


2006

Guide to Participation for the ANDRILL McMurdo Ice Shelf Project

ANDRILL Science Management Office

McMurdo-ANDRILL Science Implementation Committee

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GUIDE TO PARTICIPATION

FOR THE ANDRILL
MCMURDO ICE SHELF PROJECT



ANDRILL CONTRIBUTION 6

Prepared by the ANDRILL Science
Management Office (SMO)
& McMurdo-ANDRILL Science
Implementation Committee (M-ASIC)

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Please visit our website at: <http://andrift.org>

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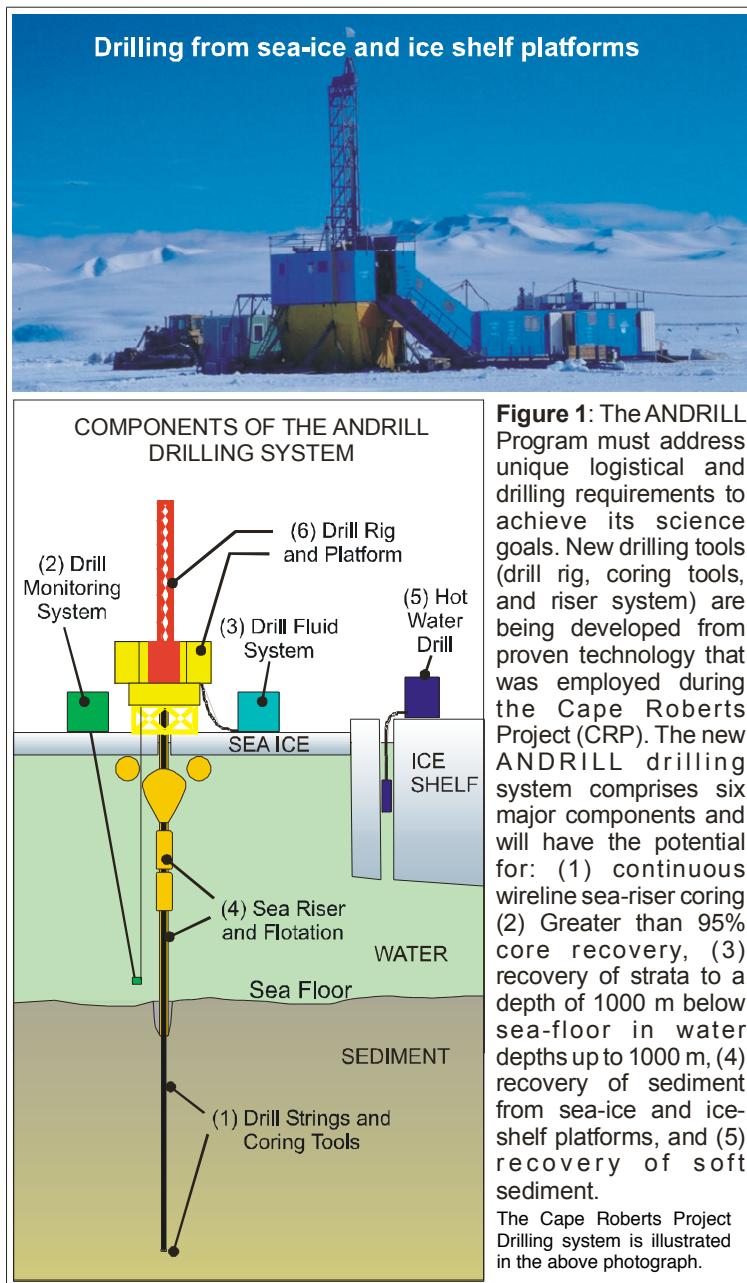
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1. PURPOSE OF THIS DOCUMENT



This document is a guide to participation for science team members involved in the McMurdo Ice Shelf (MIS) Project of the ANDRILL Program. The document provides the following information: 1) An overview of the ANtarctic geologic DRILLing (ANDRILL) Program; 2) An overview of expected individual involvement in and commitment to the MIS Project; and 3) Logistical information most relevant to on-ice participants. Information provided in this document will be supplemented by the publication of the MIS Science and Logistics Implementation Plan (SLIP). The SLIP will be available to all MIS ANDRILL participants prior to commencement of drilling.

The reader should refer to the Appendices of this document for more detailed information on the international management of the ANDRILL Program, pertinent contact information (including a roster of the MIS Science Team Members), and for a list of acronyms used throughout the document.

The McMurdo-ANDRILL Science Implementation Committee (M-ASIC) and the ANDRILL Science Committee (ASC) encourage all international scientists designated for participation in the 2006 ANDRILL drilling season to read this document, become familiar with the SLIP (when available) and to contact either your National Steering Committee Representative(s), MIS Co-Chiefs, or the ANDRILL Science Management Office (SMO) with questions or concerns regarding your participation in the MIS project.

2. INTRODUCTION TO THE ANDRILL PROGRAM

ANDRILL (ANtarctic geologic DRILLing) is a multinational, multidisciplinary program investigating Antarctica's role in Cenozoic-Recent global environmental change. ANDRILL's integrated science approach will use stratigraphic drilling and multi-proxy core analysis combined with geophysical surveys and numerical modeling to address: 1) the

Cenozoic history of Antarctic climate and ice sheets; 2) the evolution of polar biota; 3) Antarctic tectonism; and 4) Antarctica's role in the evolution of Earth's ocean-climate system. Nations contributing funds to the current ANDRILL projects include Germany (GER), Italy (IT), New Zealand (NZ), and the United States (U.S.). Information regarding the development of ANDRILL and summaries of key science issues and targets is presented in a comprehensive planning document (Harwood *et al.*, 2002), which resulted from an international workshop held at Oxford University in 2001. A copy of this document is available on the ANDRILL web site <http://andrill.org> and from the ANDRILL SMO. Results from ice sheet and climate modeling will provide the forum to help integrate new ANDRILL data into a broader regional and global context. Two initiatives endorsed by the Scientific Committee on Antarctic Research (SCAR), Antarctic Climate Evolution (ACE) <http://www.ace.scar.org> and Antarctic Neotectonics (ANTEC) <http://www.geoscience.scar.org/geodesy/antec> will help facilitate the integration of new information generated by ANDRILL into climate, ice sheet and tectonic models, and expose the broader scientific community, general public and policymakers to Antarctic paleoenvironmental and geological issues.

International funding for ANDRILL supported the development of a new, dedicated drilling system and drilling camp to enable the completion of two inaugural projects, which will be drilled in late 2006 and 2007 in the McMurdo Sound region of the Ross Sea. The drilling system, based on technology proven during the Cape Roberts Project (CRP) (Davey *et al.*, 2001), has the capability to recover strata (including soft sediment and bedrock) up to 1000 meters below sea floor (mbsf) in 1000 meters of water (a total drill string length of 2000 m), and with high-percentage core recovery (>90%). The ability to use either fast-ice or shelf ice as a drilling platform will allow sampling from a wide range of marine environments (Figure 1). The anticipated 20-year life span of the drilling rig is expected to enable future drilling in other regions of the Antarctic margin. Future ANDRILL projects will depend on new proposals to national funding agencies. Ongoing and future community involvement and proposal/site development is encouraged, facilitated and coordinated by the ASC and SMO.

2.1 INTERNATIONAL SUPPORT FOR ANDRILL

2.1.1 International Proposal and Funding

The ANDRILL International Science Proposal (AISP) was written by proponents of drilling projects, members of National Steering Committees and the ASC and submitted to National Antarctic Science Program Managers in June 2003. The Program Managers established an International Review Panel, comprised of scientists from Italy, Germany, New Zealand and the United States, which evaluated the AISP and recommended support of two projects of the proposed five-project McMurdo Sound Portfolio - the McMurdo Ice Shelf Project (MIS) and the Southern McMurdo Sound Project (SMS). The successful review led to the support of ANDRILL scientific programs in the partner nations and authorized the contributions toward operational costs in support of ANDRILL, as managed by the ANDRILL Operations Management Group (AOMG). The funding contributions to ANDRILL logistics and operations costs are U.S., New Zealand, Italy, and Germany contributing 50%, 25%, 18.5%, and 6.5%, respectively. It is on these proportions that scientific staffing was based. The project summary of the AISP is provided below.

2.1.2 Project Summary: ANDRILL - Investigating Antarctica's Role in Cenozoic Global Environmental Change

ANDRILL is a multinational, multidisciplinary program which includes scientists, students, educators, drillers, science and operations management personnel from Germany, Italy, New Zealand, the United Kingdom and the United States, designed to investigate Antarctica's role in Cenozoic global environmental change. ANDRILL's goal is to obtain a direct reference record of important Eocene, Neogene and Holocene stratigraphic intervals in the high southern latitudes proximal to the dynamic Antarctic cryosphere. ANDRILL will use an integrated approach involving geophysical site surveys, core recovery and analysis, and numerical modeling to address four scientific

themes: (1) history of Antarctic climate and ice sheets; (2) evolution of polar biota; (3) Antarctic tectonism; and (4) Antarctica's role in Earth's ocean-climate system. The program will use new innovations in polar drilling technology developed with support from NSF and the national research programs of ANDRILL partner nations. Two drilling Projects in the McMurdo Sound region will target stratigraphic records at new locations and previously unrecovered time periods. Results will lead to insights into: (1) the development of the Antarctic cryospheric system (ice sheet, ice shelf, and sea ice); (2) the magnitude and frequency of cryospheric changes on centennial to millennial timescales; (3) the influence of Antarctic ice sheets on Eocene to Holocene climate, the modulation of thermohaline ocean circulation, and eustatic change; and (4) the evolution and timing of major tectonic episodes in Antarctica and the development of sedimentary basins. The results will also contribute to the goals of other international science initiatives such as the Ocean Drilling Program (ODP), the Integrated Ocean Drilling Program (IODP), International Marine Global Changes (IMAGES), and MARGINS. The program will bring together international teams of scientists, educators, and students for each drilling project, and will provide unique opportunities to share aspects of Antarctic Earth science with the global community.

The successful retrieval of cores in Antarctica with better than 95% core recovery and excellent depth of penetration from fast-ice, ice-shelf, and land-based platforms is ensured by the improved ANDRILL drilling system. The ANDRILL program will provide new, seismically-linked and chronostratigraphically well-constrained Cenozoic stratigraphic records from locations proximal to the Antarctic cryosphere. Empirical data garnered from these records will calibrate numerical models, and will allow new and direct constraints to be placed on estimates of ice volume variability, marine and terrestrial temperatures, the timing and nature of major tectonic episodes, and the development of Antarctica's marine, terrestrial, and sea-ice biota. The ANDRILL Program will deliver a unique dataset that can only be obtained from an ice-based drilling system. The new ANDRILL data will complement the results of parallel international initiatives and enable the global scientific community to begin to fully assess the role of Antarctica in Earth's ocean-climate system. ANDRILL will build upon the strong scientific foundations and partnerships among individual researchers and international institutions developed during the successful CRP (1992-2001).

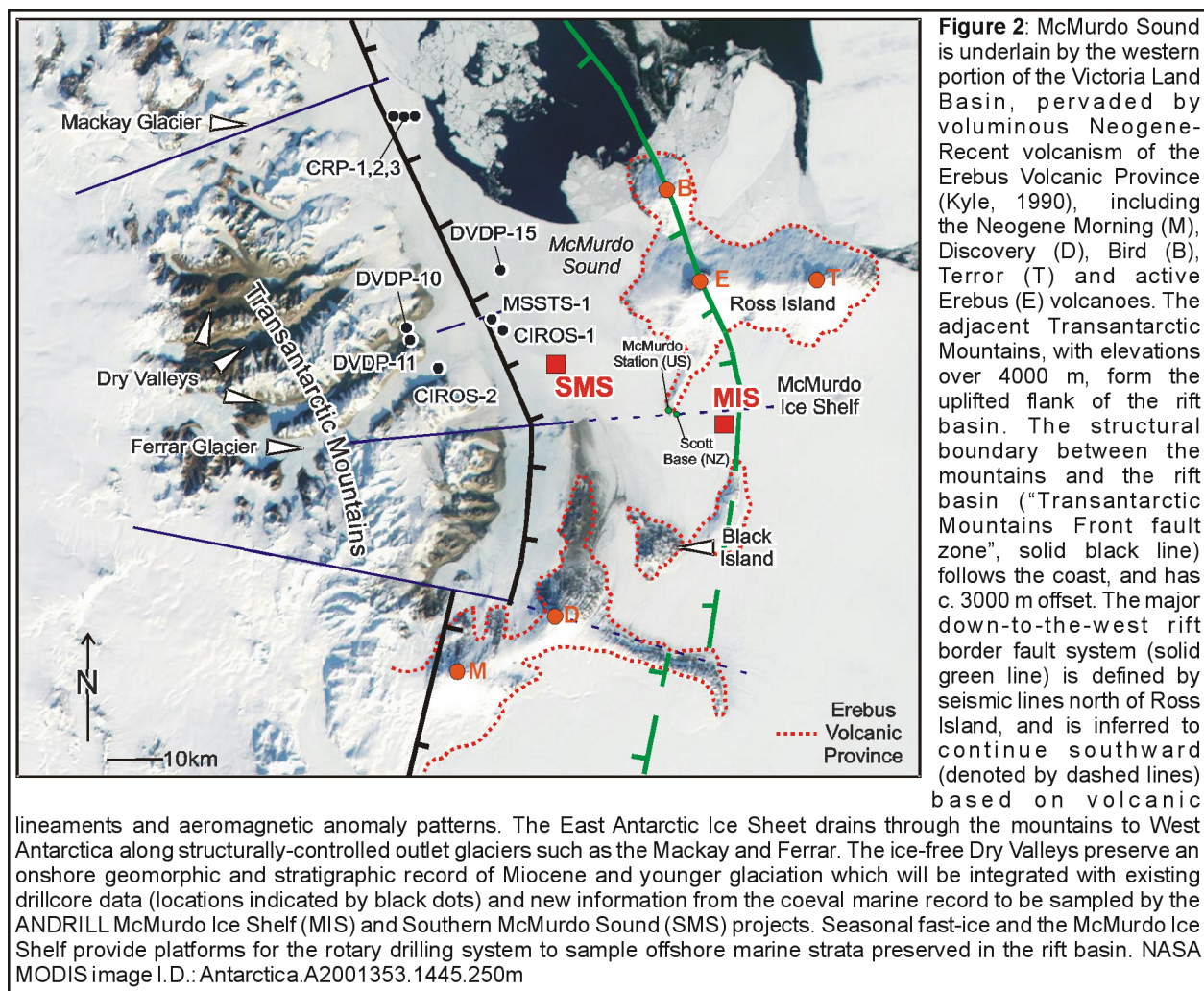
Note: The United Kingdom (U.K.) is a member of the ANDRILL Program (through membership of the ASC), but it is not currently contributing funds toward the two supported ANDRILL Projects.

