Revised Minutes

JOIDES Planning Committee Spring Meeting

April 26 - 28, 1993 — Palisades, New York

These Revised Minutes contain all additions and corrections to the Draft Minutes received at the JOIDES Office and were adopted, with minor corrections, by PCOM at its April 24 - 26, 1993 Meeting.

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LIST OF PARTICIPANTS

Planning Committee - PCOM

R. Arculus	University of New England (Canada-Australia Consortium)
J. Austin	University of Texas at Austin, Institute for Geophysics
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, United Kingdom
H. C. Larsen	Geological Survey of Greenland, Copenhagen (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
G. Moore	University of Hawaii, School of Ocean and Earth Science and Technology
J. Mutter	Columbia University, Lamont-Doherty Geological Observatory
J. Natland	University of Miami, Rosenstiel School of Marine and Atmospheric Science
W. Sager	Texas A&M University, College of Geosciences
K. Suyehiro	Ocean Research Institute (Japan)
U. von Rad	Bundesanstalt für Geowissenschaften und Rohstoffe (Germany)

Liaisons

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

JOIDES Office

W. Collins	Executive Assistant and non-US Liaison
K. Schmitt	Science Coordinator

Guests

J. Alt	Co-Chief, Leg 148, University of Michigan
J. Malpas	Memorial University (Canada - Australia Consortium)

EXECUTIVE SUMMARY

JOIDES PLANNING COMMITTEE SPRING MEETING

Lamont-Doherty Earth Observatory, Palisades, New York
April 26 - 28, 1993

LONG RANGE PLANNING

PCOM Motion 1993A-1: Four Year Plan

The Ocean Drilling Program is thematically driven, as generally 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 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 FY93, confirmed as the current program plan (PCOM winter 91).

b) In FY94, confirmed as the program plan approved at the December 1992 PCOM meeting in Bermuda, noting that the precise location of the DCS test leg (157) may change and that, if the DCS testing is eliminated from the FY1994 schedule, drilling at TAG (Leg 158) will occur as Leg 157. This program plan is designed to address aspects of rifted margin evolution, the development of oceanic lithosphere at ocean ridges, Neogene paleoceanography, and the evolution of deep sea fans and accretionary prisms.

c) The further investigation of these and other high priority themes including, but not confined to, sea-level change, high-latitude paleoceanography, fluid circulation in the lithosphere, carbon cycle will continue to define the track of the drillship. At present, highly ranked and drillable proposals which address such themes exist for the North and South Atlantic Oceans, the Caribbean, the Gulf of Mexico, the Mediterranean, Norwegian, Labrador and the Red Seas, the SW Indian Ocean and the East Pacific. These, at present, confine the likely operational areas of the drillship for FY95 and FY96.

d) PCOM encourages the submission of proposals for any ocean which address those high priority themes appropriately investigated by ocean drilling.

Proposals received before 1 January 1994 that are subsequently highly ranked have the potential to modify the FY1996 and subsequent ship track.

PCOM Consensus 1993A-2: Long Range Planning (beyond 1998)

In preparation for proposing a renewal of ODP beyond 1998, PCOM identified the following two tasks as being required by 1995.

1. A proposal describing the principal scientific goals of post-1998 drilling.
2. A paper describing platform requirements and options to achieve the science goals.

To accomplish task 1, PCOM assigns a subcommittee, consisting of the PCOM Chair (Lewis) and next PCOM Chair (Kidd) to work with the thematic panel liaisons to direct the writing of White Papers by the thematic panels that can form the basis for task 1.

To accomplish task 2, PCOM assigns a subcommittee consisting of PCOM Chair (Lewis) and next PCOM Chair (Kidd) to initiate work on this task.

PCOM expects that in executing these tasks the subcommittees will make maximum use of e-mail and they will present synopses of these papers at the August 1993 PCOM meeting.

FY94 SCIENCE PROGRAM PLAN ACTIONS

PCOM Motion 1993A-3: Leg 157

PCOM, in light of recent Hess Deep experience, recognizes the importance of photo coverage in the vicinity of any site scheduled for deployment of a HRGB. PCOM, in order to prepare properly for Leg 157, endorses a plan of action to attempt to acquire this coverage during an upcoming survey of the Vema FZ transverse ridge. The JOIDES Office will help the PI of the program with that effort.

PCOM Consensus 1993A-4: Leg 158

PCOM consensus was not to use the TAG leg to CORK hole 395A.

ADVISORY STRUCTURE REVIEW COMMITTEE REPORT

PCOM Consensus1993A-5: Advisory Structure Review Committee Report

PCOM has received the #3 draft of the ASRC report. PCOM finds within the report many beneficial recommendations, but also some recommendations that it wants to examine in greater detail.

PCOM requests after the report is formally received by EXCOM, that it be referred to PCOM for detailed comment.

PCOM set up a subcommittee consisting of Von Rad, Austin, Kidd, Taylor and Lewis to coordinate PCOM responses.

ACTIONS TAKEN IN REGARDS TO THE FY94 BUDGET AND PENDING RFPS AND RFQS

PCOM Motion 1993A-6: FY94 Budget Shortfall

PCOM considered the impact of financial shortfalls in the period FY 1994 and beyond stemming from reduction or loss of the Can-Aus contribution.

1) In the event of a one-time shortfall of $1 million, PCOM sees no choice but to delay DCS development and engineering Leg 157 into FY 1995.
2) If there is to be no contribution from Can-Aus at all, the program will be unable to continue in its present form. Radical reorientation of scientific and technological objectives would be necessary. PCOM discussed potential deleterious consequences to logging and tool development, bare-rock lithospheric and accretionary prism drilling, computer upgrades, publications, and the scale of scientific participation in program planning.
3) Since these consequences are unacceptable to large segments of our constituent community, it is imperative that current Can-Aus efforts to find financial support be successful. PCOM stands ready to support those efforts.
4) Even if continuing Can-Aus participation in ODP is successful, ODP presently lacks the funds necessary to carry out the program outlined in the Long-Range plan.
5) PCOM therefore wishes to assist EXCOM in its efforts to attract a broader international base for scientific ocean drilling.

PCOM Motion 1993A-7: Deep Drilling RFQ

PCOM recognizes the importance of deep drilling for ODP, particularly for anticipated continuation of operations beyond 1998. However, given severe present fiscal restrictions, PCOM cannot recommend to fund any of the responses to the RFQ recently issued by ODP-TAMU in consultation with TEDCOM. PCOM encourages TEDCOM to pursue the initiative on its own, by augmenting its existing expertise as required.

PCOM Motion 1993A-8: *In Situ* Pore Fluid Sampling RFP

PCOM appreciates that sampling of pore fluids in low permeability rocks is of importance to several thematic panels. However, the poor prospects for success and the budgetary constraints, preclude issuing an RFP for evaluation of the feasibility of sampling pore fluids at this time. PCOM recommends that the DMP either use or acquire panel expertise to address this issue or to seek funding from other sources for the RFP.

PCOM Actions Taken on JOIDES Advisory Panel Recommendations

PCOM Motion 1993A-9: BCOM / DMP Request for Review of RFP Specification and Review Procedures

To ensure that the interests of the JOIDES advisory structure are fully represented in all contracts let by JOI Inc. or it subcontractors that involve important new directions, the PCOM Chair should be directly involved with JOI Inc. in the specification of RFPs and nomination of reviewers.

PCOM Action 1993A-10: TECP Core Orientation Recommendation

PCOM referred the TECP core orientation recommendation to both DMP and SMP for their opinions on what to do and how to implement this recommendation. DMP/SMP recommendations in regards to core orientation are to be presented to PCOM at the December annual meeting..

JOIDES Office Action: SGPP / LITHP Proposal Updating Recommendation

The JOIDES Office will make an effort to improve the process of updating proposals for non-revised proposals nearing the three year age limit by working with proponents of these proposals to meet the JOIDES thematic panels recommendations.

PCOM Motion 1993A-11: SGPP PCS Recommendation

PCOM recognized the critical importance of the Pressure Core Sampler (PCS) for studies of in situ sediment conditions, including but not limited to capture of clathrates. However, PCOM remains concerned about the sporadic success of the instrument to date, and the complete lack of information concerning progress on design and construction of a lab chamber for transfer of pressurized core into an environment more amenable to analysis. PCOM requests SGPP to investigate the latter, for a report back to PCOM at its 1993 annual meeting.

A. Mix Action - OHP Recommendation - Carbonate Autosampler

Alan Mix will investigate the OHP recommendation on the carbonate autosampler, he will talk to Peggy Delaney and report back on this issue to PCOM at the August meeting.

PCOM Consensus 1993A-12: LITHP White Paper Revision

PCOM fully endorses the approach and schedule taken by LITHP in their White Paper. The PCOM Chair will contact the LITHP Chair to ensure that the objectives of the White Paper are consistent with the PCOM discussion.

PCOM Action 1993A-13: IHP Data Management Recommendation

PCOM referred the concerns of IHP with regards to the interim capture and curation of data to the Computer RFP Evaluation Committee to review. PCOM Chair will ask the RFP Evaluation Committee to come up with a report containing specific recommendations on how to deal with this problem for the August PCOM meeting.

PCOM Motion 1993A-14: IHP Publications Recommendation - *IR* & *SR* Size

Considering the trend for increase in the size of both *Initial Results* and *Scientific Results* volumes, and a corresponding increase in the costs of publication. PCOM recommends that TAMU negotiate the size of volumes with co-chiefs before each leg, with a review after each leg, when an assessment of scientific output can be made. PCOM encourages publication of data on CD-ROM to reduce printed pages. Establishing an across-the-board page limit for either *IR* or *SR* is discouraged, to maintain flexibility.

PCOM Consensus 1993A-15: IHP Publications Recommendations - *SR* Submission Deadline

PCOM was not in favor of implementing IHP's recommendation for a 40 month submission deadline as policy. PCOM preferred to leave the 36 month post-cruise publication deadline in place.

PCOM Action 1993A-16: TEDCOM DCS Leg 157 Planning Recommendation

PCOM will reconsider in August the issue raised by TEDCOM concerning DCS hardware placement prior to Leg 157.

JOIDES COMMITTEE/PANEL MEMBERSHIP CHANGES

PCOM Motion 1993A-17: Personnel Changes

PCOM endorsed all personnel changes in panel membership, panel chairs and PCOM liaisons presented at the April 1993 PCOM meeting.

SGPP
R. Sarg to replace N. Christie-Blick

TECP
J. Stock to replace T. Atwater
A. Robertson to replace E. Moores as Chair.

LITHP
A. Sheehan to replace T. Brocher
A. Fisher to replace D. Moos
K. Gillis to replace S. Humphris

SMP
J. Gieskes to replace K. Moran as Chair
J. Parizo to replace J. King
J. Whelan to replace M. Mottl

SSP
D. Toomey to replace G. Moore

PCOM Consensus 1993A-18: ODP-LDEO Liaison to the Computer RFP Evaluation Committee

PCOM endorsed, by consensus, the designation of Dave Goldberg as a liaison to the Computer RFP Evaluation Committee to foster interaction (except that he will be excluded from situations involving conflict of interest.).

PCOM Consensus 1993A-19: Canadian Co-Chief

PCOM endorsed, by consensus, the nomination of Dave Piper (Canada) as Co-Chief Scientist for Leg 155 (Amazon Fan).

PCOM Consensus 1993A-20: Susan Humphris Retiring from LITHP Chair

On behalf of the JOIDES advisory structure, PCOM expresses its considerable appreciation for the excellent job that Susan Humphris performed as chair of the Lithosphere Panel and wishes her well in her position at the RIDGE office and co-chief designate of Leg 158.

PCOM Consensus 1993A-21: John Malpas Retiring from PCOM

On behalf of the JOIDES advisory structure and the entire ODP community, PCOM expresses its deep appreciation to John Malpas for the time and energy he has put into PCOM, the Long Range Plan, and the numerous committee and panels he has attended over the years. PCOM recognizes that his 10 year commitment to the program has contributed immeasurably to its success.

OTHER MISCELLANEOUS ACTION ITEMS

PCOM Chair Action - Proposal Review Inquiry

PCOM Chair to consult with an FDSN representative (Dziewonski/Purdy) about the proposal for the emplacement of a borehole seismometer (proposal # 431).

JOIDES Office Action - Science Program Publicity

JOIDES Office will submit the FY94 schedule and Four Year Plan for Publication in *EOS*.

JOIDES Office Action - August 1994 Meeting

The JOIDES Office will poll PCOM for interest in having the August 1994 meeting in Iceland, possibly to include a field trip to Greenland.

PCOM Chair Action - PCOM Liaison Duties

PCOM Chair to notify Brian Taylor he should plan to attend the fall TECP meeting as PCOM liaison - Hans Christian Larsen will be unable to attend.

C. Mével Action - Russian Request for ODP Speakers and Information From Leg 147 & 148

Catherine Mével (Leg 147) will investigate the possibility that she and another scientist from Leg 148 can travel to Russia to give presentations on results of those legs.

REVISED MINUTES

JOIDES PLANNING COMMITTEE MEETING
PALISADES, NEW YORK
APRIL 26 - 28, 1993

Monday, April 26, 1993..... 9:00 AM

Item 987. Initial Business

1. Introduction of PCOM members, liaisons and guests

The meeting was called to order by Lewis and introductions were made. Lewis thanked Roy Schlische from Rutgers University for leading a field trip to the Newark Basin on Sunday, everyone who attended agreed that the trip was a great success.

2. Approval of the Agenda for the April PCOM Meeting

Lewis reviewed the agenda for the meeting and outlined the major items to be addressed at the meeting. Lewis intended to have a review and vote on all motions on Wednesday afternoon. PCOM agreed that voting on motions should be moved up to Wednesday morning in recognition of the fact that many PCOM members would be leaving early on Wednesday.

PCOM approved the revised agenda for the April meeting.

Fox proposed, Natland seconded; vote: 16 yes.

3. Approval of Minutes from the December PCOM Meeting

1. Kidd requested a change on p. 44: change "the" to "sufficient ".
2. Sager requested a change on p.49: change the sense of an ambiguous sentence to specify that "it" the RFP and not the working group.
3. Francis requested a change on p. 56: delete the sentence "It was the first time a hole....."
4. Berger requested a change on p. 39: delete the second sentence of the SGPP report.

PCOM approved the revised minutes of the December 2 - 4, 1993 meeting in Bermuda.

Natland proposed, von Rad seconded; vote: 16 yes.

Item 988. ODP Liaison Reports

1. NSF

Budget Issues

Malfait began his report by reviewing the NSF budget situation (Appendix 1.0). He was sorry to report Clinton's economic stimulus package, which included $ 241 M for NSF, would have brought NSF's budget to the requested FY94 level. Unfortunately, the Clinton package failed to pass through Congress; the final FY94 budget was still in Congress.

Status of Renewal Activities - MOUs

Malfait reported that MOU renewal activities were moving along (Appendix 1.1); the UK had signed, Germany was in the process of signing, Japan should be prepared to sign in May, and the ESF signing date would be known soon, Can/Aus status was unknown and France's signing date had not yet been set. Mével clarified that IFREMER had been waiting the French elections to be completed—to see if their budget would be there; the budget was now in place and France would sign in early June.

Contracts

Malfait reported that JOI and NSF were negotiating a new contract. NSF had completed "administrative" review of the 1994 Program Plan, the plan was submitted with a $ 44.9 M budget—this

was a six partner scenario. Malfait stressed that this budget was unlikely to stand without the sixth (Can/Aus) partner. In his opinion, the budget uncertainty would probably not be resolved until June.

Other Items

Malfait concluded his report by summarizing other items of NSF business that related to ODP (Appendix 1.2). These included: (1) the USSAC program being reviewed this summer, (2) 1994 field programs, (3) drilling of holes onshore New Jersey as part of the Leg 150 transect program, (4) Beth Ambos would be departing NSF in July—NSF was looking for a replacement, (5) NSF would be moving to northern Virginia in the fall of 1993.

Canadian Funding Situation

At this time Malpas asked to report on Canada's funding situation. He briefly reviewed the history of events that had occurred since November leading up to the present Canadian situation. Malpas explained the ODP funding structure in Canada and detailed efforts in the Canadian ODP community to restore funding after the decision to cut ODP funding in Canada was announced in December.

Malpas had recently been elected Chair of the Canadian ODP Council. The Council had been working hard to get the money to continue Canadian membership from Canadian government sources. There had been efforts made to solicit funds from an internal Canadian partner—i.e. from provincial governments such as Nova Scotia, New Brunswick or Newfoundland. Petroleum companies had also been approached. Another alternative for funding was finding a third partner for Can/Aus. This option had been postponed until all Canadian sources of funding were exhausted; this, Malpas explained, was in order to be able to negotiate fairly with potential partners.

Malpas concluded by saying that it was unlikely that Canada would have anything definite to report about money by June. The Canadian Council would be meeting after the PCOM meeting and would discuss the third-partner option. Malpas was hopeful that there would be good news by the August PCOM.

2. JOI Inc.

Updates

Pyle reviewed the ODP-related activities at JOI since the last PCOM meeting (Appendix 2.0). Two RFPs had been completed, one for the JOIDES Office to the UK in FY95 and one for the logging subcontract to LDEO. Pyle reported that the Advisory Structure Review Committee (ASRC) had met with TEDCOM in March and issued a revised draft report after that meeting. JOI had completed the draft of the FY94 Program Plan according to BCOM's recommendations; NSF's comments on the document were under review. Pyle noted that the Program Evaluation Committee (PEC) was postponed from FY94 to FY95. Contract renewal negotiations continue between JOI and NSF. There would also be negotiations between JOI and its subcontractors, the meeting dates for those negotiations were to be announced. Pyle announced that JOI had received a grant, through NERC, from the Royal Society to support Russian scientists. The JOI/NERC grant was one-time money in Pounds and it was intended to support sea-going Russian scientists.

Budget

Pyle showed last year's budget and the projected FY94 budget for ODP (Appendix 2.1). He pointed out the shortfalls from the LRP budget projections. Pyle then reviewed the FY94 SOEs that were funded by BCOM (Appendix 2.2), the list included: hard rock guidebases, DCS, DCS shipping, computer/database upgrade and a real-time shipboard navigation system. There was also the possibility, depending on the outcome of the Can/Aus situation, that another $ 3 M would need to be cut from the budget. If these cuts needed to be made there would be another meeting of BCOM in June.

Keck Report

Pyle read excerpts (Appendix 2.3) concerning ODP from the National Academy of Science's Solid Earth Sciences and Society Report ("Keck Report"). These comments were very positive about ODP's contribution to earth sciences. Copies of the report were available from the National Academy Press.

Oceanus

JOI was organizing publication of a special issue of *Oceanus* devoted to the 25th anniversary of ODP, publication was planned for January 1994. Pyle outlined the content of the issue (Appendix 2.4) and requested suggestions and volunteers to help with this undertaking. Austin asked about the cost of this activity? Pyle replied that JOI was negotiating costs and he went on to explain that he saw this as a

minimum-cost remnant of JOI's PR program—something that EXCOM had wanted JOI to do but had been cut by BCOM. PCOM discussed the cost, circulation and content of material presented in *Oceanus*.

3. Science Operator

Leg 147

Francis gave an overview of Leg 147 drilling at Hess Deep and explained the drilling operations that occurred on the leg, including problems with lost and damaged hardware (Appendices 3.0 - 3.2). Francis reported that the offset drilling strategy had been expensive due to lost hardware (Appendix 3.3). However, 122 m of core was recovered out of 545 m penetrated—a very good ratio for this type of leg—so the expense may pay off scientifically. Mével countered that she did not think it was the offset drilling strategy that lead to equipment loss but rather the environment of drilling.

PCOM then discussed the causes of equipment loss on this leg and implications for future legs and budgets. There was concern about site survey deficiencies and the discussion examined if existing guidelines were sufficient to prevent similar problems from happening in the future. Kidd assured PCOM that SSP would have a full post-cruise review of site survey problems on the leg at its next meeting.

Leg 148

Francis reported on the drilling progress on Hole 504B during Leg 148 (Appendices 3.4 - 3.5), the coring operations deepened the hole by 111 m before the drill string became stuck. After a day and a half of fishing, drilling was abandoned until additional jars arrived—they had to be emergency-shipped to the *JOIDES Resolution*. In the meantime, a new hole (896A) was started. After the jars arrived, the BHA was recovered and a .5 m fish was left in the hole with 15 m of rubble above it.

Austin wanted to know why the proper jars were not on board, TAMU had been directed to have an extensive inventory of fishing tools on board for this leg. Francis said that the fishing tool inventory on board had been a cost issue.

Leg 149

Francis reviewed the status of Leg 149 drilling, the cruise was still in progress (Appendix 3.6). He was sorry to report that there had been several problems at site IAP-4 with both drilling and logging; equipment had been lost and none of the holes at IAP-4 were logged. The worst news was that on April 24th, at IAP-2, 123 stands of pipe were lost in rough weather (est. value $500,000). Francis explained that 6180 m of pipe were still left on board but this was not quite long enough to achieve basement objectives at IAP-2. As a result, proposed site IAP-6 was selected as the alternate site where basement could be achieved with the remaining pipe and a new re-entry hole had been established at this site. The last proposed site for Leg 149 would be IAP 3-C, there should be enough pipe for completing this hole.

PCOM discussed what alternatives there would be for the leg if any more pipe was lost and what the impact of this problem was on the objectives of NARM. Of particular concern was the budgetary impact of recent equipment losses on future drilling programs.

Leg 150 & Leg 151

Francis discussed the New Jersey Leg 150 and NAAG Leg 151 proposed site locations (Appendix 3.7 - 3.9). The staffing for these legs was reviewed.

Ice Boat

Francis presented a listing of bidders who responded to the RFP for an ice support vessel on Leg 151 (Appendices 3.10 - 3.12). He announced that the *Fennica* had won the bid, the cost would be about $ 900 K depending on fuel costs which could be quite variable depending upon actual ice conditions.

Leg 152

Francis identified the Leg 152 proposed sites (Appendix 3.13) and reported that the Leg 152 Prospectus would be coming out soon. A scheduling change had been made to save transit days, the end of Leg 152 would be in St. John's, NFLD, instead of Lisbon (Appendix 3.14).

Staffing Leg 153 - Leg 155

Francis reviewed the status of staffing for Leg 153 - Leg 155 (Appendices 3.15 - 3.17), he noted there would be several new staff scientists joining the program in the next year.

Francis asked PCOM for direction on the purchase of equipment for Leg 153. TAMU would soon need to commit funds for necessary equipment but realized that there might be some changes to the

science plan pending upcoming budget cuts. Francis wanted to make PCOM aware that if funds were committed to equipment at this point, any future budget cutting would probably have to be in other budgets. PCOM discussed the budget issue and concluded that TAMU should go ahead with planned equipment purchases.

Equipment Status Report

Francis reported on the status and priority of equipment for the ship (Appendix 3.18); the first priority was core-log integration.

Publications

Francis gave a summary of progress *ODP Proceedings* volume publications (Appendix 3.19). He noted that the costs of publications were rising steadily, in part because the volumes were getting larger.

Coffee Break ..... *11:15 AM*

4. Wireline Logging

Operations

Goldberg discussed the details of recent logging operations on Leg 147, 148 and 149 (Appendices 4.0 - 4.1). To help remedy some of the recent problems encountered in FMS logging operations, LDEO would create a more comprehensive logging manual to cover operation of this tool in more detail.

Developments

Goldberg reported on the status of downhole systems development for the following (Appendix 4.2): (1) High-T temperature tool (BGRM), (2) High-T cable (BGRM), (3) High-T resistivity tool (CSMA), (4) Directional shear wave sonic tool (LDEO), (5) Third-party tool guidelines (TAMU/LDEO).

Lewis asked how the technical report on third-party tool guidelines fits in with the brochure already published by TAMU? Goldberg explained that this report was to be the second phase of DMP's program for third-party tools; this report would be a more technical production than what was published previously.

Future Logging Operations

Goldberg presented the future logging operations for Leg 149 through Leg 152 (Appendix 4.3). Goldberg pointed out that LDEO planned to have a working BHTV on Leg 152. He explained that it was the digital BHTV that had not been working and that the tool had been diagnosed as having a hardware problem. Since the tool was leased, LDEO was actively working with the German manufacturer/subcontractor (DMT) to fix the problem with the tool. In the case that the digital instrument was not functional, the plan was that the analog BHTV would be used on Leg 152 as a back-up. However, Goldberg acknowledged that the analog BHTV was not on board the ship at that moment and would need to be shipped out in order for this to happen; use of the analog tool would also require that someone receive an extensive amount of training in order to be able to use the tool successfully.

PCOM discussed LITHP's statement of frustration regarding the recent failures of the BHTV. Austin brought up the point that BCOM had specified, at the recommendation of LDEO, that the BHTV subcontract be terminated in FY94 due to the high cost and unreliability of the tool. In addition, Austin reported that BCOM had decided that the BHTV should only be used in specialty situations and only if it was being supported externally. PCOM discussed with Goldberg the recent performance history of this tool and the specialty status that BCOM had intended for the future operation of this tool.

Lewis questioned why LDEO was planning to continue to work with the BHTV subcontractor when BCOM had mandated the subcontract be terminated? Goldberg clarified that BCOM's mandate was for FY94 and the subcontract was still valid through FY93—through Leg 152. He went on to say that there were two separate subcontracts for the two different televiewers and since there was a strong need expressed by LITHP for the general use of a BHTV and a specific need on Legs 152 and 153 the best approach was to get the digital BHTV working in the time still left in the contract. Goldberg wanted to make sure that the subcontractor fixed the unit so that it was available for operations in the remainder of FY93.

PCOM debated the scientific value of the digital BHTV tool and the possibility of reconsidering funding for it in the future if the reliability problems were remedied. The likelihood, practicality and

budgetary implications of substituting the analog BHTV were discussed in terms of personnel and training required.

Other Operational Developments

Goldberg described recent operational developments at LDEO in the area of CD-ROM production for logging data on Legs 143 - 146 and gave updates on the ODP field tape backup project, logging schools and staffing (Appendix 4.4).

Lewis returned to the issue of BCOM cutting funds for borehole tool development from the LDEO contract. Given DMP's interest in tool development, Lewis asked Goldberg how he thought this would impact the program? Goldberg was concerned about the situation, he felt that third-party tool development was especially problematical because the line between new tool development and third-party support was hard to define. What BCOM cut was new tool development, Goldberg interpreted this to mean tools not already in the program as an existing or third-party tool.

PCOM discussed the implications of the tight budget situation on tools, it was clear that budget cuts meant that no new innovation would be possible and continued funding of existing or third-party tools would need to be prioritized. Lewis pointed out that some of the problems with tool development were exacerbated by the fact that panels were not careful to route their recommendations about tools through PCOM for approval, this had lead to some confusion between LDEO and BCOM about priorities.

Item 989. Reports by PCOM Liaisons

1. EXCOM

Lewis summarized the major business items that were addressed at the EXCOM meeting in January. Two items of interest to PCOM were: (1) panel chairs and national membership, and (2) core repository facilities. EXCOM decided that if a countries' national representative became a panel chair, it did not entitle a country to add another representative to the panel. However, if scientific expertise required it, there was no objection to having an additional member from that country on the panel. The core repository internationalization issue was revisited by EXCOM and they asked that TAMU reopen their search with a new request for proposals. In response to EXCOM's mandate, TAMU issued a letter asking for proposals to operate the facility; the responses were due at the end of April and they would be reviewed by three members of EXCOM for recommendation to TAMU in June.

2. BCOM

Austin reported that at the March BCOM meeting the large discrepancy between the LRP budget and the present budget made it clear that the LRP budget goals would not be met. Due to the budget situation, the term SOE was replaced simply with "innovation".

Strategy - Short Term & Long Term

Austin explained that BCOM had taken a short term and long term strategy in preparing the FY94 budget. The short-term strategy included goals of: (1) maintaining cutting edge science and innovation, and (2) tightening base budgets by using efficiency and performance improvements to affect savings. For the long term, BCOM felt that it should: (a) apply concerted effort to find new funds, (b) rewrite ODP's science objectives to reflect fiscal realities, and (c) if there were no new funds, devise a slimmed-down operation with science to match.

Draft Budget

Austin reviewed aspects of the draft budget (Appendix 5.1). He wanted to make it clear that BCOM had prioritized funds in order to make it possible to complete the FY94 Science Program as it was planned. Austin explained the budget funding levels and the required budget cuts for TAMU, LDEO and JOI/JOIDES. BCOM was concerned that further budget reduction would have serious implications for the program. Specifically, BCOM felt that further reduction would require ODP to revise its science plan to limit scientific objectives and to reduce/eliminate technical innovation. BCOM had concluded that such a budget reduction would have a mid- to longer-term deleterious—and potentially fatal—impact on ODP.

3. TECP

Moore reported the results of TECP's global ranking (Appendix 6.0). Atlantic/E. Pacific proposals still remained at the top of TECP's list but some new proposals in different geographic areas were moving up in the global rankings. As requested by PCOM in December, Moore presented TECP's prioritized list of deep holes and stressed TECP's continuing support for development of deep-drilling capabilities. The Iberian Deep hole (IAP-1) was TECP's top deep-hole priority because TECP felt that this hole was critical to completion of the NARM Non-Volcanic science objectives.

TECP was in the process of revising its White Paper, drafts of revised sections were due to the Chair, Eldridge Moores by July 15, 1993. Moores would edit a revised version of their White Paper to be reviewed at the fall TECP meeting. TECP wanted to produce a short, publishable version of the White Paper as well as a longer, more meaty version for proponents. Unlike LITHP, the TECP revision scenario did not include a public meeting. This was because of the large TECP mandate and the panel's feeling that a public review would only tend to broaden their document. TECP preferred to use its own expertise to focus the White Paper on the best tectonic problems that can be addressed by ODP drilling.

Dick was not in support of such a closed-shop approach, he felt that LITHP had previously suffered from this kind of approach and wanted to see TECP adopt the open meeting, public review approach that LITHP was taking in revising its White Paper. Moore emphasized that TECP members were not planning to do their revision work in a vacuum and panel members would seek input from colleagues in their field when revising their assigned section of the White Paper.

Arculus questioned if TECP had been able to address PCOM's concern in Bermuda (December 1992) that important TECP programs were not getting drilled because the concepts of how drilling could solve tectonic problems were not being communicated by proponents? Moore felt that TECP had started to solve that problem by assigning TECP watchdogs to highly-ranked or promising tectonics proposals. The watchdogs were to work with proponents to get the proposals ready for this type of scrutiny.

Moore summarized TECP's discussions on the content of the ASRC Draft Report.

Lunch Break ..... *1:00 - 2:00 PM*

Panel Recommendations

Moore explained TECP's concern that collection of core orientation data was not being done in a systematic manner on the *JOIDES Resolution*. As a result, TECP endorsed the recommendation by Staff Scientist Bob Musgrave, the ODP-TAMU liaison to TECP, that core orientation become a routine operation by the shipboard paleomagneticist.

PCOM discussed how this recommendation should be handled. As SMP liaison, Fox felt that SMP should get this item and that they would like to review the specifics of the recommendation. After discussion, PCOM came to the following consensus:

PCOM consensus was to refer the TECP core orientation recommendation to both DMP and SMP for their opinions on what to do and how to implement this recommendation. DMP/SMP recommendations in regards to core orientation are to be presented at the December PCOM meeting.

4. SGPP

Berger presented the results of SGPP's global ranking. SGPP was not happy that the shelf drilling for Leg 150 would not be accomplished and felt that the sea-level goals were not being properly addressed by the revised transect. To emphasize this, SGPP did a second ranking that included the undrilled Leg 150 shelf sites—they ranked second overall among SGPP's globally-ranked proposals.

Panel Recommendations

SGPP was concerned about the procedure for keeping a proposal active within the ODP system and recommended that there should be a requirement that a complete revision must be submitted to keep a proposal active, not just a letter. PCOM discussed the current requirements to keep a proposal active and the issue of corporate memory on panels. The JOIDES Office would make an effort to improve the process of updating proposals for non-revised proposals nearing the three year age limit by working with proponents of these proposals to meet the JOIDES thematic panels recommendations. PCOM also

recognized that an uncomfortable situation often arose when new members were asked to rank proposals that they were not familiar with. For the future, the JOIDES Office would compile a compendium of abstracts of all active proposals to be made available to panel members to help them in their preparation for global ranking.

Berger reported that the other major item of concern for SGPP was the status of the PCS. SGPP had recommended that there be continued field testing of this system, specifically on Leg 150. SGPP felt that the PCS would be critical to the success of any future gas hydrate leg. Arculus argued that PCS was a working tool and that the problems with it were in transferring samples for preservation. Francis agreed, explaining that the PCS was operational but that, while it was good at acquiring pressurized core, it was not particularly good at coring—it had also become a back-burner item after the recent engineering budget cuts. Austin noted that there had been an independent proposal to create a pressurized transfer/storage container to work with the PCS. PCOM discussed what the best course of action would be and passed the following motion:

PCOM recognizes the critical importance of the Pressure Core Sampler (PCS) for studies of *in situ* sediment conditions, including but not limited to capture of clathrates. However, PCOM remains concerned about the sporadic success of the instrument to date, and the complete lack of information concerning progress on design and construction of a lab chamber for transfer of pressurized core into an environment more amenable to analysis. PCOM requests SGPP to investigate the latter, for a report back to PCOM at its 1993 annual meeting.

Austin moved, Natland seconded; vote: 14 yes, 1 abstention, 1 absent.

Dick wanted the record to indicate that the SGPP minutes are not accurate with regards to the results of Leg 147 (Agenda Book p. 143). He was particularly disturbed by the description of the leg as not having achieved its operational goals. He wanted to say that scientists on the leg strongly disagree with that and regard it as an uninformed and unsubstantiated opinion. As to the statement in the SGPP minutes (Agenda Book p. 144), concluding that some of the problems on the leg could have been prevented by more detailed site survey, Dick wanted to state for the record that the Chief Scientists and the proponents do not agree with that assement. He was upset that SGPP, in that their official minutes, were misleading readers with respect to the scientific achievements of Leg 147—a leg that was a major scientific success for the program. Several other members of PCOM who were also on Leg 147 agreed that the minutes were not accurate in this regard.

5. OHP

Sager summarized the OHP meeting (Appendix 7.0) and the results of OHP's global ranking (Appendix 7.1). Coring issues were an important item of discussion, specifically the need to improve the handling/curation procedures of gassy sediment cores. OHP also felt that it was important to figure out the cause of and a cure for the depth mismatches between mbsf and composite stratigraphic depth. OHP voted the NAAG leg II its highest priority in the global ranking and, in order to better prepare for it, planned to hold a one-day meeting after Leg 151.

OHP's discussion of the ASRC Draft Report had brought up the issue of program publicity; OHP wanted to see increased visibility for ODP science. PCOM discussed at length whether or not the ODP Science Plan schedule was being disseminated fully. Some members of PCOM questioned whether or not this was a real problem and what the origin of OHP's perception was. Further discussion followed over what PCOM could do to fix the problem, there was general agreement that the constituency for publicity efforts should be larger than just the ODP community—the use of *EOS* was preferred by many as a vehicle to do this. PCOM debated the use of *EOS* as a way to inform a broader-based earth science community about ODP activities. Different opinions were expressed about what mechanism would work better in *EOS*—an ad or an article. PCOM discussed the merits of different strategies for publicizing the program in regularly published media (journals and magazines). PCOM agreed that more efforts to publicize the science plan and schedule could be made. The JOIDES Office would pursue the issue further by working on putting an article and/or an ad in *EOS* in the near future about the FY94 schedule and the Four Year Plan.

Panel Recommendations

Sager noted that the only item of major concern that OHP had raised was that of equipment, specifically the carbonate autosampler. This item had not been included in SMP's prioritized equipment list because it was not available from the manufacturer. OHP wanted to make it known that when it became available it would be OHP's highest priority item. PCOM referred the item to the OHP liaison (Mix) for further investigation. If necessary, Mix will report on the item in August for further PCOM consideration.

6. LITHP

Mutter reported that, aside from the global ranking, a large part of the LITHP meeting was taken up with rewriting the LITHP White Paper. LITHP was in favor of having an open meeting to facilitate White Paper revision and were encouraged that the ASRC Draft Report had endorsed this approach. Mutter said that the main problem that LITHP had was in finding funding sources for the meeting and LITHP requested a clear statement of support from PCOM endorsing this approach to White Paper revision. LITHP felt that it would facilitate getting funds to support an open meeting.

Panel Recommendations

Mutter summarized LITHP's other recommendations: (a) LITHP was concerned about the engineering requirements for the FY94 hard-rock drilling legs and requested an engineer be assigned to address them, (b) LITHP wanted a reliable BHTV system and operator on board, (c) LITHP wanted to add the deployment of a CORK to hole 395A to Leg 158, (d) LITHP supported the development of in situ fluid sampling capabilities and wanted to see the RFP or RFQ approach be undertaken as soon as possible, and (e) LITHP recommended the JOIDES Office compile abstracts of all active proposals.

Lewis noted that the JOIDES Office would address the last item and that the main issue that PCOM had to act on was to decide if CORKing hole 395A should be added to the 1994 schedule—this item would be taken up later in the agenda.

7. SSP

Kidd reported that SSP evaluated the status of data for the top seven globally-ranked proposals from each of the thematic panel rankings (Appendix 8.0 - 8.3). He reviewed SSP's comments to proponents of the highly ranked-proposals regarding data requirements that must be met for the site survey data package to be considered complete. SSP also flagged three proposals, Eastern Equatorial Atlantic, Costa Rica and Gas Hydrates, as having potential safety problems and in need of a pre-review by PPSP.

Post-mortems were done on recent legs in an attempt to evaluate if the site survey data was adequate for the leg. Of particular concern were the Santa Barbara sites with the gas problems that were encountered, SSP's consensus was that the data package for this site was rushed through the SSP and PPSP review process. SSP concluded that a more deliberate approach would have been beneficial to the results of the leg. Kidd noted that site survey data for Leg 147 (Hess Deep) would be carefully re-evaluated at the next SSP meeting.

Of the currently scheduled proposals, Kidd reported that the most significant problem SSP had identified was with the Vema site survey data. SSP was concerned that there was no carbonate cap at the 1500 m water depth. Kim Kastens asked to clarify the issue and explained that there was not enough data available to determine if there was carbonate cap in the desired water depth. Kastens felt that, based on the data that existed, it appeared that the cap did not extend into the area of 1500 m water depth. She felt that it was possible that limestone cap existed at another site but there was no data to make that determination. Austin said that, based on what he had heard at the TEDCOM meeting, the water depth issue was still up in the air and the engineers may not need to have the 1500 m water depths; more information on this depth requirement would be available after the DCS land tests in the summer.

Kidd concluded by relating SSP's discussions and opinions regarding the ASRC Draft Report.

Coffee Break.....*4:00 PM*

Item 990. Scientific Reports of Recent Drilling

1. Leg 147

Catherine Mével, Leg 147 Co-Chief Scientist, began by outlining the primary objectives of Leg 147 (Appendix 9.0). The program was the first leg designed to drill the lower crust and mantle using the offset drilling strategy. The drilling targets were within a tectonic window in oceanic lithosphere generated at the fast-spreading EPR. Two sites were successfully drilled, 894 in gabbros and 895 in peridotites.

Site 894

Mével gave a complete description of the preliminary scientific results, operational procedures and problems that were encountered in drilling at Site 894 (Appendices 9.1 - 9.14). The hole conditions encountered at this site made it difficult to log, the FMS was not successful in the lower part due to irregularities of the hole size. Drilling encountered mainly gabbros cross-cut by a few basaltic dikes, six holes were drilled with an average recovery of 22.5 % overall. Mével then presented detailed descriptions of the petrology, lithostratigraphy, foliations and cross-cutting relationships between ductile and brittle structures observed in the cores.

Mével outlined the principle results to-date from Hole 894G: (a) the gabbroic section crystallized from the roof of the magma chamber, (b) the strong subvertical magmatic foliation was oriented N-S—parallel to the EPR axis, (c) no high temperature deformation was observed as had been in slow-spreading ridges (735B), (d) the brittle fracture network was most likely related to the opening of the Hess Deep rift.

Site 895

Mével reported on the preliminary scientific results, the operational procedures and problems that were encountered in drilling at Site 895 (Appendices 9.15 - 9.23). At this site there had been numerous unexpected difficulties encountered during the drilling of the peridotites. Six holes were drilled at this site; harzburgites, dunites and gabbroic rocks were recovered with an average recovery of 23.4 % overall. Mével presented a detailed description of the petrology, lithostratigraphy and structural fabrics of cores recovered from the site.

The major conclusions reached to-date about the rocks recovered at site 895 were: (a) the rocks recovered at site 895 correspond to plastically-deformed upper mantle that was impregnated and cross-cut by magmatic liquids—similar to the *transition zone* in ophiolites, (b) the origin of the dunites was both the result of a reaction between the harzburgite and magma and as a cumulate, and (c) the variability between the different holes at the site suggested that melt percolation may be focused within conduits.

Mével compared aspects of holes from Sites 894 and 895 (Appendix 9.25) and discussed her conclusion that what had been drilled on this leg was the upper part of the fast-spreading ridge magma chamber (Appendix 9.25). Mével explained that one of the goals of this leg was to determine what effect the opening of Hess Deep had on EPR rocks (Appendix 9. 26), in Mével's opinion, it was still not possible to distinguish between the two tectonic models hypothesized for the Hess Deep area. However, she strongly supported the offset drilling strategy for this type of investigation.

2. Leg 148

504B

Jeff Alt, Leg 148 Co-Chief Scientist, gave a complete description of the preliminary scientific results, the operational procedures and some of the problems that were encountered in deepening Hole 504B by 111 m—to a total depth of 2111 mbsf (Appendices 10.0 - 10.8). He explained that, prior to Leg 148, there was speculation that the hole was nearing the depth of the observed velocity contrast between layer 2 and layer 3. The objective of the leg was to penetrate into layer 3. Unfortunately, several problems were encountered during drilling operations at 504B and eventually the drill became inextricably stuck in the hole. Fishing was attempted but was unsuccessful, jars that were not on board were needed so were sent for. While waiting for the equipment to arrive, the ship moved to a new, nearby site (896) to continue drilling—356 m were drilled prior to the jars arrival. After the jars arrived, operations moved back to 504B to remove the drillstring stuck in the hole. Alt explained the complex problems that were encountered in trying to remove all of the stuck equipment from the hole and in trying to make the hole drillable again. Four days were spent fishing and when all of the fishing equipment sent out to the ship was used up it was decided that it was not worth trying to clean out the hole to continue to drill any

further. After abandoning drilling, logging was completed at 504B and the ship moved back to 896A to continue operations with the time remaining.

