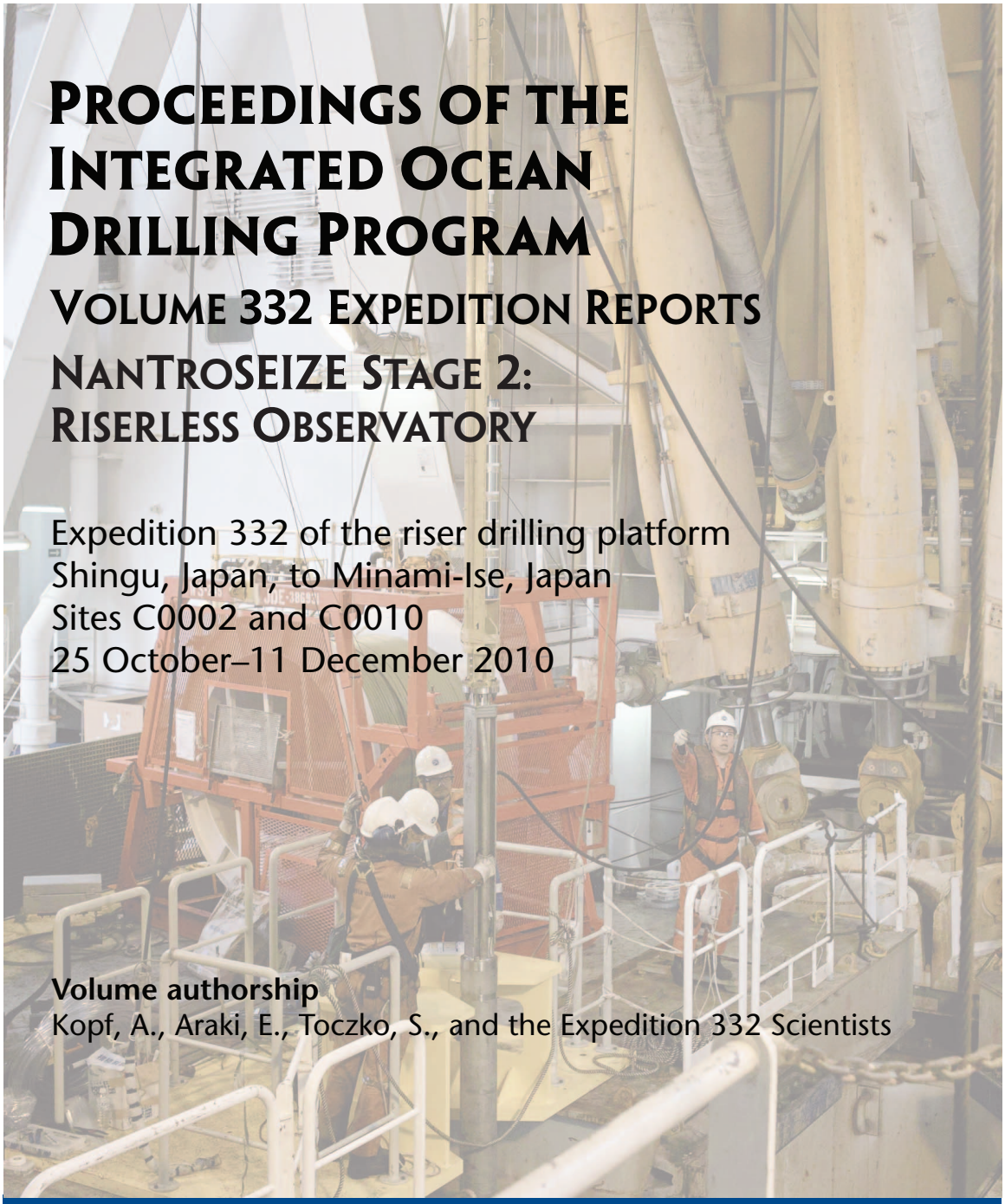

Proceedings of the Integrated Ocean Drilling Program

Volume 332 Expedition Reports

NanTroSEIZE Stage 2: Riserless Observatory

Expedition 332 of the riser drilling platform
Shingu, Japan, to Minami-Ise, Japan
Sites C0002 and C0010
25 October–11 December 2010

Volume authorship
Kopf, A., Araki, E., Toczko, S., and the Expedition 332 Scientists

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Ministry of Earth Sciences (MoES) India

Any opinions, findings, and conclusions or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of the participating agencies, IODP Management International, Inc., or Japan Agency for Marine-Earth Science and Technology.

