LITHP had requested that PCOM amend its Four-Year Plan so that the area of operations for FY96 include the 735B area so that the 735B proposal could be incorporated into the FY96 Prospectus.

Larsen proposed a motion, and Arculus seconded, that PCOM amend the Four-Year Plan motion to open up the area of operations for FY96 to include the 735B area. At this point in the discussion, Lewis asked all PCOM members who were proponents on active proposals to leave the room. When proponents had left, there was no longer a quorum of PCOM so the motion could not be voted upon. PCOM discussed the procedure that should be used in this situation, given the large number of proponents. PCOM agreed that the Four-Year Plan had wording open enough to give the Thematic Panels enough flexibility to add programs to the Prospectus for ranking without PCOM passing the amendment. PCOM agreed that LITHP could add the 735B program to its Prospectus ranking if they supported the program for FY96 scheduling.

Taylor pointed out that PCOM would only be deferring a decision on this issue until December, the top-ranked LITHP priorities—735B and Sedimented Ridges—were 180° apart on the globe. By including them both in the Prospectus, PCOM was not able to set up a sense of direction to the planning. He questioned when PCOM would deal with planning so that conflicts of geography like this wouldn't create impossible scheduling scenarios. He stressed that PCOM needed to deal with logistic realities when it considered planning on this time scale. Dick thought that PCOM should include less mature proposals in the Prospectus along with the mature programs so that planning could maximize the ship's track with a more comprehensive science plan. Taylor disagreed and stressed that only mature proposals could be scheduled for the coming year so only mature proposals could be put in the Prospectus. Dick wanted PCOM to consider establishing a tentative two-year scheduling plan.

Lewis reviewed the proposals that were candidates for the FY96 Prospectus, i.e., those that were: (a) in the area of operations as defined by the Four-Year Plan, and (b) highly-ranked by the Thematic Panels in their Global Rankings last Spring (Appendix 13.1). Taylor asked if there were any reasons, outside of site survey data requirements, that the top-seven candidate proposals could not just be incorporated into the Prospectus without further discussion. He noted that Vøring was the only one of the top seven ranked proposals that did not have adequate site survey data and should be excluded. PCOM agreed with Taylor's assessment and, at the conclusion of the discussion, assigned proposal watchdogs and passed the following motion:

PCOM Motion, August 1994 - FY96 Prospectus

PCOM recommends that the following proposals be included in the FY96 Prospectus, PCOM watchdogs are assigned as follows:

Proposal	Document(s)	PCOM Watchdog
Caribbean Basalt Province	411-Rev	Catherine Mével
Sedimented Ridges II	SR-Rev3	Marcus Langseth
E Juan de Fuca Hydrothermal	440----/Add	Marcus Langseth
Caribbean Ocean History[1]	415-Rev2[1]	Alan Mix
California Margin	422-Rev 386-Rev2/Add/Add2/Add3	Wolf Berger
Western N. Atl. Sediment Drifts	404----/Add	Hermann Kudrass
Costa Rica	400-Rev2	Hans-Christian Larsen
Bahamas Transect	412----/Add3	Wolf Berger
Return to Iberia	461----	Brian Taylor
SE Greenland Margin	460----	Dick Arculus

1. One leg; OHP focus encompassing the Cretaceous-Tertiary boundary event and Caribbean Paleoceanography.

Arculus moved, Berger seconded *vote: 12 in favor, 3 abstentions, 1 absent*

Coffee break ..... *3:25 - 3:45 pm*

H. Panel Membership Actions (Executive Session)

1. JOIDES Panel Membership

a) OHP Delia Oppo to replace Maureen Raymo

b) SSP Chair replacement decision deferred until December. PCOM asked SSP to have an alternate nomination for PCOM's December meeting in the case of Can-Aus becoming inactive.

c) SMP Terri Hagelberg confirmed as the SMP liaison to the Computer/Database Upgrade Steering Committee.

d) IHP Carla Moore confirmed as a new member on IHP and the IHP liaison to the Computer/Database Upgrade Steering Committee.

e) SSP Augmentation

Jack Casey confirmed as a new member to SSP.

2. PCOM membership and liaisons

a) Jim Natland has replaced Keir Becker as the Planning Committee member from the University of Miami.

b) PCOM Liaisons

	EXCOM	LITHP	OHP	SGPP	TECP	DMP	IHP	PPSP	SMP	SSP	TEDCOM
Arculus				X							
Berger				X							
Dick										X	
Fox									X		
Kidd	X							X			
Kudrass			X								
Langseth											X
Larsen					X						
Lewis						X					
Mével		X									
Mix			X								
Natland		X									
Sager							X				
Shipley											X
Suyehiro						X					
Taylor					X						

PCOM Motion, August 1994 - Personnel Actions

PCOM adopts the above listed changes in panel membership and liaison.

Dick moved, Langseth seconded *vote: 15 in favor, 1 absent*

3. Instituting a Service Panel Membership Rotation

PCOM Motion, August 1994 - Service Panel and TEDCOM Membership Rotation

PCOM notes that the present guidelines for the rotation schedule for Thematic Panels has worked well and should be applied to SMP, IHP, SSP, DMP and TEDCOM. PCOM recommends to EXCOM that the Terms of Reference for membership and rotation of Chairs for SMP, IHP, SSP, DMP and TEDCOM be modified to reflect the following:

- panelists will serve four years, with one-fourth of the panelists being replaced each year
- the Chairs are appointed by PCOM
- panel membership is recommended to PCOM by the panel Chair
- panels meet at least twice a year, but may meet more frequently as requested by PCOM
- PCOM convenes the panel meetings and approves their meeting dates, locations, and agendas

In some circumstances panelists may be asked by PCOM to serve more than one term, or for longer than four years.

This modification to the guidelines will provide a uniform policy for all panels and committees reporting to PCOM, thereby not only getting the best expertise into JOIDES, but also making implementation simpler and more effective. A staggered rotation should be implemented over the next four years.

Lewis moved, Fox seconded *11 in favor, 3 opposed, 1 abstention*

4. Future PCOM Meeting Dates

December 1994	ODP-TAMU	Nov. 30 - Dec. 3, 1994
April 1994	Japan	April 25-28, 1994

End of Day 2 ..... *4:30 pm*

Thursday, August 11	*8:30 am*

I. Technology Development and Planning

1. Engineering Development Review Committee (EDRC) Report

Lewis reviewed the EDRC Report recommendations regarding the process of how ODP should undertake engineering development projects (Appendix 14.0). Lewis noted that TEDCOM would like the opportunity to comment on the EDRC's recommended development procedures. Lewis suggested that PCOM refer the EDRC Report to TEDCOM for comment and a report back to PCOM in December.

Langseth asked specifically what level of project should be subject to the review process? Shanks commented that the TEDCOM was now going through the process of evaluating that question with DCS and would have some comments and classifications for PCOM in December. Langseth was just concerned that the formal procedure might slow down some smaller-scale, non-DCS developments.

Lewis reviewed the EDRC recommendations regarding TEDCOM/ODP-TAMU/PCOM interactions (Appendix 14.1). In this area, there were four recommendations that PCOM needed to take action on: (1) TEDCOM Chair attending every PCOM meeting, (2) regular review of the membership and chairmanship of TEDCOM, (3) TEDCOM meetings all being held in College Station, and (4) TEDCOM membership of an ODP-TAMU Engineering and Operations Department staff member. In addition, the EDRC recommended that TEDCOM advise PCOM on the feasibility of continued DCS development (Appendix 14.2).

Lewis presented his suggested PCOM responses to the EDRC Report recommendations (Appendix 14.3). Specifically, Lewis recommended against adding an ODP-TAMU Engineering and Operations Department staff member to TEDCOM and against requiring the TEDCOM Chair to attend every meeting of PCOM. PCOM discussed Lewis' responses. PCOM agreed not to change its present policy about panel chair attendance at PCOM meetings but PCOM would plan to invite the TEDCOM Chair to attend all PCOM meetings in the next year as a trial to evaluate the policy. PCOM agreed that an ODP-TAMU engineering staff member could not be allowed to become a voting member of TEDCOM.

Francis distributed a note from Robert Duce, Dean of the College of Geosciences and Maritime Studies at TAMU. At the June EXCOM meeting, Duce had promised to provide PCOM with an interim report on management changes at ODP-TAMU in response to the EDRC recommendations (Appendix 14.4). Francis explained that ODP-TAMU, in response to the EDRC Report, was working toward implementing the management recommendations and engineering development process.

After the discussion of the DCS situation PCOM passed the following motion:

PCOM Motion, August 1994 - EDRC Motion

PCOM views the EDRC Report as an important milestone in the process of improving engineering development in ODP. PCOM will in the future define more carefully the scientific expectation and parameters for engineering projects. PCOM recommends to EXCOM:

1. That the recommendation that a member of the Engineering and Operations Department staff be a member of TEDCOM not be adopted. Otherwise, this establishes a precedent that clearly cannot be applied to other panels (e.g. BCOM, PCOM).

2. Regarding the recommendation that the TEDCOM chair attend all PCOM meetings, PCOM appreciates the intent of the recommendation and will evaluate the effectiveness of such a policy by inviting the TEDCOM chair to the next three PCOM meetings. PCOM will review the results at its December 1995 meeting before instituting it as formal policy.

Natland moved, Shipley seconded *vote: 15 in favor, 1 absent*

2. DCS Review

a) TEDCOM DCS Subcommittee Report

Shanks reported that the TEDCOM DCS Subcommittee was formed in September. The Subcommittee's original activity was to create milestones to measure the progress and future direction for DCS development. After the EDRC review, the DCS Subcommittee became more active in evaluating DCS development in light of EDRC recommendations. The DCS Subcommittee had met August 8th at ODP-TAMU and discussed with ODP-TAMU the EDRC mandate for TEDCOM to review the DCS. The Subcommittee had concluded that their first task was to review roles and responsibilities of ODP-TAMU and TEDCOM within the EDRC's recommended procedure.

The question of which projects should fall under this EDRC procedure was also discussed at the Subcommittee meeting. The Subcommittee's consensus was that, during the budget preparation for the coming FY, ODP-TAMU would identify the projects that were likely to require an EDRC-type development process. ODP-TAMU would then have these projects referred to TEDCOM, through PCOM, for TEDCOM's recommendations on the process. The Subcommittee agreed that there was a need for a formal process to implement the EDRC development procedure recommendation.

The next Subcommittee meeting was scheduled to be held at Parvus, August 25-26, to review the last nine months of Parvus' and Paul Munroe's software development. Shanks reviewed the Parvus responsibilities and Paul Munroe responsibilities for DCS secondary heave compensation development. When ODP-TAMU terminated the Paul Munroe contract, they asked Parvus to review the progress made by Paul Munroe (PMEI) on the software. Parvus had completed an evaluation and a technical proposal to take the software forward into the land testing stage. In this evaluation, Parvus had concluded that the PMEI software did not work and they were not sure how much work they (Parvus) would have to put into it to make it work. Parvus had also proposed that the software could be developed independently by them along a parallel path but they would have to start from scratch with the standard development tools that are available for this type of application.

Arculus asked what the legal status of the software from PMEI was? Reudelhuber indicated that the software could not be used unless it was paid for by ODP-TAMU and it had not been paid for; the software was still property of PMEI. Austin asked if this would mean that ODP-TAMU would be forced to start over because of the situation with PMEI? Shanks did not think that this questioned had been answered yet. Shanks noted that there was some computer hardware developed that would be available for continued efforts. The PMEI situation had not been completely worthless and there was a greater understanding of the control problem than a year ago. Fox asked if the increase in the understanding of the problem made it clear that the problem was larger and more complex than appreciated initially and that the problem would be impossible to solve with the limited financial resources that were available? Shanks did not think that a conclusion about the resources needed to

solve the problem had yet been reached by the Subcommittee and they were still working on evaluating that.
Natland asked about the system used on Leg 132 that used secondary heave compensation designed by Chuck McKinnon, could that system still be used now? Shanks noted that this PID system was still available and was the standard for comparison that the new development was being measured against. Shanks noted that the increased performance of the fuzzy logic controller over the PID controller had led to the decision to develop the fuzzy logic controller. Reudelhuber reviewed the history of the decision to develop a new control system for the DCS after Leg 142. PCOM discussed the results of Legs 132 and 142 and the rationale behind decisions to re-engineer the secondary heave compensation system.

Arculus asked where the situation was now and what the next step at Salt Lake City was—was ODP-TAMU looking for a new software developer or were they still analyzing the dynamics etc. before moving ahead? Shanks reviewed the steps that the TEDCOM DCS Subcommittee would be undertaking in coming months. Shanks felt that if the Subcommittee followed the EDRC procedure it would allow the Subcommittee to give a feasibility analysis on DCS to PCOM in December. Watkins asked if there was any estimate of how long this development would take or how much this development would cost? Shanks felt that a budget, along with a feasibility status report should be available by the December PCOM meeting. The DCS Subcommittee would not be managing the project, but would try to help with implementation of the EDRC process.

Lewis asked if PCOM needed to restate the scientific objectives for the DCS development? Shanks agreed that having a set of target objectives for the development would be helpful to the Subcommittee. Lewis wanted PCOM to define a specific written statement of the objectives for the DCS project. Taylor asked what the Subcommittee did not understand in terms of the objectives for the DCS development? Shanks thought that the Subcommittee had a good idea about the objectives but they were not clearly stated. Lewis wanted PCOM to develop a written summary of the objectives for DCS development. Natland explained that such a summary was written down in the Leg 132 volume. Lewis still thought that more details about deployment and implementation objectives needed to be described by PCOM, the goals of deployment had implications for science and budget planning.

PCOM agreed to the TEDCOM DCS Subcommittee's participation in the planned meeting at Parvus. It was seen as the next step in evaluating the future of DCS development. After this meeting PCOM would be able to return to the issue of developmental goals for DCS and make some decisions regarding its future. Austin asked that at PCOM also appoint a PCOM member to go to the meeting at Parvus, Shipley agreed to go.

b) DCS Objectives

Natland reviewed the history of DCS development in ODP and summarized the results of the operations on the DCS engineering testing on Leg 132 (Appendices 15.0-15.10) and on the EPR on Leg 142. Based on the results of the engineering legs, Natland concluded that with DCS there would be significantly-improved recovery of basalt during on-axis and off-axis drilling. DCS would also improve offset-drilling efforts, like those at Hess Deep and MARK. In addition, DCS had potential to be a high-recovery method and contribute to improved high-resolution stratigraphy studies.

Coffee Break ..... *10:30 - 10:50 am*

c) DCS Land Testing Update

Reudelhuber reviewed the history of recent events that lead to the termination of the PMEI contract (Appendices 16.0-16.2) and the results of the PMEI software development effort (Appendix 16.3). Austin asked how much it would cost for ODP to obtain rights to the PMEI software in order to continue development outside of PMEI? Reudelhuber explained that this issue still needed to be negotiated with PMEI, the cost would depend on how much of their contract had been fulfilled. Reudelhuber reviewed the Parvus Corporation's involvement in DCS (Appendix 16.4) and the results of Parvus' review of PMEI's software (Appendix 16.5). Reudelhuber explained that the main conclusion of this review was that significant effort would be required in software development to bring the system to functionality (Appendix 16.6). At ODP-TAMU's request, Parvus had prepared a proposal for continuing the development of the DCS secondary compensation control software (Appendix 16.7). Reudelhuber stressed that this plan had not been agreed to or implemented by ODP-TAMU. Natland asked what the budget for the Parvus plan was? Reudelhuber did not know, no number had been identified.

Reudelhuber reviewed the Stress Engineering Services (SES) activities in the development of the DCS computer model (Appendix 16.8). SES was contracted to look for methods to improve the efficiency of the primary heave compensator. Reudelhuber reviewed the history of contracting for secondary heave compensation software development and the outlined the reasoning behind selection of PMEI as the subcontractor for this work (Appendix 16.9). He then discussed the reasons why PCOM should consider the Parvus proposal for further software development (Appendix 16.10).

Lewis concluded the discussion with a proposed list of PCOM action items on DCS development (Appendix 16.11). PCOM discussed what specific information TEDCOM should provide to PCOM in December regarding DCS. PCOM agreed that TEDCOM should be able to provide PCOM a list of milestones for evaluating the development of the secondary heave compensation system.

Reudelhuber pointed out that unless Parvus began work on continuing the software development it would not be possible for ODP-TAMU and TEDCOM to be any further along in evaluating heave compensation in December than they were now. Taylor agreed but stressed that the TEDCOM DCS Subcommittee's evaluation of the feasibility of the software development was the critical need. He thought that the only activities that ODP should pursue were those that got the Subcommittee the information they needed to evaluate the project's feasibility.

Austin wanted guidance from PCOM on how comfortable they were with ODP-TAMU spending more money on this program at this time. Shanks thought that the TEDCOM DCS Subcommittee could take the EDRC procedure forward and additional contracts should not be let until the feasibility study was done. Reudelhuber noted that progress toward EDRC milestones for DCS could not begin until the software development was completed. This would require paying PMEI for access to software already developed. Francis added that Parvus would need to be paid in order to do the work that they had proposed to take the software development further. PCOM discussed the project milestones that would require money to be spent.

Shanks wanted to see the steps in the EDRC development procedure laid out in more detail before any money was spent. PCOM discussed the steps that TEDCOM and its DCS Subcommittee needed to take before an evaluation of feasibility could be completed. Austin thought that the Parvus proposal needed to be evaluated and it should be looked at from a wider view. ODP needed to consider whether or not Parvus was the right contractor for the job before it moved forward.

At the conclusion of the discussion, PCOM passed the following motion:

PCOM Motion, August 1994 - DCS Development

PCOM recommends that ODP-TAMU continue with the current DCS development program through to a preliminary goal, that being a successful test of the secondary heave compensation software on the scaled model and computer simulators. The results of these tests will provide the data for TEDCOM to make an informed evaluation of the feasibility of building an ocean-going DCS. PCOM reaffirms the PCOM Motion of April 1994 that the DCS land test should not be initiated until completion of model and simulating tests to the satisfaction of TEDCOM.

The path to follow to get from the present to the preliminary goal will be defined at the August 25-26, 1994 TEDCOM DCS Subcommittee meeting at Parvus. This meeting will also establish performance-based objectives of effort.

As an example of the effort, the work statement provided by Parvus describes tasks required to meet this preliminary goal. The contractor to carry out this phase of the program will be selected in accord with the intent of the standardized JOIDES/ODP procedures set down by the EDRC. Some streamlining of these procedures is required because: (1) this is an existing project, and (2) the extremely short lead time.

Langseth moved, Taylor seconded *vote: 15 in favor, 1 absent*

In addition, PCOM adopted the following consensus statement intended to focus PCOM's planning discussions on DCS in December:

PCOM Consensus, August 1994 - DCS Development

With Respect to the DCS program, PCOM:

1) asks Jim Natland (with help from Shipley and Langseth, the JOIDES Office, and ODP-TAMU) to assemble existing documentation on DCS project definition for the December 1994 meeting, and
2) notes that Francis will provide detail on ODP-TAMU's response to the EDRC Report at the December PCOM meeting.

3. PCS Development Update

Francis reviewed the design and operation of the PCS (Appendix 17.0). He explained that the tool has been considered operational since Leg 141. Since then the PCS has been deployed 35 times but recovered core on only 20% of its deployments. In addition, the percentage of core recovered has been low and, in general, the PCS was an inefficient device. Francis reviewed the reasons why the system did not core well and then updated PCOM on the status of the engineering changes planned to make the tool better at recovering core (Appendix 17.1). He explained that the PCS tool would first be land tested and then sea tested on the Mediterranean legs before it was used on the critical gas hydrates leg.

4. Downhole Tools - DMP Recommendations

a) Third-Party Tools

Suyehiro reported that the PCOM subcommittee (Suyehiro, Kidd, Dick) had considered DMP Recommendations 94-4 through 94-10. He explained that the DMP recommendations asked that the Third-Party Tool Guidelines be enforced for several tools under development for use in ODP. However, DMP was granting exceptions to the six month waiting period to two untested third-party tools being considered for use on the TAG leg. DMP had denied an exemption to the waiting period to the third untested tool (von Herzen tool).

Goldberg reported that three of five high-temperature tools being considered for TAG required testing before they could be approved by DMP; DMP's approval would be granted by e-mail once the tests were completed. In Goldberg's opinion, all three of the tools that needed testing were in relatively the same state of readiness.

Dick represented Susan Humphris' (Co-Chief for TAG) opinion that the von Herzen tool had very high scientific priority and DMP's decision to not grant an exemption for the six month waiting period was not fully informed. PCOM discussed the Third-Party Tool Guidelines, the requirements of the TAG leg, the plans for testing these third-party tools and DMP's recommendations.

At the conclusion of the discussion, PCOM passed the following motion:

PCOM Motion, August 1994 - Third Party Tools

PCOM endorses the DMP recommendations for the following third-party development tools, noting that PCOM also waives the condition of the passage of six months required by the third party tools guidelines in order that these tools may be used on Leg 158 (TAG).

- Pressure/Temperature Memory Tool
- High-Temperature Borehole Instrument
- CSMA Resistivity Tool

In addition use of these tools on Leg 158 will be subject to the concurrence of the Co-Chief scientists.

Suyehiro moved, Natland seconded *vote: 13 in favor, 2 abstain, 1 absent*

Suyehiro reported that the subcommittee had considered the DMP Recommendation 94-11 concerning the staffing at BRG. DMP recommended that the technical staff of the BRG be augmented immediately by one full-time-equivalent engineer to support Third-Party-Tool Guidelines. Suyehiro explained that he would like to approach ODP-Japan about providing ODP-LDEO with an engineer for this purpose. PCOM thanked him for this offer and deferred any further action on this recommendation pending the results of this Japanese initiative.

b) BHTV and in situ Stress

Goldberg agreed that implementation of the DMP Recommendation 94-1 would be useful, the Thematic Panels needed to identify the best holes for in situ stress measurements. Taylor pointed out that TECP had wanted a recommendation from DMP on this issue for a long time. He questioned if this plan would warrant augmentation of BRG's budget for these projects or would costs for the measurements come from within the BRG operational budget? PCOM agreed that the priority was for scientific success and the BRG operational budgets would be augmented to reflect the need for in situ stress measurements at high-priority holes. Taylor objected to the wording of DMP Recommendation 92-2 because it would actually implement a very inflexible policy and set a bad planning precedent. PCOM agreed that the present funding policy was flexible and declined to adopt the policy recommended by DMP. PCOM thanked DMP for its input on in situ stress measurements.

c) Memory Tools

Francis did not accept DMP Recommendation 94-3 as valid. The previous understanding between ODP-TAMU and ODP-LDEO was that the wireline should be the deciding factor in whose responsibility the tool was. Goldberg agreed but explained that the curation of memory tool data was what motivated the DMP recommendation. Francis noted that the LWD data was conceded to BRG. But he stressed that ODP-TAMU wanted to continue the existing policy, and in particular, the ADARA tool would remain the responsibility of ODP-TAMU. The curation of third-party memory tool data would be the responsibility of the PI to decide.

PCOM discussed the existing policy and responsibilities for the data management in the case of memory tool data. After discussion it was concluded that there was not enough information to make a decision at this meeting and the issue was tabled until the December meeting.

Lunch break ..... *12:30 - 1:30 pm*

J. Information Technology and Planning

1. The Computer/Database Upgrade

Lewis reported on the most recent developments in the computer/database upgrade process (Appendix 18.0) and explained the timeline for implementation of the upgrade (Appendix 18.1). Lewis reviewed the mandate and membership of the Data Management Steering Committee that has been given the mandate by JOI to make recommendations regarding the development of the ODP Data

Management System (Appendix 18.2). The first meeting of the Steering Committee was scheduled for September 13-14. Lewis outlined the two phases in the implementation of the upgrade, each would cost $1.5M. He reviewed the deliverables expected in each phase. Lewis stressed that now that ODP was starting down this road by budgeting $1.5M in funds combined from FY94 and FY95 budgets, it also meant a commitment of $1.5M from FY96 budgets. PCOM reviewed the planned role of the Steering Committee and discussed what the add-on costs of the upgrade would be in terms of additional personnel required at ODP-TAMU.

Coffee break ..... *3:10 - 3:30 pm*

K. Budget Contingency

b) FY 1995

Austin reported that, in July, the absence of an internal MOU within Can-Aus had caused NSF to issue a directive that ODP should begin to plan for a $44.0M budget in FY95. ODPC had decided that Can-Aus would not be allowed to continue as a partial member without an internal MOU. Austin thought that this was a situation that would remedy itself if Can-Aus signed an MOU in September and presented themselves as an active partial member. Austin reviewed the history of the development of the FY95 budget (Appendices 19.0-19.1).

Austin was seeking input from PCOM to help him assess the degree to which ODP could maintain functionality while planning for the new budget realities being articulated by NSF and ODPC. He stressed that NSF and ODPC had indicated strongly that these budget constraints were not a signaling of the end of ODP, but they would require ODP to rethink the management of the program operations. Austin reviewed BCOM's words and urged PCOM to use them as a guide when considering implementing changes to adapt the program planning to the realities of the budget (Appendix 19.2).

c) FY 1996 and Beyond

Austin outlined his ideas for hitting the target budgets, both fiscal and scientific in the FY96-FY98 period (Appendix 19.3). He first reviewed the fixed costs, or budgetary "givens" and then listed the potential discretionary portions of the budget where he felt that PCOM could use its judgment to make cuts. Austin advocated that the program should not cut innovation, abridge the science plans or eliminate vital functionality. Austin then presented JOI's proposal on how to fix the potential FY95 budget shortfall and begin to prepare for the FY96 budget and beyond (Appendix 19.4). He discussed each of the options and the advantages/disadvantages of each option.

At the conclusion of his presentation, Austin asked PCOM for comment on, and prioritization of, the options that he had presented. Austin thought that PCOM should keep in mind that a budget of $44.9M in FY96 depended on six full partners. If this scenario did not evolve, bigger cuts would have to come in FY96. Mével did not like Austin's proposal because it did not solve the long-term budget problem and could only be done once in FY95. Austin agreed and urged PCOM to try to consider more substantive vertical cuts in the program to achieve greater budget flexibility in the program for the long-term. Austin asked PCOM to send a clear message to JOI on how the $900K should be cut in the event of a budget shortfall in FY95.

Francis asked to give the ODP-TAMU perspective on the cuts. Francis compared the base budget, SOE and total budget for ODP-TAMU from FY89 through FY95 (Appendix 20.0). He noted that approximately $25M of ODP-TAMU's budget were fixed costs (Appendix 20.1). This resulted in a situation where across-the-board cuts of 2% in budgets had greater impact to ODP-TAMU because the cuts needed to come out of the non-fixed, discretionary budgets. This situation resulted in an effective budget cut of about 6-7%. Francis explained that the ODP-TAMU share of the ODP budget has fallen since FY90 (Appendix 20.2). Francis thought that this was the result of the "tyranny of the small numbers." BCOM always found it too easy to solve the small budget problems by cutting ODP-TAMU and he wanted PCOM to consider the effect of this long-term trend.

Goldberg commented that, in FY95, BRG was taking cuts that put it at its breaking point of functionality. If BRG was cut any further than the 11% cut BCOM made in March, it would have to make major changes in operations. He stressed that the 11% cut was the largest proportional cut in the FY95 budget.

Austin explained that JOI's budget recommendation preserved functionality and staff. If PCOM adopted this recommendation, and the Can-Aus MOU was not signed, JOI would plan to implement this budget in September. Natland felt that the cuts proposed by JOI were sensible, preserving personnel was an attractive feature of the proposed cuts. Lewis agreed this was the best plan at the

moment and, hopefully it would not be needed. In addition, this plan would give PCOM the coming calendar year to prepare for decisions on larger cuts in functionality within the program. Austin agreed that PCOM should consult with the advisory system before trying to identify functional cuts in the program. Fox wanted PCOM to send a carefully worded statement to the panels instructing them to consider ways to change functionality of the program and save money; the community needed to be on board for this type of budget cutting.
Lewis concluded that the sense of PCOM was that they were in favor of JOI's proposal. Lewis asked that PCOM pass a motion that specifically charges the panels to give PCOM feedback on future budget planning. Arculus asserted that the panels needed to have a briefing like that Austin gave to PCOM or the panels would be unable to make meaningful comment. Taylor added that the motion should also include the PCOM preference for restoring publications and computing when funds are restored.
Lewis asked for a motion from the floor to adopt the JOI recommendation. At the conclusion of the discussion, PCOM passed the following motion:

PCOM Motion, August 1994 - FY95 Budget Planning

PCOM accepts the budget changes for the FY95 Program Plan budget, as tabled by JOI. PCOM further recommends a reinstitution priority for computer and publications budgets followed by DCS budget in the case that the $44.0 M budget constraint is lifted.

Taylor moved, Shipley seconded *vote: 14 in favor, 1 abstention, 1 absent*

PCOM discussed the charge to the panels and how to formulate options for cutting the budgets that the panels could evaluate. Mével, Dick and Berger, Larsen, Mix, Natland, and Fox agreed to compose a motion for adoption on Friday. On Friday, PCOM passed the following motion:

PCOM Motion, August 1994 - Budget Prioritization

PCOM has received from NSF via EXCOM guidance that the ODP budget will not increase above $44.9M though 1998, provided there are six full partners. Given that fixed costs of the program will increase with inflation, there will be an corresponding decrease in operating budgets through 1998 requiring a restructuring of the flexible components of the program.

In light of the current funding situation, PCOM requests all panels to prioritize their needs regarding program services and facilities and identify areas where programmatic costs can be reduced.

Dick moved, Watkins seconded *vote: 14 in favor, 2 absent*

L. Operational Technology Planning

1. VSP Experiments

Austin reported to PCOM on the situation that arose with Leg 156 that led to this issue being brought to PCOM by JOI. JOI did not consider a VSP a routine downhole measurement, it was not a routine third-party tool. On Leg 156 a partner country, the UK, added a shearwave VSP to the leg that resulted in a great deal of commingled funds being spent to support it. NERC only contributed a small amount of the total cost to ODP for the project. Austin wanted PCOM to issue a policy statement that would allow a VSP experiment to be included on a leg but would require that all of the costs to be allocated correctly.
Francis reviewed the cost to ODP of implementing the shearwave VSP experiment on Leg 156 (Appendix 21.0), the total add-on cost to ODP for items related to the shearwave VSP experiment was $71K. Francis reviewed the experiments on Leg 156 and noted that ODP-TAMU would be reluctant in the future to accept the type of operational constraints that were imposed by this experiment.

Austin stressed that the issue for JOI was to have PCOM issue a clear statement on who has responsibility to pay for VSP experiments and their related costs. PCOM discussed this issue and agreed that this was a specific case of a more general class of problems associated with all third-party experiments/operations done on the ship and the costs associated with supporting these activities. PCOM discussed the current implementation of third-party experiments. Dick did not think that the VSP should necessarily be a third-party experiment. Austin felt that if the experiment was integral to the leg then ODP would be willing to consider it as an SOE. He pointed out that the Leg 156 problematic situation was caused by the scheduling of the VSP after the leg had been planned. The experiment was added long after the Leg 156 program was scheduled and, in addition, the science was not integral to the success of the leg. Austin stressed that the budget flexibility within ODP that was needed to be able to incorporate experiments like the shearwave VSP into a leg at the last minute was gone. He wanted PCOM to send the message to proponents that planning for these types of experiments needed to be done further in advance and put forth with the proposal for PCOM's consideration prior to scheduling. If science was being proposed to be added-on to a leg, and it had budgetary impact, then PCOM would have to approve it.

End of Day 3 ..... *4:30 pm*

Friday, August 12	*8:30 am*

L. Operational Technology Planning—continued

1. VSP Experiments—continued

PCOM debated if the policy should state that requests come through PCOM or through Co-Chiefs. PCOM considered a motion to reflect their view that PCOM needed to review late-entry science with significant budgetary impact. At the conclusion of the discussion PCOM passed the following motion:

> **PCOM Motion, August 1994 - Add-On Science Policy**
>
> Science with a budgetary impact which is introduced after the Program Plan is approved requires the review and approval of PCOM before it can be included as part of a scheduled leg and paid for through commingled funds.

Dick moved, Fox seconded *vote: 14 in favor, 2 absent*

2. Structural Data Collection

Taylor reviewed the situation with structural data collection and his recent correspondence with TECP and ODP-TAMU on the subject. He objected to ODP-TAMU's argument that the data should not be archived because of the potential cost of publishing it, he stresased that collecting the data and publishing it were two separate issues. He did not feel this approach was valid and that data types should not be prioritized one over another. PCOM agreed that the cost of data publication was a potential problem but agreed that this should not stop the collection and archiving of structural data.
Lewis concluded the discussion by noting that the structural data motion passed by PCOM in April had not come to maturity by going through the complete panel cycle. By December, when PCOM has the TECP, SMP and IHP recommendations on structural data collection the situation may be ripe for action. PCOM reaffirmed its mandate to IHP to review structural data collection and its support for TECP's efforts at getting the structural form together. PCOM agreed to take action on this issue in December after it had received input from the advisory structure.

M. Long-Range Planning

1. White Paper Publication in the *JOIDES Journal*

a) TECP

Larsen reviewed the TECP White Paper, he thought that it was a useful document for the long-range planning process but he did not want to see it published at this time. He felt that it would require a

great deal of editing and clarification to publish. PCOM discussed the content and format of the White Paper at length and agreed that some editing of the document was desirable. Berger asked if it was possible to determine the three most important topics that TECP wanted to see addressed in the future? PCOM agreed it was not possible to tell from the White Paper. Lewis agreed to communicate to TECP that the White Paper was unacceptable in its current form and the panel should try to rewrite it as a more focused document.

b) LITHP

Mével reviewed the LITHP White Paper, she thought that it was too long but well written and should be published at this time. PCOM discussed the content and format of the White Paper as well as the three major LITHP themes: oceanic lithosphere construction, convergent margins, and LIPs. Natland felt that this White Paper was a substantive change from the previous document. This paper had a major shift in emphasis to "case studies" and he cited several examples from the paper. Natland thought that this change reflected a similar change in the panel and the community it served. It also took into account the limitations of drilling technology. PCOM discussed how realistic the LITHP plan was given the historical record of panel projects. PCOM concluded that the LITHP White Paper was ready to publish.

c) OHP

Kudrass reviewed the OHP White Paper, he thought that it was a good document and recommended that it be published because it represented OHP's objectives well. Langseth thought that it was a model White Paper given the direction that the program wanted to go. He suggested that a section might be added that indicated how OHP planned to interface with other global geoscience groups. PCOM concluded that the OHP White Paper was ready to publish.

Dick suggested that the OHP White Paper be referred to the TECP and they be directed to rewrite their paper in the OHP-type format. Taylor did not think that TECP would want the task of rewriting their document reassigned. He pointed out that the OHP had written their paper last, during the last few months, so they had a much better idea of what PCOM wanted. TECP had written their White Paper in 1993 and PCOM's direction had not been very specific at that time. Taylor thought that if PCOM had not been able to give appropriate feedback to TECP until now the panel should not be punished.

d) SGPP

Berger reviewed the SGPP White Paper, he thought that it was ready to publish and he outlined the three primary themes. He contrasted this new document with the previous SGPP White Paper (Appendix 22.0). Larsen pointed out that there were references in the White Paper to proposals in the system and he wondered if this was appropriate? PCOM agreed that it was appropriate in the context of the paper and that the White Paper was ready to publish.

At the end of the White Paper reviews, Lewis suggested that the October *JOIDES Journal* be delayed until TECP had a chance to revise their White Paper. Larsen thought that the other three should not be delayed. In addition, the TECP revision should not be rushed, so he thought it better if the TECP White Paper be published at a later date. PCOM agreed that the LITHP, OHP and SGPP White Papers should be published in the October *JOIDES Journal*, the TECP White Paper would be published in the February *JOIDES Journal*. At the conclusion of the discussion, PCOM adopted the following consensus statement:

> **PCOM Consensus, August 1994 - White Papers**
>
> PCOM acknowledges the efforts of all four thematic panels and requests that the JOIDES Office publish the LITHP, SGPP and OHP White Papers in the October 1994 *JOIDES Journal*. PCOM will task the TECP liaisons to go back to TECP with specific recommendations on modification to their White Paper. PCOM expects that the TECP White Paper to be ready for publication in the February 1995 *JOIDES Journal*.

Coffee break ..... *10:30 - 10:50 am*

2. Liaison Groups

Lewis reported that EXCOM had declined to take up the issue of Liaison Group mandates in June and did not formally approve the new mandate that PCOM had adopted at the April PCOM meeting.

Lewis proposed that PCOM modify the mandate formulated in April to reflect the discussions about revision of the *Long Range Plan*. PCOM discussed the role and implementation of liaisons and wording for the JOIDES mandate to Liaison Groups. At the conclusion of the discussion, PCOM adopted the following motion:

PCOM Motion, August 1994 - JOIDES Liaison Groups

PCOM recognizes the importance of effective communications between JOIDES and other global geosciences programs having an interest in ocean drilling. PCOM notes earlier motions (November 1989, April 1994) that allows the establishment of formal liaisons through a liaison group. PCOM hereby modifies the mandate regarding liaisons to other global geosciences programs in order to allow more effective implementation of the liaison process.

Recognizing that many members of PCOM are also active participants in other global geoscience programs, the following mandate is adopted:

Mandate for Liaisons to Global Geoscience Programs:

To facilitate effective and timely exchange of information, PCOM may designate a formal liaison to national or international initiatives in global geosciences. Liaisons may be proposed to the PCOM Chair, and will be elected by a majority vote of PCOM. It is anticipated that PCOM members with appropriate expertise will be chosen as liaisons, but if a suitable panel member is not found, PCOM may seek a liaison who is not a member of PCOM. Liaisons will typically attend at least one meeting per year of the designated program, and will report to PCOM as scheduled by the PCOM Chair.

Mix moved, Watkins seconded *vote: 14 in favor, 2 absent*

3. LRP Process

Lewis reviewed his proposed steps in the LRP update (Appendix 23.0) and the outline of the LRP revision (Appendix 23.1). PCOM members were identified to distill the White Papers for a summary to send to other geoscience groups. PCOM discussed how they would represent ODP liaison activities with other global initiatives in the revised LRP. PCOM agreed that the liaisons with other groups needed to be woven throughout the document.

Lewis reviewed the status of the vision/mission statement. PCOM discussed the content of the document that the LRP Subcommittee had begun to assemble (Appendices 23.2-23.3). Lewis explained his view that the mission statement he had written reflected his view that the program was facility-based and not a comprehensive science program. PCOM debated the facility-based vs. the science-based views of the program.

Taylor was concerned that the process of LRP revision was not being given the attention it deserved by PCOM and the LRP Subcommittee. He felt that PCOM had to recognize the need for a dedicated person assigned to write the plan and see it through to completion. PCOM agreed it was better to have a document written that they could comment on and that outlines were not sufficient. Lewis agreed that he would be seeing the plan through to the December PCOM. Fox outlined the process and the LRP Subcommittee was planning and their proposed benchmarks for completion. Taylor felt that it was critical that someone take the responsibility to create a document with the White Papers, technological goals and budget constraints all woven into a coherent picture of ODP's long-range goals.

Taylor questioned how technology development would be depicted in the revised LRP. Lewis felt that with no budget changes there would be no way to plan technology development until 1998. Austin explained that PCOM had to prioritize technology development over some operational items if it wanted to continue development projects. PCOM had to grapple with this and come up with a plan. Taylor did not think there was an adequate plan to write into a LRP document. PCOM agreed to discuss this issue much more thoroughly in December.

PCOM discussed the LRP Subcommittee's proposed revision of the advisory structure. PCOM wanted to know what the planned changes were and questioned if these changes were the result of the needs

generally perceived by the ODP community or by the LRP Subcommittee. Langseth did not want to see a revision of the advisory structure adopted in January without knowing about what the proposed changes were now and giving the present structure a chance to comment. Taylor felt that if there was a change in the structure he wanted to know about it for when he was writing his White Paper summary. Natland objected to the LRP Subcommittee discussing change without bringing proposals to PCOM for discussion. Fox felt that the change in the boundary conditions of the budget and the short time scale to put together a revised LRP have required the committee to move on some issues like this.

PCOM discussed how much full PCOM discussion would be involved in the actual writing of the revised LRP before the LRP Subcommittee submitted a draft to PCOM. The LRP Subcommittee agreed a draft would be available in December for complete review and discussion. After that, a revised draft would be submitted to EXCOM in January. Lewis stressed that he would want PCOM to discuss the revised LRP in detail at the December meeting.

Taylor asked who would write up the draft of the revised LRP, including the responses received back from the other geoscience programs? Taylor stressed that a draft document needed to written by the time that the LRP Subcommittee met on November 17. PCOM agreed that, in order for the discussion to be productive in December, the completed draft of revised LRP needed to be ready for the LRP Subcommittee meeting in November. Natland wanted to know when the panels would be allowed to review and comment on the revised LRP? PCOM agreed that the JOIDES Office would send copies of the draft of the plan that went out to the international geoscience groups, this would furnish them with the outline of the proposed changes and plans.

L. Operational Technology Planning—continued

PCOM returned to an agenda item that was skipped in the earlier section on operational technology planning.

3. Logging While Drilling

Because of the costs of an LWD program, PCOM agreed that issue of identifying potential LWD programs had to be done far in advance of a leg. Goldberg reviewed the general costs and benefits of LWD, both in time and money. PCOM agreed that the safety requirements for LWD were that a cored hole had to be drilled at a Site prior to an LWD run (Appendix 24.0).

Goldberg then outlined the costs in dollars and time for the LWD operations at Barbados. He stressed that the costs would be different in different locations (Appendix 24.1). Shipley agreed that the time invested in LWD on Leg 156 was well spent, the time resulted in less tool loss and less time spent doing the operations because of difficult formations. Goldberg felt that, in the future, LWD costs could be identified and put into the program plan for appropriate sites.

Taylor asked if consideration of an LWD program would be done by PCOM on a case-by-case basis or would there be a more general policy? Shipley felt the Barbados was an unusual case because LWD was a very expensive way to log two holes. There was a very restricted range of holes that would be appropriate to use LWD on. He thought that PCOM would begin to see proposals for minilegs to use LWD to twin wells that were on margins. PCOM concluded the discussion and deferred any further policy statement about LWD until a later date.

As a last item, Larsen asked PCOM to adopt the following consensus in thanks to Lewis and the University of Washington JOIDES Office for their service to ODP in the past two years.

PCOM Consensus, August 1994 - JOIDES Office

PCOM thanks Brian Lewis and the University of Washington JOIDES Office, Bill Collins, Karen Schmitt and Sam Clark, for having Chaired and served PCOM during the period 1992-1994. During this period PCOM has had several complex issues to deal with. Nevertheless, Brian and the JOIDES Office have, with great care and vigor, lead the program through a difficult and challenging period.

Meeting Adjourned ..... *12:30 pm*

APPENDICES

APPENDICES

for August 1994 PCOM

COUNCIL MEETING SUMMARY

1. NO SUPPORT FOR INCREASE IN CONTRIBUTION LEVEL IN 1996

2. JOIDES AND JOI MUST EXAMINE AND REDEFINE SCIENTIFIC, OPERATIONAL AND FINANCIAL PRIORITIES WITHIN PRESENT BUDGET LEVELS.

3. PLANNING LEVEL ASSUMES 6 INTERNATIONAL PARTNERS AND A $44.9 MILLION FUNDING BASE.

4. CONSENSUS TO ALLOW PARTIAL CAN-AUS MEMBERSHIP TO BE EXTENDED AS IT WORKS TOWARD FULL MEMBERSHIP.

5. BEGAN PROCESS FOR "MID-TERM" REVIEW FOR 1999-2003 PERIOD

   * REVIEW PANEL MEMBERS TO BE APPOINTED BY COUNCIL

   * <u>WILL REVIEW BY JANUARY 1996</u>:

     ACCOMPLISHMENTS AND FUTURE GOALS

     CURRENT AND PROJECTED FACILITY REQUIREMENTS

     ORGANIZATIONAL AND MANAGEMENT STRUCTURE

     RESOURCE REQUIREMENTS

6. COUNCIL MET WITH STA/JAMSTEC TO DISCUSS OD-21

   * NEED BETTER DESCRIPTION OF MANAGEMENT, COST AND ORGANIZATIONAL STRUCTURE FOR OD-21

   * PROPOSED SCHEDULE FOR INTERNATIONAL COMMITMENTS IN 1996 IS TOO EARLY !

Appendix 1.1

ODP BUDGET

FY 1994

1. NSF HAS APPROVED $600K INCREASE FOR COMPUTER AND DATA BASE UPGRADE.

   * STILL HAVE CONCERNS ON PROCESS AND PROCEDURES FOR MONITORING

FY 1995

1. TARGET FIGURE REDUCED TO $ 44.0 MILLION

   * CAN-AUS-TAI SITUATION IS UNCERTAIN

   * REDUCED TARGET ASSUMES 5 PARTNERS AND U.S.

   * $44.9 MILLION TARGET LIKELY WITH PARTIAL CAN-AUS-TAI MEMBERSHIP

2. BECAUSE OF LEAD TIME REQUIRED FOR STAFFING DECISIONS AND PRESENT UNCERTAINTY, CAN-AUS SCIENTISTS ARE NOT BEING INVITED ON SHIP BEYOND LEG 158.

NSF ITEMS

1. NSF FY 1995 BUDGET IS STILL IN CONGRESS.
   HOUSE RECOMMENDING 5 % INCREASE AND SENATE 17%
   RESEARCH INCREASES OF 2.5% AND 6.0%.

2. ODP BUDGET LIKELY TO BE LEVEL OR SLIGHT INCREASE

3. ODP SCIENCE ITEMS

   WILL SUPPORT 6 FIELD PROGRAMS IN 1995

   CALIFORNIA MARGIN, MONITORING AT TAG AND BARBADOS, ANTARCTIC DISCORDANCE, MIDDLE VALLEY, TAIWAN MARGIN

   USSAC HAS RECENTLY SUPPORTED A WORKSHOP TO PLAN EXPERIMENT PROGRAM FOR MIDDLE VALLEY

4. OCEAN SCIENCES DIVISION DIRECTOR - GRANT GROSS - WILL RETIRE AT THE END OF THE YEAR.

Appendix 2.0

Engineering Development Review Committee (EDRC)

MANDATE: (EXCOM, February 1994)

The EDRC should review two (but see below) components of engineering development in JOIDES and at ODP:

1. Engineering development has been a key component of ODP. New technologies developed during ODP, including APC, HRB, free-fall reentry cones, etc., have greatly aided the program's ability to attain its scientific goals. However, a specific review of the engineering development program has not been conducted. With greater dependency on new technological advances, it is appropriate that such a review be completed.

- The EDRC is asked to review and comment on the engineering development program within ODP and if necessary, recommend changes to the program structure used for engineering development.

2. The mandate of TEDCOM, as recommended by the ASRC, and approved by EXCOM in February 1994, is:

"TEDCOM is responsible for recommending to PCOM drilling tools and techniques to meet the objectives of the scientific plan and for monitoring the progress of their development through liaison with the ODP-TAMU Engineering Development Department."

- The EDRC is asked to review the TEDCOM/ODP-TAMU/PCOM interaction in the context of this mandate.

3. (added subsequently, following discussions among the PCOM Chair, JOI, Inc. and NSF)

- The EDRC should examine past and ongoing relationships between ODP-TAMU and its engineering development subcontractors, with a goal of optimizing efficiency of communications and ensuring cost effectiveness.

Engineering Development Review Committee (EDRC) (cont.)

Members: K. Becker (Miami), Chair; J. Delacour (France), D. Eickelberg (Germany), E. Maidla (representing Australia), W. Martinovich (U.S., consultant), A. Skinner (UK).

Liaisons: J. Austin (JOI, Inc.), T. Francis (ODP-TAMU), B. Lewis (PCOM), E. Shanks (TEDCOM).

Meetings: May 2-4, 1994, College Station
June 14-16, 1994, Edinburgh

Reporting: to EXCOM/ODP Council at their June 1994 meeting.

Logging While Drilling: Leg 156 (N. Barbados)

(Definition: gamma-ray, resistivity, neutron porosity + density, sonic logging while drilling ahead, without coring. Goal: high-quality petrophysics in unstable geologic sections.)

- a post- (1992) scheduling, post- (1993) BCOM activity (FY 1994 funds).
- total cost: approx. $172K (coordinated by JOI, Inc., ODP-TAMU and BRG).
  - $152 K from ODP-TAMU (primarily savings on day-rate).
  - $20K from BRG.
- very successful!

— another advantage → uses the same wireline system as is used for coring, which enhances correlation potential with (future) sampling (not true for coring vs. wireline logs).

Mandate: Performance Evaluation Committee-IV - Ocean Drilling Program

Evaluate the management and performance of the prime contractor (i.e., JOI, Inc.) and subcontractors (i.e., Texas A&M University/Science Operator and Lamont-Doherty Earth Observatory's Borehole Research Group/Wireline Services), and recommend action where required. Efficiency, cost and effectiveness in their delivery of services are the principal concerns.

The committee should consider, but not be limited to, issues such as:

- the effectiveness of JOIDES short- and long-term scientific planning
- the integration of scientific ocean drilling with other ongoing international earth science initiatives
- the effectiveness of the publication system

JOI, Inc. will brief the committee on the many issues facing the Ocean Drilling Program and its future renewal at the outset of its deliberations.

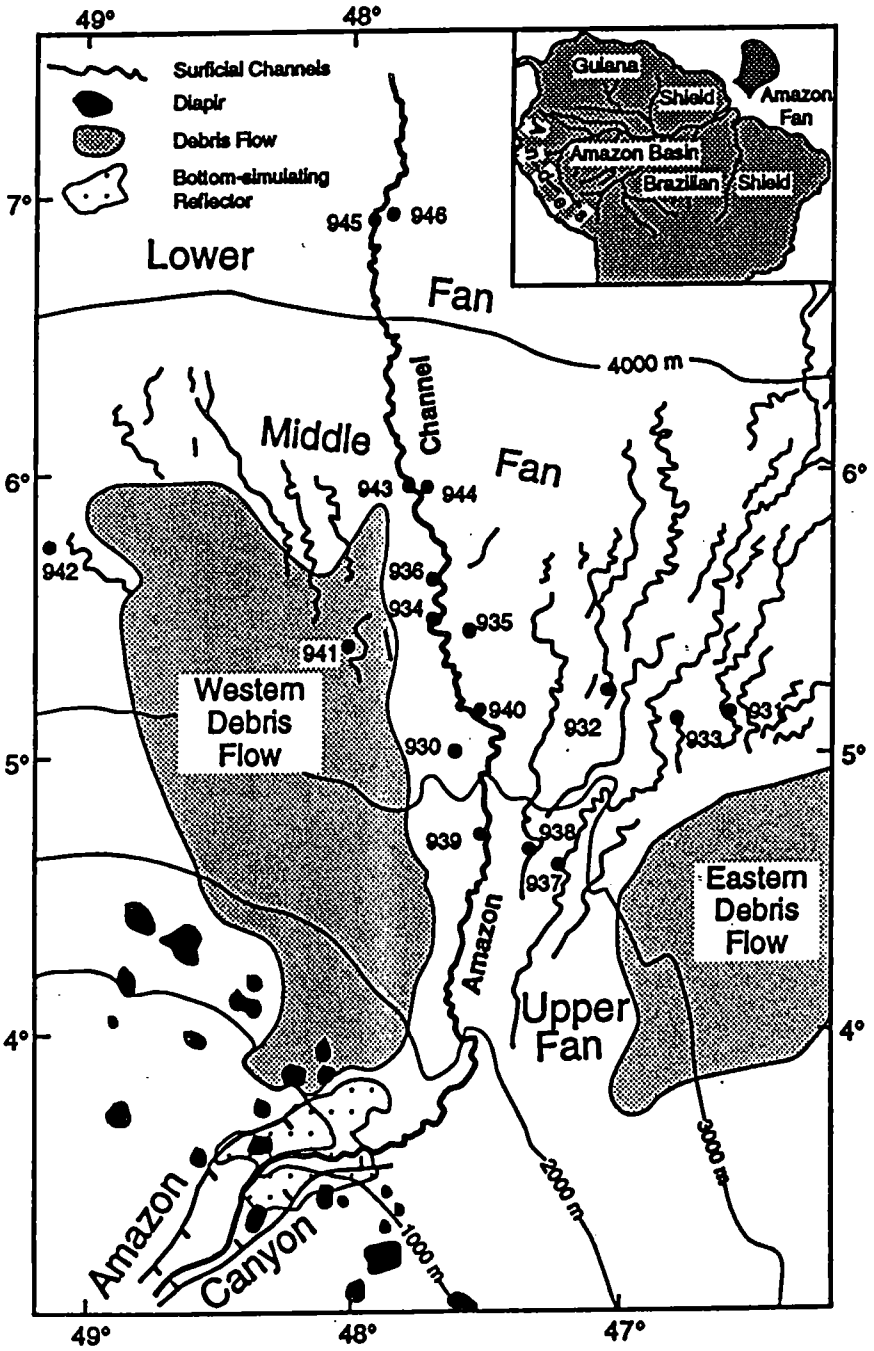
***

Projected Activity: (1) JOI, Inc. is forming PEC-IV now.

(2) PEC-IV will begin its work by ~ October 1, 1994.

(3) PEC-IV will deliver its report to JOI Board of Governors (~spring, 1995), who will then review results with subcontractors. EXCOM/ODP Council should receive the report at their June 1995 meeting. PCOM should have the report for perusal/action at their August 1995 meeting.