Alt described in detail the lithologies of rocks recovered from 504B and passed out samples of rock chips that were characteristic of all of the cores on Leg 148. Alt felt that the chips were a feature of an interval with pervasive microfaults, this zone of microfaulting had not been previously encountered in the hole. The drilling rate went up dramatically near the depth where the drill became stuck, both these events were attributed to penetration of a major fault zone. The sonic velocity tool had worked well in logging 504B and Alt pointed out that near the bottom of the hole the velocities appeared to approach the layer 3 level. Alt observed that fault zones similar to that inferred at the bottom of 504B have been observed in ophiolites separating the sheeted dikes from the gabbros and suggested that the analogy may be additional evidence to support the hypothesis that the hole was nearing layer 3.

Site 896

Alt described the siting and operational procedures used to drill Hole 896A to a total depth of 469 m (Appendices 10.9 - 10.12). One of the objectives of drilling this hole was to drill on a local heat flow high indicated by the site survey heat flow data. The site was located on a different fault block than 504B making it possible to test the local variability of the basement but still close enough to 504B so that future cross-hole experiments would be possible. The lithologies that were recovered were described and Alt noted that there was a high degree of alteration and numerous carbonate veins in the recovered core which were attributed to hydrothermal activity. Alt described the logging program carried out at 896A, comparing 896A results with 504B data (Appendix 10.13). An initial interpretation of the comparison of the logging results was that the crust was more tightly sealed at 896A than at 504B, possibly as a result of the inferred hydrothermal activity at 896A.

Prognosis Report for 504B

Francis asked to report on TAMU's engineering prognosis for continued drilling at 504B. TAMU engineers had concluded that a final determination of the feasibility of deepening 504B could not be made unless a two-part leg was scheduled to: (1) clean out the hole—estimated to take 3 weeks, (2) determine if the unstable zone could be drilled at all—TAMU would prefer drilling with a downhole motor instead of a rotating drill string, and (3) run packer tests to see if the hole could be cemented and, if so, then case the hole. TAMU felt that there was a great deal of open hole at 504B and to continue drilling would require casing the hole—a step that would be very expensive Francis warned. After casing, the next step would be to continue drilling but it was unknown how effective the drill bits that exist would be.

Dick brought up for discussion the option of starting over and drilling a new deep hole that would start out with a proper casing and drilling program. PCOM discussed this strategy and why casing had not been done previously at 504B. Natland brought up that several years ago TEDCOM had recommended developing a complete drilling program—from start to finish—to achieve deep holes. Natland felt that ODP had reached the point where a such a deep drilling program needed to be developed, particularly for a post-98 time frame.

Item 991. Non-JOIDES Liaison Report

1. MESH (Marine aspects of Earth System History)

Mix explained the development of the Marine aspects of Earth System History (MESH) group and the plans/timetable for development of their programs (Appendices 11.0 - 11.1). He noted that MESH had representation from many other groups (NSF, NOAA, NAD, USGS were examples) and countries. The MESH Steering Committee had been elected and money would be coming available at NSF for MESH programs. Mix reviewed the MESH working groups and goals and wanted to point out to PCOM that large part of the MESH program could become involved with ODP. PCOM discussed the internationalization of the MESH program in terms of funding. Mix felt that the initial intent was for MESH to get US money and NSF would be the source for funds.

Item 989. Reports by PCOM Liaisons - continued

8. IHP

Database Problems

Sager reported that IHP had identified several high-priority problems with data base management, specifically the influx of new data and the backlog of data that were not being captured and curated(Appendix 12.0). IHP was also concerned about the problem of data that was collected in individual labs and not submitted to TAMU; IHP hoped that CD-ROMs might help address all of these problems. Sager summarized IHP's recommendation for prioritizing tasks for TAMU to address the database problems (Appendix 12.0). PCOM discussed IHP's recommendations debated the best way to solve the problems IHP had identified.

Sager clarified the discussion by asking PCOM to consider two separate issues—one issue was dealing with raw data management and the second was updating refined data. Arculus brought up the possibility for solving both types of problems by an integrated use Internet throughout the program. PCOM debated this option and other possible alternatives but could not identify with certainty what they could or should do given the pending computer and database upgrade project. Sager stressed that IHP realized that the computer upgrade would take place in the near future but felt strongly that, in the meantime, there needed to be something done to capture data being produced at present.

Lewis ended the discussion on this issue by giving PCOM the choice of going back to IHP with a request for more specific recommendations on how to solve the database problems or, instead, to request from TAMU a proposal to address the database problems. Lewis favored having the Computer RFP Evaluation Committee review the recommendation. Francis urged PCOM to wait until the computer RFP came back before any decision was made on this issue. PCOM recognized the need to get something done in the time frame that IHP urged (immediate) and the realities of changes that were shortly pending; CD-ROM was viewed as the most promising scenario. After further discussion, PCOM reached the following consensus:

PCOM referred the concerns of IHP with regards to the interim capture and curation of data to the Computer RFP Evaluation Committee to review. PCOM Chair will ask the RFP Evaluation Committee to come up with a report containing specific recommendations on how to deal with this interim problem for the August PCOM meeting.

Other Issues

On other issues (Appendix 12.1), IHP was not happy with what they perceived as a short-circuit of the advisory system in regards to development of the HARVI - HRTHIN software. IHP noted that work at Micropaleontology Reference Centers was slowing due to funding problems. In regards to core repositories, IHP was not in favor of breaking up collections, transporting curated cores or using non-refrigerated storage space.

IHP/SMP held a joint session during the meeting and had discussed the concept of "limited sampling interval". This designation would be used to help co-chief's reduce over-sampling of cores with low recovery. IHP favored a three-tier approach: (1) the "critical interval" would be the most restrictive for sampling, (2) the "limited sampling interval" with fewer restrictions, and (3) normal sampling intervals. The importance of critical intervals and problems of equitable sampling were discussed in light of problems that arose on Leg 147. PCOM was sympathetic to the need for a clear statement of rules but felt that the existing rules for shipboard participants were very clear in stating that co-chiefs have the final authority in sampling decisions.

Publications - *Initial Results (IR)*

Sager reviewed IHP's recommendations regarding cost reduction for publications (Appendix 12.2). The first recommendation was that TAMU should shorten the *IR* by encouraging brevity, this should be done by giving specific directives to co-chiefs. In addition, IHP felt that costs could also be reduced by instituting limits, IHP specifically recommended that a 20-page limit be instituted on papers in the *SR* volumes—not including synthesis papers—and specified the editorial guidelines for implementing the limit in practice. One way this could be accomplished was if interpretations were put elsewhere in the publication process and tables were put on CD-ROMs.

PCOM debated the merits of cutting down the size of volumes and speculated on what other changes were implicit in IHP's recommended guidelines. Several PCOM members felt that the overall cost of publications in the program was small relative to the impact and scientific legacy it provided; their feeling

was that limiting publication sizes was a bad idea given the importance of the data. Further discussion addressed the question of whether or not PCOM should mandate a capping of publication sizes, and therefore costs. PCOM's consensus was that, given the high degree of variability between core type and recovery on different legs, the co-chiefs should be self-limiting, with suggested guidelines provided by TAMU. PCOM discussed and passed the following motion:

Considering the trend for increase in the size of both *Initial Results* and *Scientific Results* volumes, and a corresponding increase in the costs of publication. PCOM recommends that TAMU negotiate the size of volumes with co-chiefs before each leg, with a review after each leg, when an assessment of scientific output can be made. PCOM encourages publication of data on CD-ROM to reduce printed pages. Establishing an across-the-board page limit for either *IR* or *SR* is discouraged, to maintain flexibility.

Berger proposed, von Rad seconded; vote 14 in favor, 1 abstention, 1 absent (voted on Wednesday).

Publications - *Scientific Results (SR)*

For *SR* volume publications, IHP recommended the *SR* submission deadlines be changed to 40 months post-cruise. IHP's reason was that the publication time had been decreasing steadily with time and IHP was concerned that the shortening of preparation time had been detrimental to the quality of papers submitted.

Von Rad reminded PCOM that in the past PCOM had fought very hard to get the shorter lead time for the *SR* and he felt strongly that going backward to a 40 month deadline would be bad. PCOM discussed the potential benefits and drawbacks of implementing IHP's suggestion. Sager emphasized that the reason IHP requested the time extension was strictly a quality issue, not a financial one. PCOM felt that there was not enough evidence to show that the time deadlines were the fundamental problem in quality control so they preferred to leave the 36 month post-cruise publication deadline in place. PCOM reached the following consensus:

PCOM was not in favor of implementing IHP's recommendation for a 40 month submission deadline as policy. PCOM preferred to leave the 36 month post-cruise publication deadline in place.

9. SMP

Fox reported that at the SMP meeting, the first issue of particular concern was the recently-identified systematic error in the GRAPE numbers. Scientists from Leg 138 discovered that a software change was the source of a systematic error in the calculation of density. SMP was satisfied that the error had been correctly identified and remedied in the software but wanted to make sure that the correction was applied to all past data. To ensure this, SMP formulated specific recommendations on how to do the correction and replace old GRAPE data. Fox explained that for SMP, the GRAPE problem illustrated the necessity for quality control for all software on board. SMP wanted to see TAMU implement a quality control program on board to ensure that proper documentation for all computer programs was on board—especially for non-commercial software acquisitions.

Another important issue the SMP discussed was the need for capital equipment replacement. SMP felt that it was likely that many large laboratory items would be in need of replacement soon; a plan for the phased acquisition of major pieces of equipment needed to be formulated by TAMU.

Fox reiterated the point that IHP had made about hardware/software prioritization. SMP felt that their efforts were being undermined by individuals who went around the SMP software prioritization system—i.e. HARVI & HRTHIN. Fox emphasized that it was the process that needed to be addressed, not the specifics of the most recent example.

End of day 1 ..... *8:00 PM*

Tuesday, April 27, 1993 ..... 9:00 AM

10. DMP

Lewis reported that DMP was beginning to assign watchdogs to monitor operations, development and costs of downhole tools (Appendices 13.0 -13.1). DMP instituted a new thrust involving measurements that provide information from the regions far-removed from the borehole—i.e. cross-borehole acoustic techniques and downhole radar. DMP continued to monitor the development of third-party logging tools and felt that progress was good. The German magnetometer tool was the first third-party tool to enter the ODP certification process. The French sediment magnetometer had been accepted for commercialization by Schlumberger and would be provided at no cost to ODP during the engineering checkout phase; this tool may be ready for Leg 150.

Panel Recommendations

DMP was distressed about not having more involvement in the wireline services contractor review; they recommended that PCOM review the situation. Pyle objected to DMP's statement because JOI did involve DMP members in the process. Lewis elaborated on DMP's specific concerns on the issue and explained that he had recently contacted Peter Lysne, the DMP Chair, and had resolved the confusion over this issue. Lewis would return to the issue of JOIDES input to RFP review later in the agenda. Austin pointed out that DMP had become somewhat separated from the service panel advisory structure—they met three times a year instead of two and were not providing direct input to PCOM on logging issues. Austin asked that PCOM review this panel's schedule and activities. Lewis agreed but tabled the issue until discussion of the ASRC Draft Report since the issue would come up again there.

11. TEDCOM

Austin reported that one of the main objectives of the meeting had been to discuss the responses to the RFQ on deep drilling (Appendix 14.0). However, due to conflict of interest of some TEDCOM members, the TAMU engineers could not bring the bids to TEDCOM for review. In order to be able to have TEDCOM evaluate the responses, a subcommittee of uninvolved members was created to review the responses. Austin did not know when the subcommittee review was going to occur, PCOM would receive a report by August.

TEDCOM was updated on the DCS Phase IIB by TAMU engineers, a complete review of all aspects of DCS was presented. A DCS land test was planned for the summer, in Texas, to see if the secondary heave compensation was operational. TEDCOM then had a detailed discussion of the DCS sea test scheduled for Leg 157.

Panel Recommendations

After discussing the DCS testing on Leg 157 and reviewing the operations on the previous DCS test on Leg 142, TEDCOM recommended setting seafloor hardware at the DCS test drill site ahead of time. This recommendation was made to increase the chances of success for the DCS test itself. Austin felt that this was a reasonable recommendation and recommended that PCOM consider it since implementing it would be possible given the present schedule.

PCOM discussed the issue of presetting hardware. Of particular concern was the water depth requirement for the DCS test, and the fact that TAMU wanted to see the land test results before making a definitive water depth determination for the test site. Because the issue of placing equipment ahead of time was tied to site selection, PCOM felt that it had to defer a decision on this recommendation until August, after the land test of DCS. PCOM discussed the sites at Vema and the specifics of the site survey by Kastens that would be done this summer. PCOM's consensus was:

PCOM will reconsider in August the issue raised by TEDCOM concerning DCS hardware placement prior to Leg 157.

Another issue that TEDCOM discussed was retractable bit technology. TEDCOM recommended that TAMU engineers should go to Russia to investigate this technology further because it offered the potential for a dramatic increase in drilling efficiency for ODP.

12. PPSP

Lewis reported that PPSP had reviewed and approved drilling sites for Leg 150, Leg 151, Leg 152, MARK and TAG (Appendix 15.0). Safety pre-reviews were done on Leg 156 (Barbados) and on Proposal 323-Rev2 (Alboran Sea) (Appendix 15.1). The Leg 156 Barbados sites located on top of a bright spot along the décollement were approved after a thorough analysis of amplitudes and velocity on a 3-D cube. The Alboran Sites Al-1, Al-3 and Al-4 could be approved if slightly relocated (shallow holes) but the Al-1 (deep hole) could not be approved because of the potential for overpressuring. In order to get PPSP approval the proposed Al-1 site required more data or analysis proving that overpressuring was not present in the section. Lewis added that an additional problem with the site was that it was located on-structure and would have to be relocated to be approved. Alboran proponents could either do a velocity study or devise a new drilling strategy to accomplish their scientific objectives. Lewis noted that if proponents chose to revise the proposal it would be in review at the time the FY95 Prospectus would be assembled. PCOM discussed the Alboran data and whether or not it would be possible to answer the overpressuring question.

The results of the meeting of the Shallow Water Drilling Working Group (SWDWG) were presented to PPSP meeting. PPSP discussed and approved of the working group's preliminary recommendations and would review the SWDWG final report at their fall meeting.

Item 992. Shallow Water Drilling Working Group Report

Francis reported on the meeting of the SWDWG held at TAMU and chaired by PPSP Chair Mahlon Ball (Appendix 16.0). Members of the group included people from industry, academia and several other JOIDES panels. Written contributions were submitted by WG members unable to participate in the meeting. A final report would be produced by the end of June, reviewed by PPSP in October and presented to PCOM in December.

The SWDWG confirmed that riserless drilling from a floating rig was the safest way to drill in shallow water but stressed that gas must be avoided (Appendix 16.1). After discussing methods for detecting shallow gas, SWDWG concluded that drilling in shallow water could be conducted provided that very tightly-specified hazard surveys were carried out for each site and the data was properly processed and interpreted. Francis outlined the specific recommendations that were made for hazard surveys regarding: seismic source, hydrophone streamer, sampling rate, line spacing and orientation, and data processing. The SWDWG recommended that these types of hazard surveys be obligatory for all ODP drilling in water depths of less than 200 m on sedimented continental margins. Francis explained that this type of survey would cost about $ 250 K. He felt that, if the money was available, the surveys could be done by academic workers but might require leasing some oil industry equipment—i.e. seismic sources.

Drilling guidelines proposed by the SWDWG were that penetration be restricted to 1000 mbsf and that any deeper penetration in the sedimentary margins should not be attempted without blow-out protectors and well control (Appendix 16.2). The SWDWG also recommended some engineering and operational procedures to be considered by ODP. The first was to have the ability to drop the drill string, the second was to monitor the water column at the seabed for gas bubbles, and the third was to have an emergency contingency plan.

Francis pointed out that TAMU had added the requirement that hazard surveys be conducted, processed and interpreted by people who were not proponents of drilling. PCOM discussed this last requirement at length, specifically the idea of who was qualified to evaluate a hazard survey and the rights of proponents to be involved. PCOM agreed that the requirement should be for an independent review of the data, not a completely separate, non-proponent, acquisition. Francis felt that TAMU would not want to back down on the issue of having non-proponents do hazard studies. Austin asserted that there would never be funding for academic people to conduct these hazard studies because there would not be any scientific merit to proposals submitted for this work. Instead, Austin was in favor of establishing a separate fund for money to do these types of hazard surveys, specifically for surveys that were not scientifically required.

After more discussion, Francis was willing to back off on the TAMU requirement for independent acquisition but stressed that the requirement for an independent review of the hazard survey by experienced non-proponents was crucial for safety. PCOM agreed that having an independent third-party evaluate the data was appropriate; options to implement such a policy were then discussed. Lewis

concluded the discussion by asking PCOM to think about these issues for further discussion when the final SWDWG Final Report was presented to PCOM in December.

Item 993. Computer RFP Evaluation Committee Report

Francis listed the respondents to the RFP for computer and data management (Appendix 17.0). The RFP Evaluation Committee had met at TAMU in February and selected three bidders to write a proposal: (1) EG&G Washington Analytical Services Center, Inc. (LDEO/GEOMAR), (2) the Meyer Group, (3) TRACOR Applied Sciences, Inc.. Representatives of these bidders went on the recent transit leg from Panama with Kate Moran on board to facilitate the tour. The bidders' responses were to be submitted to TAMU by May 31, 1993. Responses would be evaluated by John Coyne at TAMU and then by the Computer RFP Evaluation Committee in July.

Coffee Break ..... *9:40 AM*

Item 994. Four Year Plan FY93 1996

1. Thematic Panel Global Rankings

Lewis began discussion on the Four Year Plan by reading the PCOM motion from last year. Panel liaisons (Moore, Berger, Sager, Mutter) were then asked to review their panel's global rankings (Appendix 18.0). PCOM discussed the status of the various top-ranked programs with respect to site survey data, potential safety problems, and overall proposal maturity.

2. Setting the Arena of Ship Operations for FY95 — 1996

Lewis started the discussion by presenting a draft motion for the Four Year Plan. PCOM discussed what to present in the Four Year Plan motion given that budget cuts could potentially affect the near-term program plans. PCOM agreed that it was important to maintain an upbeat message for the Four Year Plan but recognized that budgets needed to be factored into the picture.

Natland proposed formulating a science plan with a longer-range view and having PCOM make a bold statement on the long-term ideas PCOM wanted to implement. He presented a map illustrating several options for long-term ship tracks (FY95 - 98). He discussed the geographic distribution of the past ODP legs and, using highly-ranked proposals, suggested several ship tracks that would allow the *JOIDES Resolution* to get out of the North Atlantic. Using additional proposals already in the review system, Natland then presented a five-year ship track and schedule as an example of the approach he was suggesting. PCOM discussed the scientific and political aspects of Natland's scheduling approach.

PCOM agreed that Natland's suggestion was an interesting idea but most PCOM members felt strongly that there were proposals soon to be submitted that would make this long-term scheduling approach unwise. PCOM felt that it was clear that the system was intended to be proposal-driven and that within the next few years there would proposals submitted that would begin to direct the ship's schedule into new areas. Announcing a ship's schedule through the end of the program using only proposals in the system at present was not considered a viable option. Natland clarified that his proposed schedule was only for PCOM's use in thinking about how best to accomplish effective long-range planning, not necessarily as a specific proposal for the schedule.

PCOM continued the discussion of how to present an effective announcement for future operations. There was general PCOM agreement that themes should drive the science and that it was just as important to publicize the thematic interests of ODP as the geographic area of operations. Mutter felt the problem of setting an area of operations and then getting a large number proposals for that area would always occur. To counter this type of proponent reaction and guide PCOM in its planning process, Malpas felt it was important to stress the thematic objectives that ODP wanted to be addressed. Natland felt that the only critical geographical issue was deciding on the general area of geographic interest that proposals for the prospectus would come from. Fox felt that any statement coming from PCOM should be worded to emphasize the thematic priorities. Arculus agreed and wanted PCOM to insure itself enough flexibility to accommodate new proposals that would be submitted this year.

Larsen asked for clarification on why it was necessary for PCOM to formulate a greater-than-two-year plan for the ship's track. Austin explained the four year plan allowed for fiscal planning and kept the technological development on track; Austin stressed that PCOM's Four Year Plan motion needed to

include technological priorities. Malfait added that the Four Year Plan assisted proponents in developing drilling proposals and in site survey data collection.

PCOM discussed the globally-ranked proposals and how to convey ODP's thematic interests in combination with the ship track. Austin wanted PCOM to state explicitly what themes ODP would pursue in the future, he felt that there had been criticism of ODP for its lack of specificity that could be addressed if the high-priority themes were stated clearly. Dick agreed, he felt that ODP needed to actually accomplish some of its significant thematic objectives in order to be successful post-1998. Dick did not feel that the present system of setting a ship track and then getting proposals for that area was an effective strategy for accomplishing the themes that were crucial to ODP's future success—the ship needed to go where it could be used to solve thematic problems. Malpas was in favor of PCOM presenting its planning in terms of themes that would be addressed in the near-term schedule while also announcing what themes PCOM would like to be addressed in the near-future.

After discussion of the most highly-ranked proposals in the global rankings, Lewis drew the discussion to a close by summarizing that for FY95 the Atlantic would still be the likely area of operations. Lewis felt that it was after FY95, depending on proposals, that the ship track could begin to be headed for other geographic areas. A subcommittee of Mutter, Mix, Kidd and Austin prepared a thematically-focused Four Year Plan Motion. After presentation by the subcommittee, PCOM discussed and passed the following motion on the Four Year Plan:

The Ocean Drilling Program is thematically driven, as generally 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 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 FY93, confirmed as the current program plan (PCOM winter 91).

b) In FY94, confirmed as the program plan approved at the December 1992 PCOM meeting in Bermuda, noting that the precise location of the DCS test leg (157) may change and that, if the DCS testing is eliminated from the FY1994 schedule, drilling at TAG (Leg 158) will occur as Leg 157. This program plan is designed to address aspects of rifted margin evolution, the development of oceanic lithosphere at ocean ridges, Neogene paleoceanography, and the evolution of deep sea fans and accretionary prisms.

c) The further investigation of these and other high priority themes including, but not confined to, sea-level change, high-latitude paleoceanography, fluid circulation in the lithosphere, carbon cycle will continue to define the track of the drillship. At present, highly ranked and drillable proposals which address such themes exist for the North and South Atlantic Oceans, the Caribbean, the Gulf of Mexico, the Mediterranean, Norwegian, Labrador and the Red Seas, the SW Indian Ocean and the East Pacific. These, at present, confine the likely operational areas of the drillship for FY95 and FY96.

d) PCOM encourages the submission of proposals for any ocean which address those high priority themes appropriately investigated by ocean drilling.

Proposals received before 1 January 1994 that are subsequently highly ranked have the potential to modify the FY1996 and subsequent ship track.

Austin proposed, Kidd seconded; vote: 15 yes, 0 no, 1 absent.

Item 995. Advisory Structure Review Committee (ASRC) Draft Report

Lewis had distributed Revised ASRC Draft Report (#3) to all members of PCOM prior to the meeting and wanted to have a general discussion on the report so he could take PCOM's views, in the form of a motion, to EXCOM in June. Lewis suggested that PCOM request that EXCOM pass the report back to

PCOM for detailed comments after the final report was presented to EXCOM in June. PCOM discussed the subjects of the Revised ASRC Draft Report individually.

Proposal 1: Workshops / COSODs / White Papers

PCOM agreed that the ASRC recommendation for open workshops to improve White Papers was a good idea for long-range planning. However, the specific details of how these workshops would be implemented needed to be worked out. Also of concern was what PCOM's charge to the panels for their revisions should be. PCOM wanted the revisions to include a section focusing on post-1998 plans.

In addition to post-1998 planning, Fox stressed that the White Papers should be used to identify important themes that need to be drilled using a multi-leg program in order to completely address the thematic objectives. He saw this approach as having an important impact on how resources were allocated by PCOM from the present to the end of the program and beyond; less themes were needed if these themes needed large amounts of resources to accomplish their goals. Fox urged the panels not to be afraid to develop themes that may require more than a leg to accomplish.

Lewis felt that PCOM should ask LITHP to postpone their White Paper meeting until PCOM could come up with detailed instructions on what to incorporate into their White Paper. Lewis explained that he wanted PCOM to have time to carefully develop their charge to the thematic panels regarding post-98 and multiple-platform planning—both issues the PCOM itself was only beginning to address at this meeting. PCOM was reluctant to postpone the LITHP meeting at this stage of development. After more discussion, PCOM agreed to support LITHP's approach and work with them during the revision process to help refine the LITHP objectives. At the conclusion of the discussion, PCOM adopted the following consensus:

PCOM fully endorsed the approach and schedule taken by LITHP in their White Paper. The PCOM Chair will contact the LITHP Chair to ensure that the objectives of the White Paper are consistent with the PCOM discussion.

Proposal 2: Role of thematic panels

PCOM endorsed this ASRC proposal and it was generally felt that the present structure had already adopted this type of role in the planning process.

Proposal 3: Overlapping of themes, liaisons and international groups

PCOM agreed that this ASRC proposal was already in practice within the system.

Proposal 4: Handling of drilling proposals

PCOM agreed that the central idea of the first part of this proposal was using a DPG for planning the ship's schedule. PCOM's consensus was that a DPG was not necessary but PCOM was in favor of the use of a pre-planning subcommittee with representatives from the science operator, SSP and PPSP be employed to prepare scheduling options for the PCOM annual meeting.

PCOM then discussed the ASRC idea of having panels rank proposals on the basis of scientific merit and interest, thematic relevance, and scientific feasibility. PCOM agreed that thematic panels were not currently giving enough scrutiny to the details of the proposed drilling sites or the issue of whether or not the proposed sites would accomplish the objectives of the proposal. PCOM was in favor of panels using additional criteria for evaluating proposals to help identify and develop immature proposals in the thematic review process.

Proposal 5: SSP, PPSP

After a general discussion of the ASRC proposal, Kidd assured PCOM that the site survey guidelines were always under review by SSP and that SSP was very flexible on a case-by-case basis. In addition, SSP always updated PCOM on changes in any of the site survey guidelines. Kidd felt that SSP did spend a lot of time on the issues in the ASRC proposal and the ASRC had not recognized the SSP procedures that were already in place. PCOM discussed the SSP and PPSP review schedules and was satisfied that recent changes to procedures for proposal review—safety pre-review and drilling time estimates from the operator—were good improvements. PCOM was against the ASRC recommendations to: (a) make SSP a smaller group, (b) to have the JOIDES Office be tasked with site survey augmentation—SSP already did this, and (c) to use abstracts/extended abstracts in place of a complete proposal.

Proposal 6: Panel and Shipboard Party membership

1. PCOM agreed that a rotational policy for most non-US panel members had already been implemented.

2. PCOM agreed that it already does informally consider several candidates for new panel members in consultation with the national PCOM representative.

3. PCOM agreed that this item was not necessary because there were no barriers to former panel members being reappointed to a panel.

4. PCOM agreed that in the present system co-chiefs were already chosen largely as ASRC described.

5. PCOM discussed the issue of non-US nominations for leg participants. Dick felt that this was a useful suggestion that allowed co-chiefs to choose the best crew. Kidd wanted to clarify that such a slate of candidates had to be from actual applicants for the leg. Malpas added that the MOUs insure that the ultimate decision on who goes on a leg was up to the countries themselves, changing that policy would require a change in the MOUs.

Proposal 7: Selection of new JOIDES Office

Lewis felt that the main point of this proposal was the issue of having a non-JOIDES institution lead the program. PCOM discussed the further implications for the program if this proposal was implemented. PCOM consensus was that this was an internal US problem and it was not appropriate to address the problem as part of the advisory structure review.

Proposal 8: PCOM

1. PCOM had a variety of opinions on giving the thematic panels more work in the planning process, most were against adding to panel chair workloads. There was support for more subcommittee work by PCOM to handle business issues and save time for more long-range planning during meetings.

2. PCOM agreed that subcommittees were an appropriate way to deal with the majority of the panel recommendations prior to PCOM meetings. There was support for having longer PCOM meetings to allow more time for effective handling of long-range planning.

3. PCOM agreed that TEDCOM viewed itself as somewhat autonomous and had tried to distance itself from the advisory process. The consensus was that PCOM probably did not get enough direct technical advice from TEDCOM.

4. PCOM discussed the proposal to have thematic panel chairs or their representatives attend all PCOM meetings. There was general agreement that PCOM did not want to see work taken away from PCOM liaisons and added to the panel chairs' responsibilities. However, several PCOM members wanted to have thematic panel representation at all PCOM meetings to give direct input on proposals and science planning. PCOM debated the necessity of having thematic panel chairs attend both the April and the August meetings. To conclude the discussion, a straw vote was taken on having thematic panel chairs attend all of the PCOM meetings, the results were: 5 in favor, 11 against.

5. PCOM was not in favor of implementing this proposal for the Four Year Plan because it was viewed as a geographic, and not a thematic, approach to ship scheduling.

Lunch Break ..... *1:00 - 2:00 PM*

Proposal 9: Scientific Syntheses

PCOM agreed with the proposal to ask thematic panels to encourage syntheses of ODP science.

Proposal 10: TEDCOM

PCOM discussed the ASRC proposals regarding TEDCOM and supported many of the suggestions. PCOM debated what the mandate of TEDCOM should be in the advisory structure. The recent role of TEDCOM in PCOM's decision-making process was evaluated and ideas were generated on what could be done to improve PCOM's interactions with this panel. There was general agreement that, as presently constructed, TEDCOM was not as responsive to PCOM's need for technical advice as it could be. TEDCOM's technical advice was considered very valuable but PCOM wanted to see greater willingness to give input directly to PCOM. It was suggested that more engineers from academia be added to the panel to address the complaint that people from industry were not able to put in sufficient time to the

panel because they were not being paid for it. There was discussion about having the TEDCOM chair, or a representative, come to all of PCOM's 's meetings.

Proposal 11: New technologies for downhole measurements

PCOM agreed that DMP was already doing a good job at this.

Proposal 12: Mode of operations of panels and JOIDES Office

PCOM was in favor of using more committees and subcommittees to delegate work but there was agreement that generating additional meetings should be avoided. PCOM was in favor of increasing the staff for the JOIDES Office but saw that it was going to be impossible with the current budget situation. Kidd wanted to see the JOIDES Office take on some of the work of the panel chairs to help cut their workload. PCOM was not in favor of increasing the workload of the JOIDES Office without adding more staff.

PCOM agreed that it may need to pay attention to those proposals of high scientific merit that were slipping through the cracks of the ODP review process. PCOM tried to identify some active proposals that were of high quality but were not being highly ranked by panels because they did not fit exactly into any of the ODP thematic categories.

PCOM concluded discussion of the Revised ASRC Draft Report by adopting the following consensus statement:

PCOM has received the #3 draft of the ASRC report. PCOM finds within the report many beneficial recommendations, but also some recommendations that it wants to examine in greater detail.

PCOM requests after the report is formally received by EXCOM, that it be referred to PCOM for detailed comment.

PCOM set up a subcommittee consisting of Von Rad, Austin, Kidd, Taylor and Lewis to coordinate PCOM responses.

Item 996. Long Range Planning

1. Prioritizing Budget Items

Lewis raised this issue because he was concerned that major budgetary items critical to the long-range planning process would be severely impacted by the budgetary crisis ODP could face in the next few years—particularly if the Can/Aus pulls out. If there was a significant shortfall in the budget for next year PCOM would have to decide on what budget items to cut. Lewis presented two examples of strategies to cut the FY94 ODP budget by $ 3 M—this was the potential shortfall if ODP was left with five partners (Appendix 19.0). One option was to cut all SOE expenditures, this would result in a $ 2 M cut—the remaining $ 1 M would come from across the board base budget cuts for the contractors that total $ 1 M. This option would have a large impact on the science program since it would cut out the DCS testing, the planned computing upgrades and all hard rock drilling sites. This type of budget cutting, focusing on SOEs, would essentially made ODP a soft rock program. A second option Lewis presented was cutting all innovative downhole measurements and using only the basic Schlumberger package to save $ 2.4 M. To bring the cuts up to $ 3 M would also require cutting out the computing upgrade ($ 600 K) or other large SOE/base budget items.

Lewis presented these options not as the only possible ways to cut money, but to show that the program would have to consider major revision of the near-term science program if there were to be a $ 3 M budget shortfall caused by loss of the Can/Aus partner. Lewis pointed out that the $ 3 M cut was the "doomsday scenario" and there were other, perhaps more likely, possibilities for the near-term budget situation In Lewis' opinion the most likely possibility was that Can/Aus would be allowed to retain a partial membershi with the money they had available—about $ 2 M. In this scenario, the ODP budget shortfall for FY94 would be about $ 1 M, Lewis preferred to have a discussion of priorities for cutting this amount from the budget.

Austin noted that the DCS costs were a large budget item that could be deferred by taking it off the FY94 schedule, saving close to $ 1 M. He felt that delaying DCS into FY95 was the cleanest cut—but only if it delayed it and not killed it. PCOM agreed that delaying DCS sea testing would have a relatively low-impact on the FY94 science program but also wanted to know if there were ways that base budgets could

be cut more. Francis pointed out that the LDEO and TAMU base budgets had already been cut by BCOM at a time when the program was asking them to innovate—Francis felt that with these budget cuts they could not be very innovative.

Malfait indicated that PCOM should consider the option of planning for a budget where Can/Aus was granted a full membership for 2/3 of a year to give them time to raise the additional $ 1 M for full membership. PCOM debated the policy of allowing partial memberships and the possible domino effect this might have with other partners if it became a practice. Arculus reiterated that the crisis in the Can/Aus consortium was exacerbated by the short amount of lead time they had to deal with the problem. Can/Aus saw a partial membership as only a temporary measure to allow them more time. Can/Aus remained optimistic that they would, by some means, obtain funding for continued full membership.

Dick asked PCOM to consider what savings might be realized if the publication of *Scientific Results* volumes was cut and publication of results was left to the open scientific literature? PCOM discussed this type of option as an alternative to the cutting of major parts of the drilling operations. Dick wanted to consider other significant changes to the way ODP did business before they committed to cutting out all hard rock legs. He suggested an option of completely changing how computing was done on the ship—perhaps ODP should consider no longer providing the computing facilities on the ship and people would provide their own computing platforms.

Von Rad asked if there was any possibility that the existing partners could each contribute more money for their membership? PCOM agreed that the economic and political prospects for this option were not good since memberships had just been increased during the last renewal. Lewis asked about alternative sources within each country—such as industry? PCOM did not support trying to get funds from industry, because of past experience with trying to do so. Lewis felt that the lesson to be learned from the exercise of trying to cut $ 3 M from the FY94 budget was that if Can/Aus was lost from the program the existing partners would be forced to fight for more money in order for ODP to survive.

PCOM discussed getting additional partners from the rest of the world. Some saw potential for a South American consortium, an Asian consortium and possibly a South African consortium. The PCOM consensus was that a more proactive approach needed to be taken, possibly by hiring a professional to do the job. Lewis brought up the idea of pursuing other funding agencies within member countries, particularly ONR in the US. PCOM's consensus was to pursue new partners over trying to get more money from present member funding agencies. However, PCOM agreed that a search for new members had to be undertaken with the realization that it was not a very promising option given that most of these countries did not have money for this type of science.

PCOM concluded the discussion by passing the following motion:

PCOM considered the impact of financial shortfalls in the period FY 1994 and beyond stemming from reduction or loss of the Can-Aus contribution.

1) In the event of a one-time shortfall of $1 million, PCOM sees no choice but to delay DCS development and engineering Leg 157 into FY 1995.

2) If there is to be no contribution from Can-Aus at all, the program will be unable to continue in its present form. Radical reorientation of scientific and technological objectives would be necessary. PCOM discussed potential deleterious consequences to logging and tool development, bare-rock lithospheric and accretionary prism drilling, computer upgrades, publications, and the scale of scientific participation in program planning.

3) Since these consequences are unacceptable to large segments of our constituent community, it is imperative that current Can-Aus efforts to find financial support be successful. PCOM stands ready to support those efforts.

4) Even if continuing Can-Aus participation in ODP is successful, ODP presently lacks the funds necessary to carry out the program outlined in the Long-Range plan.

5) PCOM therefore wishes to assist EXCOM in its efforts to attract a broader international base for scientific ocean drilling.

Natland proposed, Austin seconded; vote: 15 yes, 0 opposed, 1 absent.

The In Situ Pore Fluid Sampler RFP

Lewis explained that this RFP was for a feasibility study to find out if it was technically possible to make a an in situ pore fluid sampling tool. Austin recommended that, given the current budget situation, PCOM not fund this RFP and that DMP identify additional expertise for their panel to find out for themselves if this instrument could ever be successfully designed. After discussion, PCOM agreed not to commit money to do a feasibility study for a tool that might not yet be technologically possible to develop.

Lewis noted that several of the thematic panels were in support of developing a way to do this type of sampling and had requested that the RFP be issued. Francis suggested that a tool may not be the answer, casing and perforation was a way to accomplish the in situ pore fluid sampling—it was the way that the oil companies do such sampling. However, he did not feel that the long time periods required for this type of testing was feasible for ODP.

PCOM concluded the discussion by passing the following motion:

PCOM appreciates that sampling of pore fluids in low permeability rocks is of importance to several thematic panels. However, the poor prospects for success and the budgetary constraints, preclude issuing an RFP for evaluation of the feasibility of sampling pore fluids at this time. PCOM recommends that the DMP either use or acquire panel expertise to address this issue or to seek funding from other sources for the RFP.

Natland proposed, Kidd seconded; vote: 13 yes, 2 abstentions, 1 absent.

Deep-Drilling RFQ

PCOM discussed the scope of the deep-drilling RFQ issued by TAMU. Francis explained that the RFQ was for a feasibility study for deep drilling on the *JOIDES Resolution* but was to include specifications for an alternate drilling vessel/platform if the required changes would exceed the capability of the *JOIDES Resolution*. Francis reviewed the names of the respondents to the RFQ. TEDCOM wanted time to evaluate the responses to the RFQ but could not complete this task at their March meeting due to conflict of interest problems with some TEDCOM members. A subcommittee of TEDCOM would be reviewing the responses soon so, until then, there would be no decision by TAMU on the winner.

PCOM debated what action to take on this issue given the current budget situation. Austin felt that the process needed to be stopped because there was no money for it and it was not clear that it was ODP's business to conduct this study. Lewis felt strongly that resolving the issue of deep drilling on the *JOIDES Resolution* was critical for a post-1998 planning and that some type of feasibility study needed to be done ahead of the renewal review of the program.

Francis explained that PCOM's only options were to: (1) table the issue pending TEDCOM review until the August PCOM meeting—waiting until this date would violate the terms of the RFQ, or (2) to not fund the RFQ. PCOM discussed the two options. The PCOM consensus was that deep drilling was essential for long-range, post-1998 planning and needed to be investigated prior to 1998. Unfortunately there was no money for it in the current budget so PCOM agreed that TAMU should not fund the RFQ. PCOM agreed to revisit the issue in the future and suggested that TEDCOM progress the issue on its own.

PCOM concluded the discussion by passing the following motion:

PCOM recognizes the importance of deep drilling for ODP, particularly for anticipated continuation of operations beyond 1998. However, given severe present fiscal restrictions, PCOM cannot recommend to fund any of the responses to the RFQ recently issued by ODP-TAMU in consultation with TEDCOM. PCOM encourages TEDCOM to pursue the initiative on its own, by augmenting its existing expertise as required.

Austin proposed, Moore seconded; vote: 14 yes, 1 no, 1 absent.

Item 997. Old Business

1. Von Herzon proposal request update

Lewis reported that at the December PCOM, Richard Von Herzen had requested an opportunity to deploy temperature measuring devices on Legs 150 and 152. Von Herzen was currently planning to take measurements at the two shallow slope sites on Leg 150, the co-chiefs supported the activity. Von Herzen planned to evaluate the data from Leg 150 before deciding whether or not to continue with the program on later legs.

Wednesday, April 28, 1993 ..... 9:00 AM

2. Update on the 1994 Schedule

Vema Engineering update, Leg 157

Lewis summarized the status of the site selection for the DCS leg. Austin noted that in order to have site survey done for placing a hardrock guidebase, Kastens would need to write another proposal to add camera surveys to her cruise. Austin felt that PCOM should not miss the opportunity to get data needed to make Leg 157 a success. PCOM discussed the necessity of getting the photos for hardrock guidebase emplacement and what the possibility of actually getting this data on the Kastens cruise was. At the conclusion of the discussion, PCOM passed the following motion:

PCOM, in light of recent Hess Deep experience, recognizes the importance of photo coverage in the vicinity of any site scheduled for deployment of a HRGB. PCOM, in order to prepare properly for Leg 157, endorses a plan of action to attempt to acquire this coverage during an upcoming survey of the Vema FZ transverse ridge. The JOIDES Office will help the PI of the program with that effort.

Austin proposed, Natland seconded; 15 yes, 1 abstention.

TAG monitoring program update

Fox reported that RIDGE held a workshop on the instrumentation of the TAG site in February 1993. Lewis brought up that LITHP requested that the TAG leg (Leg 158) be used to CORK 395A but that SGPP had recommended not to CORK the hole on Leg 158. Francis wanted to make it clear that the TAMU budget did not include a CORK for the 395A site. PCOM discussed the panel recommendations, operational feasibility and budget constraints for this operation and came to the following consensus:

PCOM consensus is not to use Leg 158 to CORK 395A.

Coffee Break ..... 10:30 AM

Item 998. New Business

1. 1993 Meeting schedule

PCOM Meetings

1) Summer Meeting in Brisbane, Australia, August 10 - 12, 1993
2) Annual Meeting at Miami, November 30 - December 3, 1993
3) Spring Meeting 1994 at Cardiff, Wales, date undetermined
4) Summer 1994 possibly an ESF-hosted meeting in Iceland, or in Barbados at the Leg 157 port call
5) Annual meeting, December 1994 in College Station, Texas
3) Spring Meeting 1995, possibly meeting in Japan

2. Membership Actions

PCOM adjourned to Executive Session to discuss membership actions

Panels and Panel Chairs

SGPP: R. Sarg to replace N. Christie-Blick

TECP: J. Stock to replace T. Atwater

A. Robertson to replace E. Moores as Panel Chair after the fall LITHP meeting

LITHP: A. Sheehan to replace T. Brocher

A. Fisher to replace D. Moos

K. Gillis to replace S. Humphris

In recognition of Humphris' service, PCOM adopted the following consensus statement:

On behalf of the JOIDES advisory structure, PCOM expresses its considerable appreciation for the excellent job that Susan Humphris performed as chair of the Lithosphere Panel and wishes her well in her position at the RIDGE office and co-chief designate of Leg 158.