2.2 OVERVIEW OF THE INAUGURAL ANDRILL PROJECTS

The first two seasons of ANDRILL drilling are scheduled for the austral summer of 2006 (MIS) and 2007 (SMS). For a detailed overview of the scientific goals and rationale for each project, please refer to the Science Plan in the respective project's Scientific Prospectus document, which are available on the ANDRILL website (<http://andrill.org>) and from the ANDRILL SMO.

McMurdo Sound was selected as the site for the first phase of ANDRILL for scientific and logistical reasons. McMurdo Sound is located at the juncture of several components of the West Antarctic Rift System (WARS), including the Victoria Land Basin (VLB), Transantarctic Mountains (TAM), and Erebus Volcanic Province (Figure 2). The region is currently situated near the confluence of several components of the Antarctic cryosphere including the East and West Antarctic ice sheets, local alpine glaciers and sea ice. As proven at Cape Roberts, proximity to the TAM combined with ample accommodation space from tectonic subsidence of the VLB gives the region excellent potential to produce high-quality, time-continuous paleoenvironmental records, during times of both large and small Antarctic ice sheets. In some areas of the McMurdo Sound, Neogene volcanism has produced flexural-moat basins superposed on the Victoria Land rift basin. The flexural moats provide both an ideal setting for sediment accumulation and a means of developing a high-resolution chronology from volcanic detritus. MIS and SMS drill site locations are based on geophysical and seismic surveys combined with knowledge gained at other proximal drill sites. Both sites are located to maximize the potential recovery of new stratigraphic records.

McMurdo Sound is close to existing Antarctic logistical centers, including McMurdo Station (U.S.) and Scott Base (NZ). The Crary Science and Engineering Center (CSEC or Crary Lab) at McMurdo Station is a state-of-the-art science facility in which most of the on-ice science will occur. The proximity of these facilities to the selected drill sites minimizes logistical difficulties associated with operating a new drilling system in an extreme environment. Furthermore access to Crary Lab allows ANDRILL to involve a full scientific team to achieve comprehensive on-ice core characterization and analysis. Other research will be conducted during drilling at the drillsite and at the home institutions of the off-ice Science Team Members.



2.2.1 McMurdo Ice Shelf Project (MIS)

Response of Antarctic ice sheets to projected greenhouse warming of up to 5.8°C by the end of the century is not known. Models on which predictions are based need to be constrained by geological data of the ancient ice sheets during times when Earth is known to have been warmer than today. The marine-based West Antarctic Ice Sheet (WAIS) and its fringing ice shelves are hypothesized (Clark et al., 2002; Weaver et al., 2003; Stocker, 2003) and documented (Scherer et al., 1998) to have collapsed during past "super-interglacial" warm extremes when global sea-level was more than 5 m higher than today. Recent collapse of small ice shelves along the Antarctic Peninsula

(Doake and Vaughn, 1991; Skvarca, 1993; Rott et al., 1996; Vaughn and Doake, 1996; Doake et al., 1998; Rott et al., 1998; Skvarca et al., 1999; Rott et al., 2002) highlights the vulnerability of these glacial components to global warming. The Ross Ice Shelf (RIS) appears to represent one of the most vulnerable elements of the WAIS system. Future demise of the RIS, on timescales of decades to centuries, may well provide an important precursor to eventual WAIS collapse.

The key aim of this research project is to determine past ice shelf responses to climate forcing, including variability at a range of timescales. To achieve this aim ANDRILL will drill a stratigraphic hole from a platform located on the northwest corner of the Ross Ice Shelf – the McMurdo Ice Shelf (MIS) sector, east of Hut Point Peninsula, Ross Island. Drilling will be undertaken in the austral summer of 2006-2007. The primary target for the MIS site is a 1200 m-thick body of Plio-Pleistocene glacimarine, terrigenous, volcanic, and biogenic sediment that has accumulated in the Windless Bight region of flexural moat basin surrounding Ross Island (Harwood et al., 2002). A single ~1000 m-deep drill core will be recovered from the bathymetric and depocentral axis of the moat in approximately 900 m of water. The drilling technology will utilize a sea-riser system in a similar fashion to the CRP, but will employ a combination of soft sediments coring tools and continuous wireline diamond-bit coring. Innovative new technology, in the form of a hot-water drill and over-reamer, will be used to make an access hole through ~200 m of ice and to keep the riser free and unfrozen during drilling operations.

Paleoclimatic, paleoceanic, and tectonic objectives at MIS are to:

- determine the timing of RIS-WAIS development relative to major ice expansion of northern hemisphere ice sheets c. 3.0 to 2.5 million years ago
- describe the nature of grounding-line and calving-line variability during both the last glacial cycle and the Plio-Pleistocene climate cycles
- document RIS behavior during the past interglacial warm climatic optima (e.g. Marine Isotope Stages 5e, 11, 31), and interstadial warm periods
- establish sedimentological and biological evidence for RIS collapse and their correspondence to melt-water discharge
- understand the effect of RIS collapse on the global thermohaline ocean conveyor
- assess the phase relationship between RIS collapse, or partial collapse and northern hemisphere climatic events
- provide the detailed history of the Ross Island volcanic complex
- understand the flexural response of continental lithosphere to volcanic loading
- propose a history of Pliocene faulting
- establish temporal relationships between volcanism, ice volume, local sea level, and eustasy
- document and describe the regional stress regime

2.2.2 Southern McMurdo Sound Project (SMS)

During the austral summer of 2007 the ANDRILL Program will drill from a sea-ice platform in southern McMurdo Sound to obtain new information about the Neogene Antarctic cryosphere and evolution of Antarctic rift basins. Target strata are middle Miocene to Quaternary in age (~17 Ma to present) and span several key steps in the evolution of Antarctic climate. Fault- and flexure-related subsidence associated with rifting and volcanic loading has provided accommodation space adjacent to the rising Transantarctic Mountains (TAM) that achieved a sediment history of this important region, which is also influenced by three significant components of the Antarctic cryospheric system: the East Antarctic Ice Sheet (EAIS), Ross Ice Shelf (RIS)/ West Antarctic Ice Sheet (WAIS), and the Ross Embayment sea-ice. The Southern McMurdo Sound Project (SMS) drillcore will also record a tectonic history of the Antarctic Rift system (Victoria Land Basin – VLB), the TAM and the Erebus Volcanic Province. The key aim of the SMS Project is to establish a robust history of the Neogene Antarctic ice sheet variation and climate

evolution that can be integrated into continental and global records toward a better understanding of Antarctica's role in the past, present and future global system.

To achieve this aim, one drillhole (>1000 m) will sample a sequence of strata identified on seismic lines and inferred to represent a lower Miocene and younger sequence of seismic units that expand basinward. Several distinct seismic packages are identified. These units are separated by distinct seismic reflection surfaces, three of which appear to be regional erosional surfaces. This drillhole will recover a composite thickness of >1000 m of strata that lie stratigraphically above the lower Miocene section recovered at the top of the nearby Cenozoic Investigations in the Western Ross Sea (CIROS) -1 drillcore, and above the 1400 m composite section covered by the CRP (~34 to 17 m) (Davey et al., 2001; Florindo et al., 2005). Drilling technology will utilize a sea-riser system and continuous wire-line diamond-bit coring to ensure high-percentage core recovery similar to that obtained by the CRP (e.g. 98% of 939 m in the CRP-3 drillhole).

The recovery of lower to middle Miocene Antarctic stratigraphic sequences is required to evaluate the history derived from global proxy records that invoke a change from a warm climate optimum (~17 Ma) to the onset of major cooling (~14 Ma) and the formation of a quasi-permanent ice sheet on East Antarctica. Secondary target strata of the Pliocene and Pleistocene age from a distal marine setting will complement and build on coastal and fjord sediment records from Dry Valley Drilling Project (DVDP) -10, -11, and CIROS-2 drillcores that are interpreted to reflect repeated Late Neogene alternation between 'interglacial' and 'glacial' conditions. The SMS site is well-connected to the grid of seismic lines in the VLB; hence the recovered sections will provide excellent chronostratigraphic control for regional seismic surfaces and units important for interpreting regional stratal architecture and for dating Neogene and younger subsidence and rift fault history.

Paleoclimatic, paleoceanic, and tectonic objectives at SMS are to:

- document the initial onset and subsequent history of sea-ice presence/absence
- document the evolution and demise of Neogene terrestrial vegetation
- document the evolution of terrestrial vegetation during the Neogene
- establish a local Late Neogene sea-level record
- test whether stable cold-polar climate conditions persisted for the last 15 m.y.
- document melt-water discharge events from the adjacent Dry Valley/TAM system
- construct a composite event history of glacial and interglacial events across a coastal to deep basin transect
- provide chronostratigraphic control for the regional seismic framework in the western Ross Sea
- develop provenance and exhumation proxies within Neogene sediment from the TAM
- document and describe the regional stress regime

3. ANDRILL INTERNATIONAL SCIENCE PARTICIPATION

3.1 OVERVIEW

This ANDRILL Guide to Participation (AGTP) was developed by the SMO, M-ASIC, and the MIS Co-Chiefs to facilitate: participation of international scientists in ANDRILL projects; production of high quality scientific results; and dissemination of results to the broader international community. The AGTP directs or outlines involvement of the international Antarctic scientific community in all aspects of ANDRILL, from initial planning activities through post-drilling dissemination of results. Components of the ANDRILL Guide to Participation include:

- Scientist Support
- Project Staffing
- Core Characterization Phase
- Science Documentation Phase
- Travel and On-Ice Information
- Contact information for the MIS Science Team

The ANDRILL MIS Science Team activities are managed by the ANDRILL SMO, University of Nebraska-Lincoln (UNL), under advisement of the Co-Chief Scientists and the M-ASIC. A description of ANDRILL's Science Management Organization is found in Appendix A; and contact information for its current members is in Appendix B.

3.2 COMPOSITION OF SCIENCE TEAMS

Science Team Members for ANDRILL projects were selected from a pool of applicants affiliated with scientific institutions from nations that are contributors to logistical and operational costs of the ANDRILL projects. A standard application procedure was implemented for interested scientists from each contributing nation, however initial screening of applicants fell within the jurisdiction of each national program. Applications for both the MIS and SMS Projects were submitted and managed through CHRONOS, a web-based data portal and interface system.

The application process was competitive, and decisions were based on a variety of criteria, including scientific program needs, qualifications, availability of appropriate research facilities, and national and international priorities and constraints. The number of participating scientists from each partner nation is roughly proportional to that nation's financial contribution to the total ANDRILL operational costs (Section 2.1.1).

The ANDRILL SMO forwarded all submitted applications from participants to the relevant Co-Chief Scientists and to respective national agencies for evaluation. Co-Chief Scientists considered staffing recommendations from each contributing nation to formulate an initial staffing plan for each project based on science needs, national logistical contributions, and identified areas of national scientific focus. Co-Chief Scientists forwarded their initial staffing plans to the M-ASIC for consideration. The M-ASIC met in September 2005 to decide on the Staffing Plan for both the MIS and SMS Projects.

Senior scientists from the member nations were invited to become Science Team Members for each of the supported ANDRILL Projects (two Co-Chief Scientists and approx. 74 senior, research, and post doctoral scientists

On- and Off-ice). Applications were accepted from scientists and engineers (e.g. professors, research scientists, technologists, graduate students) affiliated with respective national institutions (e.g. universities, government agencies, corporations). Science Team Members were assigned to either the on-ice or off-ice group. All on-ice team members will travel to, and work in, Antarctica (at McMurdo Station, with exception of the drillers and other designated science personnel) during the drilling operations, while off-ice personnel will remain at their home institutions.

Acceptance of an invitation to participate as a Science Team Member in an ANDRILL Project is an implicit, non-transferable agreement to participate, unless circumstances develop that would prevent your participation. All participants have agreed to the “Responsibilities of Science Team Members” given in Section 5 of this document, as well as specific responsibilities in the duties as outlined by the official letter/invitation of the MIS Co-Chief Scientists.

3.3 STAFFING PROCEDURE

Staffing recommendations were made through a joint consultation procedure involving a proposal submission and review process managed by the National Programs. This process was completed during the summer of 2005. Staffing recommendations were forwarded to project Co-Chief Scientists and the M-ASIC for consideration and approval. The staffing procedure resulted in an integrated Science Team chosen to meet the scientific objectives of each project, balanced by national affiliation as outlined in the ANDRILL Record of Understanding (RoU) signed by members of the AOMG, and by M-ASIC staffing protocol. All chosen Science Team Members were contacted with an invitation to join their respective ANDRILL-project in October 2005.

3.4 INVOLVEMENT OF THE SCIENCE TEAM MEMBERS

Commitment to the project begins when invitees sign an agreement with the M-ASIC elaborating their responsibilities and their acceptance of all the rights, privileges and obligations of a member of the Science Team, as defined by ANDRILL policy. On-ice Science Team Members will travel to Antarctica for the drilling season. Drilling season lengths can vary, but two to three months is a typical duration. On-ice Science Team Members will be expected to stay for the entire length of the expedition. Off-ice Science Team Members will receive samples delivered from Antarctica while drilling is underway, and will work on these samples at their home institution and report results to the Co-Chief Scientists in Antarctica. Each project will run for approximately two and a half years with the work effort divided into two phases: Core Characterization and Science Documentation.

Initial scientific data and core logs will be included in an On-Ice Report produced and circulated on-line at the conclusion of drilling operations. Following the completion of the drilling phase of each project, Science Team Members will continue research activities at their home institutions and publish initial scientific results in an Initial Results Volume, which will be produced as a compilation of results presented at the Core Sampling Workshop (4 months post-drilling). In addition, there will be a moratorium period of two years on post-core workshop sampling.