Examples of how to cite this volume or part of this volume are available at **publications.iodp.org/proceedings/332/332bib.htm.**

Abbreviations for names of organizations and publications in IODP reference lists follow the style given in *Chemical Abstracts Service Source Index* (published by American Chemical Society).

The bulk of the shipboard-collected core data from this expedition is accessible at **sio7.jamstec.go.jp/.**

Some core photographs have been tonally enhanced to better illustrate particular features of interest. High-resolution images are available upon request.

Cover photograph shows the drill rig floor of D/V *Chikyu*. Photo © JAMSTEC.

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Foreword

By Integrated Ocean Drilling Program Management International, Inc.

The Integrated Ocean Drilling Program (IODP) is now in the latter half of its decadal program (2003–2013). As envisioned in the Initial Science Plan (ISP), IODP expeditions take advantage of three scientific ocean drilling platforms that enable us to cover unprecedented areas of wide oceans, from ice-covered shallow water to full ocean depths. Drilling miles of depth below seafloor, now part of IODP capabilities, is the major advance from the program predecessors, the Deep Sea Drilling Project and the Ocean Drilling Program. The living Earth is a dynamic system that is continuously evolving. IODP seeks to understand this complex and unique system through scientific ocean drilling, sampling, and experimenting in deep holes, along with advancement of related scientific disciplines. IODP is an international collaboration among scientists and nations with keen aspirations to attain the scientific goals of the ISP. IODP currently includes participating members from 24 nations.

The *Proceedings* present the scientific and engineering results of IODP drilling projects, each designed to better understand the past, present, and future of the Earth system.

IODP expeditions begin with scientists who submit research drilling proposals to test new and innovative ideas, then the proposals progress to international scientific advisors (Science Advisory Structure) who nurture, evaluate, rank, and prioritize proposals. Scientists also schedule the science operations, select science party members from scores of international scientists qualified to participate, plan platform operations, ready the drillship, and choose borehole locations. The science party, collectively and individually, conducts science on board and on shore. The co-chief scientists on each expedition are responsible for synthesizing the scientific results as hallmark of expedition.

Ocean-drilling achievements help us to understand and interpret phenomena in various parts of the Earth system. Achievements in the two legacy drilling programs have validated the scientific concepts behind plate tectonics, contributed to the understanding of ocean circulation changes, and extended our knowledge of long- and short-term climate change. IODP is truly an expansion and extension of the scientific research conducted by the legacy programs, engaging in cutting-edge research concerning topics of global importance.

IODP drilling platform operations are conducted by three Implementing Organizations (IOs). Riserless platform operations are conducted by the U.S. Implementing Organization (USIO), comprising the Consortium for Ocean Leadership, Inc., Texas A&M University through the Texas A&M Research Foundation, and Lamont-Doherty Earth Observatory of Columbia University. Riser platform operations are conducted by the Japan Agency for Marine-Earth Science and Technology through Japan's Center for Deep Earth Exploration in cooperation with the Center for Advanced Marine Core Research at Kochi University. Mission-specific platform operations are conducted by the European Consortium for Ocean Research Drilling (ECORD) Science Operator (ESO), comprising the British Geological Survey, the University of Bremen, and the European Petrophysics Consortium. The European IO currently represents the ocean-drilling efforts of 16 nations in Europe, plus Canada.