SMP: J. Gieskes to replace K. Moran as Panel Chair after the fall SMP meeting

J. Parizo to replace J. King

J. Whelan to replace M. Mottl

SSP: D. Toomey to replace Greg Moore

PCOM Membership and Liaisons

PCOM Membership

Malpas would officially be replaced by Arculus for Can/Aus on PCOM as of September 30, 1993. However, this was Malpas' last PCOM meeting. In recognition of Malpas' years of service, PCOM adopted the following consensus statement:

On behalf of the JOIDES advisory structure and the entire ODP community, PCOM expresses its deep appreciation to John Malpas for the time and energy he has put into PCOM, the Long Range Plan, and the numerous committee and panels he has attended over the years. PCOM recognizes that his 10 year commitment to the program has contributed immeasurably to its success.

PCOM Liaison Assignments

	EXCOM	LITHP	OHP	SGPP	TECP	DMP	IHP	PPSP	SMP	SSP	TEDCOM
J. Austin											X
K. Becker						X					
W. Berger				X							
H. Dick										X	
J. Fox									X		
R. Kidd				X						X	
H. C.. Larsen					X						
B. Lewis	X							X			
R. Arculus			X								
C. Mével		X									
A. Mix			X								
J. Mutter		X									
W. Sager							X				
K. Suyehiro						X					
B. Taylor					X						
U. von Rad				X							

Co-Chief Scientists

PCOM endorsed, by consensus, the nomination of Dave Piper (Canada) as Co-Chief Scientist for Leg 155 (Amazon Fan).

Computer RFP Evaluation Committee

PCOM endorsed, by consensus, the designation of Dave Goldberg as a liaison to the Computer RFP Evaluation Committee to foster interaction (except that he will be excluded from situations involving conflict of interest.).

At the conclusion of the Executive Session, PCOM passed the following motion:

PCOM endorsed all personnel changes in panel membership, panel chairs and PCOM liaisons presented at the April 1993 PCOM meeting.

Natland proposed, von Rad seconded; vote: 16 yes.

3. Review of RFPs

Lewis explained that DMP felt there had not been sufficient input by the JOIDES advisory structure in the recent wireline logging RFP review process. Lewis' purpose of raising this issue here was an attempt to clarify the RFP reviewer selection process for PCOM. Lewis suggested that the handling and review process of the recent computer upgrade RFP might serve as a better model for future RFP reviews and that if the JOIDES advisory structure was involved in the process at an earlier stage, reviews might go smoother.

Malfait saw no problem with more input from the JOIDES advisory structure but cautioned that conflicts of interest may exist. He explained that individuals representing themselves on an RFP review committee may or may not have a conflict, but individuals representing JOIDES would be seen as a having a conflict. After discussion, PCOM passed the following motion:

To ensure that the interests of the JOIDES advisory structure are fully represented in all contracts let by JOI Inc. or it subcontractors that involve important new directions, the PCOM Chair should be directly involved with JOI Inc. in the specification of RFPs and nomination of reviewers.

Austin moved, Moore seconded; vote: 15 yes, 1 absent

4. Russian Request for ODP Representatives to Visit Russia

Lewis brought up for discussion a recent request from Nikita Bogdanov for ODP scientists to go to Russia to give presentations on the results of Legs 147 and 148. PCOM discussed the general problems of interactions with the Russian science community. There was general sympathy to keep Russian scientists involved in ODP through such informal interactions because there was a large scientific population in Russia who were interested in ODP. Austin felt that the impact of lectures was limited, he felt insuring Russian access to ODP publications was a better investment. Fox agreed and related that there was a severe lack of written journals and materials in Russia. PCOM discussed ideas that would help ODP to better distribute literature in the Russian system.

PCOM discussed the specific request that had been made. Since the Russian request was specifically for more information on Legs 147 and 148, Mével volunteered her efforts to try go to Russia to talk about Leg 147 and would look for someone from Leg 148 to go with her. She felt that she could get funds from France to undertake this activity.

5. Western Pacific Seismic Network Proposal

Suyehiro asked PCOM to discuss the Western Pacific Seismic Network proposal (ODP proposal # 431—Suyehiro identified himself as a proponent) and he questioned whether or not it had received a fair review during the spring global rankings; he noted that LITHP had not included it in their global ranking. Austin felt that the proposal should not be ranked because it needed to be placed into context of the global OSN network program plan priorities, PCOM had made that clear in the past for these types of proposals. Suyehiro said that the proposal was not submitted as part of OSN and even so, it had been

placed within the most recent prioritized OSN listing. He understood LITHP's need for proof of the technical feasibility of the program but questioned if the review/ranking process had been fair.

After discussion, PCOM's consensus was that in order for a proposal for drilling special-purpose holes to be ranked highly, the proposal needed to be fit into a global network plan. Lewis disagreed that a proposal should be forced to fit itself into a global network if it was designed as a single, geographically-isolated experiment. Lewis pointed to this proposal as an example of a proposal not within the mandates of any of the thematic panels and might be best handled as the ASRC Draft Report suggested—by having PCOM review and rank the proposal itself. Pyle suggested having a liaison from FDSN come to the August PCOM meeting and address this issue. PCOM agreed this would be a good option because the August meeting traditionally included guests from ODP liaison groups—which included FDSN. Lewis agreed to consult with an FDSN representative (Dziewanski/Purdy) about the proposal for the emplacement of a borehole seismometer (# 431).

PCOM continued to discuss how a proposal like # 431 should be handled. Since it was not a proposal that fit well into any panel mandates there was some support for having the proposal reviewed externally and letting PCOM consider it independently of the thematic panel review process. PCOM debated the scientific objectives of proposal # 431 and how it fit into the LRP objectives. Most felt that PCOM needed to know what the OSN priorities were in order to put a proposal like this into context with it. Austin's opinion was that PCOM's only commitment to these types of proposals was to view them in the global context and stressed that it would be bad a precedent for PCOM to contradict or go around the panel reviews. Mutter clarified that the reason LITHP did not rank proposal # 431 highly was that they did not feel it would be a good experiment for technical reasons.

Item 999. Review of Action Items and Voting on Motions Outstanding

PCOM reviewed a list of all of the motions, action items and consensus statements that had been presented during the meeting. Motions that had been discussed earlier but not officially voted on were presented for final consideration and voting.
[*Editor's note: The results of the vote are reported with each motion in the minutes where it was discussed*].

Lunch ..... *12:45 - 1:30*

Ken Miller gave a presentation during lunch on the progress at land-based NJ/MAT drilling at Island Beach, New Jersey.

Item 1000. Long-Range Planning for Post - 1998

In order to begin planning for ODP in post-1998 time, Lewis asked PCOM to think about three principal questions: (1) What will be the main focus of the science in the program—deep drilling, ocean history sites, shelf drilling, or a selection of each? (2) What platforms will be required to achieve these science objectives—special purpose or general purpose vessel(s) ? (3) What level of funding will be required to support this type of program? Lewis felt that these were the issues critical to the continuation of ODP post-1998 and strategies that PCOM developed now would be important for the continued success of the program.

Austin questioned how PCOM could deal with long-term planning when the budget planning process was very short-term? PCOM discussed the budgetary situation for the near future and agreed that if the "doomsday scenario" of budget cuts occurred it would be very difficult to plan for a long-term future. However, PCOM agreed that it must begin to address post-1998 planning now, even if only for the static—and admittedly optimistic—case of level funding through 1998. Lewis pointed out that trying to maintain and increase money in the program would also have to be part of a long-range plan.

Natland wanted to see ODP become more program-oriented and pursue integrated drilling strategies instead of concentrating on individual projects. Austin thought that the program should restructure itself to focus on more effectively addressing specific thematic goals, he saw a need for two vessels in the program, one a long-term drilling project ship (6 months to a year), the other a moveable, multi-purpose vessel to drill legs like ODP did now. Larsen thought that there should be some vision applied to the program in order to get more money from partners, ODP should not expect to get more money for performing the same service. Mével agreed, changes in the program could open up possibilities for increases in the funding levels and she cited multiple platforms as a possible example. Von Rad saw a need for the program to have both shallow- and deep-drilling programs with multiple platforms, but he

recognized that there would need to be a much more money in the program to do both of these types of drilling well.

PCOM discussed the assets it already had in the *JOIDES Resolution* and the efficiency of a single, multi-purpose platform with laboratory facilities, equipment and storage. It was recognized that these features would not be available to the program if several types of specialized vessels were contracted on short-term charter to do various types of drilling. PCOM agreed that adding another platform to the program would require doubling the budget and that in order to properly support multiple platforms the program needed to have strong international support and an increase in funding.

Mutter questioned why PCOM did not discuss the science planning and funding first, instead of platform planning? He felt that ODP needed to sell the program on the science not on a platform and suggested that global change was an area that ODP could make some headway into in terms of increased funding. PCOM debated whether or not ODP should try to sell itself through global change aspects. Further discussion covered the philosophical concept of "selling the science" and how justification angles applied to what ODP did in its science program.

Berger changed the subject of the discussion back to the decisions that were made earlier in the meeting regarding the potential budget cuts and proposed the following motion:

> Considering the importance of retaining the thrust of technological innovation during times of budgeting difficulties, PCOM asks TAMU and LDEO to make a list of program services not directly impinging on drilling activities that can be cut in times of future budget shortfall.

The motion was seconded by Mével and opened up for discussion. Berger explained that he did not want to see PCOM set a pattern of cutting out all aspects of technology development and innovation from the program when budgets got tight. He proposed this motion because he wanted other options to be available, options that he did not feel had been fully explored at this meeting, if this type of situation happened again.

Austin argued that PCOM, or a subcommittee of it, should do the list making for budget cuts and not leave it up to the subcontractors. Pyle countered that it was JOI's responsibility to make the list but added that he did not approve of the list making approach to budget cutting as a general practice. Fox questioned how any cuts could be made without having prioritized the near- and long-term science and technology goals to guide those cuts? Kidd wanted to make it clear that the innovation and technology, which were the main product of this international collaboration, were critical to the continued funding and participation of the international partners.

Having already passed a motion regarding budget priorities, PCOM discussed what purpose passing the motion would serve. PCOM felt that the earlier motion incorporated enough language to deal with the perceived problem. Berger withdrew the motion noting that his point had been made.

Lewis proposed that in order to prepare for post-1998 renewal PCOM should undertake a two-part strategy: (1) write a proposal describing the principal scientific goals of post-1998 drilling, and (2) write a paper describing the platform requirements and options to achieve these science goals. After discussion it was decided that a subcommittee of PCOM consisting Lewis and Kidd (next PCOM Chair) should work with PCOM's thematic panel liaisons to direct the revision of the White Papers—this would form the basis for completion of task 1. Task 2 would be investigated by Lewis and Kidd as the requirements of the first task became clearer. Lewis expected that synopses of these papers could be ready by the August PCOM meeting.

PCOM discussed Lewis' proposal and the most efficient way of accomplishing the planning tasks. There was concern over the timeframe that Lewis outlined given that the thematic panels would not be meeting prior to August. PCOM agreed that in order to get the information prior to the August PCOM meeting, it would be most effective to have the PCOM liaisons contact and work with the panel chairs. While they worked on this project, Lewis asked the liaisons to consider if they envisaged that the present thematic panel organization should be maintained or changed in the post-1998 advisory structure—were there better options for thematic panel organization.

Austin wanted to have the issue of post-1998 planning discussed by the panels at their fall meetings, the results could be presented to PCOM for further discussion at the annual meeting in December. Lewis wanted to complete this first task by August so that the panel chairs could be given specific direction

from PCOM to take to their fall panel meetings in regards to White Paper revisions and the White Paper revisions could be kept on a timely track. PCOM agreed that the panels should add an aspect of long-range, post-1998 planning in their White Papers.

PCOM discussed the wording of a post-1998 planning statement. It was agreed that the approach would be to first define the science goals and then identify what type of platform(s) would be required to accomplish this science. After theses issues were addressed, PCOM would begin the process of identifying suitable platforms that would be available in a post-1998 timeframe. PCOM concluded the discussion and the meeting by adopting the following consensus statement:

In preparation for proposing a renewal of ODP beyond 1998, PCOM identifies the following two tasks as being required by 1995.

1. A proposal describing the principal scientific goals of post-1998 drilling.

2. A paper describing platform requirements and options to achieve the science goals.

To accomplish task 1, PCOM assigns a subcommittee, consisting of the PCOM Chair (Lewis) and next PCOM Chair (Kidd) to work with the thematic panel liaisons to direct the writing of White Papers by the thematic panels that can form the basis for task 1.

To accomplish task 2, PCOM assigns a subcommittee consisting of PCOM Chair (Lewis) and next PCOM Chair (Kidd) to initiate work on this task.

PCOM expects that in executing these tasks the subcommittees will make maximum use of e-mail and they will present synopses of these papers at the August 1993 PCOM meeting.

Meeting adjourned ..... *3:30 PM*

ACRONYM DICTIONARY

ACOS	Advisory Committee on Ocean Sciences
ABW	Antarctic Bottom Water
AGU	American Geophysical Union
AMC	axial magma chamber
APC	Advanced Piston Corer
ARC	Australian Research Council
ARCSS	Arctic System Science
ASRC	Advisory Structure Review Committee
ASTC	Association of Science and Technology Centers
BGR	Bundesanstalt für Geowissenschaften und Rohstoffe
BGS	British Geological Survey
BHA	bottom-hole assembly
BHTV	borehole televiewer
BIRPS	British Institutions Reflection Profiling Syndicate
BMFT	Bundeministerium für Forschung und Technologie
BMR	Bureau of Mineral Resources
BRGM	Bureau de Recherches Géologiques et Minières
BSR	bottom-simulating reflector
CGC	Canadian Geoscience Council
CHT	cross-hole tomography
CORK	
CSDP	Continental Scientific Drilling Program
CSG	Computer Services Group (ODP)
CSM	Camborne School of Mines (UK)
CY	calendar year
DCB	diamond core barrel
DCS	diamond coring system
DEA	Drilling Engineering Association
DFG	Deutsche Forschungsgemeinschaft
DI-BHA	Drill-in bottom-hole assembly
DOE	Department of Energy
DP	dynamic positioning
DPG	Detailed Planning Group
DRB	diamond coring system retractable bit system
ECB	extended Core Barrel
ECOD	ESF Consortium for Ocean Drilling
ECR	East Coast Repository
EEZ	Exclusive Economic Zone
EMCO	ESF Management Committee for ODP
EIS	environmental impact statement
EMR	Department of Energy, Mines & Resources
ENSO	El Niño Southern Oscillation
EPR	East Pacific Rise
ESCO	ESF Scientific Committee for ODP
ESF	European Science Foundation
ETH	Eidgenössiches Technische Hochschule, (Zürich)
FARA	French-American Ridge Atlantic
FCCSET	Federal Coordinating Committee on Science Engineering & Technology
FDSN	Federation of Digital Seismic Networks
FMS	formation microscanner
FY	fiscal year
GCR	Gulf Coast Repository
GEOSECS	Geochemical Ocean Sections Study
GLOBEC	Global Ocean Ecosystem Dynamics
GOOS	Global Ocean Observing System
GSC	Geological Survey of Canada
GSGP	Global Sedimentary Geology Program
HRB	hard-rock guide base
HRO	hard-rock orientation
IDAS	isothermal decompression analysis system
IFREMER	Institut Français de Recherche pour l'Exploitation de la Mer
ILP	International Lithosphere Program
IMT	Institut Méditerranéen de Technologie
INSU	Institut de Sciences de l'Univers
InterRIDGE	International Ridge Inter-Disciplinary Global Experiments
IOC	IntergovernmentalOceanographicCommission
IPOD	International Phase of Ocean Drilling
IPR	intellectual property rights
IRIS	Incorporated Research Institutions for Seismology
JAMSTEC	Japan Marine Science and Technology Center
JAPEX	Japan Petroleum Exploration Company
JGOFS	Joint Global Ocean Flux Studies
JOIBOG	JOI Board of Governors
KTB	Kontinentales Tiefbohrprogramm der Bundesrepublik Deutschland
LANL	Los Alamos National Laboratory
LAST	lateral stress tool
LBL	Lawrence Berkeley Laboratory
LDEO	Lamont-Doherty Earth Observatory
LIPS	large igneous provinces
LRP	Long Range Plan
mbsf	meters below seafloor
MCS	multi-channel seismic
MDCB	motor-driven core barrel
MMS	Minerals Management Service
MOU	memorandum of understanding
MOR	mid-ocean ridge
MRC	Micropaleontological Reference Center
MST	multi-sensor track
NAD	North Atlantic Deepwater
NADP	Nansen Arctic Drilling Program
NAS	National Academy of Sciences
NATRE	NorthA Atlantic Tracer Release Experiment
NERC	Natural Environment Research Council
NGDC	National Geophysical Data Center
NOAA	National Oceanic & Atmospheric Administration
NRC	National Research Council
NSB	National Science Board
NSF	National Science Foundation
NSERC	National Science and Engineering Research Council (Canada)
OBS	ocean bottom seismometer
ODIN	Ocean Drilling Information Network

ODPC	Ocean Drilling Program Council
OG	organic geochemistry
OMDP	Ocean Margin Drilling Program
ONR	Office of Naval Research
ORI	Ocean Research Institute of Univ. of Tokyo
OSN	Ocean Seismic Network
PCS	pressure core sampler
PDC	poly-crystalline diamond compact (drilling bit)
PEC	Performance Evaluation Committee
PPI	Producer Price Index
RFP	request for proposals
RFQ	request for quotes
RIDGE,	Ridge Inter-Disciplinary Global Experiments (US)
ROV	remotely-operated vehicle
SCM	sonic core monitor
SCOR	Scientific Committee on Ocean Research
SCS	single-channel seismic
SES	sidewall-entry sub
SNL	Sandia National Laboratory
SOE	Special Operating Expense
SOW	Statement of Work
STA	Science and Technology Agency (of Japan)
SUSCOS	Subcommittee on U.S. Coastal Ocean Science
TAMU	Texas A & M University
TAMRF	Texas A&M Research Foundation
TOGA COARE	Tropical Ocean Global Experiment Coupled Ocean-Atmosphere Response Experiment
TTO	Transient Tracers in the Ocean program
UDI	Underseas Drilling, Incorporated
USSAC	US Scientific Advisory Committee
USSSP	US Science Support Program
VPC	vibra-percussive corer
VSP	vertical seismic profile
WCR	West Coast Repository
WCRP	World Climate Research Program
WG	Working Group
WHOI	Woods Hole Oceanographic Institution
WOB	weight on bit
WOCE	World Ocean Circulation Experiment
WSTP	water sampler, temperature, pressure (downhole tool)

JOIDES Committees and Panels:

BCOM	Budget Committee
DMP	Downhole Measurements Panel
EXCOM	Executive Committee
IHP	Information Handling Panel
LITHP	Lithosphere Panel
OHP	Ocean History Panel
OPCOM	Opportunity Committee (disbanded)
PANCHM	Panel Chairs Meeting
PCOM	Planning Committee
PPSP	Pollution Prevention and Safety Panel
SGPP	Sedimentary and Geochemical Processes Panel
SMP	Shipboard Mearurements Panel
SSP	Site Survey Panel
STRATCOM	Strategy Committee (disbanded)
TECP	Tectonics Panel
TEDCOM	Technology and Engineering Development Committee

Detailed Planning Groups (DPG) and Working Groups (WG):

DH-WG	Data-Handling WG
NAAG-DPG	North Atlantic-Arctic Gateways DPG (disbanded)
NARM-DPG	North Atlantic Rifted Margins DPG (disbanded)
OD-WG	Offset Drilling WG (disbanded)
SL-WG	Sea-Level WG (disbanded)
SWD-WG	Shallow Water Drilling Working Group

FY93 Programs:

NAAG-I	North Atlantic Arctic Gateways, first leg (Leg 151)
NARM Non-Volcanic I	North Atlantic Rifted Margins non-volcanic, first leg (Leg 149)
NJ/MAT	New Jersey / Middle Atlantic Transect (Leg 150)
504B	deepening Hole 504B (Leg 148)

FY94 Programs:

NARM Volcanic-I	North Atlantic Rifted Margins volcanic, first leg (Leg 152)
MARK	Mid-Atlantic Ridge at Kane fracture zone (Leg 153)
Ceara Rise	Leg 154
Amazon Fan	Leg 155
N. Barbadoes Ridge	Leg 156
DCS Engineering	Diamond Coring System engineering leg (Leg 157)
TAG	Trans-Atlantic Geotraverse Hydrothermal Field (leg 158)

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Appendix 1.0

NSF BUDGETS

	FY 92	FY 93	REQ FY 94
TOTAL NSF BUDGET	2,547 M	2,733 M	3,180 M
GEOSCIENCES DIRECTORATE			
ATMOSPHERIC SCIENCES	126 M	126 M	149 M
EARTH SCIENCES	76 M	76 M	90 M
OCEAN SCIENCES	177 M	177 M	210 M
RESEARCH PROGRAM	90 M	90 M	113 M
FACILITIES	51 M	51 M	57 M
OCEAN DRILLING	36 M	36 M	40 M

Appendix 1.1

B 16

STATUS OF RENEWAL ACTIONS

MOUs

UNITED KINGDOM HAS SIGNED RENEWAL MOU

GERMANY IN PROCESS OF SIGNING RENEWAL MOU

JAPAN SHOULD BE PREPARED TO SIGN IN MAY

ESF SIGNING DATE SHOULD BE KNOWN SOON

?? FRANCE SIGNING DATE UNKNOWN ??

???? CANADA-AUSTRALIA STATUS UNKNOWN ???

CONTRACTS

JOI AND NSF ARE NEGOTIATING A NEW CONTRACT

SUBCONTRACTS TO LDEO AND TAMU ARE BEING NEGOTIATED BY JOI

NSF HAS COMPETED "ADMINISTRATIVE" REVIEW OF 1994 PROGRAM PLAN

BUDGET UNCERTAINTY MAY NOT BE RESOLVED UNTIL JUNE

OTHER ITEMS

1 USSAC PROGRAM WILL BE REVIEWED THIS SUMMER

2 1994 FIELD PROGRAMS INCLUDE:

OBS STUDY AT SITE 504B - BOB DETRICK

ALVIN PROGRAM - COSTA RICA MARGIN -ELI SILVER

ADDITIONAL PROPOSALS WILL BE SUBMITTED 1 MAY

3 DRILLING OF HOLES ONSHORE NEW JERSEY PROGRESSING WELL

4 BETH AMBOS WILL DEPART ODP/NSF IN JULY. WE ARE LOOKING FOR A REPLACEMENT

5 NSF WILL BE MOVING TO DC SUBURBS IN NORTHERN VIRGINIA. MOVE STARTS IN FALL 1993.

Appendix 2.0

JOI Update

- **RFPs Completed**
  - JOIDES Office to U.K. in FY95
  - Logging Subcontract to LDEO
- **Advisory Structure Review Committee**
  - Met with TEDCOM in March
  - Draft Report Issued
- **Program Plan**
  - Draft Completed per BCOM Budget Recommendations
  - NSF Comments Under Review
  - Next PEC Postponed from FY94 to FY95
  - CUT ANOTHER #3M ?
- **Contract Renewal**
  - Negotiations Continue with NSF
  - Meetings with Subcontractors T.B.A.
- **Russian Scientists**
  - JOI/NERC Grant from Royal Society
  - One-Time £
  - Sea-going Scientists
- **Keck Report of NAS/NRC**
- SPECIAL ISSUE OF OCEANUS PLANNED

Table ES-2: Budgets for FY94 ($K)

	FY93	FY94	Δ
Drilling & Engineering	4,156	4,924	+ 768
Technical & Logistics Support	4,394	4,549	+ 155
Science Operations	1,242	1,050	− 192
Science Services	3,609	3,031	− 578
HQ/Administration	1,980	2,048	+ 68
Information Services	N/A	1,657	—
Ship Operations	21,635	21,181	− 454
TOTAL TAMU	37,016	38,440	+ 1,424
LDEO	4,621	4,800	+ 179
JOI/JOIDES	1,560	1,660	+ 100
TOTAL	43,197	44,900	+ 1,703
GRAND TOTAL ODP BUDGET	**43,197**	**44,900**	
		# ~2.1M	# 3.4M (7%)
Long Range Plan Target	**45,288**	**48,321**	

Table ES-3
FY94 Special Operating Expenses

TAMU

$560,000 In order to execute the science plan, special downhole equipment items ($380,000) above normal requirements must be purchased. Among items required, it will be necessary to have additional CORKs (4), Hard Rock Guidebases (2) and tilt beacons (2) to complete the efforts scheduled for Legs 153 and 156. Experience gained in drilling operations, particularly during FY93, points to a requirement for additional items ($180,000) for Leg 153 (MARK).

$690,000 **Diamond Coring System (DCS).** Essential to support DCS deployment and operation for Leg 157. Principal expenditures are for subcontracts, consultations and one electronics technician.

$100,000 **DCS Shipping.** Supports the shipping of DCS equipment to Barbados for deployment on the scheduled leg (note: return shipping will be included in FY95 Program Plan).

[redacted]

$600,000 [redacted] **Computer/Data Base Upgrade.** This is most probably the initial phase of a two-year program to upgrade the computer and data base system in support of ODP. The amount requested is an estimate only based on the best information available and provided for planning purposes. Actual costs will be determined after responses are received, analyzed and the JOIDES Working Group has reached a decision. Funds provide for support of the initial year of the request for proposal (RFP), contract employees required during implementation and the data base CD-ROM upgrade.

$70,000 As a result of science community and Panel (SMP, IHP, etc.) recommendations, funds are intended for the purchase of a shipboard navigation system.

R.T.

Solid Earth Sciences and Society

National Academy Press (1993)

The "Keck Report" - chair Peter Wyllie (Caltech)

"It has become clear that ODP's existence is important for other earth science initiatives that deal with global processes and interactions to achieve their goals." (p. 275)

"Preeminent among single programs relevant to understanding the environment and biological change on the 2.5-million-year time scale is the Ocean Drilling Program (ODP). Although the program operates only in the two-thirds of the Earth occupied by the oceans and their margins, no other single program can rival it in scope. Its results embody an unrivaled record of the evolution of the atmosphere-ocean system and of ocean biology and biochemistry, and for this reason it is accorded the highest priority." (p. 284)

"The Ocean Drilling Program and its predecessors have contributed as much as any facility to the rapid development of the solid-earth sciences over the past 25 years." (p. 307)

Appendix 2.4

Oceanus Issue 25th Anniversary of Scientific Ocean Drilling

Introduction to Issue: T. Pyle, E. Kappel

Background/History: A. Maxwell

Country reports (historical perspective)

U.K.: J. Briden
France: Y. s Lancelot
Japan: N. Nasu
ESF: B. Munsch
Germany: H. Beiersdorf
Canada: ?
Australia: D. Falvey
Russia: N. Bogdanov
U.S.: ?

Comments
Suggestions
Volunteers
needed this week!

Science

Paleoceanography
- High-latitude: Jorn Thiede (ESF), J. Barron (U.S.)
- Other?: N. Shackelton (U.K.), N. Pisias (U.S.), D. Rea (U.S.)

Lithosphere
- Hole 504B: K. Becker (U.S.), Kinoshita(Japan), Sakai (Japan)
- MOR/Mantle: C. Mevel (France); M. Cannat (France), R. Batiza (U.S.)
- Large Igneous Provinces: M. Coffin (U.S.)/ O. Eldholm (ESF)
- Hydrothermal Processes: J. Franklin (Canada); R. Zierenberg (U.S.)

Tectonics
- Fluid Flow: E. Davis (Can.); B. Carson (U.S.), M. Kastner (U.S.)
- Continental Margin Drilling: J. Austin (U.S.)
- Plate Motions: R. Duncan (U.S.)
- Accretionary Prisms: A. Taira (Japan), R. Von Heune (Germ.)

Sedimentary Processes
- Deep Sea Fans: W. Normark (U.S.), R. Flood (U.S.)
- Judith McKenzie (ESF)

Sea Level
- P. Davies (Aus.), K. Miller (U.S.), G. Mountain (U.S.)

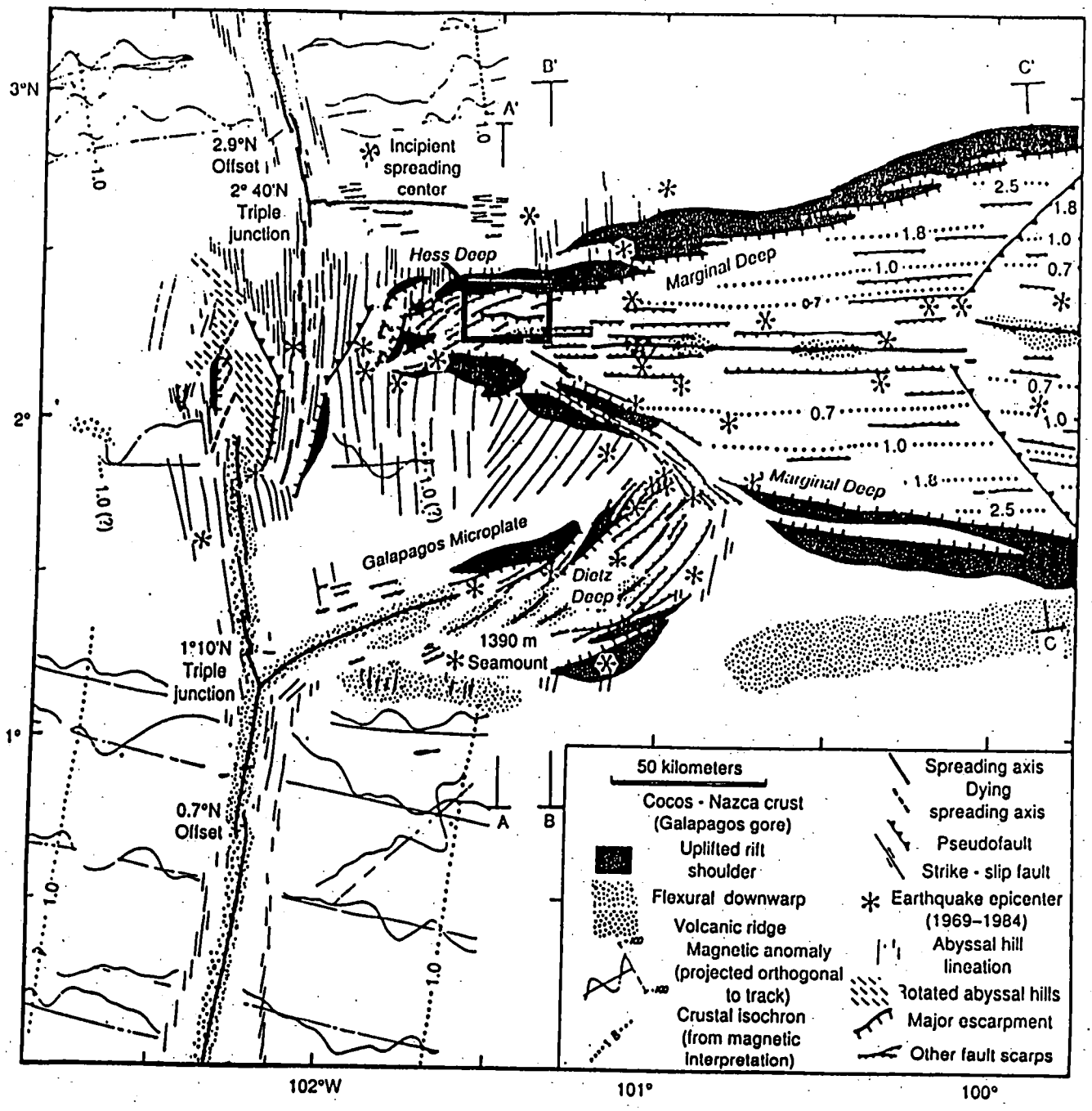
Technology

Drilling

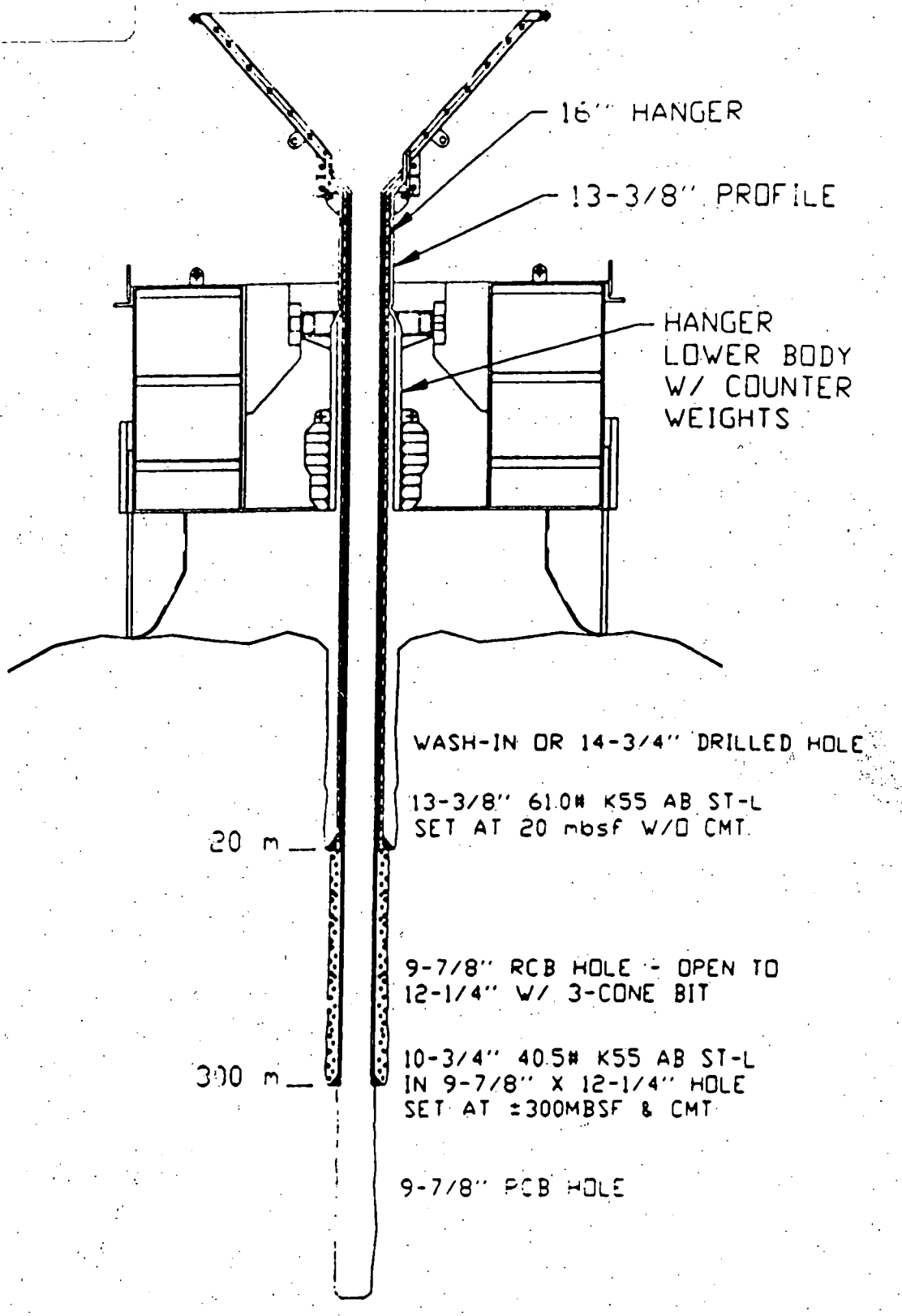
Logging
- P. Worthington (U.K.)

Description of a cruise (done in 1st person): ?

Appendix 3.0


3°N
2°
1°
102°W
101°
100°
2.9°N Offset
2° 40'N Triple junction
Incipient spreading center
Hess Deep
Marginal Deep
Marginal Deep
Galapagos Microplate
Dietz Deep
1390 m Seamount
1°10'N Triple junction
0.7°N Offset
A
A'
B
B'
C
C'
50 kilometers
Cocos - Nazca crust (Galapagos gore)
Uplifted rift shoulder
Flexural downwarp
Volcanic ridge
Magnetic anomaly (projected orthogonal to track)
Crustal isochron (from magnetic interpretation)
Spreading axis
Dying spreading axis
Pseudofault
Strike - slip fault
Earthquake epicenter (1969–1984)
Abyssal hill lineation
Rotated abyssal hills
Major escarpment
Other fault scarps

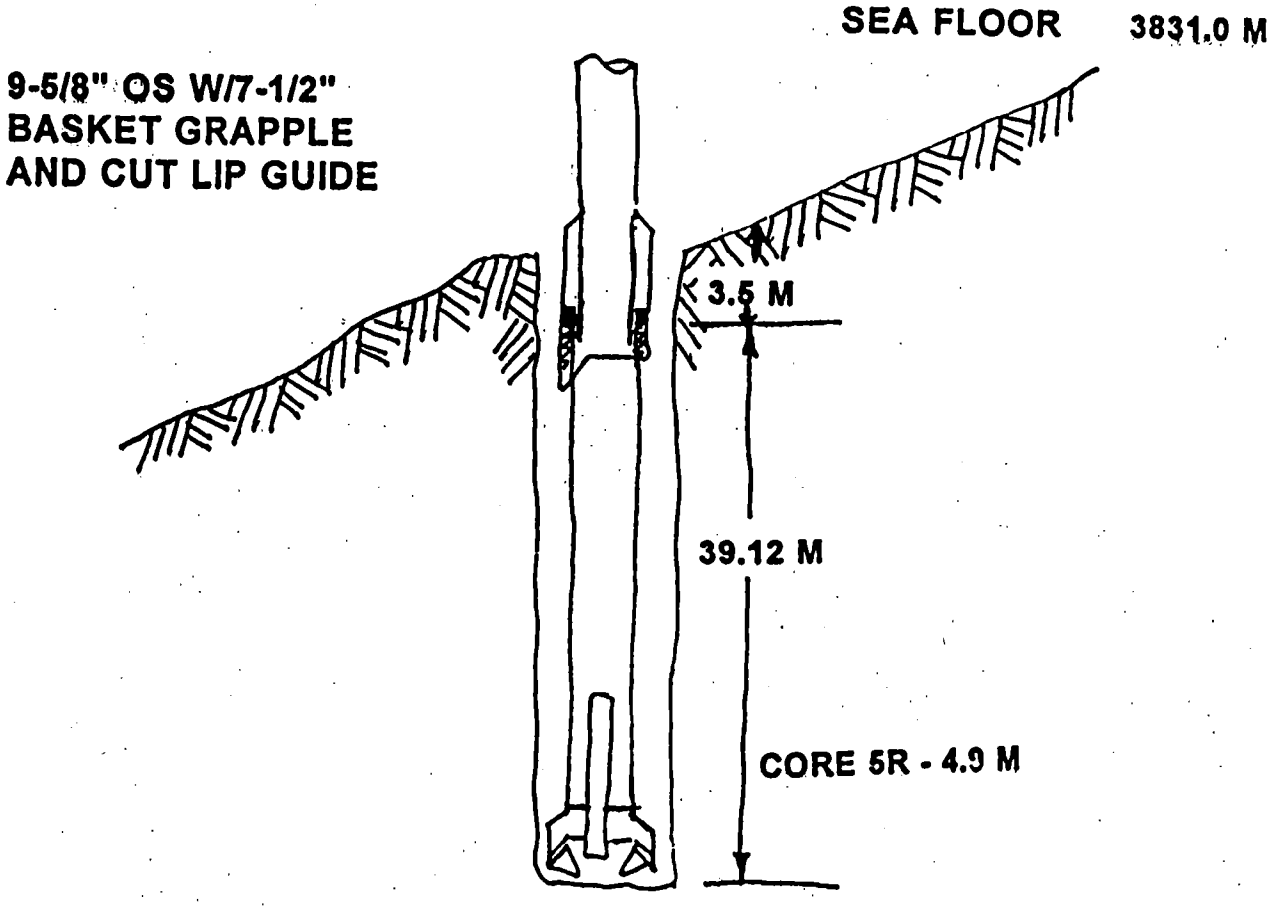
Appendix 3.1



DRIL-QUIP DUAL (SPECIAL)
LEG 147 - OPTION 1

LEG 147 - HESS DEEP

HOLE 895 C (HD-4)



TOTAL DEPTH 3873.5 MBRF (42.5 MBSF)