Projects will be considered complete following acceptance of a manuscript for a Scientific Results Volume or other mainstream scientific journal approximately 24 months after drilling ends.

It is anticipated that all Science Team Members will participate in both the Core Characterization and Science Documentation phases as described below.

3.5 CORE CHARACTERIZATION

This phase involves a six-month period of study (3 months during drilling and 3 months immediately following drilling) on initial samples and measurements collected during the drilling phase of the Project. During drilling, the Core Characterization phase research will be conducted by project scientists working in Antarctica, as well as by others working at home institutions. Once drilling ends, both groups of scientists will continue to work on initial samples at their home institutions. A Core Sampling Workshop at the curatorial facility (FSU) will mark the end of the Core Characterization phase.

3.6 SCIENCE DOCUMENTATION

This phase involves an 18-month period of study on samples requested at the Core Sampling Workshop. Results obtained during the Science Documentation phase will be integrated with that of other Science Team Members during the Science Integration Workshop to be held ~16 months after the Core Sampling Workshop. Science Documentation proposals will go through a merit-review process that will be implemented by M-ASIC. Other scientists who are not Science Team Members may, by invitation or approval of the Co-Chief Scientist, submit a research proposal to the SMO to request samples. These proposals will require endorsement of the Project's Co-Chief Scientists, and will be evaluated by the M-ASIC and the National Programs. U.S. participants will submit budget requests for science funding as part of this proposed phase.

3.7 TRAVEL TO ANTARCTICA: Preparation, Departure and On-Ice Life

The following section will provide general guidance and, in some cases, specific information regarding participation as an MIS Science Team Member on-ice. Information provided may change, so please contact your National Representative(s), the SMO, or in the case of U.S. participants, the United States Antarctic Program Participant Guide 2006-2008 Edition for final direction and/or clarification. (All new or never deployed U.S. participants will receive the 2006-2008 United States Antarctic Program (USAP) Guide with other information later this summer. For U.S. participants who have recently deployed in the past, please refer to the Guide provided then, or access Guide information at www.usuap.gov/travelAndDeployment/contentHandler.cfm?id=541).

3.7.1 TRAVEL to CHRISTCHURCH and ANTARCTICA

Designated Science Team Members will be contacted by the ANDRILL SMO to coordinate science needs, travel itineraries and to record Science Team Members' passport numbers for a travel database. We request passport information in order to ensure that all participants have and will continue to have valid passports while traveling through New Zealand and into Antarctica. Database information will be used by the SMO for ANDRILL business only. For additional information regarding passports and visas see sections 3.7.2 and 3.7.3 below.

All travel itineraries and ticketing for U.S. Participants to Christchurch, New Zealand will be provided through the U.S. Raytheon Polar Services Company (RPSC) office; all International Participant travel to Christchurch should be arranged through respective national Antarctic science or funding agencies (the SMO recommends that all German, Italian and New Zealand participants contact their respective National Representatives to obtain information or direction regarding appropriate travel procedures). Once in Christchurch, all travel to the ice will be arranged through the RSPC.

Accommodations while in Christchurch will be arranged through RSPC based on information you provide later this summer to RSPC and the SMO. Please see Appendix D for examples of travel-related forms which will be distributed. **(Do not complete these forms, for reference only)**. You will receive an appropriate set of

forms from either RSPC (for U.S. participants) or the SMO (for non-U.S. participants). Please complete those forms and return as directed.

3.7.2 SHIPPING EQUIPMENT and MATERIALS: CARGO and BAGGAGE to ANTARCTICA

Participants are able to take or send required equipment and personal gear to Antarctica via two primary methods: CARGO and BAGGAGE. CARGO includes any shipment sent unaccompanied to New Zealand and onto Antarctica. Cargo is distinctly different from baggage. BAGGAGE is the category of items that will travel on the same plane as you. Each passenger is limited to a specific amount of baggage (pieces and weight) depending on the commercial airline you use to travel to New Zealand. Travelers to McMurdo Station (McMurdo) are limited to a total of 75 pounds (lbs) of baggage when flying via military aircraft from Christchurch to the ice. This includes personal luggage, equipment, and other items you deem appropriate or necessary for your stay at McMurdo, as well as your required extreme cold-weather (ECW) clothing. (ECW is issued by your respective Antarctic Program or institutions, see Section 3.7.11 and Appendix I for further information).

NOTE: The 75 lb baggage limitation is strictly enforced from Christchurch to McMurdo. Additional baggage in excess of this amount must be arranged in advance and approved by the ANDRILL SMO (following authorization from appropriate Antarctic Programs). SCIENCE TEAM MEMBERS ARE STRONGLY ADVISED/ ENCOURAGED TO USE THE CARGO SYSTEM FOR ALL LARGE, HEAVY OR OTHER ITEMS DESIRED BUT NOT NECESSARY or REQUIRED FOR YOUR TRAVEL.

CARGO

All cargo will be incorporated into and sent through the U.S. system, after arrival in Christchurch. Every effort will be made to see that cargo is shipped either before you arrive on the ice or is transported with you. Ideally, cargo will arrive on the ice one week prior to the arrival of the Science Team. **All cargo must be clearly marked/ designated with the U.S. Science event number G-091-M.** Do not pack items in cargo that are needed immediately upon arrival, as cargo may not be readily accessible.

Please Note: No Science Team participant shipping scientific equipment as cargo to McMurdo will be allowed to depart for the ice until it is received on-ice or actually loaded onto your departing plane and arrives with you.

All participants are asked to provide the SMO with a list of cargo items that you plan to ship (unaccompanied) to Antarctica, including (1) all scientific equipment (2) boxes or containers containing reference materials or supplies, and (3) any personal items you wish to ship. (You may have already provided much of this information when submitting SIPs (Support Information Packages) to the SMO). Cargo lists should also include: item name, weight, dimensions, any special shipping instructions, anticipated shipping date from point of origin and expected arrival date(s) in Christchurch, as well as any tracking information.

All U.S. participants will prepare their own cargo and ship to Port Hueneme, California, where it is entered into the U.S. Antarctic Program (USAP) cargo system for transport south. All U.S. cargo must be received in Port Hueneme by August 25th for shipping by commercial surface (COMSUR). If unable to meet this deadline (e.g. because equipment is needed for use in your home institution), you can ship by commercial airline (COMAIR), but this requires NSF approval. U.S. participants are strongly encouraged to use COMSUR where possible.

All international participants will work with their appropriate national agencies or within established procedures to prepare and ship cargo. German cargo will be shipped through the AWI system to Antarctica New Zealand in Christchurch, and fed into the USAP/RSPC system. German participants should contact Frank Niessen at AWI for instruction and preparation of cargo. Italian participants should contact Fabio Florindo at INGV and New Zealand participants should contact Tim Naish, respectively for specific instruction and preparation of Italian or New Zealand cargo.

Again, once cargo is received in Christchurch, it will then be directed into the U.S. cargo system. Please contact the SMO for questions or further instruction.

Please be sure to indicate if you plan to ship any hazardous cargo. Hazardous cargo includes: Benzene, Chloroform, Ethanol, Formaldehyde, Hydrochloric acid, Magnesium, Perchlorate, Methanol, Nitric acid and Sulfuric acid, among others. If there are any questions, contact the SMO.

BAGGAGE

All carry-on baggage (personal and scientific) needs to be clearly identified with your name and the science event number **(U.S. Science event number G-091-M)**. Additionally, if you are hand-carrying equipment, you will need to complete the “customs” form located in Appendix E (all participants (or “grantees” as indicated) will want to check box 3 – “I am a Scientist/Grantee operating under “S-event” number _____” Again, use **event number G-091-M**). Please be sure to provide the SMO with a list of scientific equipment and materials you plan to carry with you (e.g. microscope, laptop computer, or other instrumentation). For flights heading to McMurdo, your carry-on luggage must include ECW gear (refer to Section 3.7.11 and Appendix I below for more information), and may contain other small personal items. Carry-on items cannot include sharp objects or flammables (matches, lighters, etc.). These objects should be placed in your checked baggage; knives must be declared and given to flight personnel for secure storage. Items will be returned to you upon destination arrival. Remember, each traveler is limited to 75 lbs of checked luggage, plus a carry-on for flights heading to the ice. Excess baggage is available, if needed (please send requests to the SMO). Once at McMurdo, checked luggage will not be available for at least 2 to 4 hours after arrival to the ice.

3.7.3 PASSPORTS and VISAS

A valid passport is required for travel through Christchurch and into Antarctica. Passports must not expire while in Antarctica or during your travels back home. Be sure to check passport expiration dates, because passports cannot be renewed or extended while on the ice. Passports should be valid at least 6 months beyond your stay (or at least 1 month beyond your stay if your country has consular representation in New Zealand, and is able to issue a new passport). If you require a Visa, you should obtain as directed and through your governing nation’s guidelines/procedures.

3.7.4 VISITOR’S PERMIT in NEW ZEALAND

A Visitor’s Permit is required for all holders of U.S., German and Italian passports in New Zealand. You will be issued a Visitor’s Permit upon entry into New Zealand; for many that will occur upon arrival at the Auckland airport, when clearing NZ Immigrations. The total time spent in both New Zealand and Antarctica is recorded by the New Zealand Immigration as time spent in New Zealand. It is possible that your NZ Visitor Permit will expire while on the ice or en route back to New Zealand. All Science Team Member passport numbers will be monitored (via the SMO database), and those members whose Permits expire will be extended by the McMurdo travel office (RSPC) in consultation with the SMO.

3.7.5 PHYSICAL QUALIFICATION (PQ) PROCESS (Medicals and Dentals)

Medical and dental clearance for all participants is required. The Physical Qualification (PQ) process applies to all U.S. grantees (ANDRILL’s U.S. participants) and guests of the National Science Foundation (NSF) (ANDRILL’s International participants). All U.S. medical and dental qualifying procedures will be managed by RSPC. When submitting information to the SMO, you will be asked to provide your age in order to assist in identifying the appropriate medical examination requirements. U.S. participants will be contacted by RSPC with further information and instruction.

Members of non-U.S. Antarctic Programs should be cleared through their respective nation's medical program(s), and must provide NSF/RPSC their country's/program's clearance documentation, as well as provide a copy of their medical records to the medical clinic/facility located at McMurdo. See discussion below for further information.

U.S. Science Team Members will be sent medical forms from RSPC. Successful completion of medical and dental exams will result in issuance of tickets. Participants from Germany, Italy and New Zealand must be cleared through their appropriate agencies (please contact your National Representative --Frank Niessen, Germany; Fabio Florindo, Italy; Tim Naish, New Zealand-- for further information/instruction). RPSC require that international participants either fax or mail letters of medical/dental clearance to its attention at least 8 weeks prior to expected deployment to Christchurch (in some cases, acceptance up to four weeks is allowed, please contact the SMO). Letters or reports must be from his or her National Program Office. It must be on official letterhead, translated into English, and signed by the appropriate individual responsible for clearing participants in that Program. In addition, all international participants also must bring copies of their medical records with them. These records should be in a sealed envelope with First and Last name clearly written on the front. All medical records will be collected by the ANDRILL SMO's Staff Scientist or Research Support Coordinator, and turned over to the McMurdo Hospital staff during your stay on the ice. All records become the property of NSF and will not be returned. All medical information gathered from you by NSF or its contractor is maintained in accordance with the U.S. Privacy Act of 1974 (U.S. Public Law 93-579).

All participants **are required** to have had a **tetanus immunization**, current within the last 10 years; and the following immunizations **are recommended** to minimize the spread of illness in the communal living areas around McMurdo:

Influenza vaccine for the current season;

Pneumovax for participants who are 64 years of age or older, or who have special medical conditions. Please consult your physician regarding this immunization.

If you are planning to travel after leaving the ice and/or New Zealand and immunizations or medicines are required for this travel, you will need to purchase them before leaving home and bring them to the McMurdo clinic upon arrival. The immunization(s) will be administered to you by McMurdo Clinic staff at the end of the season and prior to your departure from the ice.

In addition, if you are taking any prescription medications or health supplements regularly, be sure to bring these items (at least a three months' supply) with you. Be sure you have enough prescription medications to last the length of your stay, including travel time. It is the responsibility of all participants to obtain a supply of their regular prescription medications to cover the time that they will be deployed. (RPSC may be able to assist U.S. participants in obtaining additional monthly prescription supplies, as needed. Please refer to the United States Antarctic Program Participant Guide, 2006-2008 Edition for further information. The USSAP Participant Guide can be downloaded from <http://www.usap.gov/travelAndDeployment/contentHandler.cfm?id=541>).

New Zealand custom laws only allow three months of prescription medications and one month of controlled prescription medications to be hand carried through New Zealand. Therefore, if you will be deployed for a longer period of time, you must make arrangements for additional medication to be mailed to the McMurdo Station medical clinic through the Air Post Office (APO) mail system (**The McMurdo health/medical clinic cannot refill prescription medications**); and the medications will need to be in properly labeled pharmacy containers to be passed through the APO system. For further instruction, please see Appendix F: "Personal Prescription Medications". International participants should consult their health care providers for assistance with obtaining additional prescription supplies. In addition, remember that customs regulations require that prescription drugs be hand-carried (not packed in checked baggage) and that all labels be intact.

Some nonprescription pain relievers and cold medications are available for purchase at the McMurdo Station (Station) store. However, quantities and brands are unpredictable, and it is suggested that you bring your preferred pain relievers with you. Again, plan to bring a sufficient quantity; and if you re-pack in a container different from its original package retain the original label(s).

If you wear prescription glasses, be sure to bring an extra pair of glasses or an eye-glass repair kit with you.

Antarctica is extremely cold and dry. It is recommended that you regularly use hand lotion and lip balm to protect against dry or chapped skin. Again, purchases can be made at the Station store, but it's recommended that you also bring these items with you. While most MIS Science Team Members will not be out at the drill site or exposed to the weather or sun for prolonged periods of time, it is still suggested that you carry and use a sunscreen with an SPF of 15 or greater. Be sure that it provides both UVA and UVB coverage and that the product does not expire during your stay. Remember, it will be summer during your stay in McMurdo and the sun is out 24 hours a day; reflection off the snow and ice multiplies the potential for sunburn to exposed areas.