Appendix 3.0

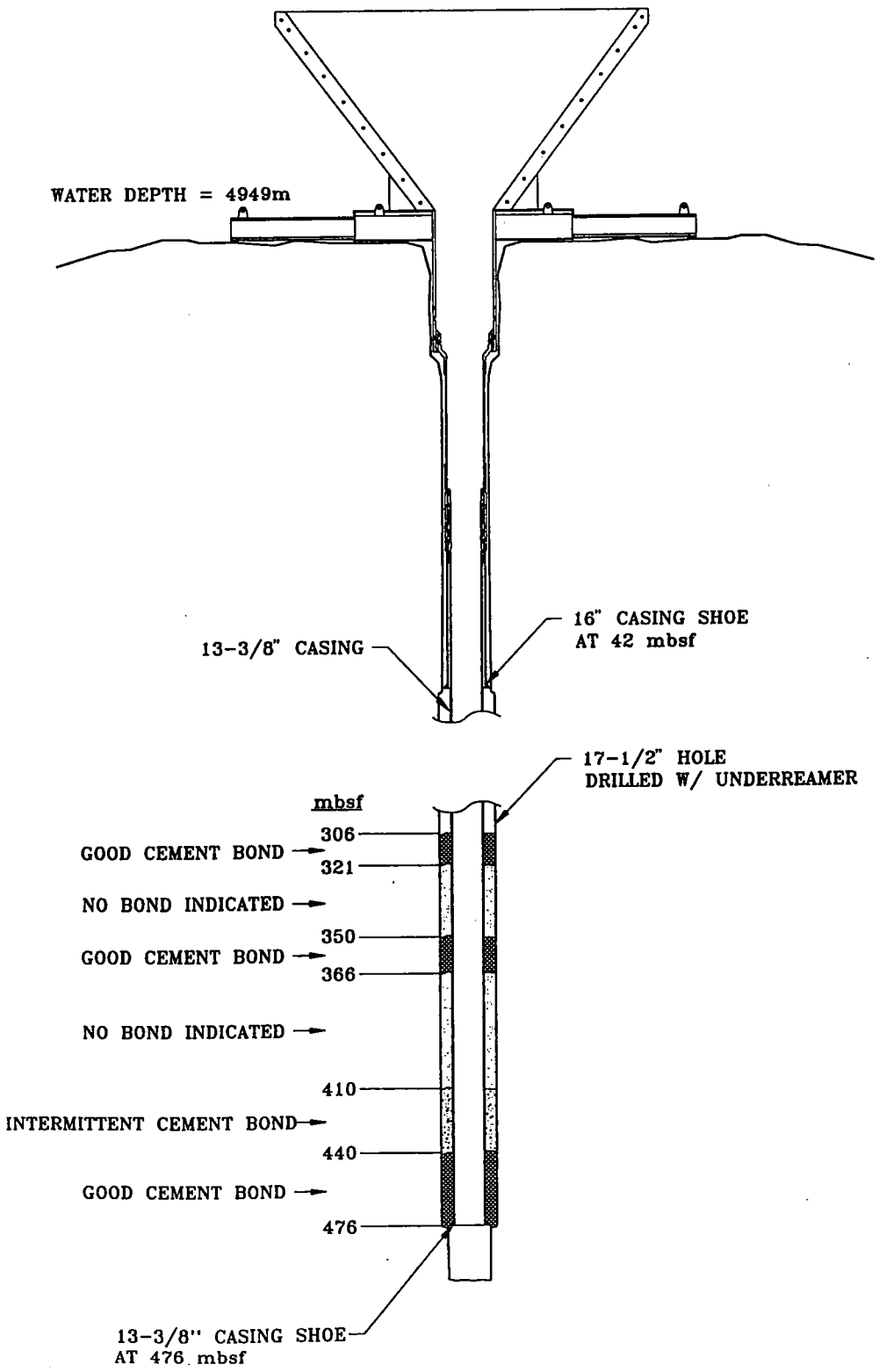

49°
48°
47°
7°
6°
5°
4°
Surficial Channels
Diapir
Debris Flow
Bottom-simulating Reflector
Guiana Shield
Amazon Fan
Amazon Basin
Brazilian Shield
Lower Fan
Middle Fan
Channel
4000 m
945
946
943
944
942
936
934
935
941
940
932
933
930
939
938
937
Western Debris Flow
Eastern Debris Flow
Upper Fan
Amazon
Amazon Canyon
2000 m
3000 m
1000 m

LEG 156

NEW OPERATIONS IN SCIENTIFIC OCEAN DRILLING

- LWD
- FIRST TRIPLE-CASED HOLE
- FIRST DEPLOYMENT OF AN UNDERREAMER TO ENLARGE A HOLE PRIOR TO SETTING CASING
- FIRST DEPLOYMENT OF A CASING STRING WITH A DOWNHOLE MOTOR, UNDERREAMER AND BIT BENEATH IT (I.E. DRILLING IN A CASING STRING WITHOUT ROTATING IT)
- FIRST USE OF GRAVEL PACK SCREEN CASING
- FIRST USE OF A BRIDGE PLUG
- FIRST USE OF EXPLOSIVES FOR A SCIENTIFIC EXPERIMENT (SHEAR WAVE VSP)

LEG 156
NORTH BARBADOS RIDGE
SITE NBR-2
HOLE 948D

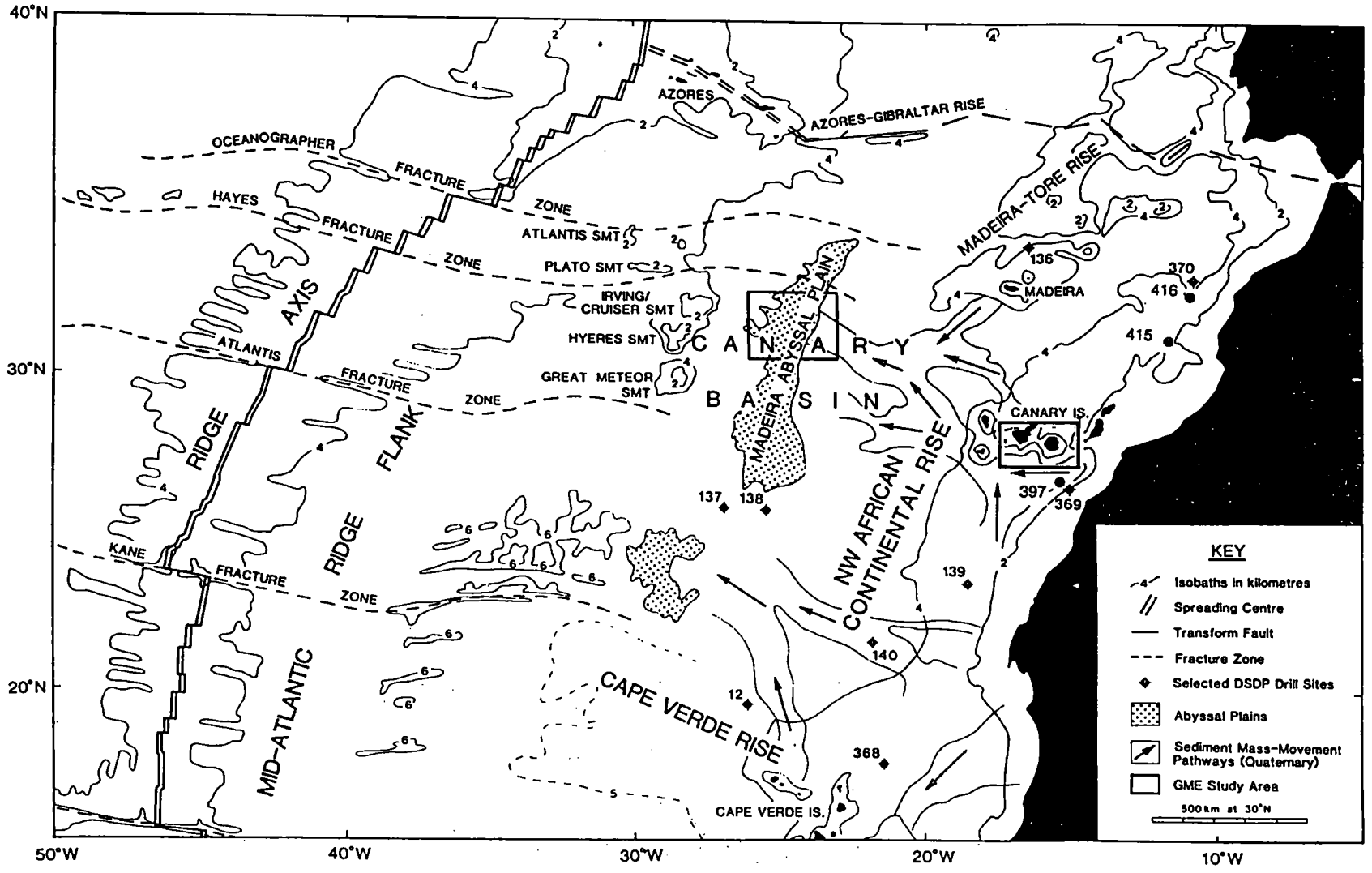


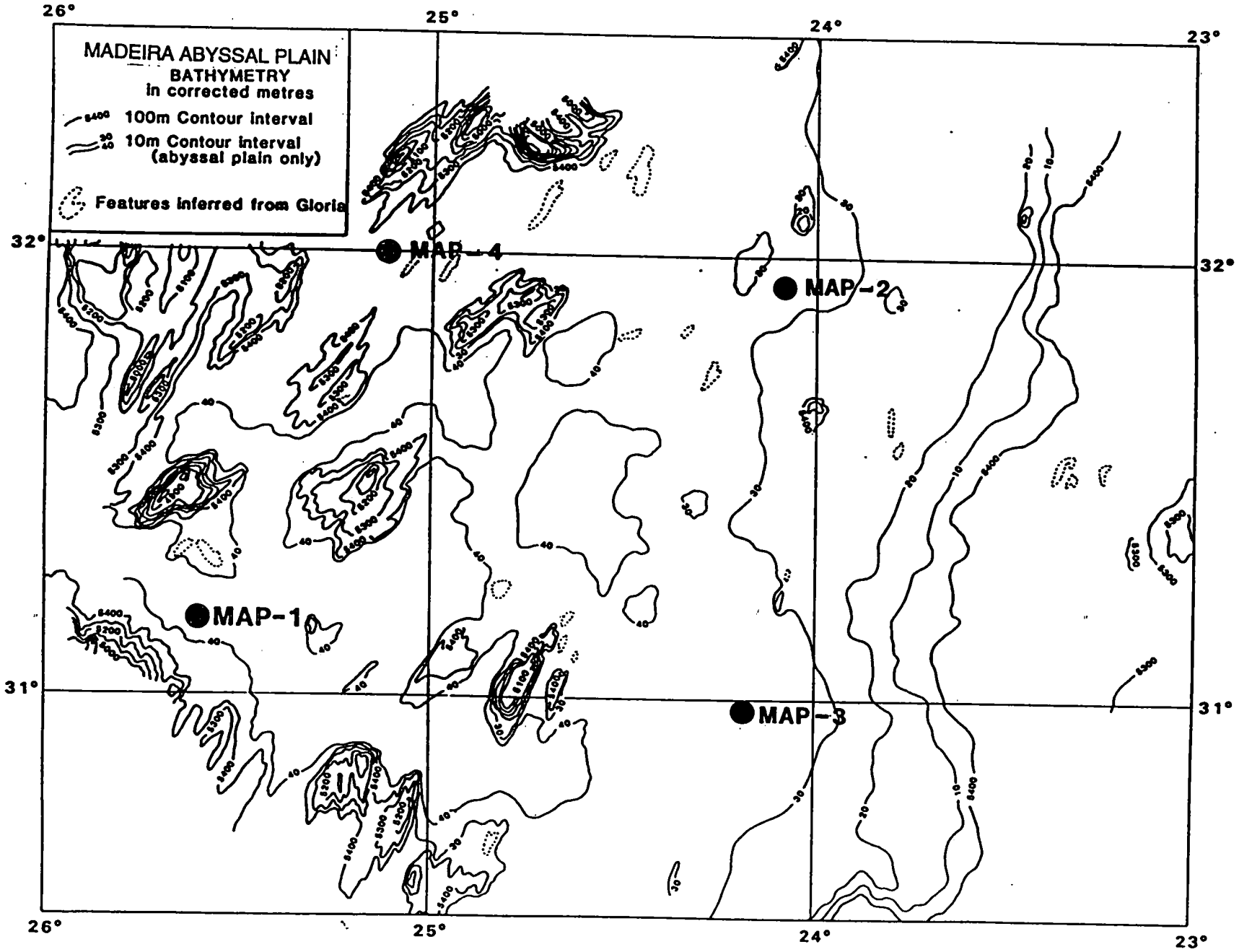
LEG 156

SCIENTIFIC MANNING

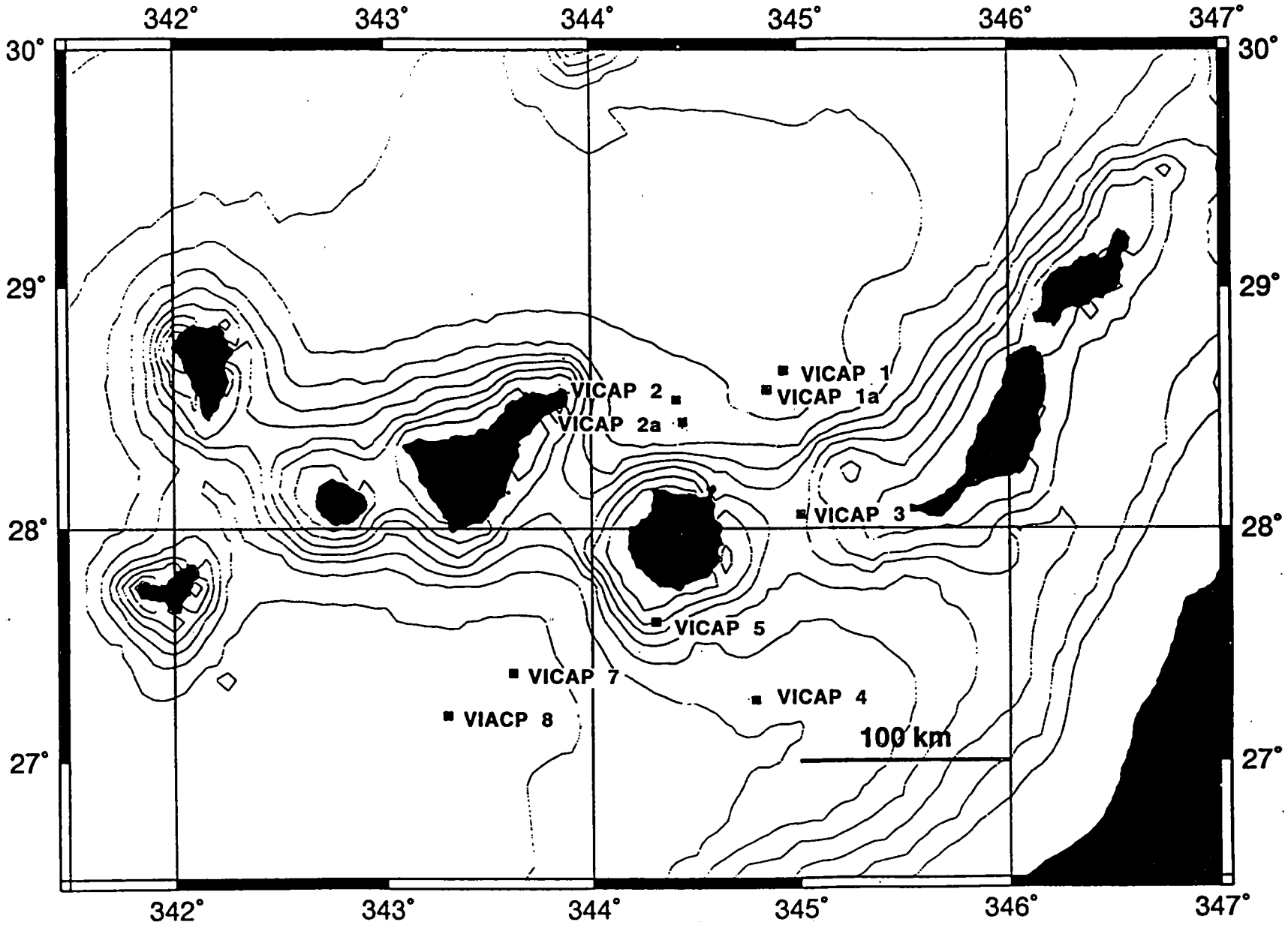
SPECIALITY	NUMBER	CORE-RELATED	DOWNHOLE MEASUREMENTS RELATED
CO-CHIEF SCIENTIST	2	1	1
STAFF SCIENTIST	1		
SEDIMENTOLOGIST	3	3	
PHYSICAL PROPERTIES	4	3	1 (SVSP)
PALEONTOLOGIST	2	2	
PALEOMAGNETIST	1	1	
STRUCTURAL GEOLOGIST	4	4	
ORGANIC GEOCHEMIST	1	1	
INORGANIC GEOCHEMIST	2	1	1
LOGGING SPECIALIST	3		3
SEISMIC SPECIALIST	1		1 (VSP)
	24	16	7

Appendix 3.4

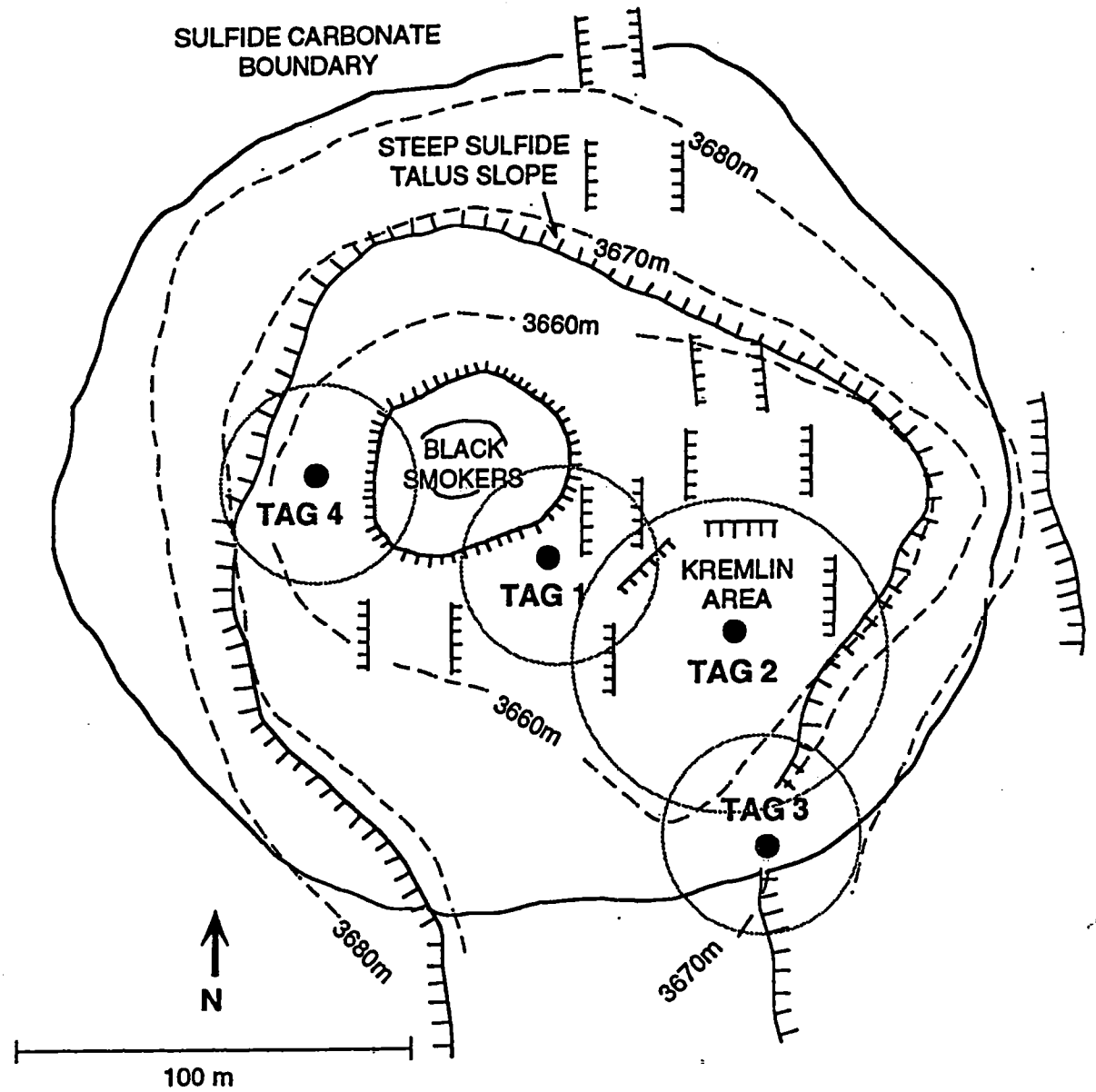

40°N
30°N
20°N
50°W
40°W
30°W
20°W
10°W
AZORES
AZORES-GIBRALTAR RISE
OCEANOGRAPHER
FRACTURE
ZONE
HAYES
FRACTURE
ZONE
ATLANTIS SMT
PLATO SMT
IRVING/
CRUISER SMT
HYERES SMT
GREAT METEOR
SMT
MADEIRA-TORE RISE
MADEIRA
136
370
416
415
CANARY IS.
397
369
137
138
139
140
12
368
CAPE VERDE IS.
CAPE VERDE RISE
MADEIRA ABYSSAL PLAIN
C A N A R Y
B A S I N
NW AFRICAN
CONTINENTAL RISE
ATLANTIS
FRACTURE
ZONE
MID-ATLANTIC
RIDGE
AXIS
RIDGE
FLANK
KANE
FRACTURE
ZONE
KEY
Isobaths in kilometres
Spreading Centre
Transform Fault
Fracture Zone
Selected DSDP Drill Sites
Abyssal Plains
Sediment Mass-Movement
Pathways (Quaternary)
GME Study Area
500 km at 30°N


MADEIRA ABYSSAL PLAIN
BATHYMETRY
in corrected metres
100m Contour interval
10m Contour interval
(abyssal plain only)
Features inferred from Gloria
MAP-1
MAP-2
MAP-3
MAP-4
26°
25°
24°
23°
32°
31°

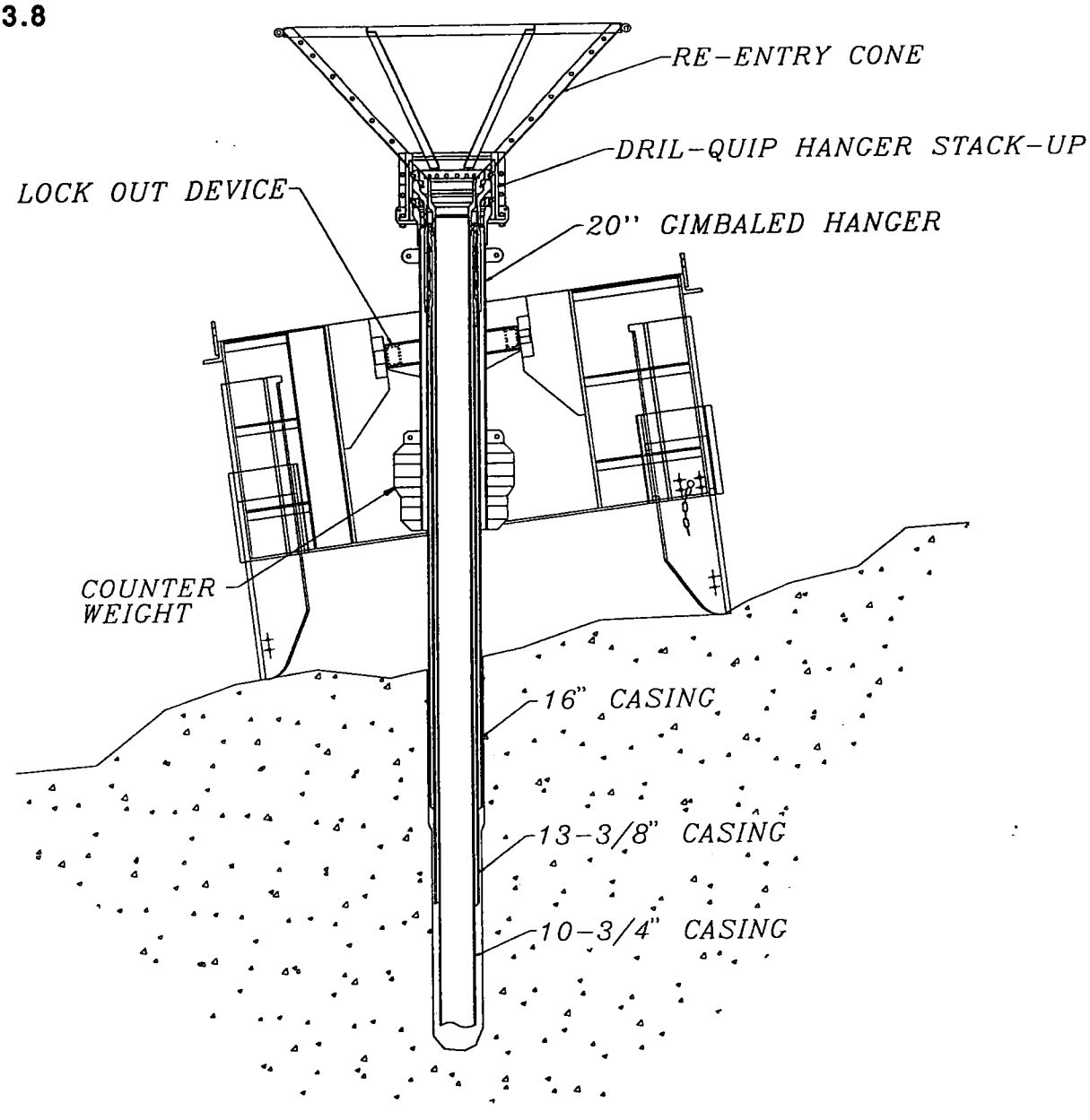
Appendix 3.5


342°
343°
344°
345°
346°
347°
30°
29°
28°
27°
VICAP 1
VICAP 1a
VICAP 2
VICAP 2a
VICAP 3
VICAP 5
VICAP 7
VICAP 4
VIACP 8
100 km

Appendix 3.6


SULFIDE CARBONATE BOUNDARY
STEEP SULFIDE TALUS SLOPE
3680m
3670m
3660m
BLACK SMOKERS
TAG 4
TAG 1
KREMLIN AREA
TAG 2
TAG 3
3660m
3680m
3670m
N
100 m

Appendix 3.8



CASING SIZE, IN	DESIRED HOLE SIZE, IN	OPERATIONS REQUIRED
16	22	DRILL WITH PILOTED UNDERREAMER #16000
13-3/8	17-1/2	DRILL WITH PILOTED UNDERREAMER #11700
*	14-3/4	*MAY BE POSSIBLE TO DRILL WITH 14-3/4 TRICONE OR PILOTED HOLE OPENER IF GOOD FORMATION IS PRESENT
10-3/4	15	DRILL WITH UNDERREAMER #9500
*	12-1/4	*MAY BE POSSIBLE TO DRILL WITH 12-1/4 TRICONE OR PILOTED 12-1/4 HOLE OPENER IF GOOD FORMATION IS PRESENT

TRIPLE CASING HANGER SETUP
FOR THREE CASING STRINGS
(16", 13-3/8" AND 10-3/4")

ODP OPERATIONS SCHEDULE

	Leg	Port of Origin†	Cruise Dates	Days at Sea	Estimated Days Transit/On Site
156	North Barbados Ridge	Barbados 24-28 May	29 May - 24 July 1994	56	1/55
157	VICAP/MAP	Barbados 24-28 July	29 July - 23 September 1994	56	12/44
158	TAG	Las Palmas 23-27 September	28 September - 23 November 1994	56	13/43
	Transit to drydock	Las Palmas 23 November	24 November - 30 November 1994	6	
	Drydock at Falmouth, England				
	Transit to Dakar	Falmouth	24 December - 3 January 1995	10	
159	Eq. Atlantic Transform	Dakar 3-4 January 1995	5 January - 2 March 1995	56	13/43
160	Mediterranean I	Las Palmas 2-6 March	7 March - 2 May 1995	56	15/41
161	Mediterranean II	Napoli 2-6 May	7 May - 2 July 1995	56	11/45
162	Atlantic Arctic Gateways II	Leith 2-6 July	7 July - 1 September 1995	56	15/41
163	Gas Hydrates	Reykjavik 1-5 September	6 September - 1 November 1995	56	13/43
164	DCS Engineering	Miami 1-5 November	6 November 1995 - 1 January 1996	56	

† Although 5 day port calls are generally scheduled, the ship sails when ready.

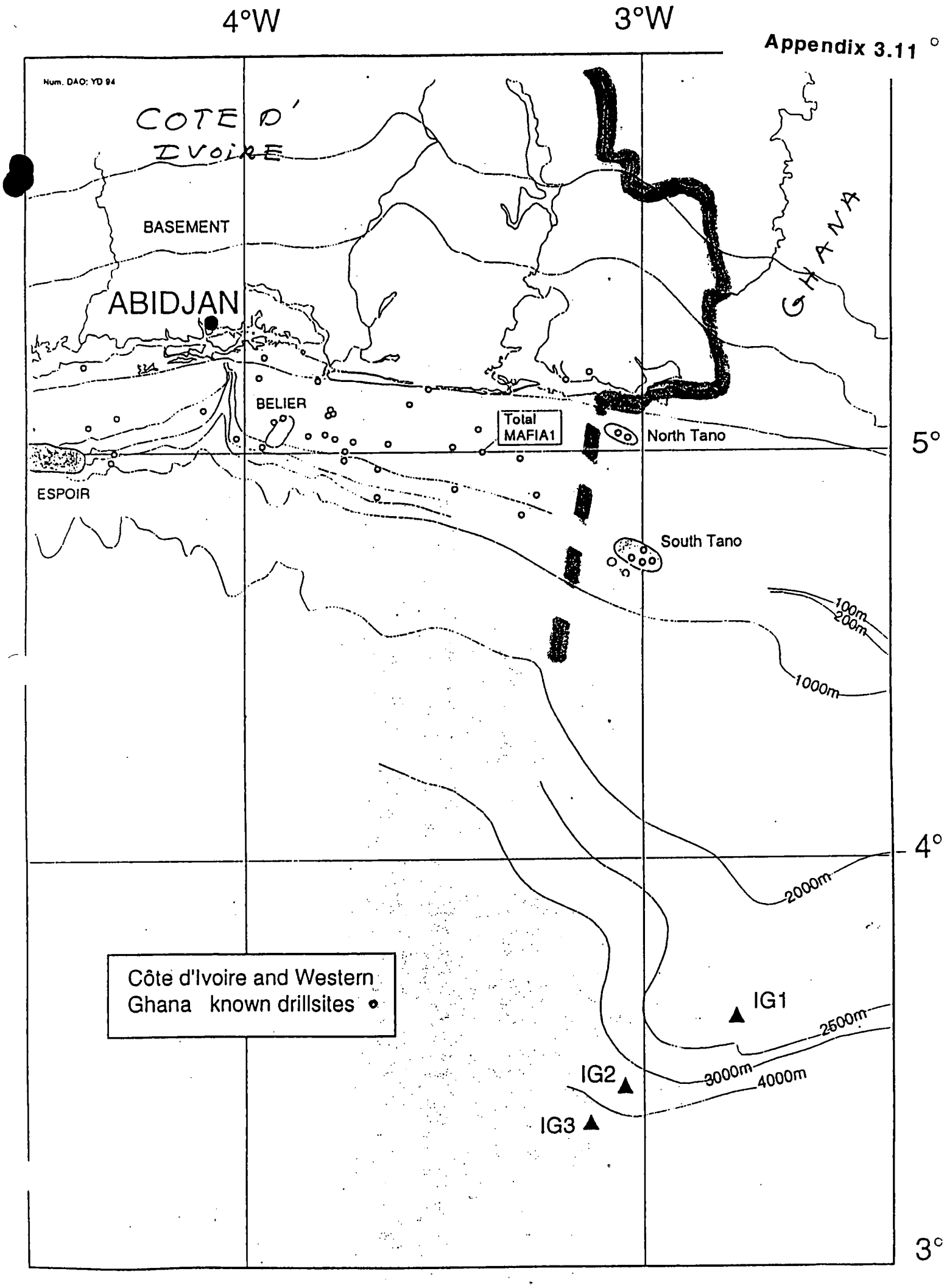
TJ67

21 July 1994

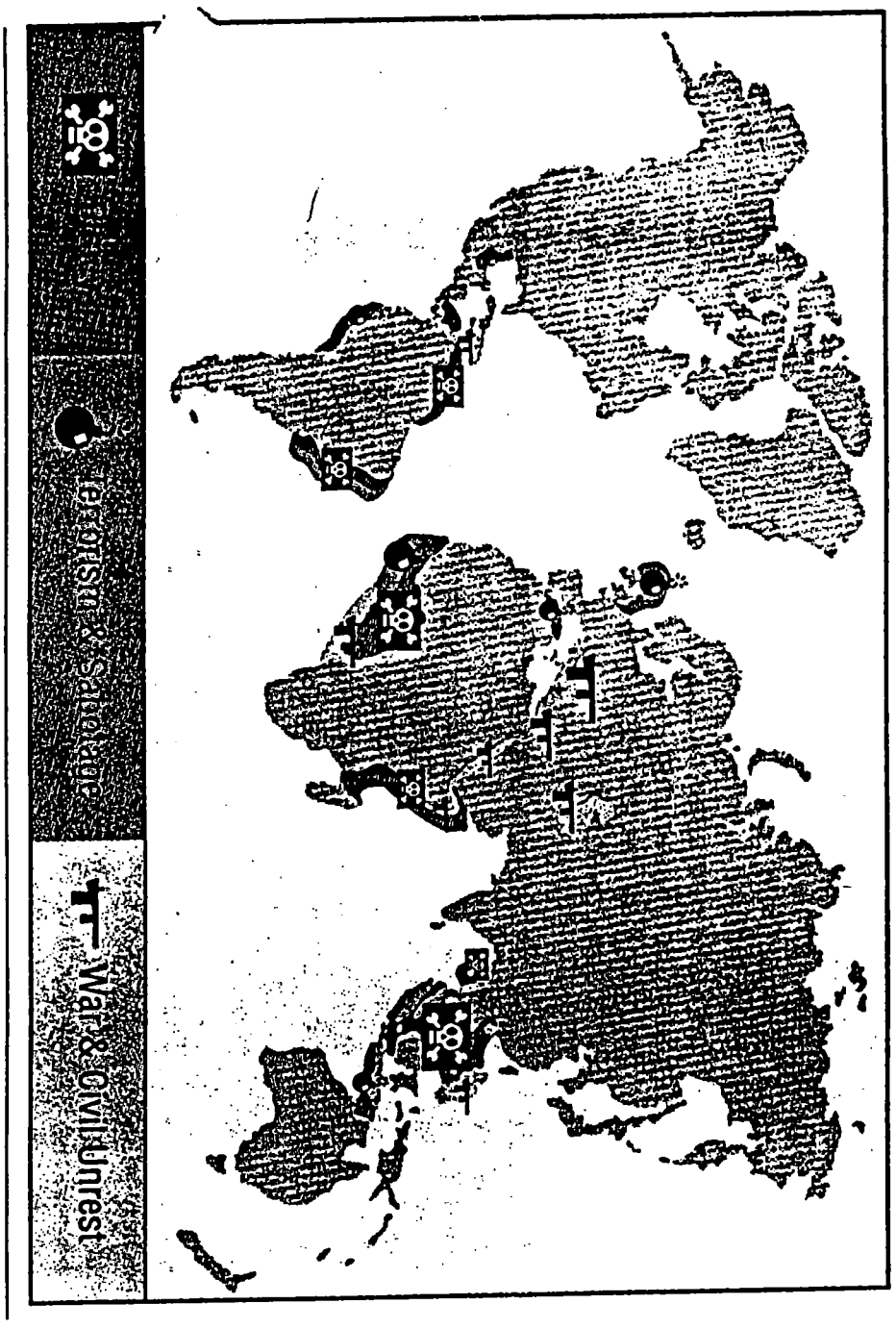
Appendix 3.9

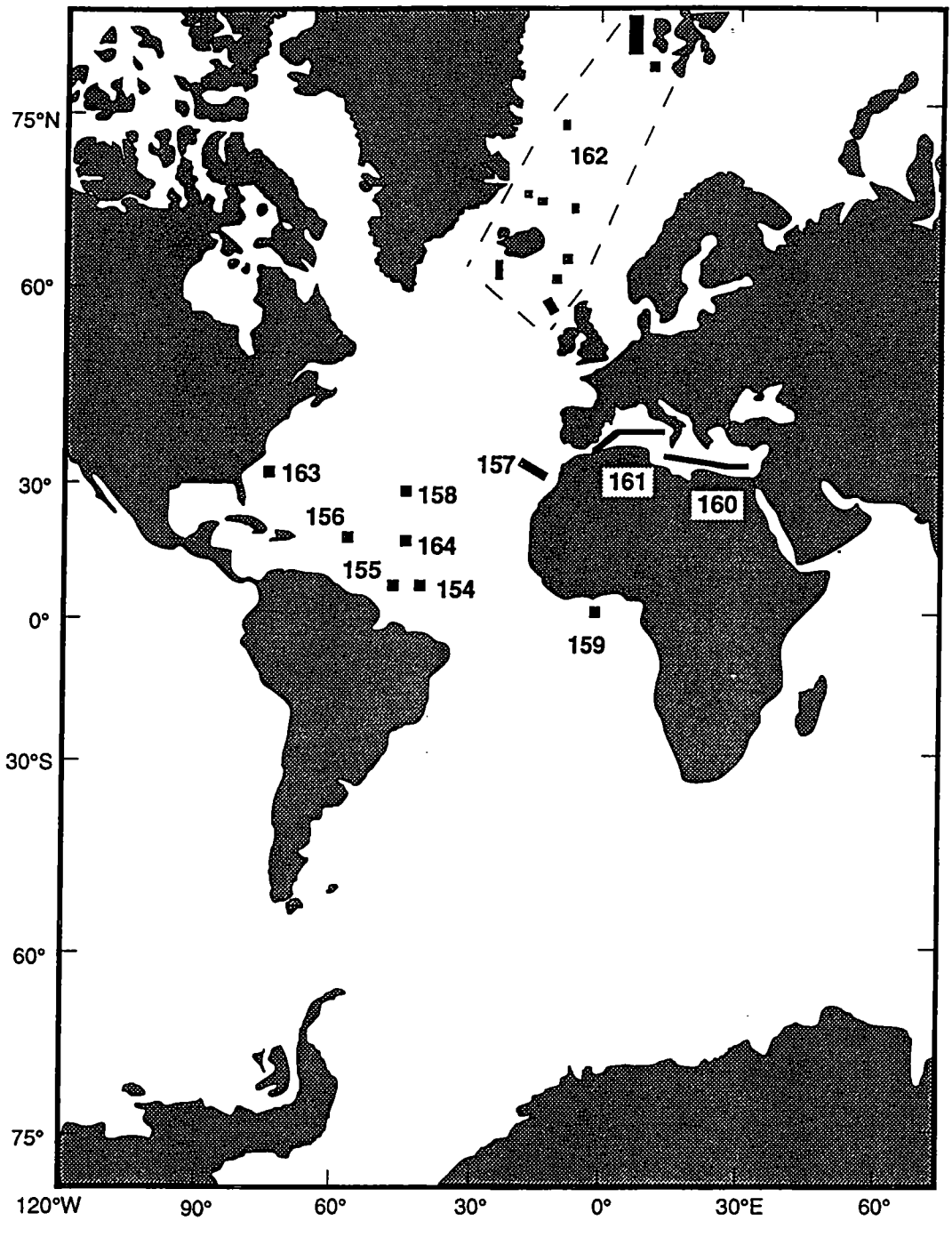
<u>LEG 158</u>	CO-CHIEF SCIENTISTS:	SUSAN HUMPHRIS (WHOI) PETER HERZIG (GERMANY)
TAG	ODP STAFF SCIENTIST: ODP OPERATIONS SUPT: ODP LAB OFFICER:	JAY MILLER GENE POLLARD BRAD JULSON
<u>LEG 159</u>	CO-CHIEF SCIENTISTS:	PAT LOHMANN (WHOI) JEAN MASCLE (FRANCE)
EQUATORIAL ATLANTIC TRANSFORM	ODP STAFF SCIENTIST: ODP OPERATIONS SUPT: ODP LAB OFFICER:	PETER CLIFT GLEN FOSS BURNEY HAMLIN
<u>LEG 160</u>	CO-CHIEF SCIENTISTS:	KAY-CHRISTIAN EMEIS (GERMANY) ALASTAIR ROBERTSON (UK)
MEDITERRANEAN I	ODP STAFF SCIENTIST: ODP OPERATIONS SUPT: ODP LAB OFFICER:	CARL RICHTER GENE POLLARD BILL MILLS

Appendix 3.11



Appendix 3.12




75°N
60°
30°
0°
30°S
60°
75°
120°W
90°
60°
30°
0°
30°E
60°
162
157
161
160
163
158
156
164
155
154
159

<u>LEG 161</u>	CO-CHIEF SCIENTISTS:	MENCHU COMAS (SPAIN/ESF) RAINER ZAHN (GERMANY)
MEDITERRANEAN II	ODP STAFF SCIENTIST: ODP OPERATIONS SUPT: ODP LAB OFFICER:	ADAM KLAUS MIKE STORMS BRAD JULSON
<u>LEG 162</u>	CO-CHIEF SCIENTISTS:	EYSTEIN JANSEN (NORWAY/ESF) MAUREEN RAYMO (MIT)
ATLANTIC ARCTIC GATEWAYS II	ODP STAFF SCIENTIST: ODP OPERATIONS SUPT: ODP LAB OFFICER:	PETER BLUM RON GROUT BURNEY HAMLIN
<u>LEG 163</u>	CO-CHIEF SCIENTISTS:	RYO MATSUMOTO (JAPAN) CHARLES PAULL (UNIV. NORTH CAROLINA)
GAS HYDRATES	ODP STAFF SCIENTIST: ODP OPERATIONS SUPT: ODP LAB OFFICER:	NEW HIRE GENE POLLARD BILL MILLS

BREMEN CORE REPOSITORY (BCR)

- 14,484 M OF CORE NOW RACKED FROM FOLLOWING FIVE LEGS

LEG 151	3020.6 M
LEG 152	1320.1
LEG 153	287.7
LEG 154	5808.2
LEG 155	4047.8

- FIRST SAMPLES DISTRIBUTED — 30 MAY 1994
- FIRST VISITOR (JEFF KARSON, LEG 153 CO-CHIEF) — 23 JUNE 1994
- OFFICIAL OPENING — 14 JULY 1994
- INSTALLATION OF COMPUTER SYSTEM AND TRAINING — 4-17 AUGUST 1994
- LEG 154 SAMPLING PARTY — 19-24 AUGUST 1994

Appendix 3.15

CORE CURATED AT END OF LEG 156 (METRES)

	ECR	WCR	GCR	BCR	TOTAL
DSDP	46,999	50,055			97,054
ODP	29,580		54,152	14,751	98,484
TOTAL	76,579	50,055	54,152	14,751	195,538

CURATED LENGTHS. "CURATED LENGTH" EXCEEDS "RECOVERED LENGTH", MEASURED ON THE CATWALK, BY ABOUT HALF A PERCENT.

Appendix 3.16

MULTI-SENSOR TRACK (MST)

The MST is one of the most routinely used devices on board the *JOIDES Resolution*. The MST measures ephemeral properties of whole cores.

The current system contains:

- Automatic core conveyer and positioning system with a "core boat" system
- Gamma-ray attenuation evaluator (GRAPE)
- P-wave logger (PWL)
- Magnetic susceptibility meter (MSM) which measures for 1 or 10 s periods
- Natural gamma-ray measuring device (NGR)
- 5 PC's operating the instruments

Appendix 3.18

MULTI-SENSOR TRACK (MST)

The proposed system includes:

- a more robust and durable track system
- an integrated computer system housing an integrated software package
- replacement electronics rack for the GRAPE, PWL, and MSM with a better signal/noise ratio and dynamic range
- 1 work-station running all of the instruments on the track and collecting all of the data
- new integrated software

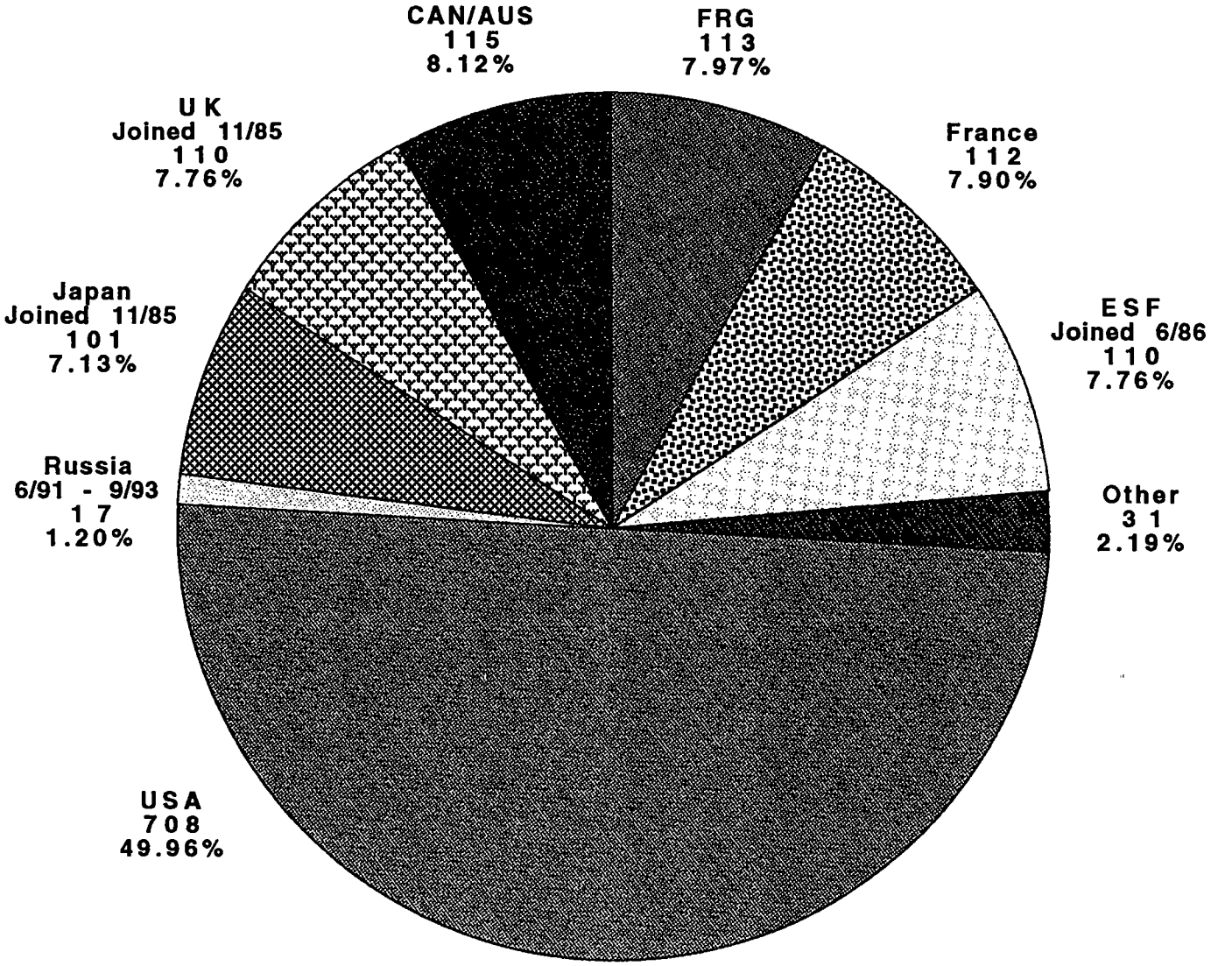
TIME LINE

- 12-18 Months for new system*

* Includes generating RFP, developing hardware and software, and testing new system

FOSSILIST

- Final Beta version is being used on Leg 157
- Fossilist has been distributed for evaluation to 5 paleontologists in the scientific community. Initial feedback has been positive, but the most significant feedback will be received from Leg 157
- An on-line tutorial has been written for Fossilist and is currently being distributed with the program
- Version 1.0 is to be completed by Jan 1995 and will be used on Leg 159



Appendix 3.20

TOTAL = 1417 Participants including Staff Scientists and LDGO/LDEO Logging Scientists

Recent Logging Operations

Leg 155: Amazon Fan - equatorial sedimentation

- Quad tool in 8 holes *(No CSES)*
- FMS in 7 holes
- Geochem tool in 2 holes
- Mag/Susc in 2 holes *(susc worked, mag worked)*
- CLIP 'splicer' deployed on ship

Leg 156: Barbados - accretionary prism decollement

- LWD deployed in Holes 947A and 948A
- Quad tool deployed in Hole 948C
- VSP and CBT (cement bond) run in Holes 948D &949C
- 'Geoframe' processing system installed on ship