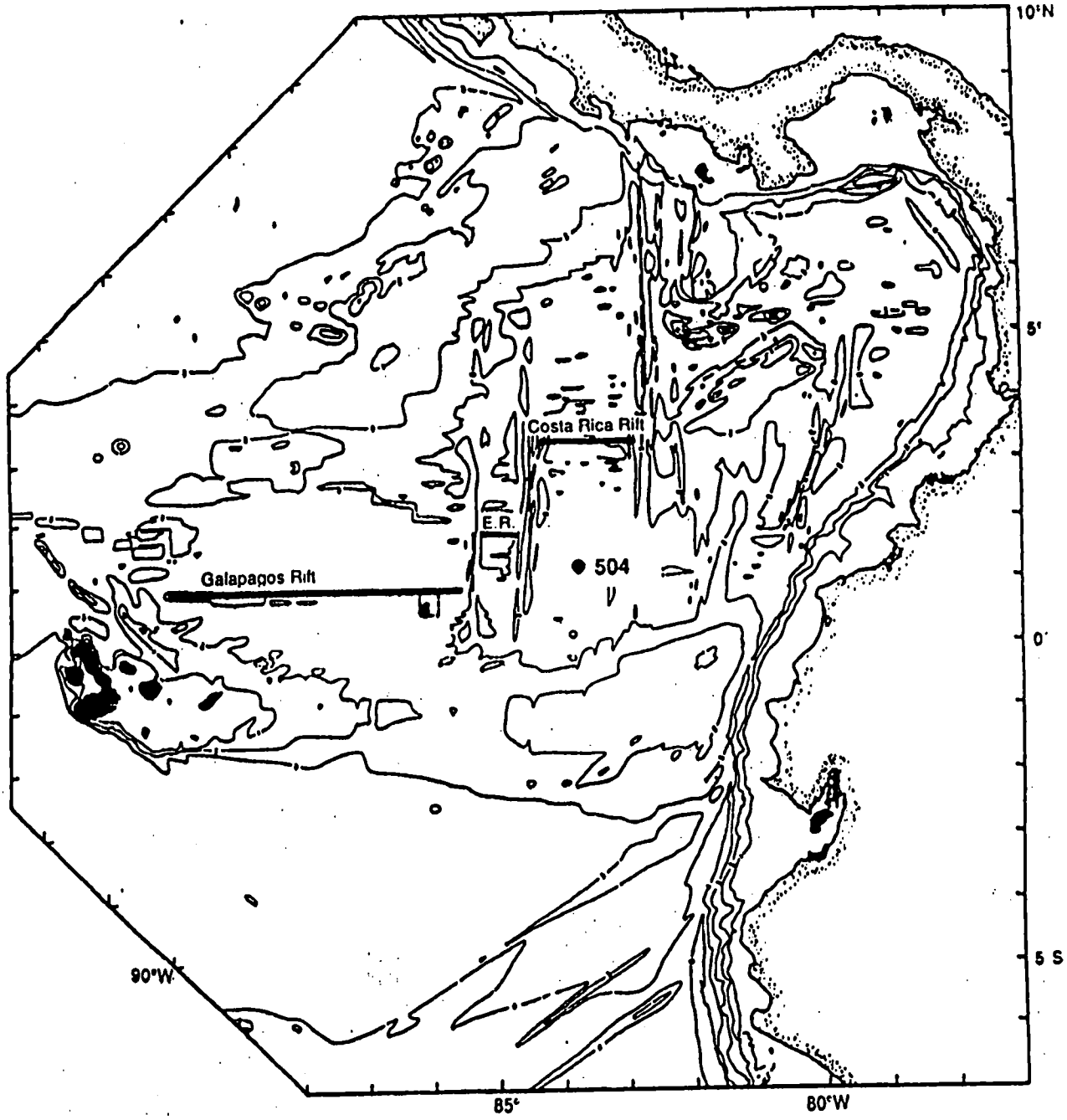
LEG 1 - HESS DEEP

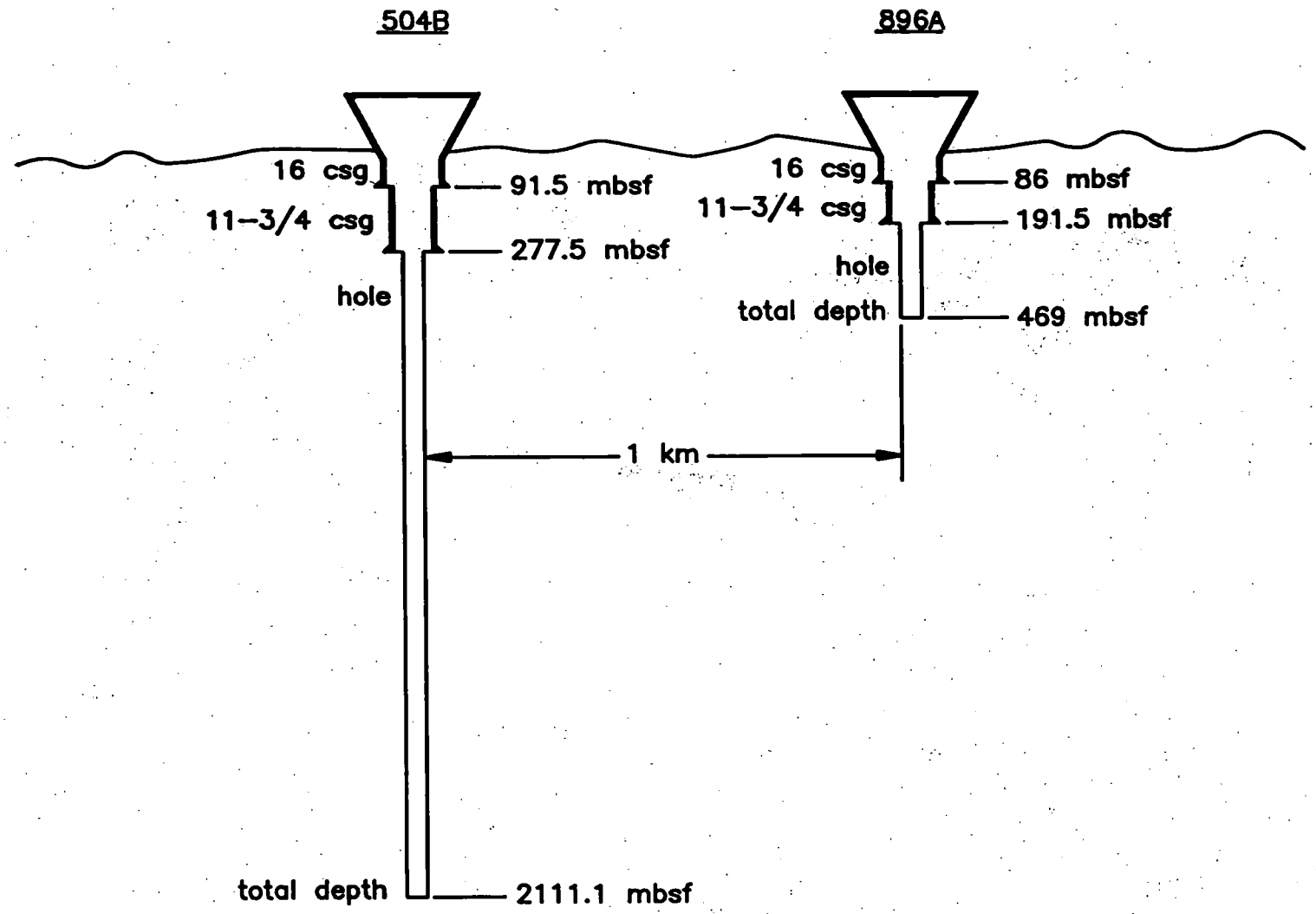
HARDWARE LOST, DAMAGED, USED, OR RECOVERED

LEG SUMMARY BY HOLE

HOLE NUMBER	$ RECOVERED	$ USED	$ LOST	$ DAMAGED	$ TOTAL (USED/LOST/DAM))
894 C	0	0	169,503	12,000	181,503
894 G	145,576	51,499	0	0	51,499
895 A	0	0	34,922	6,000	40,922
895 C	0	0	44,842	18,000	62,842
895 D	0	6,644	75,827	2,705	85,176
895E	0	0	50,671	0	50,671

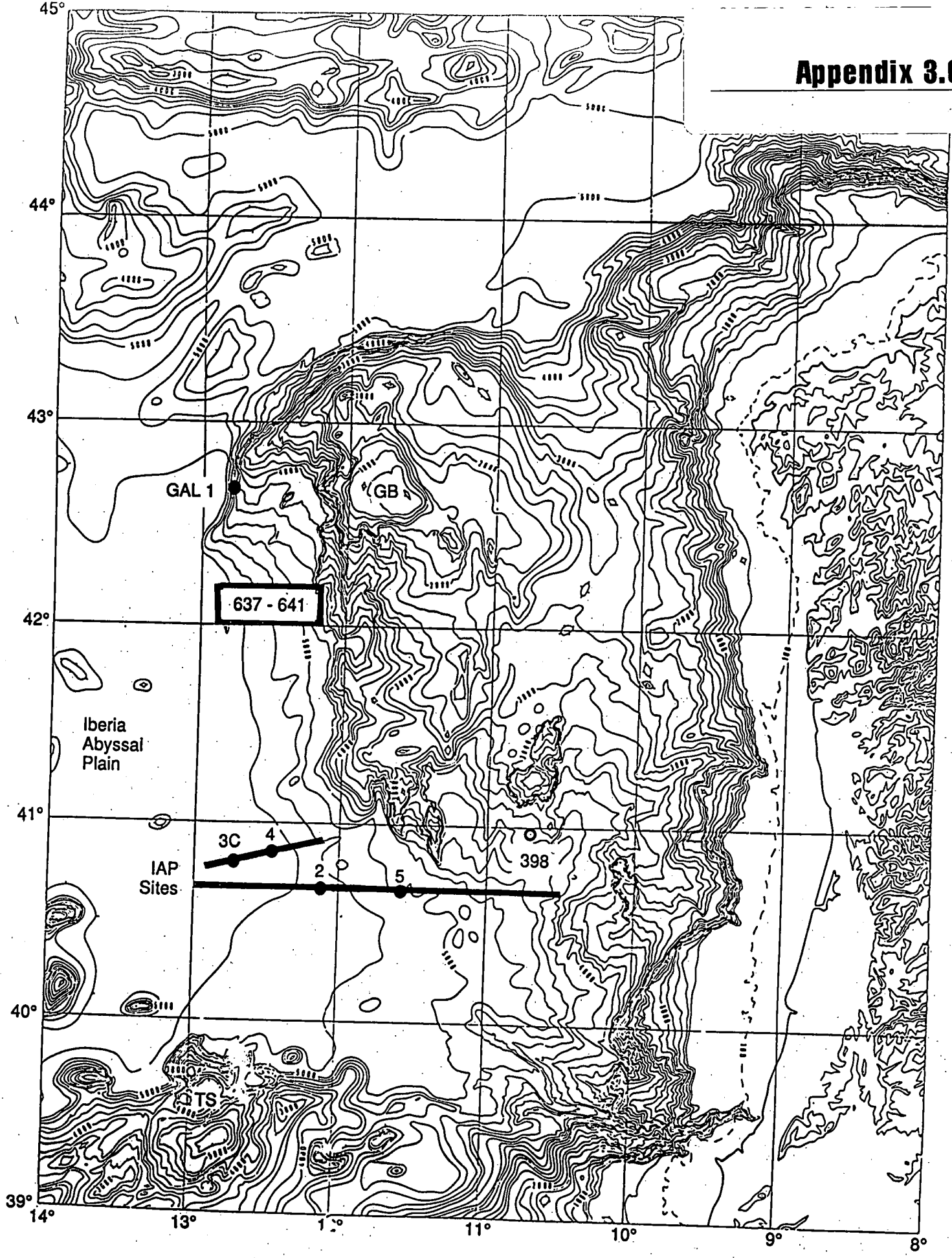
LEG TOTAL:	$ 472,613
TOTAL HARDWARE USED:	$ 58,143
TOTAL HARDWARE LOST:	$ 375,765
TOTAL HARDWARE DAMAGED:	$ 38,705
HARDWARE RECOVERED:	$ 145,576


10°N
5°
0°
5 S
90°W
85°
80°W
Costa Rica Rift
E.R.
504
Galapagos Rift


504B
896A
16 csg
11–3/4 csg
hole
91.5 mbsf
277.5 mbsf
16 csg
11–3/4 csg
hole
total depth
86 mbsf
191.5 mbsf
469 mbsf
1 km
total depth
2111.1 mbsf

LEG 148

Appendix 3.6


45°
44°
43°
42°
41°
40°
39°
14°
13°
12°
11°
10°
9°
8°
GAL 1
GB
637 - 641
Iberia
Abyssal
Plain
3C
4
IAP
Sites
2
5
398
TS

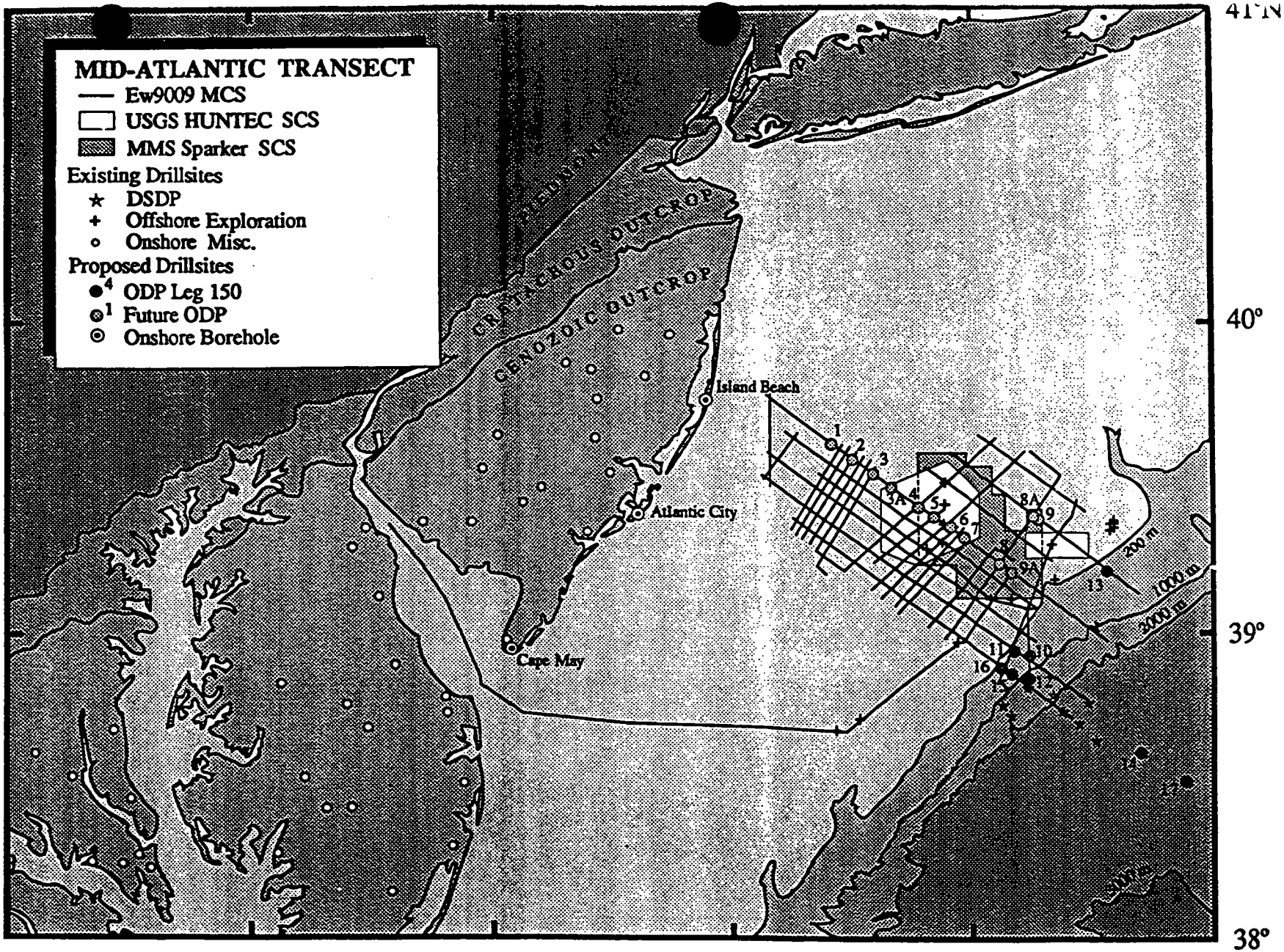
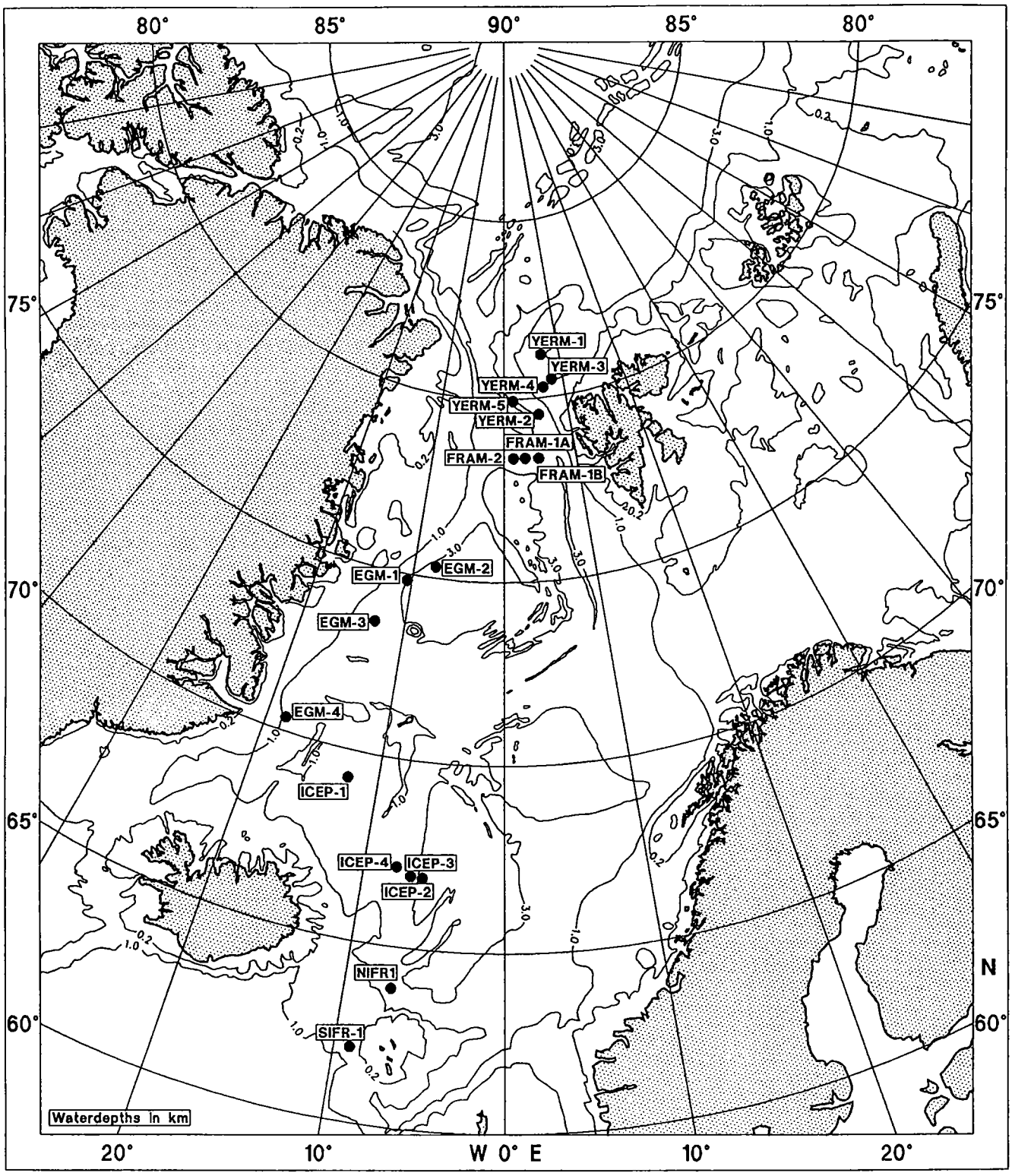


Figure 2 - Track chart of MCS data collected by the authors on cruise 9009 of the *Maurice Ewing*. The areas of "hi-res" seismic surveying by the USGS and MMS are shown. Existing commercial exploration wells, DSDP boreholes, and miscellaneous onshore wells are shown. Locations of additional drillsites include: a) onshore boreholes currently being drilled; b) future (?) ODP drillsites on the shelf; and c) proposed ODP Leg 150 drillsites.

LEG 150	CO-CHIEF SCIENTISTS:	GREG MOUNTAIN (LDEO) KENNETH MILLER (RUTGERS)
NEW JERSEY SLOPE AND RISE	ODP STAFF SCIENTIST: ODP OPERATIONS SUPT: ODP LAB OFFICER:	PETER BLUM GLEN FOSS BURNEY HAMLIN
LEG 151	CO-CHIEF SCIENTISTS:	ANNIK MYHRE JÖRN THIEDE (GERMANY)
ATLANTIC ARCTIC GATEWAYS	ODP STAFF SCIENTIST: ODP OPERATIONS SUPT: ODP LAB OFFICER:	JOHN FIRTH GENE POLLARD BILL MILLS
LEG 152	CO-CHIEF SCIENTISTS:	HANS-CHRISTIAN LARSEN (DENMARK) ANDREW SAUNDERS (UK)
EAST GREENLAND MARGIN	ODP STAFF SCIENTIST: ODP OPERATIONS SUPT: ODP LAB OFFICER:	PETER CLIFT RON GROUT BRAD JULSON

Appendix 3.9

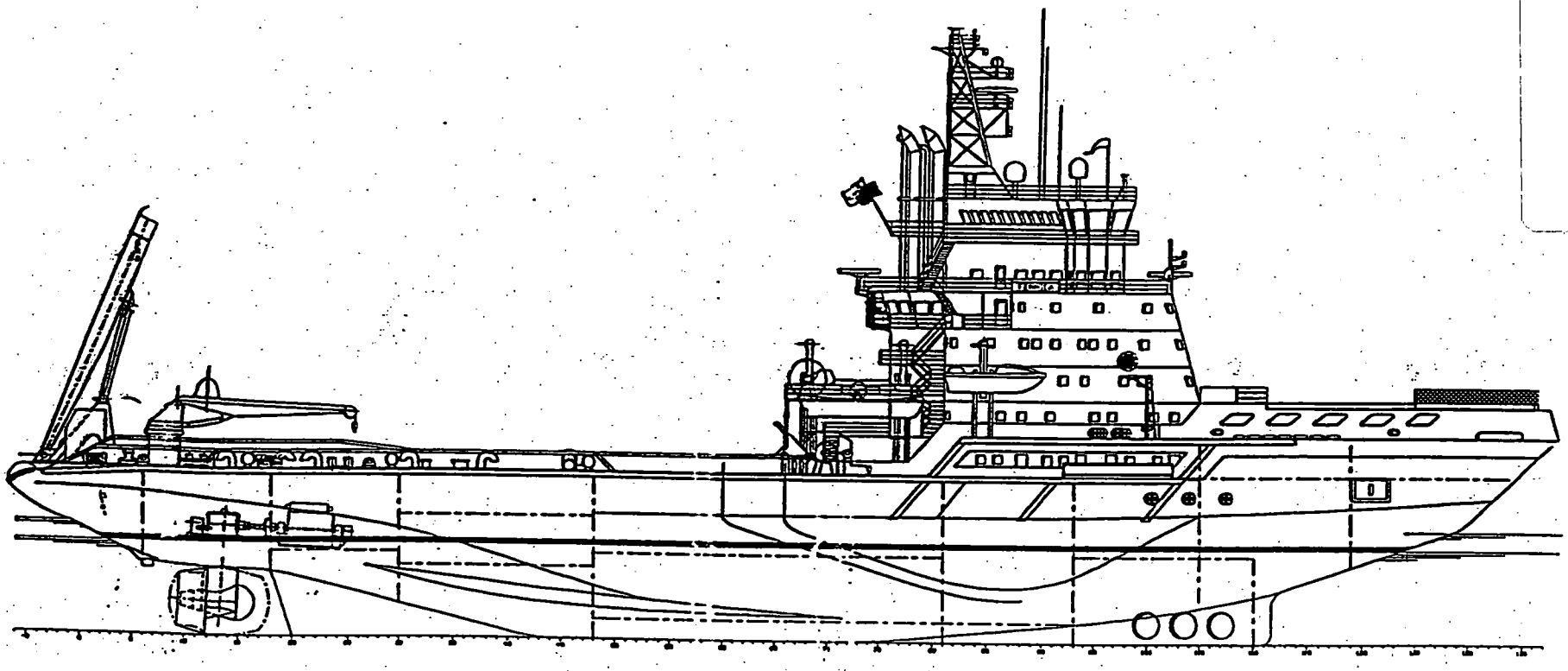

80°
85°
90°
85°
80°
75°
70°
65°
60°
20°
10°
W 0° E
10°
20°
N
YERM-1
YERM-3
YERM-4
YERM-5
YERM-2
FRAM-1A
FRAM-2
FRAM-1B
EGM-1
EGM-2
EGM-3
EGM-4
ICEP-1
ICEP-4
ICEP-3
ICEP-2
NIFR1
SIFR-1
Waterdepths in km

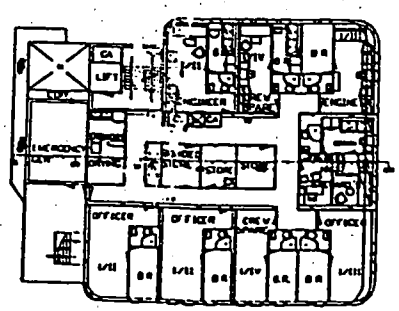
ICE VESSEL BIDS RECEIVED

COMPANY NAME/COUNTRY	SHIP
NATIONAL MARITIME ADM./SWEDEN	*"ODEN"*
UGLAND OFFSHORE AS/NORWAY	*"FENNICA"*
FERONIA INT'L SHIPPING/FRANCE	*"CARIBOO"*
A.P. MOLLER/DENMARK	*"CHIGNECTO"*
RIEBER SHIPPING AS/NORWAY	*"POLAR QUEEN"*
RIEBER SHIPPING AS/NORWAY	*"POLAR BJORN"*
KARLSEN SHIPPING CO., LTD./CANADA	*"VIGILANT"*
KARLSEN SHIPPING CO., LTD./CANADA	*"POLAR STAR"*
KARLSEN SHIPPING CO., LTD./CANADA	*"BRANDAL"*

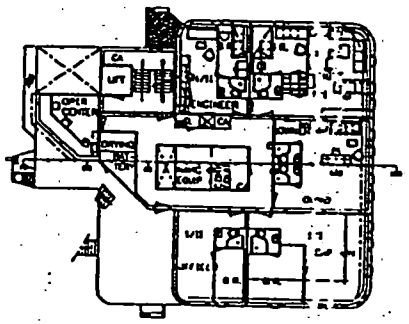
Appendix 3.10

M.S.V. FENNICA

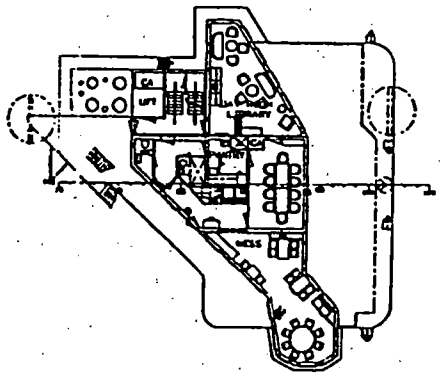




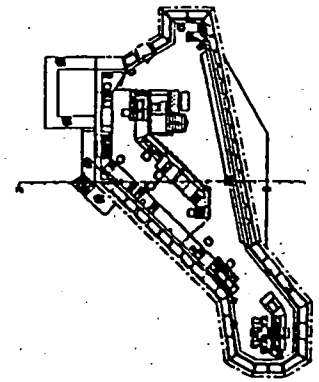
3. BRIDGE DECK 20900



4. BRIDGE DECK 23600

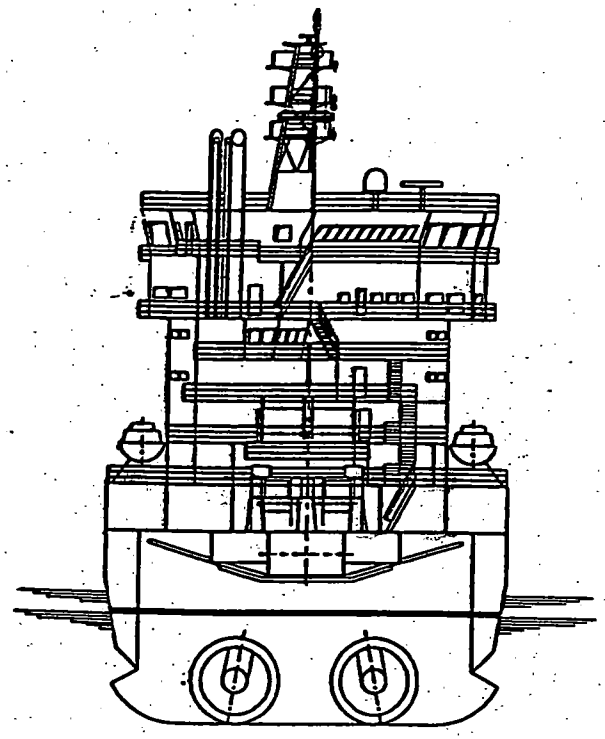


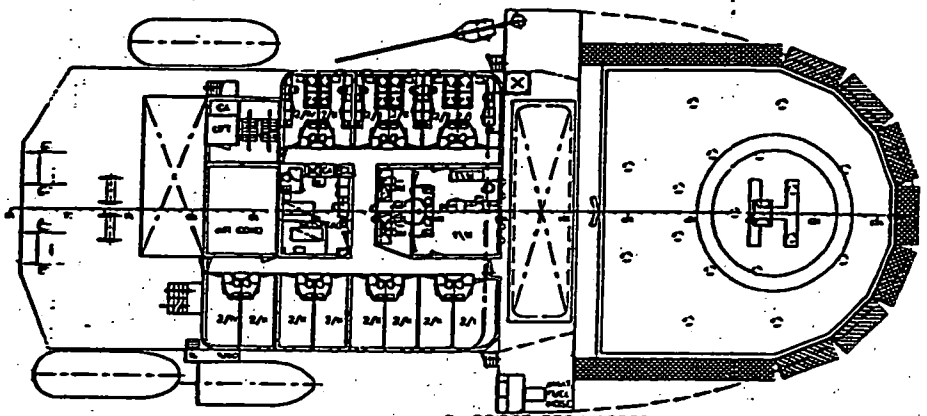
5. BRIDGE DECK 26300



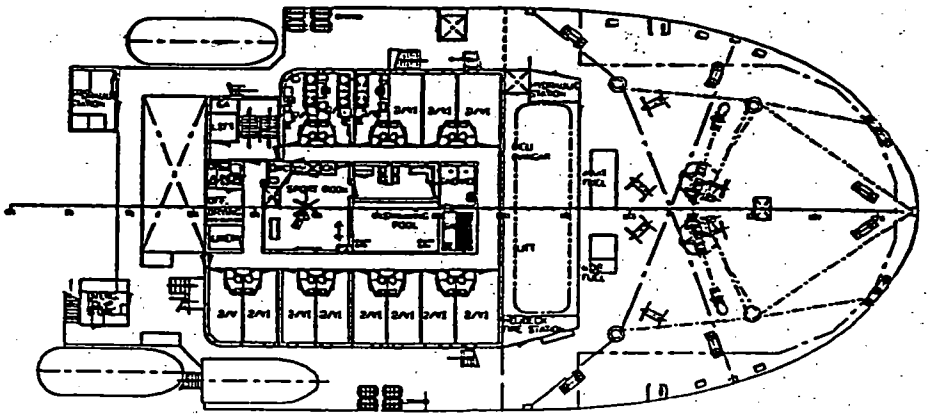
BRIDGE DECK 30400

M.S.V. FENNICA

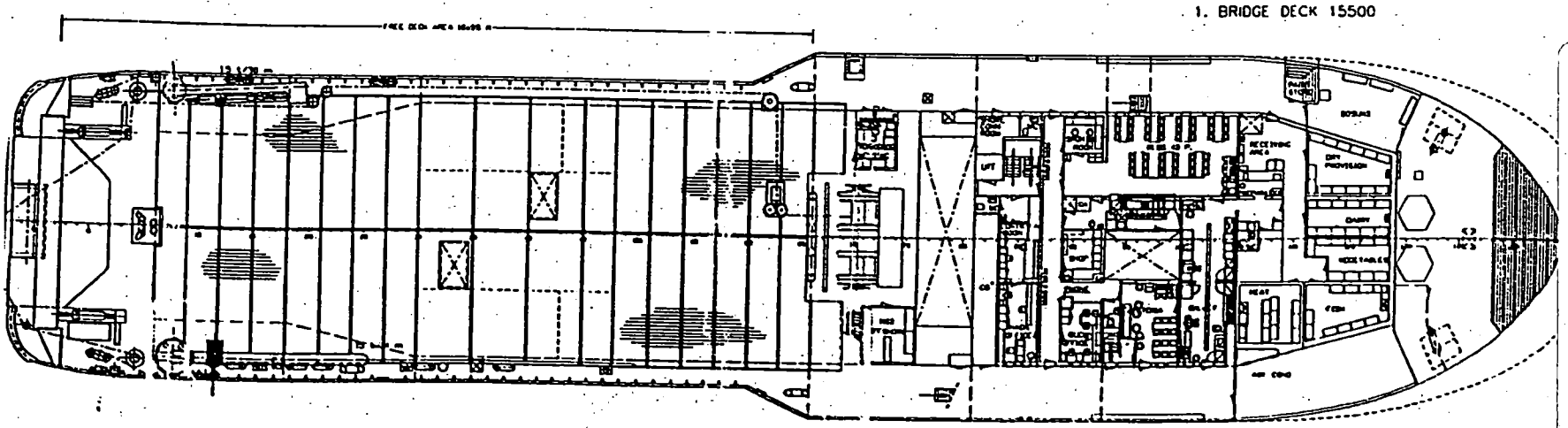




2. BRIDGE DECK 18200

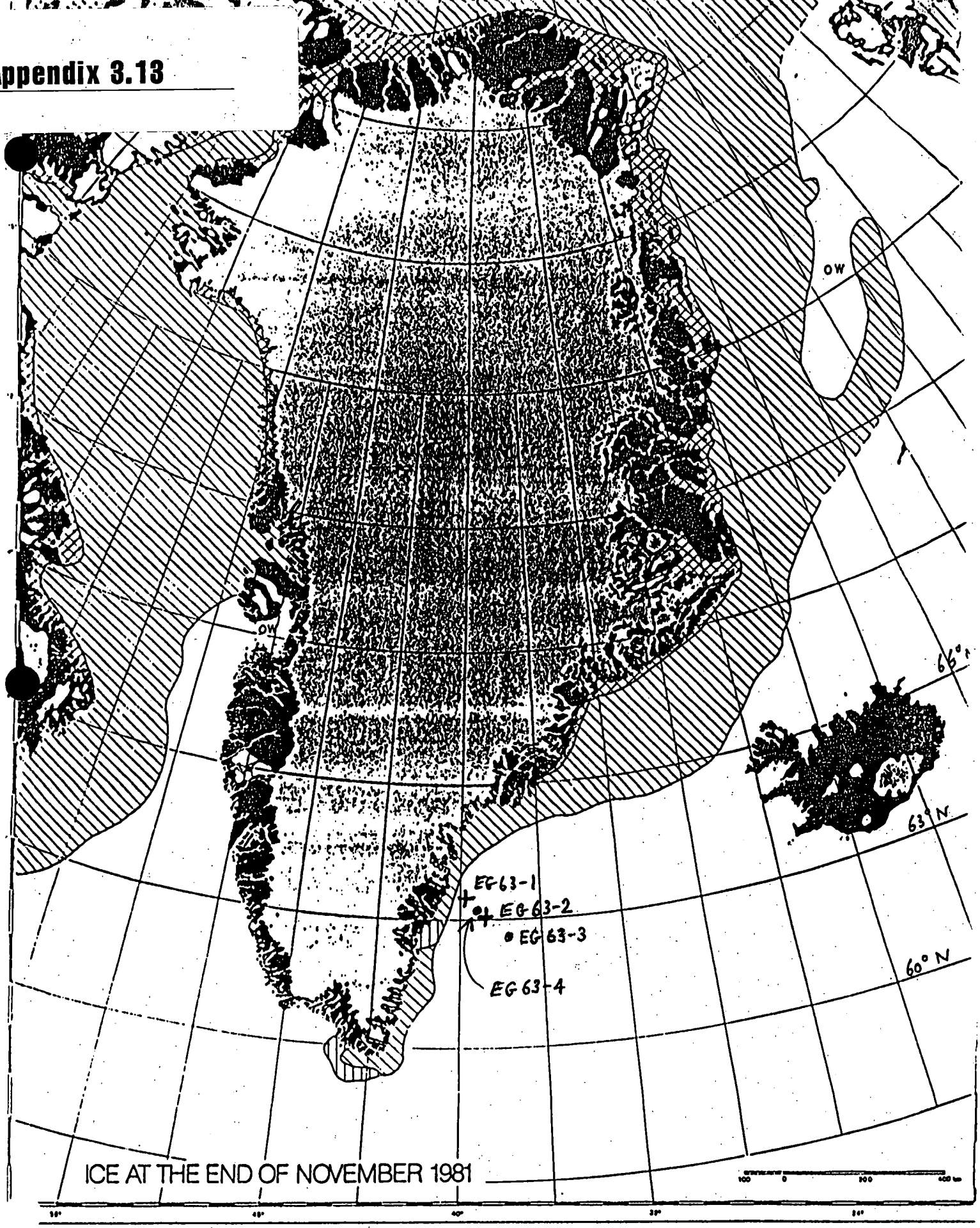


1. BRIDGE DECK 15500



Appendix 3.12

Appendix 3.13



ODP OPERATIONS SCHEDULE

Leg		Port of Origin†	Cruise Dates	Days at Sea	Estimated Days Transit/OnSite
149C	Iberian Abyssal Plain	Lisbon 19 April	20 April - 25 May 1993	35	2/33
150	New Jersey Sea Level	Lisbon 25-29 May	30 May - 25 July 1993	56	16/40
151	Atlantic Arctic Gateways	St. John's 25-29 July	30 July - 24 September 1993	56	14/42
152	East Greenland Margin	Reykjavik 24-28 September	29 September - 24 November 1993	56	6/50
153	MARK	St. John's 24-28 November	29 November 1993 - 24 January 1994	56	10/46
154	Ceara Rise	Barbados 24-28 January	29 January - 26 March 1994	56	8/48
155	Amazon Fan	Recife 26-30 March	31 March - 26 May 1994	56	8/48
156	North Barbados Ridge	Barbados 26-30 May	31 May - 26 July 1994	56	1/55
157	DCS Engineering	Barbados 26-30 July	31 July - 25 September 1994	56	8/48
158	TAG	Barbados 25-29 September	30 September - 25 November 1994	56	
	Drydock	Lisbon 25 Nov. - 9 Dec. 1994			

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

Revised 21 April 1993

Appendix 3.14

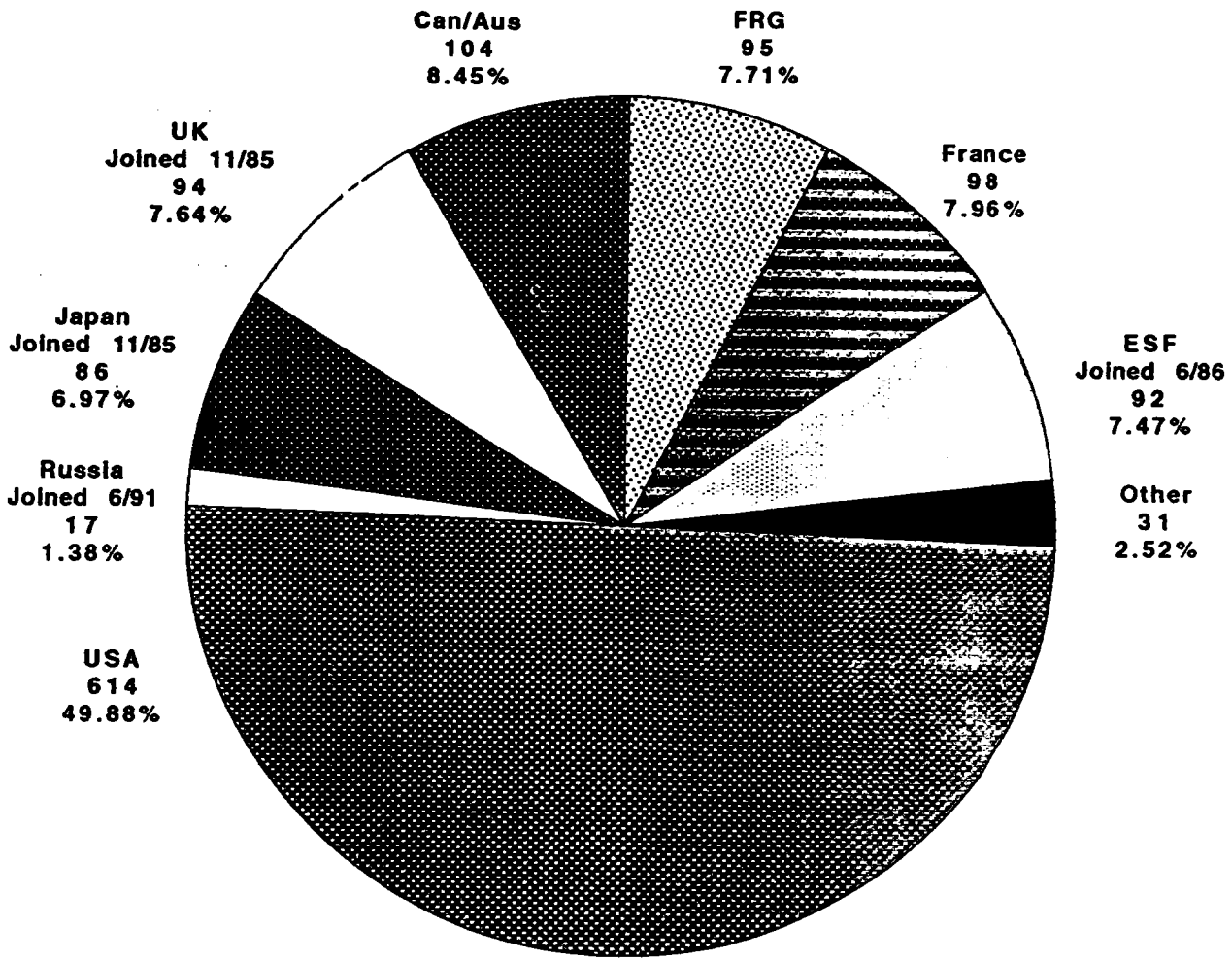
LEG 153	CO-CHIEF SCIENTISTS:	MATHILDE CANNAT (FRANCE) JEFFREY KARSON (DUKE)
MARK	ODP STAFF SCIENTIST: ODP OPERATIONS SUPT: ODP LAB OFFICER:	JAY MILLER TOM PETTIGREW BURNEY HAMLIN
LEG 154	CO-CHIEF SCIENTISTS:	BILL CURRY (WHOI) NICHOLAS SHACKLETON
CEARA RISE	ODP STAFF SCIENTIST: ODP OPERATIONS SUPT: ODP LAB OFFICER:	CARL RICHTER GLEN FOSS BILL MILLS
LEG 155	CO-CHIEF SCIENTISTS:	ROGER FLOOD (SUNY, STONY BROOK) TO BE NAMED
AMAZON FAN	ODP STAFF SCIENTIST: ODP OPERATIONS SUPT: ODP LAB OFFICER:	ADAM KLAUS GENE POLLARD BRAD JULSON

LEG 156	CO-CHIEF SCIENTISTS:	TOM SHIPLEY (UT, AUSTIN) YUJIRO OGAWA (JAPAN)
NORTH BARBADOS RIDGE	ODP STAFF SCIENTIST: ODP OPERATIONS SUPT: ODP LAB OFFICER:	PETER BLUM GLEN FOSS BURNEY HAMLIN
LEG 157	ODP OPERATIONS SUPT:	DAN REUDELHUBER
DCS ENGINEERING	CO-CHIEF SCIENTISTS: ODP STAFF SCIENTIST: ODP LAB OFFICER:	TO BE NAMED JOHN FIRTH BILL MILLS
LEG 158	CO-CHIEF SCIENTISTS:	SUSAN HUMPHRIS TO BE NAMED
TAG	ODP STAFF SCIENTIST: ODP OPERATIONS SUPT: ODP LAB OFFICER:	LAURA STOKKING GENE POLLARD BRAD JULSON

Appendix 3.16

SHIPBOARD PARTICIPANT TALLY

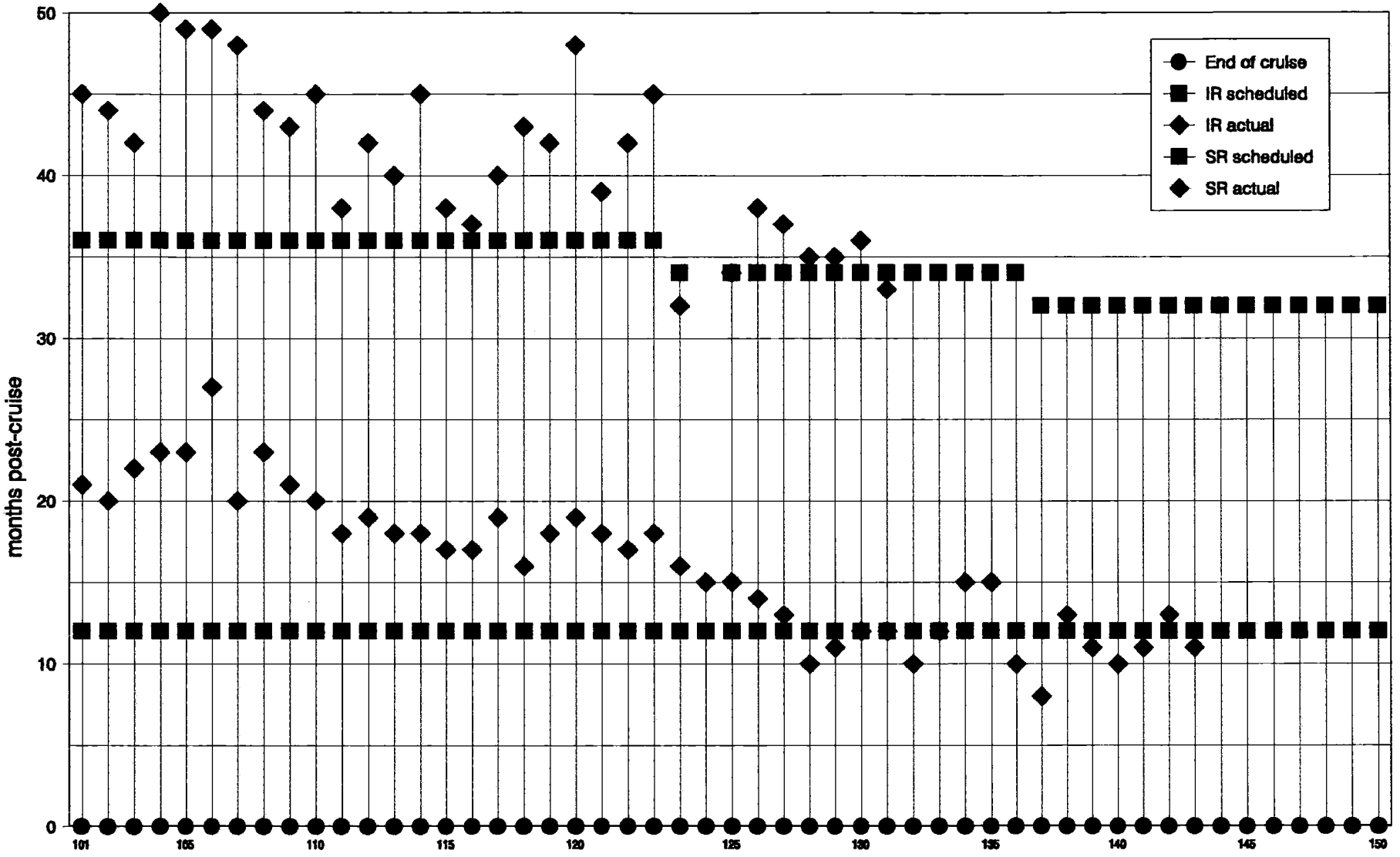
LEG 101-LEG 149B



TOTAL=1231 Participants Including Staff Scientists and LDGO/LDEO Logging Scientists

EQUIPMENT STATUS REPORT

EQUIPMENT	STATUS
1. Core-Log Integration	
a. Natural Gamma	Instrument Installed- Software and Measurement Protocol in Development
b. MST Upgrade	On Hold
c. Resistivity	On Hold
d. Data Integration Software	Pilot Program Development
2. XRF Electronics Upgrade	Completed on Leg 149A
3. Real-Time Navigation	Under Evaluation- FY94 SOE provides Funds for Real-Time Navigation
4. Replacement of Chem LAN	To be Completed by end of Leg 149
5. New Dionex (Chem Lab)	Installed
6. Bar Code System	Basic System and Software Complete- Implementation on Hold
7. Seismic Towing System	Booms Under Design, Level Winds Installed by Leg 150, Cable Puller- One Installed, Design Being Modified



Publishing dates for ODP *Proceedings* volumes scheduled versus actual

4/1/93

Dates based on 12 months post-cruise (IR) and 36, 34, 32 (SR).

