Integrated Ocean Drilling Program

Sample, Data, and Obligations Policy

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1. Policy Overview

This document outlines the policy for distributing Integrated Ocean Drilling Program (IODP), Ocean Drilling Program (ODP), and Deep Sea Drilling Project (DSDP) samples and data to research scientists (Science Party members and postmoratorium researchers), educators, museums, and outreach institutions and the obligations that recipients of these samples or data incur.[1]

The specific objectives of the IODP policy are to

- Ensure availability of samples and data to Science Party members so they can fulfill the objectives of the drilling project and their responsibilities to IODP;
- Encourage scientific analyses over a wide range of research disciplines by providing samples to the scientific community;
- Preserve core material as an archive for future description and observations, nondestructive analyses, and sampling;
- Disseminate "Expedition Research Results" papers published in the *Proceedings of the Integrated Ocean Drilling Program* from drilling project-related research; and
- Support education and outreach related to the drilling program by providing core materials to educators, museums, and outreach institutions.

There are three categories of policy users: (1) Science Party members, (2) postmoratorium researchers, and (3) educators, museums, and outreach institutions. Section 2, "Policy Guidelines," provides details for these users on how to submit sample requests and the specific reporting obligations that sample and data recipients incur.

2. Policy Guidelines

2.1. Guidelines for Science Party Members

2.1.a. Definition of Science Party

The Science Party includes all invited shipboard and shore-based expedition scientists plus other scientists who have been approved by the Sample Allocation Committee (SAC; see Appendix C for contact information) for working on expedition material during the moratorium period and publishing their research results. By program decision, two or more thematically linked expedition cruises can be designated as a single IODP project with a joint Science Party and a common moratorium period. In this case, expedition results are published in a single *Proceedings of the Integrated Ocean Drilling Program* volume.

2.1.b. Submitting Sample Requests

Science Party members may submit sample requests to IODP prior to the pre-expedition planning meeting; however, sample requests will also be considered during the expedition and within the moratorium period. The IODP Sample Request Form is available at www.iodp.org/access-data/ (see Appendix D.4. for guidelines to estimating sample volumes).

The SAC (see Appendix C for contact information) will review the sample requests, and approval will be based on compatibility with the Sampling Strategy (see

[1] Obligations incurred during ODP will be carried forward into IODP.

Appendix D.1.). The sample requester may choose to appeal any decision by the SAC or the IODP Curator to the Curatorial Advisory Board (CAB; see Appendix C for contact information). If a conflict arises over the allocation of samples during the moratorium period, expedition participants will have priority over those who did not participate in the expedition.

2.1.c. Accessing Data

The Science Party may access expedition data online at a password-protected Web site during the moratorium period (see www.iodp.org/access-data/).

2.1.d. Obligation

All Science Party members are obligated to conduct research and publish the results of their work. To fulfill the obligation, papers must be published in a peer-reviewed scientific journal or book that publishes in English, or as a peer-reviewed data report in the *Proceedings of the Integrated Ocean Drilling Program.* To fulfill the obligation, manuscripts must be submitted within 20 months postmoratorium.

Following completion of sample investigations, or in the event that research is discontinued, nondestroyed sample material must be returned at the investigator's expense to the IODP core repository where the core materials are stored (see Appendix D.5. for sample distribution information).

If Science Party members are unable to fulfill their obligation because appropriate samples or data were not retrieved during the expedition, or because data could not be obtained during postexpedition analyses, a letter of explanation must be submitted to the Platform Curator with a copy to IODP Management International IODP-MI; see Appendix C for contact information). Obligation fulfillment will be monitored by IODP-MI. Scientists who do not meet IODP their obligations may be restricted from obtaining future samples and data and from participating in future IODP expeditions.