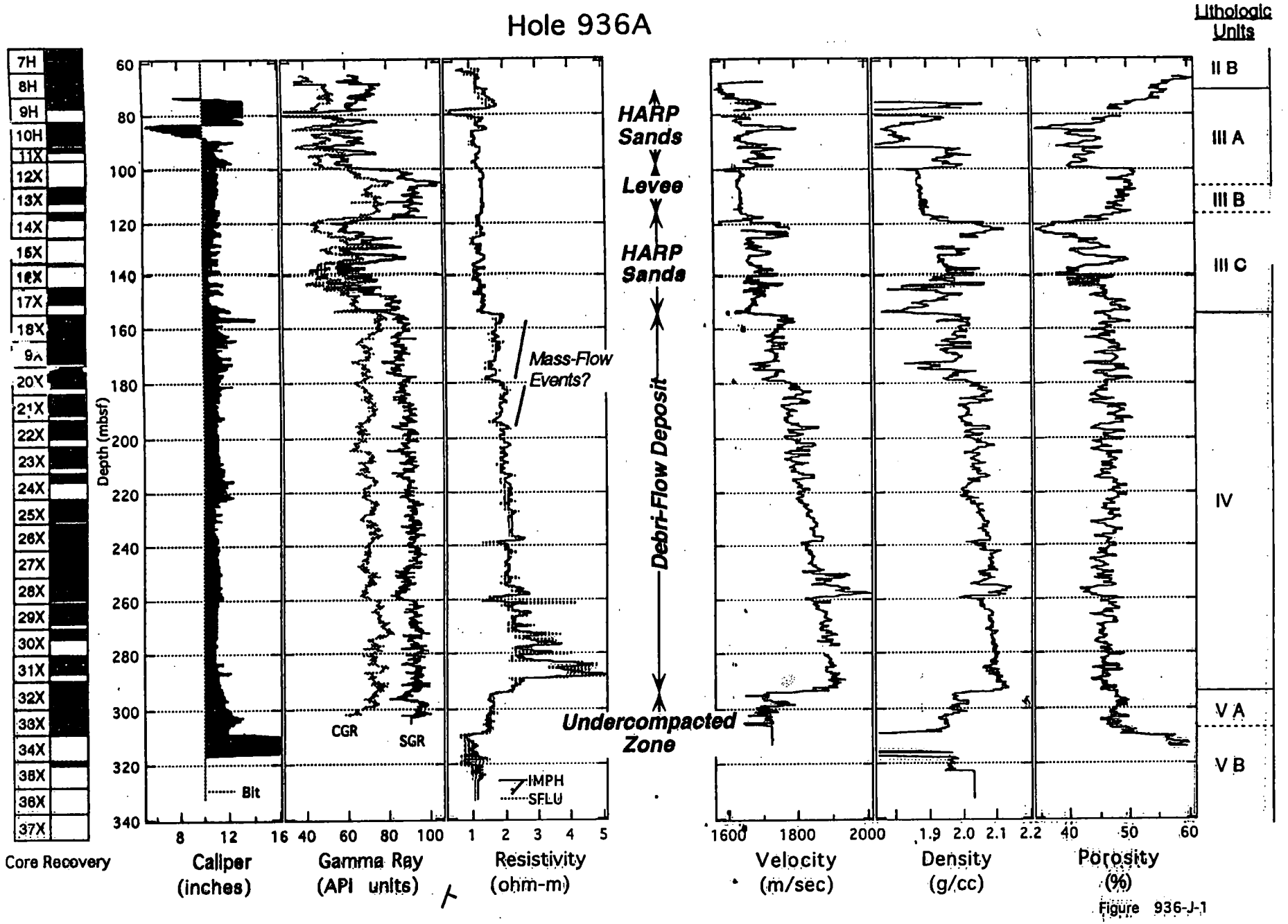


Figure 936-J-1

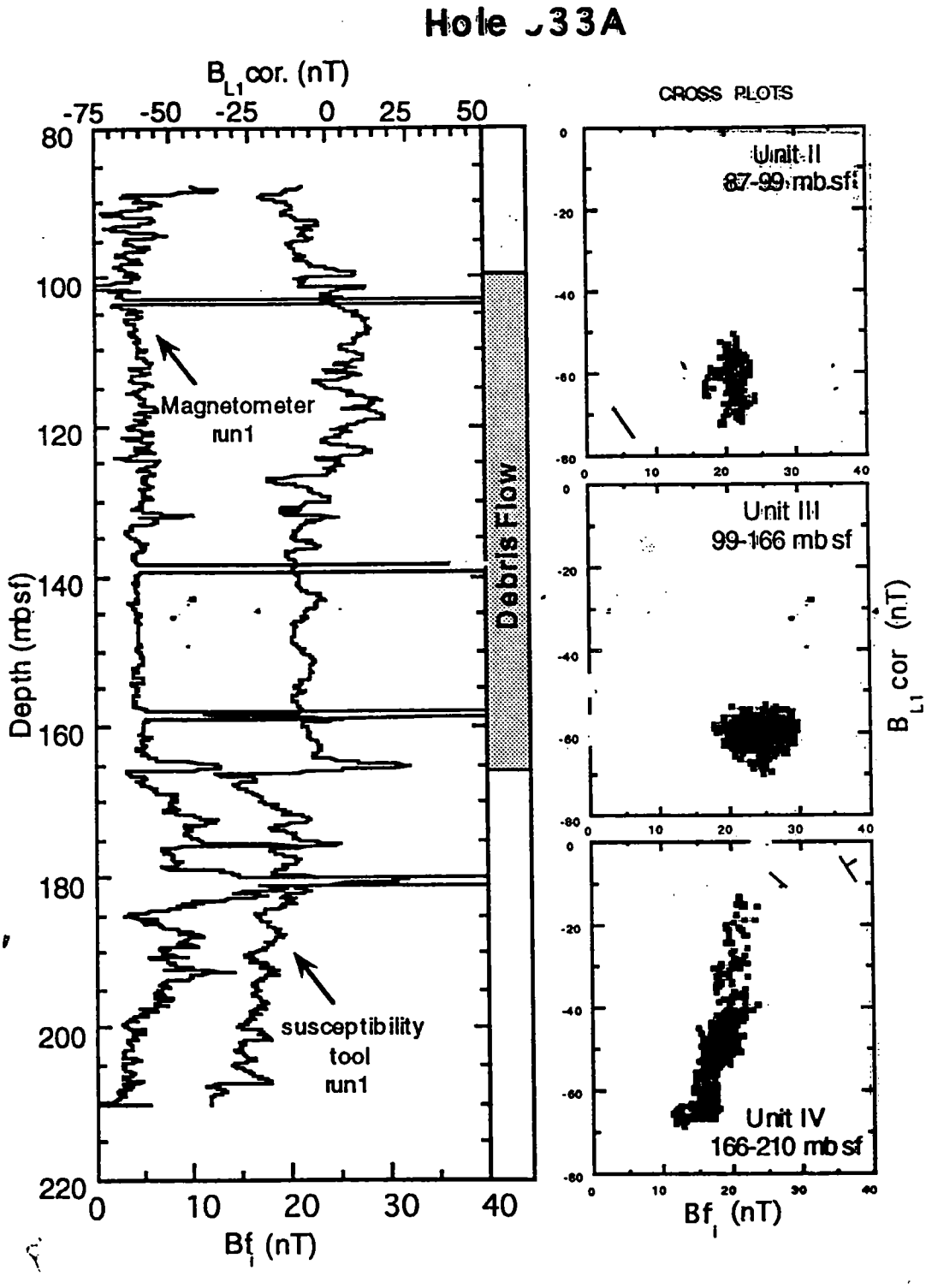
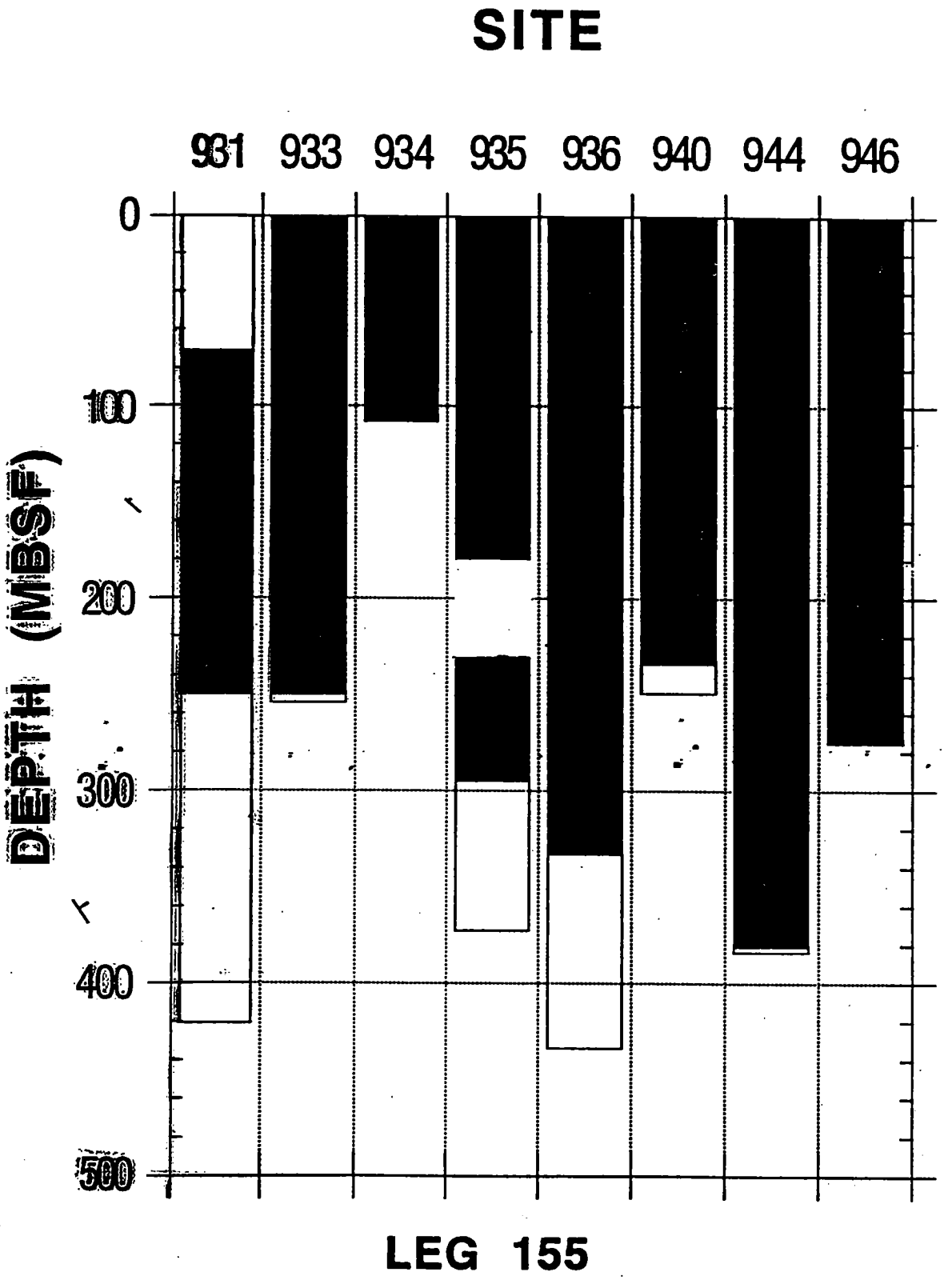
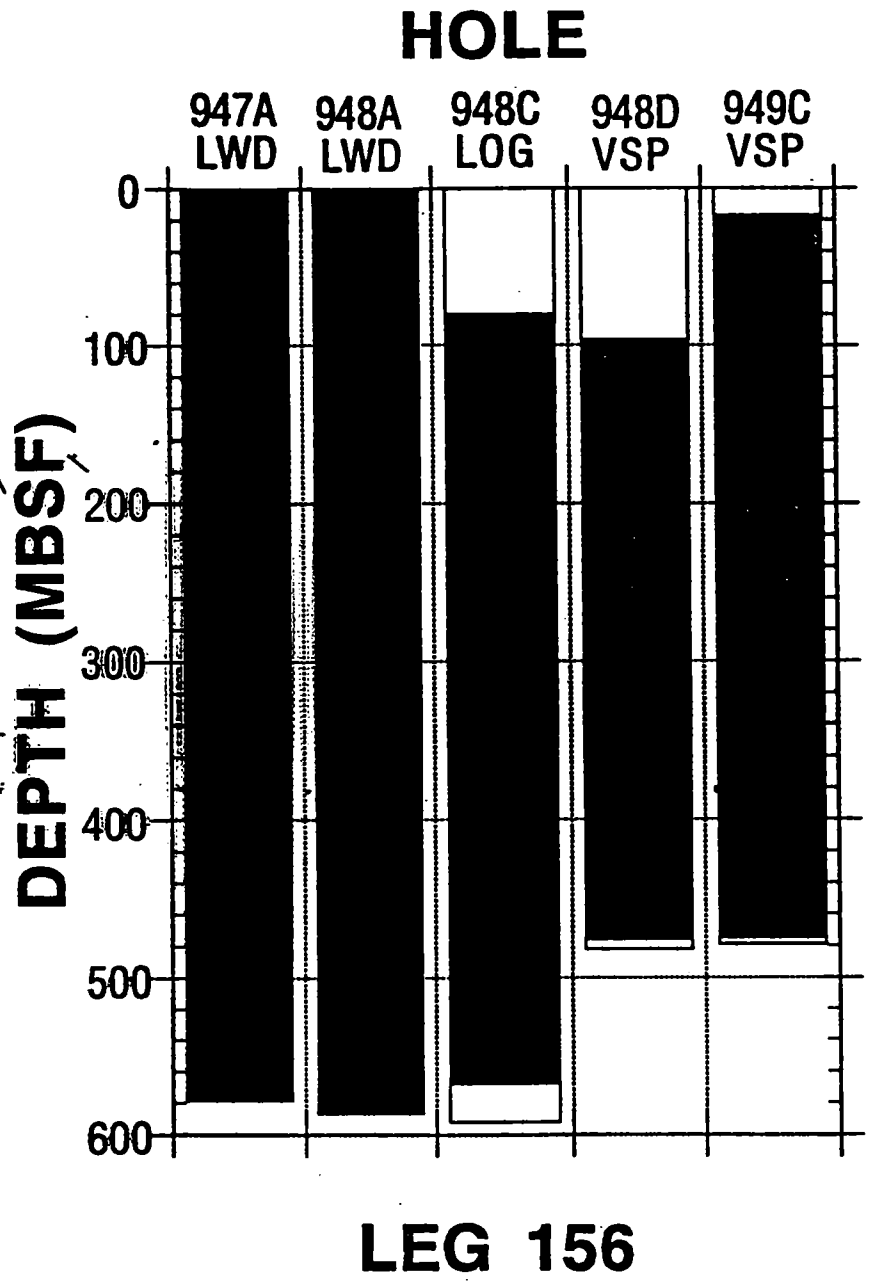


Figure 933-J-9

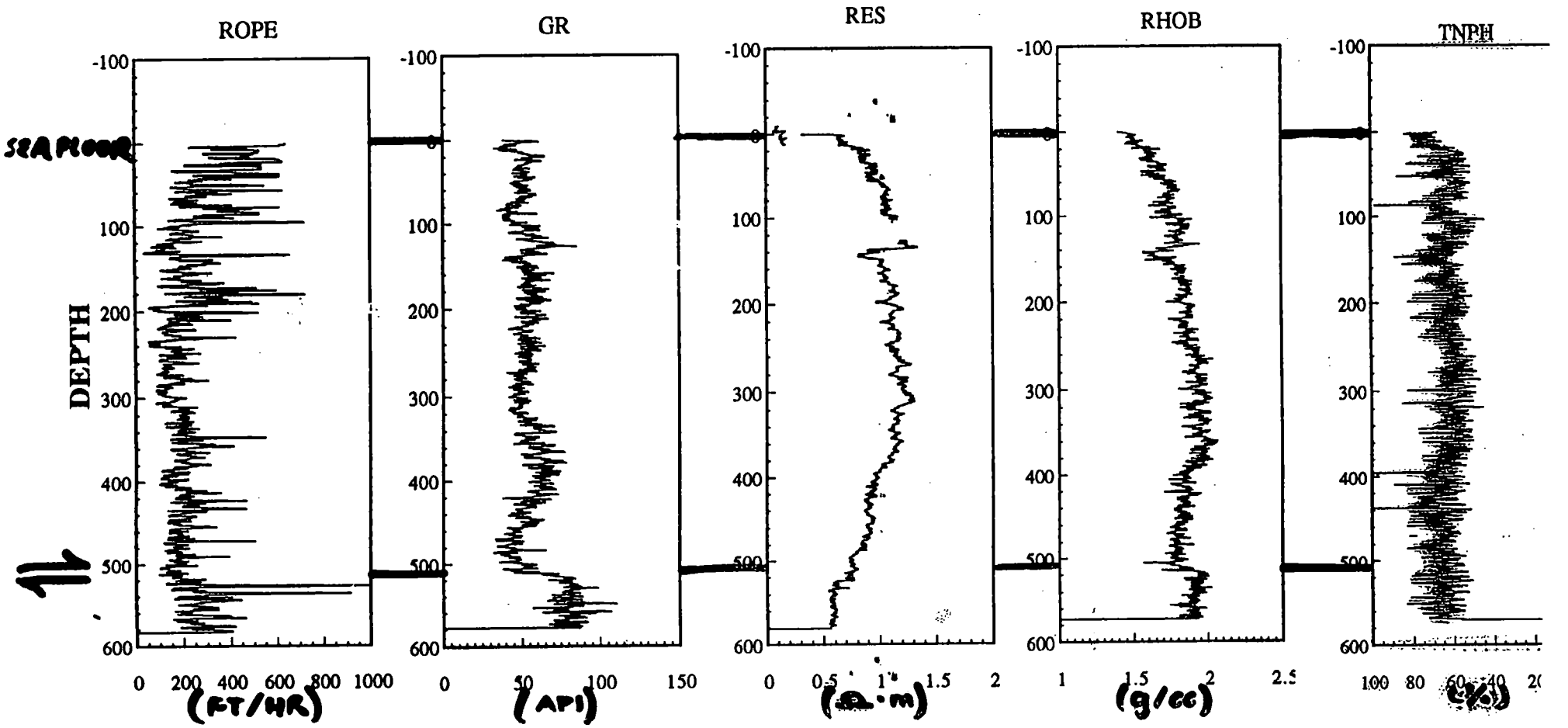
Leg 155

Appendix 4.3


SITE
931
933
934
935
936
940
944
946
0
100
200
300
400
500
DEPTH (MBSF)
LEG 155


HOLE
947A LWD
948A LWD
948C LOG
948D VSP
949C VSP
0
100
200
300
400
500
600
DEPTH (MBSF)
LEG 156

P18A



Appendix 4.5

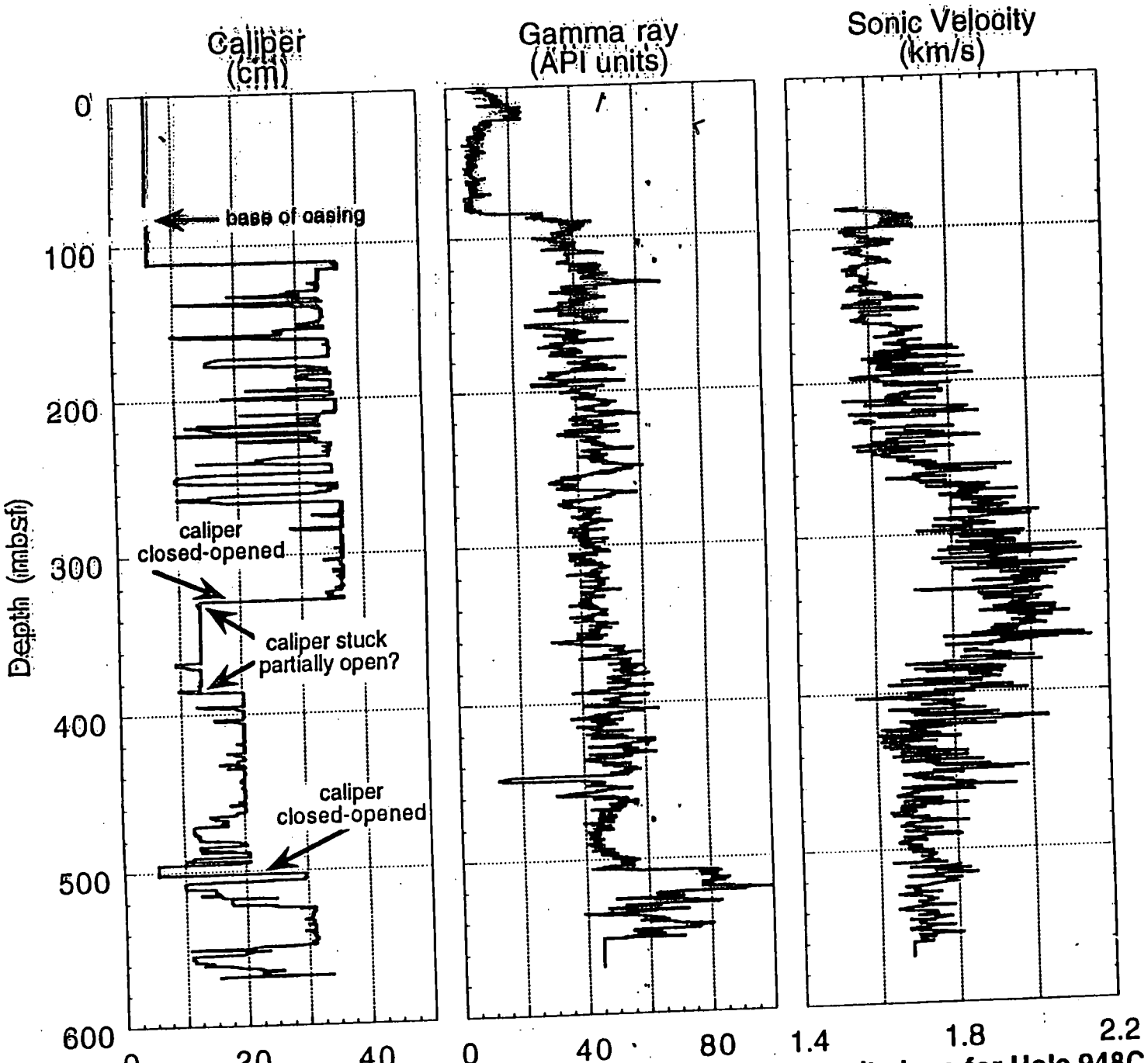


Figure 948-I-2. Open hole caliper, gamma ray, and sonic velocity logs for Hole 948C.

Near-future Logging Operations

Leg 157: VICAP/MAP - evolution of volcanoclastic facies

- standard tools/FMS planned
- 'Geoframe' software available on ship

Leg 158: TAG -- Hydrogeology of mid-Atlantic geothermal vents

- standard tools available
- 'high-T' tools available, pending land tests

Downhole systems development

High-T resistivity tool (CSM)

- tool shipped to LDEO -- end-June
- land test and autoclave -- July-August
- evaluation and shipping for TAG -- end-August

High-T temperature tool (BRGM/LDEO)

- tool shipped to LDEO -- early-June
- land test and autoclave -- July-August
- evaluation and shipping for TAG -- end-August

o

High-T borehole televiewer (DMT)

- informal agreement with BRG for no-cost developmnet and deployment on TAG
- tool shipped to LDEO -- end-July
- land test and autoclave -- mid-August
- evaluation and shipping for TAG -- end-August

Appendix 4.9

Ongoing Initiatives

ODP tape backup

- FMS data transfer to DAT/CDROM

CD-ROM

- Legs 139-150/150x published in IR

Education

- Multimedia "Downhole Tools Guide" for CD-ROM demos at March IHP and April PCOM

- "Downhole Tools Guide" print publication by BRG anticipated in September 1994

- Fall 1994 AGU Special Session:

  "Recent Advances in the integration of downhole, core and seismic data: applications to paleoclimate, stratigraphy, hydrogeology, and crustal evolution"

  Convenors: D. Goldberg, BRG; P. Lysne, DMP

EXCOM REPORT

Summary of JOIDES Executive Committee Motions & Consensuses
June 28 - 29, 1994 Washington, D.C.

EXCOM Motion, June 1994 - EDRC Report
EXCOM accepts the EDRC Report and thanks the Committee and its Chair for its excellent report and constructive recommendations.
EXCOM recommends that PCOM and TAMU (following direction from JOI) evaluate the report's recommendations and implement immediately, where possible, such recommendations and to report to EXCOM on actions taken in January 1995.
Nowell moved, Briden seconded vote: 15 in favor, 1 absent

EXCOM Consensus, June 1994 - PEC IV Mandate
Evaluate the management and performance of the prime and subcontractors, and recommend action where required. Efficiency, cost and effectiveness in their delivery of services are the principal concerns.
The committee should consider, but not be limited to, issues such as:

- the effectiveness of JOIDES short-term and long-term planning
- the integration of drilling with other earth science initiatives
- effectiveness of the publication system

JOI will brief the committee on the many issues facing the program and its future renewal.

EXCOM Motion, June 1994 - FY95 Program Plan Approval
EXCOM endorses the FY95 Program Plan as presented with a $44.9 M budget including the continued upgrade of the data management system.
Should JOI be notified by NSF of any change in the budget total for FY95, EXCOM requests JOI notify the EXCOM Chair in order that the full benefit of appropriate JOIDES committees advice may be utilized to evaluate the impact of any cut and to recommend appropriate responses and plan changes.
Nowell moved, Orcutt seconded vote: 12 in favor, 2 opposed, 1 abstention, 1 absent

Appendix 5.1

EXCOM Motion, June 1994 - OD21 Proposal

EXCOM welcomes and strongly supports the proposed Japanese plan for scientific drilling in the 21st Century, including: construction of a riser drill ship; their expectations of a substantial contribution towards scientific outfitting and operation of this ship by partner countries; and their plan to schedule the ship through a JOIDES-like structure.

However, many unresolved issues exist relating to scientific outfitting, operation and management of the proposed Japanese drill ship. EXCOM and STA/JAMSTEC recommend that a small Working Group be convened in the near future to identify these issues an suggest mechanisms to resolve them. The WG should consist of appropriate representatives of ODP and STA/JAMSTEC, the present and future Chairs of PCOM and EXCOM, and the JOI ODP Director.

EXCOM recognizes that a major step in technology is required to match the need for advanced studies of Earth systems in the 21st Century.

EXCOM requests that PCOM develop the rationale and questions that would be addressed by a potential multiplatform operation, including riser drilling.

Nowell moved, Malpas seconded vote: 13 in favor, 1 abstention, 2 absent

BUDGET COMMITTEE REPORT: ADDENDUM

BCOM meeting 20 May, 1994, Washington, DC.
(Final Addendum revised and sent to JOI Inc. 26 May 1994 by BCOM
)

ISSUES TO BE RESOLVED

- Recommendations for a new ODP data management system by the ad hoc Computer RFP Committee.

- How did TAMU intend to institute the mandated base-budgetary cut of $323,009?

- How did LDEO intend to institute the mandated base-budgetary cut of $195,787?

- Need to reallocate $252,000 of the JOI budget because of change in plans at JOI

Appendix 6.1

BCOM ACTIONS

Because of potential conflicts of interest, both the University of Texas and LDEO representatives were unable to participate in the discussions on the data base issue. Also, those who were part of the discussion process were required to sign non-disclosure agreements.

BCOM was satisfied with Computer RFP Evaluation Committee report and recommended the authorization of $900,000 in the new fiscal year (FY95) for this purpose, bringing the total recommended amount to $1.5 million in FY94 and FY95. Implicit in this recommendation was the understanding that approximately $1.5 million would need to be authorized for FY96 to complete the task. BCOM was advised and accepted the recommendation from the Computer RFP Evaluation Committee that a Steering Committee be appointed to advise ODP/TAMU on the implementation of the new computer system and that the chair of this committee should be an advisor to TAMU in contract negotiations between the vendor and TAMU. BCOM recommends to JOI Inc. that it move to implement the steering committee as rapidly as possible.

BCOM

The base-budget cuts at TAMU were explained by Philip Rabinowitz and Timothy Francis. The primary effect of the cuts is the loss of two shipboard technicians. Otherwise, the science operations were largely unaffected.

The base-budget cuts at LDEO were accomplished with an 11% cut more or less across the board, including similar reductions to the foreign partners.
BCOM was concerned that the LDEO approach was not in keeping with the spirit of the original BCOM recommendation, which requested that the foreign partners be kept as whole as possible. However, BCOM accepted LDEO's approach and explanation.

The issue of reallocating $252,000 of the originally recommended JOI budget drew considerable discussion. BCOM recommended that these funds
should be used by JOI in the following categories and approximate amounts:

- Expenses for the steering committee for the new data management system (20K)
- Future "internationalization" expenses, such as for EXCOM/PCOM or other
ODP scientists to accompany the JOI Director to potential partner countries,
(50K)
- Reinstate some of the technician support at TAMU that was cut in the past recommendation, (100K)
- DCS costs if the land test proves successful, (50K)
- Reinstate 15K each to the Leicester and NEB/IMT subcontracts.

BCOM requests that JOI Inc. consult with BCOM should a distribution of these special funds be greatly different from this recommendation.

Appendix 7.0

PPSP REPORT

Reviewed:

- leg 160 Western Med, Alboran + Medsaps

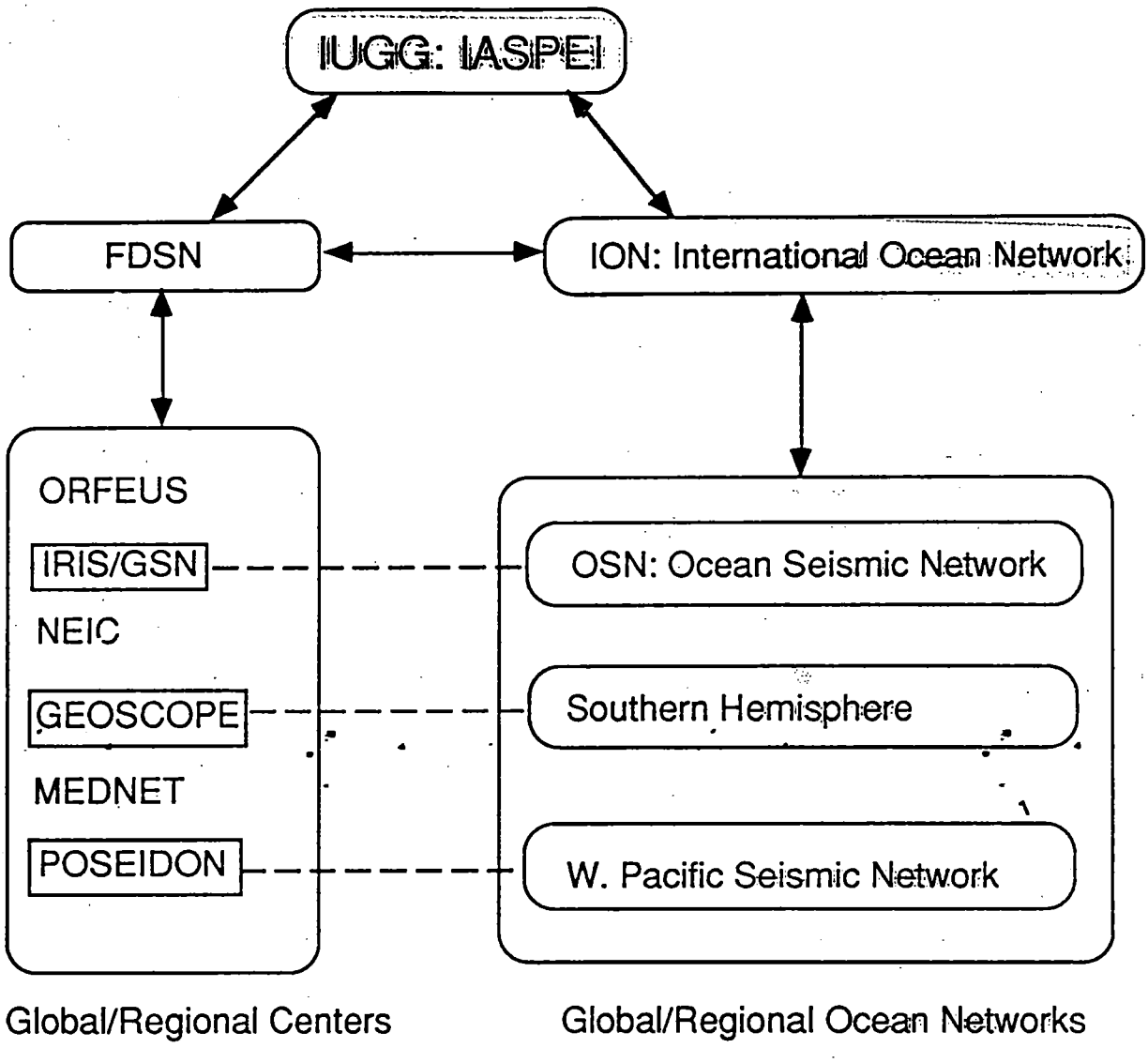
All sites approved as requested (Alb2, 2A, 3, 4 + Medsap 1 through 7)

- leg 161 Eastern Med, Med Ridges + Medsaps

All sites approved with restrictions on the order of drilling and the depth of drilling at 1 site on the sea-mount. Some alternate sites will be reviewed in October.

Previewed
- Costa Rica

Excellent data and no particular safety problems.



ION Goals

- cooperation in the development of critical elements of the observing systems
- standardization of system specifications
- standardization of those elements of the system that would allow shared maintenance of the observatories
- development of common plans for the use of resources such as provided by the Ocean Drilling Program
- timely exchange of data
- coordination of siting plans

Appendix 8.1

Wed, Aug 4, 1993

Plan

Phase 1. Pilot Experiments ~ 1996

- in land boreholes such as at Piñon Flat
- in DSDP/ODP holes, such as 396B, 794D, and 843B
- at seafloor and buried environments for comparison

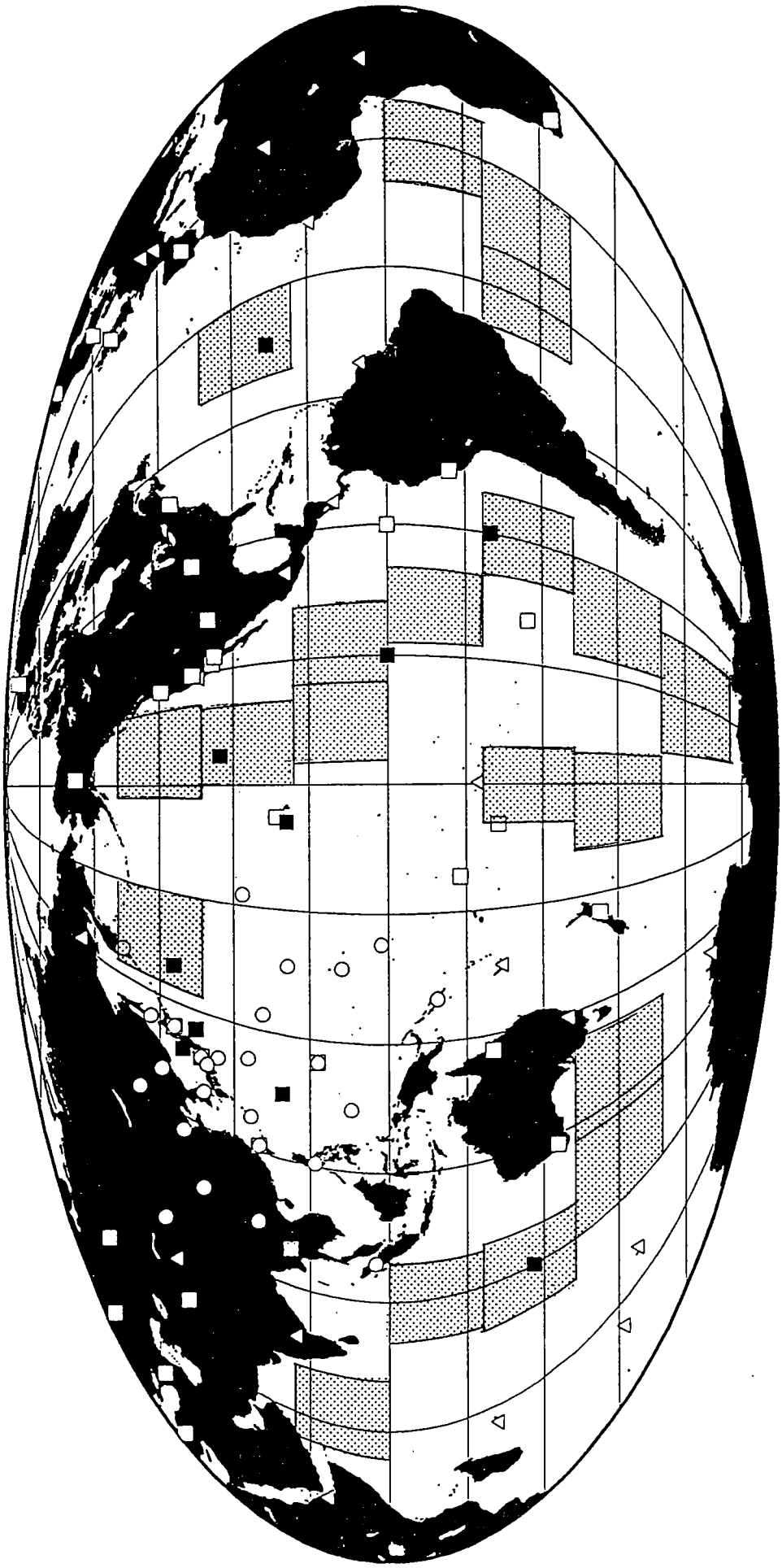
Phase 2. Prototype Stations 1997 ~ 1999

- at priority sites recognized by OSN/ION

Phase 3. International Ocean Network 2000 ~

- establish 15~20 permanent seafloor stations in optimum environments based on Phase 2 results

Appendix 8.2



Appendix 8.3

International Ocean Network

Workshop by ION/ODP-France 1995 January 11-13 Marseilles
"Multidisciplinary Observatories on the Deep Seafloor"

- Assessment of scientific impact and technical status
  Scientific goals of each discipline and technical problems to address
  Produce reports and define future strategy

IUGG Inter-association Symposium 1995 July
"Long-Term Seafloor Observations and Networks"

Scientific objectives and technological feasibility of establishing deep sea-floor stations to observe geophysical or geochemical parameters ranging from ocean to core processes are to be discussed in light of experimental and theoretical studies.

U. S. Ocean Seismic Network

Recent Steering Committee Meetings
December 6, 1993
May 23, 1994
OSN's objectives
learn how to make broad band measurements on the seafloor
install permanent observatories

* Portable arrays are outside OSN although OSN will learn how to make portable broad band observations.

Status reports
Pinon Flat Experiment
Wet/Dry hole KS-54000 experiments
Good at 300 s to 4 Hz.
Participate in OBLISP (Ocean Borehole Laboratories, Instrumentation, and Sampling Program)WS: Wants to produce an OSN plan before ION WS.
OSN-1 Wireline re-entry exercise 1995 (Fred Spiess)
OSN-1 borehole seismometer experiment 1996 (John Orcutt)
OSN-1 BBOBS burial and seafloor 1996 (WHOI/SIO/RSMAS)

IRIS situation
Land-based GSN will be completed sooner. Oceans next.
Next IRIS 5-year plan goes in 1995.

France

Ocean bottom observatory business is evolving very slowly.
A group of scientists of different geophysical field to design future observatory is set up.
A first experiement should take place in Mediterranean in order to test

the concept of the observatory.
In a second stage, the observatory will be installed somewhere in the southern hemisphere.
Due to the cost of the project, international cooperation (Europena Level or global scale) is searched for.
ION workshop will be an important stepping stone for getting funding.
In the framework of multidisciplinarity, the group recognized the importance of using an ODP hole which might be used, not only for seismic purposes but by other scientists.

Japan

Universities

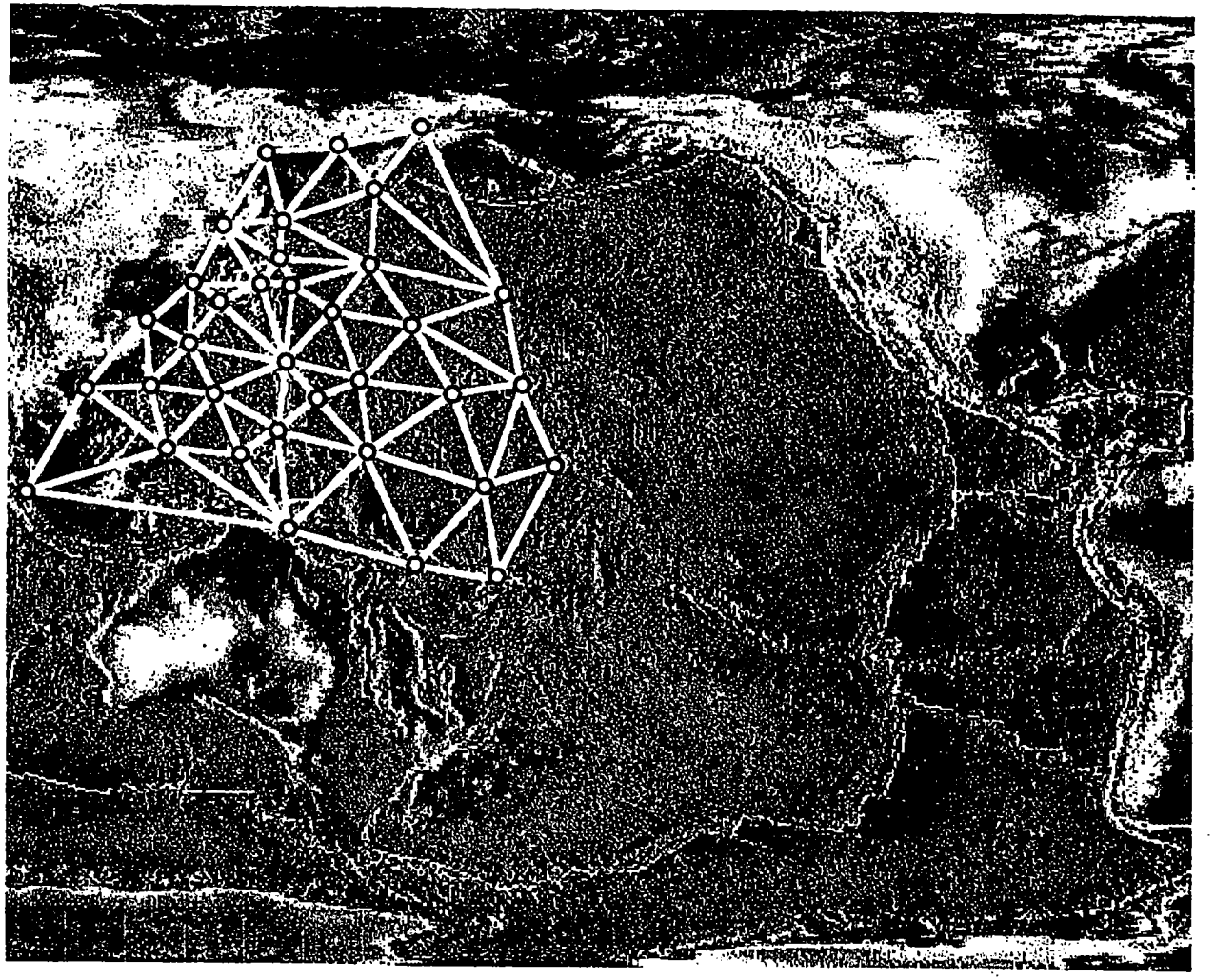
A proposal to set up a 10-year center with a large funding in the early half will be submitted in September. If accepted, the program will run from spring 1996. The plan is to complete a network in the western Pacific composed of island and seafloor stations and form a base network to expand further into eastern Pacific. A proposal for utilization of ODP boreholes is already in. This program incorporates both land and ocean stations, seismological and electromagnetic, permanent and portable.

Broad band OBS is being built to be operational early 1995.

海半球ネットワーク　（1）　地球内部を覗く窓

海洋底は
地球内部に向けて
開いた窓です.

その窓から
地球深部を
覗く目として
海半球ネットワークを
構築します.

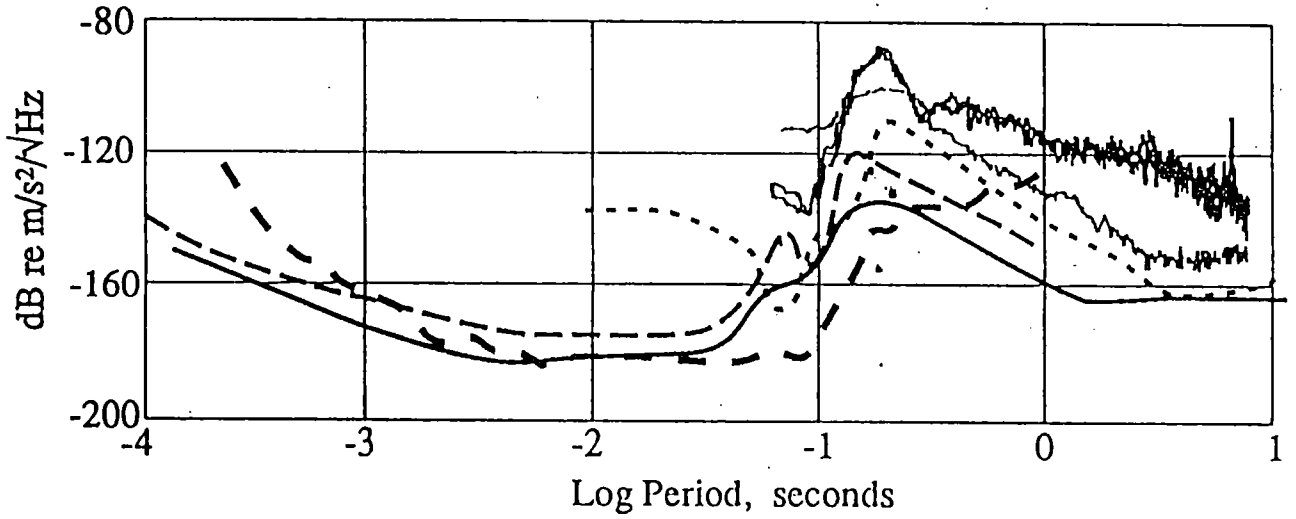


予定される海半球ネットワークの観測点
このネットワークは海底観測を主とする地球物理観測網です

Recent progress

- Pilot experiments
  794D (JPN), 396B (FRA), 843B (USA, planned 1996)
- FDSN quality sensor
  396B Broadband (0.001 - 2 Hz) High resolution
  843B ULF (0.0027 - 4.2 Hz) 24-bit Velocity
- Downhole installation options
  drillship/wireline re-entry/submersible
- More ambient noise characteristics
  Buried (HIG), Semi-buried (FRA), Seafloor (SIO)
- 1-yr continuous record feasible
  4W x 1 year = 35 kWh
  20 Hz x 3 ch x 24 bitx 1 year = 5.7 GB
- International coordination
  Instrument test
  Modular design
  Shared maintenance
  Data compatibility for exchange

VERTICAL PARTICLE ACCELERATION NOISE IN THE OCEAN



——— Low Noise Model

– – – SBB station during NADIA Experiment

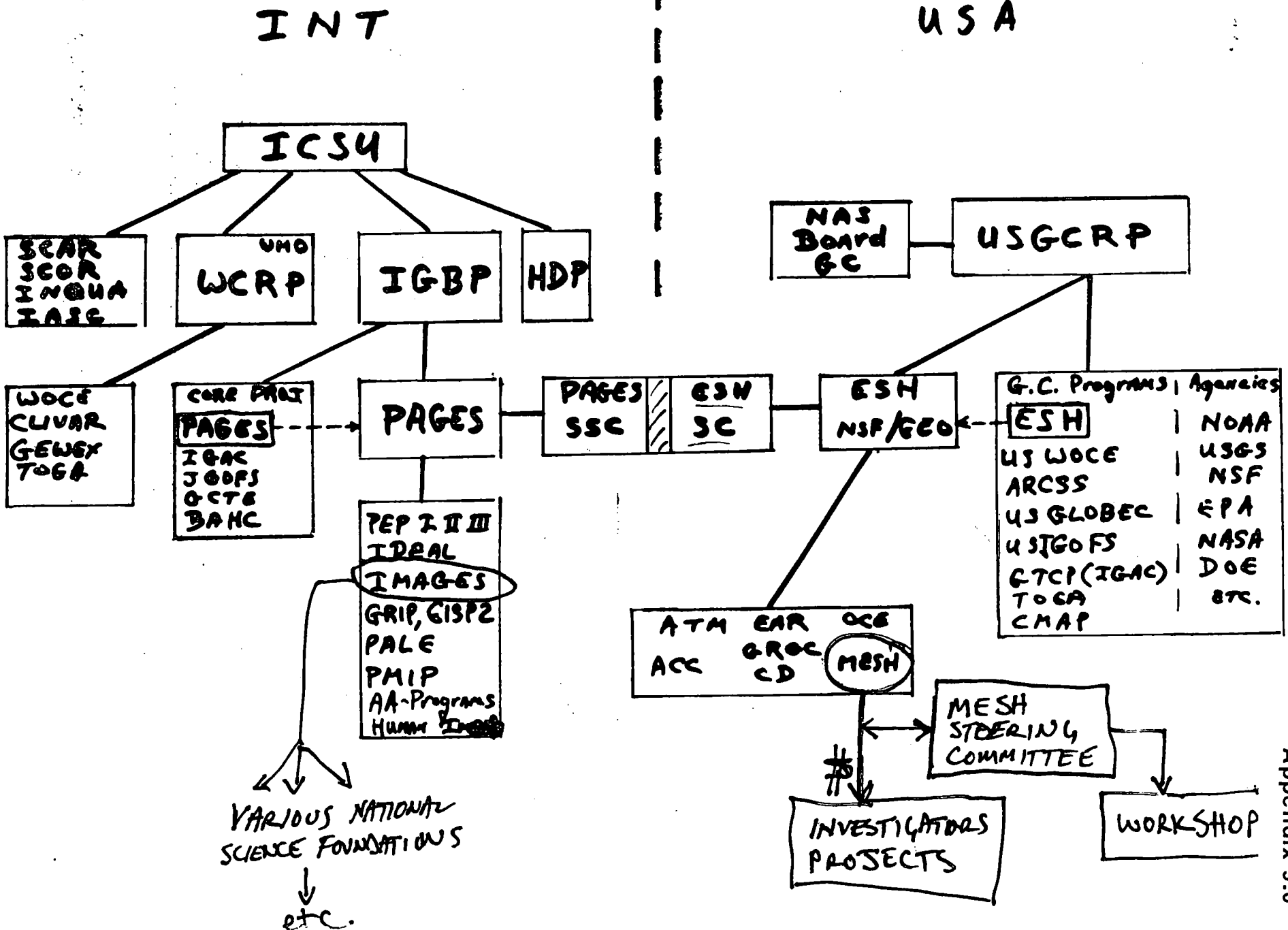
— — · OFM (ocean bottom vertical) noise during NADIA Experiment

····· ULF/VLF Buried Sensors off Oregon

——— Other curves from ocean bottom experiments

FIGURE 1: In the figure above, the French buried sensor data (OFM) are compared with data from a French continental station taken at the same time (SBB), with the Low Noise Model, with the ULF/VLF Experiment data, and with other ocean bottom vertical noise data. There are several points of uncertainty in these data. Note that the French data are more than 20 dB below the low noise model at 10 s, and more than 30 dB below the other ocean floor data. As observed noise in this period range are related to microseisms, the very low level of the French data is difficult to understand. Also note that the French data do not exhibit a classical microseism peak between 3 and 10 s, but continue to rise towards short periods.

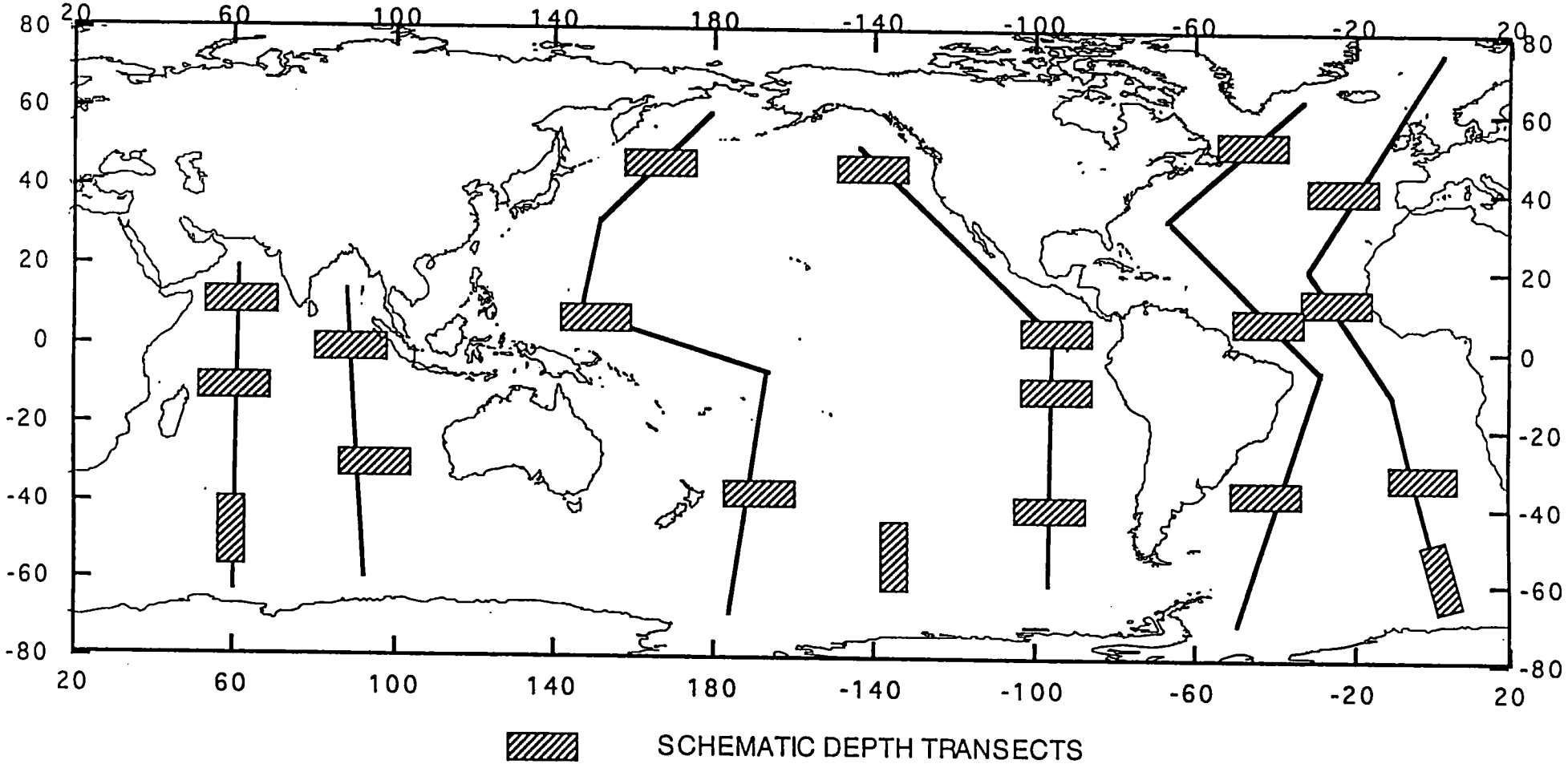
Appendix 8.7


INT
USA
ICSU
SCAR
SCOR
INQUA
IASC
WMO
WCRP
IGBP
HDP
WOCE
CLIVAR
GEWEX
TOGA
CORE PROJ
PAGES
IGAC
JGOFS
OCTE
BAHC
PAGES
PEP I II III
IDEAL
IMAGES
GRIP, GISP2
PALE
PMIP
AA-Programs
Human
PAGES
SSC
ESH
SC
VARIOUS NATIONAL SCIENCE FOUNDATIONS
etc.
NAS Board GC
USGCRP
ESH
NSF/GEO
G.C. Programs
Agencies
ESH
US WOCE
ARCSS
US GLOBEC
US IGOFS
GTCP (IGAC)
TOGA
CMAP
NOAA
USGS
NSF
EPA
NASA
DOE
etc.
ATM
EAR
OCE
ACC
GROC
CD
MESH
MESH STEERING COMMITTEE
INVESTIGATORS PROJECTS
WORKSHOP

Appendix 9.0

9/94 MESH # IMAGES

MERIDIANAL AND DEPTH TRANSECTS NEEDED TO CONSTRAIN GLOBAL CIRCULATION PATTERNS RELATED TO THE SEQUESTORING AND PRODUCTION OF CO_2 IN THE OCEANS



Appendix 9.1

Figure 1. Meridianal and depth transects needed to constrain global circulation patterns related to the sequestering and production of CO_2 in the oceans - MESH Element "SENSITIVITY OF CLIMATE AND ATMOSPHERIC pCO_2 TO OCEAN CIRCULATION AND BIOGEOCHEMISTRY OVER THE PAST 500,000 YEARS (AT TIMESCALES OF 10^3 TO 10^5 YEARS)"

7/94 MESH PROGRAM PLAN

REGIONS OF THE OCEAN THAT CONTAIN KNOWN OR POTENTIAL HIGH RESOLUTION RECORDS FROM CORALS, LAMINATED SEDIMENTS OR HIGH ACCUMULATION RATE SEDIMENTS

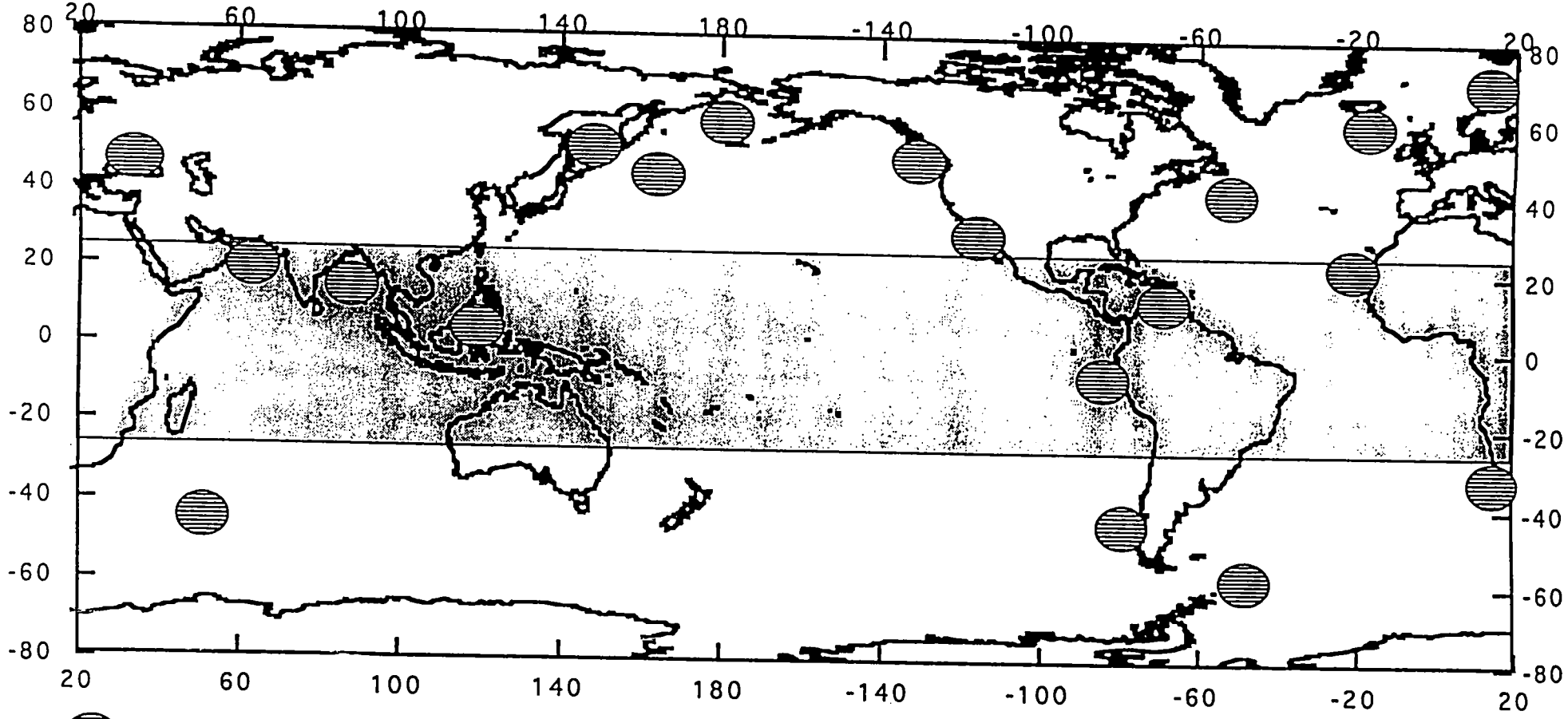


Figure 7. Regions of the ocean that contain known or potential high resolution records from corals, laminated sediments and high accumulation rate sediments - MESH Element "CLIMATE SYSTEM SENSITIVITY AND VARIABILITY: THE MARINE RECORD OF INTERANNUAL-MILLENNIAL CHANGE"