3.7.6 DURATION of ON-ICE STAY and RE-DEPLOYMENT HOME

All MIS on-ice Science Team Members are expected to be on the ice mid-October through December, 2006. It is expected that the MIS field season will be completed in 10 weeks; however, it is possible that drilling and science operations make take longer and some Science Team Members may be required to remain on the ice into January, 2007. Science Team Members will be notified by the MIS Co-Chief Scientists whether or not they are required to stay longer than anticipated.

Please be prepared to remain in Antarctica through the holiday season(s), with departures beginning in late December or early January. Pre-holiday departures will require permission by the Co-chief Scientists. The departure travel process will begin upon successful completion of all obligations to the MIS Project, as determined by the Co-Chief Scientists. All departure travel from Antarctica to Christchurch will be arranged through the ANDRILL Research Support Coordinator, after Co-Chief Scientist notification or endorsement. This rule will apply during the entire field season.

Specific re-deployment information and directions will be provided upon arrival to McMurdo during "grantee" orientation. In general, the RSPC travel office will ask you to provide information with regards to expected departure (to be determined by Co-chiefs or Staff Scientist); any leisure travel you may want booked on your way home (for U.S. participants only. RSPC's travel office can make bookings, but you'll be required to make payment as directed); and general return ticketing services from McMurdo to Christchurch and home destination. Travel arrangements will also include hotel reservations in Christchurch. All Science Team Members will be required to stay at least one night in Christchurch before heading home. The RSPC travel office will assist international participants in return ticketing from the ice to Christchurch and in securing hotel reservations for their stay while in Christchurch; however, return ticketing from Christchurch to home destinations need to be arranged through one's respective national funding agencies. Please contact the SMO if there are any questions.

3.7.7 HOUSING at McMurDO

On-Ice housing will be arranged through the SMO and provided by the U.S. Antarctic Program managed by RSPC. All MIS Science Team Members will be housed at McMurdo. Housing is dormitory-style and will require roommate pairings. You will be contacted by the SMO to arrange/match roommates. Every effort will be made to match you to your requested roommate(s), however, it is possible that you may be assigned to a room without preference to your selection. While every effort will be made to match persons with day shifts to persons with evening shifts, allowing for alternating use of rooms, it is more than likely that some day shift members will be roomed together given the overall Science Team numbers and expected division of shift duties. In addition, there is a slight chance that MIS team members may be paired with a roommate or roommates of another Science Event or an RSPC employee. Please see Appendix G for “Housing” instructions and form. **(Do not complete housing form, for reference only).** All participants will be sent an appropriate housing form (or one similar to it) and asked to complete and return to either the SMO or RSPC.

Sheets and linens, including pillows and blankets are supplied by the USAP. You may bring your own sheets (twin extra-long), pillows or blankets, but these items should be included with either your personal shipped cargo or checked-luggage (if a part of your checked-baggage, it counts towards your 75 lb weight limit). The USAP does not provide towels or washcloths, and it is recommended that you pack a towel and washcloth in your carry-on bag.

The electrical power outlets in New Zealand are 230 volts (50 hertz), and hotels may not have appropriate converters for U.S., Italian and German electrical appliances, so be sure to bring electrical converters or adapters as needed. Electrical power outlets in McMurdo use a 110-volt system and the Crary Lab can accommodate some 220 volt systems. While staying and working at McMurdo, you will use the U.S. electrical outlet system; and therefore, you should plan to bring appropriate converters and plug adapters.

3.7.8 TRANSPORTATION BETWEEN BASES and DRILL SITE

There will be a dedicated shuttle service between McMurdo, Scott Base and the MIS drill site for those Science Team members traveling out to the drill site; however, most Science Team Members will be working solely in the Crary Lab at McMurdo, which does not require use of shuttles.

3.7.9 COMPUTERS

Please let the SMO know if you plan to bring a laptop or desktop computer with you, and provide a basic description of your machine. Computer monitors are available through USAP, thus eliminating the need to ship your monitor with a desktop if so doing. Let the SMO know if you wish to request a USAP-supplied desktop system for your work/lab station.

All laptop computers brought to the ice are subject to inspection and will be screened in Christchurch prior to deployment to Antarctica for current anti-virus software and operating system patches. This screening process is scheduled upon arrival in Christchurch, and usually occurs a day or two before your deployment. Information regarding screening activities will be provided in advance of your departure to Christchurch, either by RSPC or the SMO. Computer screenings may take anywhere from 2 hours to a full day. Technicians will gather appropriate information from your computer and make it available to all technicians performing the actual screenings. Computers that receive a “pass” rating in Christchurch may connect to the McMurdo Station network upon arrival. A “fail” rating indicates that the computer(s) will need to go through remediation activities upon arrival in McMurdo and before connecting to the Station’s network. See Appendix H for more detailed information on inspection screening guidelines.

In addition, you will be sent an Information Security Acknowledgement form, which describes the rules that govern using McMurdo’s computer network while at McMurdo, (located in Appendix H) from either RSPC or the SMO before your expected deployment. All MIS participants must sign and return computer forms provided by SMO or

RSPC. **(Do not complete forms in Appendix H, for reference only).** More detailed computer guidelines and user information has been published in the Information Security Awareness User Information Booklet (22 pages) located at <http://www.usap.gov/technology/documents/RSPC-05-500.pdf>. It is recommended that all participants familiarize themselves with this document.

Wireless access will be made available to Science Team Members in Crary Lab. Internet access is not readily available (if at all) in the dormitories or rooms.

3.7.10 LABORATORY EQUIPMENT, CONSUMABLES and SCIENCE CONSTRUCTION

Science Team Members may be assigned a workspace in the Crary Lab based on your science needs. USAP will provide access to installed lab equipment and small science equipment where available and appropriate. If USAP is unable to provide the required equipment, the SMO will contact you to discuss options. USAP will also provide consumable items such as gloves, microscope slides, required chemicals, etc. Please provide the SMO with your expected consumable needs. If you do not ask for it before deployment to the ice, USAP may not be able to provide it upon arrival, so plan to ship or bring it with you. Some equipment may be available on a shared basis or for a limited period. The Staff Scientist is the MIS point of contact for all equipment and lab needs.

Will you require science construction support? For example, scientists conducting paleomagnetic studies may require non-magnetic (wooden tables). Or, do you require special crates to ship samples to your home institution? If so, you must let the SMO know as soon as possible.

3.7.11 PERMITS

The New Zealand Ministry of Agriculture and Forestry (MAF) require permits to transship and import samples through and into New Zealand. Due to the large volume of permit requests and processing limitations, MAF permits should be in place prior to deployment. On-ice applications will be limited to emergency situations. All Science Team Members importing samples into New Zealand will also need a “permit to Import Laboratory” specimens from their home institution or any institution that expects to receive MIS samples. Please contact your institution or institutions for instructions and applicable forms.

The MAF permit requirements apply to ALL samples that are shipped by air or hand-carried by an individual. It is important to specify whether the samples will be unaccompanied or accompanied. Any samples shipped north on the re-supply vessel do not require MAF permits. The SMO can assist you in applying for MAF permits, as needed, please contact Richard Levy for further information.

The United States Department of Agriculture (USDA) has regulations governing the importation of organisms and samples into the United States. It is the responsibility of all U.S. Science Team Members to determine if a USDA permit is required for their expected samples. U.S. Science Team Members will need this permit to bring samples into the U.S., whether shipped by air or hand-carried. (Complete V.S. Form 16-3 or 16-7) USDA permits can be held by an individual or by an institution. If you will be air shipping or hand-carrying samples, check with your home institution first to see if a permit is in place. If not, see <http://www.aphis.usda.gov/forms/index.html> for information. Permits can take up to 16 weeks to process. U.S. Science Team Members can also apply on-line at <https://web01.aphis.usda.gov/IAS.nsf/Mainform?OpenForm>.

As with the MAF permit, the USDA permit is not required for samples that are shipped north on the re-supply vessel.

If you will be importing samples into a country other than New Zealand or the United States, it is your responsibility to obtain the appropriate instructions and permits.

3.7.12 CLOTHING including ECW (Extreme Cold Weather) gear

All ECW clothing should be issued through your respective nation's Antarctic Program (Italy and New Zealand) or AWI for Germany. A list of clothing required and assigned by the United States Antarctic Program (USAP) is provided in Appendix I. Please note that you will be expected to wear or carry with you on every flight to and from Antarctica the items listed. International participants are expected to be outfitted with clothing appropriate to your Nation's program and comparable to U.S. issued gear. Please let the SMO know if you have any concerns, or if non-U.S. scientists will require outfitting from the U.S. Program. All U.S. Scientists will be given required clothing before departure to the ice. Science Team Members are required to wear ECW gear while in transport to and from the ice. For U.S. participants ECW typically weighs approx. 30 lbs. In addition, whatever ECW gear that is not worn must be included in your carry-on bag, for U.S. members this is an additional 10 lbs. of clothing.

Proper clothing fit and functionality are important. For maximum protection, check each individual item to ensure correct fit, that the zippers or enclosures work, and that quantities are correct. You are responsible for maintenance and return of all issued clothing. Some issued clothing, particularly USAP issued-parkas or items of interest from other national programs, are subject to theft. Please take care to prevent loss. Many will experience weight gain (which is common) while in Antarctica, so select clothing that fits loosely and can accommodate weight gains (or losses) without compromising functionality and protection.

Sunglasses or goggles are critical. Your ECW may include ski-type UV protective goggles. It is strongly suggested that you bring 2 pair of sunglasses. Make sure they provide 100% UV protection, and the frames are plastic, not metal. Consider wrap-around temples or side shields to protect from harsh sunlight and reflections off the snow that may seep around your polarized lenses. Again, while most of the ANDRILL Science Team Members will be stationed at McMurdo, and are expected to have limited or periodic exposure to the sun and ice/snow, eye protection is still an absolute must. If you wear prescription glasses, then you should bring prescription sunglasses.

While stationed at McMurdo, casual cold weather clothing or attire is appropriate and choices are up to you. Bring your own indoor clothing, including light sweaters or heavy sweatshirts; fleece, wool or down items; underwear; socks; shirts and pants (jeans). Washable clothing is highly recommended. Laundry facilities are available for use in the dormitories. Dry cleaning is not available. Base the quantity of clothing you pack on its overall weight, your expected duration of stay, and the type of work you will be performing. The temperature both inside buildings and outside will vary dramatically. The best way to manage such changes is to layer your clothing. Therefore you should aim to pack items that can accommodate this and allow you to shed or layer quickly and easily. Several thin layers are more effective than one bulky layer.

Additionally, McMurdo has a recreational building with gym equipment. You may also want to include appropriate work-out gear, including running shoes, and a swimsuit. While there is not a pool, there are several saunas available throughout the McMurdo dorms.

Semi-formal attire (a coat and tie or skirt/dress) is suggested if you plan to attend formal functions or holiday parties/evening meals on the ice. Given the proposed drilling schedule, ANDRILL Science Team Members will most likely be on the ice /residing at McMurdo for both the Thanksgiving and Christmas dinners. Such clothing is not a requirement in order to participate in these functions, although most people will be dressed semi-formal.

Note: Secured storage is available for items you will not need while in Antarctica (clothing not being taken to the ice, other travel baggage or luggage not needed, etc.). This will be coordinated through the SMO and Raytheon Polar Services in Christchurch.

3.7.13 MISCELLANEOUS PERSONAL MATTERS

It can be difficult to handle financial or other personal affairs from Antarctica. Before you leave to Antarctica, take care of any personal affairs and designate someone who can respond to personal matters on your behalf as they may arise. You will have access to internet and telephone, however, use of both may be restricted to a limited number of users at any given time. In addition, because telephone and internet service is provided by satellite, outages can and do happen, and may range from a few hours to several days.

Mail: Do not forward your mail to Antarctica during your stay. Mail delivery to Antarctica is not always reliable or timely. Do not rely on mail service for critical business. While mail services are provided, the timing of delivery is always subject to weather, transportation options, and cargo space.

U.S. postal services are available at McMurdo and U.S. domestic postal rates and regulations apply to all APO mail to New Zealand, McMurdo and off the ice. While postage stamps are available at the Station store and the postal office at McMurdo, it is recommended that participants bring a supply of stamps with them.

Mail is received in Christchurch, New Zealand, seven days a week. Letter mail is transported to/from Christchurch to Antarctica on all available southbound flights. Letter mail service varies, generally taking 5 to 14 days, and sometimes longer depending on the time of year. Letter mail always takes priority over package mail both to and from Antarctica. Packages have the lowest priority of all cargo being transported to Antarctica resulting in delivery time of up to 6 weeks. Perishable food and items should not be sent. Packages destined for MIS Science Team Members at McMurdo during the drill season should be mailed after Labor Day (Monday, September 4, 2006) or they will be returned. Mail that misses the intended recipient will either be forwarded (if a directory card has been given to the McMurdo post office –please see the post office at McMurdo for further instruction), or returned to the sender. If sending or receiving a package to the ice, do not use “packing peanuts” or other Styrofoam packing materials. Instead, please use clothing or something similarly useful and non-polluting to cushion objects being mailed.

The Postal Service prosecutes people who mail items improperly. The following items should not be mailed: chemicals, explosives or other flammable materials; biological materials; liquor; odor-producing materials; sharp instruments; drugs; or articles for resale (note: sharp instruments (i.e. needles) related to prescribed medical use and prescription medications can be mailed, if arrangements have been made with the McMurdo medical clinic and proper documentation/containers are included/used). The Postal Service states: “Full responsibility rests with the mailer for any violation of law under Title 18, United States Code 1716, which may result from placing these items in the mail.” Remember, all mail going to McMurdo is subject to customs, agricultural and drug inspections as it passes through Christchurch. For a complete listing of prohibited/restricted items, go to the USPS (United States Postal Services) website: <http://www.usps.com> and search for Publication 52 – *Acceptance of Hazardous, Restricted or Perishable Matter*.

Your address while in McMurdo will be:

[Your Name]
McMurdo Station
Project G-091-M
PSC 469 Box 800
APO AP 96599-1035 U.S.A.