2.1.d.i. Submitting Manuscripts during the Moratorium Period

Science Party members who wish to submit manuscripts or abstracts for publication before the moratorium period has expired must comply with the following guidelines:

- Receive prior written approval by a majority of the expedition scientists This approval will be coordinated by the IODP Staff Scientist associated with the expedition. The Staff Scientist will circulate the manuscript among the expedition participants, tabulate the responses, and notify the author of the expedition participants' decision.
- Comply with all written collaborative agreements identified in the expedition sampling strategy (see Appendix D.1.).
- Use the authorship "Expedition ### Scientists" (where ### is the expedition number).
- Include the words "Integrated Ocean Drilling Program" or "IODP" in the abstract.
- Acknowledge IODP using the following wording:
  "This research used samples and/or data provided by the Integrated Ocean Drilling Program (IODP). Funding for this research was provided by _____."
- Provide the following key words, as appropriate, to the manuscript publisher: "Integrated Ocean Drilling Program," "name of drilling platform,"

Expedition ###," "expedition title," and/or "Site ###" (where ### is the expedition or site identifier).

- Notify the Editorial Review Board (ERB) of manuscript acceptance and submit complete citation information to IODP-MI (see Appendix C for contact information).

2.1.d.ii. Submitting Manuscripts after the Moratorium Period

Science Party members who submit manuscripts for publication after the moratorium period has expired must comply with the following guidelines:

- Comply with all written collaborative agreements identified in the expedition sampling strategy.
- Submit to the Editorial Review Board at the time of the second postcruise meeting the planned titles for all papers that fulfill their IODP obligations and any supplementary publications that they intend to publish.
- Submit manuscripts for publication by 20 months postmoratorium.
- Include the words "Integrated Ocean Drilling Program" or "IODP" in the abstract.
- Acknowledge IODP using the following wording:
  "This research used samples and/or data provided by the Integrated Ocean Drilling Program (IODP). Funding for this research was provided by _____."
- Provide the following key words, as appropriate, to the manuscript publisher: "Integrated Ocean Drilling Program," "name of drilling platform," Expedition ###," "expedition title," and/or "Site ###" (where ### is the expedition or site identifier).
- Notify the Editorial Review Board (ERB) of manuscript acceptance and submit complete citation information to IODP-MI (see Appendix C for contact information).

2.2. Guidelines for Postmoratorium Researchers

2.2.a. Definition of Postmoratorium Researchers

Postmoratorium researchers are researchers who request samples after the moratorium period has ended.

2.2.b. Submitting Sample Requests

Scientists who wish to conduct research on DSDP, ODP, and/or IODP core materials may submit sample requests after the moratorium period has expired. The IODP Sample Request Form is available at www.iodp.org/access-data/ (see Appendix D.4. for guidelines to estimating sample volumes).

2.2.c. Accessing Data

Expedition data are available online (see www.iodp.org/access-data/).

2.2.d. Obligation

Scientists who use core for research (destructive sampling or nondestructive analyses) after the moratorium period are obligated to publish the results of their work. If investigators are unable to fulfill this requirement within 36 months after receipt of samples, they must submit a report describing the status of their research and the estimated date that results will be published to the Repository Curator with a copy to IODP-MI (see Appendix C for contact information).

Following completion of sample investigations, or if the research is discontinued, nondestroyed sample material must be returned at the investigator's expense to the IODP core repository where the core materials are stored (see Appendix D.5.).

2.2.d.i. Submitting Manuscripts based on Postmoratorium Sample Requests

Postmoratorium researchers must comply with the following guidelines:

- Submit a manuscript for publication within 36 month after receiving samples.
- Include the words "Integrated Ocean Drilling Program" or "IODP" in the abstract.
- Acknowledge IODP in all publications that result from the data collected from samples received using the following wording:
  "This research used samples and/or data provided by the Integrated Ocean Drilling Program (IODP). Funding for this research was provided by _____."
- Provide the following key words, as appropriate, to the manuscript publisher: "Integrated Ocean Drilling Program," "Ocean Drilling Program," or "Deep Sea Drilling Program", "name of drilling platform," Expedition or Leg ###," "expedition or leg title," and/or "Site ###" (where ### is the cruise or site identifier).
- Notify the Repository Curator and copy IODP-MI of manuscript acceptance and submit complete citation information to the Repository Curator (see Appendix C for contact information).