The discoveries presented in this volume build upon layers of knowledge and science developed over roughly the last fifty years. Expedition *Proceedings* are published by IODP Management International for IODP under the sponsorship of the U.S. National Science Foundation (NSF), Japan's Ministry of Education, Culture, Sports, Science and Technology, and other IODP members. The material is based upon research supported under Contract OCE-0432224 from NSF.

Kiyoshi Suyehiro
President & Chief Executive Officer
Integrated Ocean Drilling Program Management International, Inc.
Tokyo
www.iodp.org/

Integrated Ocean Drilling Program

Integrated Ocean Drilling Program Management International, Inc.

Web site: **www.iodp.org/**

IODP-MI
1001 Connecticut Avenue, NW, Suite 504
Washington DC 20036
USA
Tel: (202) 465-7500; Fax: (202) 955-8363
E-mail: **info@iodp.org**

IODP-MI
Tokyo University of Marine Science and Technology
Office of Liaison and Cooperative Research, 3rd Floor
2-1-6, Etchujima, Koto-ku, Tokyo 135-8533
Japan
Tel: (81) 3-6701-8-3181; Fax: (81) 3-6701-3189

IODP-MI member organizations*

Alfred-Wegener-Institute für Polar und Meeresforschung, Germany

British Geological Survey, United Kingdom

Cardiff University, United Kingdom

Columbia University, Lamont-Doherty Earth Observatory, USA

Federal Institute of Technology (ETH) Zurich, Switzerland

Florida State University, USA

Hokkaido University, Japan

Liebniz, Institute of Marine Sciences (IFM-GEOMAR), University of Kiel, Germany

Institut de Physique du Globe de Paris, France

Institut Universitaire Européen de la Mer (IUEM), France

Japan Agency for Marine-Earth Science and Technology (JAMSTEC), Japan

Kochi University, Japan

Kyushu University, Japan

National Institute of Advanced Industrial Science (AIST), Japan

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Texas A&M University, USA

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University of Southampton, National Oceanography Centre, United Kingdom

University of Tasmania/IMS, Australia

University of Texas at Austin, USA

University of Tokyo, Japan

University of Washington, USA

Woods Hole Oceanographic Institution, USA

*At time of expedition.

Implementing organizations

IODP European Implementing Organization: European Consortium for Ocean Research Drilling, Science Operator (ESO)

Web site: **www.eso.ecord.org/**

IODP-ESO Coordinator: Science, Logistics, and Operations

British Geological Survey
Murchinson House
West Mains Road
Edinburgh EH9 3LA
United Kingdom
Tel: (44) 131-667-1000; Fax: (44) 131-668-4140
E-mail **eso@bgs.ac.uk**

IODP-ESO Petrophysics

European Petrophysics Consortium
Department of Geology
University of Leicester
Leicester LE1 7RH
United Kingdom
Tel: (44) 116-252-3611; Fax: (44) 116-252-3918
E-mail: **sjd27@leicester.ac.uk**

IODP-ESO Curation and Laboratories

Integrated Ocean Drilling Program
Bremen Core Repository
Center for Marine Environmental Sciences
DFG Research Center for Ocean Margins
University of Bremen
Leobener Strasse
28359 Bremen
Germany
Tel: (49) 421-218-65561; Fax: (49) 421-218-98-65565
E-mail: **bcr@marum.de**

IODP Japanese Implementing Organization: Japan Agency for Marine-Earth Science and Technology (JAMSTEC)

Web site: **www.jamstec.go.jp/chikyu/eng/index.html**

IODP-Japan Science Operator

Center for Deep Earth Exploration (CDEX)
Japan Agency for Marine-Earth Science and Technology
Yokohama Institute for Earth Sciences
3175-25 Showa-machi
Kanazawa-ku, Yokohama
Kanagawa 236-0001
Japan
Tel: (81) 45-778-5643; Fax: (81) 45-778-5704
E-mail: **cdex@jamstec.go.jp**