Banking: Make sure that your ATM and credit cards do not expire while you are away from home. International credit cards are generally accepted, although American Express is not widely accepted in New Zealand and is not accepted in McMurdo. You will probably need between \$500 and \$1,500 for a round trip between your respective nation and Antarctica. Of course this amount will vary depending on personal spending habits, length of stay, and any travel delays. Banks in New Zealand will exchange your nation's currency into New Zealand currency as needed. You can also withdraw funds from banks using your Visa and MasterCard credit cards or personal bank card, if set-up to do so. This usually requires a personal identification number (PIN) established by or with your financial banking institution. Automatic Teller Machines (ATMs) marked with "Plus" or "Cirrus" will accept credit cards, ATM cards and debit cards. There are two ATM machines at McMurdo, and credit cards (Visa/MasterCard) are accepted in the Station store.

Insurance: Make sure you have adequate health and life insurance for your stay in Antarctica. Check with your employer or a financial consultant to learn what insurance you do have and to decide if it is adequate for your needs. In the event of a health emergency, you will receive free medical care at the McMurdo Station Clinic, but if necessary and possible, you may be evacuated from the ice and hospitalized at a foreign or U.S. hospital. Thus, you will be responsible for costs of off-ice hospitalization, medical care, lab fees, and any additional costs. It's strongly suggested that before you leave home that you examine your health coverage and consider purchasing additional coverage (as needed), or are aware of what agreements your country may have with the U.S. or New Zealand in the event of a health-related emergency and provided care. With regards to life insurance, keep in mind that Antarctic flights are generally considered non-scheduled military airplane operations, and are not covered by most insurance policies. Check with your institution to see whether its group policies for employees provide coverage or exceptions for travel and work in remote regions.

Station Store: The McMurdo Station Store is open during limited hours during the week and provides a selection of postcard/gift items; clothing; personal items (shampoo/soaps, laundry detergents, etc.); candy/snacks; and beer/wine/spirits for sale. Cash (U.S.) or credit cards are accepted for purchases. Please note some items, such as alcohol, may be limited for purchase depending on supplies on-hand or available during the season. The Station Store is located in Building 151.

Emergency Contact: In case of an emergency, your family can get a message to you in Antarctica by calling RPSC headquarters in Denver, Colorado (+1. 303.790.8606). Ask for the Human Resources Department and explain that this is an emergency. RPSC will contact the appropriate individuals at McMurdo to locate and assist you in receiving the information and arranging for your departure from the ice, if necessary.

3.7.14 McMURDO LIFE

Besides the assigned dormitories and the Crary Lab, MIS Science Team Members will spend a great deal of time in Building 151, McMurdo's main business and housing facility. Building 151 has laundry facilities and a computer lab. It houses the Station store, banking/ATM facilities, the dining area and many RPSC offices. Rental of recreational equipment is also conducted in Building 151. And schedules for daily and weekly events are posted in this building. Below is a brief overview of aspects related to life at McMurdo.

Food Service: Dining at McMurdo is cafeteria style. There is no charge for meals. Take as much as you want, but, to minimize cost and waste, eat all of what you take. Vegetarian and non-Vegetarian meals are available three times a day, with a summer midnight meal available (first served to night workers and then the general public).

Recreation: A range of recreational opportunities are available in Antarctica. McMurdo has facilities for physical exercise and recreation such as a library, clubs, climbing wall/bouldering cave, gymnasium, weight room, aerobics room, saunas, and a bowling alley. There are also running races, yoga classes, dances, movies, local walks/hikes and tours to Scott's Discovery Hut, and live music events. In addition, there are scheduled trips to Scott Base for a variety of events, including shopping at the Base store. Many common areas around McMurdo are equipped with

televisions and VCRs/DVDs. A free video checkout library is operated by the Station Store. CDs, musical instruments, cross-country skis and other items are available for rental. McMurdo has several bars (smoking and non-smoking) as well as a CoffeeHouse/Wine Bar. All recreational facilities are open during scheduled hours, which are posted in Building 151. Recreational activities that take you off-base (e.g. hiking, jogging, skiing, etc.) will require you to attend a safety briefing (scheduled information sessions are posted in Building 151) and abiding by check-out and –in procedures with the Station Firehouse.

Waste Management and Recycling: Every participant deployed in the USAP, including guests of the USAP, is expected to comply with and participate in the waste management and recycling program. McMurdo separates all wastes, including cardboard, scrap metal, aluminum, glass, white paper and plastic for return to the U.S. Upon arrival, everyone is required to attend a briefing regarding the waste segregation and recycling program. Appropriately labeled receptacles and dumpsters are located throughout McMurdo to assist in proper segregation. This also extends to use of the Crary Lab. Science Team Members must abide by specific rules involving waste management in the labs. Please familiarize yourself with appropriate disposal procedures used in Crary Lab; information will be provided upon lab orientation and assignment of work space within Crary.

Smoking: Smoking is prohibited in all indoor areas except those designated specifically as smoking areas. This includes bars, coffeehouse and dining area. There are two bars which allow for smoking. Smoking outside is allowed except in fueling and hazardous areas. Extinguished cigarettes should be placed in appropriate containers. Do not dispose of used cigarettes on the ground.

Alcohol and Drugs: Consumption of alcohol is permitted in designated areas and dormitories. Please drink responsibly and remember that even during off-duty hours, events may arise that require swift, intelligent action. Gross intoxication and behaviors associated with it will not be tolerated. Recreational drug usage is not permitted under any circumstances and will result in removal from the ice. Persons under the influence of alcohol or other controlled substances will not be allowed on program airplanes.

Chaplain/Worship Services: Services are provided by a U.S. military Protestant chaplain and New Zealand Catholic priests, who rotate on one month intervals. In addition to conducting regular worship services and religious programs in McMurdo's Chapel of Snows, the chaplain accommodates all religious practices and is available for counseling, both religious and secular.

3.8 OFF-ICE SCIENCE

Approximately one-half of the ANDRILL MIS Project Science Team Members will be working “off-ice” at their home institution during the drilling period and Core Characterization Phase. The ANDRILL SMO is working to provide a means of rapid data exchange between the on-ice and off-ice science teams, whereby all team members would have access to high-resolution core images, core logs, preliminary chronostratigraphic age determinations, and regular reports as drilling proceeds.

Samples will be shipped from Antarctica to off-ice Science Team Members at regular intervals, so that data from all disciplines can be included in the On-Ice Science Report. Off-Ice Science Team Members will be able to select future sample intervals, guided by core logs and high-resolution core images. Delivery time of samples from Antarctica is anticipated to be 8 to 10 days from the time the samples leave McMurdo Station.

The SMO is working with NSF-supported CHRONOS Group at Iowa State University, with the GEOWALL and COREWALL groups at the University of Illinois-Chicago and the University of Minnesota, and with IODP at Texas A&M University to provide means for rapid data exchange and data archive. Details of these relationships are still

evolving and the MIS Project will be pioneering testing ground for several new systems. While we look forward to the ability to work as a diverse and disparate team geographically, we recognize and anticipate that doing so will result in some frustration during the early days of the MIS Project. More details and direction regarding means of communication and data exchange protocols to and from the ice will be provided in the future and before on-ice activities commence.

The Co-Chief Scientists, Staff Scientist, Discipline Team Leaders (DTLs) and on-ice colleagues will be reachable by email. The DTLs will call for regular reports of data and results from Off-Ice Science Team Members, which will be included in the on-going logging of results and data as drilling continues. We hope that Off-Ice MIS Science Team Members will be engaged in monitoring drilling activities and producing results to integrate with the On-Ice MIS Science Team, so that physical location is not a deterrent to active involvement in the MIS Project.

At the conclusion of the on-ice drilling period, all MIS Science Team Members will be working at their respective home institutions to produce new results on sample collected during the Core Characterization Phase. All MIS Science Team Members will also meet at the Core Workshop, to be held at Florida State University (FSU) in late April to early May, and will have the opportunity to examine the core and request a second set of samples for study during the longer Science Documentation Phase.

4. TIMELINE FOR PARTICIPATION IN ANDRILL PROJECTS

Year	Key Dates	Event
2005	March	Prospectus documents for MIS and SMS Projects are available on-line at http://andrill.org .
	April 1	Application for science participation in the MIS and SMS Projects opens.
	June 1	Application for science participation in the MIS and SMS Projects closes.
	October	Applicants notified of staffing decisions for MIS and SMS Projects.
	November 1	Acceptance of staffing offer to be sent to co-chief scientists.
2006	March 8-10 March 15	MIS Science and Logistic Implementation Plan (SLIP) Meeting MIS Project Science Team Members to submit research equipment and materials requirements (support information package [SIP]) to the SMO.
	June-July	MIS Project Science Team Members undergo medical and dental exams for Antarctic deployment clearance; submit travel request documents to the SMO. SMO and RSPC develop deployment schedule and notify MIS participants.
	October	MIS On-Ice Science Team Members deploy to Antarctica; Off-Ice Science Team Members work at home institutions
	December	Production of the MIS On-Ice Science Report with contributions from on-ice and off-ice Science Team Members.
	End of December	MIS On-Ice Science Team Members depart Antarctica.
2007	Jan-March	MIS Science Team Members continue analysis of samples collected during drilling operations at their home institutions.
	Feb-March	SMS Project Science Team Members to submit research equipment and materials requirements (support information package [SIP]) to the SMO.
	March 1	SMS Science and Logistics Implementation Plan (SLIP) Meeting
	March 15	MIS Project Science Team Members to submit papers or extended abstracts for inclusion in the MIS Project Initial Results Volume and preliminary supplementary sample request.
	April (date TBD)	MIS Project Core Sampling Workshop, Florida State University, Tallahassee, FL.
	April – May (date TBD)	MIS Project Science Team Members to submit Science Documentation proposal with final supplementary sample request (if required) to Co-Chief Scientists (via the SMO). [U.S. participants will submit a supplementary budget request via the SMO].
	May - July	MIS Project Science Team Members receive supplementary samples.
	June-July	SMS Project Science Team Members undergo medical and dental exams for Antarctic deployment clearance; submit travel request documents to SMO. SMO and RSPC develop deployment schedule and notify SMS participants.
	October	SMS On-Ice Science Team Members deploy to Antarctica; Off-Ice Science Team Members work at home institutions.
	December	Production of the SMS On-Ice Science Report with contributions from on-ice and off-ice Science Team Members.
	End of December	SMS On-Ice Science Team Members depart Antarctica.

4. TIMELINE FOR PARTICIPATION IN ANDRILL PROJECTS cont'd

2008	Jan-March	SMS Science Team Members continue analysis of samples collected during drilling operations at their home institutions.
	March 15	SMS Project Science Team Members to submit papers or extended abstracts for inclusion in the SMS Project Initial Results Volume and preliminary supplementary sample request.
	April (date TBD)	SMS Project Core Sampling Workshop, Florida State University, Tallahassee, FL.
	April-May (date TBD)	SMS Project Science Team Members to submit Science Documentation proposal with final supplementary sample request (if required) to Co-Chief Scientists (via the SMO). [U.S. participants will submit a supplementary budget request via the SMO].
	May - July	SMS Project Science Team Members receive supplementary samples.
	June-Aug (date TBD)	MIS Science Integration Workshop
	Sep - Nov (date TBD)	MIS Project Science Team Members to submit papers for inclusion in the MIS Scientific Results Volume; MIS Project Science Team Members to submit synthesis papers to relevant science journals.
2009	June-Aug (date TBD)	SMS Science Integration Workshop
	Sep - Nov (date TBD)	SMS Project Science Team Members to submit papers for inclusion in the SMS Scientific Results Volume; SMS Project Science Team Members to submit synthesis papers to relevant science journals.

5. RESPONSIBILITIES OF SCIENCE TEAM MEMBERS

Scientists and Science Team Members are responsible to the ANDRILL Program as well as to their respective national funding agencies.

5.1 RESPONSIBILITIES OF SCIENTISTS TO THE ANDRILL PROGRAM

Responsibilities of members of an ANDRILL Project Science Team will be described in the letter of invitation to participate. On behalf of the M-ASIC, the Co-Chief Scientists will send this invitation and request a formal acceptance of terms for involvement. The following describes the activities required of Science Team Members through the course of a drilling project. Refer to the Timeline (Section 4) for tentative schedule of the activities. As discussed previously, acceptance of an invitation to participate as an ANDRILL Science Team Member, in either project, is an implicit, non-transferable agreement to join, unless circumstances develop that would prevent your involvement.

5.1.1 PRE-DRILLING ACTIVITIES

All Science Team Members must propose anticipated sample requirements for the core characterization phase of the project. This sample request should be made to the SMO at the time of acceptance of a position on the Science Team, and will be considered by the Co-Chief Scientists and Curators and approved by the M-ASIC. On-ice Science Team Members will submit research equipment and materials requirements and travel-related information to the SMO, and must successfully complete medical and dental examinations for deployment to Antarctica. See Section 3.7 above for more detailed information and instruction.

5.1.2 DRILLING ACTIVITIES

On-ice and off-ice Science Team Members will complete initial analysis and characterization of recovered materials, contribute openly to scientific discussions with other team members, and provide results for inclusion in (1) periodic science reports that will be distributed to all Science Team Members, the M-ASIC, AOMG and National Antarctic Science Program Managers; and (2) the on-line data integration system that will store all project data and render this accessible to on-ice and off-ice Science Team Members. In addition, team members will contribute text, figures and tables, and data as appropriate, to the Co-Chief Scientists, Staff Scientist and Discipline Team Leader(s) (DTL) (see Appendix B for list of appropriate names) for inclusion in the On-Ice Science Report and initial publications to EOS, Geotimes, etc.

5.1.3 POST-DRILLING ACTIVITIES

Science Team Members will attend a Core Sampling Workshop at FSU, Tallahassee, Florida, where on-ice and off-ice Science Team Members meet and share results approximately 4 months following conclusion of the on-ice phase. Each member will submit papers or extended abstracts and figures/tables for distribution at the Core Sampling Workshop and inclusion in the Initial Results Volume. Revised proposals for the science documentation phase (additional samples) will be submitted for review by the Co-Chief Scientists. Proposals by U.S. scientists for support during the Science Documentation Phase of their research will also be evaluated by a panel established by the Joint Oceanographic Institutions (JOI). Receipt of additional samples (and Science Documentation funding) is contingent on submission of a report for the Initial Reports Volume. Additional samples will be distributed upon approval of revised proposals. At the Science Integration Workshop, Science Team Members will submit draft manuscripts for inclusion in a Scientific Results Volume or will circulate draft manuscripts prepared for submission to a mainstream science journal. Science Team Members also will be encouraged to contribute to synthesis and thematic papers submitted to relevant science journals.