2.2.b.ii. Submitting Manuscripts based on Postmoratorium Data

Postmoratorium researchers who use IODP, ODP, or DSDP data after the moratorium period do not incur obligations to publish their results. However, if they do publish papers based on these data, they are required to comply with the following guidelines:

- Include the words "Integrated Ocean Drilling Program" or "IODP" in the abstract.
- Acknowledge IODP, ODP, and/or DSDP, as appropriate in all publications that result from the data using the following wording:
  "This research used samples and/or data provided by IODP**.** Funding for this research was provided by _____."
- Provide the following key words, as appropriate, to the manuscript publisher: "Integrated Ocean Drilling Program", "Ocean Drilling Program" or "Deep Sea Drilling Program", "name of drilling platform," "Expedition or Leg ###," "expedition title," and/or "Site ###" (where ### is the cruise or site identifier).
- Notify IODP-MI of manuscript acceptance and submit complete citation information (see Appendix C for contact information).

2.3. Guidelines for Educators, Museums, and Outreach Institutions

2.3.a. Submitting Requests

After the moratorium period has expired, core materials can be used for the following purposes:

- Viewing and describing for teaching and educational purposes,
- Sampling by educators (if core materials are abundant in the collection, and thus not in demand for research purposes), and
- Public display, such as in museums or at professional meetings.

To request materials, submit a sample request to IODP. The IODP Sample Request Form is available at www.iodp.org/access-data/ (see Appendix D.4. for guidelines to estimating sample volumes). Upon receipt, an IODP Curator will contact the requestor to discuss the request and identify the most suitable core materials. For museum loans, an IODP Curator will consult with the CAB for approval.

Requestors are responsible for paying for shipping materials to and from their institutions.

2.3.b. Obligations

Educators, museums, and outreach institutions who receive samples for educational or display purposes incur the following obligations to IODP:

- All recipients are required to submit a report at the conclusion of the loan period (or other time frame designated by the Repository Curator) that documents (a) how the core materials were used, (b) how many students/visitors were impacted, and (c) the activities that were organized related to the loan.
- All public displays of IODP material must properly credit IODP using the following wording: "This project used samples and/or data provided by the Integrated Ocean Drilling Program (IODP)."

Appendixes: Definitions and Procedures

Appendix A. Terms and Definitions

A.1. Archive and Working Halves

Cores are split into halves for shipboard analysis to uniquely identify split-core halves for measurements and sampling. The halves are referred to as the "working half" and "archive half." The entire working half is available for sampling. The concept and definition of an archive half is designed to enhance scientific flexibility and to enable greater access to important material. In certain circumstances the archive is available for sampling.

A.2. Composite Splice

Paleoceanographic cruises typically recover sediment cores from multiple holes cored side by side at a given site using an advanced hydraulic piston corer (APC) and/or an extended core barrel (XCB). A composite stratigraphic depth section is constructed by establishing correlations between adjacent drill holes, using the variations in properties measured on cores by nondestructive sensors. A composite depth table describes the resulting (delta) depth offsets between holes. These offsets represent the difference between the meters below seafloor (mbsf; i.e., cored depth) and the meters composite depth (mcd) values that are derived from these correlations. Another data table describes the unique intervals in specific holes at a given site that have been used to construct the "ideal" section, also known as the "composite splice." The purpose of a composite splice is to describe the most complete sedimentary section at a given site, without gaps in core recovery (i.e., missing sediment), which then can be used for developing high-resolution sampling strategies and analyzing time series. Scientists often prefer to sample using the composite splice as a guide, rather than to sample down a single hole at a given site, because of gaps in recovery between cores in a single hole.