Recent Logging Operations

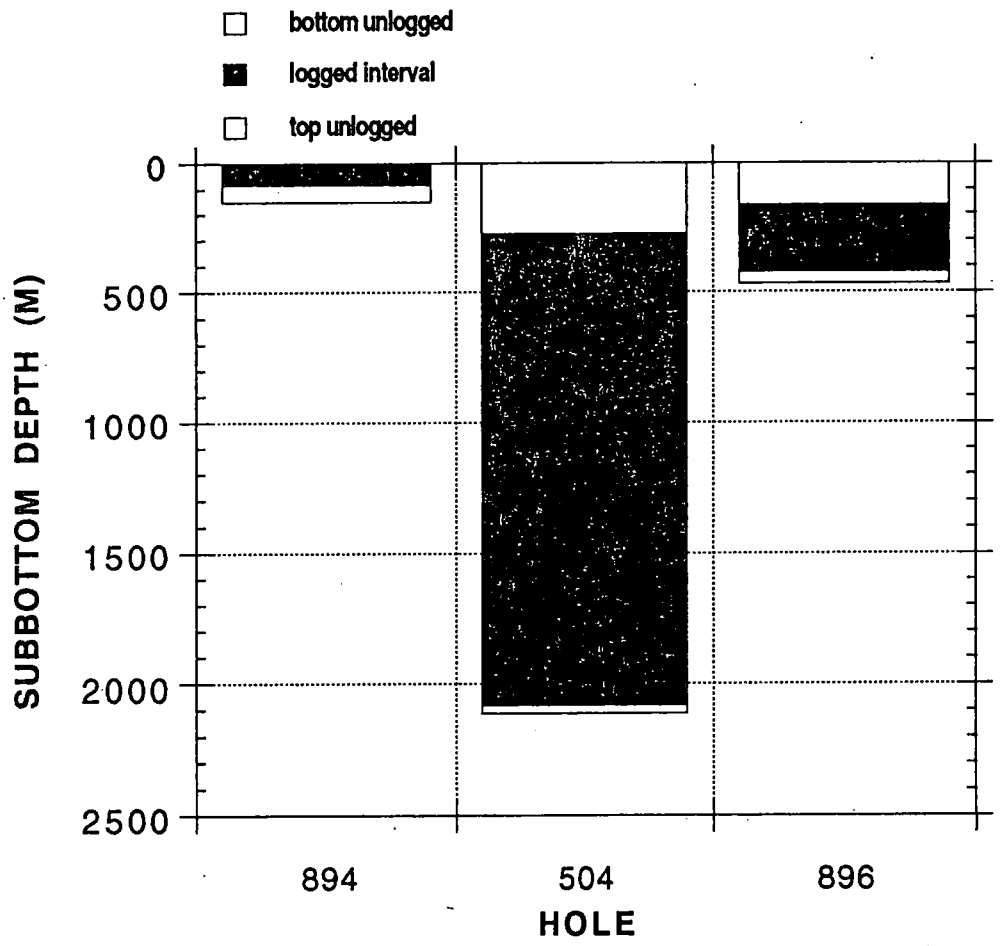
Leg 147: Hess Deep

- oceanic crust/mantle transition
- 1 hole logged -- 894G
  Quad tool over ~80 m interval
  FMS (5 passes) over ~35 m interval
  BHTV telemetry failure

Leg 148: Equatorial Pacific

- upper oceanic crust
- 2 holes logged -- 504B and 896A
- max. bottom hole temp 180°C
- magnetometer in both holes
- successful packer test in 896A
- BHTV, VSP failures, WST successful

Appendix 4.1


bottom unlogged
logged interval
top unlogged
SUBBOTTOM DEPTH (M)
0
500
1000
1500
2000
2500
894
504
896
HOLE

Downhole systems development

High-T temperature tool (BRGM)

- autoclave test in Houston successful (tool only)
- tool successul in Hole 504B to 180°C

High-T cable (BRGM)

- January field test in Italy unsuccessful
- *evaluation underway of cable failure and corrosives in fluid samples*

High-T resistivity tool (CSMA)

- manufacturing of ceramics delayed
- *scheduled delivery in July 1993*

Directional shear sonic tool (LDEO)

- prototype *field test successful*

Third-party tool guidelines (TAMU/LDEO)

- technical report in preparation

Appendix 4.3

Future Logging Operations

Leg 149: Iberian Abyssal Plain

- characterization of rifted margin
- standard tools and VSP planned
- MAXIS/winch installation on transit
- Dipole sonic tool available
- Sun IPX installed on ship

Leg 150: New Jersey Margin

- high-resolution sea level change
- standard tools planned

Leg 151: N. Atl. Arctic Gateways

- high-latitude sedimentation
- standard tools planned
- Schlumberger NMRT possible

Leg 152: E. Greenland Margin

- tectonic history
- standard and BHTV tools planned

Other operational developments

CD-ROM

- Leg 143 CD-ROM published in IR
- Leg 144 CD-ROM in production
- Leg 145 CD-ROM in preparation
  MST data possibly included
- Leg 146 CD-ROM in preparation

ODP field tape backup project

- 8/48 legs transferred to DAT
- projected completion 6 -12 mos.

Logging schools

- 2-day school with ESF participants during Fall 1993
- Possible 1-day school at AGU

Staffing

- LDEO staff stabilized
- Chief Scientist readvertised
- Shipboard staffing thru Leg 152
- Subcontracts for staff at European analysis centers in place

Appendix 5.0

Budget Committee
March 8-10, 1993
Joint Oceanographic Institutions, Inc.

1. BCOM members present: Briden (Chair), Austin, Lancelot, Lewis, Rosendahl. From ODP-TAMU: Rabinowitz, Francis, McPherson. From LDEO: Goldberg, Rodway. From JOI, Inc.: Pyle, Kappel.

2. The budget numbers (see also PCOM Agenda Book notes, p. 14), $M.

	FY93	FY94	FY95	FY96
Long Range Plan (LRP)	45.3	48.3	50.9	52.9
6 partners (BCOM, 1992)	43.2	45.4	48.0	50.0
6 partners (BCOM, 1993)	43.2	44.9	-	-
5 partners (CAN-AUS?)		41.9 (see 5. below)		

"In the 1992 BCOM report it was stressed that the LRP target figures were realistic if goals were to be met with a program of quality and innovation that the partners would support, and that some erosion of infrastructure would occur at the lower figures. In this report this fear is realized."

3. Resultant BCOM strategy:

Short term:
- maintain cutting edge science and innovation (see below)
- tighten base budgets, using efficiency and performance improvements to effect savings

Long term:
- apply concerted effort to find new funds (ref. 1/93 EXCOM action)
- rewrite ODP's science objectives to reflect fiscal realities ("The LRP has served a purpose, but is no longer a realistic template for science prioritization.")
- if no new funds, devise a slimmed-down operation with science to match (ref. PCOM action items, this mtg.)

4. Draft budgets submitted and BCOM actions:

	Proposed, FY94	FY93	Recommended
ODP-TAMU	$37,256,164	$37,016,447	$36,420,000[1]
[SOE]	3,452,836	innovation:	2,020,000
LDEO	5,153,213	4,621,000	4,500,000[2]
[SOE]	532,675	innovation:	300,000
JOI/JOIDES	2,001,324	1,560,000	1,660,000[3]

[1]re: base budget, cap pub. costs, minimize cost increases at East Coast Repository, examine costs in "Engineering Development" budget line, negotiate ecoonomies with UDI. "Staffing economies are likely to be inevitable." Details of "innovation" items: FY94 drilling needs were fully funded (inc. DCS), computing/databasing was given $600K, shipboard science equipment got only $70K (for real-time integrated navigation). The rest got nothing (see the minutes).

[2]see the minutes for details of BCOM actions. "Noting the addition of new personnel in the two European centers, BCOM recommended that the base budget be reexamined thoroughly, with special attention to possible reductions in staffing at LDEO."

[3]no PR activities (see 1/93 EXCOM action), possible delay of PEC-IV, no salary support for panel chairs. "BCOM referred the issue of salary support of thematic panel chairs to national funding agencies."

5. Implications of (further) budget reduction to $41.9M:

- revise ODP's science plan to limit objectives
- reduce/eliminate technical innovation
- re-review the situation ASAP - PCOM, BCOM, EXCOM (see minutes)
- "BCOM emphasizes the mid- and longer-term deleterious and potentially fatal impact that such a budget reduction would have on ODP."

6. Every PCOM member should read the LONG TERM ISSUES section of the minutes.

Appendix 6.0

TECP Meeting
Davis, CA 22-24 March 1993

Global Rankings

1. Alboran Deep Hole
2. NARM-NV (Iberia 2)
2. Equat. Atl. Transform
4. Med Ridges I (shallow)

---

5. N. Australian margin
6. Costa Rica accretionary wedge

Deep Drilling Priorities

1. Iberian Deep Hole (IAP-1)
2. Alboran Deep Hole (AL-1)
3. Galicia S'
4. NARM Newfoundland (NB4A)

Large Budget Priorites

Pore fluid sampling
Deep Drilling

White Paper

Drafts of sections to Moores by July 15
Moores to present document for review at fall mtg
Publish short version; send long version to proponents

Durbaum Report

OHP
4-5 March
Santa Cruz

Joint with SGPP

Coring Issues

Improve handling/curation of gassy seds
Figure out depth mismatch
mbsf ≠ composite stratigraphic depth

NAAG Leg II

High priority
Will hold 1-day planning meeting

ASRC Report

Response generally favorable
Return to regional planning not good
Stay with science as impetus
Better publicity of program to scientists
JOIDES Journal not enough

Spring Proposal Ranking

Rank	Proposal	(theme)	Score
1	*NAAG, Leg II	(Hi-res Neogene ocean/climate)	0.942
2	430 **Sub-Antarctic SE Atlantic transect**	(Hi-res Neogene ocean/climate; Hi-lat)	0.861
3	*354-Rev/Add **Benguela Current**	(Neogene upwelling)	0.753
4	415-Rev **Caribbean History & K/T**	(Mainly Ancient Oceans/gateway)	0.703
5	386-Rev2/422-Rev **California Current**	(Hi-res Neogene upwelling)	0.651
6	404 **Neogene West Atlantic Sediment Drifts**	(Hi-res Neogene ocean/climate)	0.604
7	427 **South Florida margin Sea Level**	(Sea Level)	0.503
8	391-Rev **Mediterranean Sapropels**	(Hi-res Neogene ocean/climate)	0.460
8	079-Rev **Mesozoic Somali Basin**	(Ancient Oceans)	0.460
10	337-Add **New Zealand Exxon Sea Level Test**	(Sea Level)	0.365
11	253-Rev/Add **Ancestral Pacific**	(Ancient Oceans)	0.302
12	347-Rev **Cenozoic South Equatorial Atlantic**	(Hi-res ocean/climate)	0.295
13	406 **North Atlantic Paleoceanography**	(Hi-res Neogene ocean/climate)	0.275
14	367-Add **Australia cool water carbonates**	(Sea Level)	0.173
15	CEPAC **Bering Sea**	(Ancient Oceans)	0.168

* Mature plan, ready to drill

Executive Summary

JOIDES Site Survey Panel Meeting

April 6-8, 1993

The primary goals for this meeting were: (1) to evaluate the status of data for those proposals that had been highly ranked (top 7) by the Spring '93 Thematic Panel meetings, and (2) to provide feedback to the proponents of those proposals concerning the data required for submission to the ODP Data Bank. Following are the consensus and action items resulting from this meeting.

SSP CONSENSUS 1: For the 1993 round of assessments SSP will flag proposals at its April meeting that potentially could have **safety considerations**. By discussion with PPSP Chair, SSP may invite proponents on these proposals to present data at SSP's July meeting. After this, or in lieu of this, these proposals may be recommended for PPSP pre-review at PPSP's Fall meeting.

SSP CONSENSUS 2: SSP notes that the presence of gas in the sediments at the **Santa Barbara Basin** site drilled on Leg 146 is obvious in 3.5kHz and SCS profiles in the data package. Although the gas was CO_2, and thus did not pose a safety problem, the stratigrafic objectives may have been somewhat compromised by pervasive gas-induced disturbance of the sediment laminae. The data package for this site was rushed through the SSP and PPSP review process, and SSP wonders if a more deliberate approach to the compilation and evaluation of regional seismic data might have found a site where gas-disturbance of sediments would have been less of a problem.

SSP CONSENSUS 3: All data required for Leg 149, **Iberia Abyssal Plain** NARM-V I, have been deposited with the Data Bank.

SSP CONSENSUS 4: Two vital seismic lines (Ex77-8 and BGR 201), in support of the new **New Jersey margin** sites MAT 13 and MAT 14, need to be submitted to the data bank immediately. In addition, 3.5kHz data is said to exist across the two new sites, but is not in the data bank. Finally, every effort should be made to submit "desirable" data types: GLORIA, Hydrosweep bathymetry, and logs of cores in the vicinity.

SSP CONSENSUS 5: **North Atlantic Arctic Gateway** proponents must submit full data packages for sites ICEP-2, ICEP-3, ICEP-4, NIFR-1 and SIFR-1. These sites were approved by PPSP at their April meeting, but have never been seen or evaluated by SSP, and no data in support of these sites exists in the Data Bank.

SSP CONSENSUS 6: For Leg 152, **East Greenland Margin**, the Data Bank lacks copies of the new high-res seismic data collected in the summer of '92, 12kHz records, a summary of surficial grab samples, and information related to bottom currents and surficial ice conditions.

SSP CONSENSUS 7: The data package for the primary targets at MARK(Leg 153) is nearly complete. We still await (a) locations for the photographs near site MK1, (b) additional data from the MPL/SIO Deep Tow cruise, and (c) existing refraction data. SSP feels that it would be prudent for barerock drilling legs to plan backup sites in sediment s in case of technical failure on barerock sites; 3.5kHz and/or SCS and/or coring information should be submitted to document drillable sediment pockets in the vicinity of the primary sites.

1. = 20 persons 4 times

2. → POST MORTEM * HD 1

→ SCHEDULED LEGS

* MAG

1

2.

SSP CONSENSUS 8: The **Ceara Rise** data package is complete except for 4 piston core descriptions still to be filed at the Data Bank.

SSP CONSENSUS 9: The **Amazon Fan** site survey data package is complete in the Data Bank.

SSP CONSENSUS 10: The **North Barbados Ridge** has a strong data package. All "vital" data types are in the Data Bank. Several existing "desirable" data types are not yet submitted, including improved seismic velocities, and the results of the 3-D seismic processing.

SSP CONSENSUS 11: SSP cannot at the present time endorse drilling at 1500m water depth on the crest of the **Vema Fracture Zone** transverse ridge, in the absence of any observational evidence that lithologies of interest for scientific or engineering purposes will be recovered at that water depth. It is possible that a suitable target can be found at ~1500m waterdepth by SCS/dredging/Hydrosweep operations aboard the Ewing this summer. Data packages for originally-proposed sites VE-1, VE-2 and VE-3 are expected to be completed after the August 1993 Ewing cruise.

* VEMA

SSP CONSENSUS 12: All "vital" data types for the proposed sites at the **TAG Hydrothermal System** (361-Rev2) are in the Data Bank. Newly-collected heatflow data should be submitted in time for Safety review. SSP feels that it would be prudent for barerock drilling legs to plan backup sites in sediment ponds in case of technical failure on barerock sites; 3.5kHz and/or SCS and/or coring information should be submitted to document drillable sediment pockets in the vicinity of the primary targets.

*

SSP CONSENSUS 13: From a scientific perspective, sufficient data now exist in the data bank to schedule an **Alboran** drilling leg. Heatflow measurements are still desirable for safety panel consideration, and a core is still required near the re-entry sites; these will be collected on an April/May 1993 Hesperides cruise. If new sites are selected in response to safety pre-review, proponents must ensure that the documentation for these new sites is in the Data Bank.

FUTURE TARGETS

SSP CONSENSUS 14: All "vital" data types for **Eastern Equatorial Atlantic Transforms** are in the Data Bank except for the MCS crossing of IG5. Several "desirable" data types exist, but have not yet been deposited. The program is ready for PPSP pre-review.

* EEAT.

SSP CONSENSUS 15: The data package for drilling the **Mediterranean Ridge** remains incomplete. There is a general lack of high-resolution SCS data across the sites. On the complex areas of the Mediterranean Ridge, SSP is requiring crossing high-resolution SCS profiles and swath bathymetry over the sites in addition to the usual requirements for Target Type "A". Based on SSP's understanding of several site surveys planned for summer '93, it is possible that a complete data package for one leg worth of drilling will be submitted by November 1, '93.

SSP CONSENSUS 16: In considering data types that will be needed in support of **North Australian Margin** drilling, SSP points out (a) the need for a grid of intersecting seismic lines plus swathmapping data in this structurally complex setting, (b) the need for heat flow data if the fluid flow objective is pursued, and (c) the need for core data if reentry holes are proposed.

SSP CONSENSUS 17: The **Costa Rica Accretionary Wedge** (400/400-Add) data set is satisfactory for the current structural objectives and would be drillable in 1995.

* CR.

3.

A detailed heat flow and Alvin dive program have been funded and should provide required data for fluid objectives for 1995 drilling.

SSP CONSENSUS 18: No data for **Gas Hydrates** (423-rev) is in the Data Bank, although the proposal suggests that significant relevant data exist. In addition to the usual data types required for paleoenvironment sites, SSP will want to see velocity determinations so that the position of drilled samples relative to the BSR can be accurately known. Also, SSP will want to see heat flow measurements so that the observed clathrate distribution in the drillhole can be compared with the distribution predicted for the theoretical temperature/pressure stability field.

* July SSP ?

SSP CONSENSUS 19: In support of the sealevel objectives of the **Bahamas Transect**, a grid of seismic lines, rather than a single crossing, will be required to get a three dimensional view of the prograding sequences. In support of the fluid flow objectives, SSP will want to see observational evidence that the hypothesized discharge and recharge zones exist (relevant data could include detailed heatflow measurements, near-bottom towed side-looking sonar and 3.5/4.5kz, and visual observations).

SSP CONSENSUS 20: No data has been submitted to the Data Bank since the packages that arrived in support of the **Mediterranean Sapropels** proposal in November '92. Apart from the proposed re-occupation of Tyrrhenian Sea ODP site 652, none of the Medsap sites can be considered fully documented in terms of site survey data. Based on SSP's understanding of several site surveys planned for summer '93, it is possible that a complete data package could be submitted by November 1, '93.

MAP

SSP CONSENSUS 21: The data package for is complete, and from SSP's perspective, the program is ready to drill. Since the August '92 SSP meeting, a minor quantity of additional data has been deposited in the data bank in support of **VICAP**; however, this data package remains far from complete. SSP is aware of planned cruises that will address many or all of the deficiencies in the VICAP data package.

SSP CONSENSUS 22: SSP generally endorses the planned survey data collection strategy outlined in the "**Evolution of Oceanic Crust**" drilling proposal. Because the experimental design of the drilling leg depends critically on penetrating a hypothesized normal fault, SSP urges the proponents to make every effort to image or otherwise document the existence, attitude, and depth of this fault, rather than relying on inference from surface morphology alone.

SSP CONSENSUS 23: The proposal to **return to site 735B** on the Atlantic II Fracture Zone is an ambitious project which will be more successful if the geological and geophysical setting of the sites are better understood through additional survey/sampling work before drilling begins.

SSP CONSENSUS 24: If the East Greenland transect EG63 is not completed on Leg 152, very little additional data would be needed to plan a **second NARM volcanic margin leg** using already-approved EG63 sites. If, however, Leg 152 does complete the EG63 objectives, and a second NARM volcanic leg wishes to focus on the Voring Margin, substantial improvement to that data package will be needed.

SSP CONSENSUS 25: Only a small amount of a very large **Red Sea** data set is presented in the proposal. Existing data sets have not yet been fully exploited in support of this program, and it is unclear at this time whether additional data collection would be necessary before the Red Sea could be scheduled for drilling.

SSP CONSENSUS 26: Much of the data needed for **Sedimented Ridges II** drilling remains in the Data Bank in the package prepared for Leg 39. ROV and side-looking sonar data acquisition scheduled for 1993 will strengthen the data package.

SSP CONSENSUS 27: The existing Data Bank data package prepared for NAAG I (now scheduled as Leg 151) will need to be supplemented to provide enough fully-documented sites for a **second leg of NAAG** drilling.

SSP CONSENSUS 28: New data must be acquired to prepare an adequate site survey data package for the **Sub-Antarctic SE Atlantic Transect,** and proponents plan to request funding to acquire such data. SSP does not anticipate that the data package for this leg will be ready in time for FY95 scheduling.

SSP CONSENSUS 29: No data has yet been deposited in the data bank in support of **Benguela Margin** drilling, but a site survey cruise is scheduled for April/May 1993. Because of the likelihood of encountering stratigraphy affected by mass wasting, SSP is requiring crossing high-resolution SCS at all sites, and swath bathymetry across areas of rugged topography, in addition to the core data and 3.5kHz/Parasound that are always considered "vital" for paleoceanographic sites.

SSP CONSENSUS 30: NSF has recently declined a proposal to survey the region of the **Caribbean K/T boundary** drilling targets; and no effort has yet been made to compile a data package from existing data. In addition to the normal data types for Target Type "D," SSP will want to see (1) regional data (e.g. magnetic anomalies, seismic ties to existing drillholes) documenting that the basement age is not younger than Late Cretaceous, and (2) piston cores is support of the paleoceanography objectives.

SSP CONSENSUS 31: No original data has yet been submitted in support of **California Margin** proposal 386-Rev2 but it is now to be merged by OHP with California Borderland proposal 422-Rev. SSP urges the proponents of these two offshore California proposals to finalize site locations and prepare their data packages to meet Target A requirements for the 1 July '93 deadline.

CONSENSUS 32: Although no data has yet been submitted to the Data Bank in support of **NW Atlantic Sediment Drifts**, SSP anticipates that the proponents will be able to assemble a strong data package from abundant existing data, and from a funded upcoming (1993) cruise.

SSP CONSENSUS 33: No data package has yet been submitted in support of **South Florida Margin** drilling. SSP generally endorses the proposed site survey plan outlined in the proposal. Because of proposed shallow-water drilling and the desired use of the DCS, this proposal will need special attention from the ODP advisory system.

SSP CONSENSUS 34: SSP considers that it would be prudent for **barerock drilling legs** to have alternate site(s) in sediment pockets, which could be spudded-in with conventional technology in the event of technical failure at the barerock site(s). Consequently, the data package for barerock legs should include 3.5kHz data, and/or SCS data, and/or coring data sufficient to document the location of drillable sediment pockets in the vicinity of the primary targets.

****

ACTION ITEM 1: Kastens to convey the sense of SSP's discussion of **shallow water hazards** surveys to PPSP Chair Mahlen Ball for incorporation into the guidelines

Leg 147
Hess Deep

Appendix 9.0

Objective: drill the lower crust and mantle generated at a fast spreading ridge using the "offset drilling strategy" (tectonic window)

Area = Hess Deep
Tectonic window in the oceanic lithosphere generated at the East-Pacific Rise (13 cm/y)

Two sites were successfully drilled :

- 894 in the gabbros
- 895 in the peridotites

Appendix 9.1 Bathymetric Map for ODP Leg 147 Site 894

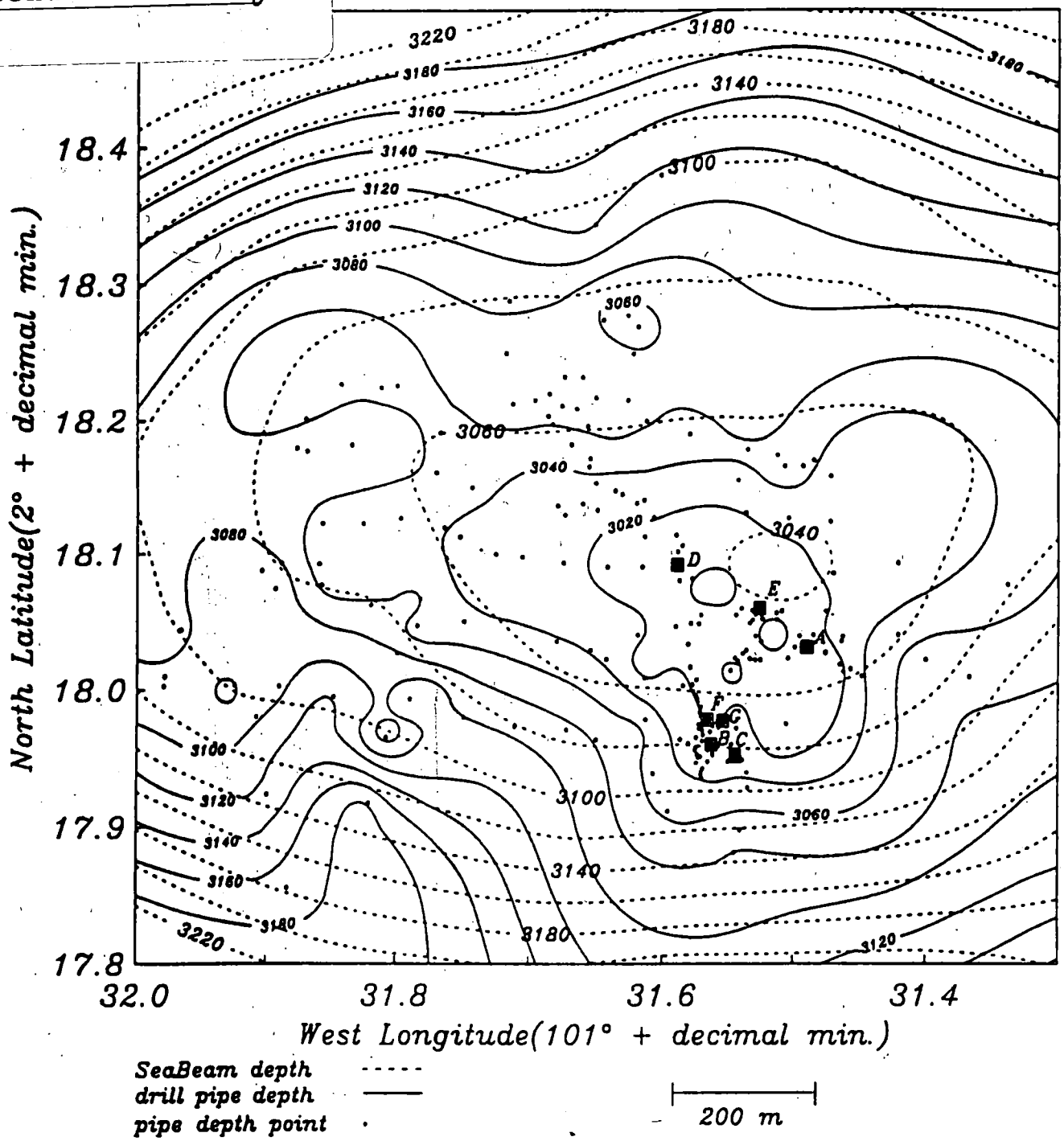


Figure 894-B-2

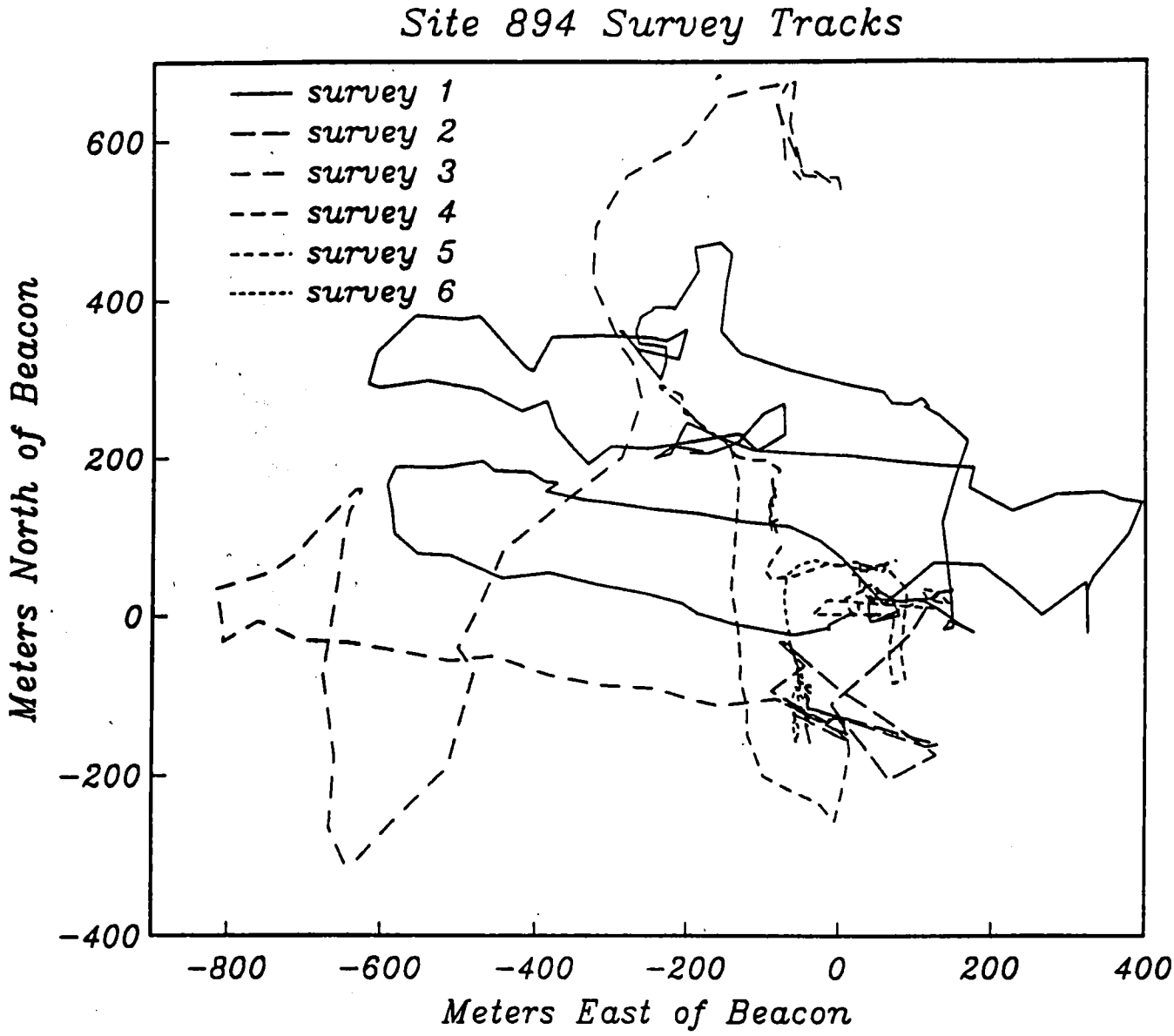


Figure 894-B-1

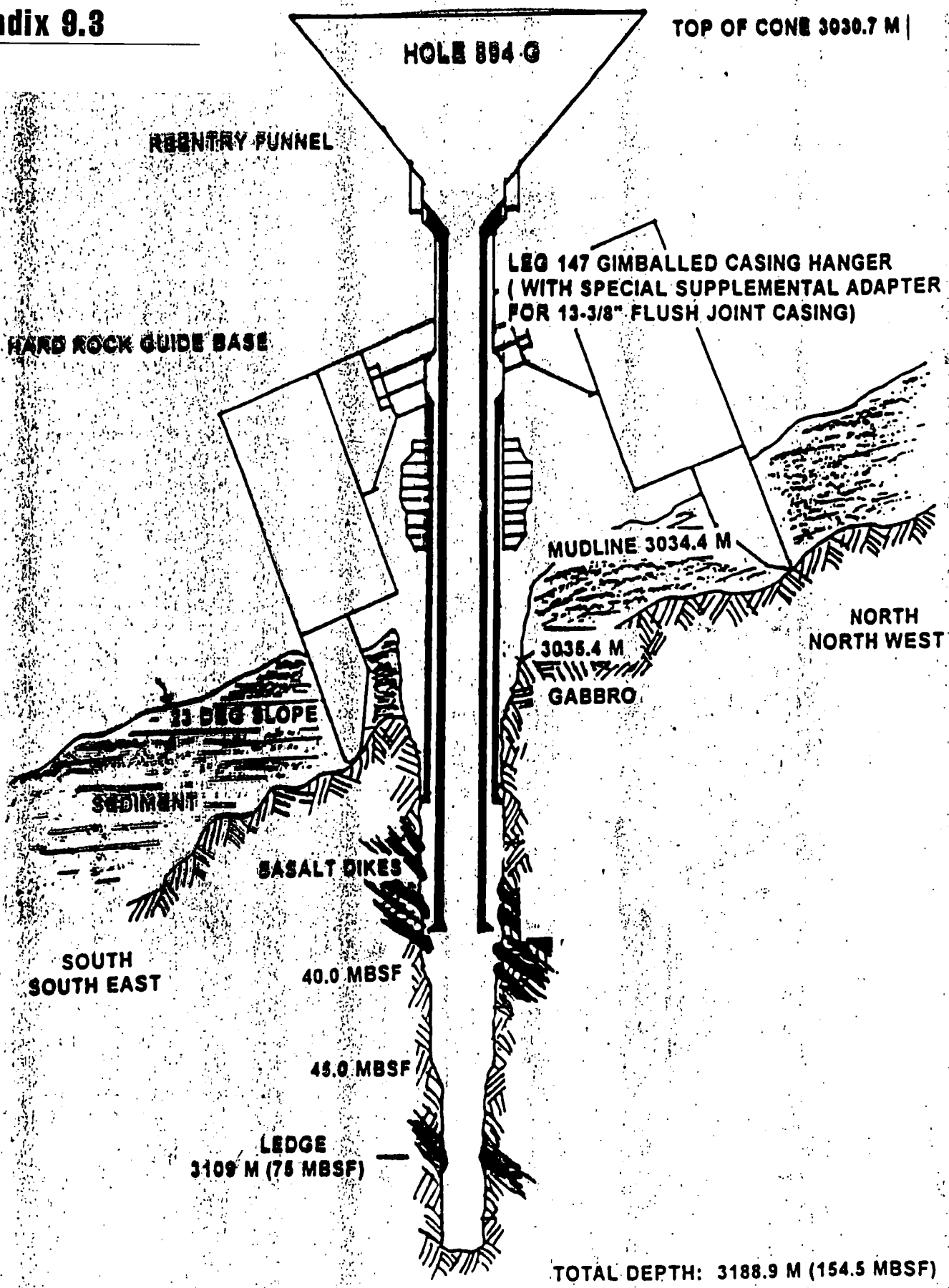


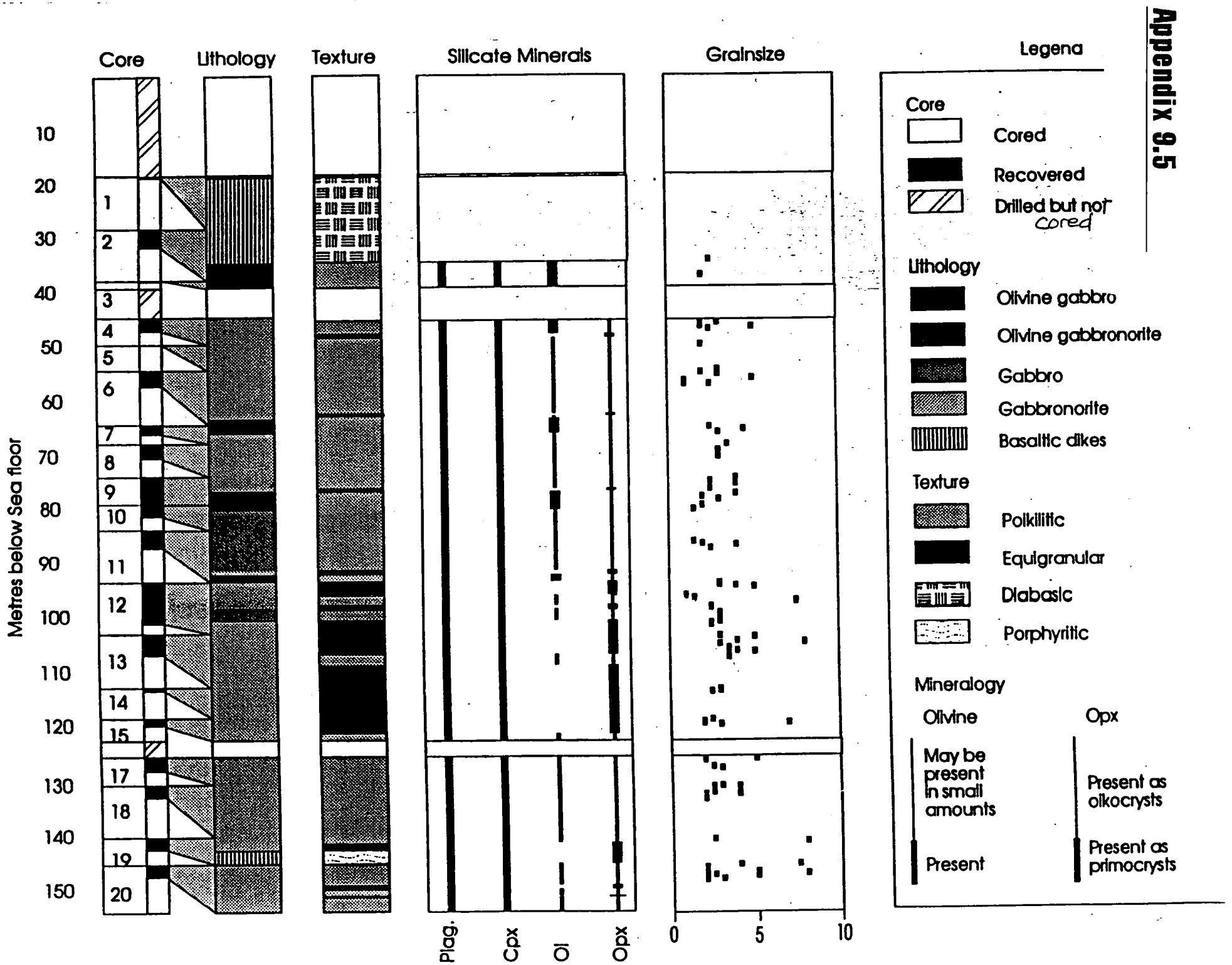
Figure 894-B-4

Site 894

Gabbros cross-cut by a few basaltic dikes

	depth (mbsf)	recovery (m)	
Hole 894A	6.00	6.26	
Hole 894B	7.00	0.14	
Hole 894C	31.00	0	
Hole 894E	28.70	3.03	
Hole 894F	25.70	1.80	
Hole 894G	154.50	45.78	35.9 %
Total	252.90	57.01	

average recovery = 22.5 %


Appendix 9.5
Core
Lithology
Texture
Silicate Minerals
Grainsize
Legend
Core
Cored
Recovered
Drilled but not cored
Lithology
Olivine gabbro
Olivine gabbronorite
Gabbro
Gabbronorite
Basaltic dikes
Texture
Poikilitic
Equigranular
Diabasic
Porphyritic
Mineralogy
Olivine
Opx
May be present in small amounts
Present
Present as oikocrysts
Present as primocrysts
Metres below Sea floor
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
17
18
19
20
Plag.
Cpx
Ol
Opx
0
5
10