5.1.4 APPLICATION for SUPPLEMENTAL SAMPLES and FUNDS for SCIENCE DOCUMENTATION

Following core recovery and prior to the Core Workshop, Science Team Members from ALL nations will be required to submit a modified research plan based on the post-drilling project Science Plan (as revised by the Co-Chief Scientists) to request additional samples. U.S. scientists will request and justify the second phase of AUSSP (ANDRILL U.S. Science Support Program) funds at this time.

5.1.5 ARISE (ANDRILL Research Immersion for Science Educators) Program

ANDRILL has established an immersion experience for science educators to facilitate development of mechanisms and materials to effectively connect the ANDRILL Program with the public. The ARISE Program provides science educators with an inside view of ANDRILL, will engage participants in authentic Antarctic geoscience, and will utilize their expertise as educators to develop and implement innovative approaches to geoscience education and public outreach. Elements of the program include: full integration into the MIS Science Team with on-ice and off-ice research experience, participation in an Antarctic geoscience course and in an educational working group.

During MIS, six international science educators will be a part of the Science Team in Antarctica. Each educator will become a member of the science discipline teams and contribute to the scientific investigation of the core, as well as agree to, or accept, all responsibilities of the Science Team Members. Off-ice, ARISE participants will maintain communication and collaboration with their discipline team members and continue their own study of data and material collected during the MIS drill season. ARISE participants will also participate in the Core Sampling Workshop at FSU.

Selected ARISE participants should familiarize themselves with this document as members of the Science Team; as well as contact the SMO for further information and instruction as related to their involvement with the ARISE Program. It is imperative that ARISE participants contact the SMO as soon as possible with any particular equipment needs or requests and information regarding cargo or shipping. Otherwise, ARISE participants are bound to the same instructions set forth in Section 3 “ANDRILL International Science Participation” of this document. Please contact the SMO with any questions or to seek clarification, if needed. More information can be found at <http://andrill.org>.

6. CONCLUSION

The ANDRILL MIS Project will provide an opportunity for the Science Team to engage with other scientists in discovery, learning, teaching and producing results that are important to understanding the Earth's climate history. The MIS Project expects to be not only an adventure, but an important segment in the continued legacy of international collaboration in Polar research. We are looking forward to the start of ANDRILL's first project; to the recovery of core; to the next three years of documenting the recovered core and interpreting its significance; and to the team's collaborative effort to unveil a portion of Antarctica's hidden past.

Much attention will be focused on Antarctic science during the upcoming 4th International Polar Year (IPY; see <http://www.ipy.org>). ANDRILL research activities and scientific contributions will be highlighted in international and local media reports. You are ambassadors for Antarctic science and Polar research, education and public outreach. The ANDRILL SMO staff are available to assist you in promoting Antarctic science and to ensure that your scientific needs are met. We look forward to a productive and rewarding experience for all.

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APPENDIX A: ANDRILL ORGANIZATION AND SCIENCE MANAGEMENT

ANDRILL Science Committee (ASC)

The ASC is a community-based planning committee that provides the Antarctic Earth science community with a framework, management structure, and mechanism to assist in the development and maturation of drilling proposals, the collection and integration of site survey results, and to coordinate initial discussions regarding resource allocations from National Antarctic Programs. The ASC's chief responsibility is the development of future ANDRILL science targets, from initial concept to the submission of proposals. Membership of the ASC includes national representatives appointed by National Steering Committees (or other bodies) and proponents of developing projects. Chief responsibilities of these members are (1) to develop science and operational portfolios for drilling around the Antarctic margin; (2) to facilitate the establishment of international consortia to support drilling operations; (3) to ensure a plan of geophysical surveys and drilling capability is operating on behalf of the international community; (4) to organize the ANDRILL Site Survey Panel (ASSP) and ANDRILL Scientific Measurements Panel (ASMP); and (5) to maintain continuity of the ANDRILL Science Plan (ASP) in the developing portfolios and drilling projects.

McMurdo Sound - ANDRILL Science Implementation Committee (M-ASIC)

National Antarctic Science Program Managers from Germany, Italy, New Zealand and USA formally established the M-ASIC to be responsible for all scientific aspects of the two approved ANDRILL projects. Each of these nations is represented on the M-ASIC by a principal representative and by an alternate representative. The M-ASIC works with the AOMG for overall planning and implementation, and is supported by the staff of the SMO. The main objectives of the M-ASIC are to see that all science aspects of the funded projects are met and that science requirements have been appropriately considered in drill system design and field operations planning. This includes ensuring that (1) the planning of project science is fully developed, (2) the science plans are put into effect, (3) the results from each project are appropriately reported, and (4) the recovered cores are properly curated. Other ANDRILL Science Implementation Committees (ASICs) will manage future ANDRILL portfolios and projects, when approved.

ANDRILL Operations Management Group (AOMG)

The AOMG comprises the National Logistics Coordinators of the ANDRILL partner nations for the currently approved projects, and/or their agreed delegate(s). The main responsibilities of the AOMG are to: (1) provide governance to the approved ANDRILL projects; (2) provide operations and logistics funding for the approved projects; (3) oversee and approve all operations and logistics planning and operational execution of the projects; (4) liaise with the M-ASIC to ensure project science objectives are understood and science requirements are being incorporated into operational and logistics planning and execution; and provide direction and oversight to the Operations Management Office (OMO). The AOMG reviews, at least quarterly, the logistics support requirements, including operational funding and payment schedules, for the approved science projects.

Operations Management Office (OMO)

Antarctica New Zealand is the Project Operator for the two approved drilling Projects of the McMurdo Sound Portfolio (MSP). The OMO is responsible for project management services for the MSP, including day-to-day project administration, financial management of ANDRILL funds, and information dissemination to/from AOMG, M-ASIC and SMO. The OMO enters into contracts for services and equipment on behalf of ANDRILL, and the timely provision of financial, operational and technical reports to AOMG, M-ASIC and the broader ANDRILL community, as appropriate. Other tasks include: logistics services and operational planning and execution; drilling services including drill system development and drilling operations in Antarctica; support services, including the refurbishment or building of camp facilities, provision of transportation for Antarctic operations and support of drilling operations in the field; and science and technical services, including close liaison with the ANDRILL science

community on drilling and operational-logistics issues that will impact science. Staff within the OMO includes the Project Manager and the Drilling Science Coordinator (DSC).

Science Management Office (SMO)

The SMO is responsible for overall coordination of the ASP, including support for the activities of the ASC for planning of new drilling targets, support for the M-ASIC for implementation of approved drilling projects, as well as support as needed for National Steering Committees and advisory panels. Key tasks include: (1) liaising with the above committees, the OMO and Raytheon Polar Services Co (RPSC); (2) coordinating and managing the application process for the two projects' Science Teams; (3) consolidate the requests of scientists for field and laboratory support of efforts during drilling and site survey activities; (4) manage the deployment of the ANDRILL science and support teams to Antarctica and to project workshops; (5) coordinating all aspects of science publication, including editorial oversight and production/distribution of science reports; (5) assisting the Co-Chief Scientists and DTLs in management of the Science Team and procurement of science supplies and equipment, and coordinating education and outreach activities. The ANDRILL SMO is located at UNL and is staffed by an Executive Director, Director of Research, Coordinator of Education and Outreach, Staff Scientist and Research Support Coordinator. CHRONOS provides IT support for ANDRILL's web site and will maintain the science "workspace" for the two approved projects during the drilling and follow-up research phases to facilitate exchange of scientific information.

ANDRILL Scientific Measurements Panel (ASMP)

The ASMP will contribute advice to the ASC and M-ASIC with regard to handling scientific data and information, on methods and techniques of measurements on core, and downhole measurements and experiments. Its specific mandate from the ASC is to develop policies and to furnish advice about scientific measurements, which will assist the M-ASIC and AOMG in formulating plans for scheduled projects, and the ASC for proposed projects. Specific responsibilities for the panel are databases, curation, computers, on-ice equipment and analyses (needs and operating procedure), measurement calibrations and standards. Development of measurement guidelines in the form of guidebooks will be a secondary priority. This Panel will work to ensure continuity of scientific measurements and reporting between projects. Members are appointed by the ASC based on nominations to the SMO from National Steering Committees and interested scientists. Panel composition reflects a broad range of geoscience disciplines important for the analysis of stratigraphic core records.

ANDRILL Site Survey Panel (ASSP)

The ASSP is responsible for the review and evaluation of drilling proposals to ensure their development to high level of maturity and to guarantee all necessary information is obtained by ANDRILL project proponents to address safety, operational and science needs. Members of the ASSP are appointed by the ASC, which considers nominations from the scientific community. The ASC will work with the proponents of drilling projects and an Operations Planning Group to identify the requirements for drilling. The ASSP will advise the ASC on the status of developing projects.

ANDRILL Science Advisory Panel (ASAP)

The ASC invited a panel of internationally recognized scientists with experience in large project leadership to assess the direction and overall progress of the ANDRILL Program and specific drilling projects. The ASAP is an integral part of the direction, credibility and profile of the ANDRILL Program. The ASAP shall maintain a dialogue of constructive criticism with the ASC and M-ASIC and make regular recommendations regarding issues and improvements to the Science Plan and Project Management. ASAP members will advise the National Representatives to the ASC and M-ASIC and provide guidance to National Steering Committees.

Co-Chief Scientists

Co-Chief Scientists are responsible for the development of scientific aspects of a drilling project, and for ensuring the successful implementation of a project's Science and Logistics Plan (SLIP). During drilling, decisions on science operation and drilling strategy are the responsibility of the Co-Chief Scientists and the on-ice operations management team. Co-Chief scientists are appointed by the M-ASIC through written invitation and acceptance.

Co-Chief Scientists will identify potential DTLs who will assist in development of the science plan and staffing matrix. DTLs will be formally appointed by the M-ASIC following approval of the final staffing plan. Co-Chief Scientists are responsible for ensuring the success of project science objectives during drilling operations, and will oversee science at the drill site and science laboratory facilities. They will prepare, with assistance from the Staff Scientist, weekly progress reports to be circulated to the on-ice drilling operations management team, Project Operator, M-ASIC, AOMG, ASAP, and the project Science Team. Co-Chief Scientists will work with the DSC, Project Operator, and the rest of the on-ice drilling operations management team to resolve issues regarding science priorities and targets; with the M-ASIC to resolve issues of overlapping scientific interests; and with the M-ASIC, DTLs and Curators regarding core sampling. Co-Chief Scientists will work with Curators and the Staff Scientist to plan and implement a Core Workshop (to be held 4 to 6 months after drilling at the designated curatorial facility). Project science objectives may be revised by the Co-Chiefs at the workshop on the basis of the initial core characterization, who will report any revised science priorities to the M-ASIC, AOMG and Project Science Team. Co-Chief Scientists, with the Staff Scientist, DTLs and the drafting team will compile an On-Ice Project Report to include basic core description and relevant data for use prior to and during the core workshop. Co-Chief Scientists will prepare a summary article for submission to EOS, Geotimes, Geology, etc., to describe the immediate post-drilling results of the Project. Co-Chief Scientists are responsible for establishing an editorial team that will assist the SMO in production of the Project's Initial Report and Scientific Results. Co-Chief Scientists are responsible for ensuring timely production of an Initial Report immediately following the core workshop, and Scientific Results following the Science Integration Workshop. Co-Chief Scientists can decide on the appropriate venue for publication of the Scientific Results (e.g. special issues in international Earth Science journals). Content and authorship of flagship and key synthesis papers will be negotiated between Co-Chief Scientists, DTLs, and relevant project scientists. Disputes over publications (e.g. authorship) will be resolved by the Co-Chief Scientists, in consultation with the M-ASIC. Eighteen months after drilling (approximately one year after the Core Workshop) Co-Chief Scientists will organize and convene a Science Integration Workshop where the project Science Team will report on final results to be published in the Scientific Results Volume and address larger thematic issues meriting further publication as synthesis papers. Co-Chief Scientists are responsible for organizing and hosting thematic workshops and symposia at national and international meetings in order to promote the dissemination of key scientific results, and to foster collaboration and integration within and beyond the ANDRILL community.

Staff Scientist

The Staff Scientist is an integral member of the Science Management Office and ANDRILL science operations. The Staff Scientist works in support of the M-ASIC, ASC, and Co-Chief Scientists to ensure continuity and high-level science planning and reporting. The Staff Scientist is responsible for assisting the Co-Chief Scientists in management of the Science Teams and in coordinating the production and dissemination of scientific results by serving as a point-of-contact for related elements of the off-ice and on-ice Science Teams. The chief responsibility is to facilitate the production of scientific output at all levels. The Staff Scientist is the chief point-of-contact for ANDRILL with (1) Raytheon Polar Services Company (RPSC) for matters concerning requests for laboratory space, equipment, and supplies in preparation for and during on-ice Core Characterization phase, (2) the curatorial effort of FSU, and (3) the CHRONOS database portal. Where possible, the Staff Scientist will assist new Project Proponents with the development of science and field programs to support site survey efforts. The Staff Scientist will work closely with the ASMP to ensure consistent and appropriate measurements of scientific data are collected. The Staff Scientist interacts closely with the OMO to ensure that the needs of the Science Teams are

met. A close relationship between the Staff Scientist and Coordinator of Education and Outreach will ensure effective communication of appropriate science content into outreach and educational materials.