Appendix 9.2

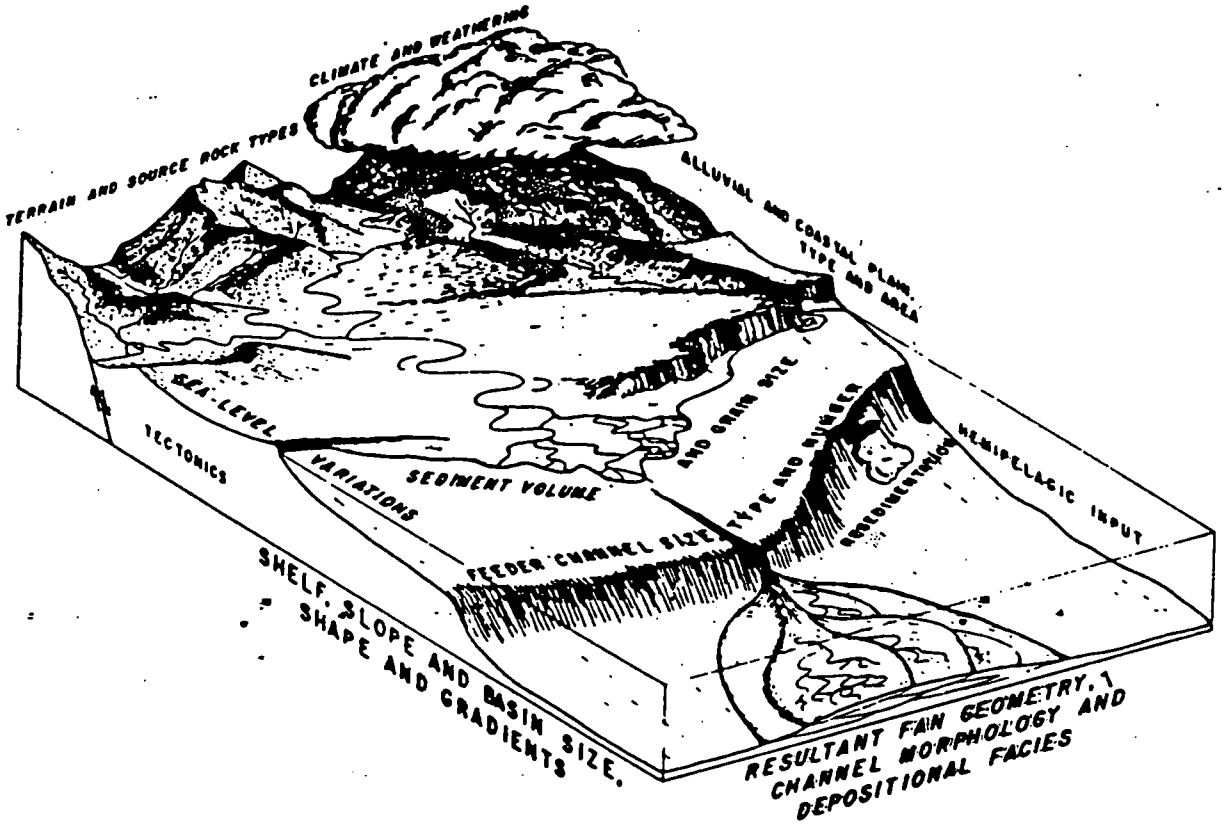
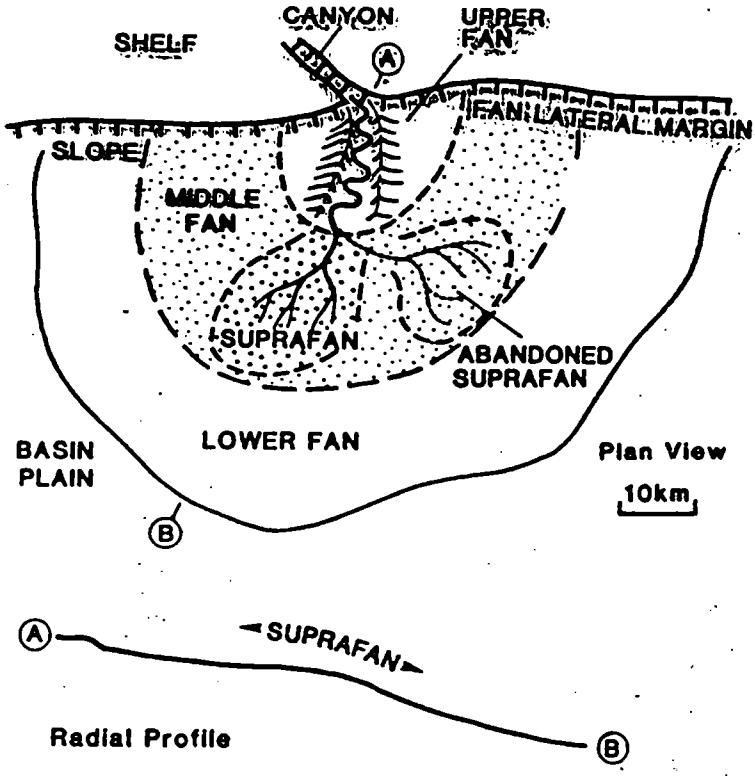
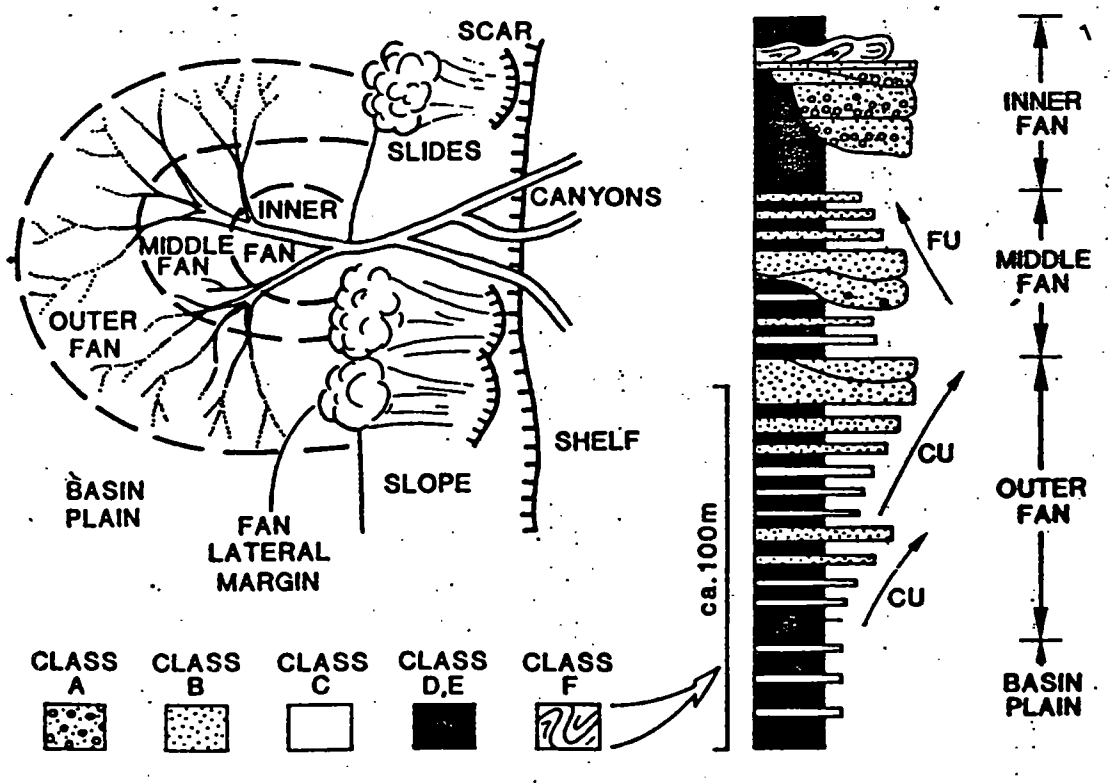


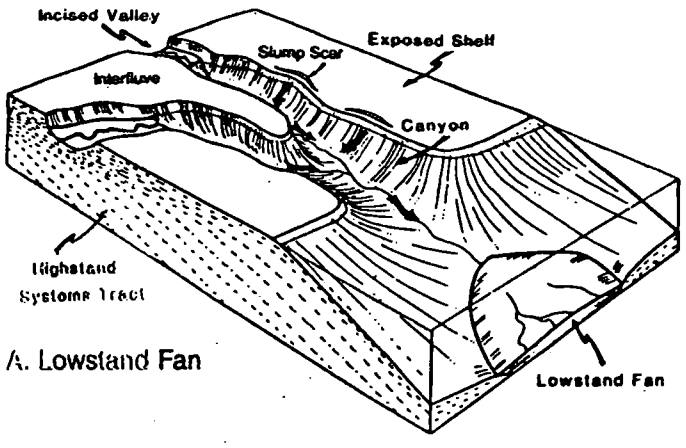
Figure 1. Schematic diagram highlighting the variety of physical processes that control submarine fan development.

Appendix 10.1

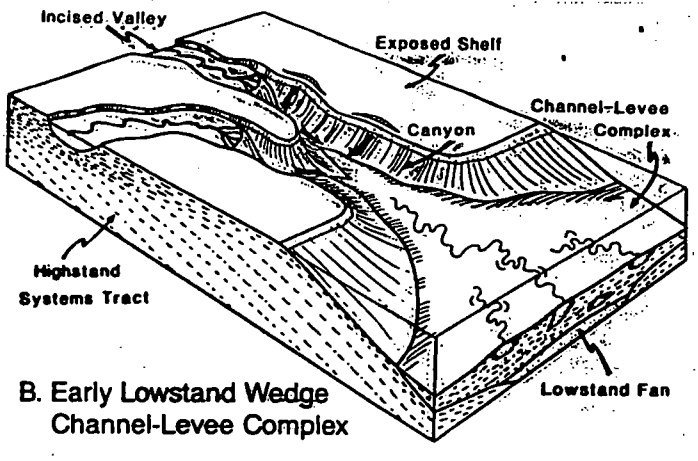




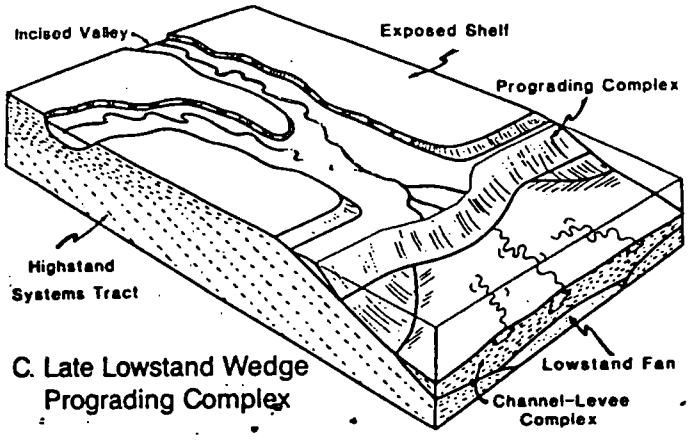
Appendix 10.2



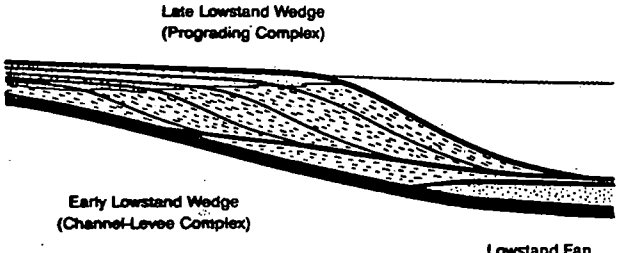
A. Lowstand Fan



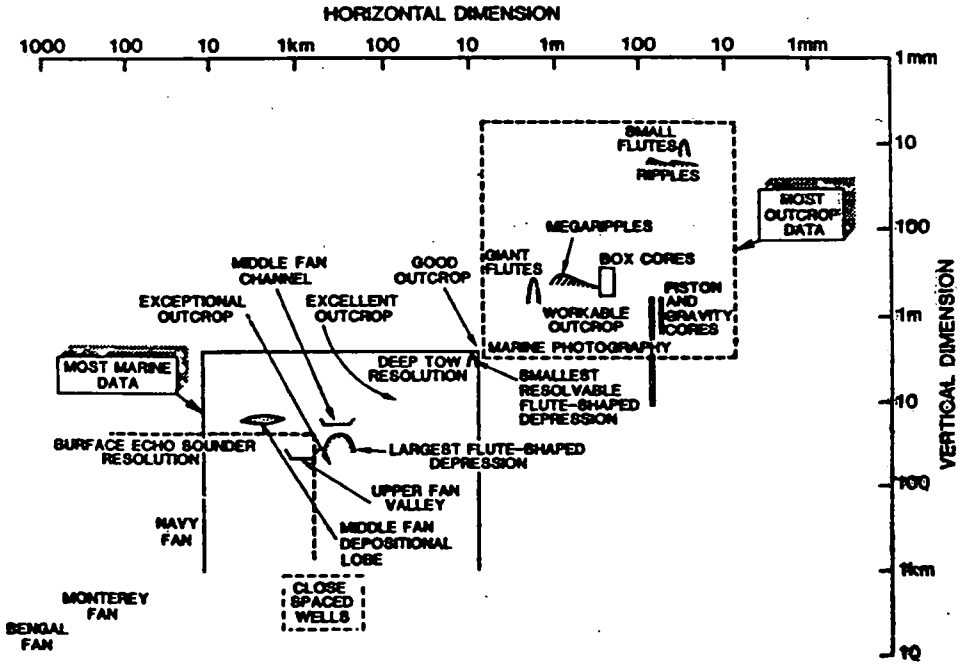
B. Early Lowstand Wedge
Channel-Levee Complex



C. Late Lowstand Wedge
Prograding Complex



D. Axial Section through
Canyon and Slope



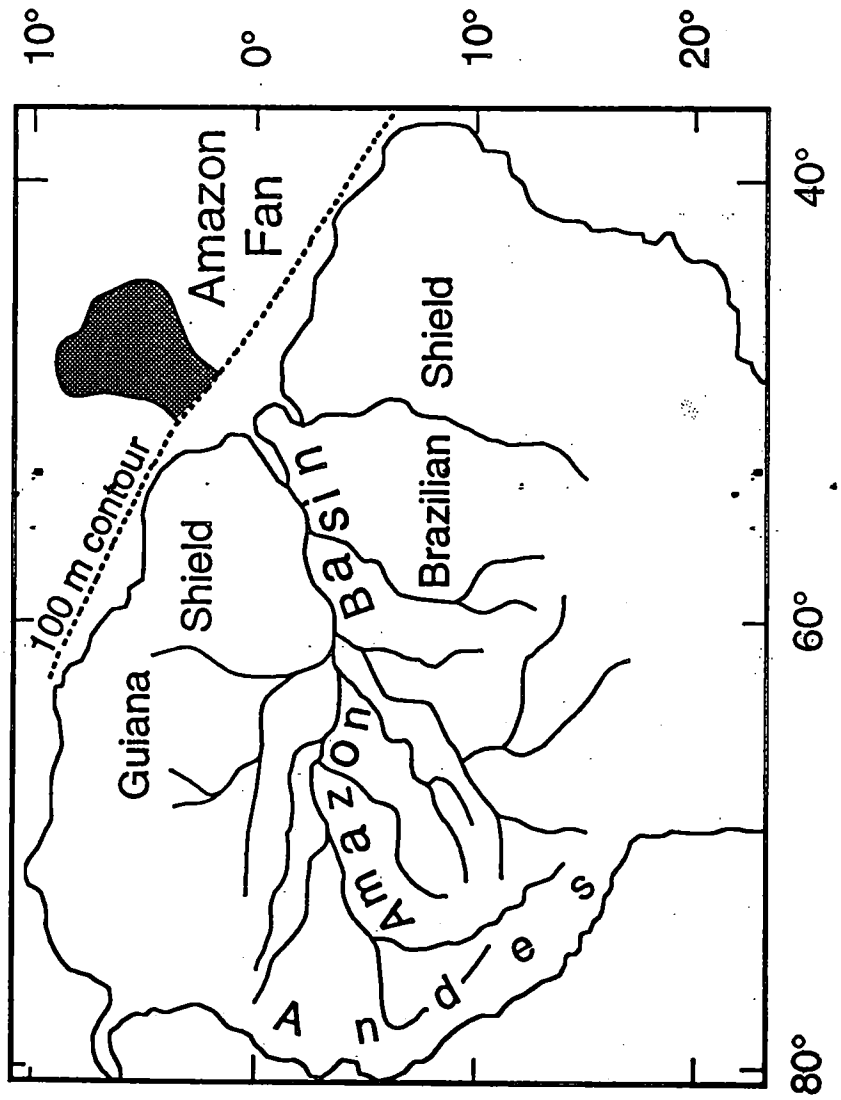
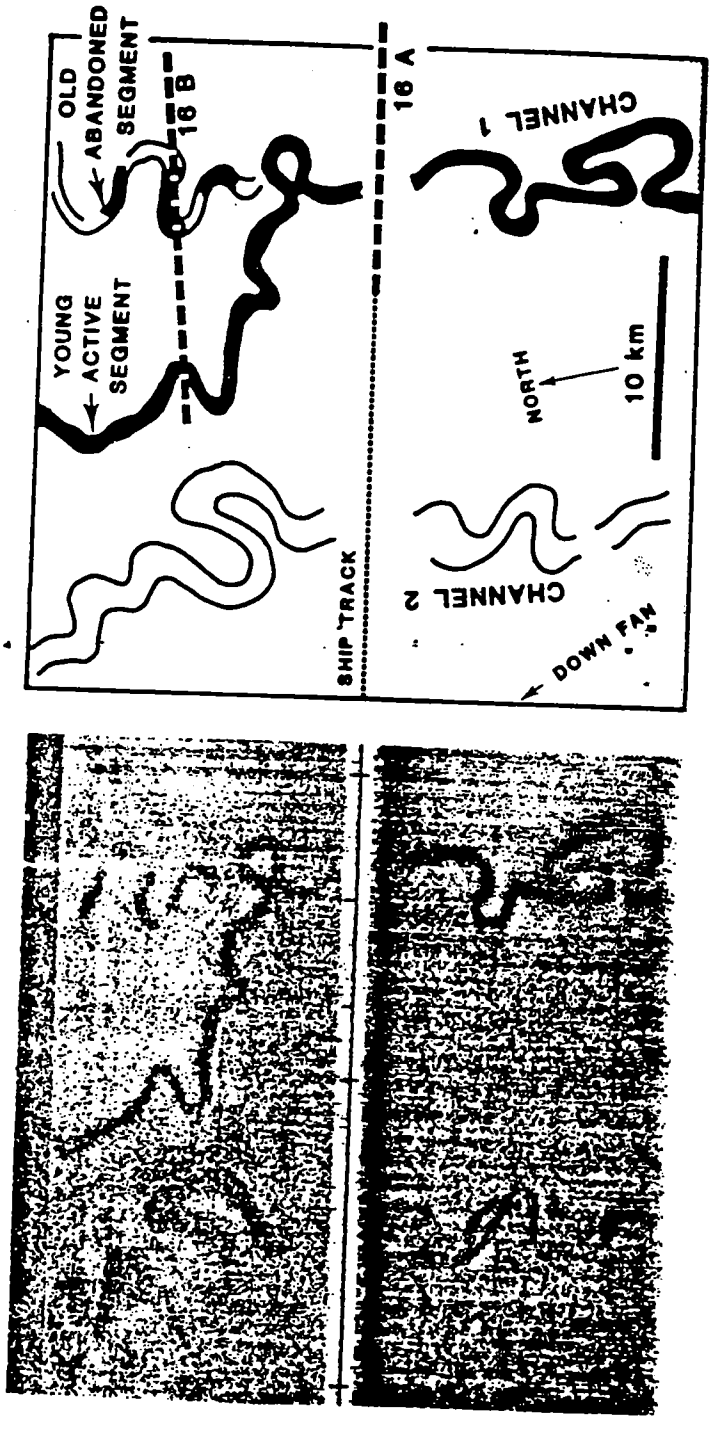


Figure Intro-1 Final

Appendix 10.4



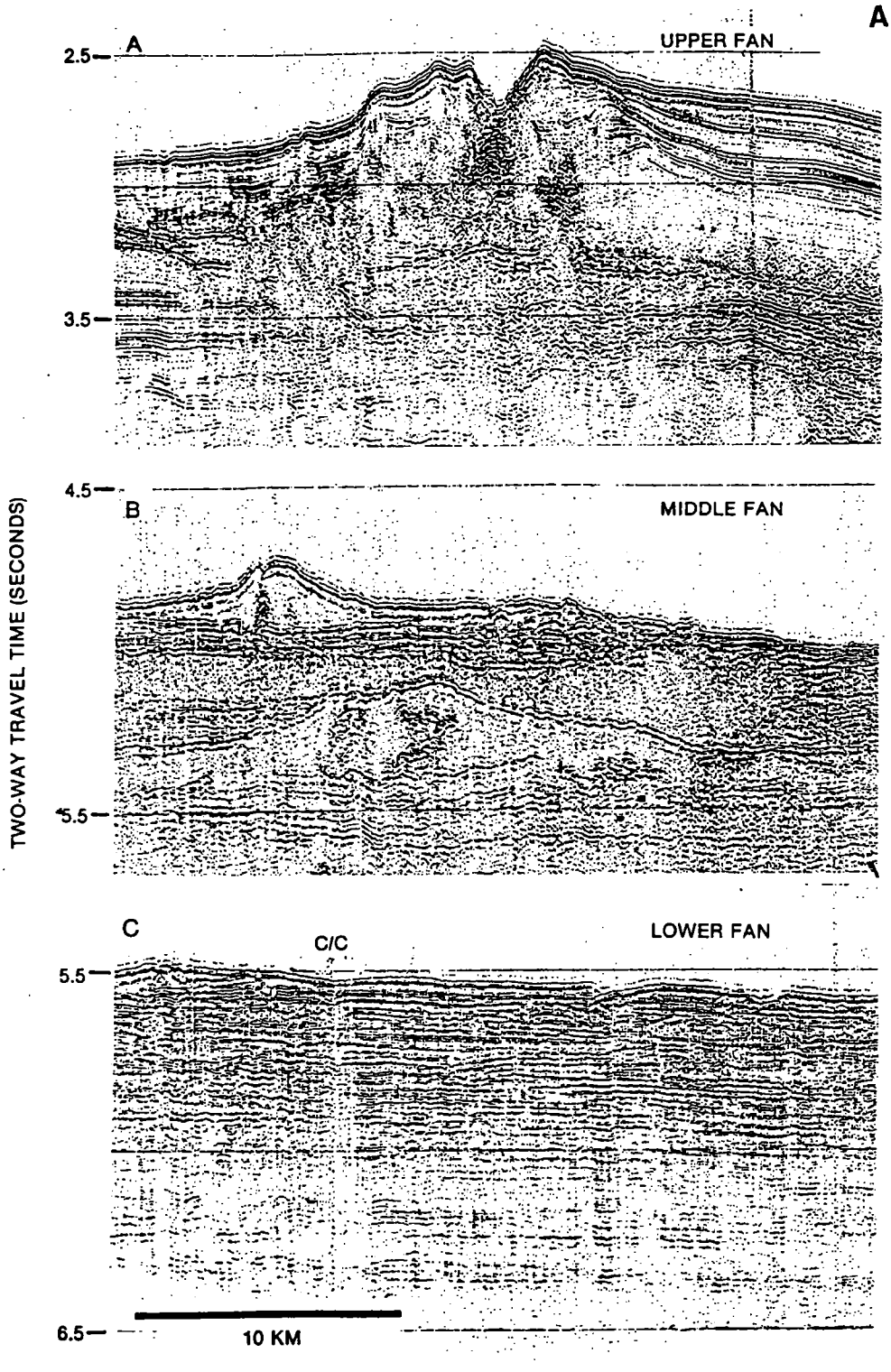


Figure 4. Representative watergun seismic-reflection profiles from the most recent channel on the Amazon fan. (A) Upper fan at 1875 m water depth. (B) Middle fan at 3550 m. (C) Lower fan at 4125 m (c/c marks course change). The channel shows small levees where it is crossed near the left side of Profile C, but no levee relief where it is crossed near the center of Profile C. Vertical Exaggeration (V.E.) = 13. Acoustic facies are well defined and well resolved on these high-resolution profiles.

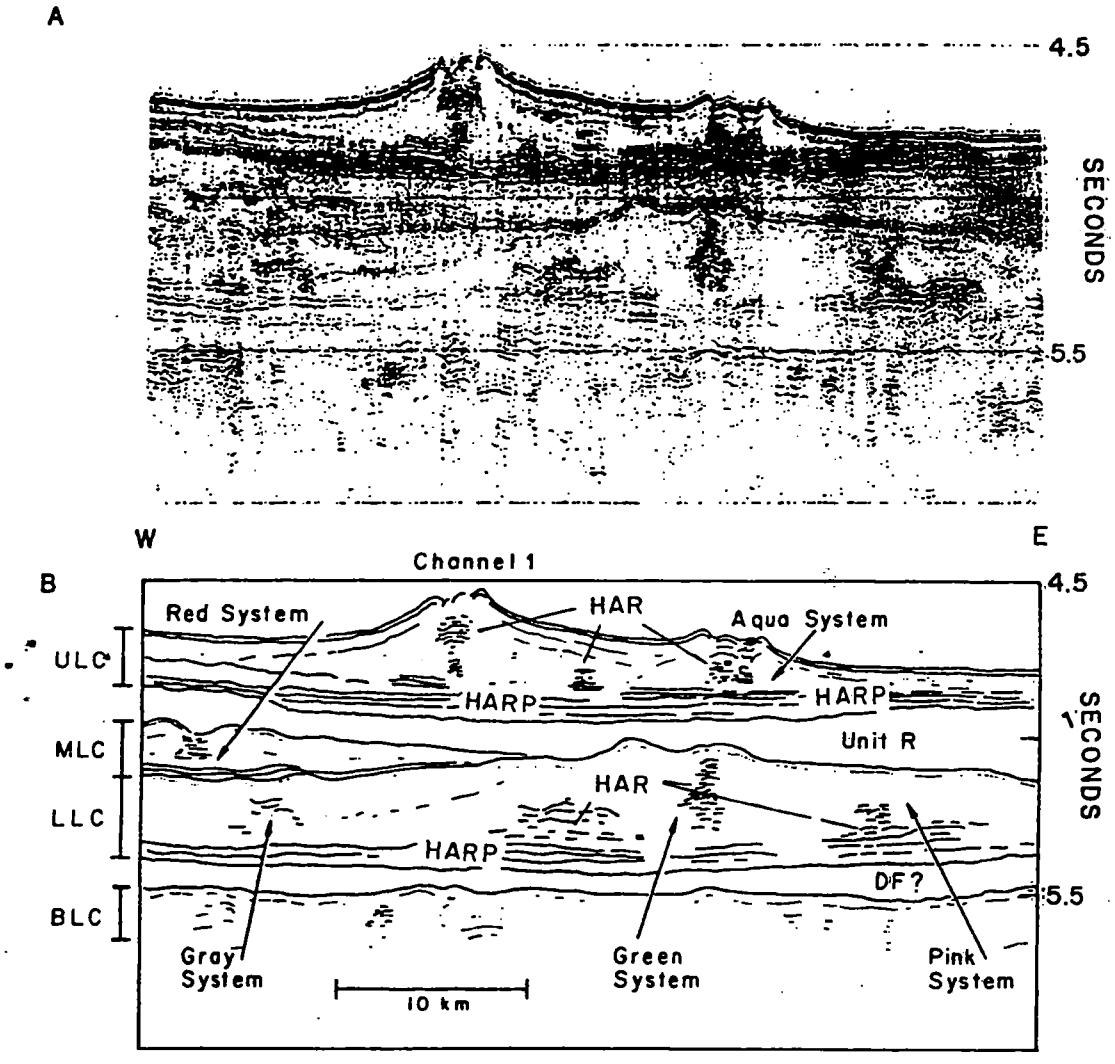


Figure 7. Original water gun seismic-reflection profile (A) and interpretation (B) from the middle fan at 3450 m, showing the relationship between the different seismic facies observed on the fan. Note the high-amplitude reflections (HAR) within the levee of Channel 1 (Amazon Channel) and the flatter lying high-amplitude reflection packets (HARP) that lie beneath the channel/levee system. Similar acoustic facies are also observed associated with other channel-levee systems (color names as given by Manley and Flood, 1988) both at the fan surface and at depth. Unit R, which separates the Upper Levee Complex (ULC) from the Middle and Lower Levee complexes (MLC and LLC), appears to be a debris-flow deposit. An inferred debris-flow deposit (marked DF?) separates the LLC from the more deeply buried Bottom Levee Complex (BLC). The paths of the buried (color named) channel-levee systems are shown in Figure 8. While surficial and buried channel-levee systems and other acoustic facies are well resolved, we do not have a very good understanding of the actual relationships between sedimentation pattern and sea level. (Adapted from Flood et al., 1991.)

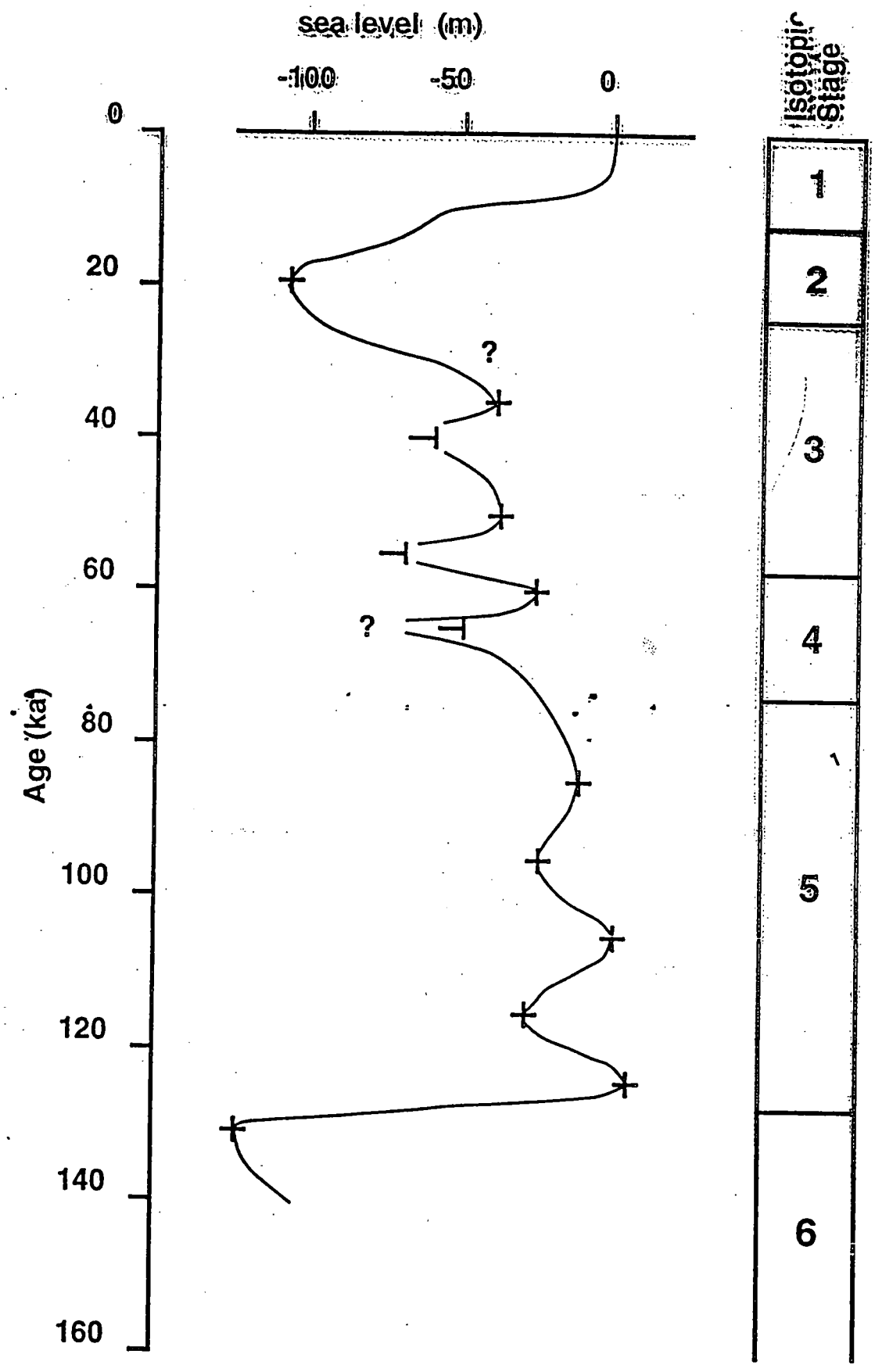
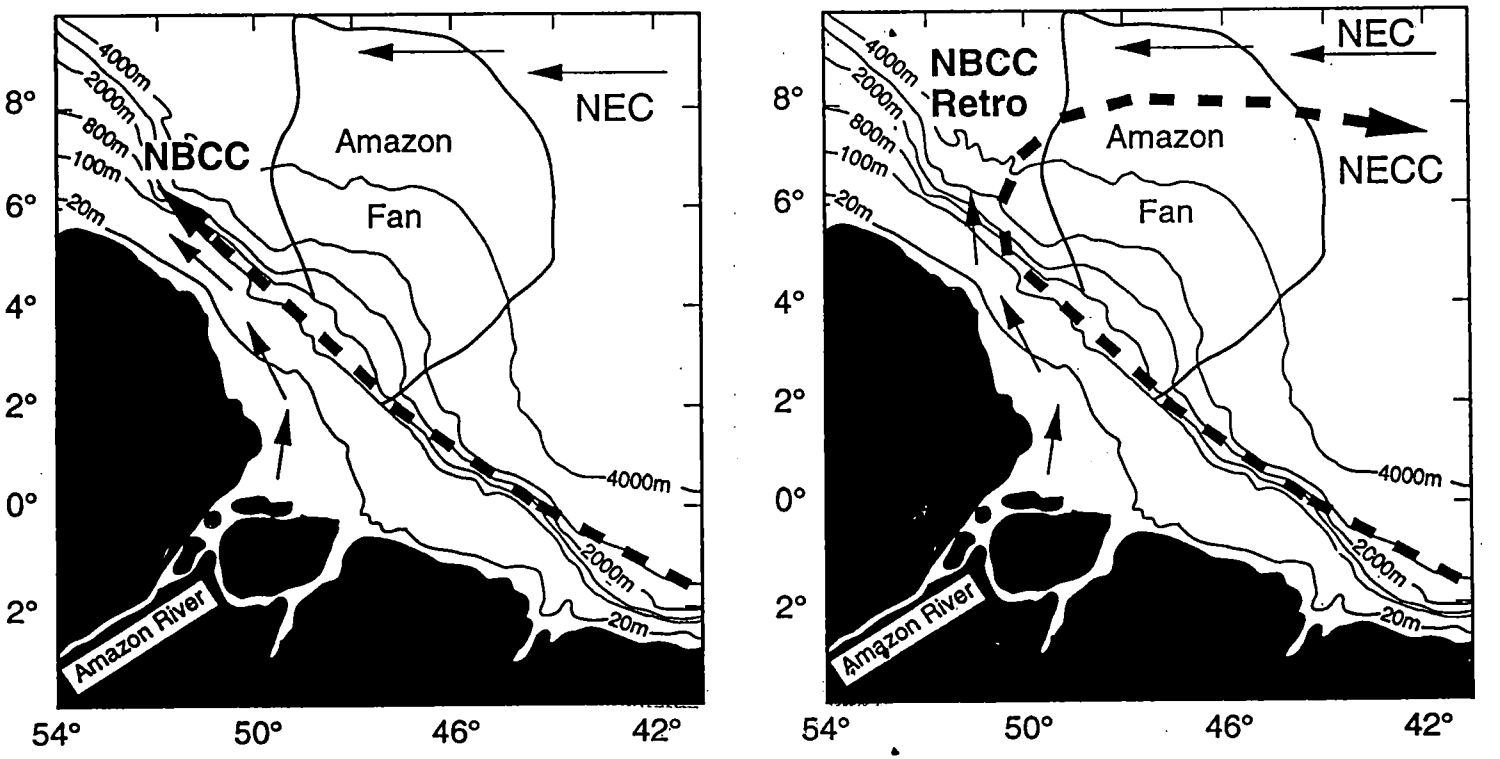


Figure Intro-7 FINAL



February-June: peak discharge, rising water

July-January: minimum discharge, falling water

Figure Intro-8 FINAL

Appendix 10.8

ODP Leg 155 -- Amazon Fan

Objectives:

Establishment of the relationship, if any, between the development of fan deposits, sea-level fluctuations, climatic change and uplift of the Andes

Determination of the sediment lithologies characteristic of distinctive acoustic facies and an understanding of the evolution of turbidite facies in relation to fan morphology and flow processes

Use of the stratigraphic record of the Amazon Fan to better understand climatic change within the Amazon drainage basin, the nature and timing of surface circulation patterns in the western Equatorial Atlantic, and Amazon Basin changes over glacial/interglacial cycles and integration of these into world-wide climatic signals

Characterization and understanding of the nature, origin and early diagenesis of organic carbon present in the different fan units

Appendix 10.10

ODP Leg 155 — Amazon Fan

Shipboard Scientists

Co-Chief Scientists	**Roger Flood** **David Piper**
Staff Scientist	**Adam Klaus**
Sedimentology	**Bill Normark** **Rick Hiscott** **Jed Damuth** **Renato Kowsmann** **Adrian Cramp** **Futoshi Nanayama** **Michel Lopez** **Ralph Schneider**
Palentology	**Bill Showers** **Mark Maslin** **Naja Mikkelsen** **Simon Haberle**
Physical Properties	**Pat Manley** **Bill Busch** **Wonn Soh** **Dave Long**
Paleomagnetics	**Stan Cisowski** **Frank Hall**
Organic Chemistry	**Miguel Goni** **Kai Hinrichs**
Inorganic Chemistry	**Steve Burns** **Diane McDaniel**
Logging	**Carlos Pirmez** **Jack Kronen** **Jerome Tibal**

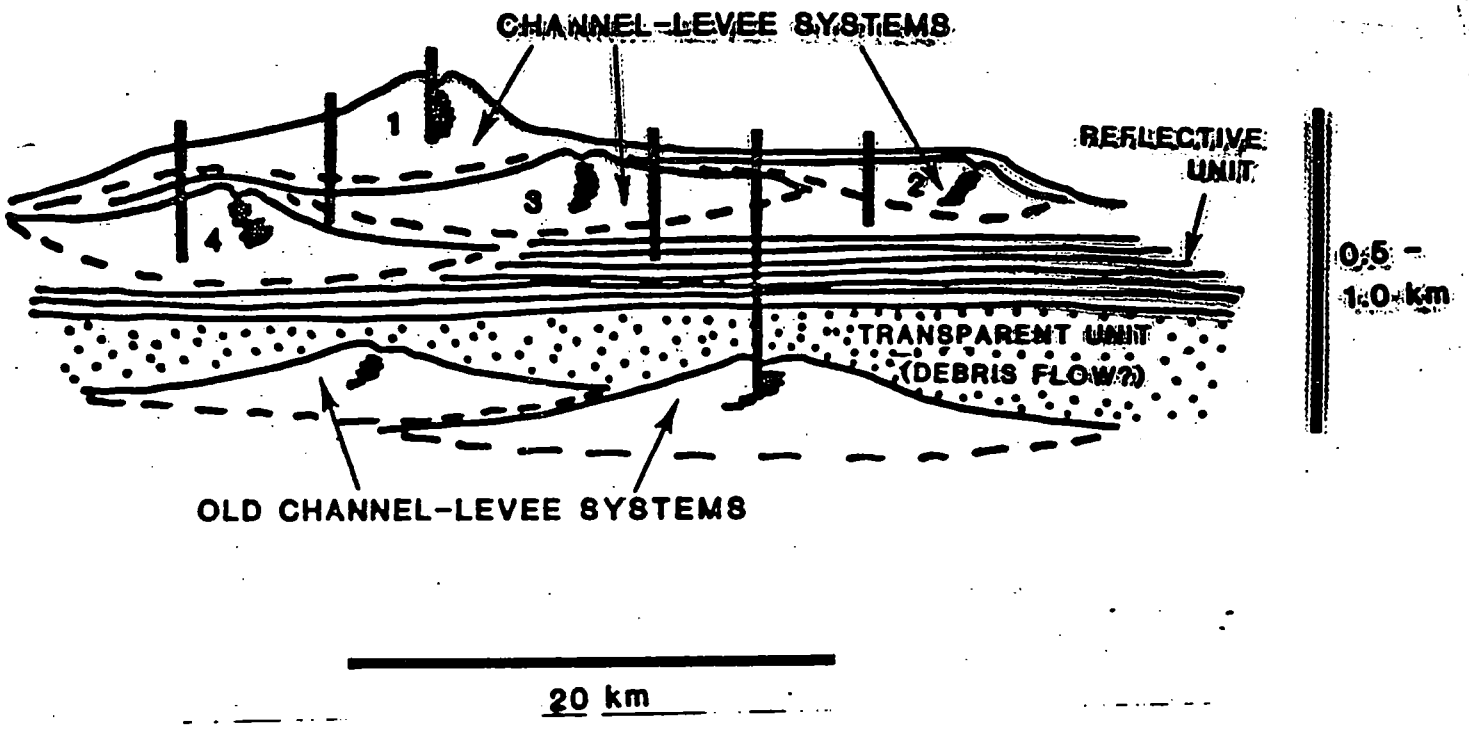


Figure 8. Cartoon showing stratigraphic relationships of middle-fan channel-levee systems and acoustic facies observed on the Amazon fan. Black vertical lines show hypothetical APC/XCB coring strategy. Sites penetrating channel-levee systems of the upper (modern) levee complex will provide a continuous stratigraphy and depositional history for the fan. Deeper penetration sites will sample older, now buried channel-levee systems as well as deeper acoustic facies (transparent and reflective) between levee complexes.

Appendix 10.12

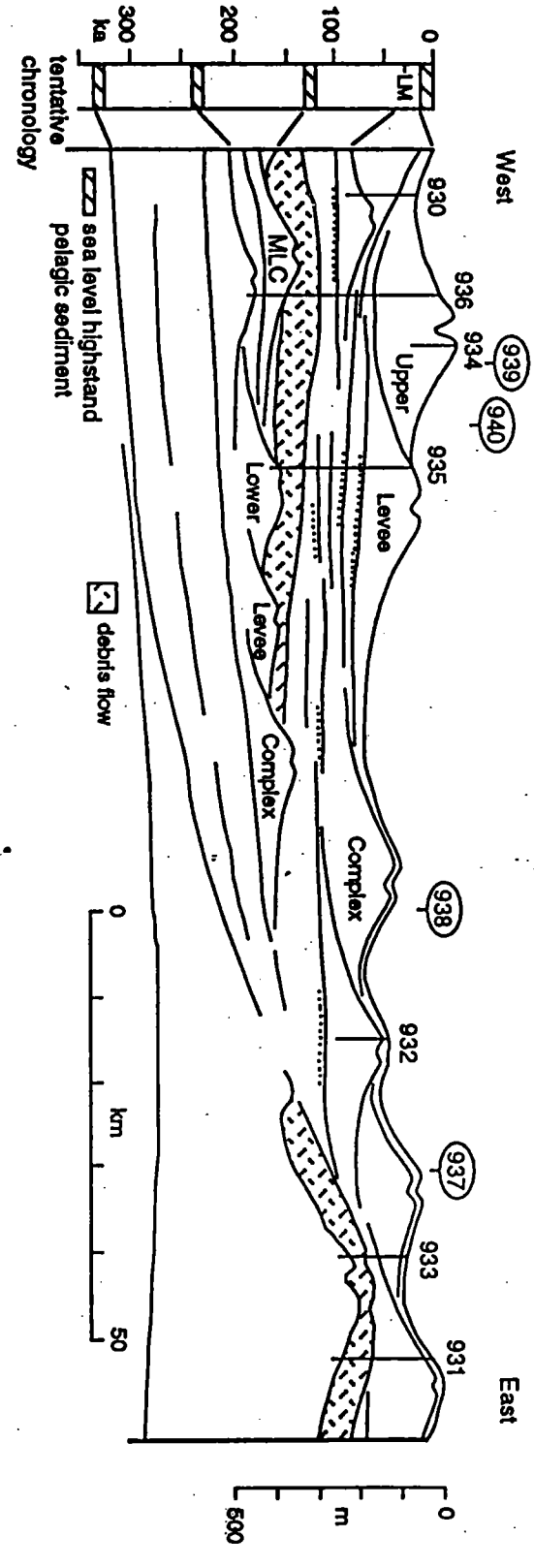


Fig. EOS-3 FINAL

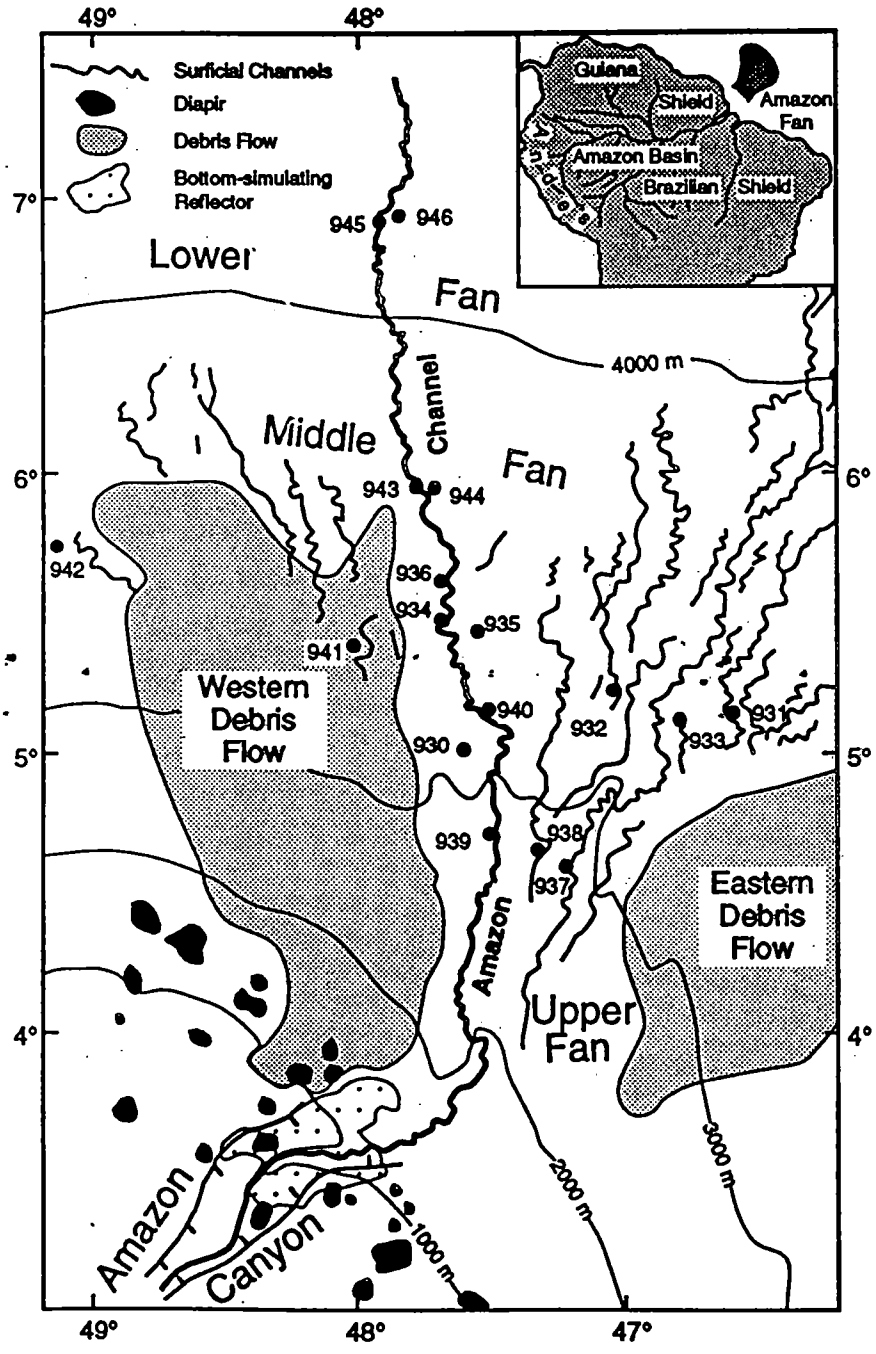


Figure EOS-1 FINAL

Appendix 10.14

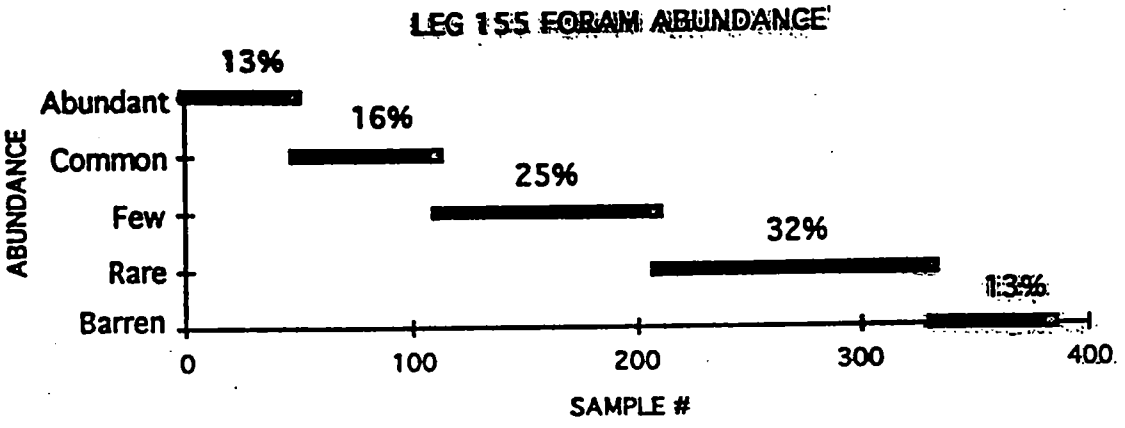


Figure 1. Planktic Foraminiferal Abundance of Core Catcher Samples from Leg 155 drill cores.

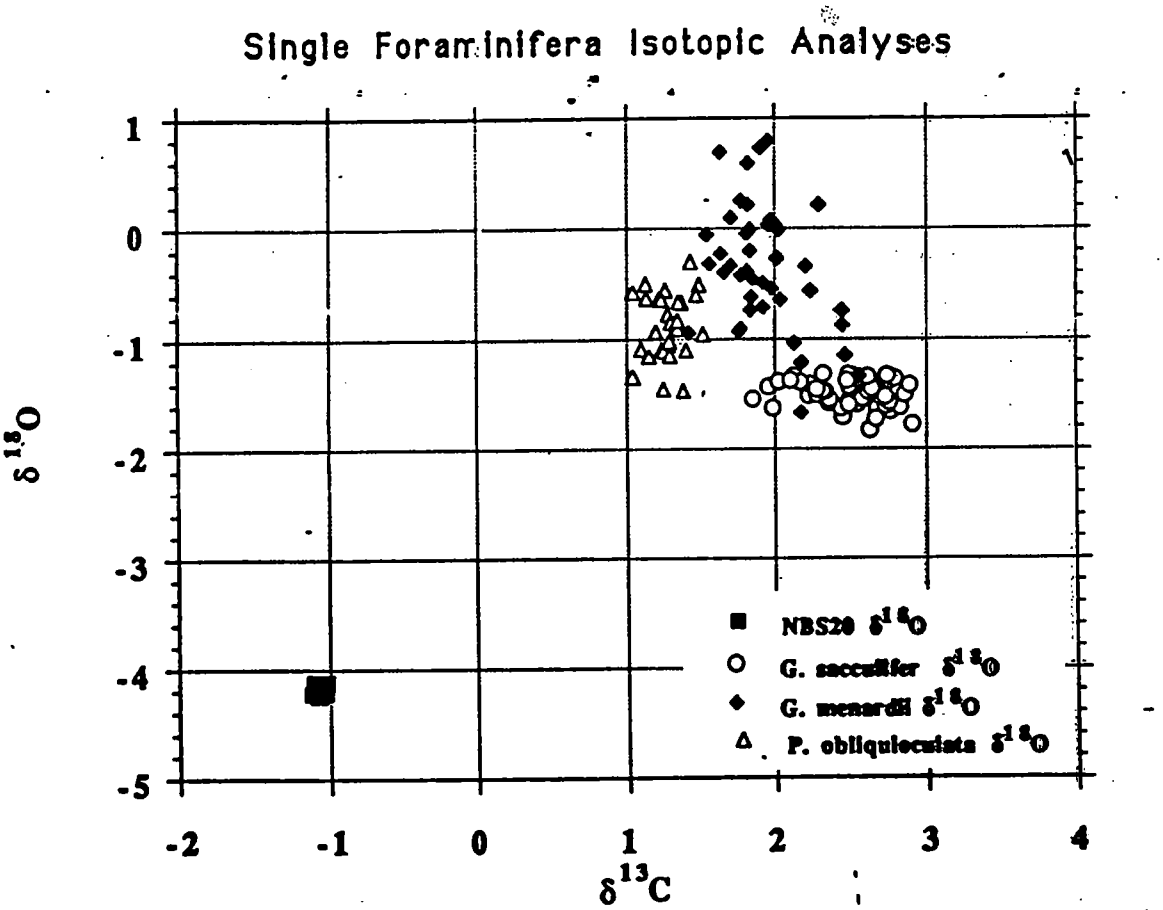


Figure 2. Isotopic analysis of single foraminifera from GEOB Box core 1513, 13 cm with a C-14 age of about 4 ka.