A.3. Critical Intervals

Critical intervals are lithologic spans of such scientific interest that there is extremely high sampling demand for them. These intervals may vary from thin, discrete horizons to thick units extending over an entire core or more. Examples include, but are not limited to, décollements, sediment-basement contacts, igneous contacts, impact/tektite horizons, gas hydrates, marker ash horizons, scaly fabric, magnetic reversals, and particular biostratigraphic levels. The Sample Allocation Committee (SAC; see Appendix C for contact information) is responsible for anticipating the recovery of critical intervals and for developing a strategy for sampling and/or conserving them. For postmoratorium sampling, the Integrated Ocean Drilling Program (IODP) Curator at the appropriate repository will work with investigators to ensure that previously defined critical intervals are sampled only when necessary.

A.4. Educators, Museums, and Outreach Institutions

Grade school through university educators, museum educators, curators of museum exhibits and collections, and professional conducting outreach related to the program.

A.5. Drilling Project

A single expedition or multiple expeditions that are defined as one project during the expedition scheduling phase.

A.6. Implementing Organization

The organization that provides drilling and support operations for a drilling platform. Three Implementing Organizations (IOs), in Japan, the United States, and Europe, serve as science operators of the riser vessel, riserless vessel, and mission-specific platforms, respectively.

A.7. Moratorium Period

The moratorium period is one year long and begins either (1) after the conclusion of an expedition cruise if the majority of the sampling occurred during the cruise or (2) after the conclusion of the expedition onshore sampling party (onshore science party in case of the mission-specific platform).

During the moratorium period, the only researchers permitted to receive expedition core materials and data are members of the Science Party. After the moratorium period ends, samples are given or loaned to persons whose requests have been approved by an IODP Curator. Project data are also publicly available (www.iodp.org/access-data/).

A.8. Nondestructive Analyses

Requests to perform nondestructive analyses on cores (e.g., descriptions, imaging, X-rays) should be submitted to the IODP Curator at the appropriate repository after the completion of the IODP Sample Request Form (www.iodp.org/access-data/). Investigators who conduct nondestructive analyses incur the same obligations as scientists who request samples.

A.9. Permanent Archive

A "minimum permanent archive" is established for each IODP drill site. Archive core earmarked "permanent" is material that is initially preserved unsampled and is conserved in the core repositories for subsequent nondestructive examination and analysis. In "unique intervals," this minimum permanent archive consists of at least one half of each core, excluding whole-round samples that require more than the working half (e.g., for interstitial pore water analysis). If so desired, the SAC (see Appendix C for contact information) may choose to designate more, but not less, than this amount as the permanent archive. In "nonunique intervals," the permanent archive will consist of at least one half of one set of cores that span the entire drilled sequence, again, excluding whole-round samples. The permanent archive is intended for science needs that may arise five years or more after drilling is completed.

In practice, if holes are cored continuously, the minimum permanent archive may consist of one half of each core taken from the deepest hole drilled at a site. As such, the archive halves of cores from additional holes drilled to equal or shallower depths that contain replicate copies of stratigraphic intervals constituting the minimum permanent archive need not be designated as permanent archive, but can be, if so desired by the SAC. If not deemed permanent archive, these cores are "temporary archive." If a composite splice section is constructed and the sampling demand exceeds the working half, an alternative curatorial strategy may be required to ensure that all samples can be taken from the spliced section. In this case, the permanent archive can be defined from cores that are not part of the splice (e.g., from cores from different holes). Sampling of the permanent archive is feasible five years postcruise if the working and/or temporary archive halves of the core have been depleted.

A.10. Postmoratorium Researchers
Researchers who request samples after the moratorium period has ended.

A.11. *Proceedings of the Integrated Ocean Drilling Program*
An IODP serial publication published by IODP-MI that contains a detailed summary of expedition technical operations and scientific results and related peer-reviewed data reports and synthesis papers that cover postexpedition research.

A "data report" is a short report of useful data that mainly consists of data sets and does not contain interpretation of results.

An expedition "synthesis paper" summarizes in a review-type fashion the findings related to the key goals and themes of the drilling project and links to the broader and global theme(s) addressed. While this is primarily based on the scientific papers and data reports resulting from the expedition, it is not a synopsis of all papers and data reports in all fields of observations. The style should be close to that of a thematic review paper for the open literature, though obviously tied closely to the actual expedition(s). An expedition could have more than one synthesis paper, if the diversity of science and findings would be best served by that. Likewise, synthesis papers from drilling projects with multiple expeditions, joint scientific party membership, and a common moratorium period would not normally be broken down according to specific expeditions, but would be presented as a single manuscript.