Appendix 9.6

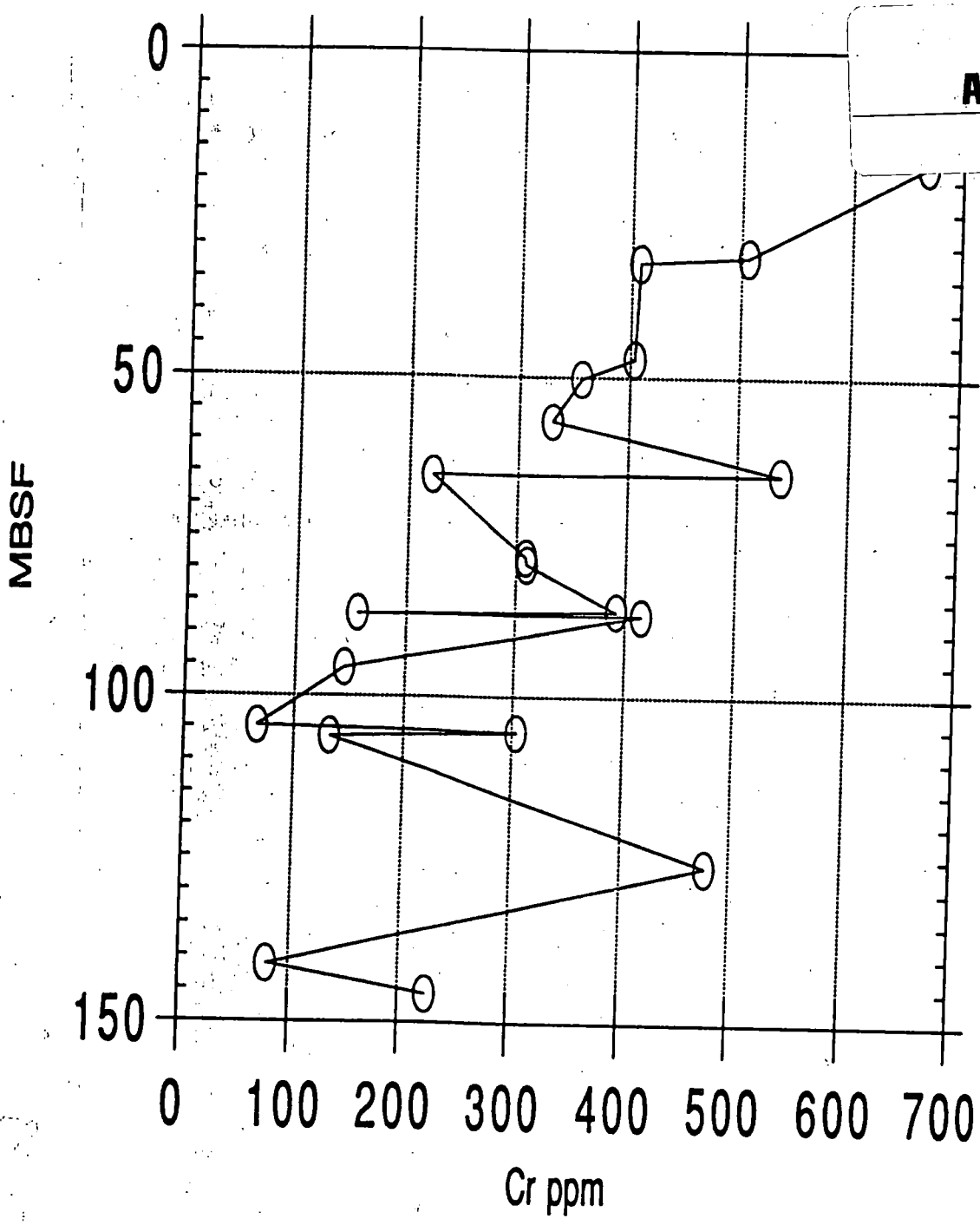


Figure 147-894-H-1A

Appendix 9.7

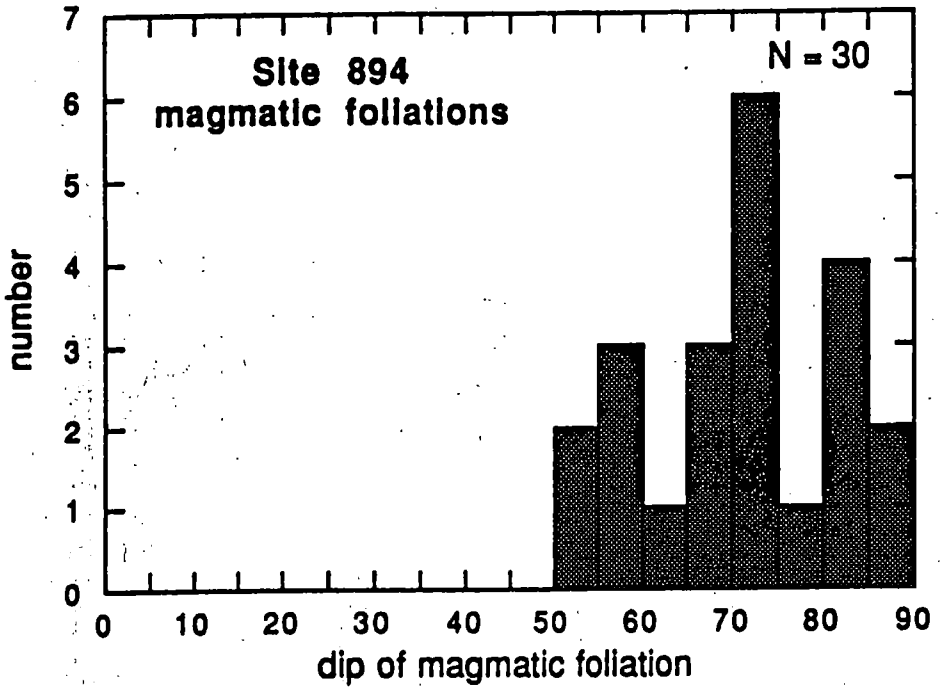
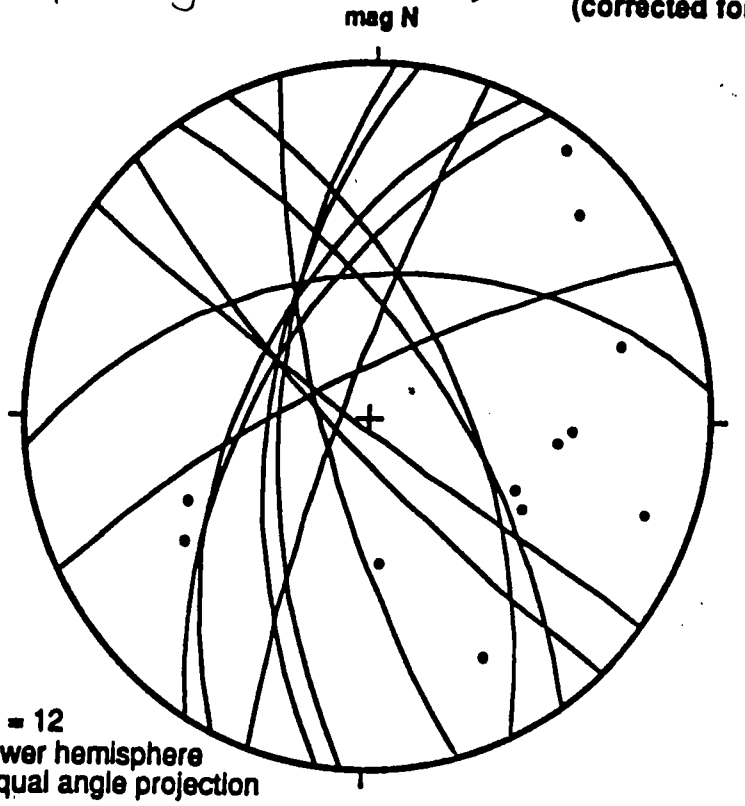


Figure 894-G-2

MAGMATIC FOLIATIONS
(corrected for magnetic inclination)

Site 894 magmatic foliations
(corrected for magnetic inclination)

(a)



(b)

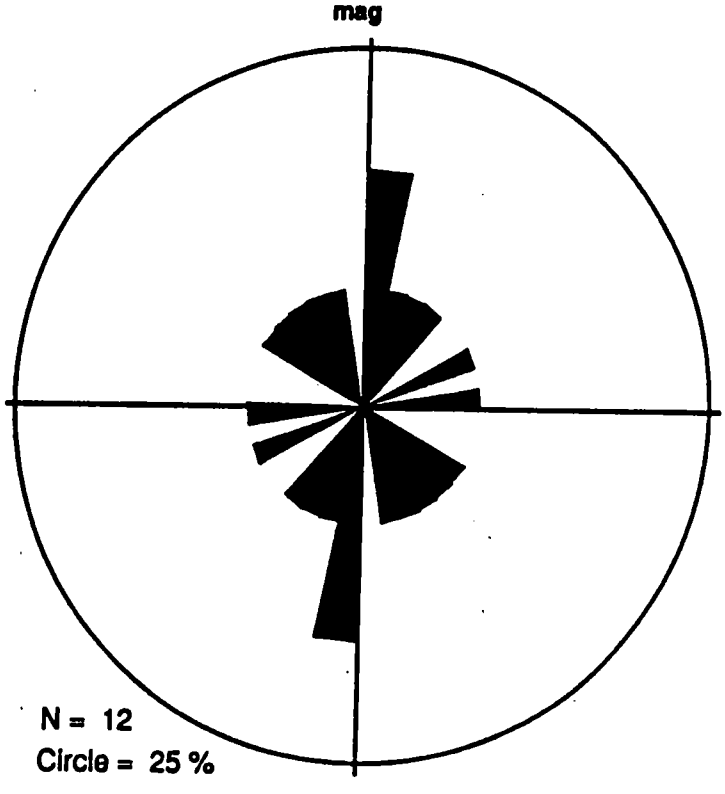


Figure 894-G-17

Appendix 9.9

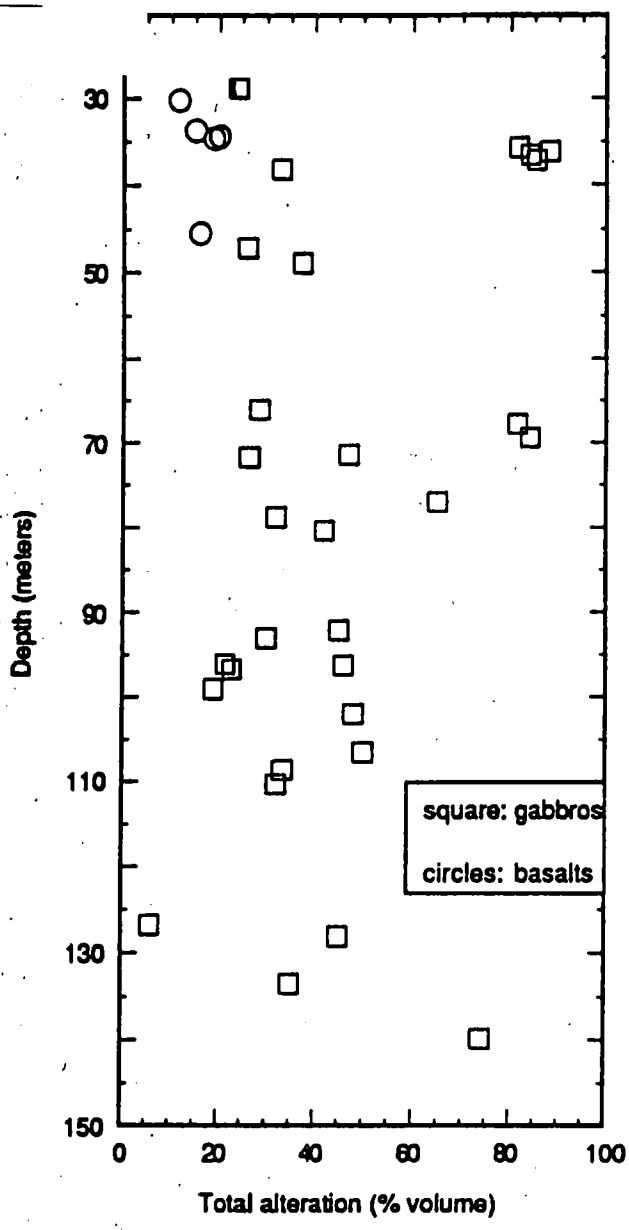
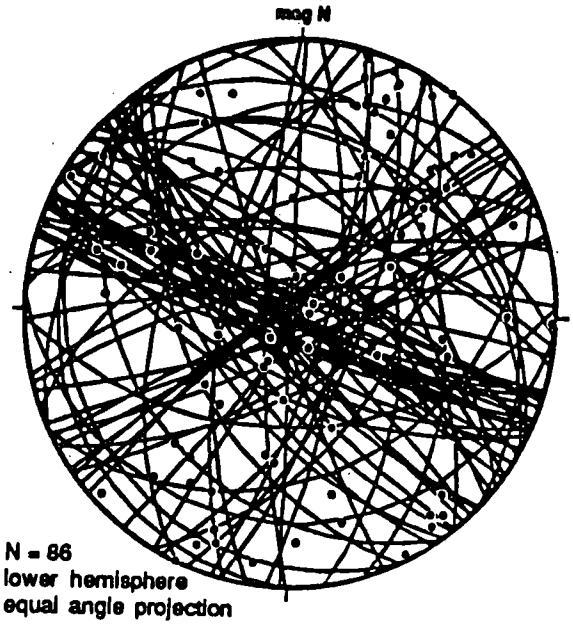


Figure 894-F-1

Site 894
veins and fractures
(corrected for magnetic inclination)

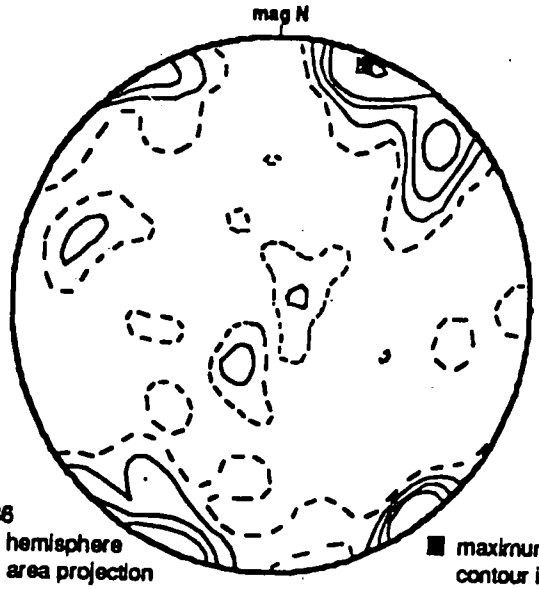
Appendix 9.10

(a)



N = 86
lower hemisphere
equal angle projection

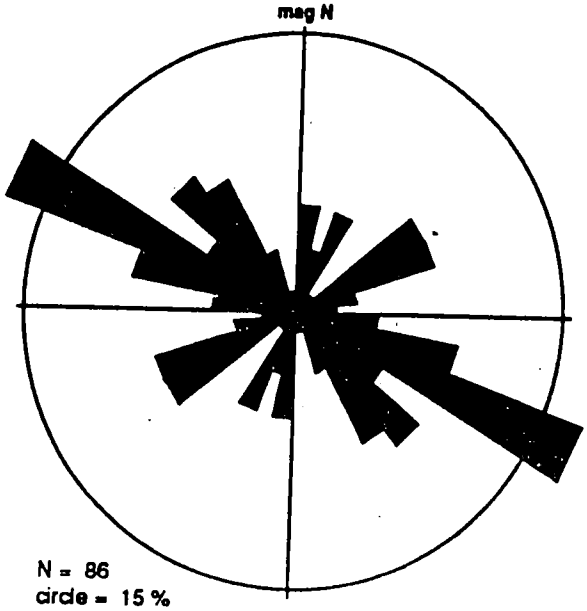
(b)



N = 86
lower hemisphere
equal area projection

maximum density = 10.7%
contour intervals: 1, 2, 3, 4, 8%

(c)



N = 86
circle = 15 %

Figure 894-G-18

Appendix 9.11

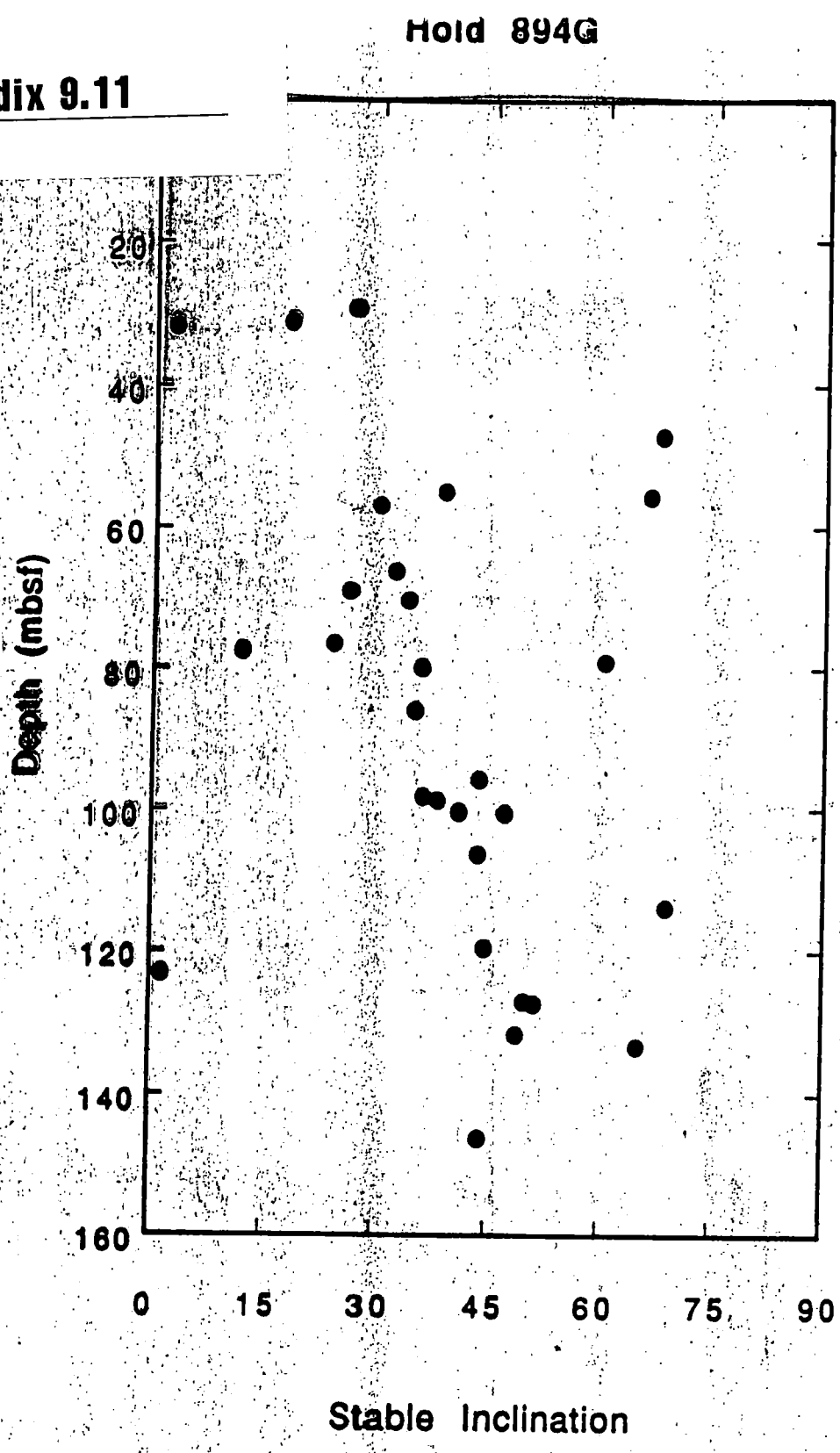


Figure 894-J-11

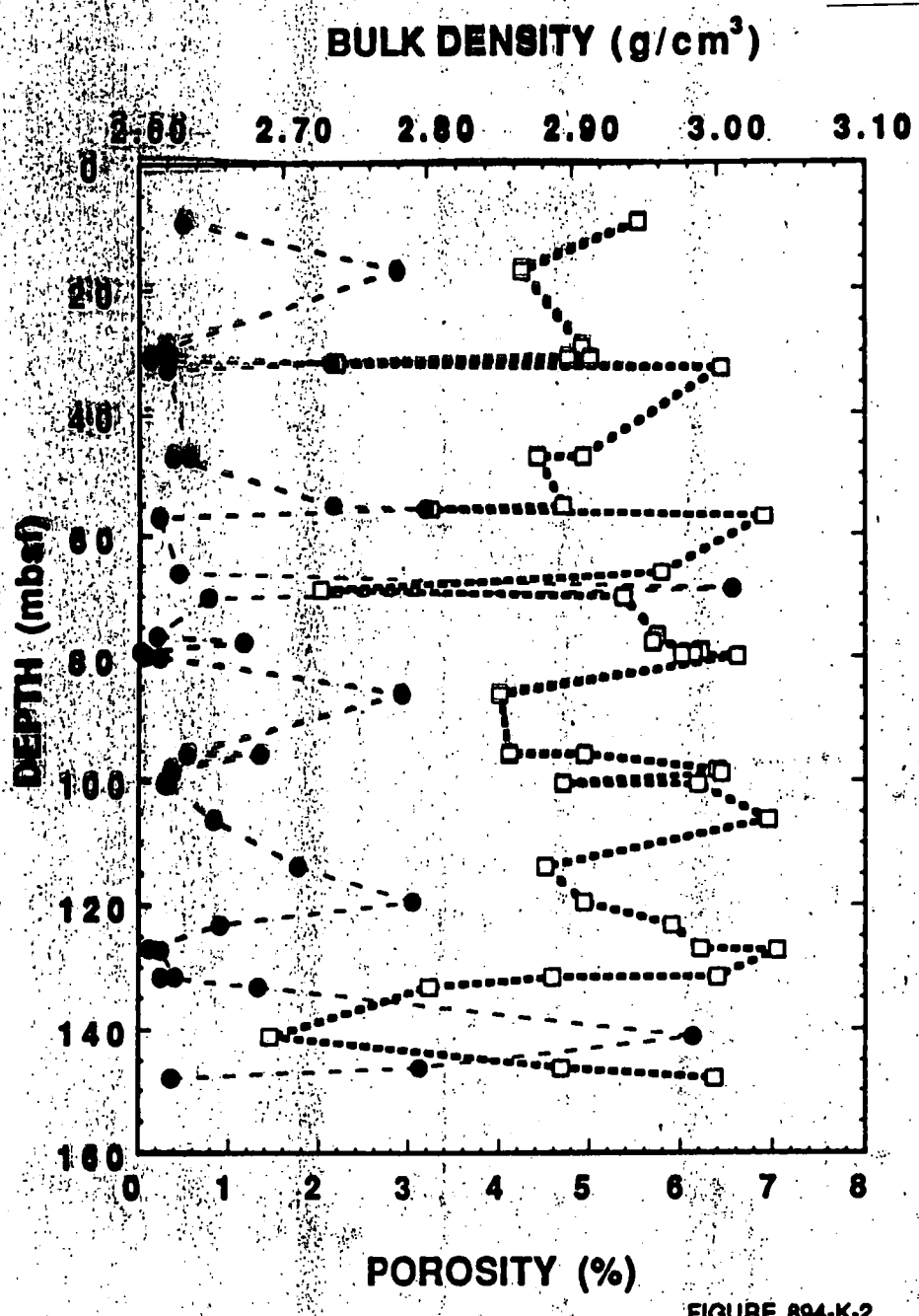


FIGURE 894-K-2

Appendix 9.13

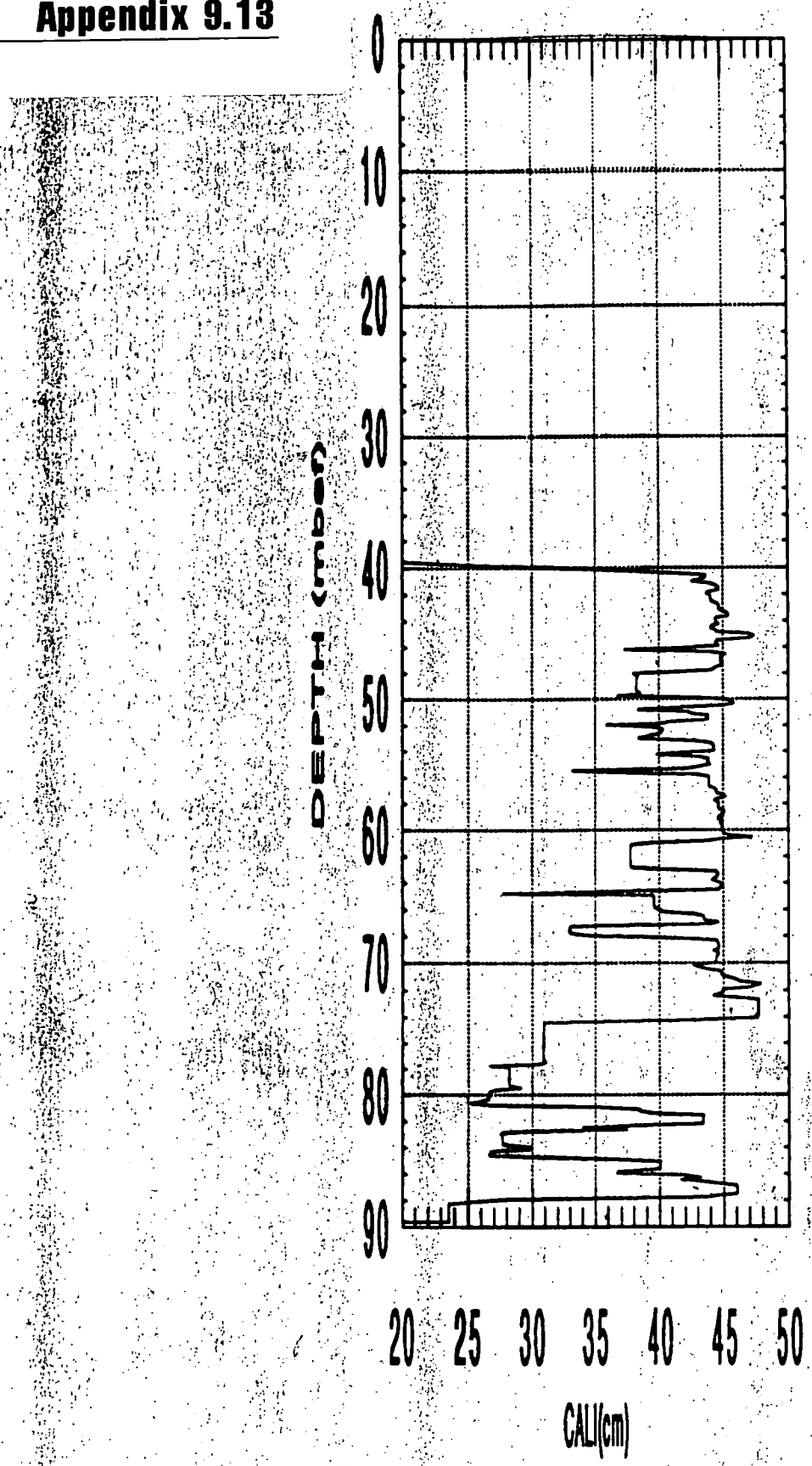


Figure 894-L-2

Gabbros from the intra-rift ridge Hole 894G

Appendix 9.14

- Gabbroic section crystallized from the roof of the magma chamber

- strong subvertical magmatic foliation
  N-S ? parallel to the EPR axis

- no high temperature deformation as in slow-spreading ridges (735B)

- fracture network related to the opening of the rift ?

Appendix 9.15 17.1

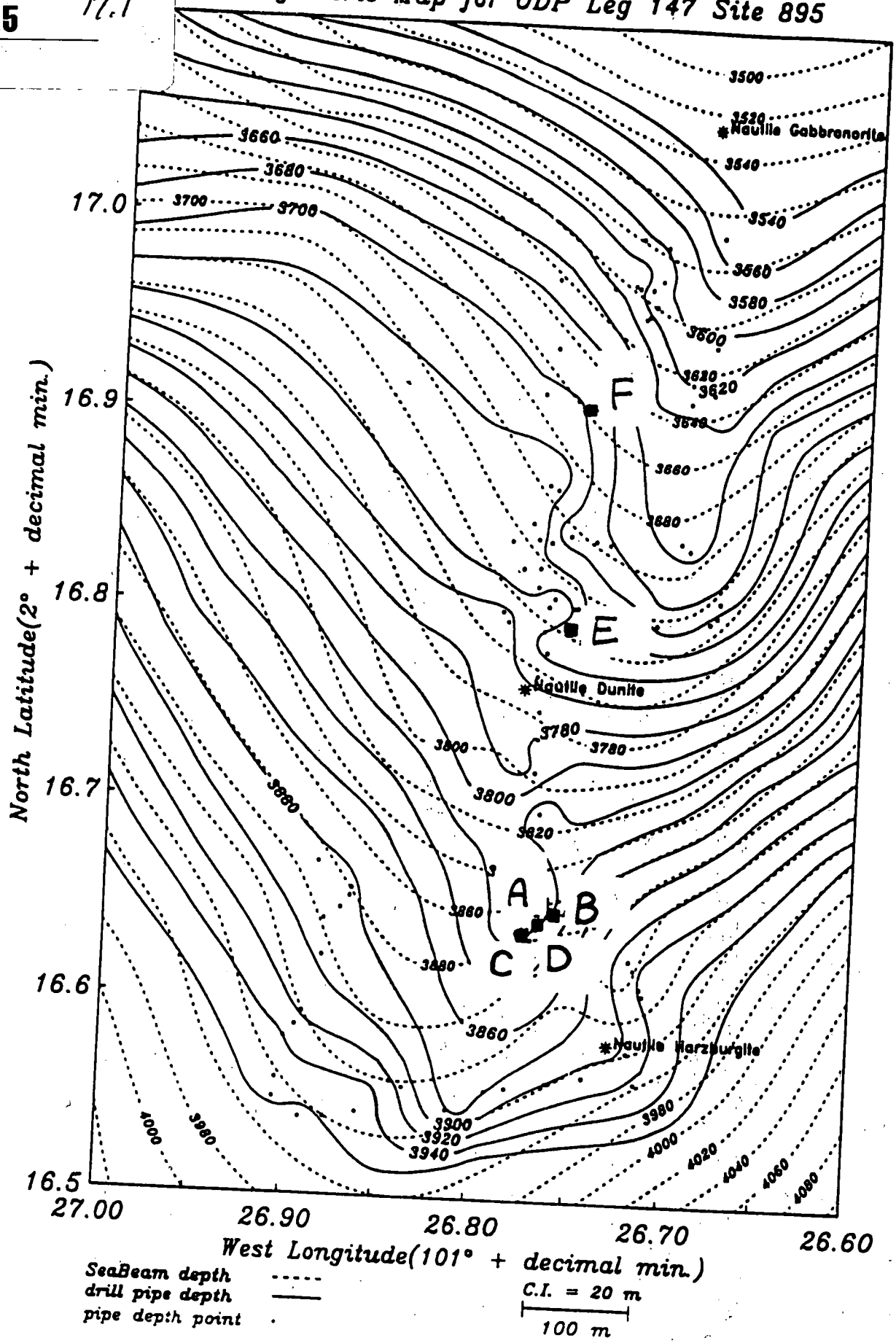


Figure 895-B-2

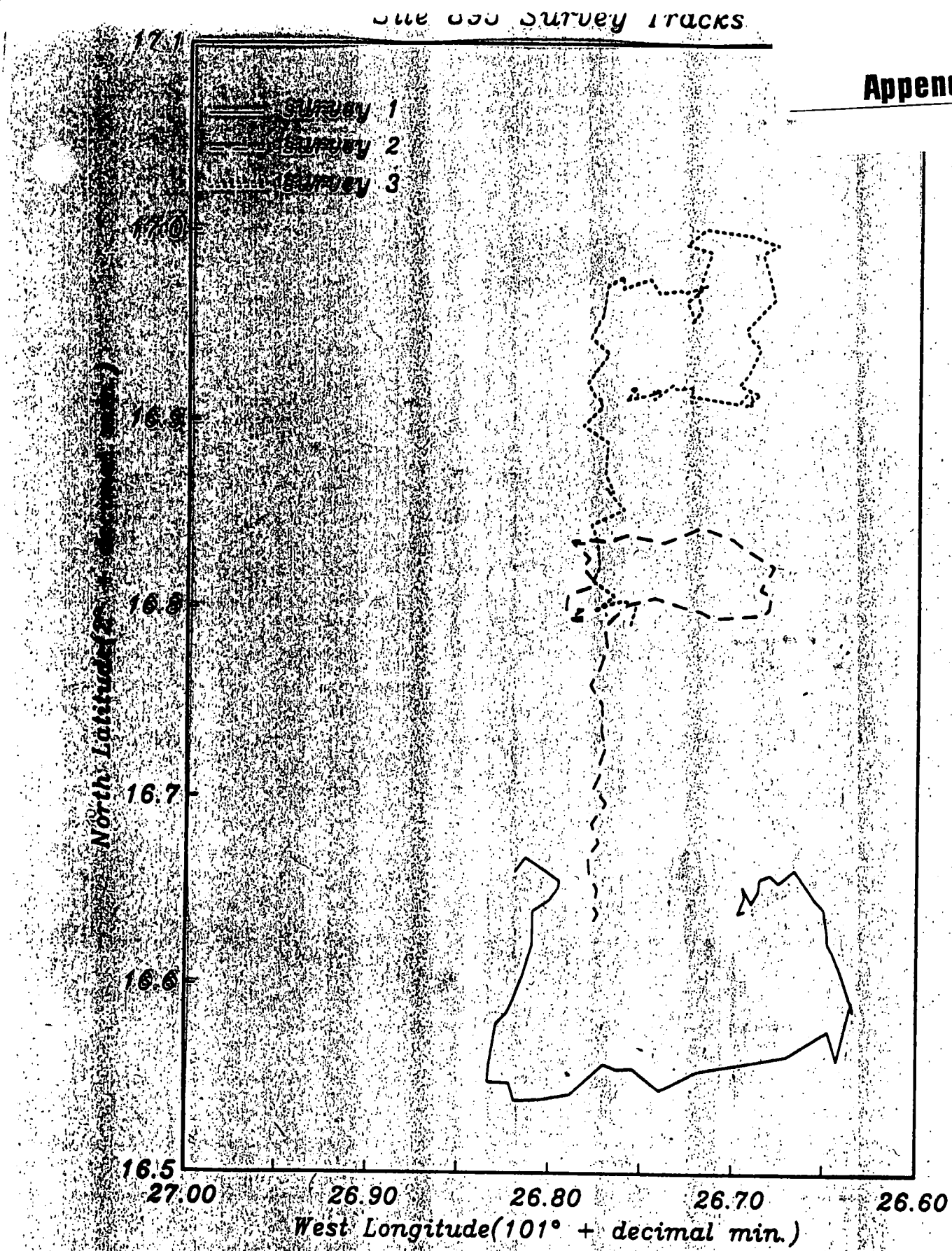


Figure 895-B-1

Appendix 9.17

Site 895

Harzburgites, dunites and gabbroic rocks

	depth (mbsf)	recovery (m)	
Hole 895A	17.20	2.38	
Hole 895B	10.30	1.02	
Hole 895C	37.90	5.73	
Hole 895D	93.70	19.99	21.3%
Hole 895E	87.60	32.93	37.6 %
Hole 895F	26.20	1.98	
Total	272.90	64.03	

average recovery = 23.4 %

Hole 895D Igneous Stratigraphy

Appendix 9.18

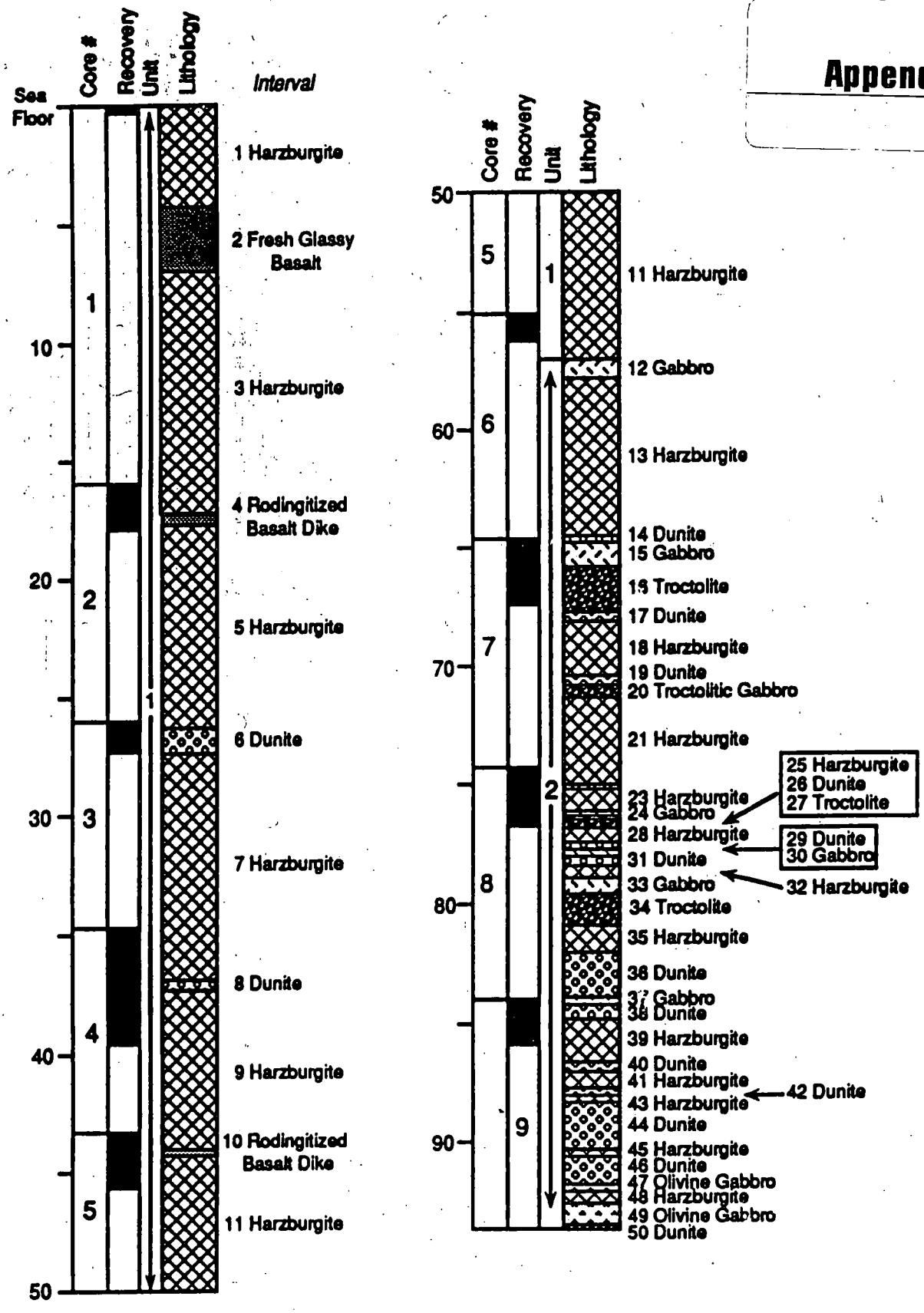


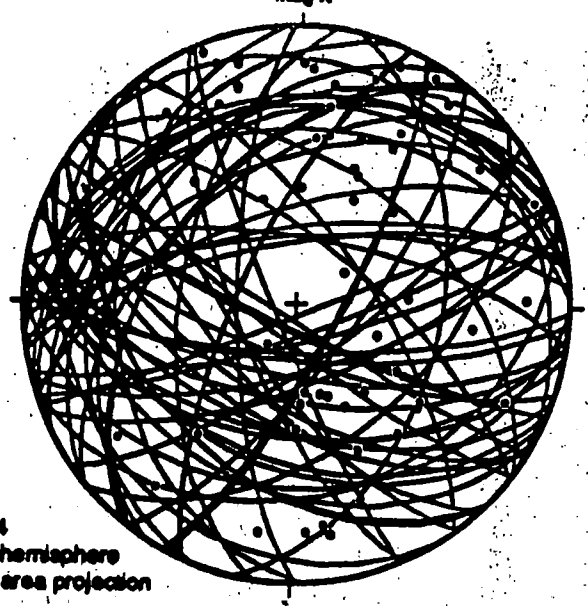
Figure 895-H-1

Appendix 9.19

Site 895 serpentine veins

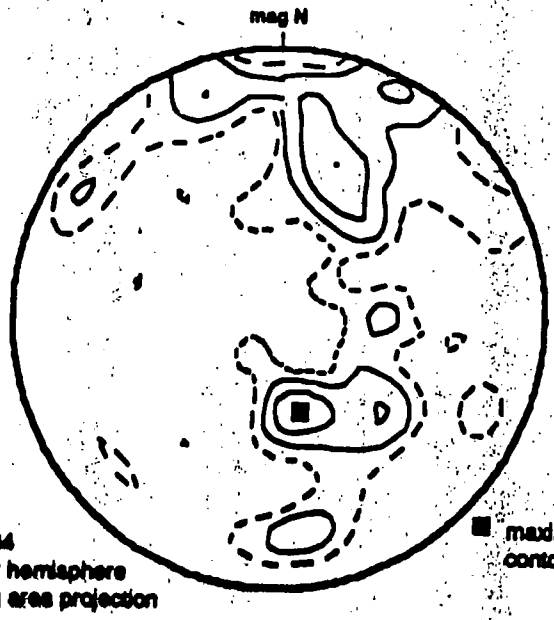
(restored relative to magnetic declination, and corrected assuming inclination to be zero