IODP U.S. Implementing Organization

Web site: **www.iodp-usio.org/**

IODP-USIO Systems Integration Contractor

Consortium for Ocean Leadership
1201 New York Avenue, NW, Fourth floor
Washington DC 20005
USA
Tel: (202) 232-3900; Fax: (202) 462-8754
E-mail: **info@oceanleadership.org**

IODP-USIO Science Services, LDEO

Lamont-Doherty Earth Observatory
of Columbia University
PO Box 1000, 61 Route 9W
Palisades NY 10964
USA
Tel: (845) 365-8672; Fax: (845) 365-3182
E-mail: **borehole@ldeo.columbia.edu**

IODP-USIO Science Services, TAMU

Integrated Ocean Drilling Program
Texas A&M University
1000 Discovery Drive
College Station TX 77845-9547
USA
Tel: (979) 845-2673; Fax: (979) 845-4857
E-mail: **information@iodp.tamu.edu**

Expedition 332 science party*

Expedition 332 scientists

Achim Kopf
Co-Chief Scientist
MARUM Research Centre
University of Bremen
Leobener Strasse
28359 Bremen
Germany
akopf@marum.de

Eiichiro Araki
Co-Chief Scientist
Institute for Research on Earth Evolution
Japan Agency for Marine-Earth Science and Technology
2-15 Natsushima-cho
Yokosuka
Kanagawa 237-0061
Japan
araki@jamstec.go.jp

Sean Toczko
Expedition Project Manager
Center for Deep Earth Exploration
Japan Agency for Marine-Earth Science and Technology
3173-25 Showa-machi
Kanazawa-ku, Yokohama
Kanagawa 236-0001
Japan
sean@jamstec.go.jp

Yukari Kido
Logging Staff Scientist
Center for Deep Earth Exploration
Japan Agency for Marine-Earth Science and Technology
3173-25 Showa-machi
Kanazawa-ku, Yokohama
Kanagawa 236-0001
Japan
ykido@jamstec.go.jp

Sebastian Hammerschmidt
Geoscientist
Department of Geosciences
University of Bremen
Bibliotheksstrasse 1
28359 Bremen
Germany

Present address (August 2011):
MARUM Research Centre
University of Bremen
Leobener Strasse
28359 Bremen
Germany
hammerschmidt@uni-bremen.de

Toshinori Kimura
Geophysicist/Downhole Measurements Specialist
Institute for Research on Earth Evolution
Japan Agency for Marine-Earth Science and Technology
2-15 Natsushima-cho
Yokosuka
Kanagawa 237-0061
Japan
kimurat@jamstec.go.jp

Kazuya Kitada
Geophysicist/Downhole Measurements Specialist
Institute for Research on Earth Evolution
Japan Agency for Marine-Earth Science and Technology
2-15 Natsushima-cho
Yokosuka
Kanagawa 237-0061
Japan
kkitada@jamstec.go.jp

Rachel Lauer
Hydrogeologist/Downhole Measurements Specialist/Seismologist
The Pennsylvania State University
University Park PA 16802
USA
rml@geosc.psu.edu

*Addresses at time of expedition, except where updated by the participants.

Demian Saffer
Hydrogeologist/Downhole Measurements Specialist
The Pennsylvania State University
Deike Building
University Park PA 16802
USA
dsaffer@geosc.psu.edu

Geoff Wheat
Microbiologist/Inorganic Chemist/ Hydrogeologist
School of Fisheries and Ocean Sciences
University of Alaska Fairbanks
PO Box 475
Moss Landing CA 95039
USA
wheat@mbari.org

NanTroSEIZE chief project scientists

Masataka Kinoshita
Institute for Research on Earth Evolution
Japan Agency for Marine-Earth Science and Technology
2-15 Natsushima-cho
Yokosuka
Kanagawa 237-0061
Japan
masa@jamstec.go.jp

Harold Tobin
Department of Geology and Geophysics
University of Wisconsin-Madison
1215 West Dayton Street
Madison WI 53706
USA
htobin@wisc.edu