Discipline Team Leaders (DTLs)

DTLs are members of the project scientific staff selected by the Co-Chief Scientists to serve as leaders of key scientific disciplines. They aid the Co-Chief Scientists and Staff Scientist in coordinating the production and dissemination of scientific results within the project Science Team by serving as a point-of-contact that represent related elements of the off-ice and on-ice Science Teams. Disciplines to be represented by Team Leaders include: sedimentology & stratigraphy, paleontology, physical properties (geophysics, magnetics, physical properties), geochemistry (largely off-ice Science Team), and others as needed. The DTLs will be responsible for: (1) implementing science protocol developed by the ASMP, and ensuring that scientific staff follow appropriate procedures and data reporting; (2) obtaining from their Science Team a list of equipment and supplies needed to conduct on-ice initial core characterization, and requesting these materials through the SMO Staff Scientist; (3) compiling scientific data from their Science Team in order to synthesize results, which are presented to Co-Chief Scientists and Staff Scientist for inclusion in daily and weekly reports; (4) building a collaborative environment within the discipline to aid the integration of on-ice and off-ice members of the Science Team. They will be the first step toward resolving conflicts of overlapping science interests; (5) working with other DTLs to establish a sampling plan to present to Co-Chief Scientists for approval, to distribute samples from intervals of high scientific interest, and assist in development of a sampling plan; (6) point-of-contact for the Education & Outreach Coordinator to aid in ANDRILL's educational and outreach mission; and (7) aiding the Co-Chief Scientists, Curators and Staff Scientist in planning and running the Core Workshop.

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Erich Scholz erich@downholesystems.com tele: +1.845.398.3779
 Downhole Systems Inc.
 238 Oak Tree Road
 Tappan, NY 10983
 United States

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 GNS Science
 1 Fairway Drive
 PO Box 30 368
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214 Bessey Hall
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tele: +64 4 570 4617

GNS Science
1 Fairway Drive
PO Box 30 368
Lower Hutt
New Zealand

Please Note: The following forms provided in these appendices are EXAMPLES of what you can expect to receive. Do not complete. The appropriate form(s) and instructions will be sent to you either by the SMO (for non-U.S. Participants), or the RSPC (for U.S. Participants) in June/July 2006. All forms should be completed and returned to the appropriate office no later than the end of August.

All questions or concerns you may have when filling out forms should be directed to the SMO. All text in red MUST be copied onto your appropriate form(s) as given.

U.S. Participants should complete all forms as instructed and return originals to RSPC, copies to SMO.

Non-U.S. Participants should complete all forms as instructed and return originals to the SMO.

All MIS Science Team Members are strongly encouraged to keep copies of everything for their own records.

APPENDIX D: TRAVEL INFORMATION and HOTEL LIST

The Hotel List at the end of this section should be consulted and used when filling out your appropriate travel form(s). Hotel costs given are in NZ dollars.

Self-Ticketing Grantees (Non-U.S. Participants ONLY): Travel Information

The NSF has directed Raytheon Polar Services Company's (RPSC) Travel Department to not support, monetarily, your group's deployment (or certain members of your group) to Christchurch/Punta Arenas. Support for your travel should be arranged through your National Funding Agency as described in Section 3.7.1 of this Guide. While RPSC will neither purchase your airline tickets nor pay for any other deployment-related expenses, there are several important services RPSC will provide for you.

RPSC will provide you with the following services, as appropriate, if this form is completed and returned to the SMO no later than three weeks prior to your deployment:

- Provide you with original copies of New Zealand customs forms if you are carrying technical goods.
- Meet and greet you in Christchurch with details of your ECW clothing issue time (if appropriate).
- Reserve a hotel room for you in Christchurch, though not pay for it.
- Manifest you for a flight to McMurdo and advise your reporting time at Clothing Distribution Center (CDC).
- Ensure that your departure from Christchurch to Antarctica is on schedule and your field season is not delayed.

It is imperative that you complete and return this form to the ANDRILL Science Management Office at the address or fax number below no later than three weeks prior to your deployment. The SMO will forward information to RPSC.

ANDRILL Science Management Office
University of Nebraska-Lincoln
Attention: Laura Lacy
126 Bessey Hall
Lincoln, NE 68588-0341 USA

Fax: +1 402.472.6724
Phone: +1 402.472.6725

Updates to this form should be forwarded to the SMO as soon as they are known. It is critical that the SMO/RPSC receive any changes to your hotel or travel information so that your deployment to Antarctica is not delayed.

Last Name/First Name/Title (as it appears on your Passport): _____

RPSC/SMO PoC: _____ Jessie Crain/Laura Lacy

Event #: _____ G-091-M

Principal Investigator: _____ David Harwood

Cruise #: _____

Airport of Departure: (Airport/City/Country) _____

Home Phone: (_____) _____ - _____
Name: _____

Emergency Contact

Business Phone: (_____) _____ - _____

Emergency Contact Phone Number: _____

Email Address: _____

Passport Country of Issue: _____ / _____

Passport Expiration Date: ____/____/____

Travel Arrangements

HOTEL REQUESTS: (Christchurch, NZ, and Punta Arenas, Chile hotel suggestions are listed on the Hotel List: RPSC form: DS-A-100d)	
Check in date _____	Check out date _____
<input type="checkbox"/> Christchurch, NZ	<input type="checkbox"/> Punta Arenas, Chile
<input type="checkbox"/> Other _____	
Contact phone number/address if "other" _____	
<input type="checkbox"/> 1 st Choice of Hotel _____	Willing to Dorm? <input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> 2 nd Choice of Hotel _____	Willing to Dorm? <input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> No Hotel Preference	<input type="checkbox"/> Smoking Room <input type="checkbox"/> NON-SMOKING Room
<input type="checkbox"/> Roommate _____ (name)	<input type="checkbox"/> Single <input type="checkbox"/> Twin Beds <input type="checkbox"/> Double
<input type="checkbox"/> NO HOTEL REQUIRED Local contact phone number if no hotel required _____	

Please attach a copy of your itinerary or list your travel itinerary as it appears on your tickets for Airport of Departure (AOD) to Christchurch/Punta Arenas.

From City/State/Country and/or Airport	To City/State/Country And/or Airport	Airline and Flight Number	Arrival Date Month/date/year	Arrival Time
				a.m./p.m.
				a.m./p.m.
				a.m./p.m.

The Staff of Raytheon Polar Services Company and the ANDRILL Science Management Office wishes you a successful season.

Grantee Deployment Travel Request Worksheet (U.S. Participants Only)

GRANTEE DEPLOYMENT TRAVEL REQUEST WORKSHEET (TRW) This form should be returned eight (8) weeks before the scheduled departure date. All tickets will be purchased a <u>minimum</u> of fourteen (14) days in advance.						
Please complete and return to: Raytheon Technical Services Company Polar Services Attn: Deployment Specialists Group 7400 South Tucson Way Centennial, CO 80112-3938		Fax: 303-705-0742 Phone: 800-688-8606 ext 2 303-790-8606 ext 33202 Email: deployment@usap.gov		RPSC POC: <u>Jessie Crain</u> Principal Investigator: <u>David Harwood</u> Event #: <u>G-091-M</u> AA Frequent Flyer #: _____ Other FF#'s: _____		
Please print clearly Name: _____ Exactly as it appears on Passport Airport of Departure (AOD) (Airport/City/State) _____ Emergency Contact Name and Phone Number _____ DO YOU HAVE A PASSPORT? Yes <input type="checkbox"/> No <input type="checkbox"/> Passport expiration date: _____ Passport country of issue: _____				Home Phone: (____) _____ Business Phone: (____) _____ Cell Phone: (____) _____ E-mail Address: _____ Fed. Ex. Delivery Address (P.O. Boxes not accepted): Is this a residential address? YES <input type="checkbox"/> NO <input type="checkbox"/> _____ _____ _____		
REQUESTED TRANSPORTATION ARRANGEMENTS: (YOU MUST PROVIDE RETURN DATE EVEN IF APPROXIMATE.)						
From City/State and/or Airport	To City/State or Country	*Date	ETD Earliest/latest	ETA Earliest/latest	Seating Requests	Special Meal Requests
			:	:		
			:	:		
			:	:		
			:	:		
<i>Any necessary visa should be obtained before leaving the U.S. by contacting the embassies of the countries to be visited. Failure to do so may complicate or delay your travel. The U.S. Antarctic Program does not pay for or provide assistance in obtaining visas.</i>						
Vessel Departure Date: _____ Arrival Date at McMurdo Station: _____ Arrival Date at South Pole Station**: _____ **Arrival dates must be coordinated with the South Pole Asst. Area Manager Arrival Date at Palmer Station: _____			*Allow a <u>minimum</u> of four (4) days prior to requested date of departure to Antarctica for travel time from AOD to Christchurch, NZ and three (3) days prior to requested date of departure to Antarctica for travel time from AOD to Punta Arenas, Chile, or vessel departure date. All travel arrangements are made in accordance with the Federal Acquisition Regulations (FAR) and in the best interest of the U.S. Government.			
All business stops must be approved by the NSF in advance of ticketing. If stops are required, please provide an explanation. If personal travel or meetings are planned during deployment, please detail below. Any personal stops en route must be coordinated directly with the airline, and any additional costs incurred due to personal stops will be the traveler's responsibility. Complete the Excess Baggage Request form when excess baggage is required. The <i>Excess Baggage Request</i> form and/or the <i>USAP Participant Guide 2004-2006</i> provides further instructions regarding excess baggage. If you plan to hand-carry high value/high tech items through New Zealand, RPSC DSG will provide you with an original, individually assigned New Zealand customs form for your hand-carry items. Contact RPSC DSG for further instructions at 800-688-8606 ext. 2 or 303-790-8606 ext. 33202.						
HOTEL REQUESTS: (Christchurch, NZ, and Punta Arenas, Chile hotel suggestions are listed on the Hotel List: RPSC form: DS-A-100d) Check in date _____ Check out date _____ <input type="checkbox"/> Christchurch, NZ <input type="checkbox"/> Punta Arenas, Chile <input type="checkbox"/> Other _____ Contact phone number/address if "other" _____ <input type="checkbox"/> 1 st Choice of Hotel _____ Willing to Dorm? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> 2 nd Choice of Hotel _____ Willing to Dorm? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No Hotel Preference <input type="checkbox"/> Smoking Room <input type="checkbox"/> NON-SMOKING Room <input type="checkbox"/> Roommate _____ (name) <input type="checkbox"/> Single <input type="checkbox"/> Twin Beds <input type="checkbox"/> Double <input type="checkbox"/> NO HOTEL REQUIRED Local contact phone number if no hotel required _____						

Traveler's Signature/Date: _____ Principal Investigator/RPSC POC Signature/Date: _____
 RPSC Form DS-A-100b, Deployment Specialists Group, Revision #13, February 9 2006, All Locations, Approved by Lynn Dormand

Christchurch, New Zealand : Hotel List

For further details refer <http://www.polar.org/dsg/CHCHotels/ARB.htm>

Location	Name	Single	Phone	Address
AirportHotel	Copthorne Hotel Commodore	\$140.63 NZD	(3) 358 8129	449 Memorial Ave
	Outrigger at Clearwater Resort	\$135.00	(3) 360 1000	Clearwater Ave, Harewood
	Russley Hotel	\$90.00	(3) 358 6500	73 Roydvale Ave
	Sudima Hotel Grand Chancellor	\$119.25	(3) 358 3139	Cnr Memorial Ave/ Orchard Road
AirportMotel	Aarburg Airport Motel	\$84.00	(3) 358 8122	94-98 Roydvale Ave
	Airport Delta Motel	\$120.00	(3) 358 0969	61 Roydvale Ave
	Airport Gateway Motor Lodge	\$104.00	(3) 358 7093	45 Roydvale Ave
	Airport Lodge Motel	\$110.00	(3) 358 5119	105 Roydvale Ave
City B&B	Croydon House B & B	\$140.00	(3) 366 5111	63 Armagh Street
	Devon Bed and Breakfast Hotel	\$99.00	(3) 366 0398	69 Armagh Street
	Grange Guest House, The	\$95.00	(3) 366 2850	56 Armagh Street
	Home Lea Bed & Breakfast	\$75.00	(3) 379 9977	195 Bealey Ave
	Turret House	\$100.00	(3) 365 3900	435 Durham Street
	Windsor Bed and Breakfast	\$77.30	(3) 366 1503	52 Armagh Street
City Backpackers	Akron Lodge Backpackers	\$35.00	(3) 366 1633	85 Bealey Ave
	Base Backpackers	\$30.00	(3) 982 2225	56 Cathedral Square
	Boulevard Backpackers (from Oct 2005)	\$50.00	(3) 377 0550	Cnr Worcester St/ Latimer Square
	Charlie Bs Backpackers	\$40.00	(3) 379 8429	268 Madras Street
	Coachman Backpackers	\$80.00	(3) 377 0908	144 Gloucester Street
	Excelsior Backpackers	\$48.00	(3) 366 7570	Crn Manchester and High Street
	Frauenreisehaus Womens Hostel	\$35.00	(3) 366 2585	272 Barbadoes Street
	Living Space – The Mill	\$89.00	(3) 963 0202	96 Lichfield Street
	Stonehurst Hotel & Backpackers	\$60.00	(3) 379 4620	241 Gloucester Street
	YHA Christchurch City	\$59.00	(3) 379 9535	273 Manchester Street
	YMCA	\$45.00	(3) 365 0502	12 Hereford Street
City Hotel	Camelot Cathedral Square	\$95.00	(3) 365 2898	66 Cathedral Square
	Cashel Apartments	\$151.88	(3) 365 4220	87 Cashel Street
	Chateau Blanc Suites	\$146.25	(3) 365 1600	Cnr Kilmore & Montreal Street
	Copthorne Central	\$146.25	(3) 379 5880	776 Colombo Street
	Copthorne Durham Street	\$151.87	(3) 365 4699	Cnr Durham and Kilmore Street
	Crowne Plaza Hotel	\$185.63	(3) 365 7799	Cnr Durham & Kilmore Street
	Fino Casementi	\$153.00	(3) 366 8444	87-89 Kilmore Street
	George Hotel, The	\$191.25	(3) 379 4560	50 Park Tce
	Heritage Hotel	\$156.38	(3) 377 9722	28-30 Cathedral Square
	Heritage Suites	\$184.50	(3) 377 9722	28-30 Cathedral Square
	Holiday Inn City Centre	\$140.63	(3) 365 8888	356 Corner of Cashel and High Street
	Holiday Inn on Avon	\$129.38	(3) 379 1180	356 Oxford Tce
	Hotel Grand Chancellor	\$146.25	(3) 379 2999	161 Cashel Street
	Hotel off the Square	\$172.22	(3) 374 9980	115 Worcester Street
	Millennium Hotel	\$157.50	(3) 365 1111	14 Cathedral Square
	Pacific Park	\$85.00	(3) 379 8660	263 Bealey Ave
	Poplars Apartments, The	\$140.63	(3) 365 4220	Cnr Madras Street/ Chester Street East
	Quest Christchurch	\$137.25	(3) 964 6200	Cathedral Junction, Worcester Street