(a)



N = 64
lower hemisphere
equal area projection

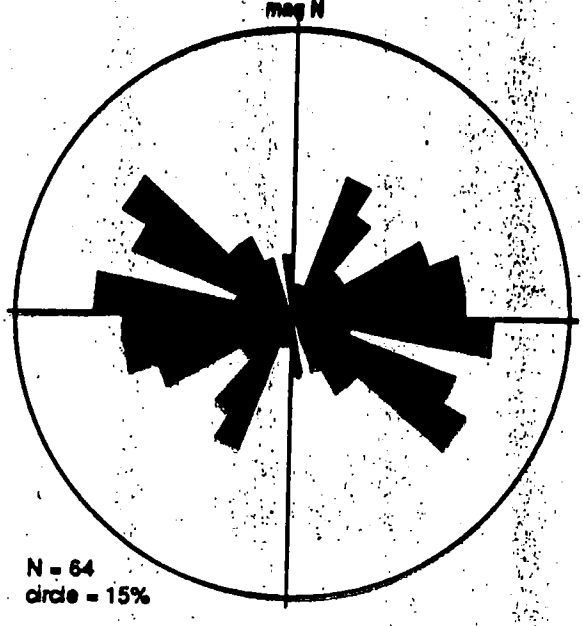
(b)



N = 64
lower hemisphere
equal area projection

■ maximum density = 5.9%
contour intervals: 1, 2, 3, 4%

(c)



N = 64
circle = 15%

Figure 895-F-17

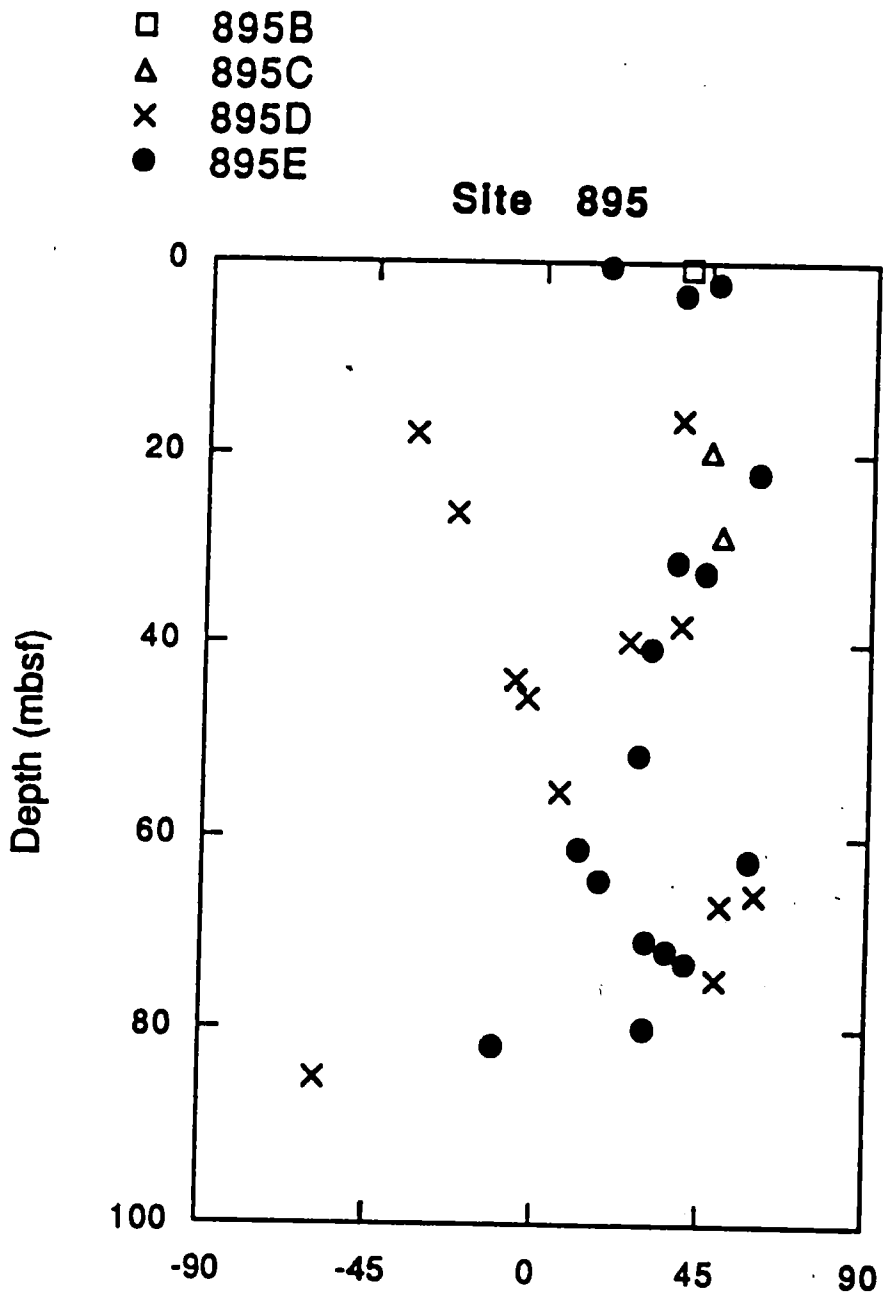


Figure 895-I-12

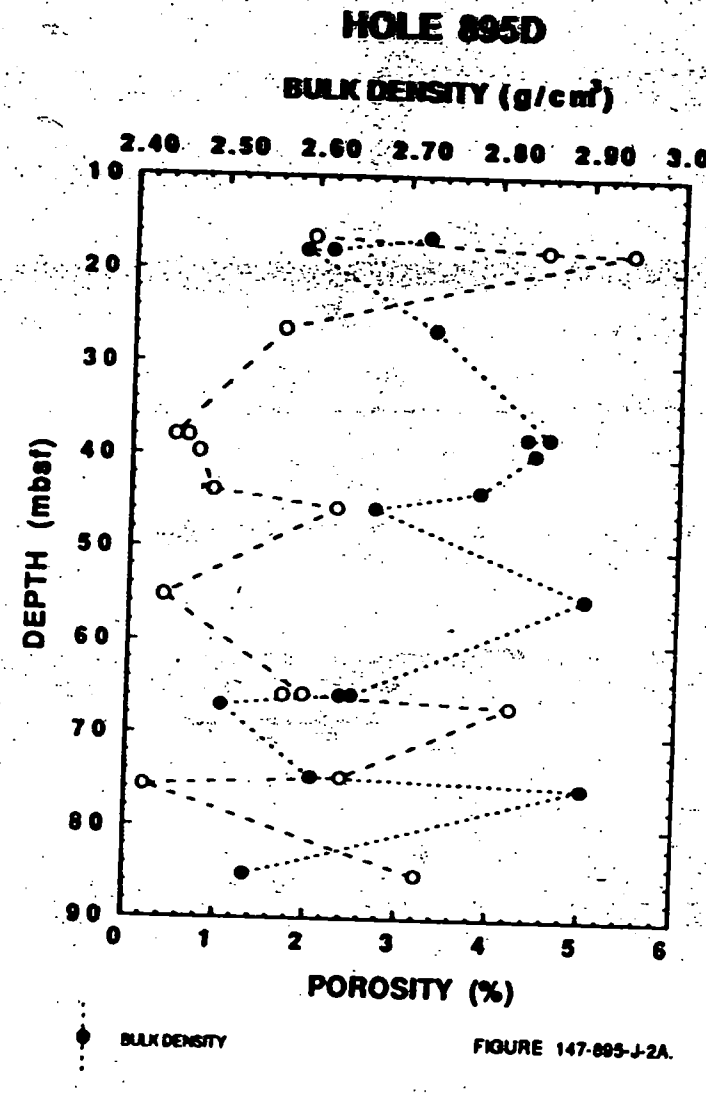


FIGURE 147-895-J-2A.

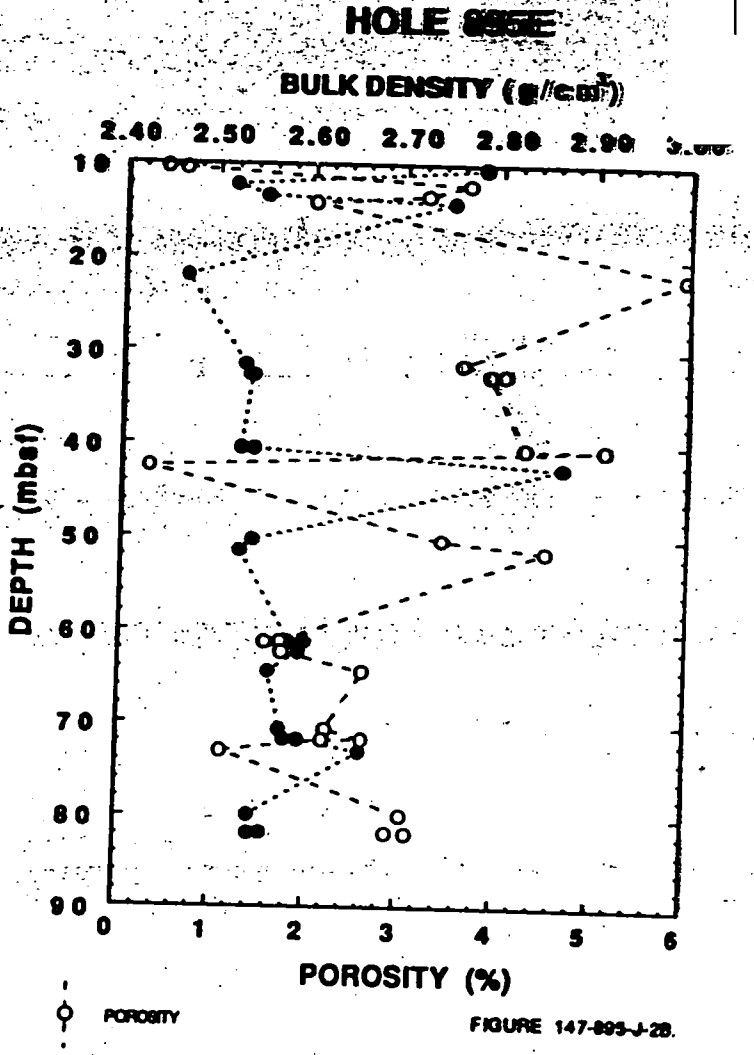


FIGURE 147-895-J-2B.

Site 895

Harzburgites

high temperature foliation
1-2% cpx = depleted

Dunites

high temperature foliation

Impregnated dunites

undeformed interstitial plagioclase + cpx
"pseudo-troctolites" with deformed olivines

gabbros s.l.

magmatic liquids

Appendix 9.23

The rocks recovered at site 895 correspond to plastically deformed upper mantle impregnated and cross-cut by magmatic liquids

similar to the ***transition zone*** in ophiolites

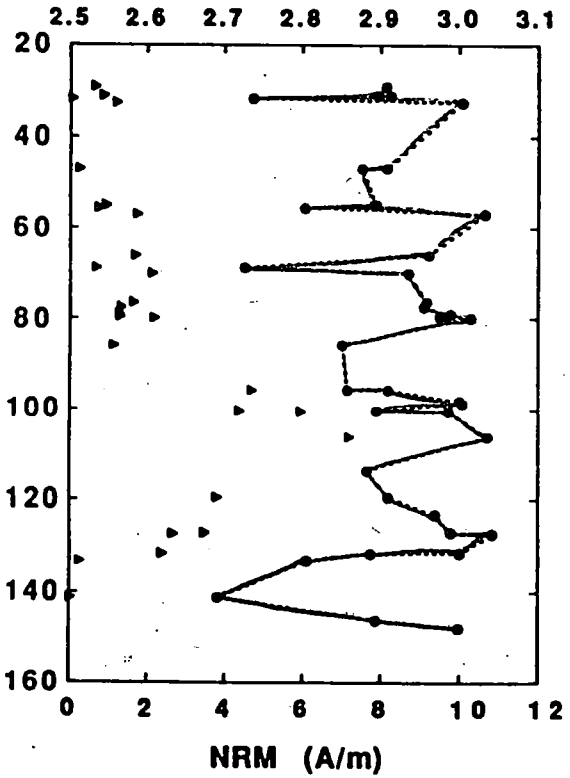
Origin of the dunites :

- result of a reaction between the harzburgite and magma

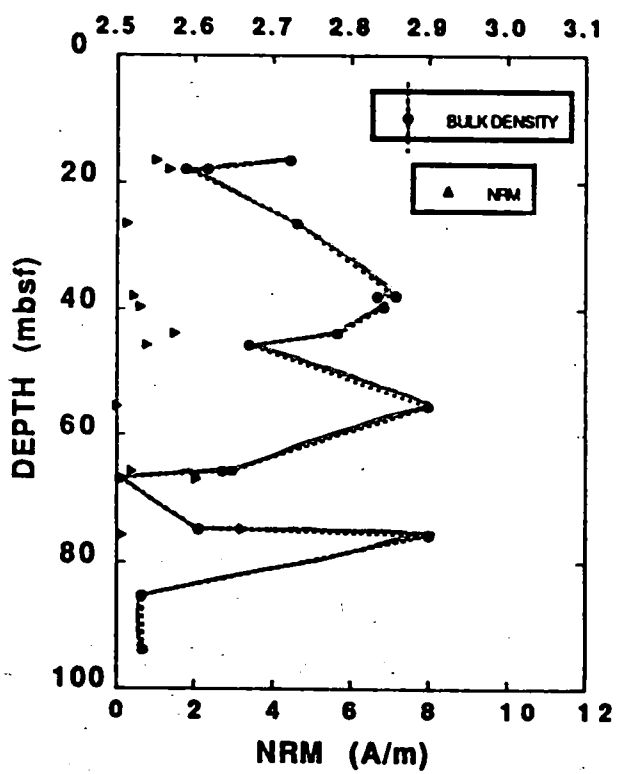
- cumulates

The variability between the different holes suggests that melt percolation may be focused within conduits

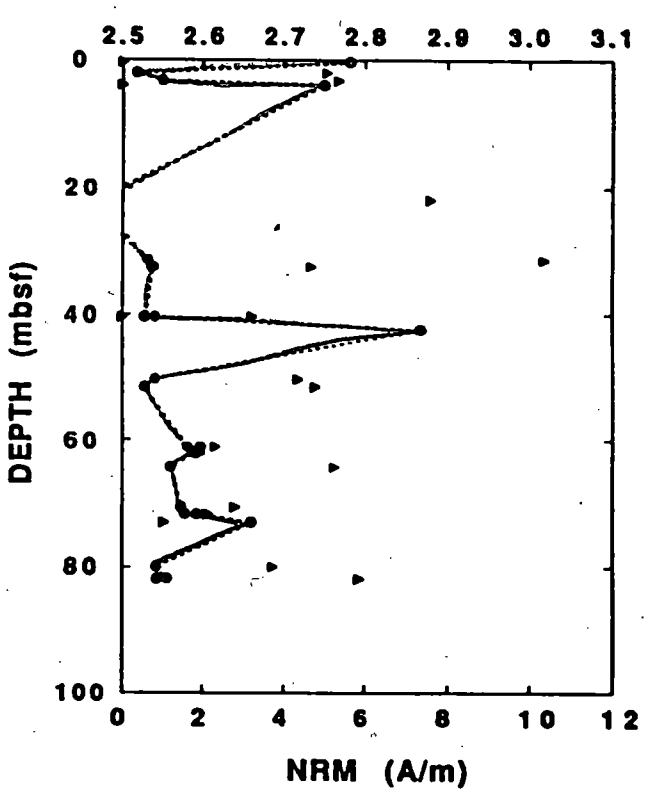
HOLE 894G



HOLE 895D



HOLE 895E



Appendix 9.24

Appendix 9.25

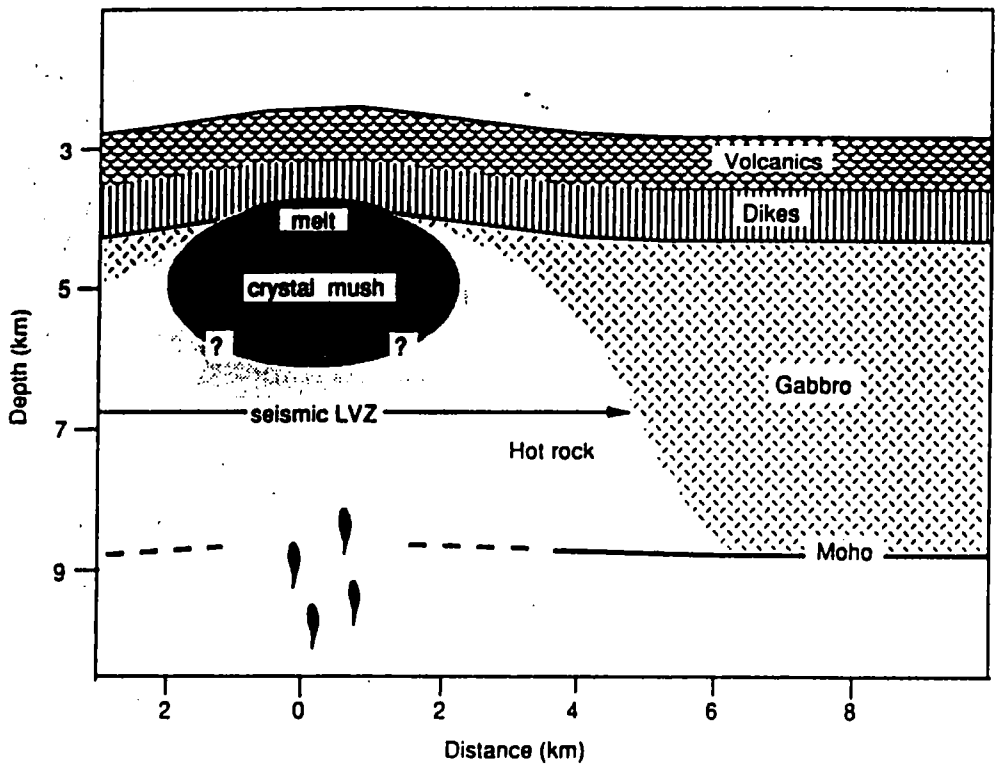


Figure 5. Interpretive model of an EPR magma chamber based on recent seismic results. The essential elements of this model are a narrow, sill-like body of melt 1–2 km below the sea floor that grades downward into a partially solidified crystal mush zone which marks the transition from the (mostly liquid) chamber interior to the largely solidified (but still hot) surrounding rock. The bulk of the axial LVZ is inferred to be composed of the slowly cooling cumulate rocks of layer 3.

Influence of the opening of Hess Deep

- basaltic dikes = primitive composition, similar to Cocos-Nazca basalts

- WNW-ESE fracture network in the gabbros :

Low temperature metamorphism is related to this fracture network

- magnetic inclinations show that gabbros and peridotites have been rotated by 30°

In peridotites, magnetization is acquired during serpentinization, therefore rotation postdates serpentinization

- models of emplacement for the ridge : serpentine diapirism versus low angle faults

serpentinite densities < gabbro
serpentinisation static, no deformation

Appendix 10.0

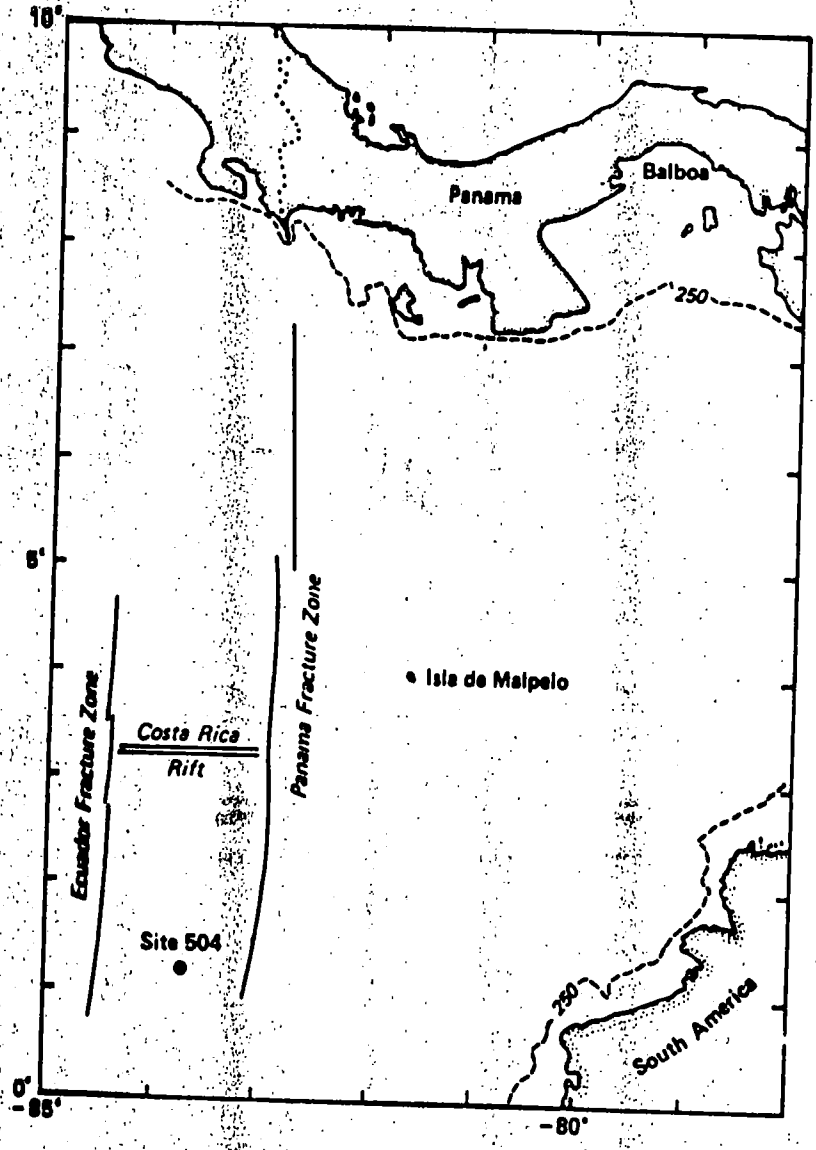
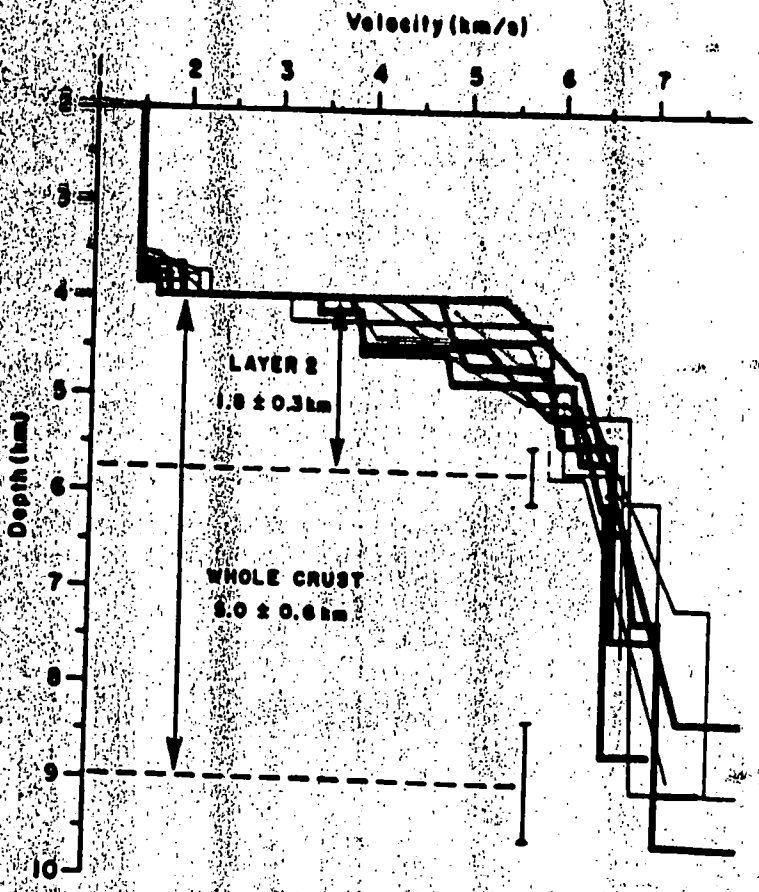
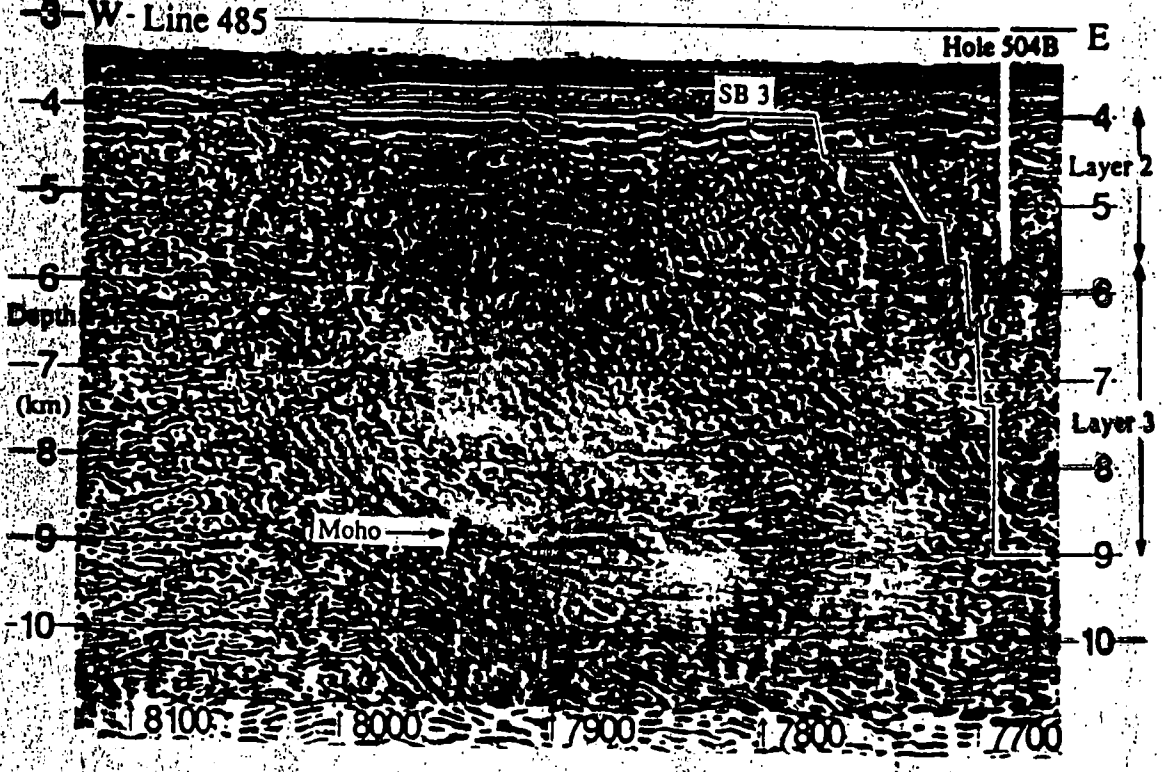


FIG. 1. Location of Hole 504B.





No vertical exaggeration (1:1)

Appendix 10.2

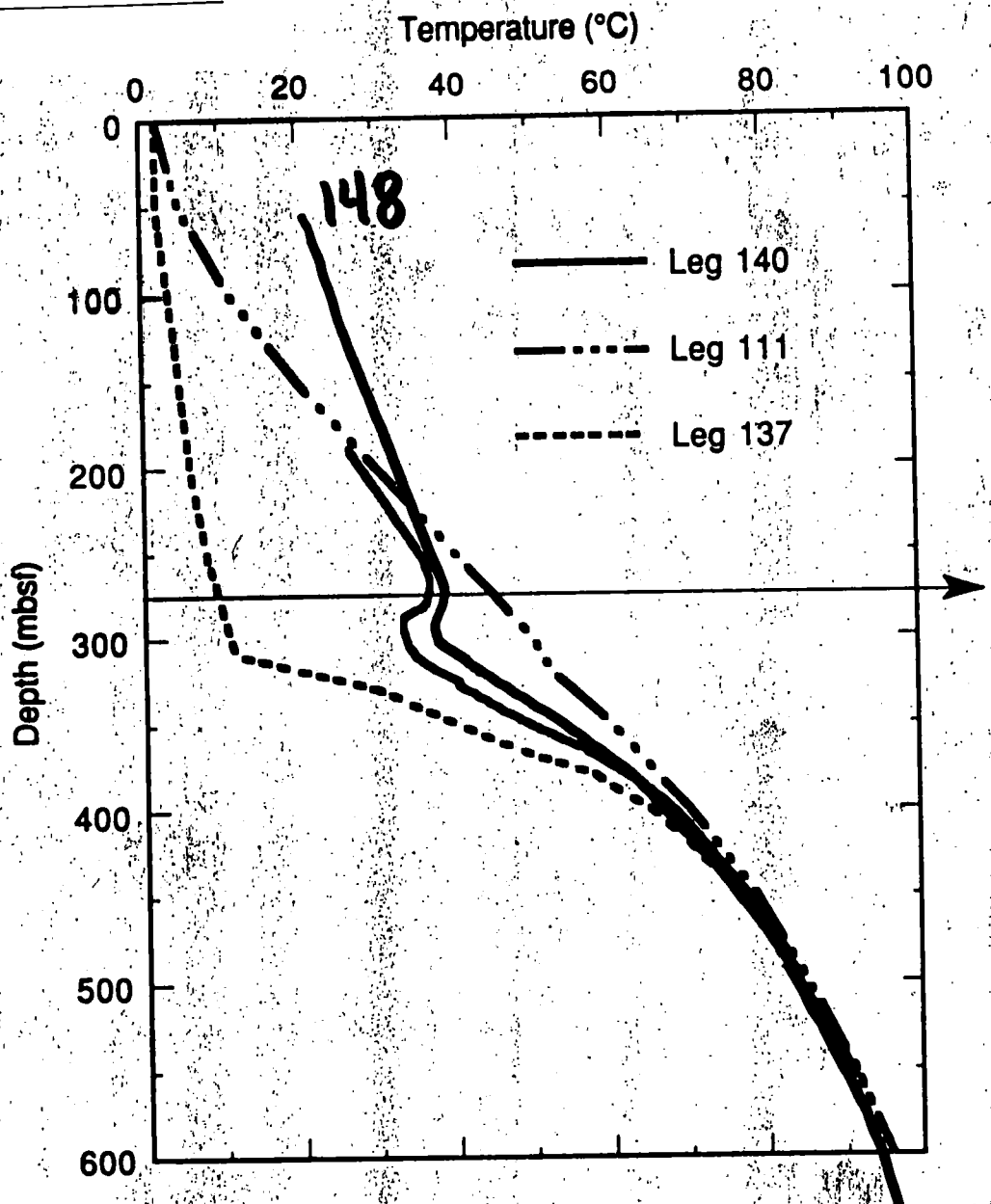


Figure 117. Composite diagram of temperature profiles recorded in Hole 504B with the BRGM high-resolution temperature probe during Legs 111, 137, and 140.

180°C at 2000 mbsF

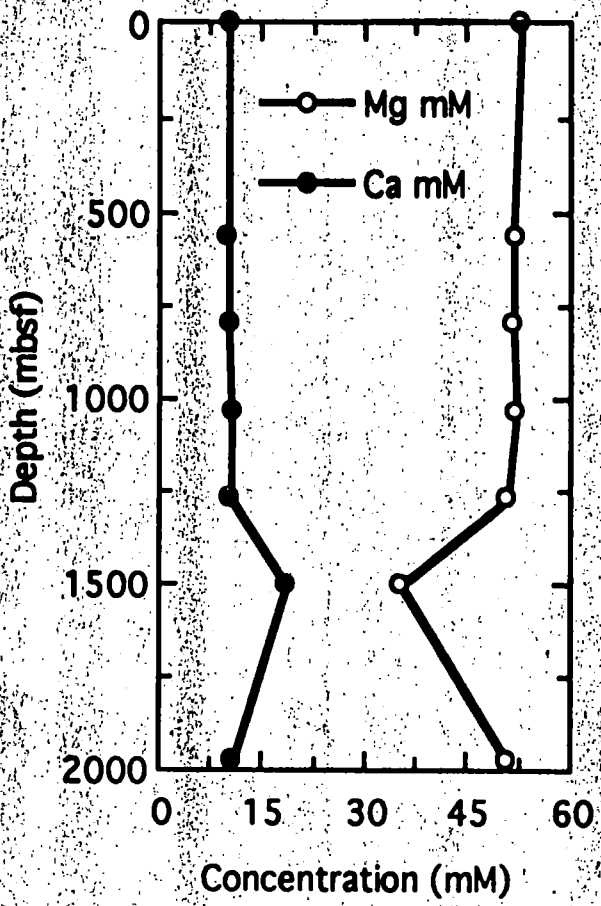
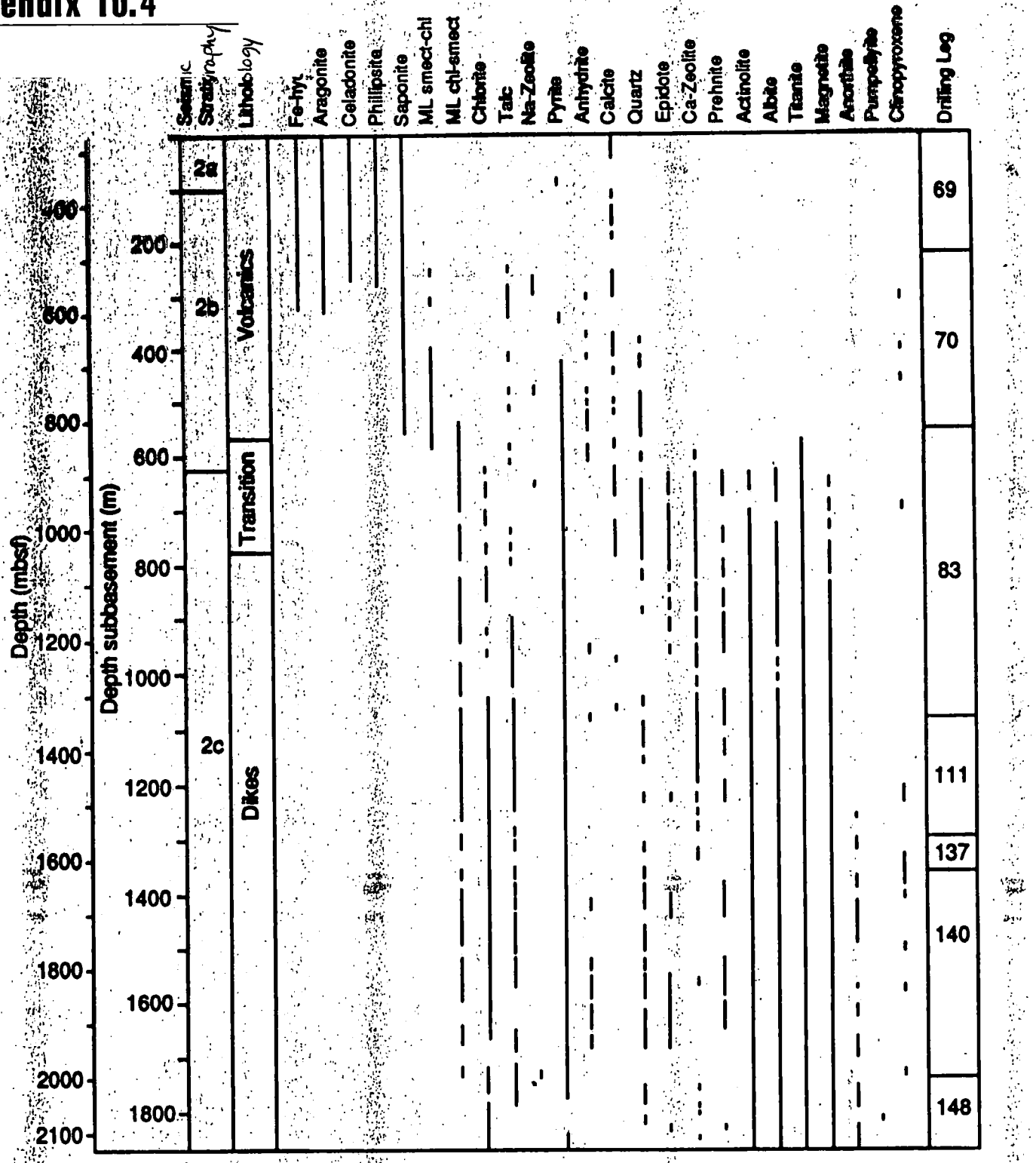