NanTroSEIZE specialty coordinators

Toshiya Kanamatsu
Paleomagnetism/Biostratigraphy
Institute for Research on Earth Evolution
Japan Agency for Marine-Earth Science and Technology
2-15 Natsushima-cho
Yokosuka
Kanagawa 237-0061
Japan
toshiyak@jamstec.go.jp

Gaku Kimura
Structural Geology
Department of Earth and Planetary Science
Graduate School of Science
University of Tokyo
7-3-1 Hongo
Bunkyo-ku
Tokyo 113-0033
Japan
gaku@eps.s.u-tokyo.ac.jp

Gregory Moore
Core-Log-Seismic Integration
Department of Geology and Geophysics
University of Hawaii
1680 East-West Road
Honolulu HI 96822
USA
gmoore@hawaii.edu

Demian Saffer
Physical Properties
The Pennsylvania State University
Deike Building
University Park PA 16802
USA
dsaffer@geosc.psu.edu

Michael B. Underwood
Sedimentology
University of Missouri
307 Geology Building
Columbia MO 65211
USA
underwoodm@missouri.edu

Geoff Wheat
Geochemistry
School of Fisheries and Ocean Sciences
University of Alaska Fairbanks
PO Box 475
Moss Landing CA 95039
USA
wheat@mbari.org

Operational and technical staff

Shipboard personnel and technical representatives

Captains (Mantle Quest Japan)
Yasushi Minoura
Yuji Onda

Offshore Installation Managers (Mantle Quest Japan)
Seizaburo Higuchi
Stephen Krukowski

Operations Superintendents (CDEX)
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Douglas Alexander
Richard Chittleburg
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ROV Technicians (Oceaneering International)
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ROV Engineers (Oceaneering International)
David Milton Morton

Drilling Engineers (CDEX)
Yasuhiro Kawano (CDEX-Bets)
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Kiyoaki Oikawa
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Wellhead Engineers (VETCO Gray)
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Naotaka Togashi
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Masahiro Yasunaga

Operations Geologists (CDEX)
Kan Aoike
Toshiro Kaminishi

Publications Assistant (Marine Works Japan)
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Expedition reports

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Expedition research results

Data reports

Titles are available in **HTML.**

Syntheses

See **"Syntheses"** in the Expedition-related bibliography.

Drilling location maps

A site map showing the drilling locations for this expedition and maps showing the drilling locations of all Integrated Ocean Drilling Program (IODP), Ocean Drilling Program (ODP), and Deep Sea Drilling Project (DSDP) drilling sites are available in PDF format. These maps were produced using Generic Mapping Tools (GMT) of Paul Wessel and Walter H.F. Smith (**gmt.soest.hawaii.edu/**).

IODP Expedition 332 site map

IODP map (Expeditions 301–329, 331, and 332)

ODP map (Legs 100–210)

DSDP map (Legs 1–96)

Expedition-related bibliography

IODP publications

Scientific Prospectus

Kopf, A., Araki, E., and Toczko, S., 2010. NanTroSEIZE Stage 2: riserless observatory. *IODP Sci. Prosp.,* 332. **doi:10.2204/iodp.sp.332.2010**

Preliminary Report

Kopf, A., Araki, E., Toczko, S., and the Expedition 332 Scientists, 2011. NanTroSEIZE Stage 2: riserless observatory. *IODP Prel. Rept.,* 332. **doi:10.2204/iodp.pr.332.2011**

Scientific Drilling journal*

Pending

Proceedings volume

Kopf, A., Araki, E., Toczko, S., and the Expedition 332 Scientists, 2011. *Proc. IODP,* 332: Tokyo (Integrated Ocean Drilling Program Management International, Inc.). **doi:10.2204/iodp.proc.332.2011**