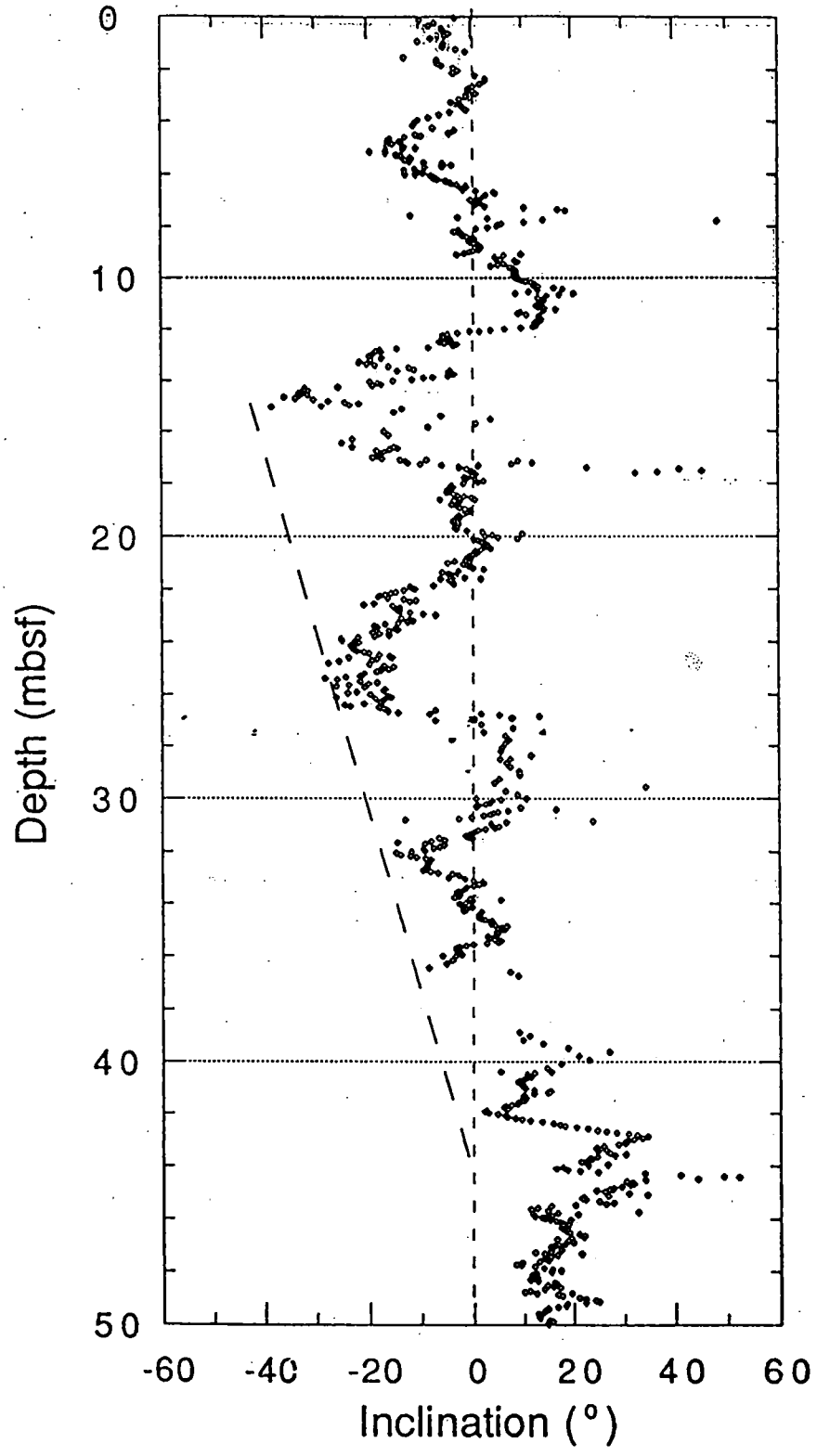
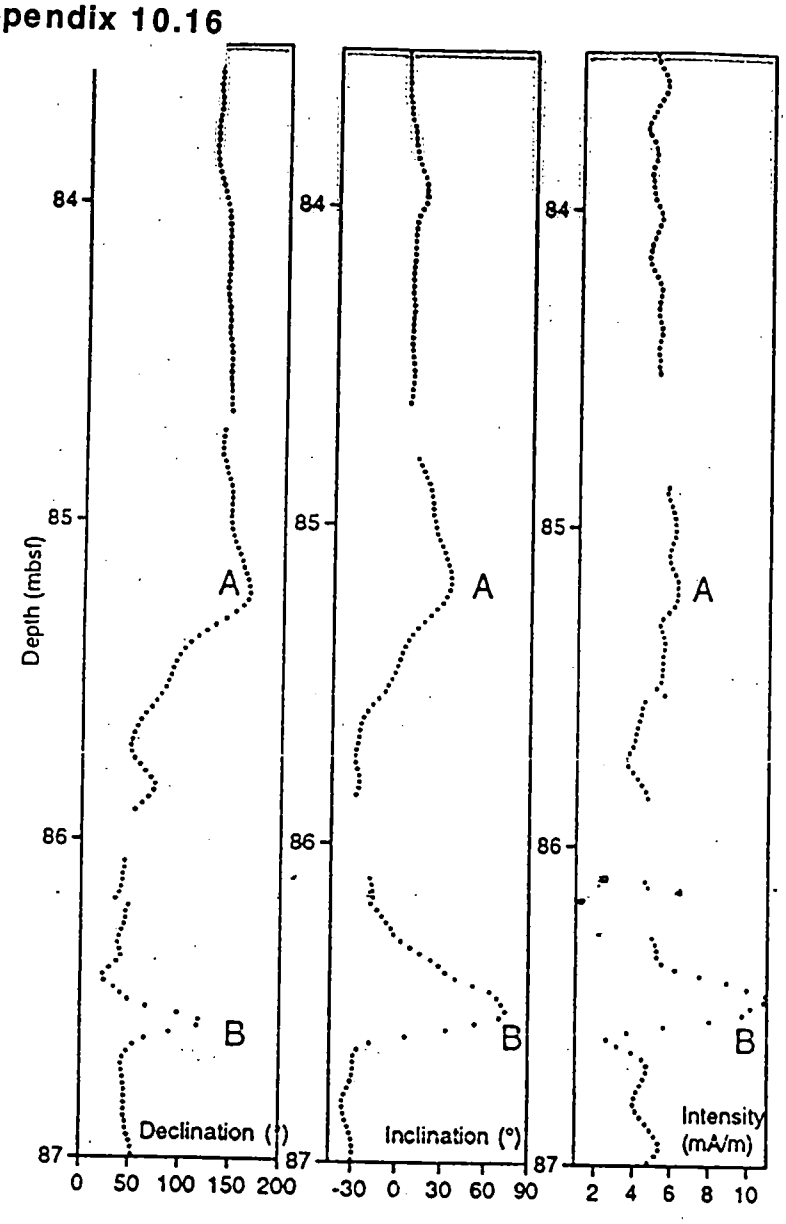
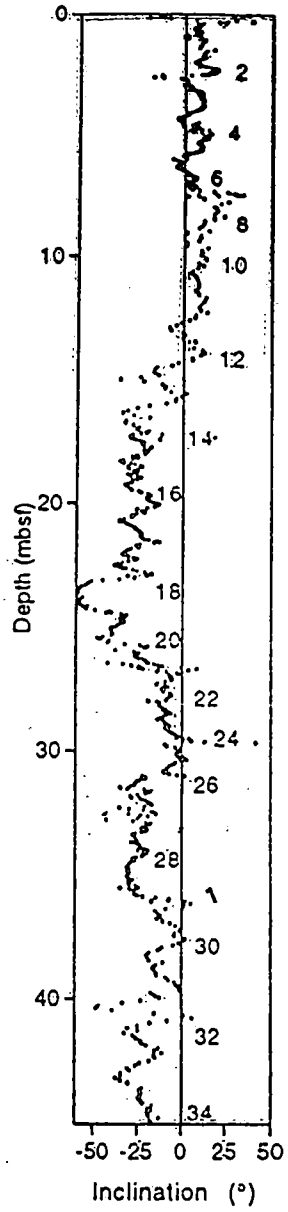
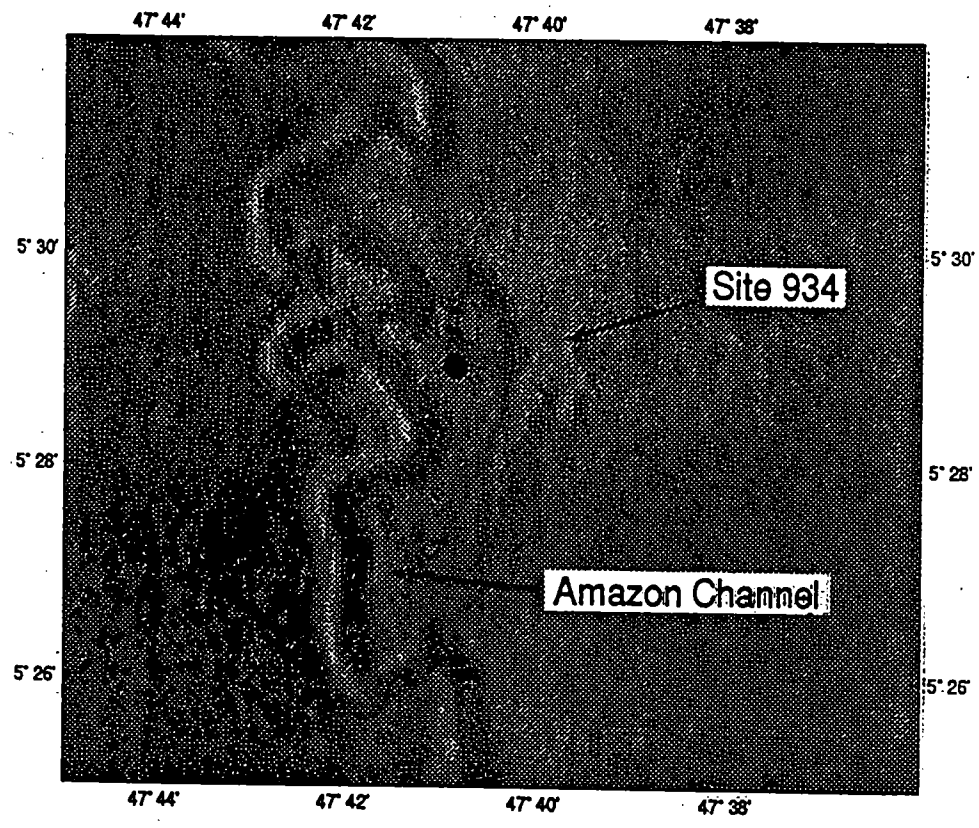


Figure 938-F-1

Appendix 10.16



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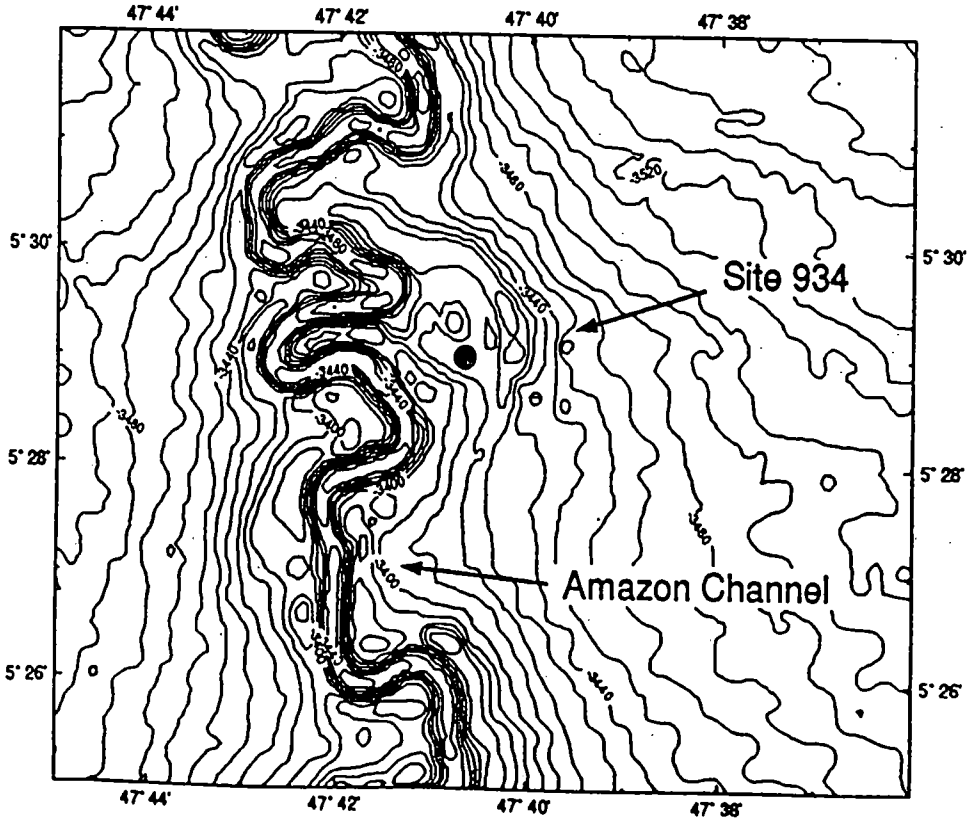
47° 42'
47° 40'
47° 38'
5° 30'
5° 28'
5° 26'
Site 934
Amazon Channel


47° 44'
47° 42'
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5° 30'
5° 28'
5° 26'
Site 934
Amazon Channel

Appendix 10.18

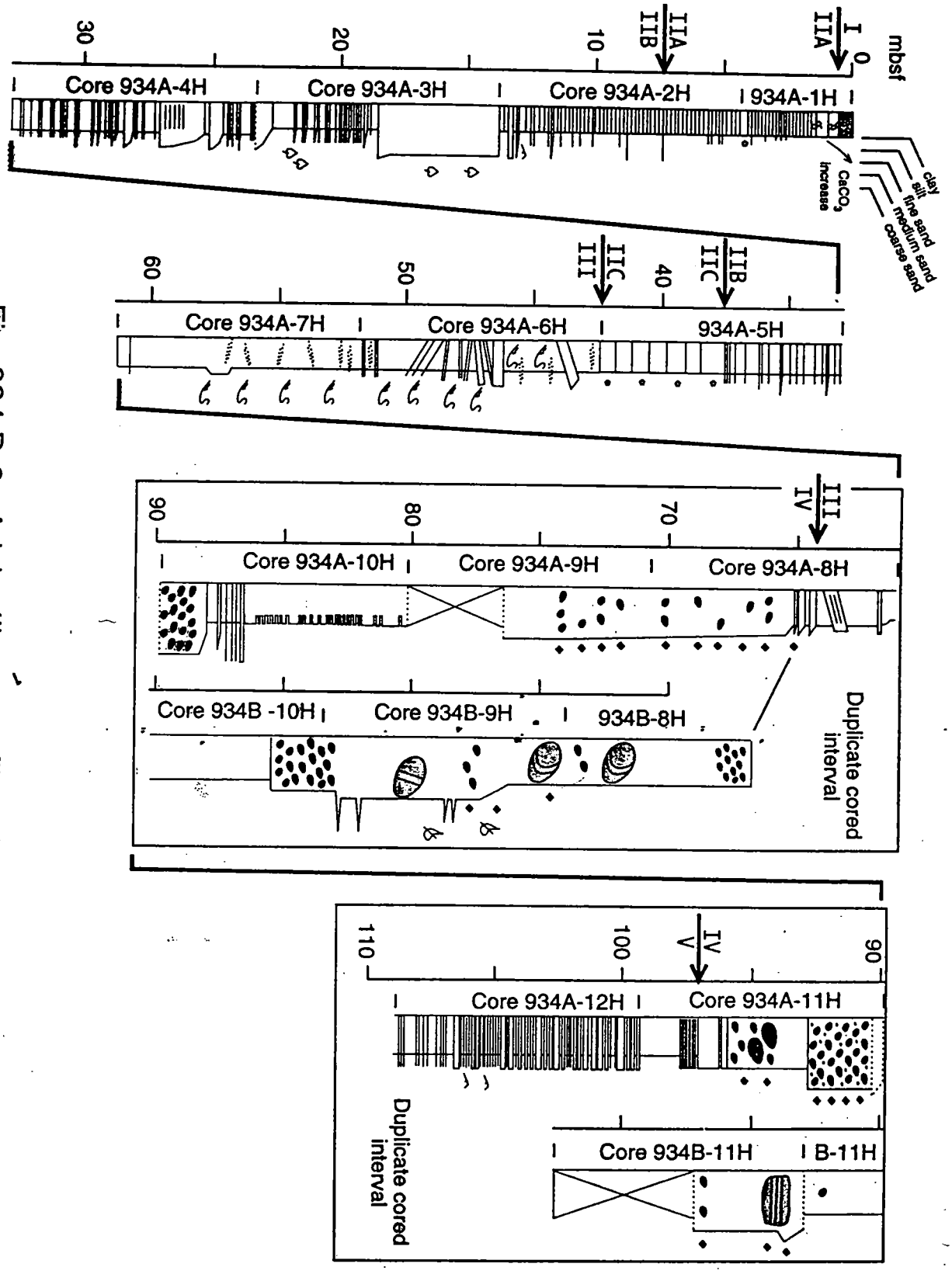
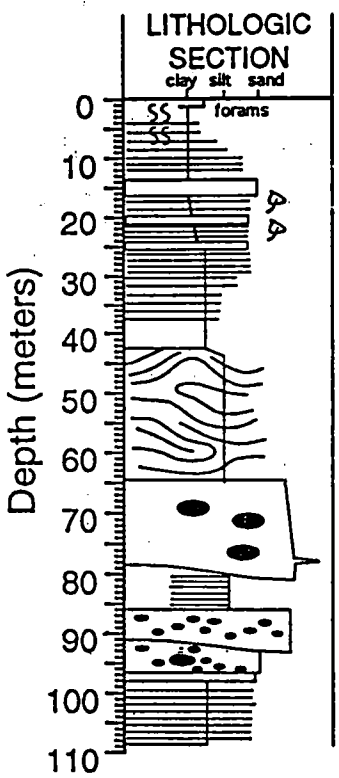


Fig. 934-D-2 , Adobe Illustrator file column934.adobe.ai



Holocene foram-rich clay

Muds and thin turbidite sands and silts that accumulated by spillover after meander abandonment

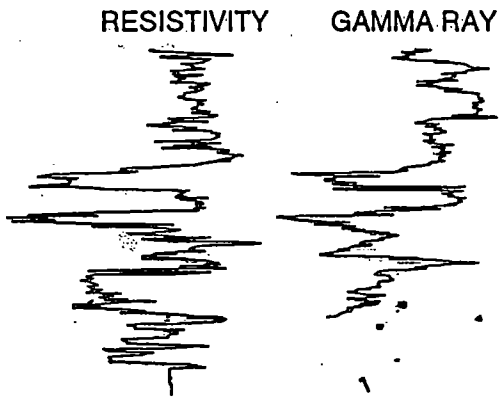
Slump of levee muds from channel wall

Thick coarse sand beds with common mud clasts, interbedded with some mud, silt and fine sand

Turbidite silt and mud pre-dating the channel

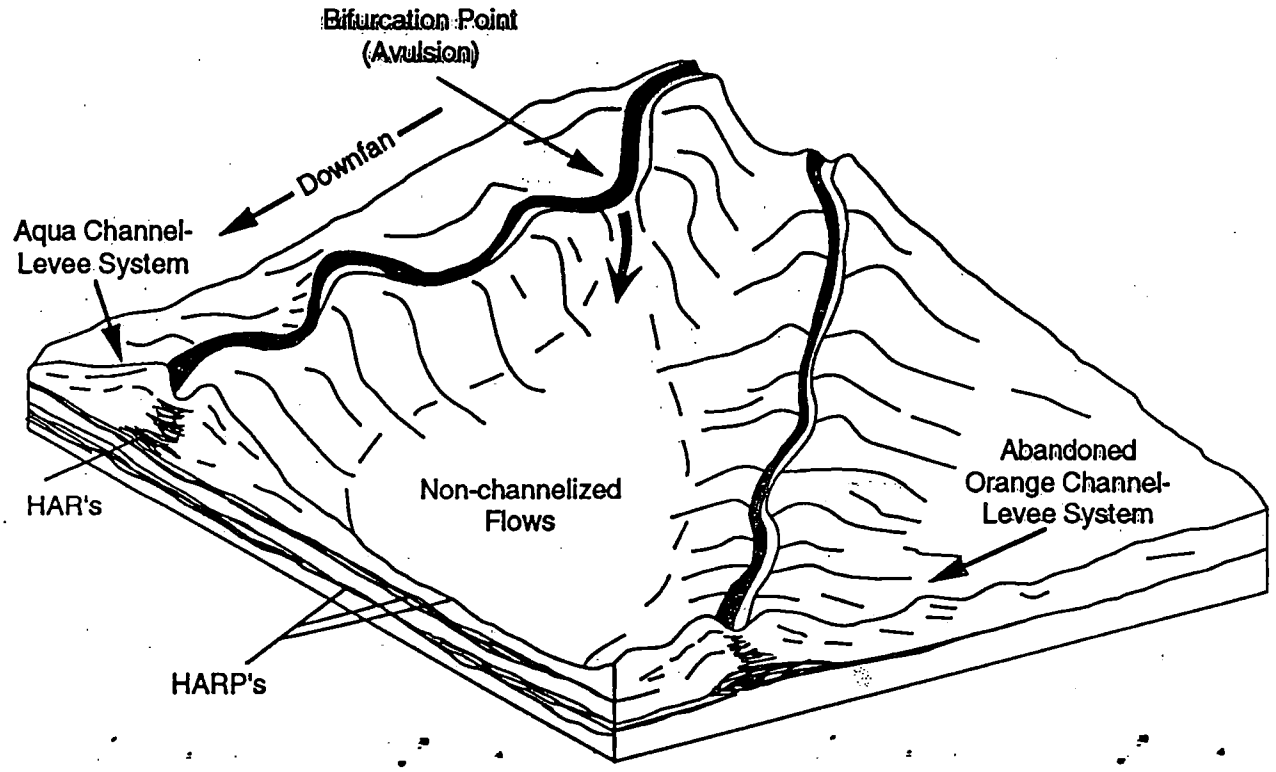
Site 934

Wireline logs



Appendix 10.20

A. Initiation of Bifurcation (Avulsion)
- Formation of new HARP's



B. End of Bifurcation (Avulsion)
- Formation of new channel levee system

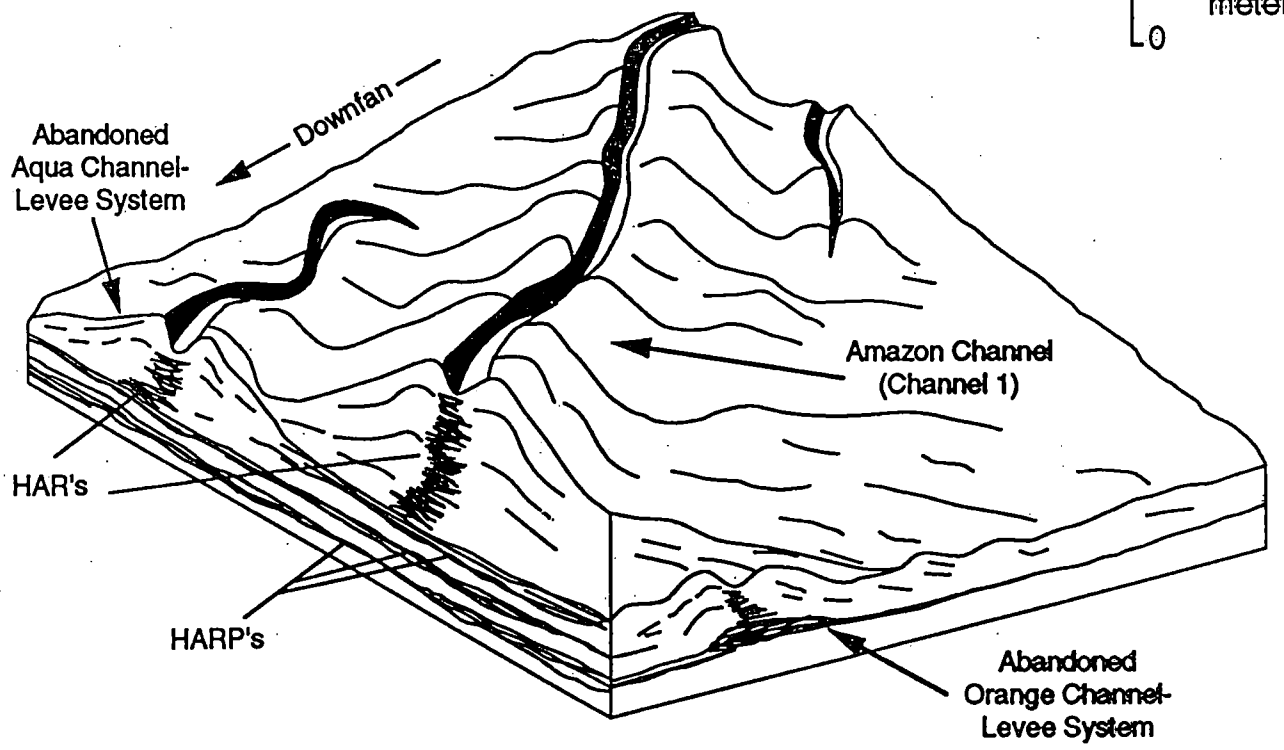
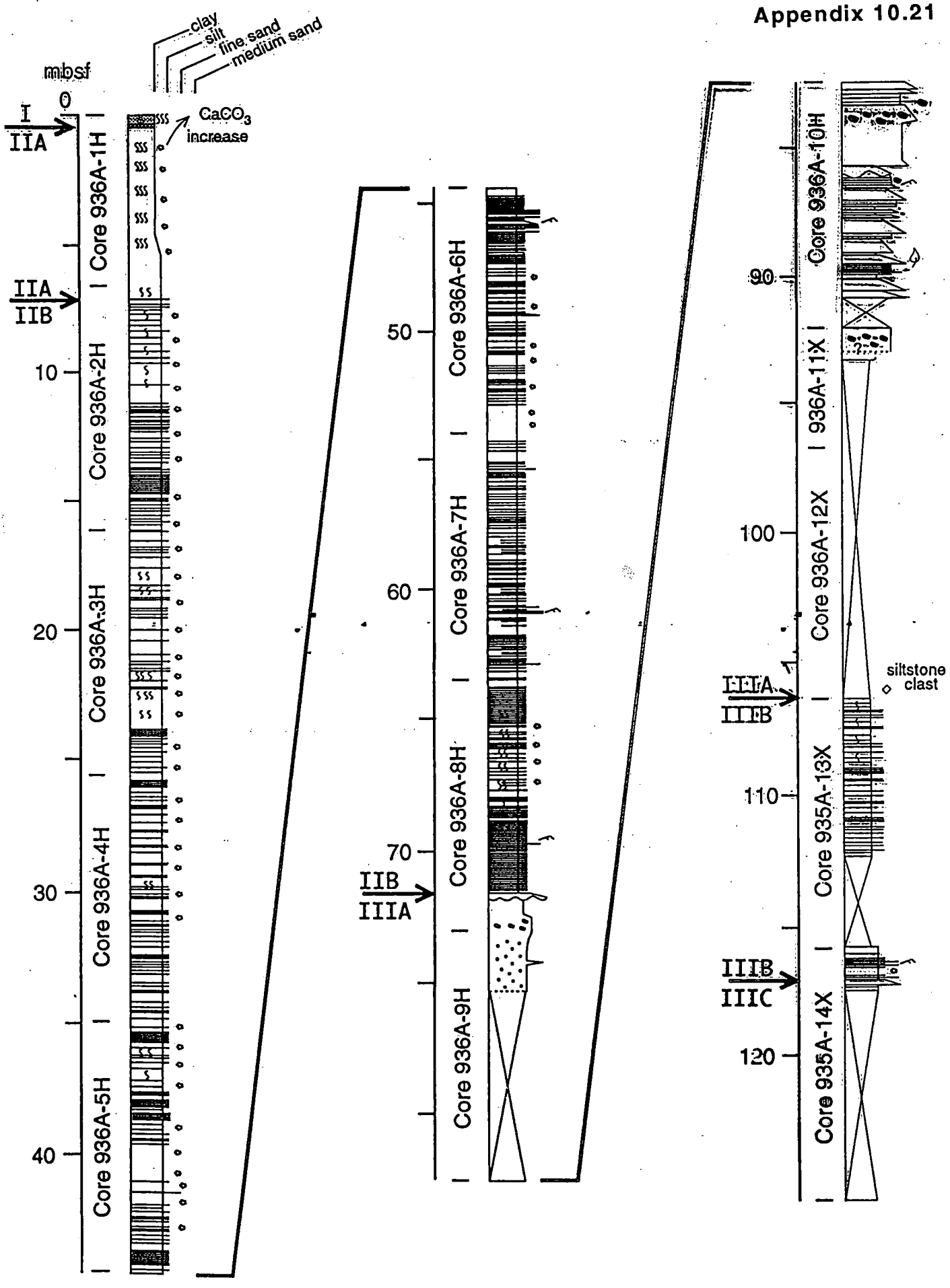


Figure Intro-6 FINAL



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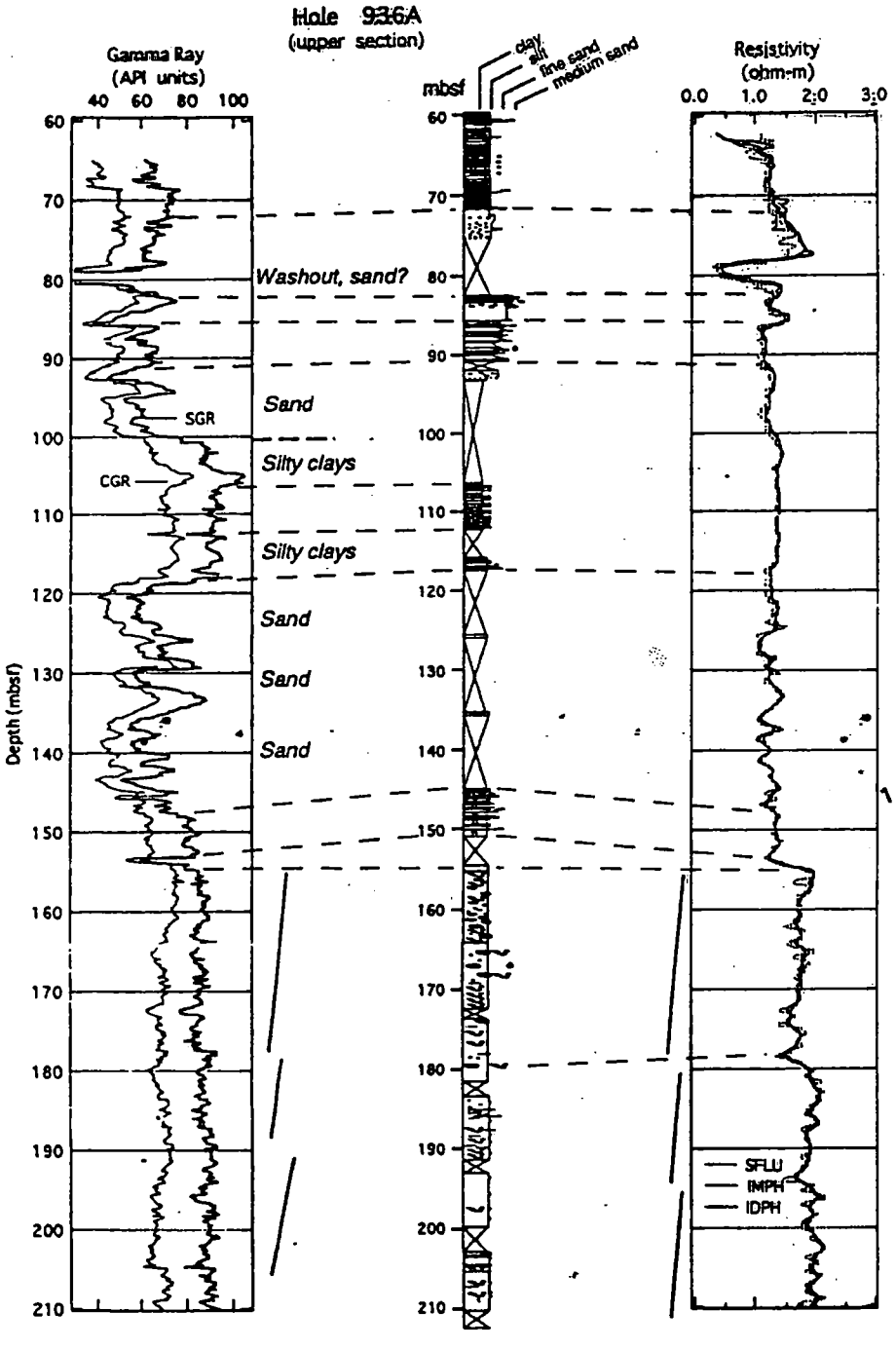
Appendix 10.22



Site 936

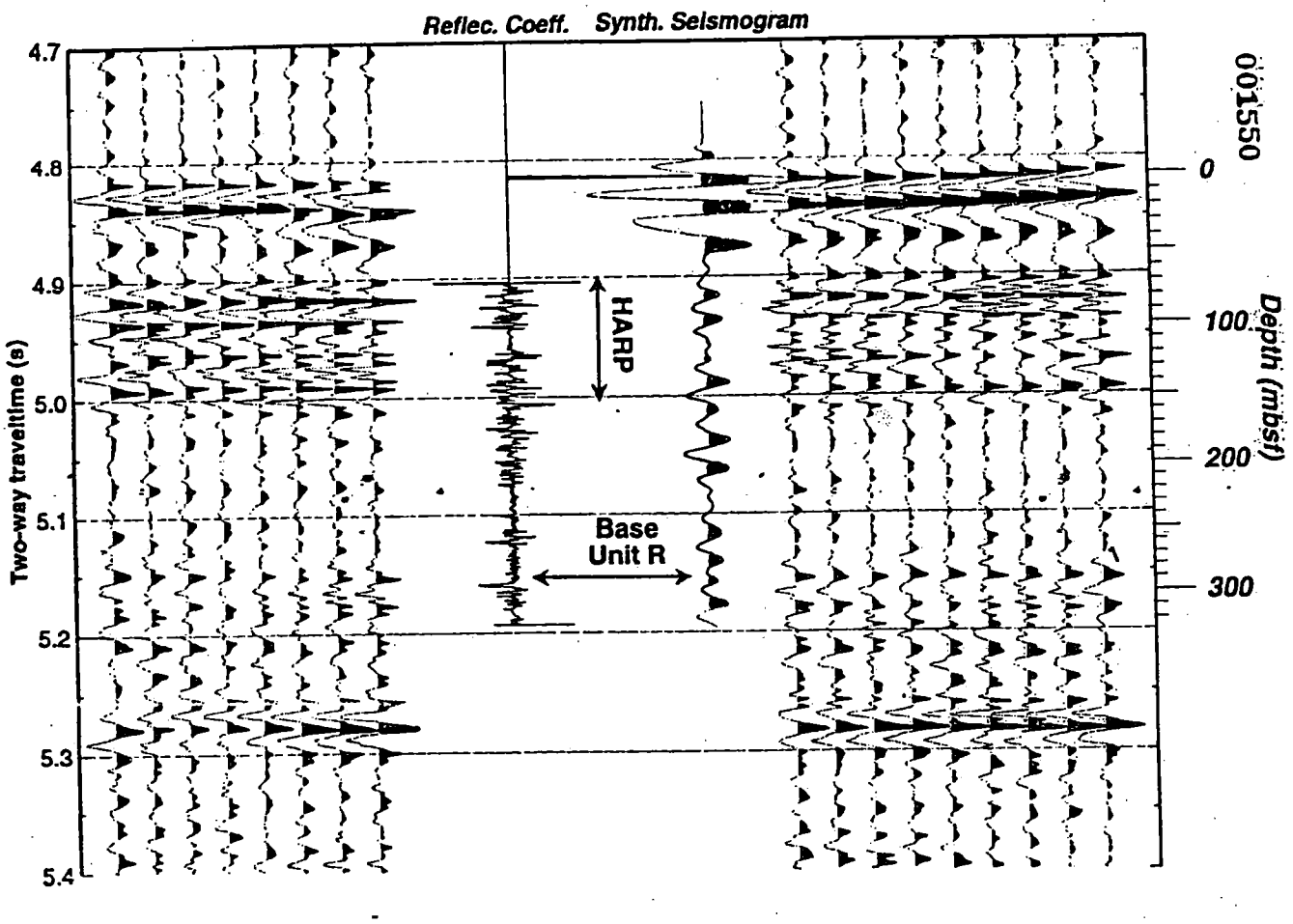


Fig. 936-K-3

Appendix 10.24

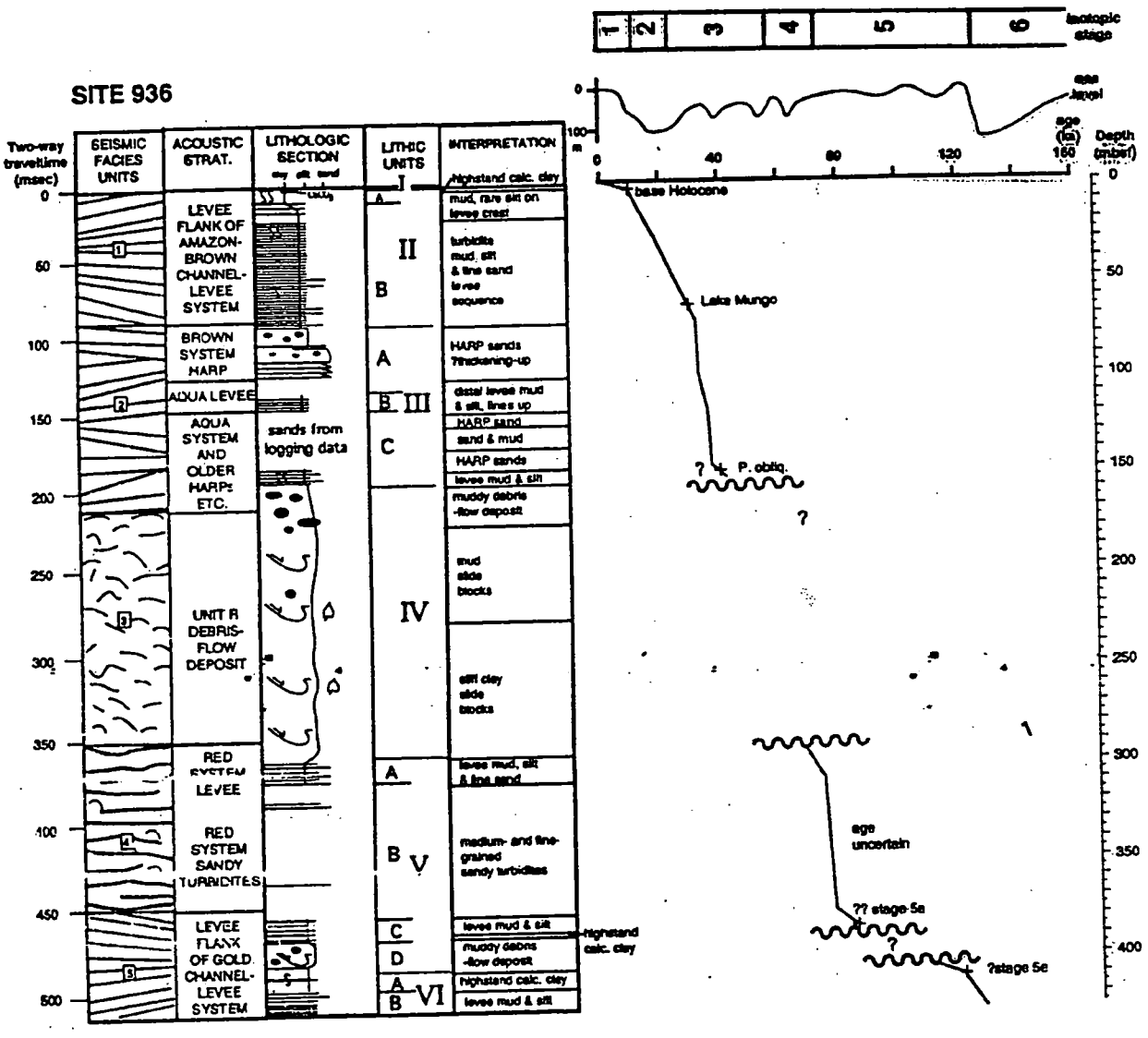


Figure 936-M-1

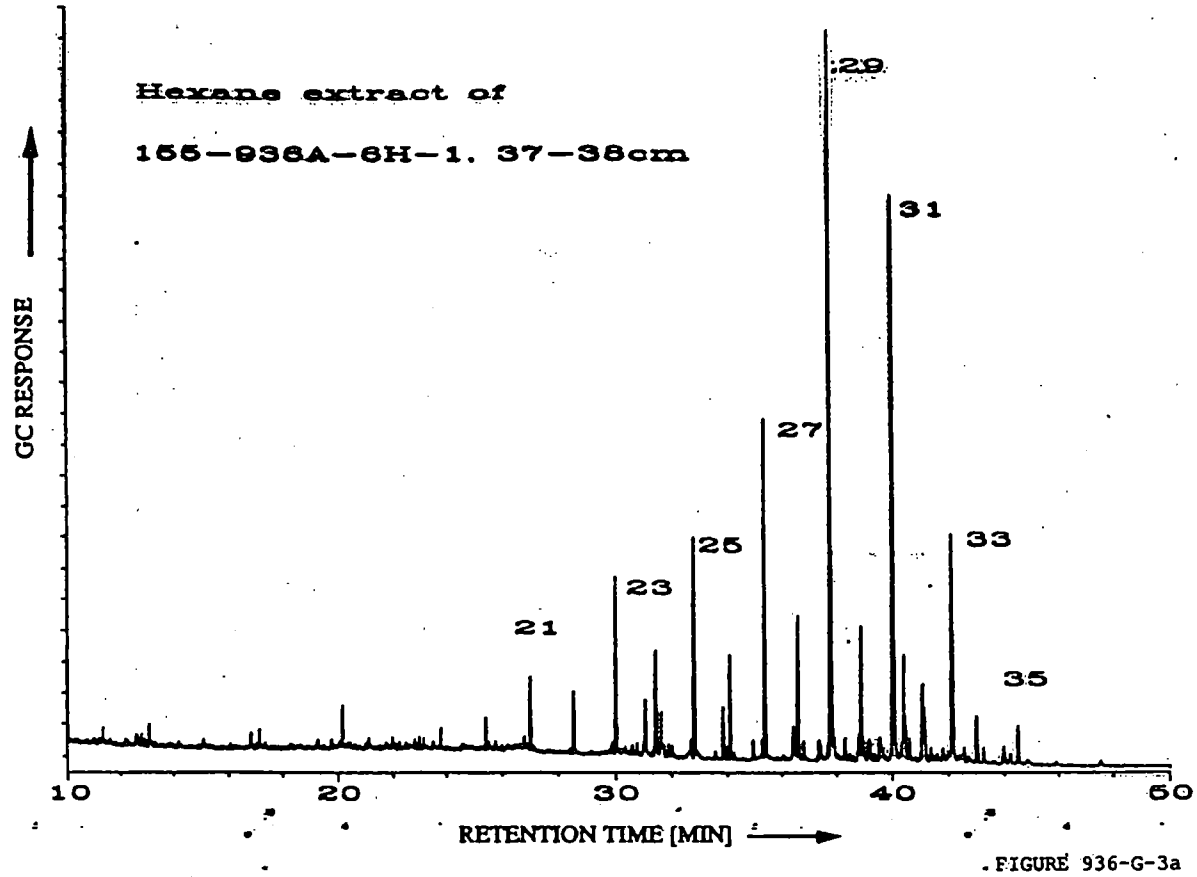


FIGURE 936-G-3a

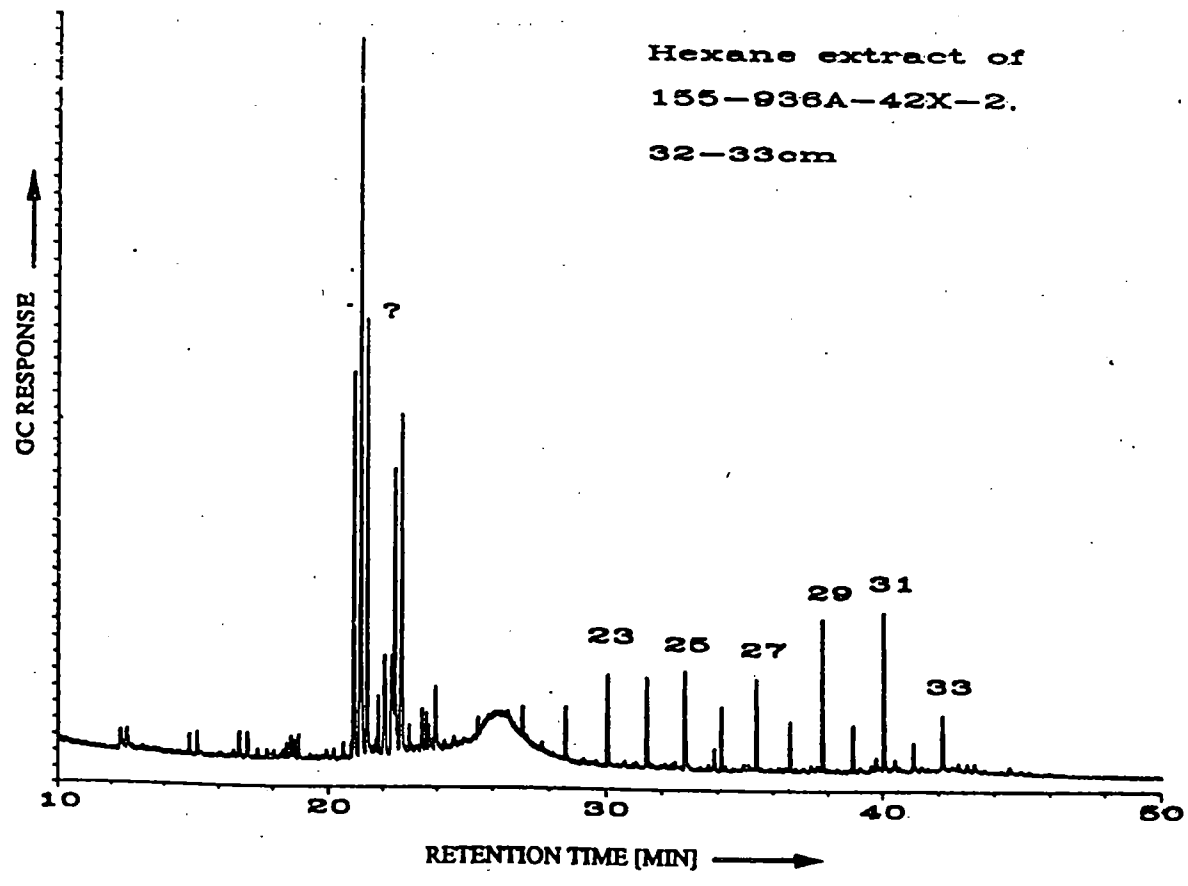
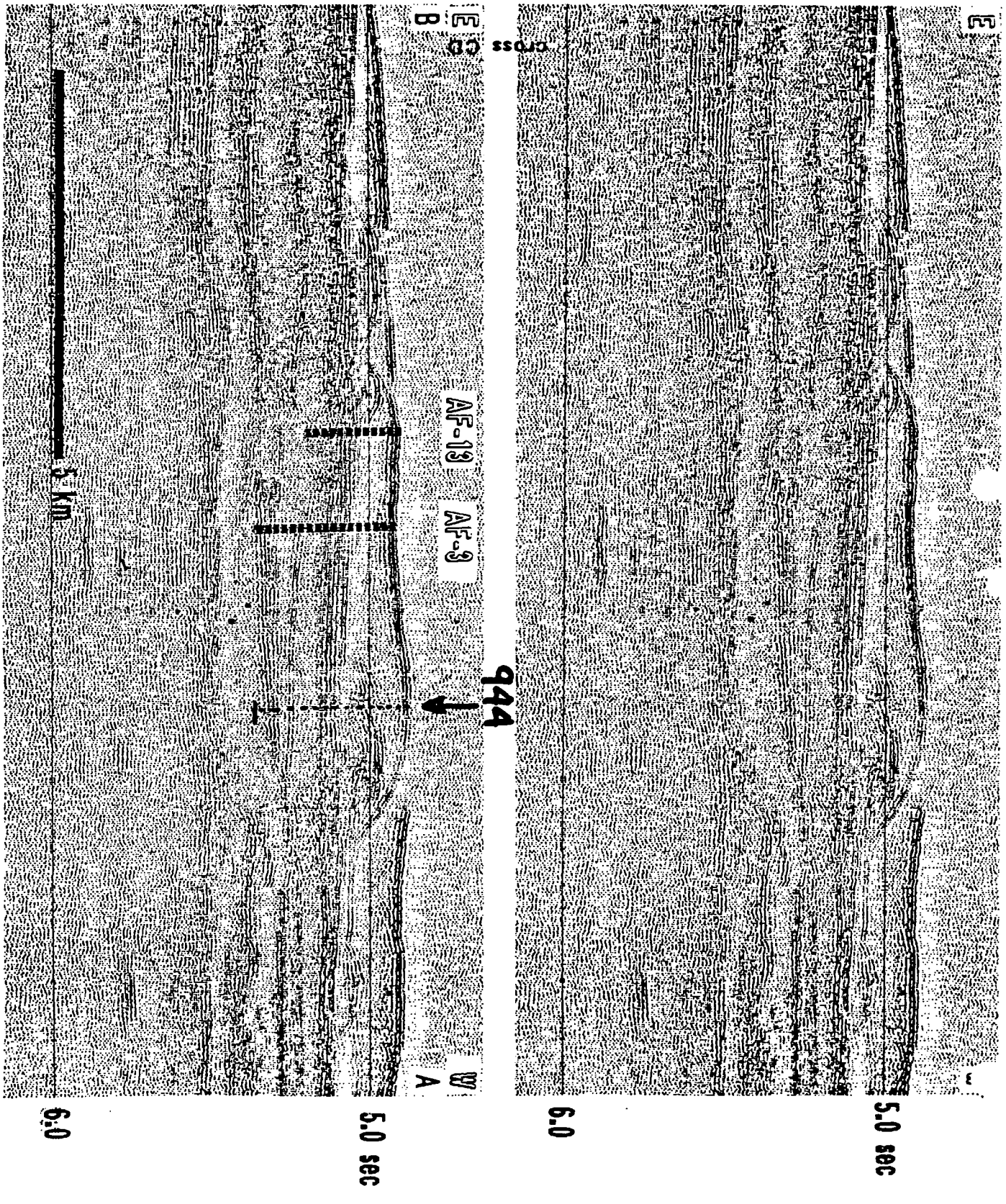