Each *Proceedings* volume will be completed at 36 months post moratorium.

A.12. Science Party
The Science Party includes all invited shipboard and shore-based expedition participants plus scientists who have been approved by the SAC (see Appendix C for contact information) for working on expedition material during the moratorium period and publishing their results.

A.13. Temporary Archive
Cores taken from nonunique intervals that are not part of the "minimum permanent archive" will be considered "temporary archives" unless stipulated otherwise by the SAC in the Sample Strategy. If required for special shore-based analysis, some cores may be left unsplit on the platform and shipped to the designated IODP core repository or laboratory as whole-core sections. If split (the common scenario), the temporary archive may be sampled just as the working halves are when (a) either the working halves have been depleted by sampling or (b) when pristine, undisturbed material is needed for special sampling needs, such as taking U-channels or slab samples.

A.14. Unique and Nonunique Intervals
A cored interval is designated "unique" if it has been recovered only once at a drill site. The most common occurrence of a unique interval is one that results when only one hole is drilled at a site. If the cored interval is recovered from two or more holes, then the interval is considered "nonunique." A critical exception to this definition occurs when drilling into igneous basement rocks, metamorphic rocks, or metalliferous deposits. Every hole drilled into these lithologies is considered unique because of their inherent lateral heterogeneity. Lithostratigraphic analysis of advanced piston cores from multiple holes drilled at one site may reveal that short sedimentary

intervals (generally less than 2 m) are commonly missing between successive cores from any one drill hole, even where nominal recovery approaches 100%. These missing intervals can be ignored when considering whether or not an interval is unique.

Appendix B. Roles and Responsibilities

B.1. IODP Curators

There are three Integrated Ocean Drilling Program (IODP) Curators who are responsible for (1) curation and sampling of core during an IODP drilling project and (2) oversight and use of IODP, Ocean Drilling Program (ODP), and Deep Sea Drilling Project (DSDP) core collections that are stored in the IODP repositories (see Appendix C for contact information and repository locations).

B.1.a. Platform Curator

Each Curator serves as the Platform Curator to oversee all curation tasks from the preplanning stage through the arrival of the core after an expedition at the repository where the core material will be stored. The Platform Curator has responsibility to oversee use of the core materials through the end of the moratorium period.

B.1.b. Repository Curator

Each Curator serves as the Repository Curator with responsibility for the preservation of the core once it arrives at the repository where the core material will be stored. The Repository Curator has responsibility to oversee the use of core material after the moratorium period ends.

All Curators maintain records of all distributed samples, both from the platform and from the repositories. Sample records include the names of the recipients, the nature of the proposed research, the volume of samples taken, and the status of the request. This information is available to investigators upon request through the Repository Curator.

B.2. Curatorial Advisory Board

The Curatorial Advisory Board (CAB) is a standing body that consists of two IODP senior managers and three members of the scientific community (selected by the IODP Scientific Technology Panel) who serve overlapping four-year terms. Every effort will be made to ensure that CAB membership represents a variety of scientific disciplines.

The CAB has two main roles:

- Act as an appeals board vested with the authority to make final decisions regarding sample distribution if and when conflicts or differences of opinion arise among any combination of the sample requester, IODP Curator at the repository of interest, and the SAC.
- Review and approve requests to sample the permanent archive and requests for loans of core material for outreach and education.

A person appealing to the CAB may contact any member of the Board directly (see Appendix C for contact information).

B.3. Editorial Review Board

The Editorial Review Board (ERB) is established for every drilling project and comprised of the Co-Chief Scientist(s) for the drilling project and the IODP Staff Scientist assigned to the expedition. These individuals may select external scientists/specialists to serve with them. The need for external ERB members will be determined based on the Co-Chief Scientists' and Staff Scientist's workloads and