Figure 504-G-1

Appendix 10.4



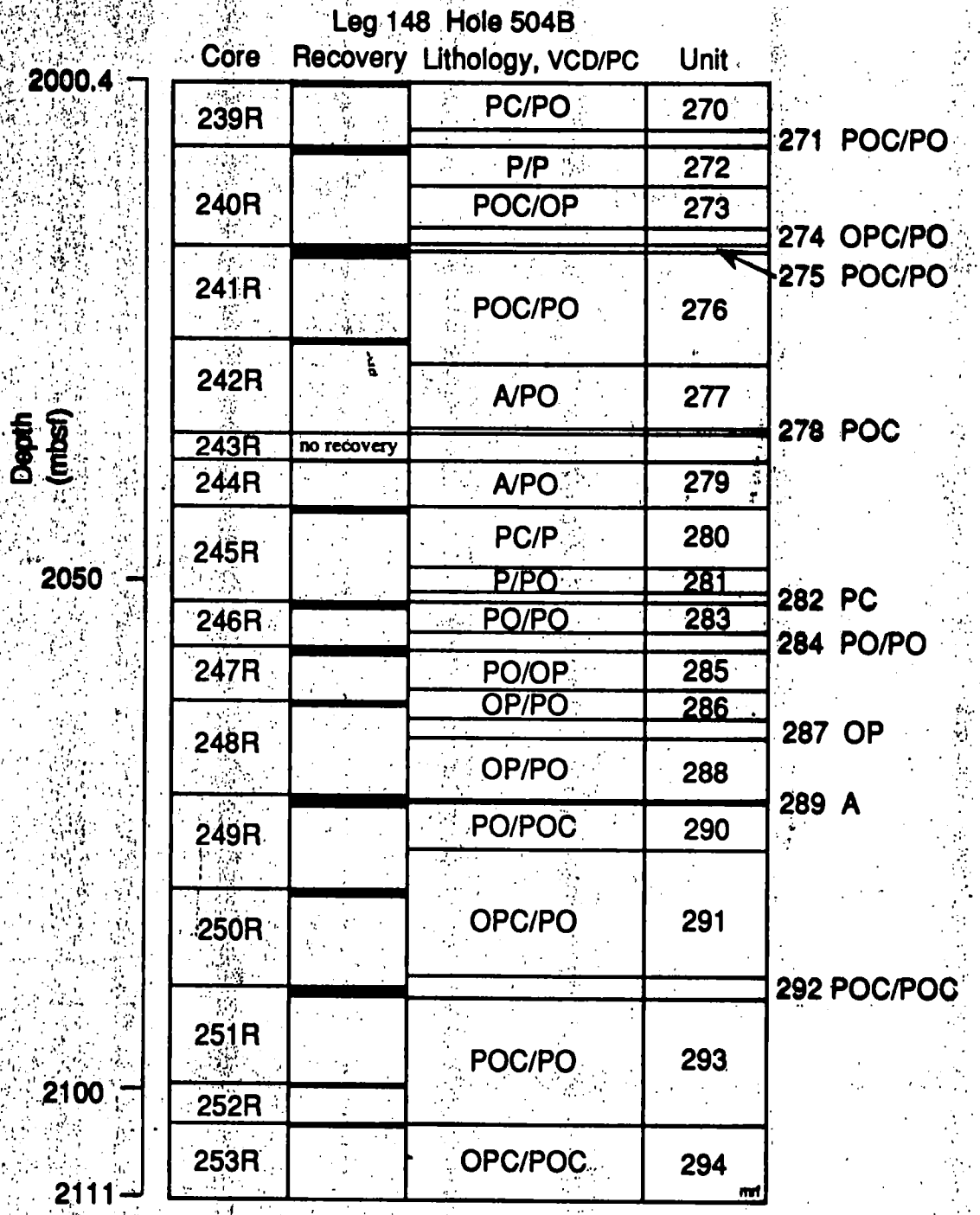
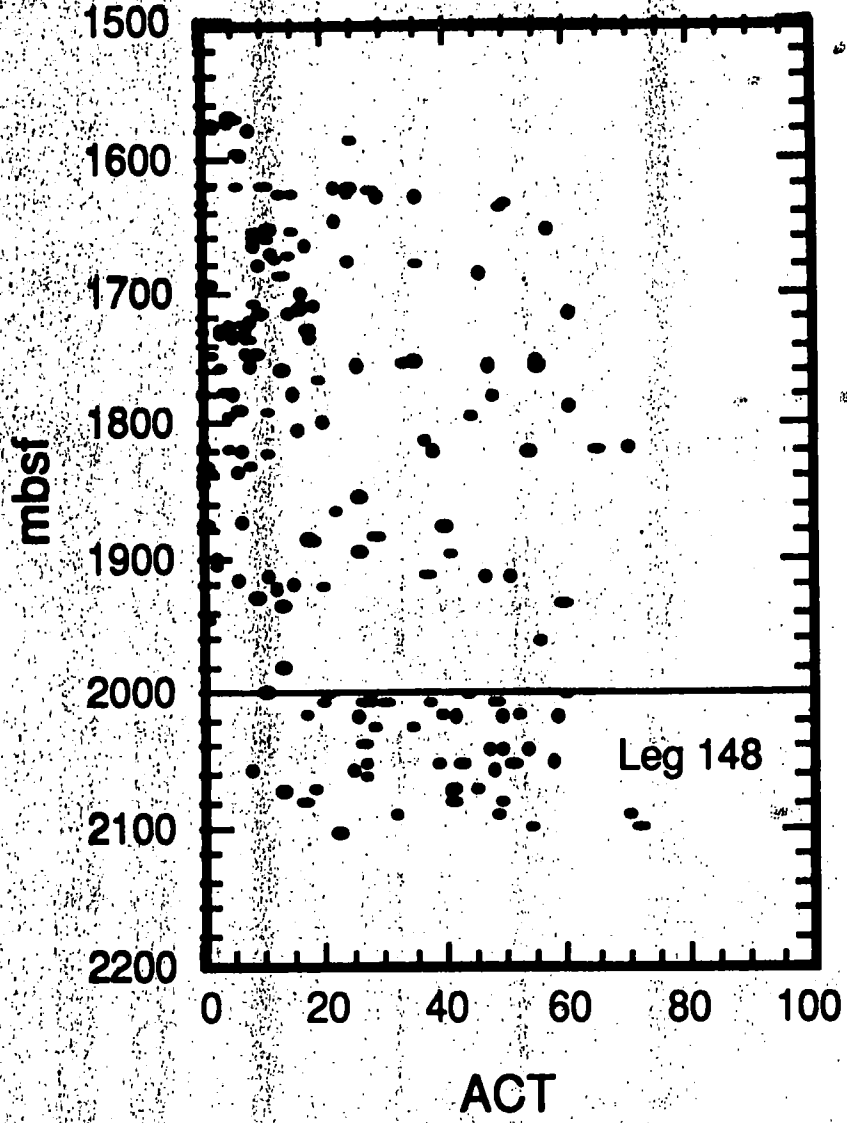
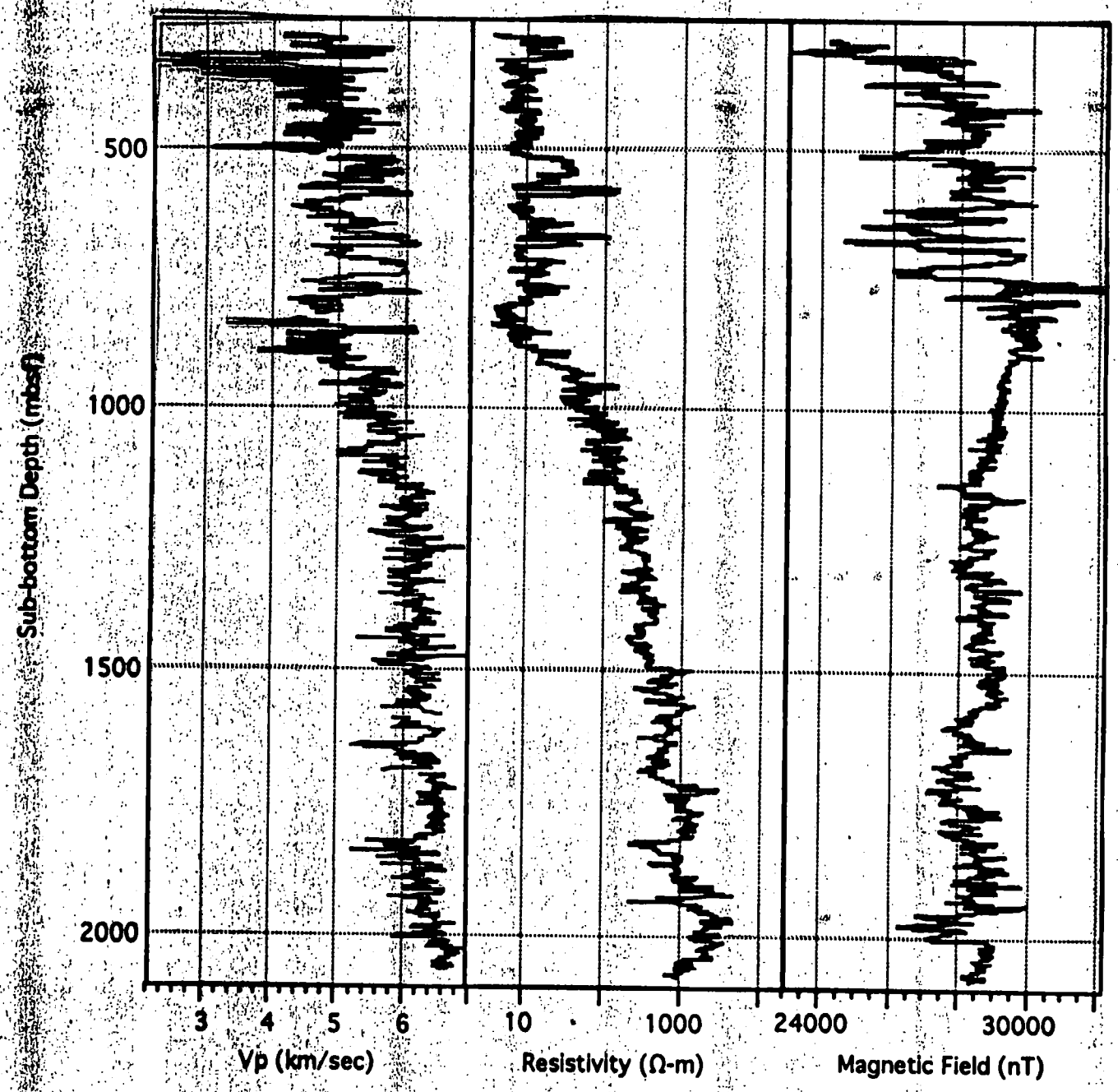


Figure 504-E-1

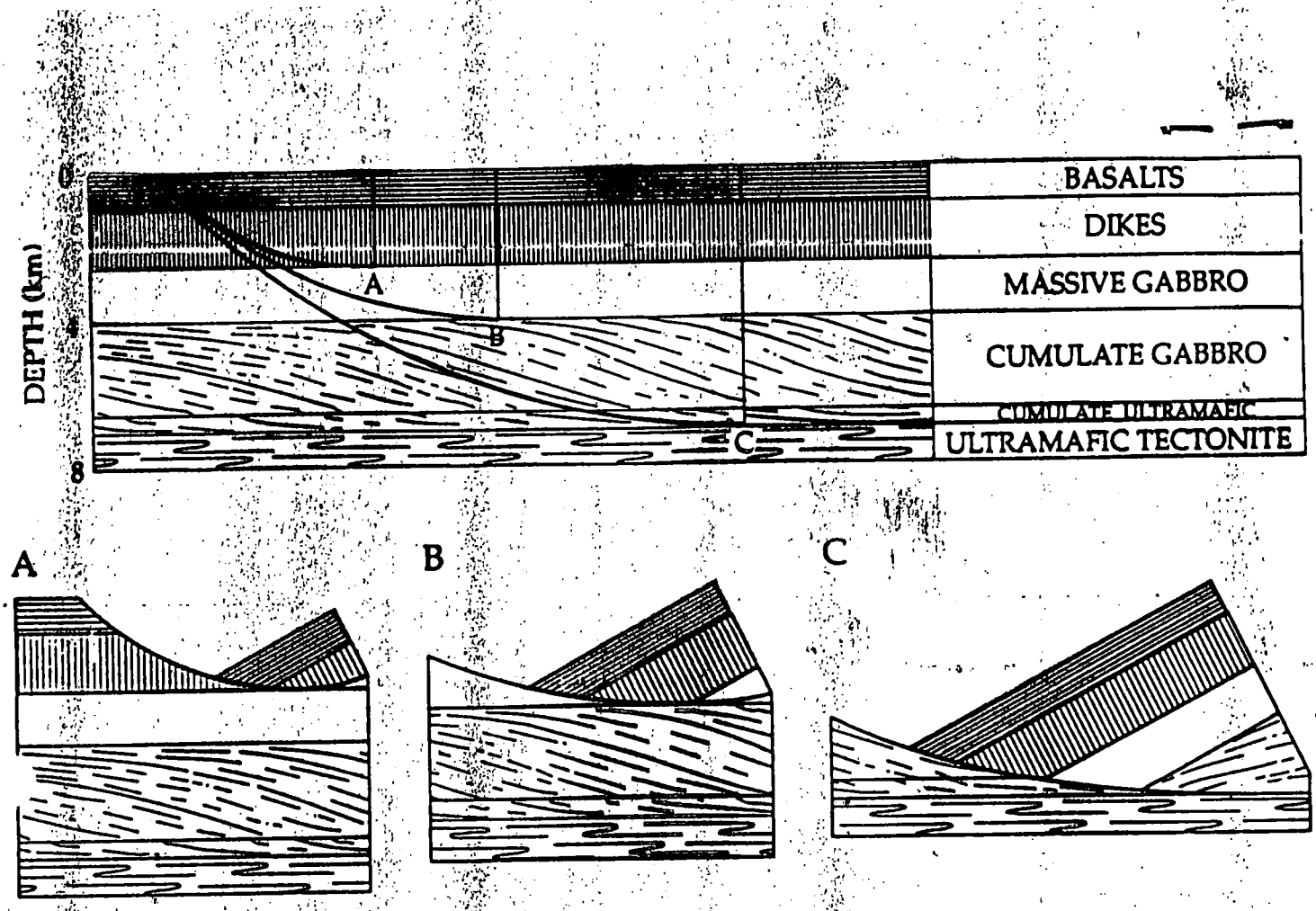
Appendix 10.6



Appendix 10.7



Appendix 10.8



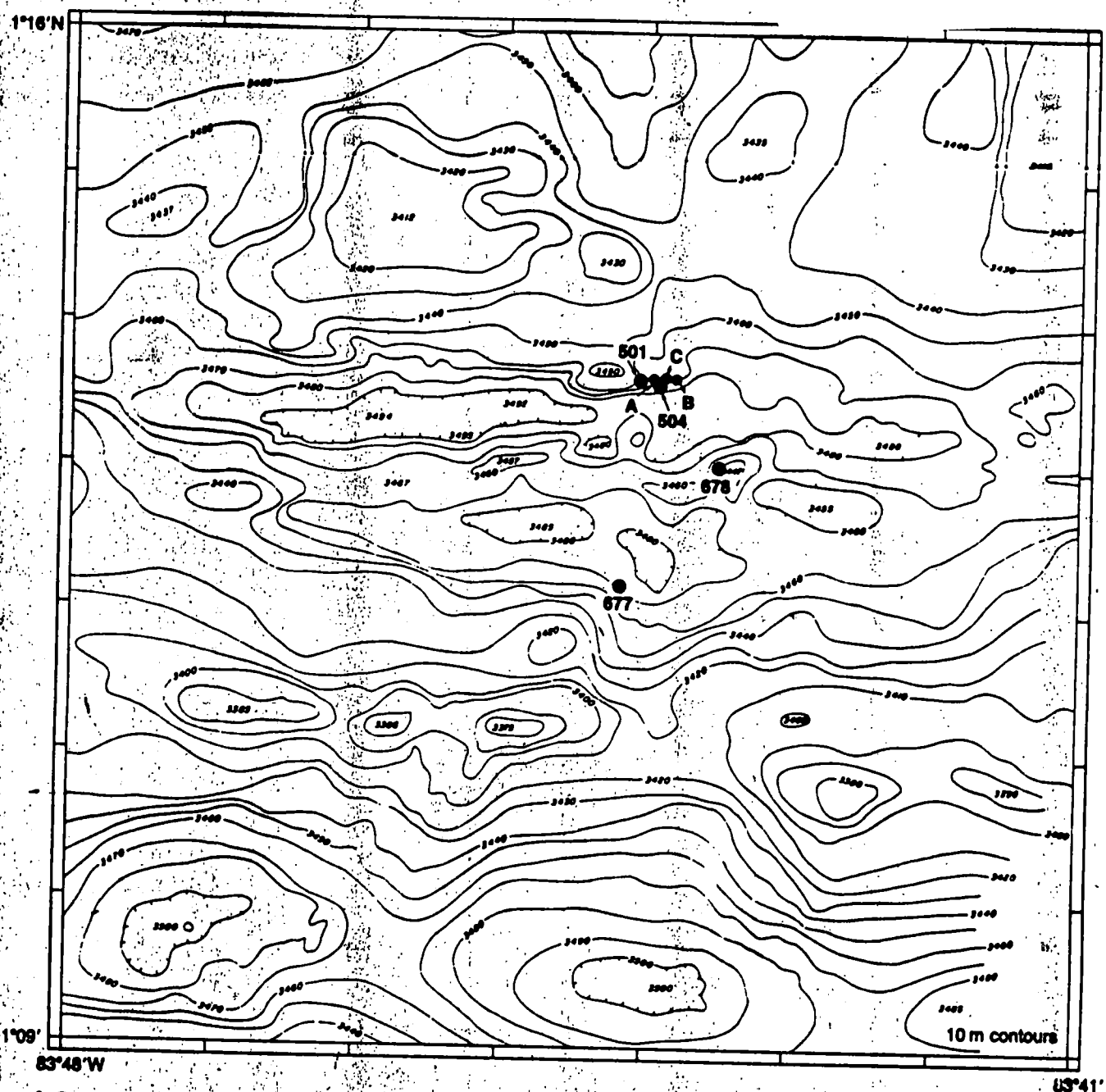


Figure 2. Contour map of seafloor bathymetry in the Site 501/504 area. Locations of Holes 501, 504, 504 A–C, Site 677, and Site 678 are also shown.

Figure 4. Preliminary heat-flow values in the Site 901/504 area. Drill hole locations are shown. Lines A–A' and B–B' are locations of profiles shown in Figure 3.

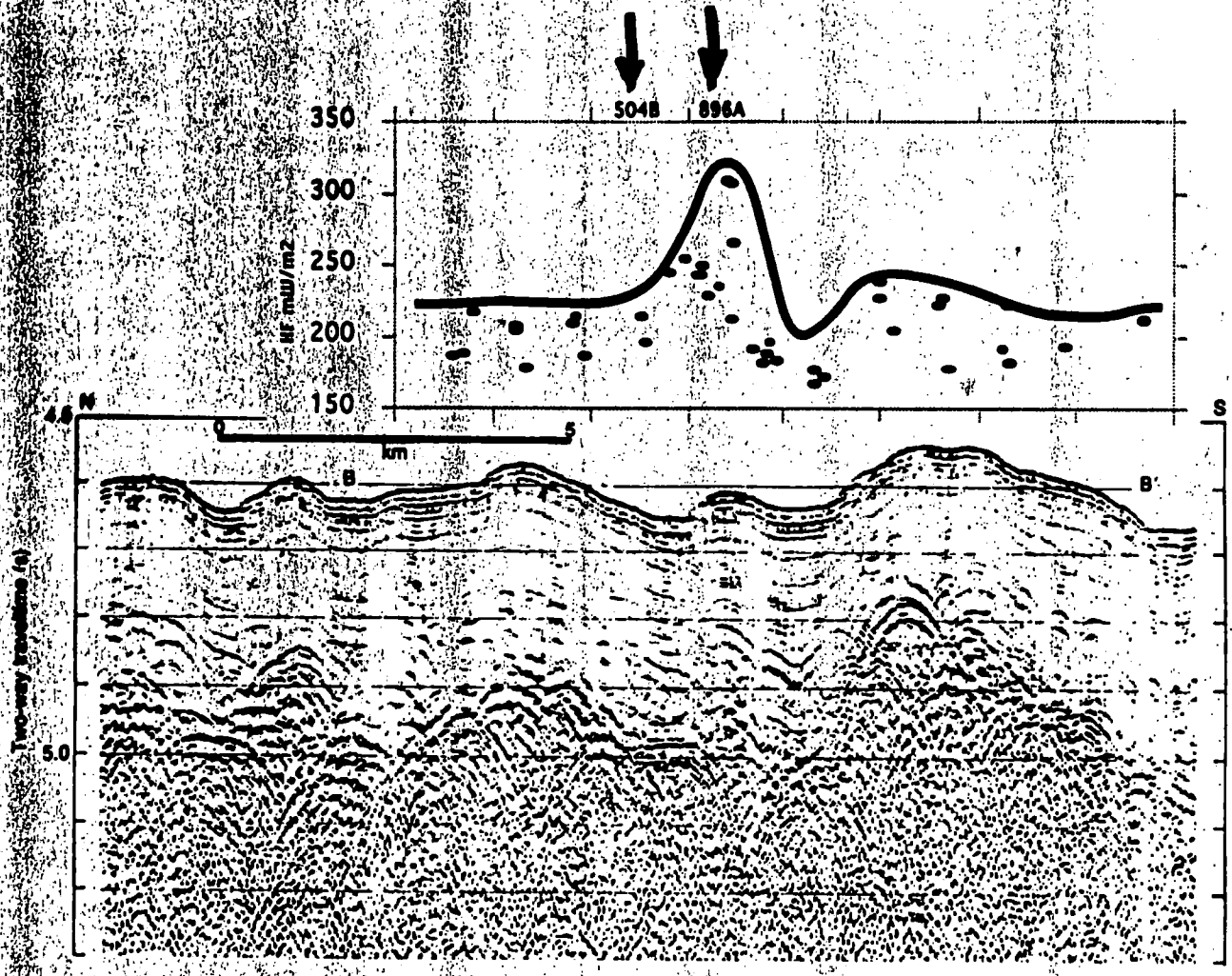


Figure 3. A. Reproduction of the 3.5-kHz record along line A–A′ (see Fig. 4). B. SCS section along line B–B′ (Fig. 4). Processing parameters: band pass filter 30–220 Hz, and time-varying gain.

Appendix 10.12

HOLE 896A

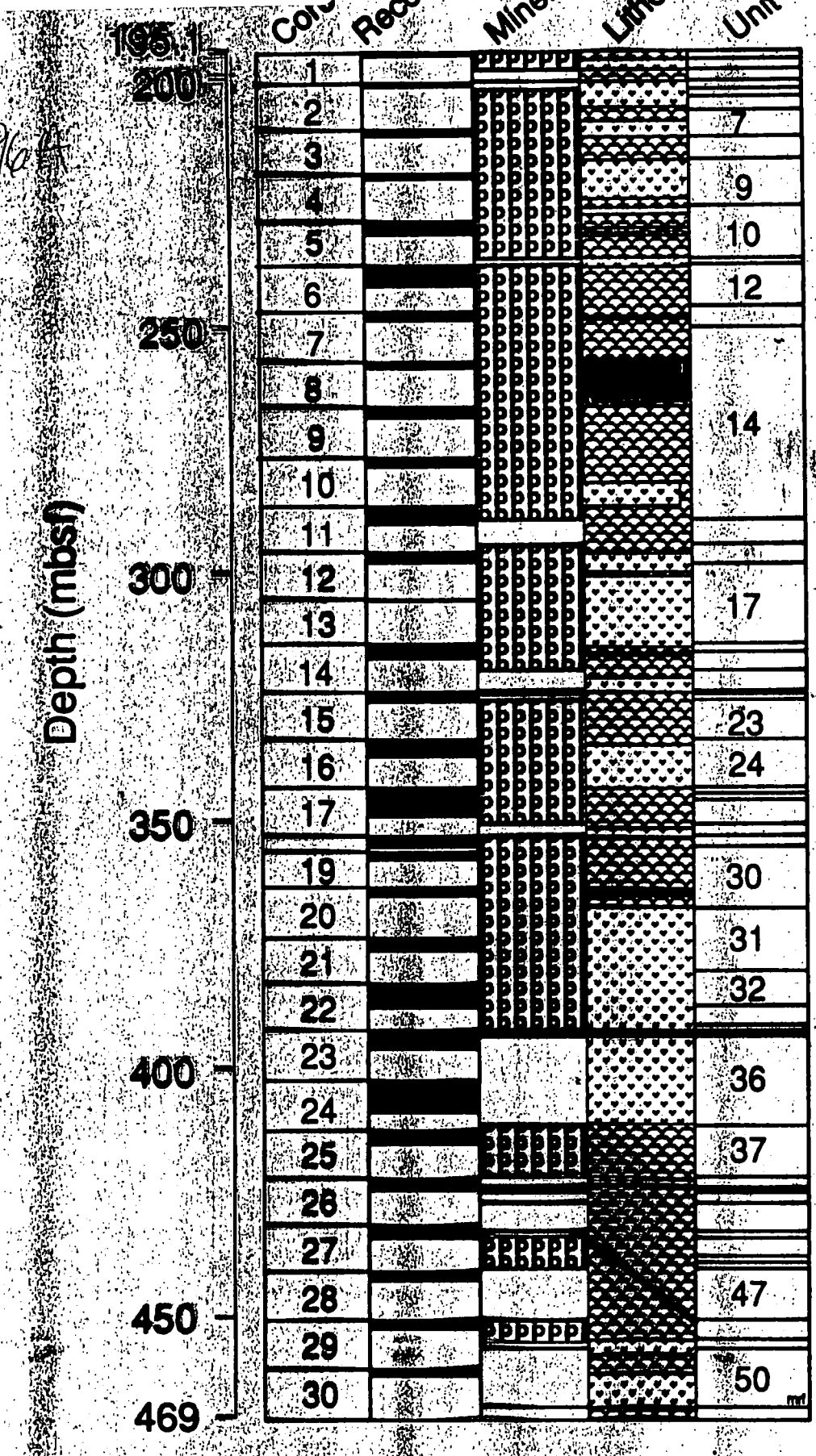


Figure 896-F-1

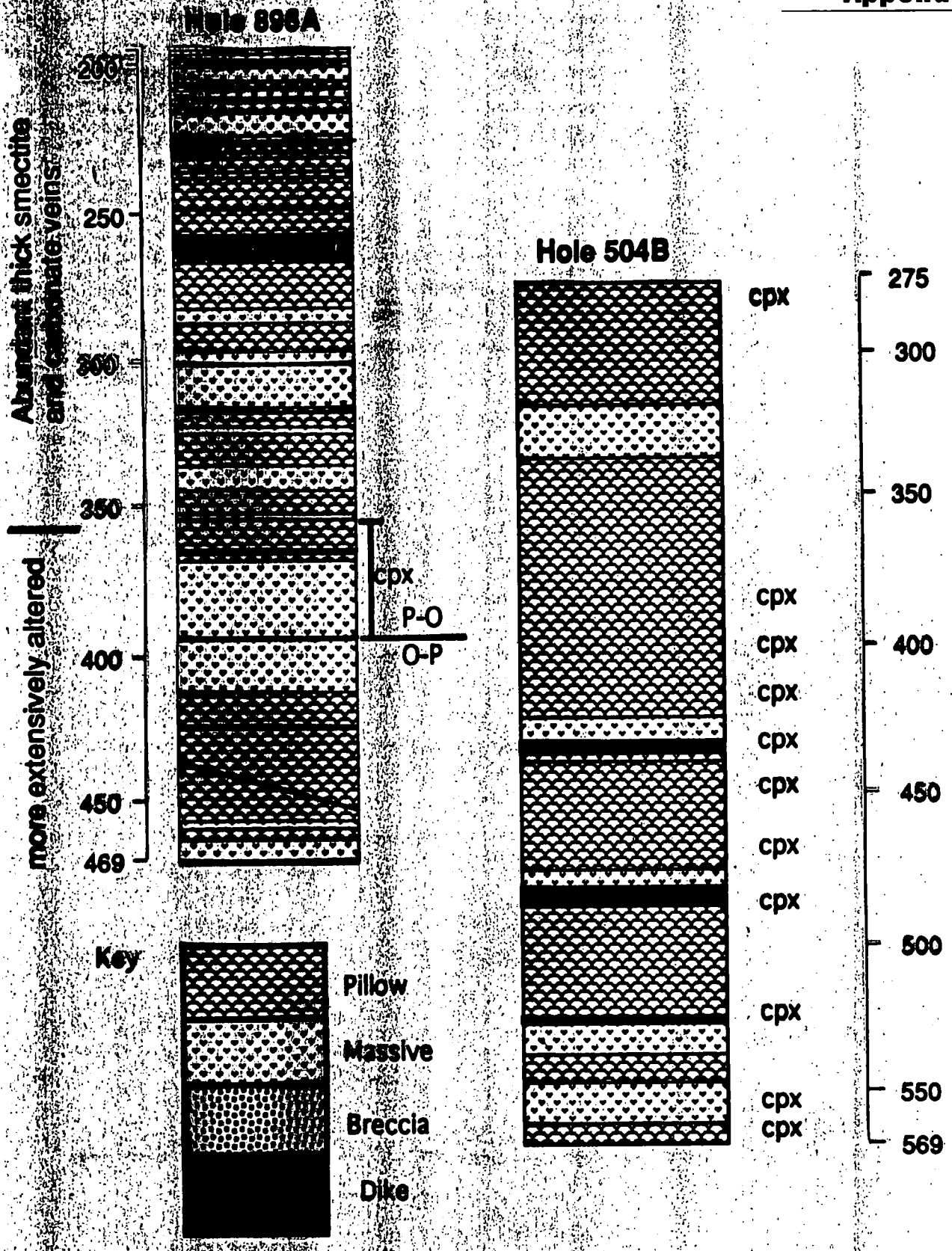


Figure 896-E-23.

Appendix 11.0

MESH

Marine aspects of Earth System History

2. MESH FUTURE:

a) New Steering Committee (Science and Management Plans by Fall, 1993):

N. Pisias (Chair) Oregon State Univ.
M. Arthur, Penn State Univ.
E. Barron, Penn State Univ.
E. Boyle, MIT
J. Cole Univ. Colorado
B. Curry, WHOI
A. Mix, Oregon State Univ.
T. Moore, Univ. Michigan
W. Prell, Brown Univ.
D. Rea, Univ. Michigan
L. Sloan, U.C. Santa Cruz
L. STOTT, USC

b) Working Groups (summer, 1993):

1. Ocean Biogeochemical Dynamics and Climate Change (Boyle and Prell, leaders)

2. Episodes of Extreme Warmth (Barron and Arthur, Leaders)

3. Interannual to Millenial Paleoclimate Changes (Cole and Peterson, Leaders)

4. Abrupt changes (Curry, Rea, Stott, leaders)

5. Continental-Marine Connections (not decided)

6. Sea Level (not scheduled).

F

Appendix 11.1

MESH

Marine aspects of Earth System History

1. Past Efforts:

1990, July: Meeting on Earth System History, NSF, formation of ac hoc steering committee (Eric Barron, Chair)

1991, September: Advisory Panel Report on Earth System History (G. Mountain, ed.)

1992 February: Committee Report on Marine Sediment Coring for Global Change studies. (N. Pisias, Chair)

1992, September: Public meeting on Coring at International Congress of Paleoceanography IV, Kiel FRG. (N. Pisias, Chair).

1993, March: MESH-Portland Public meeting (about 70 participants). Presentation and prioritization of white papers, election of new steering committee (Eric Barron, Chair)

Representation of:
NSF - OCE: Haq, Malfait, Sancetta, EAR: Maccini, ATM: Zimmerman
NOAA Paleoclimate Program - Anderson
NAD - Brass
USGS - Dean
EXCOM - Lancelot
PCOM - Mix
OHP - Delaney and others.

UK - Shackleton
France - Labeyrie, Lancelot
Germany - Mienert
Mexico - Molina-Cruz

Appendix 12.0

IHP
February 23-25, 1993
College Station

Joint with SMP

First Priority - Database Problems

Catch up with data influx (capture & curate)

Better relational database

Computer & software upgrade

Hire personnel

Address backlog

Paleo - 32 legs

XRF - 32 legs

GRAPE - improve data structure

Priority Activities (TAMU)

1. TAMU to devote resources to capture & curate current data flow
2. Improve relational database
   Software (works better; user friendly)
   Hardware (with computer upgrade)
3. Address data backlog
4. Consider computer-readable cumulative index

Miscellaneous

HARVI-HRTHIN

IHP not happy with short-circuit of system
Not IHP, SMP top priority
"Squeaky-wheel syndrome"

MRC

Work slowing because of funding problems

Repositories

IHP not in favor of
Breaking up collections
Transporting curated cores
Using non-refridgerated storage

Sampling

IHP/SMP discussed
"limited sampling interval"
To help co-chiefs reduce oversampling of cores with low recovery
Three tier approach
"Critical Interval" - most restrictive
"Limited Sampling Interval"
Normal sampling

Publications

Cost Reduction

- Encourage brevity in IR volume
  - (via Co-Chiefs)
  - Put interpretations elsewhere
  - Make use of CD-ROM for tables, etc.
- Institute Limits
  - 20 page limit on papers
    - Includes text, tables, figures
    - Excludes plates & range charts
    - Excludes synthesis papers
  - Tables longer than 1 page (each) go to CD-ROM
  - Put reprints and data reports on CD-ROM
    - Print abstracts only

Other

- Move SR submission deadline to 40 months post cruise
- Have TAMU monitor CD-ROM publication progress (not time to move yet)
- Encourage funding for logging CD-ROM for SR volumes
  - Fund "gap" volumes under current fiscal year
  - Encourage rapid turnaround on standard database for inclusion in CD-ROM

DMP Executive Summary

The incoming Chairman took the opportunity to express his views concerning interprogram development efforts, and to poll the Panel as to how its functions could be improved. The Panel recognized a need for a more critical review of downhole measurement systems, and reasons for such action surfaced repeatedly throughout the meeting.

> *All scientific drilling programs are suffering from a lack of qualified downhole instrumentation, cooperative development efforts can aid the situation, and the DMP is in a unique position to further such efforts. However, a challenge exists in that the goals and aspirations of other programs may not parallel those of the ODP. (Minutes, Item 4.)*

> *The DMP will adopt the concept of "Watchdogs" to provide points of contact, and to better assess the operational principles, the engineering constraints, and the costs associated with downhole measurements. This action will minimize oversights that lead to false expectations within the ODP community. (Minutes, Items 4., 5.b.-d., 9.b., 10., 11.b., 11.e., 12.c., 13.a., and 13.c.)*

The DMP instituted a new thrust involving measurements that provide information from the region far-removed from the borehole.

> *Cross-borehole acoustic techniques are used in the hydrocarbon industry to generate velocity and attenuation maps over distances up to several hundred meters. This technology is expensive and, perhaps, immature for use in the oceanic environment, but there is the possibility that cooperative efforts can further the concept. (Minutes, Item 16.)*

> *Downhole radar can be used between holes, or from within a single hole. The distance of interrogation is less than that of acoustic experiments, but the technology may be relatively inexpensive. (Minutes, Item 17.)*

Appendix 13.1

DMP Executive Summary

The development of third-party logging tools is progressing nicely.

The booklet Guide to Third Party Tools is finished, and it will be distributed throughout the JOIDES structure. (Minutes, Item 18.)

The German magnetometer tool is the first to enter the ODP certification process. (Minutes, Item 13.d.)

The French sediment magnetometer has been accepted for commercialization by Schlumberger, and the tool will be available to the ODP for no cost during the engineering checkout phase. The new tool may be ready for Leg 150. (Minutes, Items 13.e. and 14.b.)

Traditional distribution of log data is cumbersome, and advanced methods are being developed.

Log data for Leg 139 (Sedimented Ridges are now available on CD ROM's. Comments on this prototype issuance are requested. (Minutes, Item 11.c.)

Some groups had experienced a concern regarding the JOI, Inc. request for Proposals for a Wireline-Logging Service Contractor.

THE DMP is distressed that it did not have more involvement in the JOI solicitation for a Wireline-Service Contractor. PCOM is requested to review the situation. (Minutes, Item 7.b.)

Next Meeting.

The next meeting of the JOIDES Downhole Measurements Panel will be at Scripps Institution of Oceanography, May 25-27, 1993. The following meeting will be held concurrently with the JOIDES Lithosphere Panel in Santa Fé, October 12-14, 1993. A joint DMP/LITHP meeting will occur on October 12.

TEDCOM
March 30-31, 1993
College Station

1. TEDCOM was to have discussed responses to the RFQ on deep drilling, as per PCOM's direction, but details of specific engineering concepts and cost data were not presented by ODP-TAMU as expected. The explanation given was potential conflict of interest with some members of TEDCOM.

- after discussion, TEDCOM set up a subcommittee consisting of "uninvolved" members Marsh, Rischmuller, Shanks and Summerour to evaluate the responses (6 - 2 "good", 2 "mediocre", 2 "letters of intent") and report back to TEDCOM and PCOM through ODP-TAMU.

2. TEDCOM had a thorough update of DCS Phase IIB from ODP-TAMU.

- Land test in Tunisia with AMOCO did not materialize, but plans for other land testing underway.

- TEDCOM feels strongly that seafloor hardware should be set at candidate Vema sites before Leg 157, to maximize the time for DCS operations. (The PCOM liaison advised them that this was feasible, given current logistics of the FY94 program.) *Possible ACTION ITEM for PCOM.*

3. TEDCOM was generally in favor of pursuing retractable tricone (not diamond(!), *see the minutes*) bit technology being offered to ODP-TAMU by the Russians.

4. TEDCOM met with the JOIDES Advisory Structure Review Committee in executive session (no PCOM liaison allowed). TEDCOM also spent some additional time discussing their mandate, with the view that it maintain its "independent advisory body" status.

Appendix 15.0

April 1993 PPSP meeting.

Liason to PCOM; B.Lewis

Meeting summary;

George Claypool was Chair because Mahlon Ball could not attend. After reports by T.Francis (Science Operatot) and B.Lewis (PCOM) the meeting focussed on specific legs.

Leg 150 (New Jersey sea-level). Presented by Greg Mountain. Slope sites approved as requested.

Leg 151 (NAAG). Presented by B.Thiede and Annik Myhre.
17 sites approved.

Leg 152 (East Greenland). Presented by H-C Larsen.
The report was highly commended and all sites were approved as requested.

Leg 153 (MARK). Presented by Claude Delas.
Sites approved as requested.

Appendix 15.1

April 1993 PPSP meeting.

Alboran Sea Preview. Presented by T. Watts.
Sites Al-2, Al-3 and Al-4 were approved with minor relocations. Al-1, the deep hole which would provide the subsidence history, was not approvedas is. There is potentially a problem with over-pressuring in the lower section and gas in the deepest part of the hole. If proponents can show, using velocity analyisis, that overpressuring does not exist, then the site would be considered. Proponents will review strategy for drilling the Alboran.

Leg 156 (Barbados) preview. Presented by T. Shipley.
This leg was previewed because of "bright spots" on the decollment. Through carefull analysis of amplitudes and 3-D imaging Shipley dispelled any concern about safety at these sites.

After the site reviews Tim Francis presented the results of the shallow water working group for discussion. PPSP was supportive of the conclusions and awaits M. Balls write up. At the end of the meeting Martin Hovland made an excellent presentation of data relating to shallow gas and safety. Of particular interest was the concentration of gas in buried furrows produced by glaciers. These are very local features that can only be identified on 3-D type seismic data.

Appendix 16.0

SHALLOW WATER DRILLING WORKING GROUP

- MET AT ODP-TAMU 18-19 FEBRUARY 1993

- CHAIRED BY MAHLON BALL (CHAIR, PPSP)

- ATTENDED BY REPRESENTATIVES OF INDUSTRY (INCLUDING SITE SURVEY COMPANIES, WELL-CONTROL SPECIALISTS, MAJOR OIL COMPANIES), PCOM, PPSP, TEDCOM, SSP, ODP-TAMU AND SEDCO-FOREX

- WRITTEN CONTRIBUTIONS FROM

  *VERNON GREIF (DISTRICT MANAGER, SEDCO-FOREX)

  *COLIN LEACH (WELL CONTROL & SYSTEMS DESIGN)

  *ALISTAIR SKINNER (BRITISH GEOLOGICAL SURVEY) AND

  JOAR SAETTEM (IKU, NORWAY)

  *PETER TRABANT (MARINE GEOHAZARDS CONSULTANT)

- REPORT WILL BE PRODUCED BY END JUNE 1993 AND REVIEWED AT NEXT PPSP MEETING IN OCTOBER 1993.

SHALLOW WATER DRILLING WORKING GROUP

- CONFIRMED THAT RISERLESS DRILLING FROM A FLOATING RIG IS THE SAFEST WAY. BUT WE MUST AVOID GAS.

- CONCLUDED THAT DRILLING IN SHALLOW WATER CAN BE SAFELY CONDUCTED PROVIDED THAT VERY TIGHTLY SPECIFIED HAZARD SURVEYS ARE CARRIED OUT AND THAT THE DATA IS PROPERLY PROCESSED AND INTERPRETED. SPECIFICATIONS INCLUDE:

  * SEISMIC SOURCE
  * HYDROPHONE STREAMER
  * SAMPLING RATE
  * LINE SPACING AND ORIENTATION
  * PROCESSING

- HAZARD SURVEYS WILL BE OBLIGATORY FOR ODP DRILLING IN WATER DEPTHS OF LESS THAN 200 M ON SEDIMENTED CONTINENTAL MARGINS.

Appendix 16.2

SHALLOW WATER DRILLING WORKING GROUP

- PENETRATION WILL BE RESTRICTED TO 1000 MBSF. DEEPER PENETRATION IN THESE ENVIRONMENTS SHOULD NOT BE ATTEMPTED WITHOUT BOPs AND WELL CONTROL.

- SOME ENGINEERING/OPERATIONAL PROCEDURES NEED TO BE CONSIDERED.

  * ABILITY TO DROP THE DRILL STRING

  * MONITORING WATER COLUMN AT SEABED FOR GAS BUBBLES

  * CONTINGENCY PLAN

- THE HAZARD SURVEY MUST BE CONDUCTED, PROCESSED AND INTERPRETED BY PEOPLE WHO ARE NOT PROPONENTS OF THE DRILLING.

COMPUTER/DATA MANAGEMENT RFP

BIDS RECEIVED

AEA TECHNOLOGY (UK)

CAP GEMINI AMERICA (FRANCE/US)

----> EG&G WASHINGTON ANALYTICAL SERVICES CENTER, INC. (LDEO/GEOMAR)

GEOQUEST ASSOCIATES/MADEN TECH CONSULTANTS, INC.

----> MEYER GROUP

PARALOG SYSTEMS INTERNATIONAL INC. (GERMANY/US/UK)

SEACONSULT LTD/NEWFOUNDLAND AND LABRADOR COMPUTER SERVICES LTD. (CANADA)

SOUTHWEST RESEARCH INSTITUTE

STRATA DATA LTD.

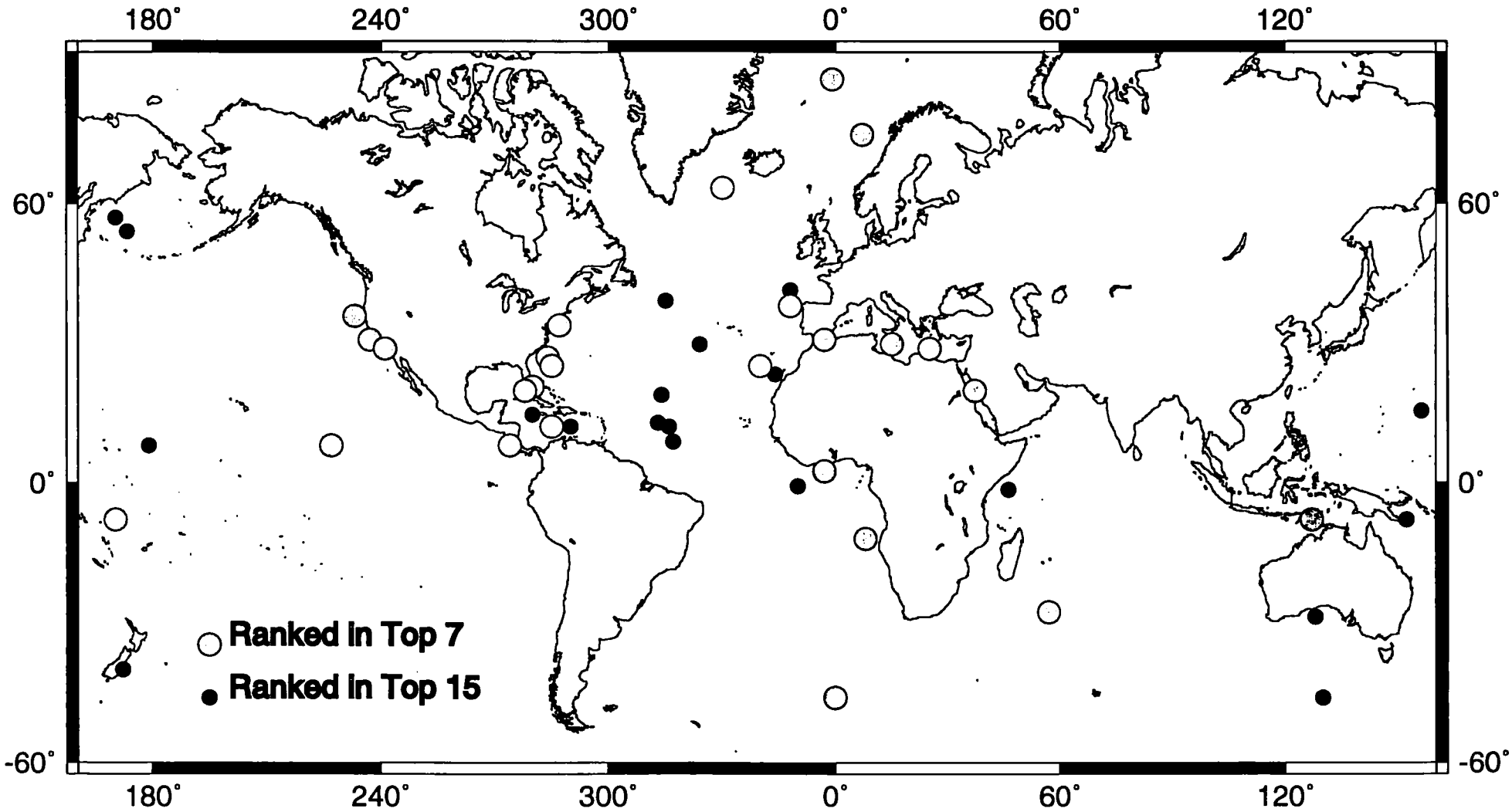
THE ANALYTIC SCIENCES CORP. (TASC)

----> TRACOR APPLIED SCIENCES, INC.

UNIVERSITY OF HAWAII AT MANOA

INTEGRAL (CANADA)

Appendix 17.0



GMT Apr 19 14:04 1993 Global Ranking

TRIMMING THE BUDGET BY $3,000,000

Example 1:

A. Cut all SOE expenditures related to drilling.

1. DCS leg 157	690,000
2. DCS shipping one way	100,000
3. Computing	600,000
4. Drill supplies (hard rock)	560,000
5. Science equipment	70,000
Total	2,020,000

B. Across the board cuts to TAMU, LDEO, JOI.....$1,000,000

Grand Total $3,000,000

Science consequences; Cut out all hard rock sites and DCS testing. Live with existing data collection system.