FIGURE 936-G-3b

Appendix 10.26



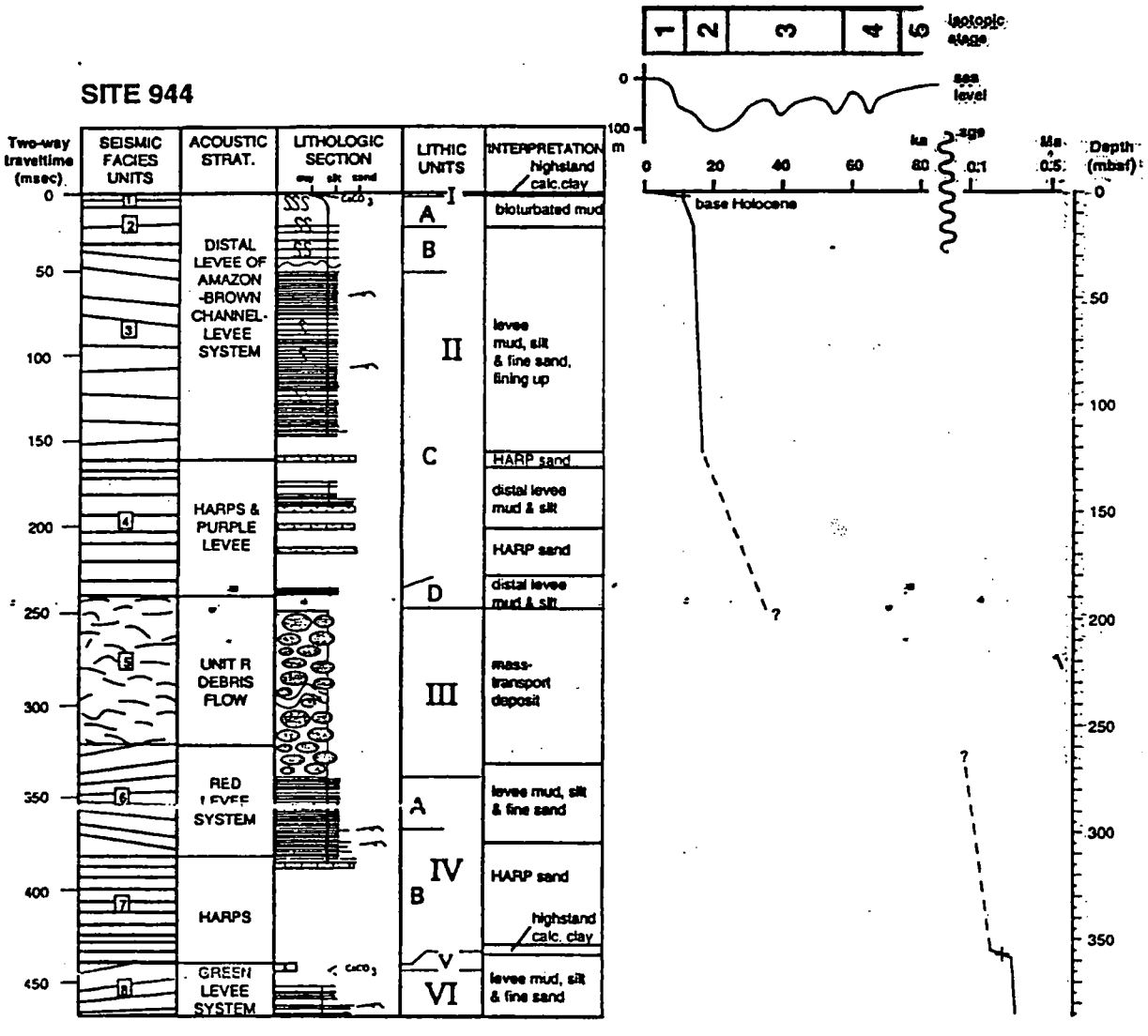


Figure 944-M-1

Appendix 10.28

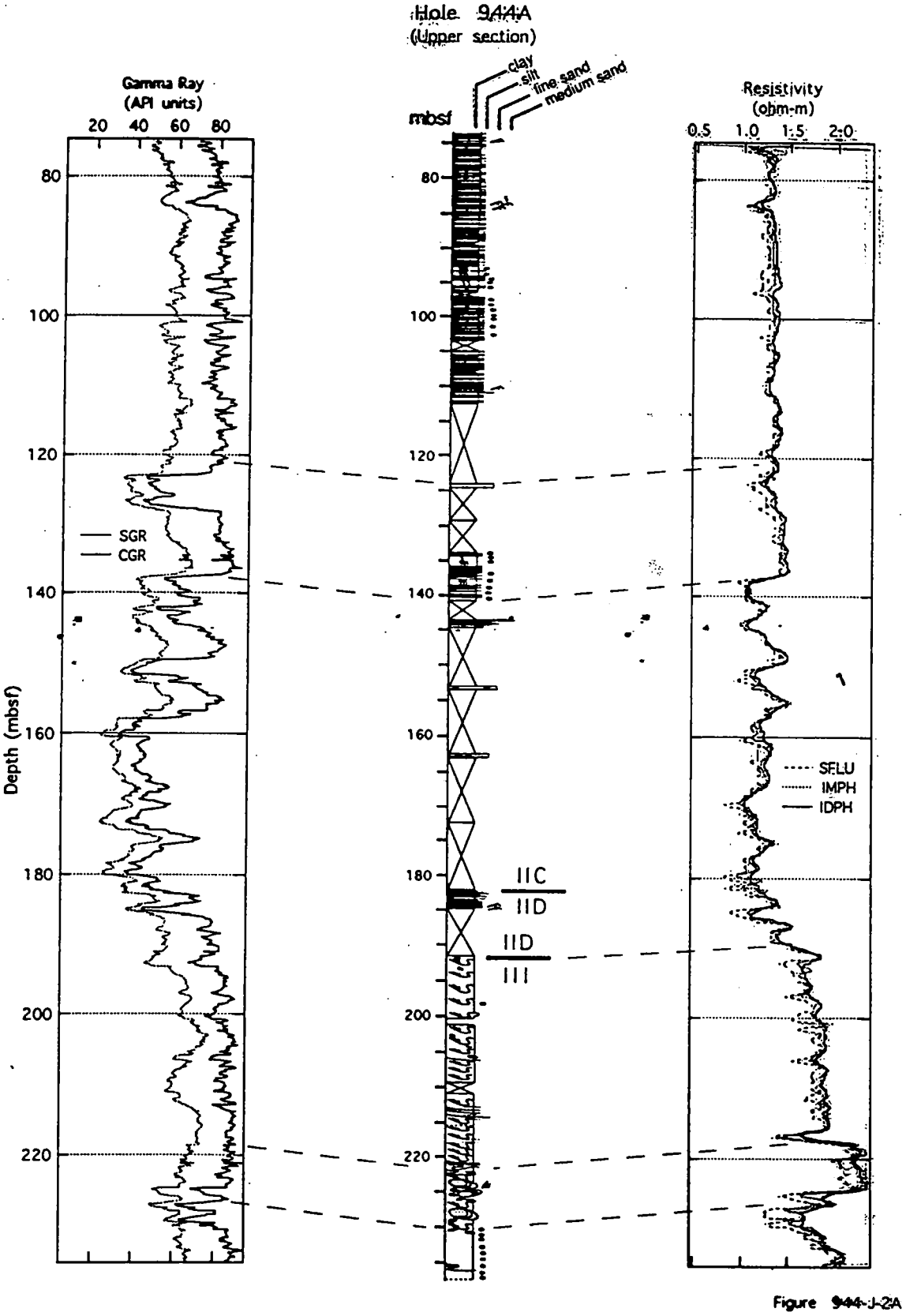


Figure 944-J-2A

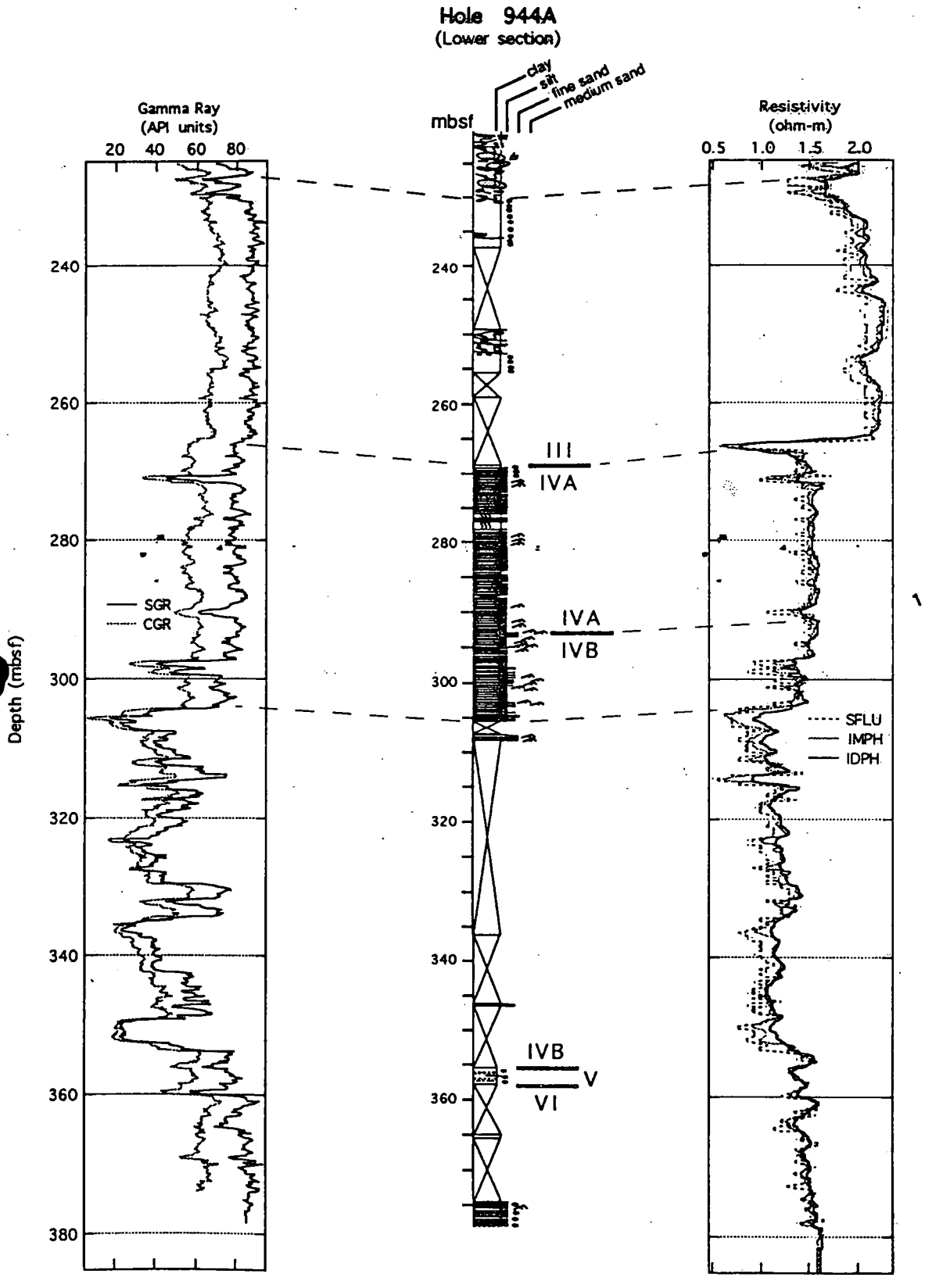
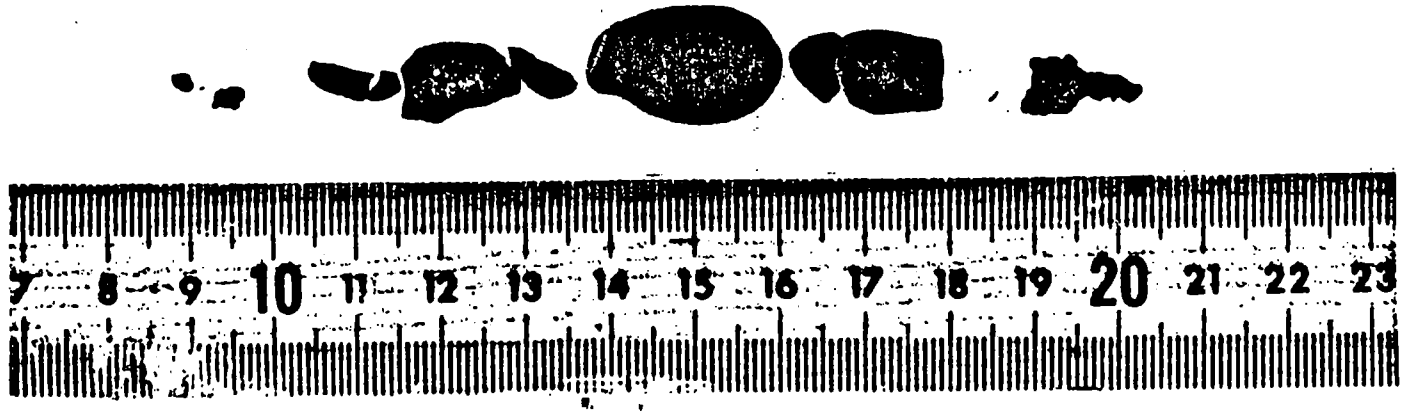
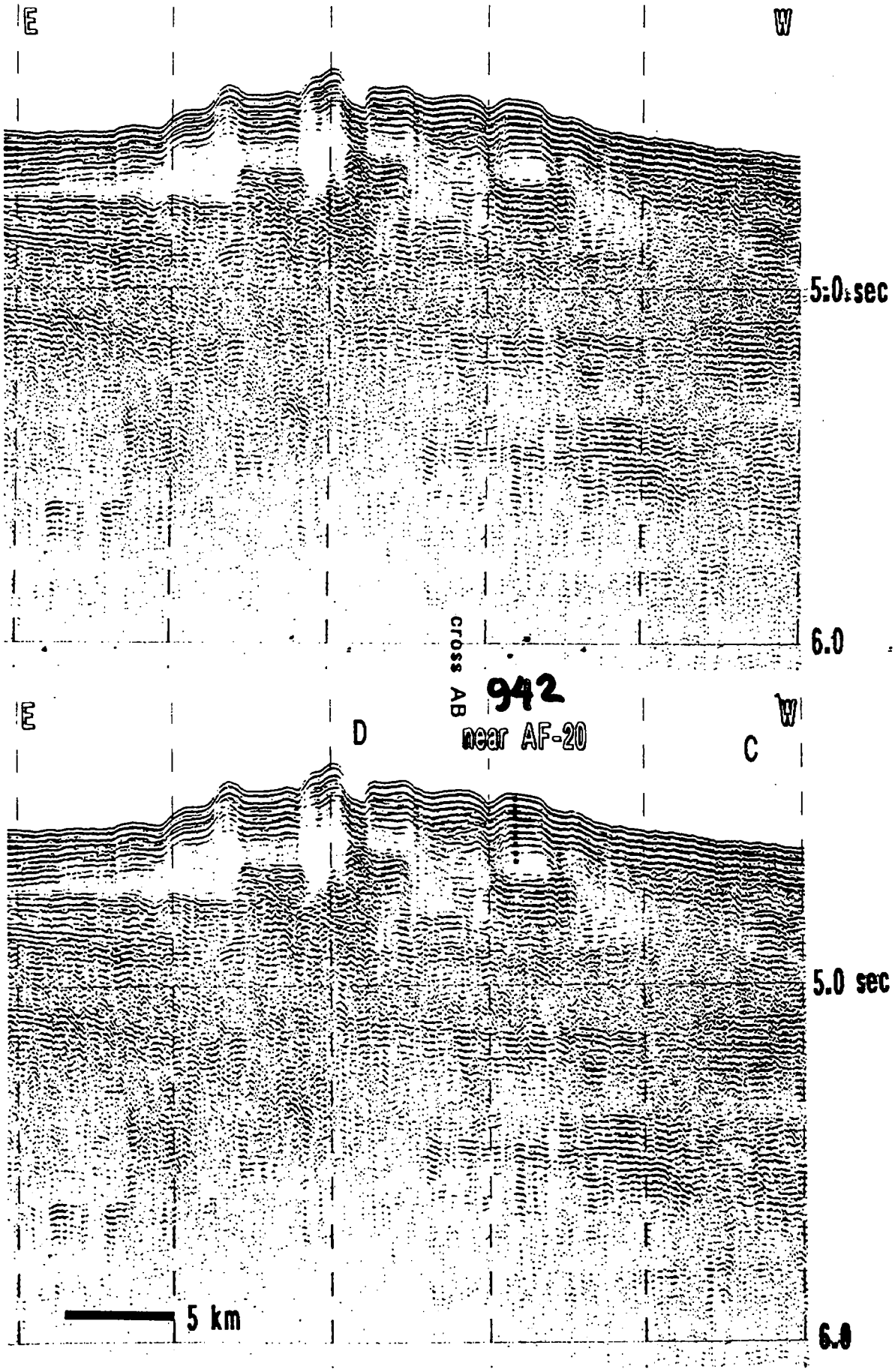


Figure 944-J-2B

OCEAN DRILLING
LEG | HOLE | CORE | SECT
155 9364 38X CC

ALL




E
W
5.0 sec
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cross AB
942
near AF-20
E
D
C
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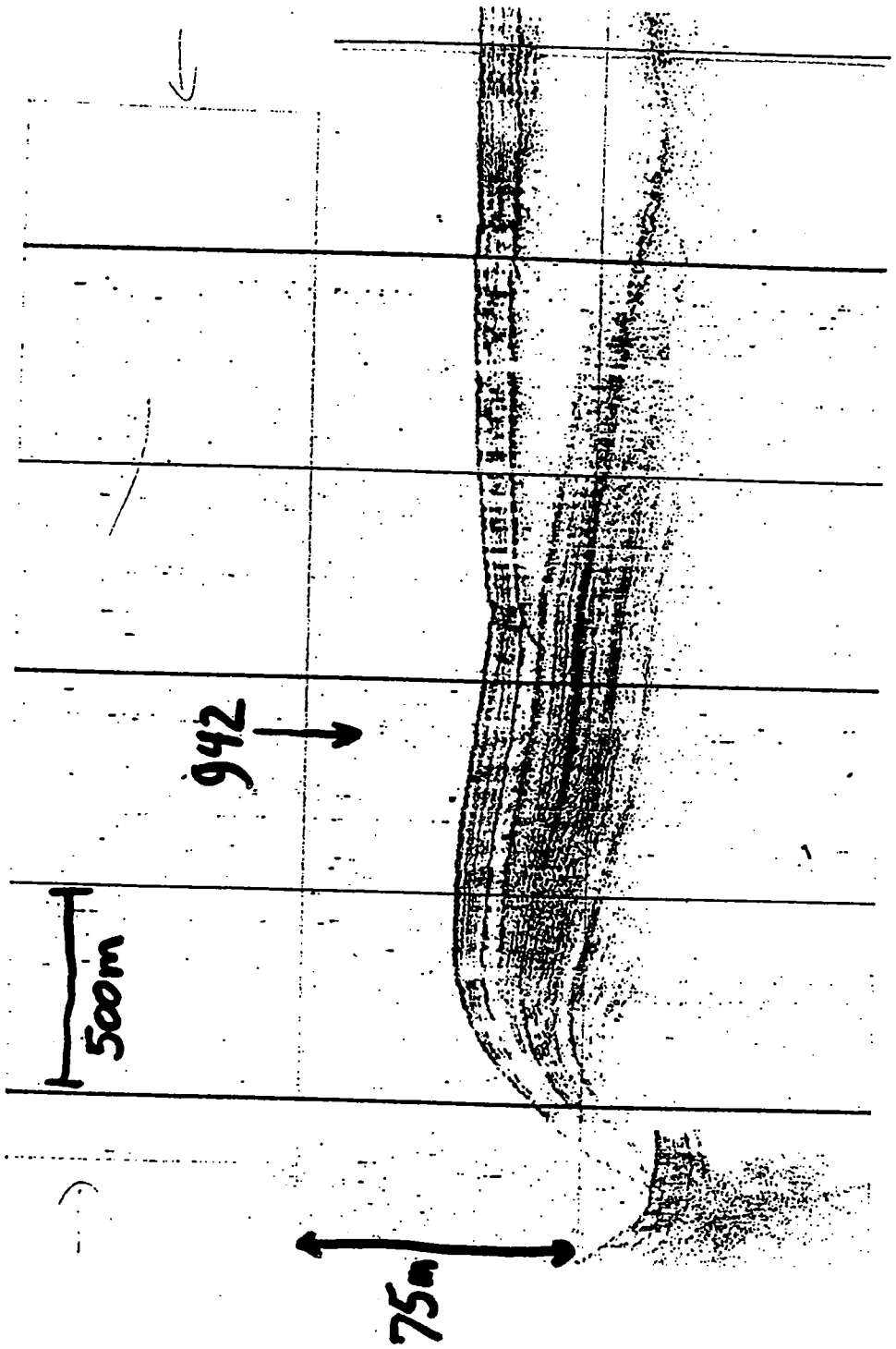
6.0

Appendix 10.32



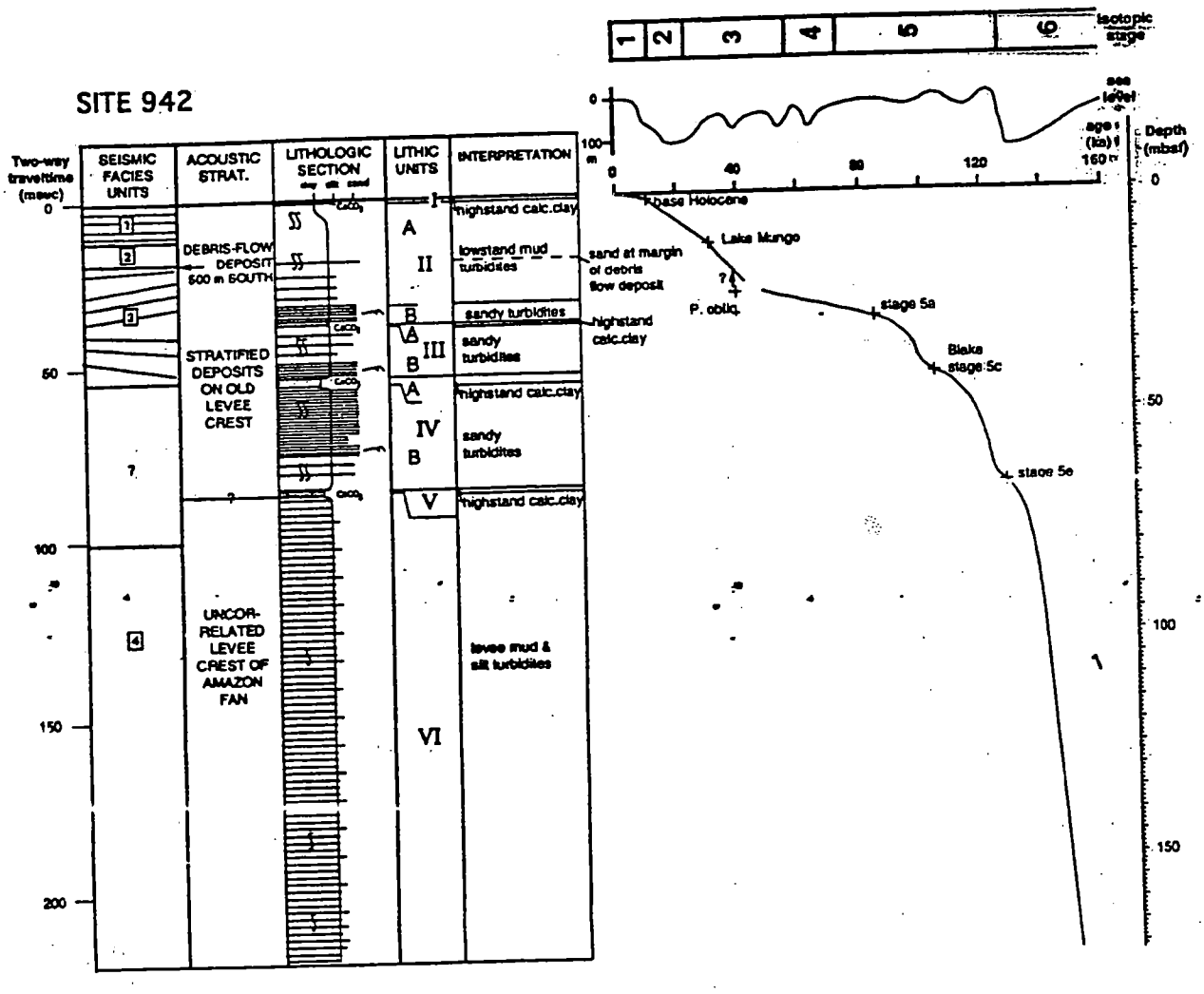
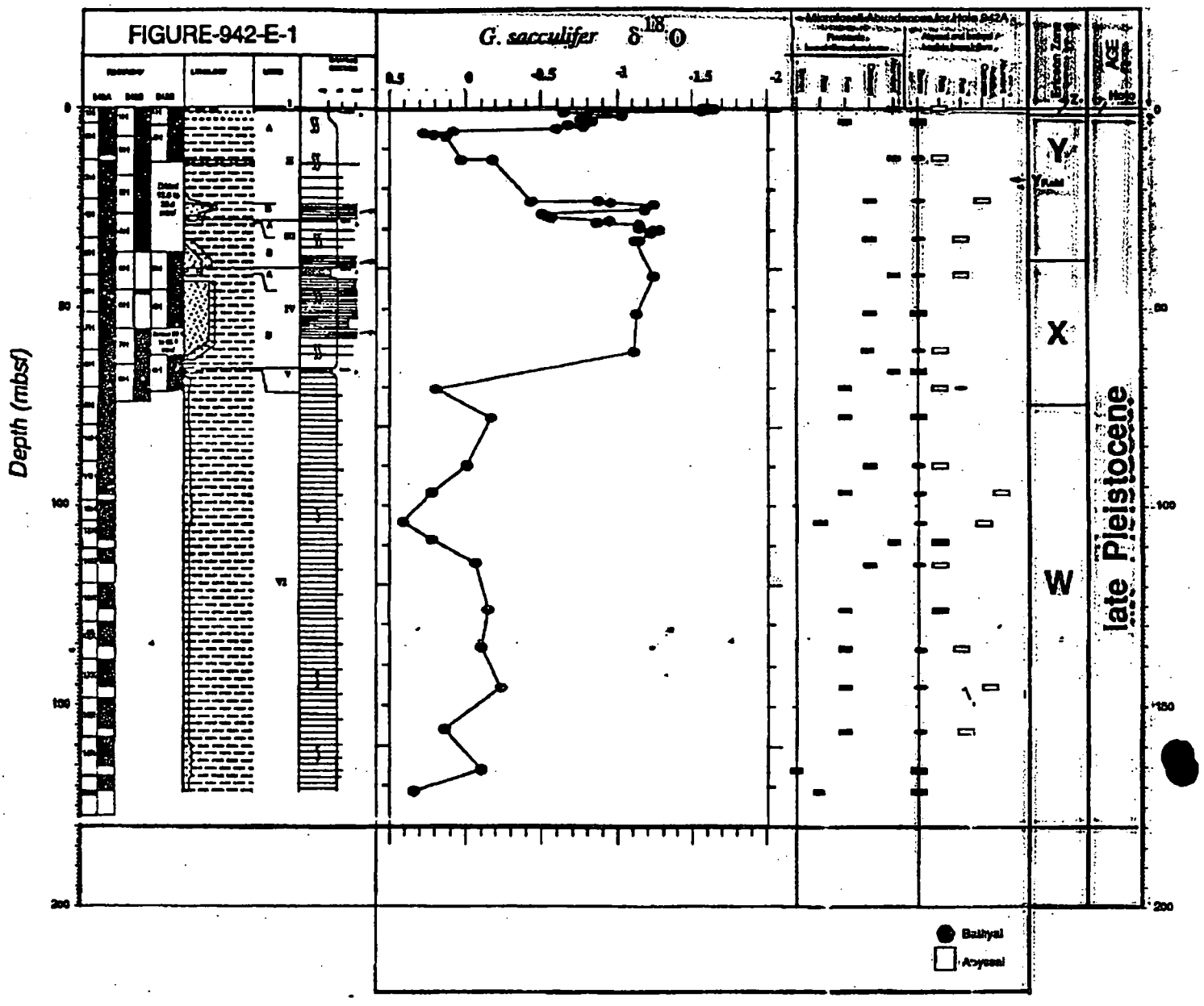
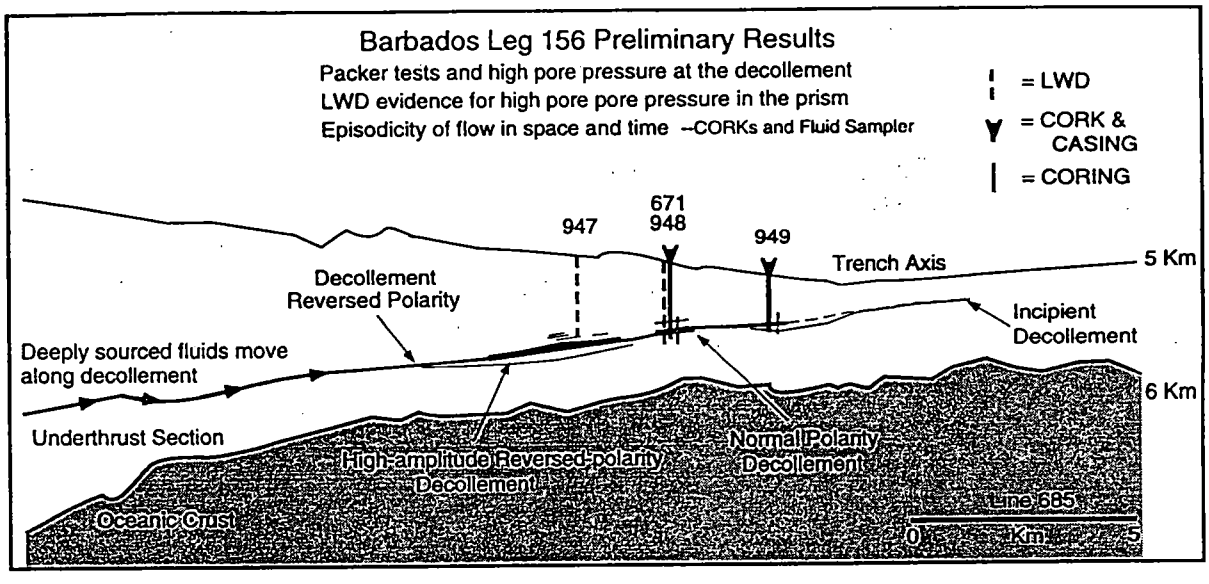


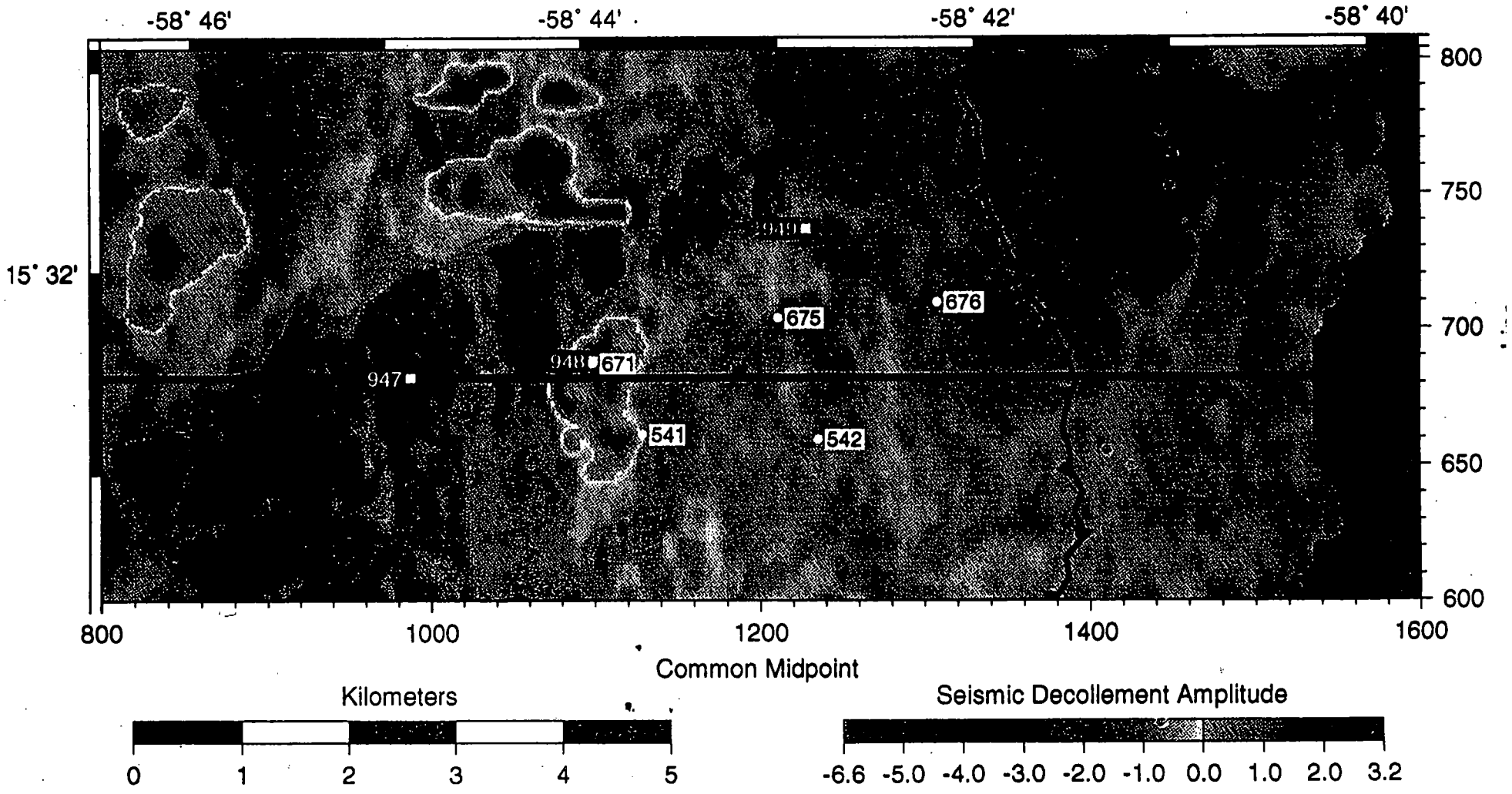
Figure 942-M-1

Appendix 10.34

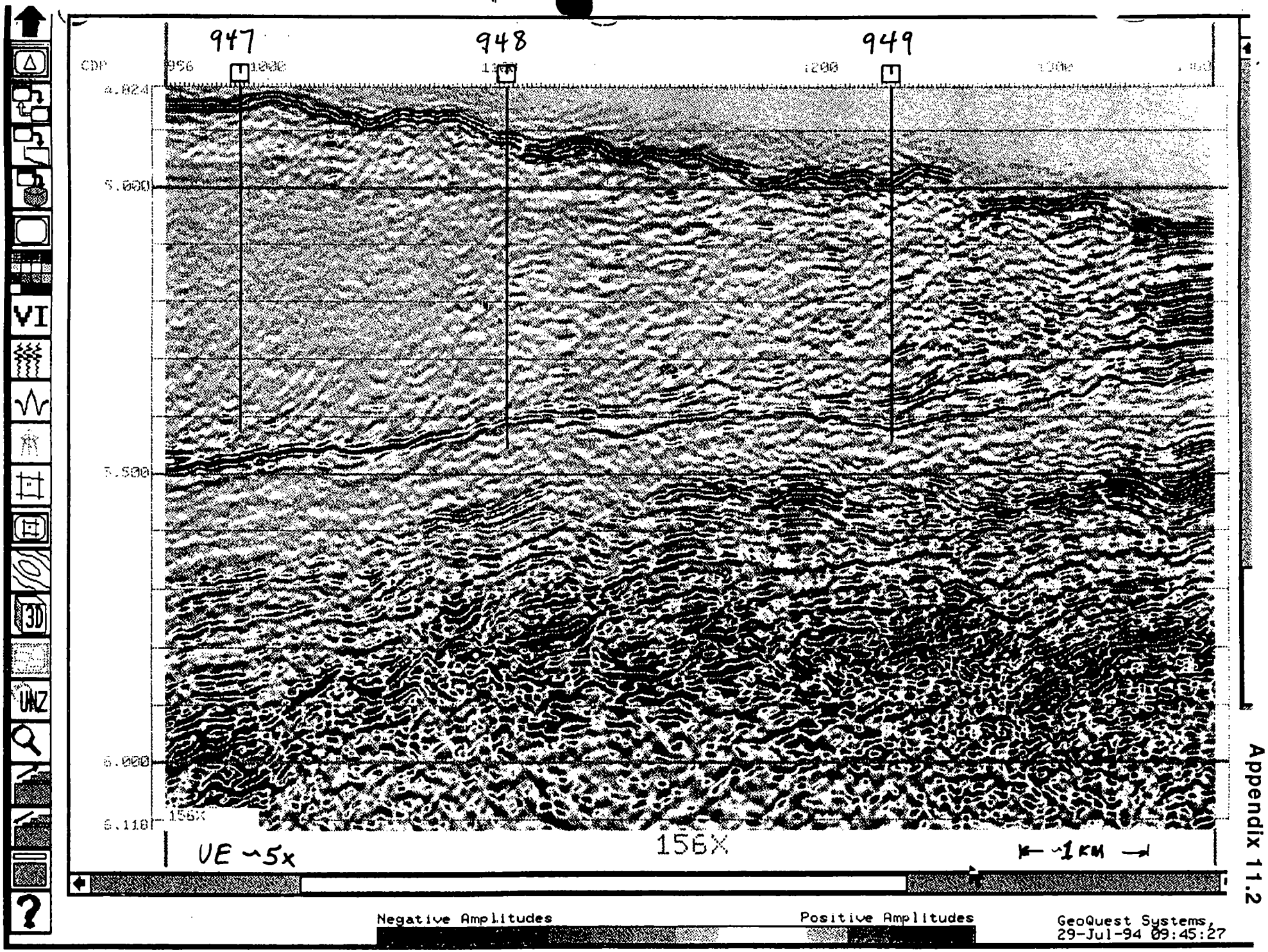




Leg 156 Summary
//d4/leg156/Summary.drw
/d4/leg156/Summary.epsi
11 july 94

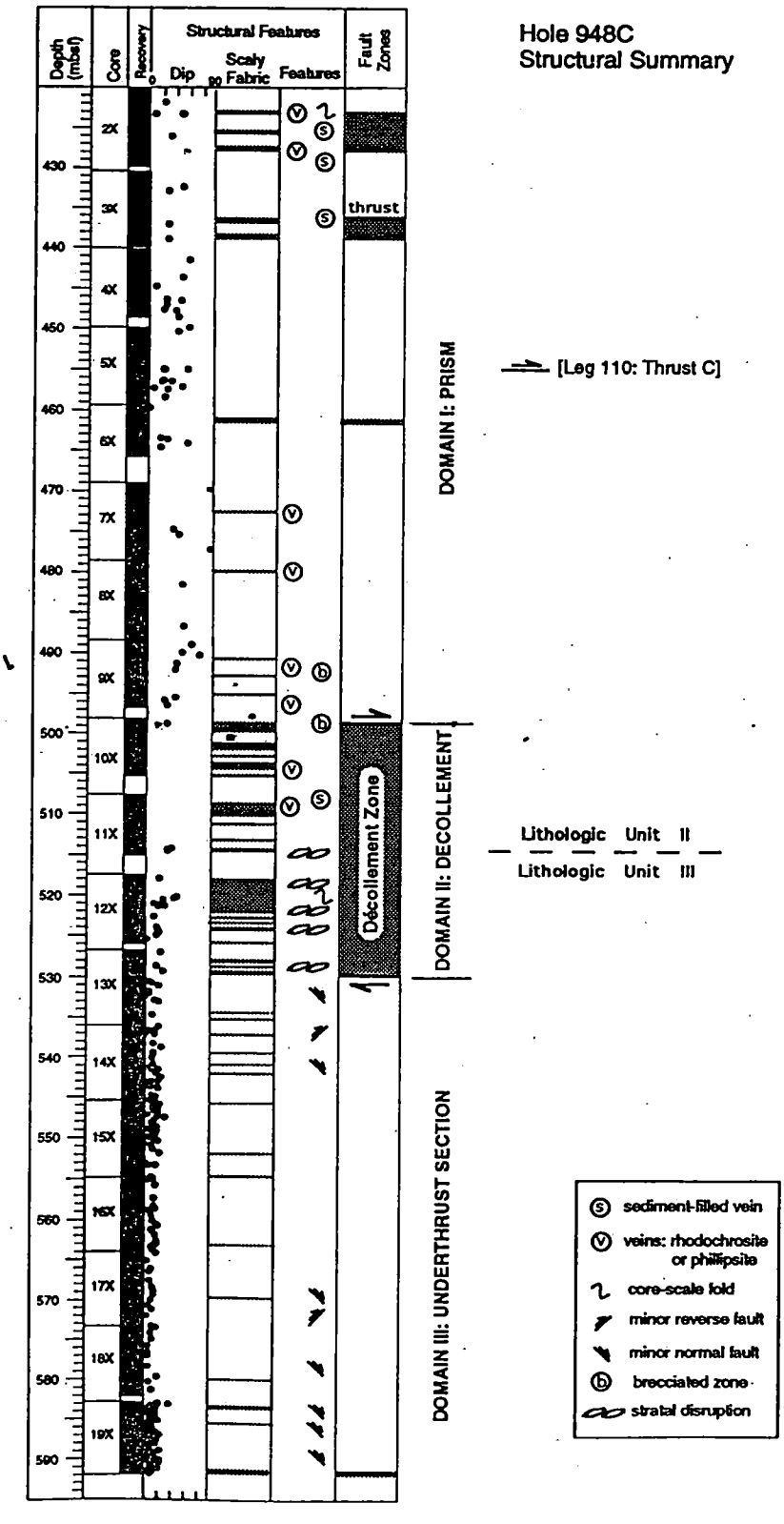


Appendix 11.1



Appendix 11.2

Appendix 11.3



Appendix 11.4

Hole 949B
Structural Summary

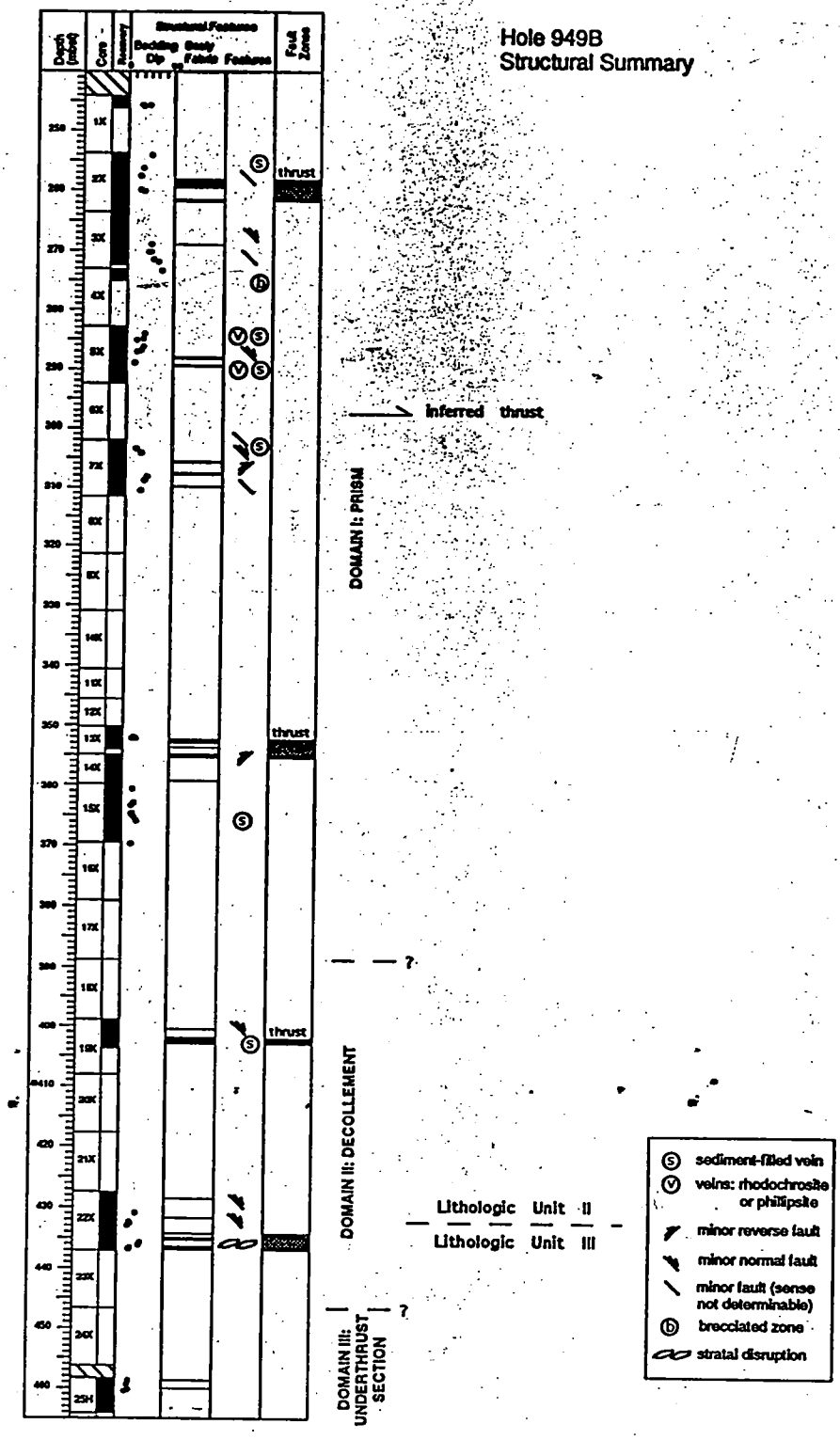
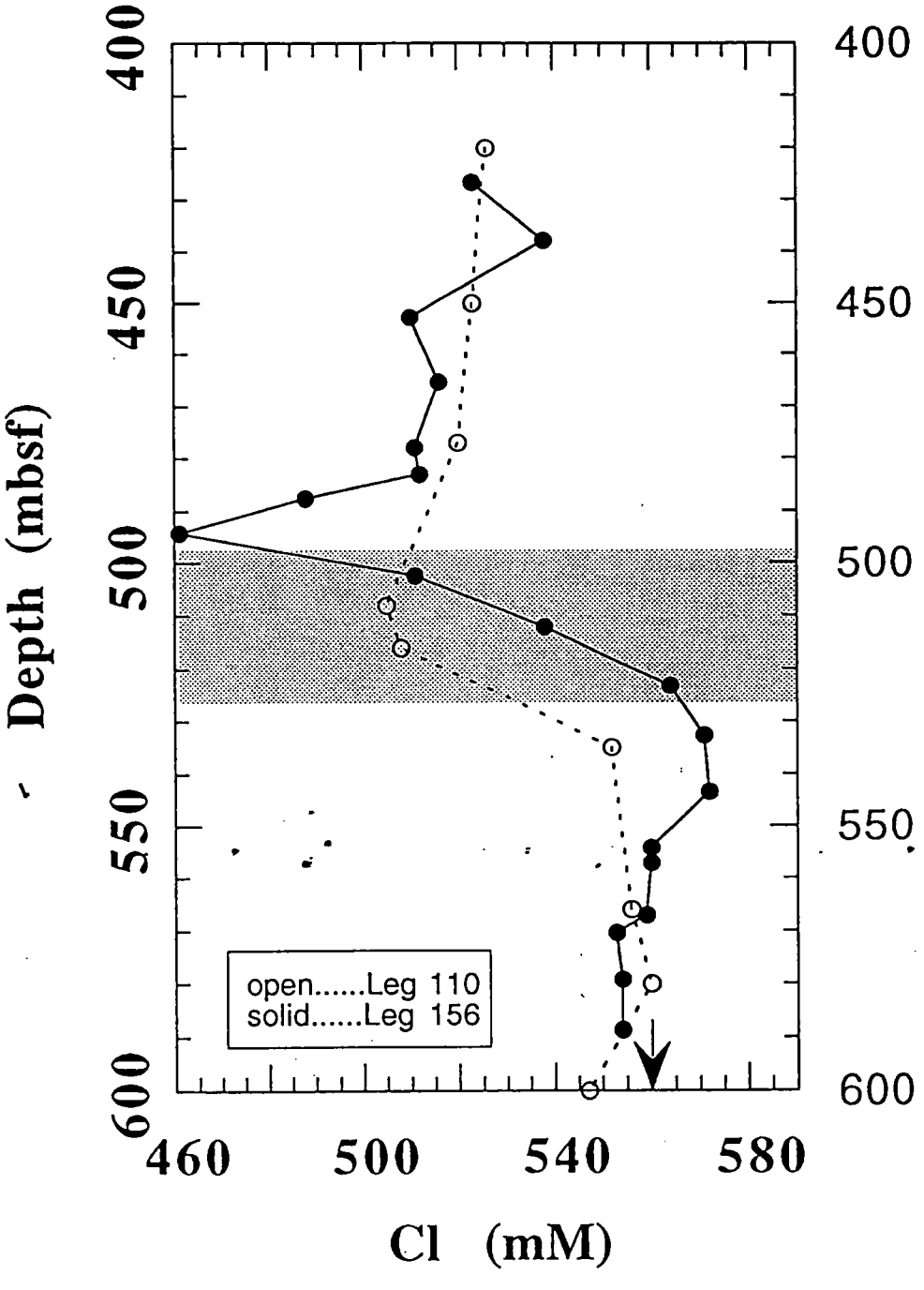


Figure 949-E-1

Appendix 11.5

Hole 948C



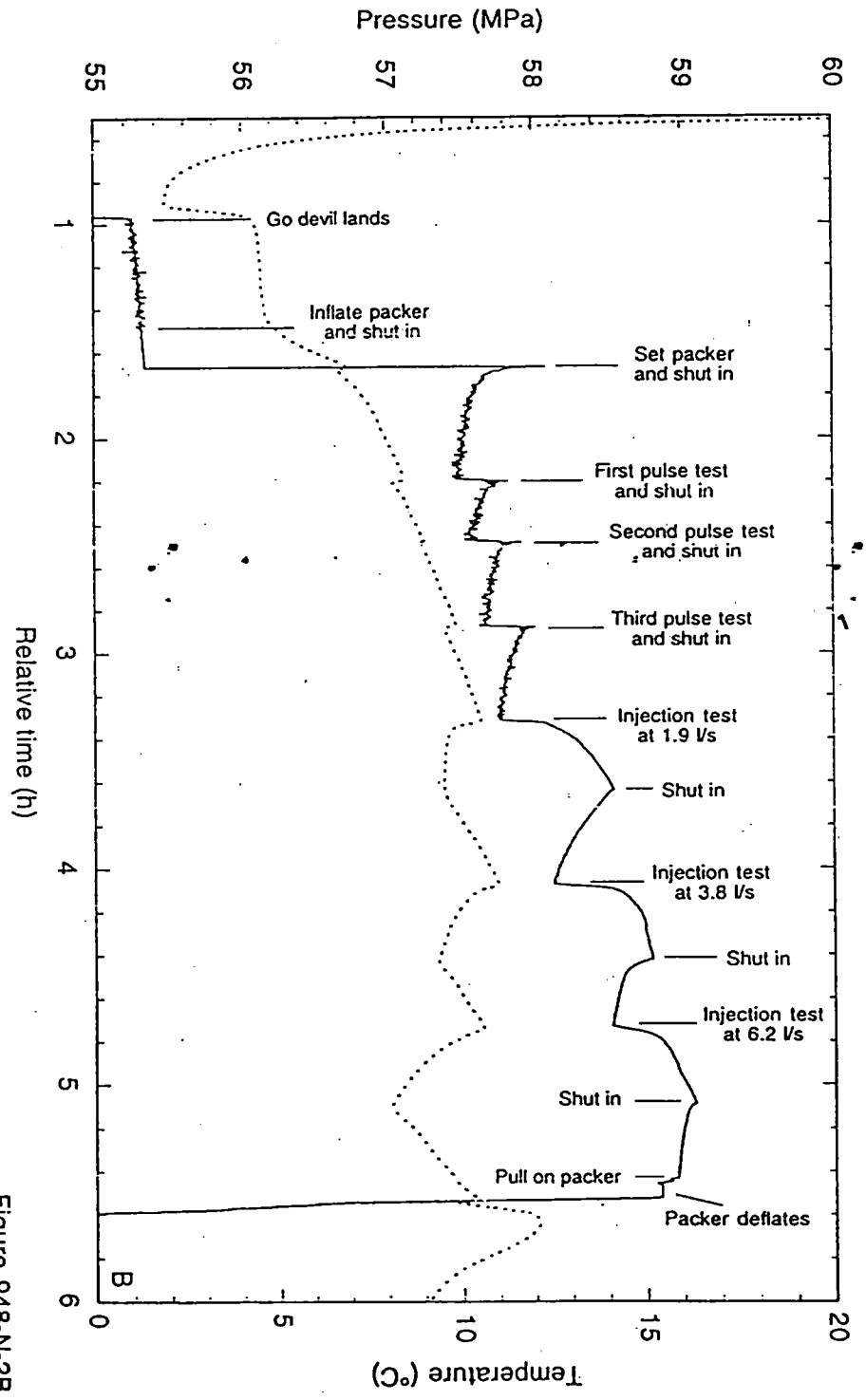


Figure 948-N-2B

Appendix 11.7

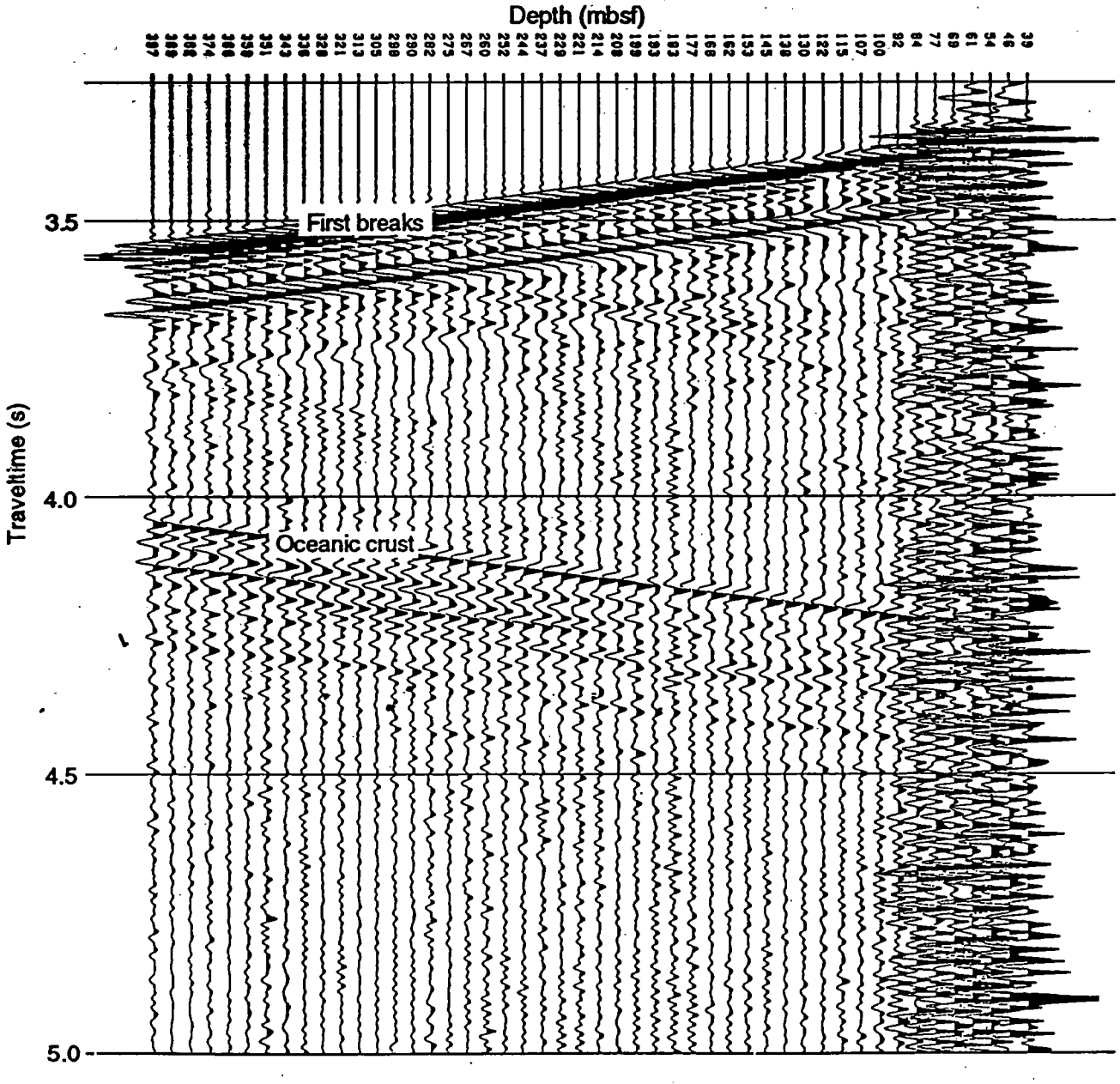


Fig. 949-M-1
949-M-1.ps

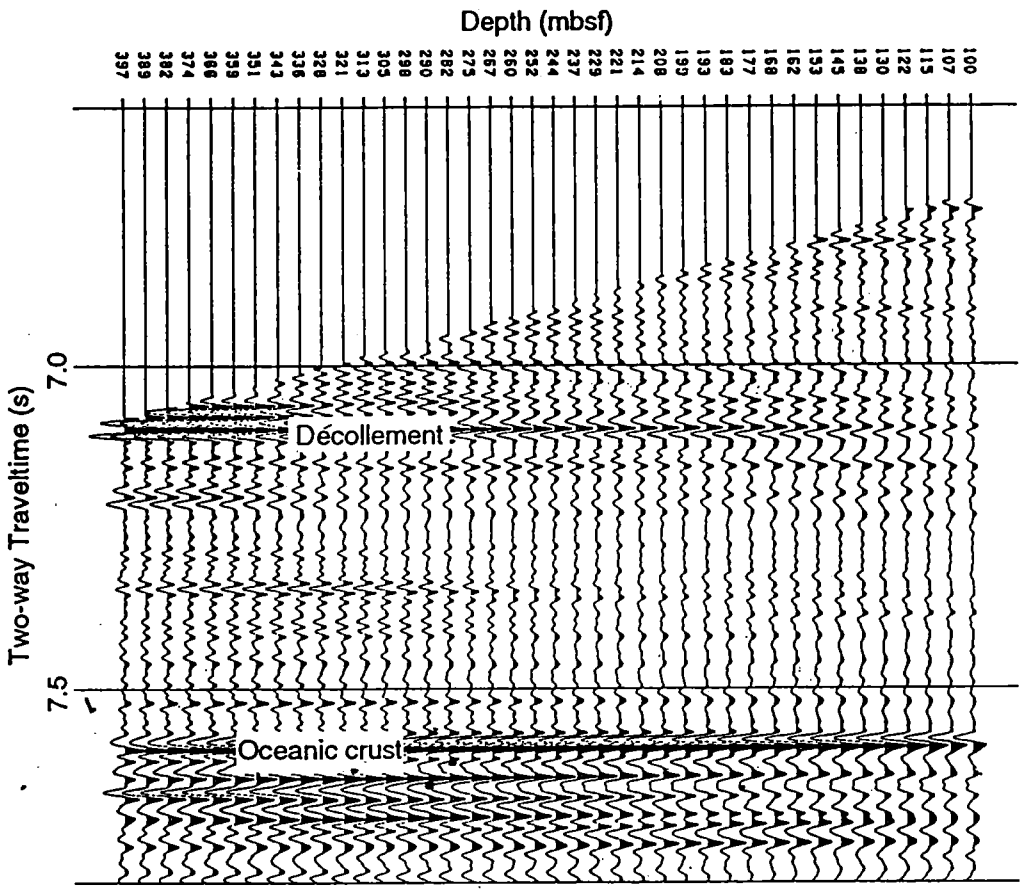
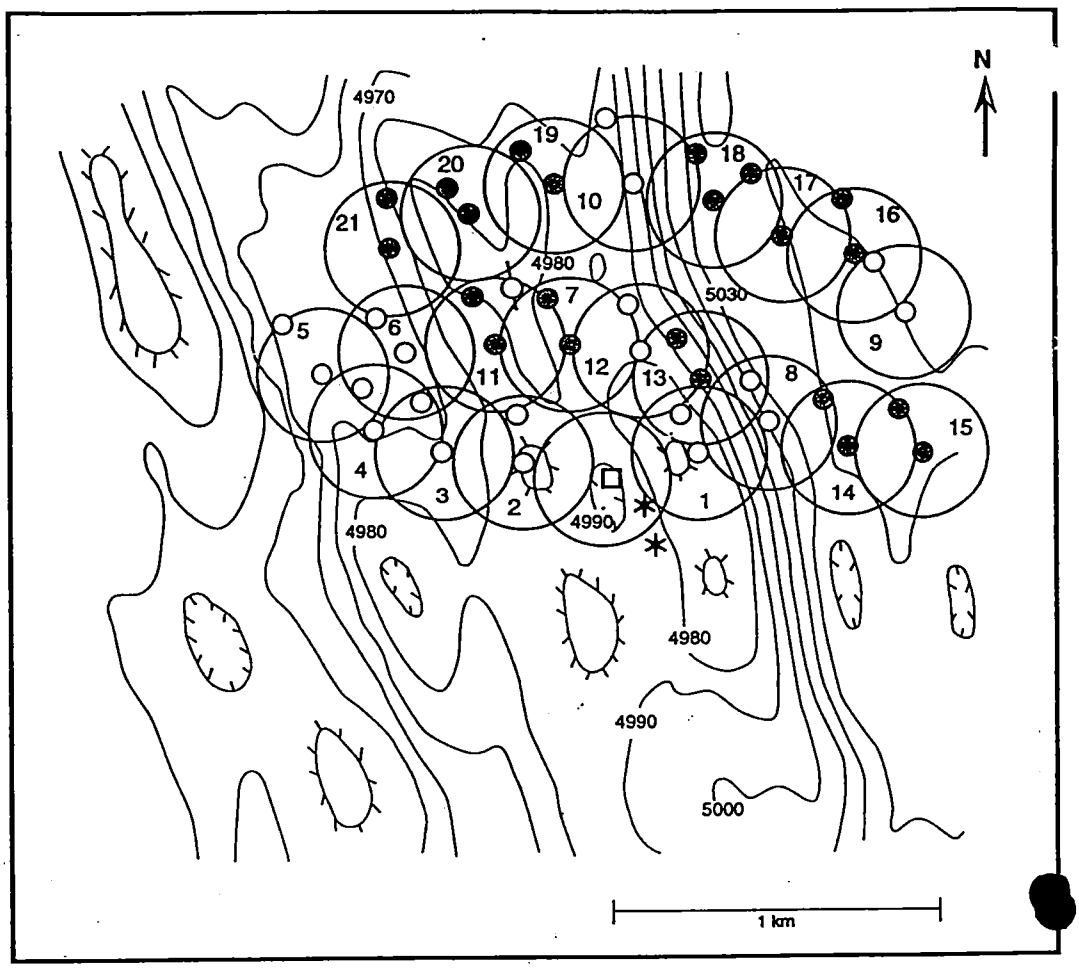
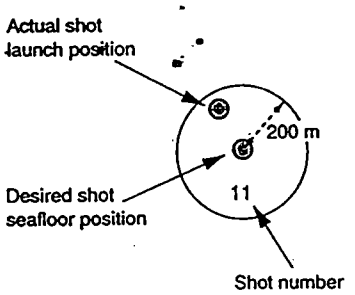