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Kitada, K., Araki, E., Kimura, T., Kinoshita, M., Kopf, A., Hammerschmidt, S., Toczko, S., Saruhashi, T., Sawada, I., Kyo, M., Namba, Y., Kido, Y., Saffer, D.M., Lauer, R., and Wheat, G., 2011. Drill pipe monitoring of vortex-induced vibration during IODP Expedition 332 observatory installations. *In* Kopf, A., Araki, E., Toczko, S., and the Expedition 332 Scientists, *Proc. IODP,* 332: Tokyo (Integrated Ocean Drilling Program Management International, Inc.). **doi:10.2204/iodp.proc.332.106.2011**

*The **Expedition-related bibliography** is continually updated online. Please send updates to **PubCrd@iodp.tamu.edu.**

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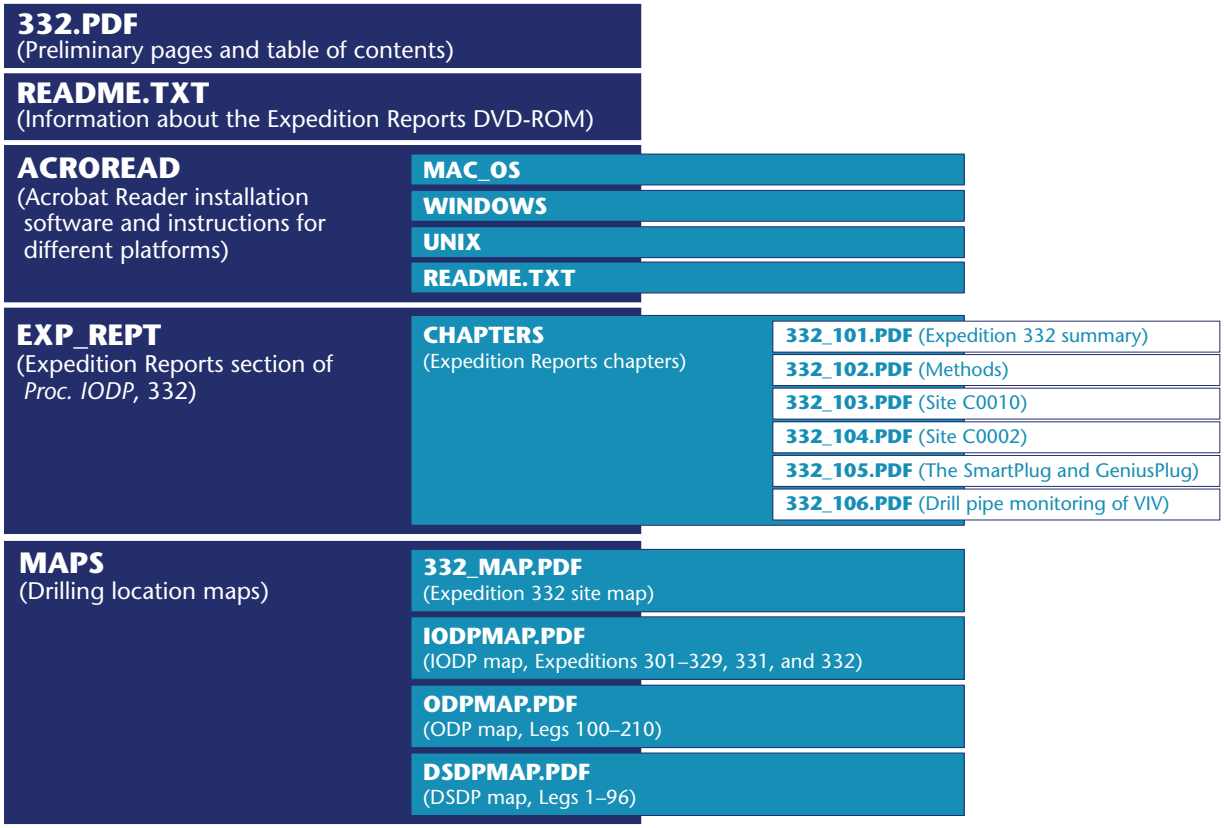

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