Fig. 949-M-3
949-M-3.ps

Appendix 11.9





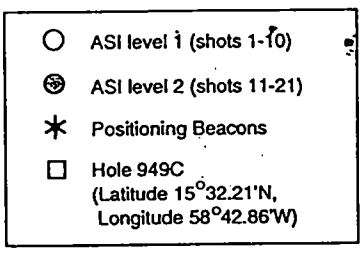


Figure 949-M-5

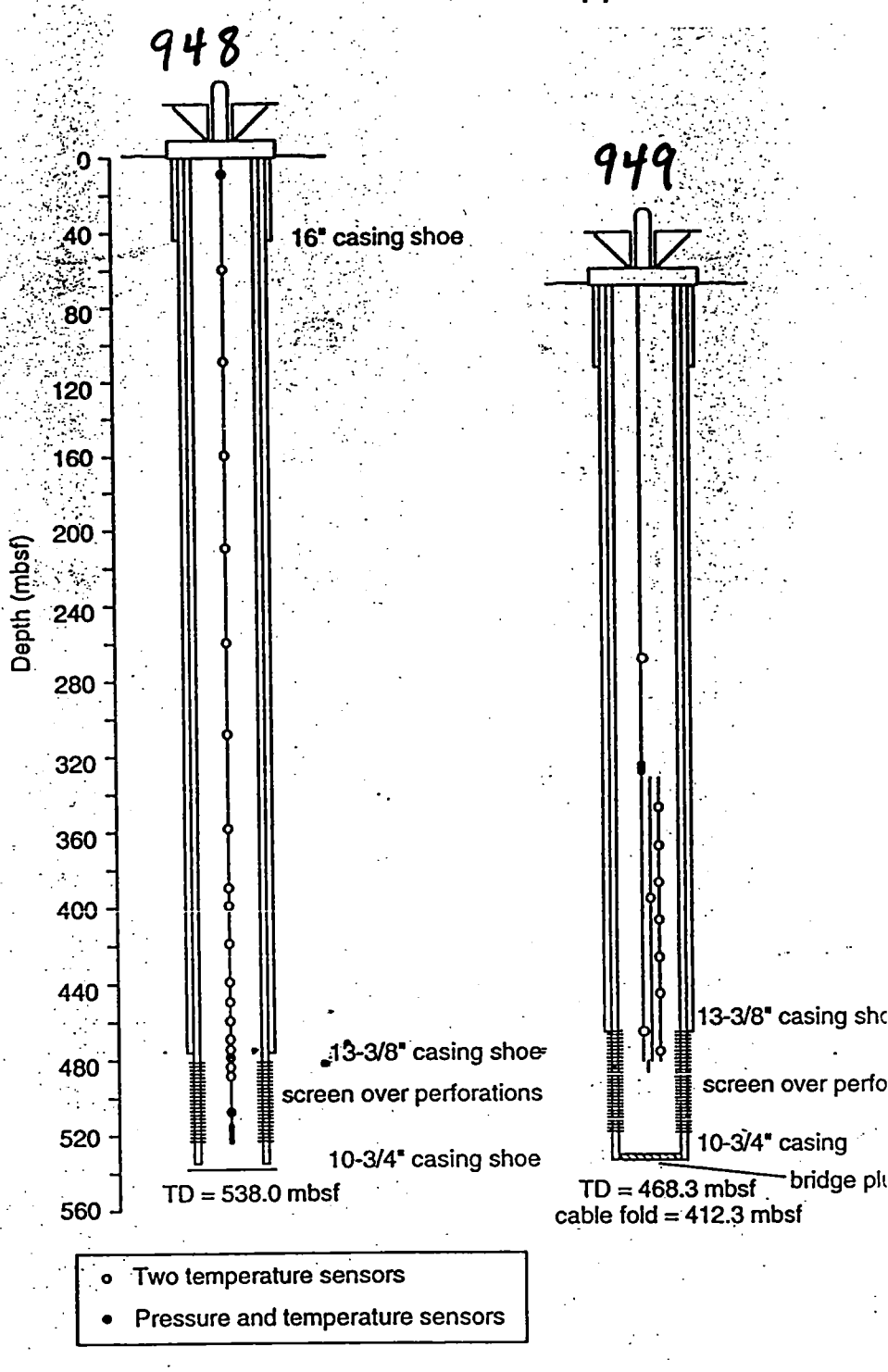


Figure 948-C-1

949

Mechanical Continuous Fluid Sampler

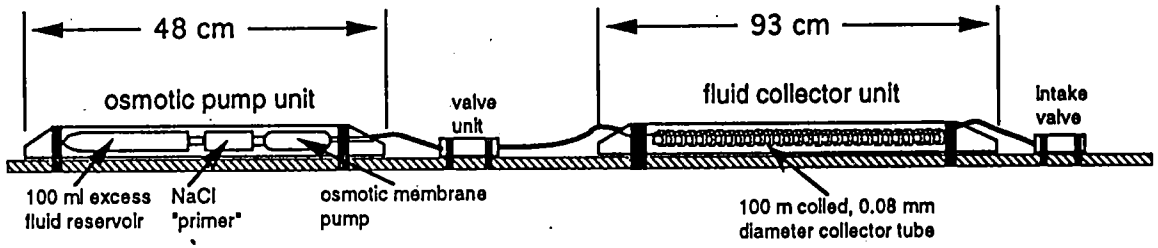


Fig. 949-I-6

Principle Results

1. **High-pressure fluid compartments**
   The decollement is weak and dilated
   Along decollement 'porosity' and flow are variable
   Must be dynamic down-head (up-dip) flow for maintenance of observed porosity

2. **Extensive regions of prism with high pore pressures**
   Validates weak prism mechanical state

Operations Notes

Used 55 days on site
Minimal coring
LWD at two sites
Placed casing in two sites where water depth was 5000 m and total depth was about 5500 m
Both CORKs might have remaining installation problems
Could have been a few days short of getting second site done thus without provisions for more time, VERY HIGH RISK
Planned about 12 reentries for two sites, did 23.
Major costs for drilling expendable supplies, other equipment and time in extensive planning

Appendix 12.0

SUGGESTED OUTLINE OF THE UPDATED LRP

Appendices.

A1. Structure and functions of ODP [JOIDES, JOI Inc, Science Operators]

A2 The present ODP Long Range Plan

A3 Accomplishments of the program over the past ten years, 1985 through 1994
a) Thematic accomplishments
b) Technology accomplishments
(Note; we could consider using the recent Oceanus volume to highlight accomplishments).

A4. Thematic panel White Papers
- Lithp.
- OHP.
- TECP.
- SGPP

A5. Input from Partner Countries
- United States, Compost Report
- Japan
- Germany
- France
- United Kingdom
- E SF
- CAN/AUS

A6. Input from other Programs (This could be accomplished by submitting a draft LRP to the various programs for a response which is incorporated into a final draft)
- ION
- InterRidge
- Mesh
- Nansen

PCOM Motion, April 1994

Four Year Plan FY94 - FY97

The Ocean Drilling Program is thematically driven, as detailed in the *Long Range Plan* and White Papers presented by the program's Thematic Panels. In order to address some of those themes which are considered of high priority by the JOIDES advisory panels, and to provide for the development of necessary technology to achieve drilling targets, PCOM sets the direction of the drilling vessel for the next four years as follows:

a) In the remainder of FY94, confirmed as the current Program Plan (PCOM December 1993).

b) In FY95, confirmed as the Program Plan approved at the December 1993 PCOM meeting in Miami, noting that if Sedco Forex chooses to drydock the ship in Europe rather than Cape Town, Leg 159 will become the Eq. Atlantic Transform program and all subsequent legs will be moved up by one.

c) **At present, highly ranked and drillable proposals exist for the North Atlantic, the Caribbean and the East Pacific. These, at present, confine the likely operational areas of the drillship for FY96. Themes addressed by these proposals include Earth's response to impulse (bolide) and orbital forcing, the nature of Large Igneous Provinces, sea-level variations, carbon cycling as represented in upwelling zones, mass fluxes (including fluid flow) in accretionary prisms, fluid flow at mid-ocean ridges and in the ocean crust.**

d) For FY97, we forecast a geographically much more diverse area of operations, including the Western Pacific, the South Atlantic and the Southern Oceans.

e) However, proposals for any ocean which address high priority themes appropriately investigated by ocean drilling are encouraged. Proposals received by the July 1, 1994 deadline, that are subsequently highly-ranked, have the potential to modify the FY96 and subsequent ship track. Proposals received by the January 1, 1995 and the July 1, 1995 deadlines, that are subsequently highly-ranked, have the potential to modify the FY97 and subsequent ship track.

Appendix 13.1

CANDIDATE PROPOSALS

TOP 5 RANKED	LEADER
Caribbean Basalt Province	Catherine Mevel
Sedimented Ridges II	Marc Langseth
E Juan de Fuca Hydrothermal	Marc Langseth
Caribbean Ocean History	Alan Mix
California Margin	Wolf Berger
Costa Rica	Hans-Christian Larsen
Bahamas Transect	Wolf Berger
Return to Iberia	Brian Taylor

TOP 7 RANKED	
NARM Volcanic II Vøring Margin	Catherine Mevel
Western North Atlantic Sediment Drifts	Hermann Kudrass
SE Greenland Margin	Dick Arculus

SAFETY CONSIDERATIONS	
New Jersey Margin	Joel Watkins

Notes:

Vema FZ was ranked 4 in the Fall of 1992 by LITHP. It was not ranked recently because it was scheduled as part of the DCS test Leg.

Cork 395A was also ranked as drillable on an opportunity basis.

1994 GLOBAL RANKING

Review	Rank	LITHP	OHP	SGPP	TECP
Spring 1994	1	Caribbean Workshop* LIP's Objective	Caribbean Workshop* Ocean History Objective	348—/348-Add New Jersey Sea Level II	447— W. Woodlark Basin
Spring 1994	2	GENERIC Giant LIP	386-Add2 California margin	400-Rev/Add2 Costa Rica acc. wedge	400-Rev/Add2 Costa Rica acc. wedge
Spring 1994	3	Tie SR-Rev2 I Sedimented Ridges II	Tie 348-Add (shallow) I NJ Margin II	412—/Add/Add2 Bahamas Transect	450— Taiwan arc/con collision
Spring 1994	4	I 440---- Tie E. J. de Fuca Hydr.	I 430---- Tie Sub-SAT	386-Rev2/Add2 California Margin	NARM-Add3 NARM IAP II
Spring 1994	5	426— Aus.-Antarctic discord.	441---- (1 OHP leg) SW Pacific Gateway	SR-Rev2 Sed. Ridges II	442— Mariana back-arc basin
Spring 1994	6	400-Add2 Costa Rica acc. wedge	354-Rev2 Benguela Current	434---- Caribbean Quat. climate	340-Rev N Australian margin
Spring 1994	7	NARM-DPG NARM Vol. II Vøring	404— NW Atl. sed. drifts	354-Rev2 Benguela Current	NARM-Add2 E Greenland Trans. F

EDRC

Procedures for Engineering Development

(1) The EDRC recommends a standardized procedure for all ODP-TAMU development engineering projects. This procedure is detailed in the text, and provides for (a) clear definition of the scientific need by PCOM, (b) early assessment of feasibility and costs by TEDCOM, and (c) feedback from TEDCOM throughout the critical phases of development by ODP-TAMU. It will also provide for more accurate forecasting of the budgetary and manpower requirements for a development project, such that it can be prioritized by PCOM and appropriate staffing levels set at ODP-TAMU.

ODP-TAMU Management Structure for Engineering Development

(2) The management for engineering/operations at ODP-TAMU should be made simpler and less top-heavy. The department should have a clear line of authority from a single departmental manager through two supervisors, one for operations, the other for engineering development.

(3) All development engineering projects, including really major efforts like DCS, should be assigned distinct budgets and project leaders who report to the supervisor of development engineering.

(4) Operations and development engineering should not be separated into two departments, as the crosstalk is absolutely essential for continued operational success. Nevertheless, the autonomy of the two arms should be increased, with personnel and budgets clearly assigned to one primary function.

TEDCOM/ODP-TAMU/PCOM Interactions

(8) Sound technical advice from TEDCOM to PCOM is obviously essential for prioritization of ODP-TAMU engineering development and for scientific planning based on engineering development. This requires close two-way liaison between PCOM and TEDCOM, with a PCOM liaison to each TEDCOM meeting, and the ***TEDCOM chairman attending every PCOM meeting.***

(9) **The membership and chairmanship of TEDCOM should be regularly reviewed by TEDCOM/PCOM,** to ensure that TEDCOM successfully fulfills the advisory roles defined for engineering development as the scope of the ODP-TAMU development engineering effort evolves.

TEDCOM should meet only in College Station, except in special circumstances. Feedback from ODP-TAMU engineers concerning current engineering development projects and operational activities onboard *JOIDES Resolution* is critical to ensure that TEDCOM can fulfill its role. Meeting in College Station will optimize the communications between the ODP-TAMU engineering staff and TEDCOM.

In order to improve communication and dispel mistrust and misunderstanding between ODP-TAMU and TEDCOM, the EDRC recommends that **a member of the Engineering and Operations Department staff should be a** (voting) **member of TEDCOM.** The ODP-TAMU engineering/operations department manager should propose to TEDCOM/PCOM the official member to TEDCOM.

Future DCS Development

(10) The EDRC recommends that TEDCOM advise PCOM on the feasibility of continued DCS development. If TEDCOM considers DCS development feasible, then a full development plan should be established by ODP-TAMU/TEDCOM/PCOM, so that PCOM can properly prioritize continued DCS development.

Appendix 14.3

TEXAS A&M UNIVERSITY
COLLEGE OF GEOSCIENCES AND MARITIME STUDIES
College Station, Texas 77843-3148

Office of the Dean
Rm. 204, O & M Bldg.

Phone 409-845-3651
FAX 409-845-0056

5 August 1994

MEMORANDUM

TO: PCOM

FROM: Robert A. Duce
Dean

SUBJECT: Interim Report of Action on the Recommendations of the EDRC Report

The report of the Engineering Development Review Committee (EDRC) was presented at the recent EXCOM meeting in Washington, DC. After the presentation of the report at that meeting, I indicated that at the August PCOM meeting ODP-TAMU would provide an interim response to the recommendations made in the report.

ODP-TAMU appreciates the time and effort devoted to this review by the members of the EDRC. We are committed to providing the best engineering development program possible for the Ocean Drilling Program, and we are taking the recommendations and suggestions of the EDRC most seriously. Some of the changes suggested had already been initated by ODP-TAMU before the EDRC review. Others are in the process of being accomplished now, and in some cases details of these changes are not yet available. However, we are moving aggressively in these areas. We expect all the changes in the engineering development operations at ODP-TAMU to be completed by early 1995. As I indicated at the Washington EXCOM meeting, ODP-TAMU will present a final report of our actions relative to all these recommendations at the EXCOM meeting in Hawaii in January.

At the PCOM meeting in Iceland, Dr. Tim Francis will provide you with a report on the progress we have made relative to each of the recommendations that involve ODP-TAMU and that were outlined in the Executive Summary of the EDRC report. Some of the EDRC recommendations are directed toward TEDCOM and PCOM, so the full implementation of the EDRC Report recommendations requires actions by these groups as well. ODP-TAMU will work closely with both of those groups to insure that our common goals in engineering development are attained.

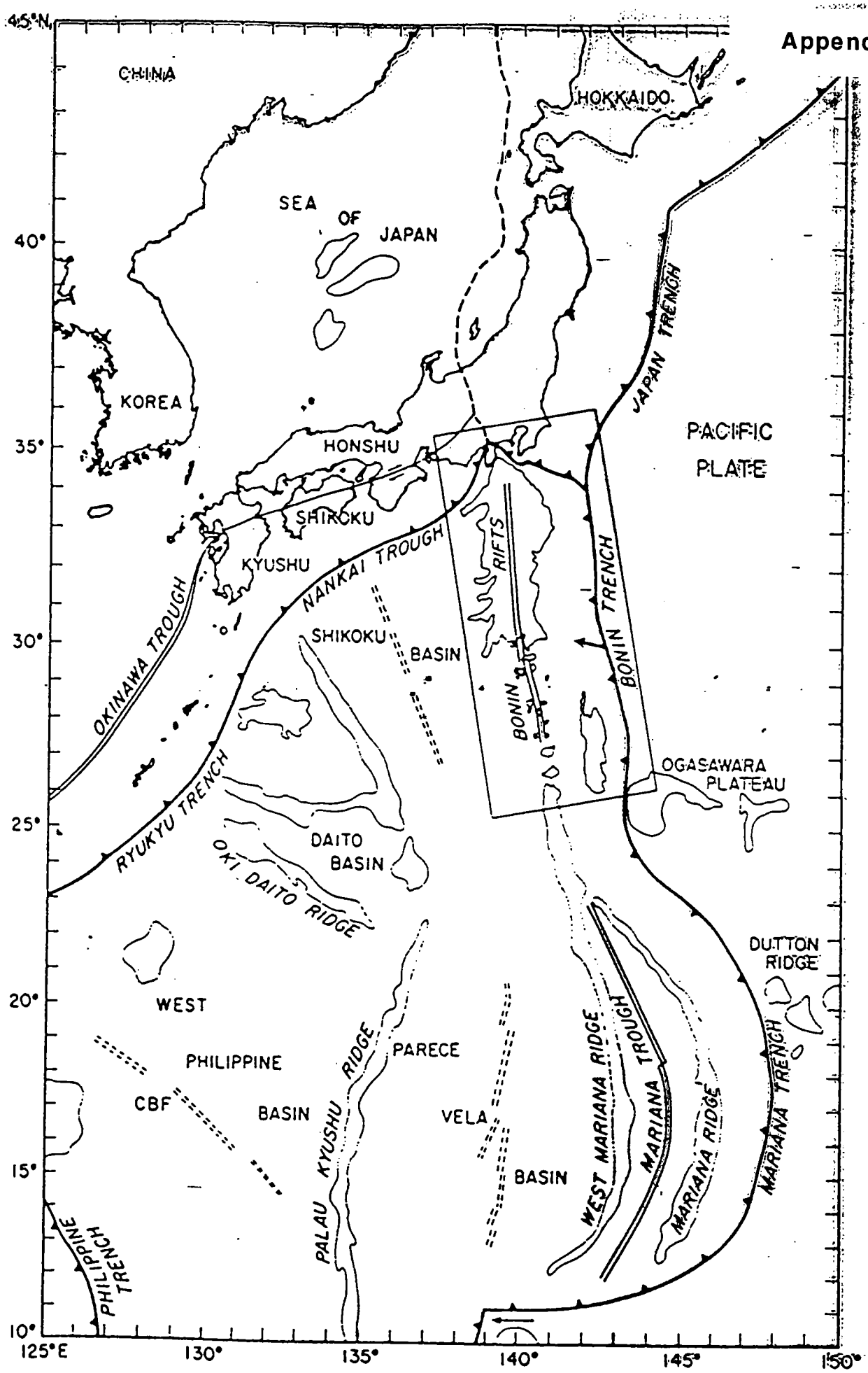
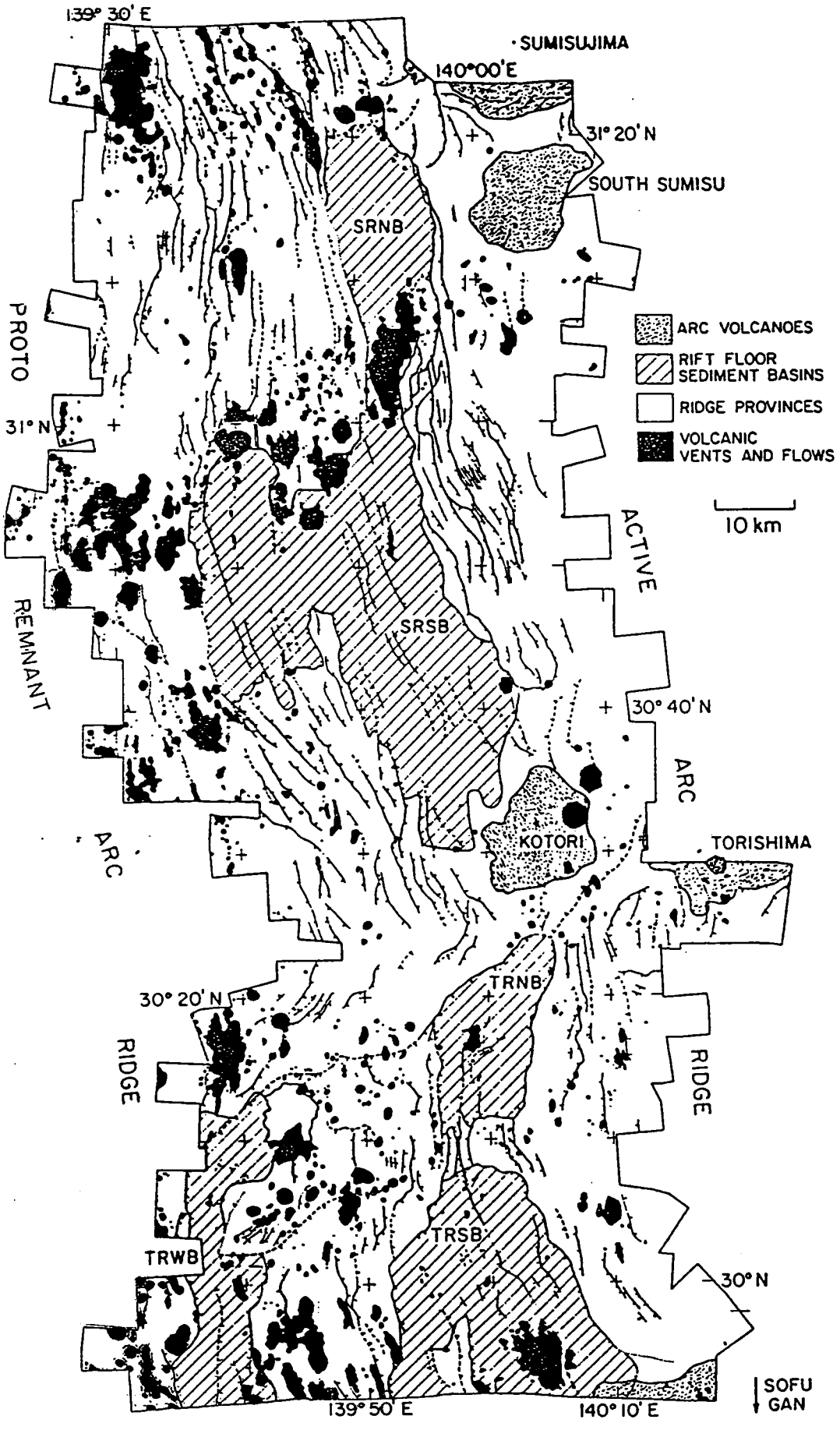


Figure 809-B-1

Appendix 15.1



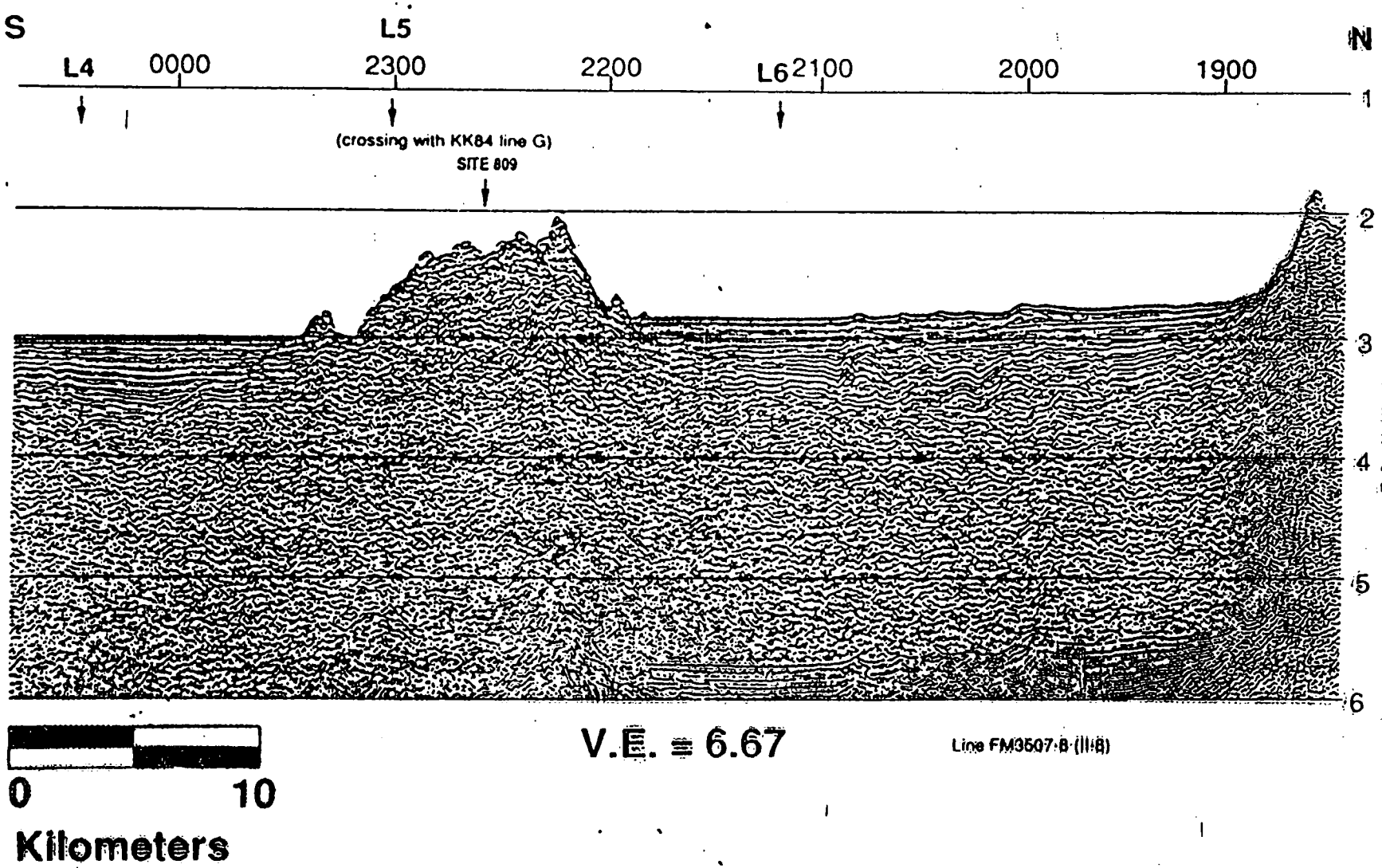
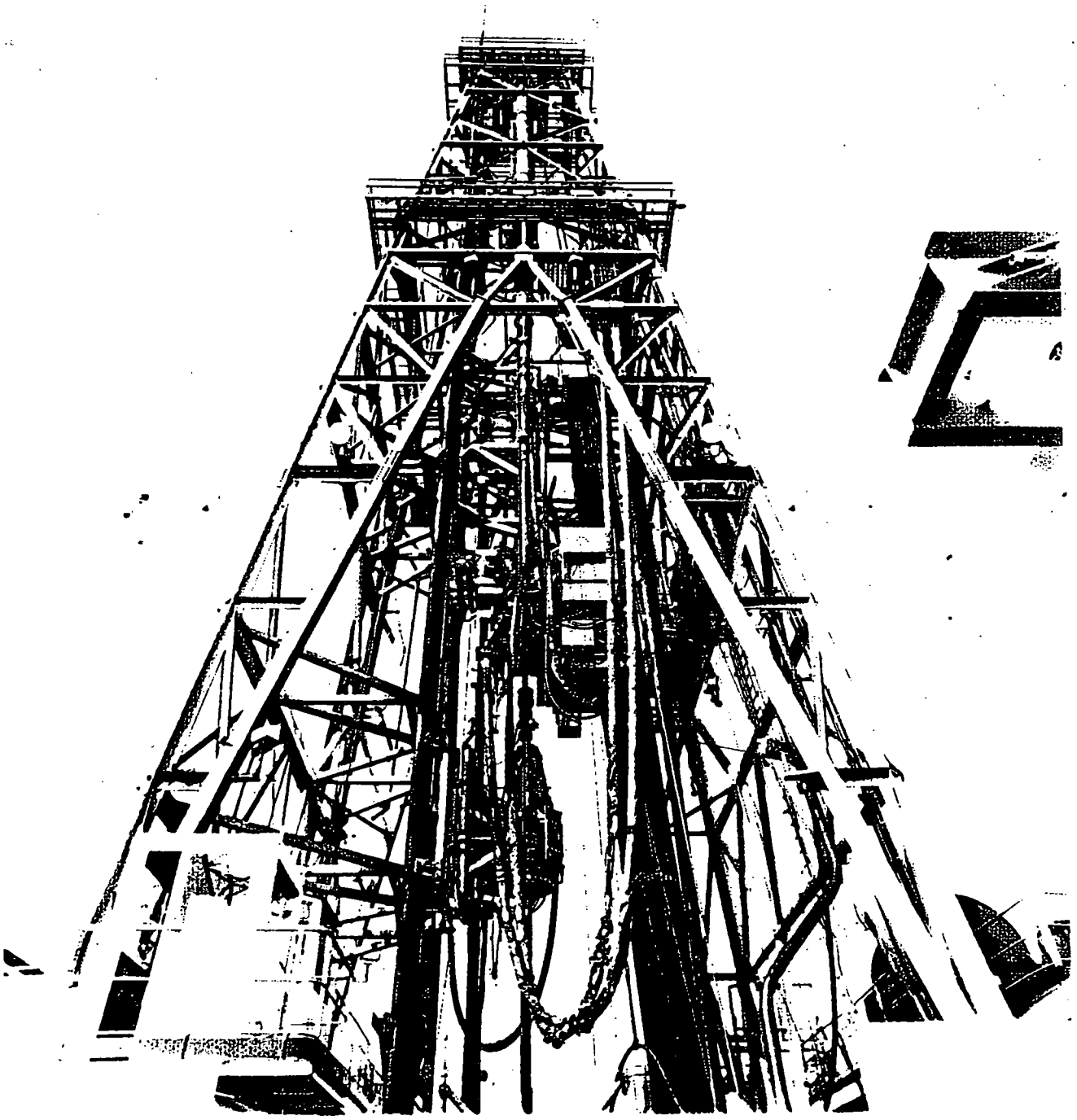
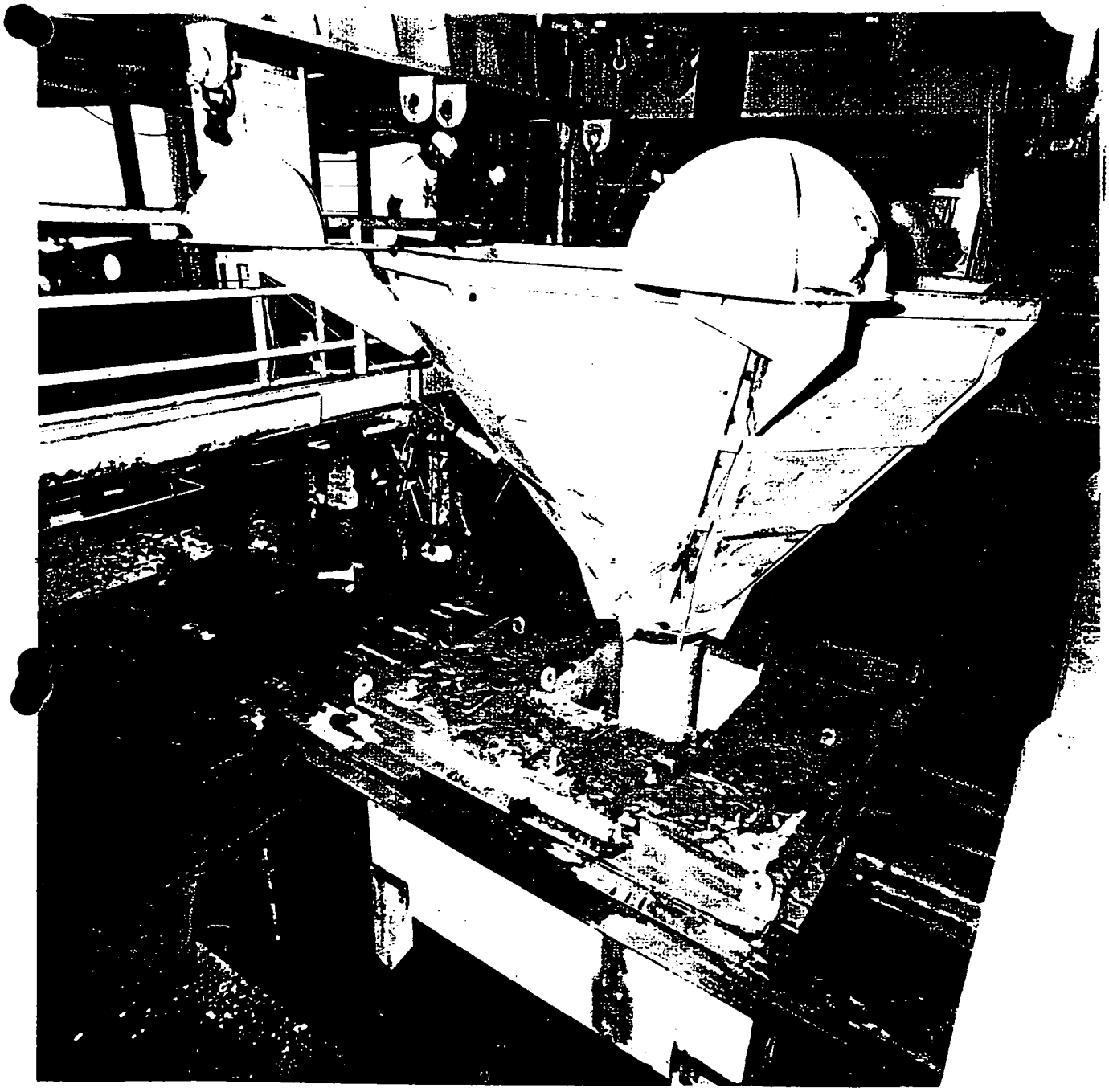


Figure 809-B-5

Appendix 15.2

Appendix 15.3





Appendix 15.5

LEG

132

SITE

809

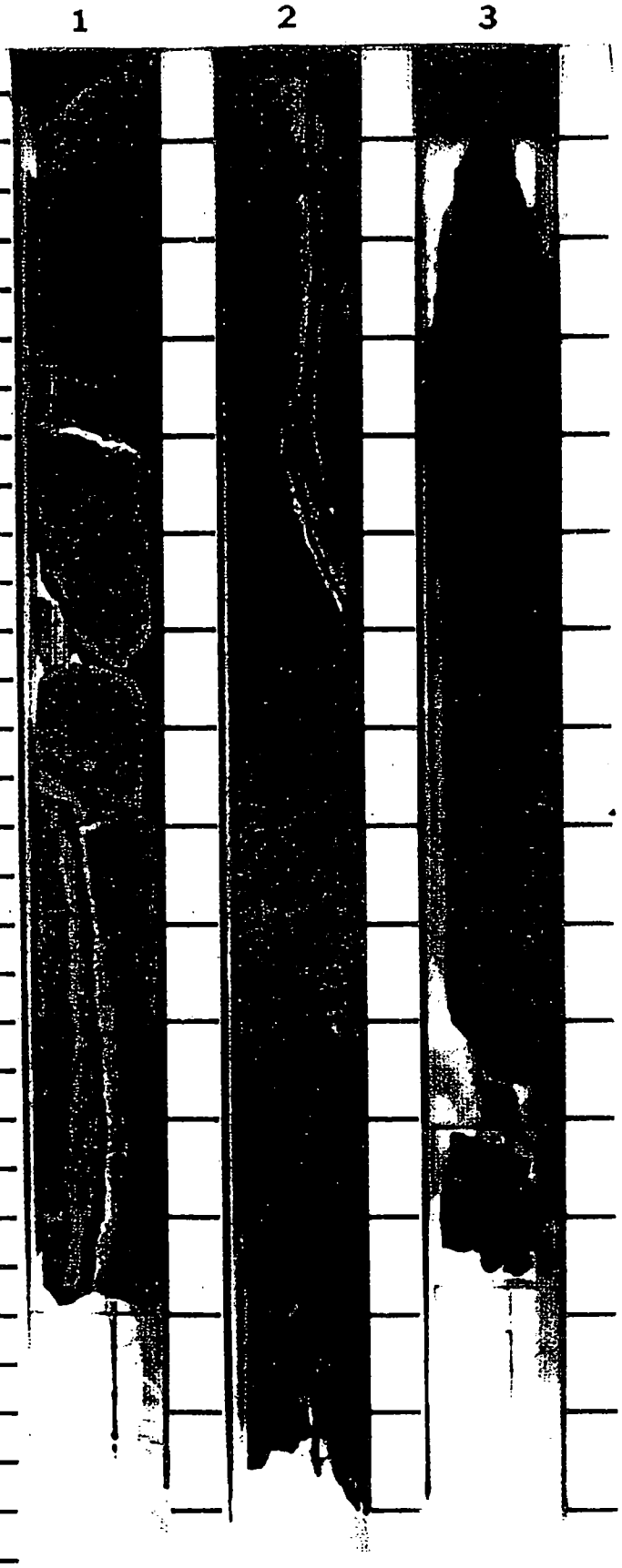
HOLE

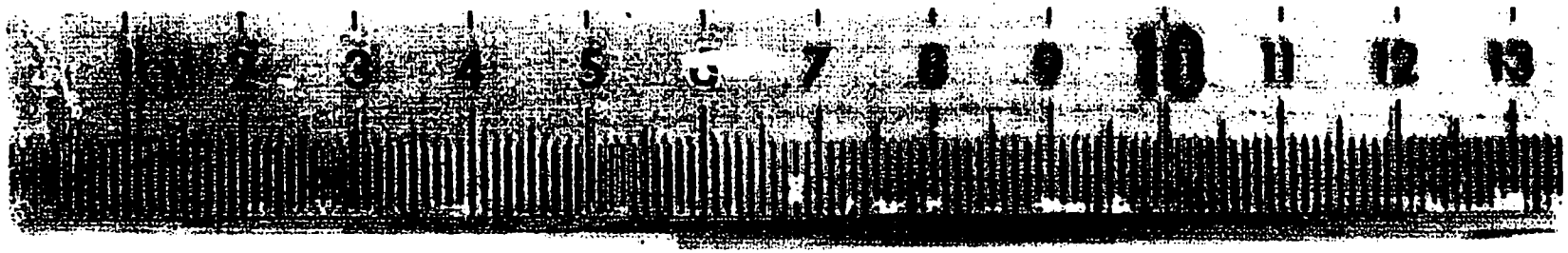
F

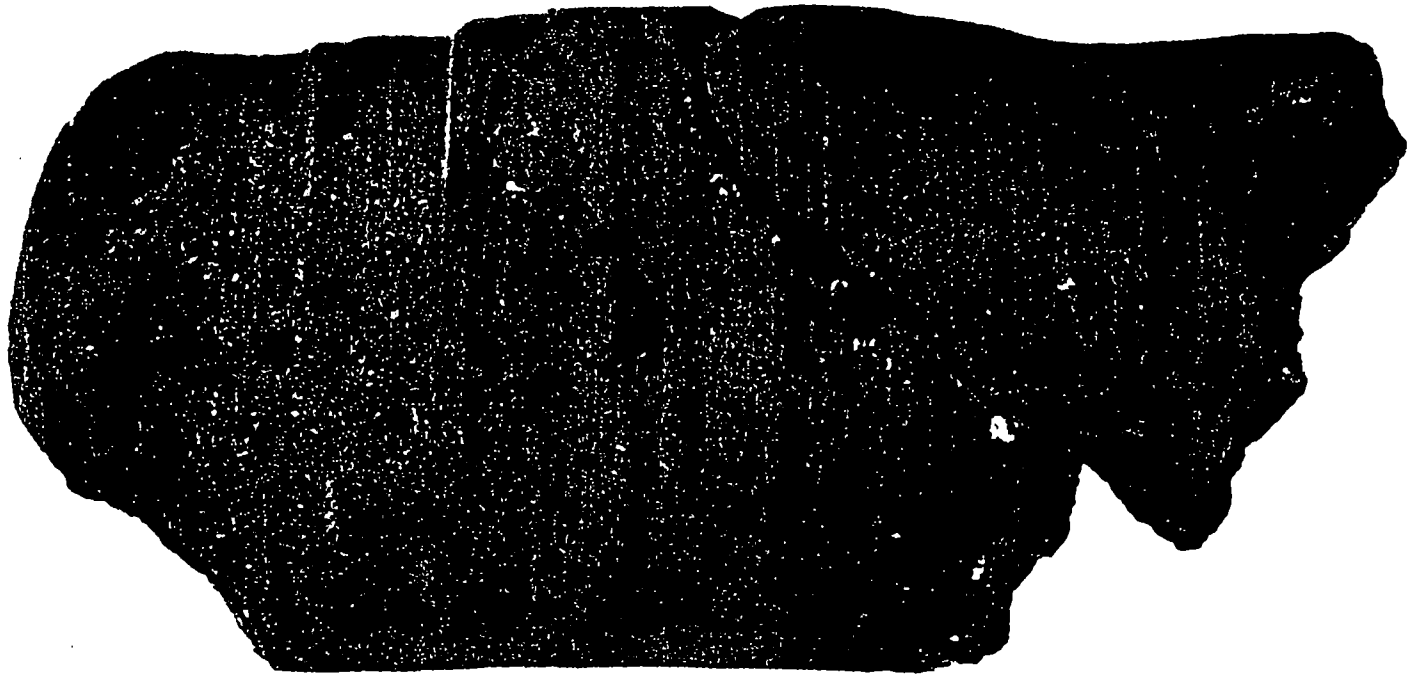
CORE

11

Z





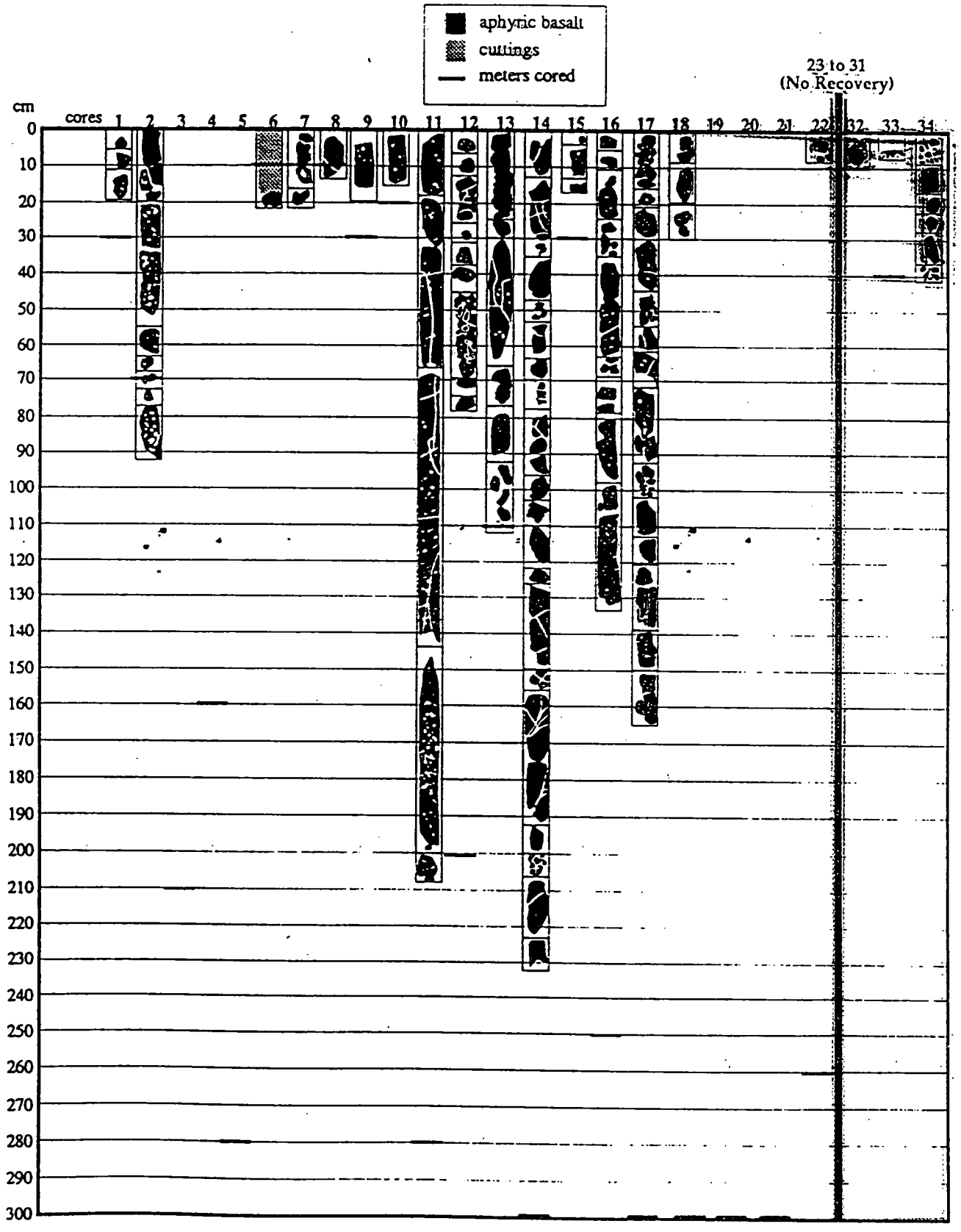


OCEAN DRILLING

leg 1 hole 1 core 1 sect

Appendix 15.7

Hole 809F, Sumisu Rift
DCS Samples



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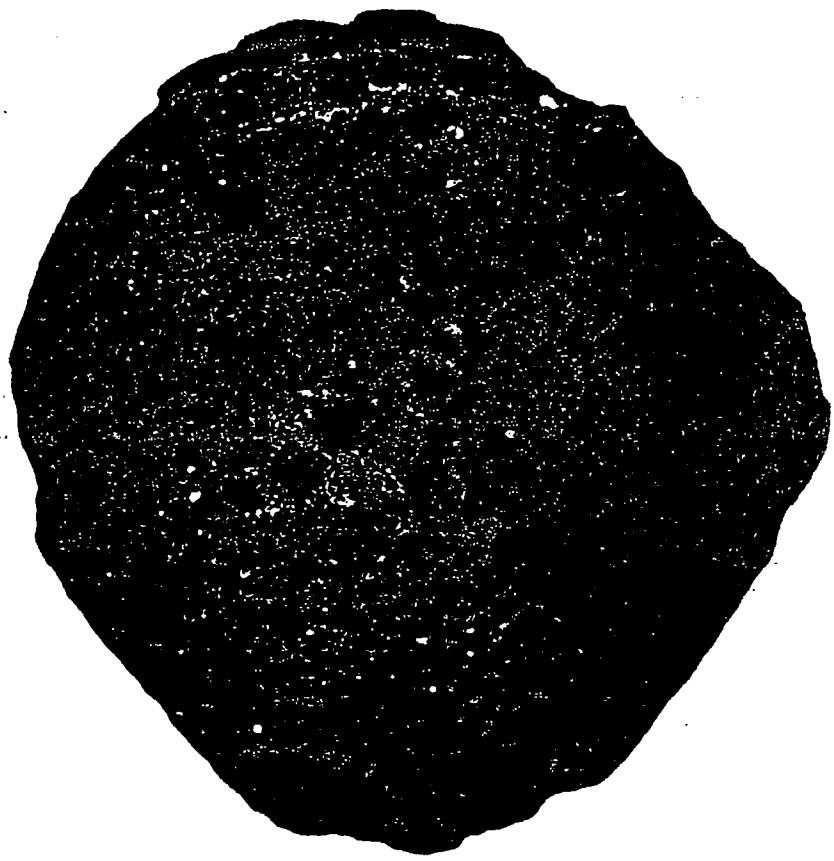

DEEP SEA DRILLING PROJECT

Leg	Hole	Core	Section	Sampled At	Sample	Date
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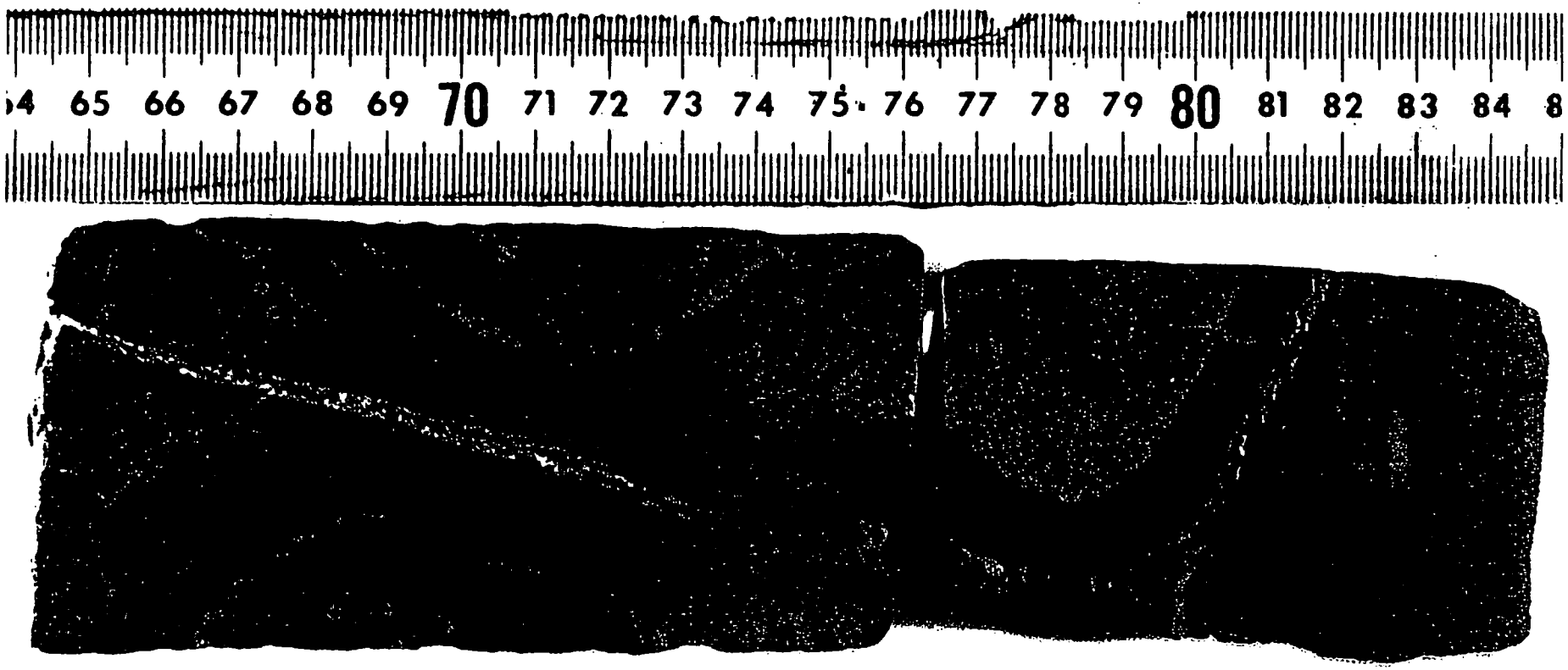

DEEP SEA DRILLING PROJECT

Core | Section | Sampled At | Sample

91 595B 5-2 #7B

Appendix 15.10

Appendix 16.0

STATUS OF DCS PROJECT

PRESENTATION OUTLINE

1. PAUL MUNROE ENGINEERING INTERNATIONAL (PMEI)

   - SUBCONTRACT TERMINATED EFFECTIVE JUNE 14, 1994 FOR DEFAULT/NONPERFORMANCE
   - PMEI SOFTWARE DEVELOPMENT NOT COMPLETED

2. THE PARVUS CORPORATION

   - TWO (2) SETS OF CONTROLLER HARDWARE ESSENTIALLY COMPLETE
   - PARVUS HAS REVIEWED PMEI SOFTWARE STATUS AND ISSUED A REPORT
   - PARVUS HAS PROPOSED A PLAN FOR CONTINUED DEVELOPMENT OF THE CONTROL SOFTWARE

3. STRESS ENGINEERING SERVICES, INC. (SES)

   - SES HAS COMPLETED CHANGES TO THEIR COMPUTER MODEL TO INCLUDE EFFECTS SUGGESTED BY TEDCOM AND ODP
   - SES HAS BEEN AWARDED A CONTRACT ADDITION TO CONDUCT CYLINDER SEAL FRICTION TESTING (LOW FRICTION SEAL DESIGN FOR POSSIBLE USE IN PRIMARY DRILL STRING COMPENSATOR)

4. LAND TESTING

   - TWELVE (12) RFPs WERE MAILED OUT. TWO (2) BIDS WERE RECEIVED. BOTH BIDS ARE IN EFFECT UNTIL OCTOBER 1994.
   - NO LAND TEST CONTRACT WILL BE SIGNED UNTIL SOFTWARE DEVELOPMENT MILESTONES ARE COMPLETED.

STATUS OF DCS PROJECT

PRESENTATION OUTLINE - CONTINUED

5. DCS STATUS REVIEW BY TEDCOM

- **A STATUS REVIEW OF THE DCS PROJECT IS PLANNED AT PARVUS IN SLC FOR LATE AUGUST OR EARLY SEPTEMBER. THE TEDCOM DCS SUBCOMMITTEE WILL ATTEND.**

Appendix 16.2

STATUS OF DCS PROJECT

PAUL MUNROE ENGINEERING INTERNATIONAL

- PMEI's SUBCONTRACT WAS TERMINATED JUNE 14, 1994
- CONTRACT WAS TERMINATED DUE TO NONPERFORMANCE. PMEI DEFAULTED IN MEETING SEVERAL WORK COMPLETION DATES.
- PMEI WAS WARNED REPEATEDLY THAT FAILURE TO MEET CONTRACTUAL DELIVERY DATES WOULD RESULT IN TERMINATION.
- PROGRESS HAD SLOWED CONSIDERABLY BY MAY 1994. IT APPEARED THAT PMEI HAD REACHED LIMIT OF THEIR OWN CAPABILITIES.
- SOFTWARE WRITTEN BY PMEI DOES FUNCTION, BUT IS NOT ACCEPTABLE AS IS BECAUSE IT FAILS TO MEET AGREED-TO PERFORMANCE CRITERIA.
- AT LEAST THREE (3) VERSIONS OF SOFTWARE EXIST AND ARE AVAILABLE FOR FURTHER WORK. THE SOFTWARE IS RESIDENT ON A PC AT THE PARVUS CORPORATION.
- PMEI EFFORTS HAVE BEEN CLOSELY MONITORED BY ODP THROUGH FREQUENT TRIPS TO SLC, DAILY PHONE CALLS AND WEEKLY STATUS REPORTS.
- PMEI EFFORTS WERE SUPPORTED BY ODP WHILE PROGRESS WAS STILL BEING MADE. WHEN PROGRESS SLOWED, THEN STOPPED, ODP TEMPORARILY CONTINUED TO SUPPORT PMEI BECAUSE WE OBSERVED AND BELIEVED THAT SUCCESS WAS IMMINENT.
- PMEI WAS GIVEN EVERY OPPORTUNITY TO COMPLETE THE PROJECT. ODP URGED PMEI TO GET OUTSIDE, ADDITIONAL TECHNICAL EXPERTISE TO HELP THEM COMPLETE THE PROJECT.

STATUS OF DCS PROJECT

PMEI SOFTWARE DEVELOPMENT

- RECENT HISTORY OF PMEI SOFTWARE DEVELOPMENT EFFORT IS AS FOLLOWS:
  - MARCH/APRIL 1994 - FIRST VERSION OF DOS-BASED SOFTWARE RELEASED TO PARVUS FOR USE WITH PARVUS PROTOTYPE HARDWARE/PARVNET NETWORK.
  - MAY 1994 - PARVUS TESTING CONTROL OF MECHANICAL SIMULATOR USING PMEI SOFTWARE AND PARVNET HARDWARE.
  - MAY/JUNE 1994 - PMEI SOFTWARE DEVELOPMENT CONTINUED IN AN EFFORT TO IMPROVE PERFORMANCE.
    - CONTROL PANEL CHANGES TO ALLOW MANIPULATION OF FUZZY PARAMETERS (INPUT AND OUTPUT).
    - GENETIC ALGORITHM CHANGES TO CORRECT SORTING PROBLEMS.
    - RULE BASE CHANGES TO TRY TO IMPROVE PERFORMANCE.
    - WORK ON DERIVATIVE CALCULATION ALGORITHMS AND FILTERING TO IMPROVE DERIVATIVES/CORRECT PROBLEMS.
  - JUNE 1994 - AT LEAST TWO (2) MORE VERSIONS OF SOFTWARE CREATED AND EXTENSIVELY TESTED IN AN ATTEMPT TO ACHIEVE REQUIRED PERFORMANCE CRITERIA.
  - EXTENDED TESTING (IN PREPARATION FOR ACCEPTANCE TESTING) WAS DUE TO BE COMPLETE BY JUNE 10, 1994. PMEI WAS STILL ATTEMPTING TO TEST ON JUNE 14.
  - GRAPHS OF TESTING RESULTS WERE DUE ON JUNE 13, BUT THESE COULD NOT BE COMPLETED DUE TO DELAYS IN TESTING BY PMEI.
- CONTRACT WAS TERMINATED JUNE 14, 1994.

Appendix 16.4

STATUS OF DCS PROJECT

THE PARVUS CORPORATION

- TWO SETS OF SECONDARY COMPENSATION CONTROLLER HARDWARE HAVE BEEN PRODUCED AND TESTED.

- ONE HARDWARE SET IS INSTALLED/UNDER TEST ADJACENT TO THE HYDRAULIC/MECHANICAL SIMULATOR AT PARVUS. THE PMEI SOFTWARE (APRIL 94 VERSION) HAS BEEN USED WITH PARVUS HARDWARE FOR CONTROLLING/FUNCTION TESTING WITH THE SIMULATOR.

- GATEWAY HARDWARE IS PRESENTLY BEING DESIGNED AND PRODUCED. THE GATEWAY NODE WILL ALLOW COMMUNICATIONS BETWEEN THE OUTSIDE WORLD AND THE DCS LOCAL NETWORKS. THE GATEWAY NODE WILL ALSO PERFORM A FLIGHT RECORDER FUNCTION AND WILL SERVE AS THE CONNECTION POINT FOR THE DATA ACQUISITION SYSTEM.

- SUBSEQUENT TO THE PMEI TERMINATION, PARVUS WAS CONTRACTED TO PERFORM A REVIEW OF THE PMEI SOFTWARE FUNCTIONALITY AND STATUS. PARVUS ISSUED A REPORT THAT HAS BEEN MAILED TO THE TEDCOM DCS SUBCOMMITTEE MEMBERS FOR REVIEW.

- PARVUS HAS ALSO PUT FORTH A PROPOSED PLAN FOR FURTHER DCS CONTROLLER SOFTWARE DEVELOPMENT. THIS PLAN HAS BEEN MAILED TO THE DCS SUBCOMMITTEE MEMBERS FOR REVIEW AS WELL.

STATUS OF DCS PROJECT

PMEI SOFTWARE REVIEW

- ODP CONTRACTED WITH PARVUS TO REVIEW PMEI SOFTWARE.
- AN INDEPENDENT SOFTWARE CONSULTANT IN SLC ASSISTED PARVUS IN REVIEW OF THE PMEI CODE.
- THE FOLLOWING SPECIFIC ITEMS WERE EVALUATED, ALONG WITH OVERALL CONCLUSIONS AND RECOMMENDATIONS:
  - MAINTAINABILITY
  - EXTENSIBILITY
  - MODULARITY
  - PORTABILITY
  - SEPARABILITY
  - UNDERSTANDABILITY
  - DOCUMENTATION
- A PRELIMINARY REPORT WAS ISSUED JUNE 21. A FINAL REPORT WAS ISSUED BY THE CONSULTANT ON JUNE 24.
- MAIN CONCLUSIONS WERE:
  - THE SOFTWARE SYSTEMS EVALUATED ARE IN AN INCOMPLETE STATE, I.E. STILL UNDER DEVELOPMENT AND NOT READY FOR RELEASE.
  - VALIDATION AND MAINTENANCE WOULD BE DIFFICULT IN PRESENT STATE.
  - MOVING THE SYSTEM TO ANOTHER PLATFORM (FROM THE PC) WOULD BE DIFFICULT IN PRESENT STATE.
  - A LARGE AMOUNT OF EFFORT AND INTEGRATION OF TECHNOLOGIES HAS GONE INTO THE CURRENT PROJECT.
  - SIGNIFICANT EFFORT WILL BE REQUIRED TO BRING THE SOFTWARE TO CONFIDENCE LEVEL IN AREAS OF FUNCTIONALITY, MAINTAINABILITY AND EXTENSIBILITY.

Appendix 16.6

STATUS OF DCS PROJECT

PMEI SOFTWARE REVIEW - CONTINUED

- FURTHER EFFORT IS NEEDED TO DETERMINE SPECIFIC PROJECT AND MANAGEMENT STRATEGY TO ACHIEVE THE ABOVE.

- EXISTING SOFTWARE, HAVING BEEN LEFT IN THE DEVELOPMENT STAGE, IS NOT SUFFICIENTLY COMMENTED AND LACKS COMPLETE DOCUMENTATION.

DCS STATUS REPORT

PARVUS'S PROPOSED PLAN

- PARVUS HAS PROPOSED A PLAN FOR CONTINUED DEVELOPMENT OF THE DCS SECONDARY COMPENSATION CONTROL SOFTWARE.
- PARVUS'S PLAN IS BASED ON A PARALLEL PATH APPROACH.
  - CONTINUE PMEI SOFTWARE DEVELOPMENT
    1. CHOOSE "MOST FUNCTIONAL" VERSION
    2. DECREASE COMPLEXITY OF OPERATOR INTERFACE
    3. CLEAN UP CODE WHERE POSSIBLE AND ADD LINE COMMENTS
    4. QUALIFY CONTROL ALGORITHM BY SIMPLIFIED IMPLEMENTATION (EXTRACT ALGORITHM; EXECUTE WITHOUT FUZZIFICATION/DEFUZZIFICATION)
    5. OPTIMIZE ALGORITHM ONCE EXTRACTED
    6. REINSTATE ALGORITHM AND REBUILD FUZZY ENVIRONMENT
  - DEVELOP NEW FUZZY CONTROLLER WITH NEURAL NETWORK SYSTEM USING STATE-OF-THE-ART DEVELOPMENT TOOLS
  - DEVELOP A CLASSICAL PID CONTROLLER WITH OPTIMIZATION PERFORMED BY AUTOTUNE SOFTWARE FOR USE AS A METRIC
- IMPLEMENT ADDITIONAL TEST PLATFORM(S) FOR CONTROLLER TESTING AND QUALIFICATION
  - INSTALL SES COMPUTER MODEL ON A TEST PLATFORM (PC) AND PROVIDE ACCESS THROUGH HARDWARE AND NETWORK INTERFACES
  - CONFIGURE LAND TEST SETUP SUCH THAT IT IS ALSO ACCESSIBLE BY SEVERAL CONTROL HOSTS AS A TEST PLATFORM
  - MAINTAIN AND USE ALL TEST PLATFORMS THROUGH LAND TESTS COMPLETION

Appendix 16.8

STATUS OF DCS PROJECT

STRESS ENGINEERING SERVICES, INC.

- SES HAS IMPLEMENTED CHANGES TO THE DCS COMPUTER MODEL IN THREE (3) AREAS:
  - API DRILL PIPE-TO-GUIDESHOE FRICTION (A FUNCTION OF ROLL AND VESSEL OFFSET).
  - DCS TUBING-TO-API DRILL PIPE FRICTION (ALSO A FUNCTION OF ROLL AND VESSEL OFFSET).
  - DUAL SERVOVALVE CONTROL SYSTEM
  - SERVOVALVE FLOW RESPONSE NON-LINEARITIES
- LIMITED PRELIMINARY SIMULATION RUNS HAVE BEEN MADE TO TEST THE CHANGES TO THE MODEL.
- AT A FUTURE DATE, CONTROLLER ALGORITHMS WILL BE TESTED WITHIN THE SES MODEL.
- SES HAS BEEN CONTRACTED TO UNDERTAKE SEAL FRICTION TESTS.
- THE TESTS ARE INTENDED TO DETERMINE IF AN ALTERNATIVE SEAL DESIGN CAN PROVIDE LOWER FRICTION WITH NO SIGNIFICANT DECREASE IN LONGEVITY, COMPARED TO THE EXISTING SEAL DESIGN.
- SEAL FRICTION IN THE PRIMARY COMPENSATOR IS THE MOST SIGNIFICANT SOURCE OF INEFFICIENCY.
- ANY IMPROVEMENT IN PRIMARY COMPENSATOR EFFICIENCY WOULD MAKE DCS SECONDARY COMPENSATION EASIER, AND ALSO WOULD HELP IMPROVE STANDARD CORING RESULTS.

DCS STATUS REPORT

WHY WAS PAUL MUNROE CHOSEN?

- AFTER LEG 142, TWO CONTRACTORS (SES AND PMEI) WERE TASKED WITH INDEPENDENT ANALYSIS OF EXISTING DCS SYSTEM, EXISTING CONTROL SOFTWARE, PREVIOUS MODELLING/SIMULATION WORK, CREATING A NEW MODEL AND RUNNING SIMULATIONS, AND PROPOSING NEW CONTROL METHODS.
- BOTH CONTRACTORS SUBMITTED FINAL REPORTS IN LATE 1992, EARLY 1993.
- SES SUGGESTED THAT AN ADAPTIVE CONTROLLER BE USED, WITH VELOCITY AND LOAD CONTROL. SES DID NOT PROPOSE A CONTROLLER.
- PMEI PROPOSED A NEW APPROACH TO CONTROLLER DESIGN: FUZZY CONTROL. NEWER METHODS SUCH AS FUZZY ARE MUCH MORE ADAPTIVE AND THESE METHODS WERE DESIGNED FOR MORE EFFECTIVE CONTROL OF SYSTEMS SUBJECT TO CHAOTIC DISTURBANCE(S).
- PMEI SUCCESSFULLY IMPLEMENTED VARIOUS FUZZY CONTROL ALGORITHMS WITHIN THEIR DCS MODEL.
- AN RFP WAS MAILED TO NINE (9) POTENTIAL BIDDERS.
- TWO (2) RESPONSES WERE RECEIVED: PAUL MUNROE/PARVUS AND RETSCO, U.K.
- BASED ON PROPOSED TECHNICAL APPROACH AND COST, THE PAUL MUNROE/PARVUS PROPOSAL WAS DEEMED THE MOST RESPONSIVE AND FAVORABLE TO ODP.
- PAUL MUNROE PROPOSED TO PERFORM SOFTWARE DEVELOPMENT. PARVUS WAS TO DO HARDWARE DEVELOPMENT WITH INPUT FROM PAUL MUNROE AND ODP.
- ONCE DEVELOPED AND TESTED ON THE MECHANICAL SIMULATOR, PMEI WAS TO TURN OVER THE CONTROLLER SOFTWARE TO PARVUS FOR IMPLEMENTATION ON ACTUAL CONTROL HARDWARE AND PROOF TESTING ON THE SIMULATOR.

Appendix 16.10

DCS STATUS REPORT

WHY CONSIDER PARVUS FOR FURTHER SOFTWARE DEVELOPMENT?

- PARVUS HAS ADDED PERSONNEL IN 1994 WITH CONTROLS/FUZZY CONTROLS DEVELOPMENT AND IMPLEMENTATION EXPERIENCE
- PARVUS NOW UNDERSTANDS MUCH BETTER WHAT IS BEING ATTEMPTED, AND HAS WITNESSED FIRST HAND THE SUCCESSES AND FAILURES OF THE PMEI SOFTWARE DEVELOPMENT
- PARVUS HAS WRITTEN, TESTED AND QUALIFIED NUMEROUS SOFTWARE PACKAGES FOR CONTROL AND AUTOMATION
- PARVUS RECENTLY DELIVERED HARDWARE AND SOFTWARE TO THE U.S.B. OF M. FOR CONTROL OF A ROOF-BOLTER. THE SOFTWARE USED CLOSED-LOOP CONTROL OF FORCE AND RPM TO ACHIEVE A GIVEN ROP.

D.C.S.

1. Motion – Ploom actions.
2. Shipley to Paris mtg in May.
3. NATLAND to assemble documentation for project definition for D.C.S. (collaborate with Shipley, Langseth)
4. TECom to provide Ploom in Dec with list of milestones for evaluating the ~~secondary~~ heave compensation system.

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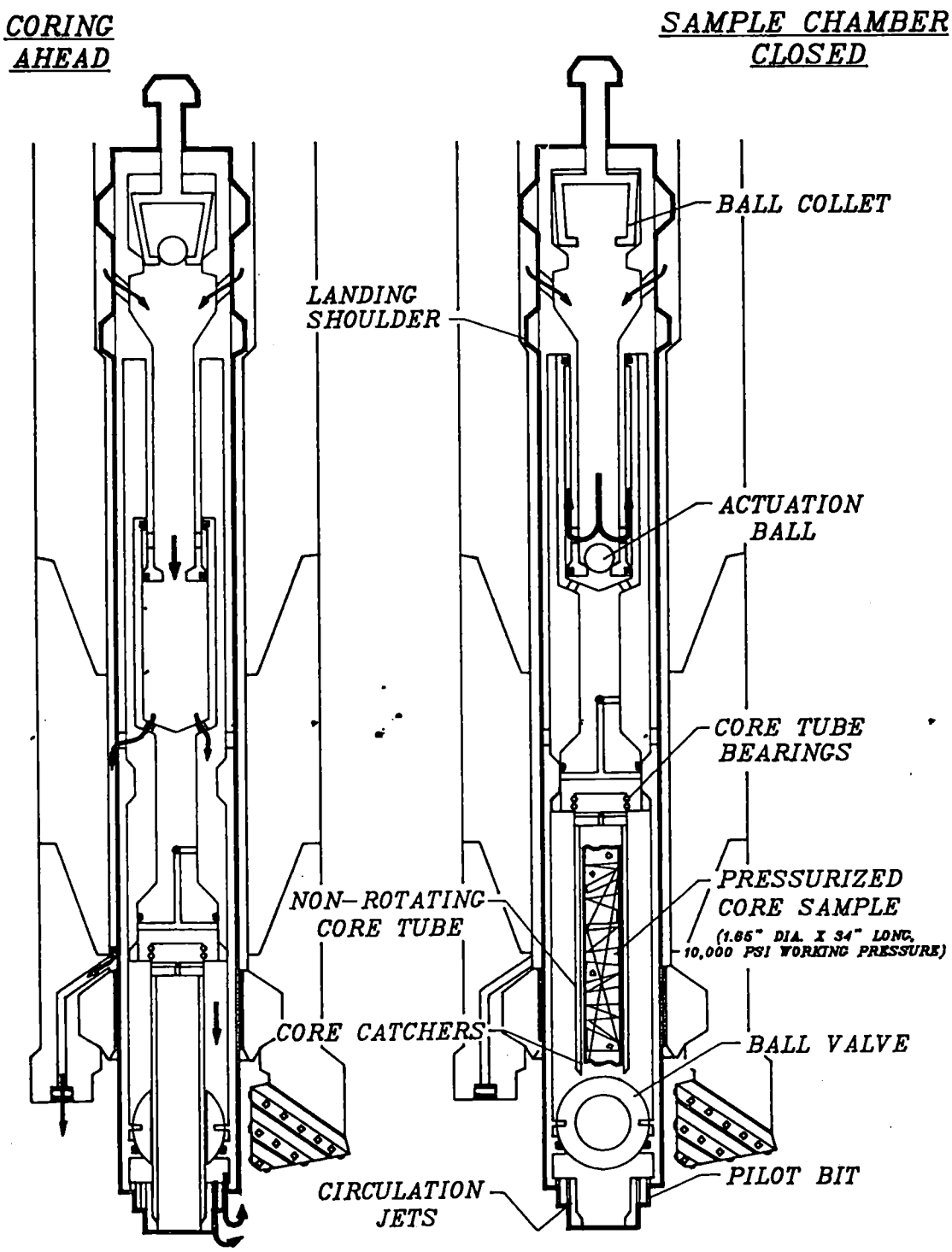
5. Francis to provide more details on Texaco response to EDRc report in Dec.

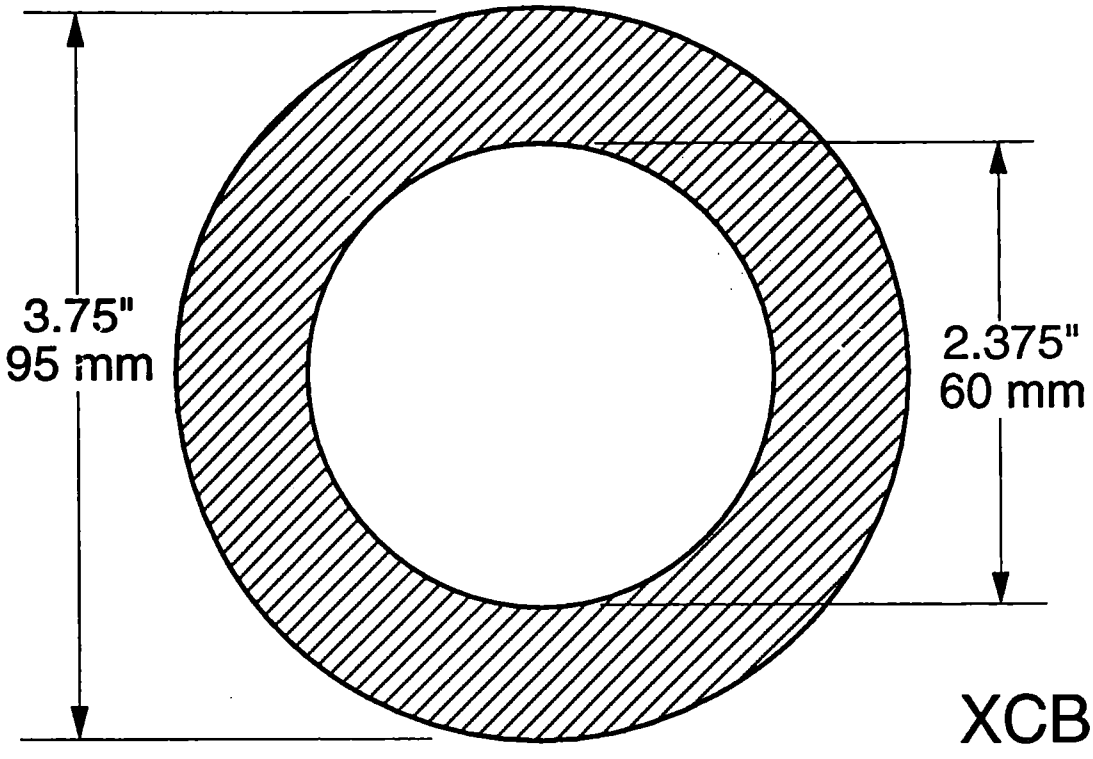
Appendix 17.0

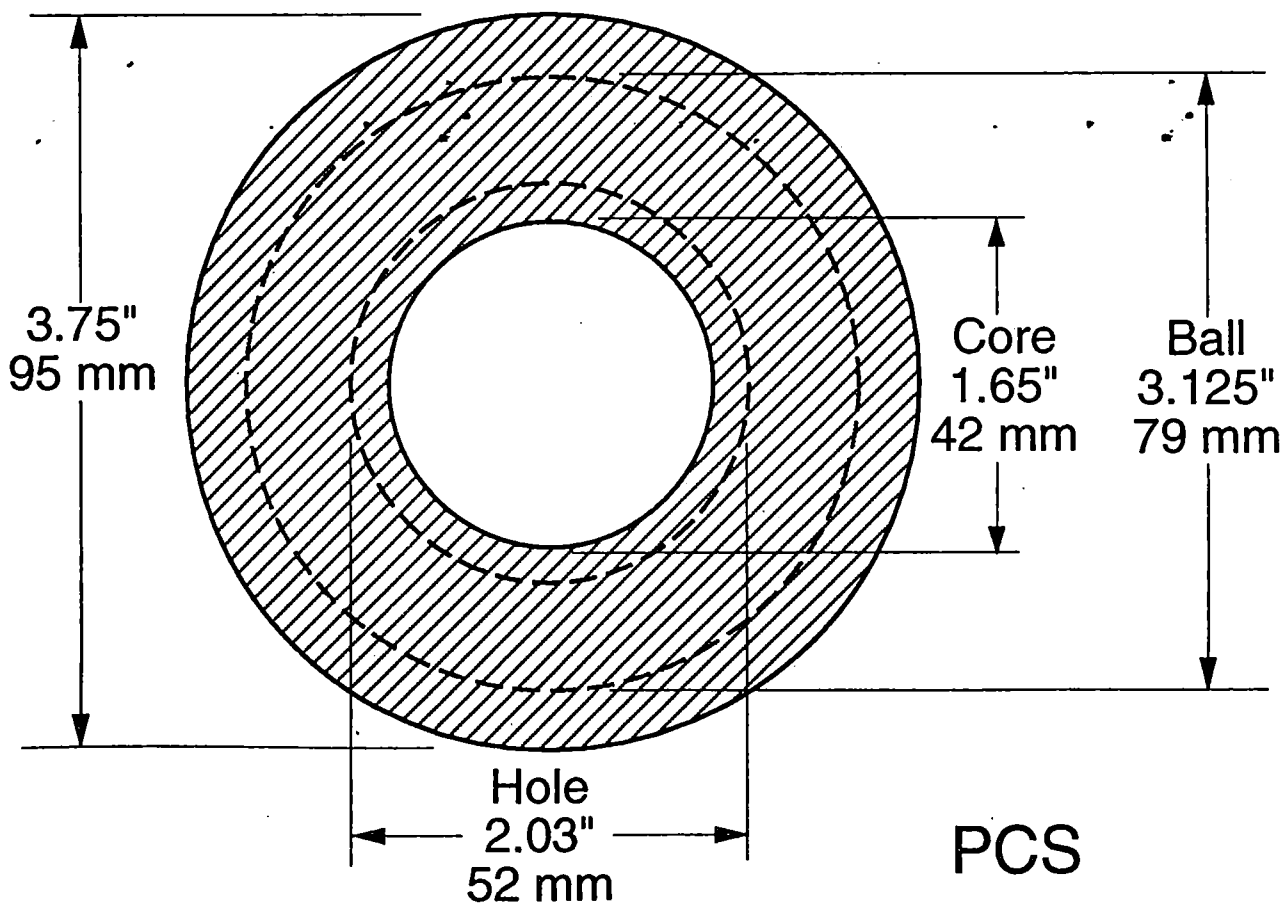
PRESSURE CORE SAMPLER (PCS)
OPERATING SCHEMATIC



APC/XCB BHA Throat

3.8" (97 mm) min. ID





Appendix 18.0

DATA BASE MANAGEMENT SYSTEM REPORT

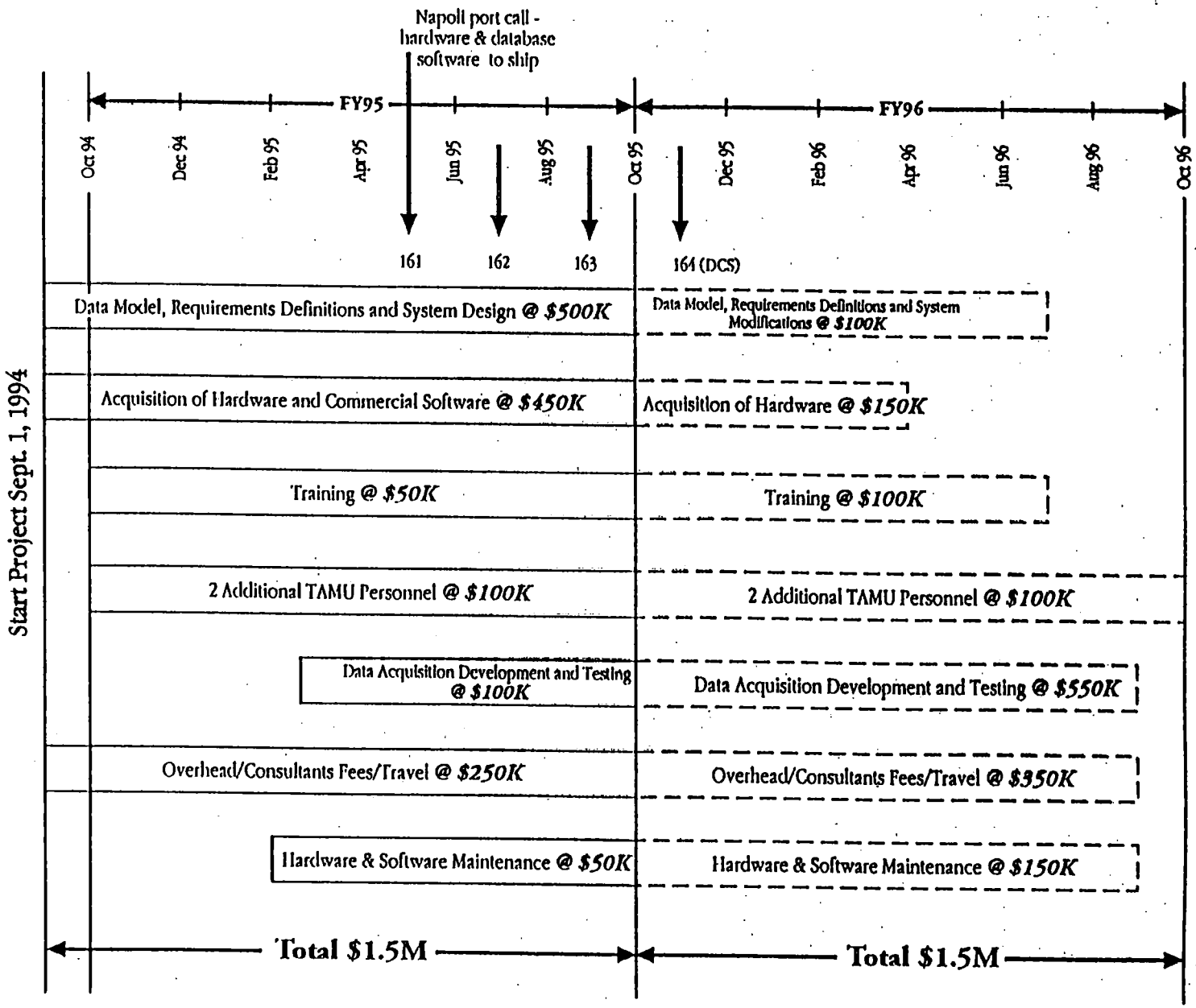
TRACOR Selected as Vendor

Approximate time lines developed

NSF releases 600K of 1994 funds

JOI establishes DBMS Steering Committee

Appendix 18.1



5/17/94

Appendix 18.2

Mandate of the JOI Inc Data Management Steering Committee

The JOI Inc Data Management Steering Committee has the overall mandate toassist and make recommendations regarding the development of the ODP DataManagement System to ensure that TAMU receives appropriate inputfrom the final user community.

The Role and Mandate for the Steering Committee is to provide overall guidance to TAMU on the development of the ODP Data Management System. Its specific tasks include:

- Assist in the Development of Program Goals
- Assist in the implementation and review of a Data Policy for JOI/JOIDES
- Provide guidance for development of the ODP Data Management system, in particular;

a) Assist in the development of the Statement of Work
b) Review System Requirements and Design documents.
c) Provide guidance to TAMU and it's developer in the nature and priorities of various user requirements.
d) Review progress and technical reports
e) Provide JOI Inc. with progress reports at least quarterly and report to PCOM at each of their meetings
f) Review final contract statement of work after TAMU has completed contract negotiations, and make a written recommendation on this project to JOI Inc. before any subcontracts are signed by TAMU or its designees.

Membership should be limited to no more than 10 persons and should include members as follows:

Chair (Brian Lewis)
TAMU Scientists (Bauldauf)
TAMU Information Science Group (Coyne, Mithal)
TAMU Financial Officer (Kibler)
BRG representative (TBN)
Liaisons from PCOM (TBN), IHP (Carla Moore), SMP (Terri Hagelberg)
Data base experts : Tim Ahern , Ann Kerr

Status of the FY 95 Program Plan (Where did all the dollars go?)

The FY 1995 budget time-line:

- January 10, 1994 - JOI, Inc. receives "budget target" of $44.9 M for FY 95 from NSF , with the following "assumptions and projections":

  - six "full" international partners ($2.95 M each)

  - NSF to provide "at least" 52% of joint program costs

  - "Total Management and Administrative costs" to remain at FY 94 levels

- March 7-8, 1994 - first BCOM meeting at JOI, Inc. Issues left unresolved:

  - final contractor selection for data management upgrade by ODP-TAMU, with advice from JOIDES (mid-May meeting, College Station)

  - examination of outcome of BCOM-mandated cuts to ODP-TAMU and LDEO-BRG

- May 20, 1994 - second BCOM meeting at JOI, Inc. (see the Agenda Book).

  - leftover funds from JOI, Inc. redistributed to ODP-TAMU and LDEO-BRG

  - ODP-TAMU contractor selection endorsed - data base management upgrade activity allocated $600 K (FY 94) and $900K (FY 95), with expectation of $1.5 M more (FY 96)

FY 95 (cont.)

- June 29, 1994 - EXCOM endorses the FY 95 Program Plan, at the originally stated target figure of $44.9 M.

  - NSF announces to EXCOM/ODP Council that its FY 94 support of the total program has reached 63.2% (5 + 7/12 international partners)

  - CAN-AUS representatives detail progress on a third partner (positive response from Taiwan, but nothing before summer '95, "no" from South Korea on 3/10/94)

- June 30, 1994 - ODP Council discusses CAN-AUS situation in executive session.

- July 7, 1994 - NSF provides JOI, Inc. with a "new target figure" for FY 95.

  - "future status and level of participation of the Canadian-Australian consortium is uncertain"

  - "depending upon the final level of [CAN-AUS] participation, [NSF] would be prepared to consider restoring part or all of the $900 K reduction"

  - "all FY 95 ... activities must be completed within this budget level"

    * preserve innovation (i.e., do not cut out engineering development efforts or eliminate data management upgrade)

    * keep the long-term view (i.e., This is not, repeat not, an ODP termination notice!)

- Ongoing - JOI, Inc. and subcontractor response to the new target. **JOIDES PCOM input requested at this meeting.**

Scientific Expectations vs. Budget Realities/Responsibilities of JOIDES in Long-Range Planning

BCOM - March 8, 1994 (when the target budget was $44.9 M)

"It is fair to state that neither the subcontractors nor BCOM are happy or comfortable with...base budget cuts. TAMU commented that this is a risky proposition because it inevitably will result in a lessening of their work force and inventory. TAMU also noted that there are ways to juggle base costs and innovation, but 'it's playing a game with smoke and mirrors.' BCOM is worried that this is exactly what might happen and *we stress the importance of making a clear distinction between base budget and and innovation expenses.*

BCOM stresses that this type of budgeting and budget control should not continue. This probably means an end to 'business as usual.' Whether this leads to a restructuring for more cost efficiency and/or restructuring of the types and goals of the science are matters for EXCOM, PCOM, and JOI to resolve. *We ask these groups to discuss and derive better ways of doing the ODP 'business.'* If this does not happen, we believe the long-term health of the program will be placed in serious jeopardy."

Action requested from PCOM at this meeting.

Appendix 19.3

Gearing Up for Renewal(?) in 1998

Hitting the "target" (fiscal and scientific):

- the budgetary "givens":
  (Note: all $ below are FY 95, given the original figure of $44.9M):

  - SEDCO-FOREX (ship ops, ODP-TAMU) $21.7 M

  - Schlumberger (logging, LDEO-BRG) $ 2.3 M

- possible budgetary "hit-list":

  - ODP-TAMU
    * engineering development $1.25 M
      - DCS: $484 K (FY 94) and $155 K (FY 95)
    * science services (i.e., publications) $1.97 M
    * technical support (at sea/ashore) $3.71 M
    * headquarters/administration $2.05 M
    * data management upgrade (FY 94 + FY 95) $1.50 M

  - LDEO-BRG
    * LDEO personnel (no overhead) $0.56 M
    * Subcontracts (France, UK) $0.56 M

  - JOI, Inc. (Washington, no overhead) $0.66 M
    * total, inc. JOIDES Office, Data Bank, etc. $1.41 M

DON'T: cut innovation, abridge science plans (unless intended), eliminate vital functionality.

Action requested from PCOM at this meeting.

Possible Options: Fixing the FY 95 Budget and (Beginning) to Prepare for FY 96 and Beyond

Rationale: Do not overreact. Some/all of the $900 K might be restored during FY 95. However, recognize that budgets WILL continue to be tight/flat in FY 96 and beyond. Scientific expectations MUST correlate with those budgets.

FY 95 (refer to budget "hit-list", no particular priority order) JOI, Inc. Rec.:

- save on the ship's day rate **$120 K**
  - advantages: transparent to JOIDES community.
  - disadvantages: reduces ODP-TAMU/program flexibility.

- slow down DCS development - possibly defer land-test to FY 96 **$155 K**
  - advantages: some of the $484 K budgeted in FY 94 and $155 K in FY 95 could be re-programmed; favors the serial approach recently advocated by the EDRC.
  - disadvantages: at-sea test (now Leg 164) might be postponed; DCS development could stall/stop (good-bye innovation!).

- delay publication of volumes (~$60 K/volume, ~12 volumes/yr) **$240 K**
  - advantages: does not lay-off ODP-TAMU personnel; flexible solution which can be adjusted as fiscal conditions warrant..
  - disadvantages: program product delayed; negative signal to affected shipboard parties trying to meet publication deadlines; only postpones the issue if budget downturn long-term.

- reduce "non-payroll" support at ODP-TAMU **$100 K**
  - advantage: does NOT reduce at-sea technical support.
  - disadvantages: may reduce ODP-TAMU liaison activities with JOIDES, reduces program flexibility.

- "slow down" data management upgrade (some % of $900 K) **$150 K**
  - advantages: would not necessitate putting off the activity; still sends the strong message that JOIDES' most important priority will be accomplished (preserve innovation!).
  - disadvantage: if budget not restored, upgrade might take longer (and perhaps become more expensive?).

- find other commensurate savings throughout the program **$135 K**
  (i.e., at L-DEO, JOI)

TOTAL: $900 K

Appendix 20.0

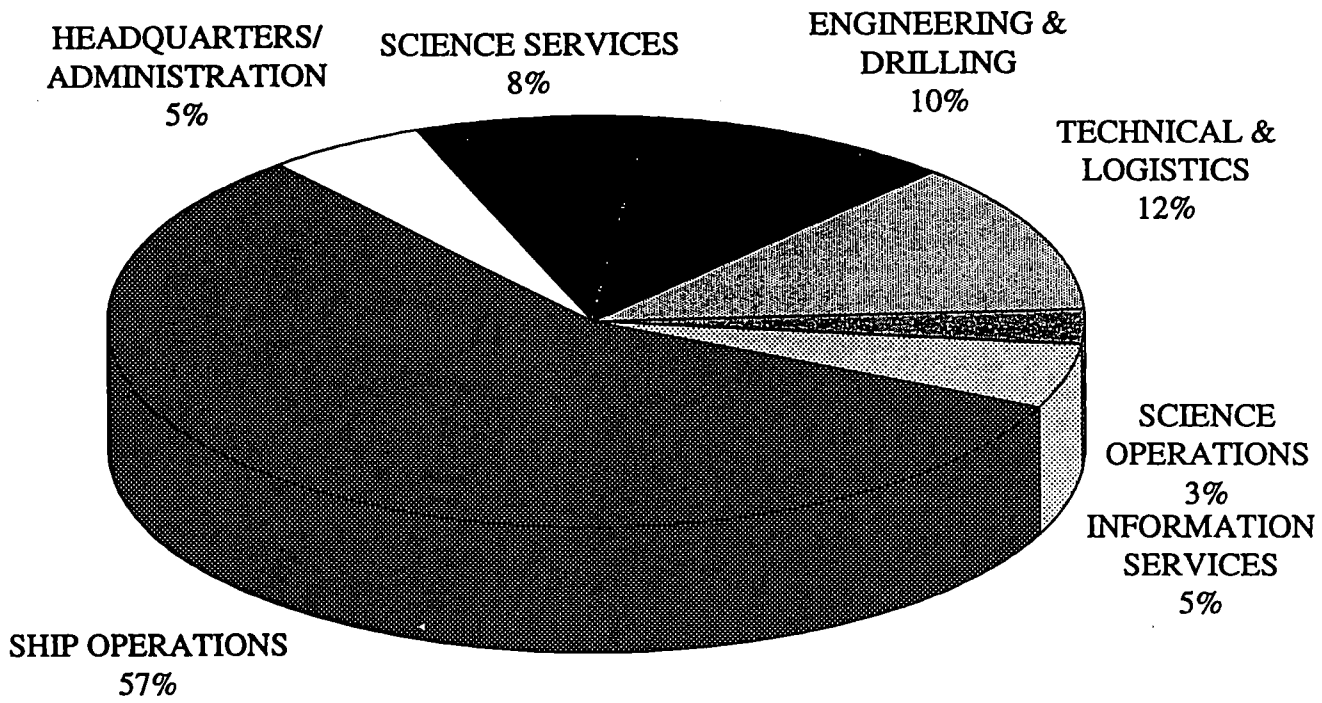
ODP-TAMU BUDGET HISTORY
$ M

	BASE	SOE	TOTAL
FY 89	30.504	1.010 *(3.2%)*	31.514
	4.1%		**4.9%**
FY 90	31.758	1.286 *(3.9%)*	33.043
	3.0%		**3.8%**
FY 91	32.707	1.602 *(4.7%)*	34.309
	4.7%		**4.4%**
FY 92	34.254	1.551 *(4.3%)*	35.805
	3.9%		**3.4%**
FY 93	35.606	1.410 *(3.8%)*	37.016
	2.3%		**3.8%**
FY 94	36.420	2.020 *(5.3%)*	38.440
	1.9%		**-0.8%**
FY 95	37.123*	1.095* *(2.8%)*	38.218*

24 JUNE 94

Appendix 20.1

OCEAN DRILLING PROGRAM
SCIENCE OPERATOR
FY95 PROGRAM PLAN BUDGET



TAMU'S SHARE OF THE TOTAL ODP BUDGET ($ K)

	TAMU		TOTAL
FY90	33,043	**87.0%**	38,000
FY91	34,308	**86.7%**	39,591
FY92	35,805	**86.5%**	41,400
FY93	37,016	**85.7%**	43,197
FY94	38,440	**85.6%**	44,900
FY95	38,218	**85.1%**	44,901

(JUNE 17, '94)

APPROVED PROGRAM PLAN FIGURES

Appendix 20.2

LEG 156

ODP-TAMU EXPENSES FOR SHEAR WAVE VSP

HAZOPS SUBCONTRACT	33,444
EXPLOSIVES MAGAZINE	3,908
WELDER (INSTALL MAGAZINE)	500
ABS CHARGES:	
INSPECTION	
TRAVEL	
LABOR	3,165
EXTRA INSURANCE	30,000
TOTAL	**$71,017**

ONLY THE INSURANCE WOULD BE NEEDED IF THIS EXPERIMENT WERE CONDUCTED AGAIN.

Appendix 22.0 SGPP White Paper

Sedimentary & Geochemical Processes Panel

MANDATE Process controlling Sedim. Distr. & Geochem. Activity on & beneath the SF. Inventory / fluxes / experiments.

OLD THEMES ① $ & eustatic Δ ② Material Co & sed. distr. ③ fluid circulation & geochem. balances ④ metallogenesis ⑤ ocean paleochem. & budgets

NEW TOPICS ① $ & facies architecture ② fluids, geochem fluxes ③ carbon Co, SF to base of biosphere

RELEVANCY ① Econ resources ② Clim Δ ③ Carbon Co & evo.

DETAILS

$ & Facies architecture

Tasks: Test $ curves using sequence strat; understand facies distr. as derived from $ Δ. Initial focus: Neogene. Allocyclic forcing, autocyclic processes.

Results: Isotope strat., basin transects, atoll & guyot dipsticks. [Barrier reef, NJ transect]

Goals: More Margin transects. Calif M, AA, Converg. M, S Atlt. M. Long-range: Shallow w. / deep targets. Riser.

Fluids / Geochem. fluxes

Tasks: Role of fluid flow - ridges, active M, passive M, carb plat/atolls

Results: Recognition of importance, diff. settings. Fresh w flow. Diagenesis ↔ fluid fluxes - CORK.

Goals: Fluid interactions w/ sediments, basement (diagenesis, alteration-Metallogenesis. Fluids → evo of ocn crust. Experiments. Long-range: deeper targets, long-term monitoring - Riser.

Carbon Cycling: SF to Base of Biosphere

Tasks: Burial / re-ox of C_{org} - mapping. Links to N, S, P. Microbial activity w/in sed. bodies.

Results: Conds. of C_{org} pres. / gas hydrate accum. / ψ of icehouse state

Goals: short-term: carbon seq in upwel, gas hydrates
long-term: Global budgets for C_{org} & paleo Π (p clim)
Methane origin. Microbial activity.

Process of producing a draft LRP revision

Step 1. Send initial draft to other programs together with a letter inviting comment and interest. Letter to go out week 1 of Sept 94 with deadline of Oct 30 for reply.

Step 2. Coordinate replies into coherent package (appendix).

Step 3. Subcom to meet Nov 17, 18, 19 to revise outline based on input from other programs.

Step 4. Review by PCOM in Nov-Dec 94

Step 5. Final revision of Draft for submission to EXCOM in Jan 95.

Appendix 23.1

OUTLINE OF LRP REVISION

1. Introduction-

   1.1 The role of Scientific Ocean Drilling in Earth Sciences—A mission statement

   1.2 Why the LRP needs updating (science, budgets, technology)

   1.3 The process of updating the LRP (input from panels, other programs, partners)

2. The Updated LRP

   2.1 Science foci based initially on "White Paper summaries", based finally on this and input from other programs

   ---

   Summary is to include the accomplishment and future objectives:
   Tectonics - Taylor
   OHP - Mix
   LITHP - Mevel
   SGPP - Berger

   PCOM re-write for uniting the four

   2.2 Technology availability and development -

   2.3 Time lines

   2.4 Budget process and implications for operations

   2.5 Integrating ODP objectives with those of national/international programs

   2.6 Revised advisory structure and proposal review process

3. Actions required to implement the Updated LRP
4. Summary
5. Attachments/references.

1.1 The role of scientific ocean drilling in Earth Sciences- A Vision and Mission Statement

The last century has witnessed a revolution in the relationship of mankind to the planet that is its home. We, the human species, have become a major geologic agent, whose impact is comparable to changes driven by mountain building and volcanism, solar cycles and climatic fluctuations. In this setting, it is ever more important to increase our understanding of Earth dynamics in all its manifestations. We need this understanding to secure economic resources, to assess hazards from natural catastrophes, and to create the scientific basis for Earth management.

These needs call for many different approaches to the study of Earth. Ocean drilling ranks high among these: 70% of the Earth's surface is ocean, and seafloor sediments contain the only comprehensive record of the history of climate and life on the planet. The large-scale motions of continents and ocean floor which are responsible for the major patterns of earthquakes and volcanism have first been elucidated by seafloor studies; further insights can only come from continuing and intensifying such studies, with deep drilling as an essential ingredient.

From these facts it is self-evident that a mechanism to sample the solid earth beneath the oceans is essential if we are to understand the history of the ocean and the climate, Earth Dynamics and the interaction of mankind and his planet.

Much has been achieved over the last two-and-a-half decades, and much remains to be done. The task of constantly improving our understanding of Earth dynamics has become more urgent. The rewards have been substantial not just in terms of creating new knowledge, but in furthering cooperation between nations with access to the sea, nations whose observers have joined the crews of *JOIDES Resolution*. At the same time, the ship works as a floating international academy where earth scientists from many cultures find an opportunity to update their knowledge and skills.

ODP seeks to explore and understand the processes that control a constantly changing earth. Central to this goal is to document the dynamic history of the climates and environments that sustain the diversity of life on this planet. This history, recorded with remarkable fidelity in ocean sediments, can only be understood in the context of the solid-earth processes that characterize the evolving plate mosaic. These processes modulate the fluxes of energy and material out of, and recycling back into, the earth's interior via tectonic and geochemical processes.

Appendix 23.3

In the international and national science communities there exists many science programs whose missions are the study of specific components of climate and ocean history and the dynamics of the solid earth. Examples are: MESH, InterRidge, ION, NANSEN, MARGINS. To many of these programs drilling is an important and even essential component in achieving their mission goals. By design these mission goals are embodied in the program plans for ODP and its advisory and proposal review structure, requiring close relationships between ODP and these programs.

The mission for ODP is thus easily stated:

ODP, consisting of it's member parts, ODPC, JOIDES, JOI Inc, and the Science Operators, has as its mission the recovery of cores from beneath the sea-floor, the acquisition of data related to these cores, and the provision of facilities and procedures for making these cores and data available to the intenational scientific community and their representative programs in order to improve our understanding of the history of the climate and oceans and solid earth dynamics.

Member parts of ODP are organized so as to achieve this mission in an efficient, cost effective manner and to site the cores samples so as to enhance knowledge about earth processes, in particular the history of the ocean and climate, and the Dynamics of the Earth.

To achieve this mission ODP is generally guided by its Long Range Plan, which is periodically updated to reflect new science directions and technology.

Sampling the deep earth

23.2-.3

LWD ECONOMICS

COSTS

- Downhole Equipment (Time & Depth)
- Surface Equipment
- Personnel
- Maintenance
- Logistics / Shipping
- Insurance

BENEFITS

- ~~Drilling~~ Logging Efficiency (100%)
- "Insurance" Decision Making
- Combination with MWD (real time)
- Unique Data (i.e. upper 100 m bsf)

Appendix 24.1

Logging-While-Drilling (LWD) Operations

ODP Leg 156

$172 K (50% Reduction)

The LWD budget is based on equipment leasing costs and the drilling depths.

Following from the Leg 156 pre-cruise meeting, total depth penetration at the three drill sites is 1535 m (5050 ft). ~ 1 km depth (2 holes)

To remain within budget, this operations schedule and depth target must be closely followed. ~ 4.5 days ops drilling

Friday May 27:	Fly equipment to Barbados. Transfer immed. to ship
Saturday May 28:	Quality control tests in port. Begin transit to NBR-3
Sunday May 29:	Begin LWD operations on site
Wednesday Jun 1:	End LWD operations on site
Thursday Jun 2:	**Begin transit to Barbados at 00:00 or earlier**
Thursday Jun 2:	Transfer equipment off ship for immediate airfreight.
Friday Jun 3:	Fly equipment out of Barbados.