		Rydges Hotel	\$150.00	(3) 379 4700	Cnr Worcester St/ Oxford Tce
		Thomas's Hotel	\$69.00	(3) 379 9536	36 Hereford Street
		Warners Historic Hotel	\$140.00	(3) 366 5159	50 Cathedral Square
		West-Fitzroy Apartments	\$125.00	(3) 372 3408	66 Armagh Street
City Motel		Akron Motel	\$89.00	(3) 366 1633	87 Bealey Ave
		Bella Vista Motel	\$93.00	(3) 377 3363	193 Bealey Ave
		CentrePoint on Colombo Motel	\$110.00	(3) 377 0859	859 Colombo Street
		City Centre Motel	\$120.00	(3) 372 9294	876 Colombo Street
		City Court Motel	\$90.00	(3) 366 9099	850 Colombo Street
		Colombo in the City Motel	\$110.00	(3) 366 8775	863 Colombo Street
		Comfort Hotel Carlton Mill	\$99.00	(3) 366 1068	19 Bealey Ave
		Holiday Lodge	\$85.00	(3) 366 6584	862 Colombo Street
Other Hotel		Tuscan Motor Lodge	\$125.00	(3) 377 4485	74 Bealey Ave
		Chateau on the Park	\$150.75	(3) 348 8999	189 Deans Ave, Riccarton
		Cotswold Hotel	\$106.88	(3) 355 3535	88 Papanui Road, St. Albans
		Elms Hotel	\$96.75	(3) 355 3577	456 Papanui Road, Papanui
		Garden Hotel	\$80.00	(3) 385 3132	108 Marshlands Road, Shirley
		Kingsgate Hotel Autolodge	\$123.75	(3) 355 6109	72 Papanui Road, St. Albans
		Quality Hotel Pavilions	\$129.38	(3) 355 5633	42 Papanui Road, St Albans
		Riccarton Village Inn	\$69.00	(3) 348 5049	110 Mandeville St, Riccarton
Other Motel		Adelphi Motel	\$95.00	(3) 355 6037	49 Papanui Road, St. Albans
		Airport Birches Motel	\$95.00	(3) 342 3338	390 Yaldhurst Road, Avonhead
		Airways Motel	\$105.00	(3) 342 9464	3 Dinton Street, Yaldhurst
		Alcala Motor Lodge	\$95.00	(3) 365 8180	100 Sherborne Street, St Albans
		Alexandra Court Motel	\$90.00	(3) 366 1855	960 Colombo Street, Edgewater
		Alglen Motel	\$105.00	(3) 355 7010	59 Papanui Road, St Albans
		City Park Lodge	\$85.00	(3) 348 0909	22 Riccarton Road, Riccarton
		Racecourse Hotel Motor Lodge	\$75.00	(3) 342 7150	118 Racecourse Road, Yaldhurst
		Towers Motor Inn, The	\$110.00	(3) 348 0613	Cnr Deans and Kilmarnock, Riccarton

All prices are current as of Jun-06, in NZ dollars, inc. tax and are subject to change. TO CALL NZ, DIAL **011 64 AND HOTEL NUMBER**

**NOTE: PLEASE ENTER YOUR HOTEL REQUEST ON
YOUR TRAVEL PAPERWORK**

YOU CAN VIEW ADDITIONAL HOTEL INFORMATION AT

<http://www.polar.org/dsg/travelersalert.htm>

APPENDIX E: APPROVED GOODS ACCOMPANYING PASSENGERS EN ROUTE TO ANTARCTICA INFORMATION AND FORM

The following form is an EXAMPLE only. Please contact the appropriate office for form and instructions, if needed.

As discussed in Section 3.7.2 of this Guide, if you are expecting to or are planning on hand-carrying any scientific instrument(s) or other equipment needed while at McMurdo, you must complete the following form and return a COPY of it to the ANDRILL Science Management Office (Non-U.S. Science Team Members) or Raytheon Polar Service Company (U.S. Science Team Members). The ORIGINAL remains with you until you have return from the Antarctica. You must bring the form with you when traveling to New Zealand, it is required to clear NZ Customs. After your return to your home institution, mail the ORIGINAL to the office you received the form from.

After you have contacted the appropriate office for, received, and completed the “Approved Goods” form: U.S. Participants should fax to RSPC (303.705.0742) and send a copy to the SMO. Non-U.S. Participants should send/fax form to the SMO, which will forward to RSPC. Please, do not send directly to RSPC unless you are a U.S. participant.



Tē Mana Arai o Aotearoa

NZCS/NSF Surety
Approval No. 200 ____ / ____

APPROVED GOODS ACCOMPANYING PASSENGERS EN ROUTE TO ANTARCTICA

I, _____ (Importer's full name) declare that:

- (i) the goods listed will NOT be left, sold or disposed of in New Zealand without the written permission of the New Zealand Customs Service (NZCS), Christchurch, and, the payment of such duties and taxes as applicable on the said goods under the Tariff Act 1988 and Section 12 (1)(a) of the Goods and Services Tax Act 1985; and
- (ii) the goods listed will be exported from New Zealand to a point outside New Zealand (except Antarctica) within twelve months from the date of their first landing in New Zealand; and
- (iii) the goods listed in this entry are:

Quantity	Description of Goods (Including Serial no., etc.)	Value (US\$)
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____
5. _____	_____	_____

(See Note 4 Overleaf for Additional Goods)

(iv) AND (Tick ☐ applicable)

- ☐ I am an employee of the National Science Foundation (NSF) and the goods listed are the property of NSF; or
- ☐ I am an employee of Raytheon Polar Services Company (RPSC) and the goods listed are the property of NSF; or
- ☐ I am a Scientist/Grantee operating under "S event" number _____, and the goods listed belong to _____, and my "event" is funded and administered by NSF;
(University/Government Agency/Organisation)

- ☐ I am a technician operating under "T event" number _____, and the goods listed belong to _____, and my "event" is funded and administered by the NSF;

OR

- ☐ I am a US Government Agency employee _____ (Agency name) assigned to Antarctica as part of:

- ☐ US Geological Survey; or
- ☐ National Oceanic Atmospheric Administration; or
- ☐ National Aeronautic and Space Administration; or
- ☐ _____ (event) which has been approved by NZCS, Christchurch

and the goods listed belong to _____, and the operation/ "event" is funded and administered by NSF;

- (v) and that the particulars contained in this declaration are true and correct and I fully understand if any of the conditions set out above are violated then I am immediately liable for any duties and taxes payable on the said goods jointly and severally with NSF.

(Signed)

(Date)

Entry Passed

(Customs Officer)

Date: _____ STAMP

NOTES

1. This entry is made pursuant of Section 110 of the Act.
2. This entry is **NOT** to be used for **YOUR OWN** personal effects which are to be entered separately.
3. The approval number shown on the face of this declaration is a unique approval reference for you only. It is only applicable for the season noted in the approval number.
4. If there is insufficient room in paragraph (iii) for all the goods, then list the balance of goods on a separate page. Note the paragraph (iii) overleaf accordingly plus sign and date the extra page.
5. This entry and any additional pages of goods listed are to be completed in duplicate. A copy will be returned to you prior to your departure to New Zealand which should be returned to:

Raytheon Polar Services Company
Attention: Travel Supervisor
7400 S. Tucson Way
Centennial
Colorado 80112-3938
USA

Telephone: 1-800-688 8606 Prompt "2"
E-mail: kelly.nevins@usap.gov
Facsimile: 303-705 0742

The original should be kept by you and produced on demand or if questioned by a New Zealand Customs Officer about the goods at points of arrival or departure to/from New Zealand. Once you return to the USA or your overseas location please note the country or continent where the goods listed have been relocated to and return the completed form immediately to the address shown above.

6. **Important Note:** Apart from where the form requires you to input specific information or where marked, there should be no deletions, additions or alterations to the declaration overleaf without the express approval of the New Zealand Customs Service, at Christchurch.
7. Should you require further information in relation to this entry or on any other New Zealand Customs Service requirements you should contact:

New Zealand Customs Service
Client Services
Drury Street
International Airport
Christchurch
New Zealand

Hours: Monday to Friday 0830 to 1630 hours
Telephone: +64-3-358 0600
Facsimile: +64-3-358 0604

APPENDIX F: PERSONAL PRESCRIPTION MEDICATIONS (Instructions) International and U.S. Science Team Members

To USAP Participants: **(Personal Prescription Medications)**

It is the responsibility of all participants to obtain a supply of their regular prescription medications to cover the time that they will be deployed. The New Zealand custom laws, however, allow for only three months of prescription medications and one month of controlled prescription medications to be hand carried through New Zealand. Therefore, if you will be deployed for a longer period of time, you must make arrangements for additional medication to be mailed to the station medical clinic through the APO mail system. The medications will need to be in properly labeled pharmacy containers to be passed through the APO system. It is important that you hand carry the initial three months of medication (one month for controlled medications) in order to provide enough time for the mail to reach you in Antarctica. When you get your prescription medications filled, ask the pharmacist to put three months of medication (or one month of controlled medications) in one labeled container and the remainder in a separately labeled container. If you are not sure if your medication is a controlled (Class II or III), ask the pharmacist when you get the prescription filled. Mail the containers with the remainder of the medication to the medical clinic at the station where you will be deployed (see addresses below). Most health plans only allow one month of medication to be dispensed at a time. **If you have difficulty in getting the amount that you need for deployment, contact Human Resources at RSPC for assistance.** We can coordinate with your health plan to help you obtain the sufficient quantity of your prescription to last your entire deployment.

Mail the medication to the appropriate APO address listed below. Packages destined for summer participants should be mailed after Labor Day or they will be returned. You can receive your medication at the Station medical clinic.

McMurdo Station – RSPC

Medical Clinic, RSPC
McMurdo Station
PSC 469 Box 700
APO AP 96599-1035

South Pole Station – RSPC

Medical Clinic
South Pole Station
PSC 468 Box 400
APO AP 96598

Palmer Station or Research Vessels

Medical Clinic or MPC
[Palmer Station or Vessel Name]
c/o Raytheon Polar Services Company
7400 S. Tucson Way
Centennial, CO 80112-3938

If you have any questions about the procedure for transporting your prescription medications to Antarctica, contact the Medical Department at RSPC, 1.800.688.8606, option 3 on the menu.

RAYTHEON TECHNICAL SERVICES COMPANY LLC

APPENDIX G: HOUSING REQUEST FORM

Note: U.S. Participants will receive this form with their information packet from RSPC; Non-U.S. Participants will receive a similar form from the SMO. Do not complete this form. This is an EXAMPLE only. U.S. participants will return completed form to RSPC, please send a copy to the SMO. Non-U.S. Science Team Members will return completed form to the SMO. If you have any questions or would like assistance when filling out, please contact the SMO. Use information (red text) provided below as a guide when completing the actual form, which you should receive in June/July 2006.

McMurdo Station, Antarctica HOUSING REQUEST WORKSHEET

Following Raytheon Housing Guidelines, the RPSC Housing office assigns housing for all agencies and Grantees residing in or passing through McMurdo. Your input will assist Housing in making those assignments. Please complete this form and return it with your deployment packet to RPSC, DSG, 7400 South Tucson Way, Centennial, CO 80112-3938.

(a) Due dates: July 15th for WINFLY/August 15th for summer season

Name: _____ Gender: Male Female
Last First MI Nickname

Roommate request: _____ Is this person your spouse/partner? Yes No
If you are not a permanent McMurdo resident (permanent = over 30 days for RPS employees and over 15 days for grantees), roommate requests may not be honored. This includes spouse/significant others.

(b) Are you a (please circle one): Grantee Fulltime Employee Contract Employee Sub-Contractor

(c) Please circle all that apply to you:
Smoker Snorer Prefer tidy room Stay up late Non-drinker T V -
watcher

Sensitive to perfumes/other odors Prefer cool room temperature Quiet personality

Please give any other information pertinent to your room assignment. Please note that specific requests may not be honored:

(d) GRANTEES, Artists/Writers and Sub-Contractors (T- and R-Events), please fill out this section:

Are you a Principal Investigator or Co-Principal Investigator? Yes No Event number: G-091-M

Approximate deployment date: 10/15/2006 Approximate length of stay in McMurdo: 2.5 months (end of Dec. 2006)

Will you remain in McMurdo for the duration of your stay? Yes No

Please indicate approximate dates you will be away from McMurdo, if applicable:

(e) ALL OTHERS, please fill out this section:

Department and Job: _____ Agency (RPSC, NANA, etc.): _____

Number of previous months with USAP since 1990: _____ Approximate deployment date: _____

Do you have a winter contract? Yes No Do you have a 12 month contract? Yes No

Contracted to work mainly at: McMurdo South Pole Field Camp

Will you be working nights? Yes No Unknown

(f) All residents are required to check out with the Housing Office when leaving McMurdo overnight for any length of time. Storage will be available as needed.

(g) For RPSC use only:
PTS: _____ Date: _____ Initials: _____ UPT: _____ Date: _____ Initials: _____ Job Code: _____ Total Housing Points: _____

APPENDIX H: McMURDO STATION COMPUTER INFORMATION

For more information, visit <http://www.usap.gov/technology/contentHandler.cfm?id=94>

In this appendix, you will find information on the following:

- H.1 Information Security Awareness User Information Booklet
- H.2 Information Security Computer Screening Requirements
- H.3 Acknowledgment of Information Security Policies

H.1 INFORMATION SECURITY AWARENESS USER INFORMATION BOOKLET

Please familiarize yourself with information contained in the Information Security Awareness User Information Booklet at: <http://www.usap.gov/technology/documents/RSPC-05-500.pdf> or as provided by RSPC in U.S. participant medical kits or electronic grantpacks.

The information provided at the link above is extremely important. Please feel free to download for use.

NOTE: U.S. Participants **MUST** sign and return computer form located on the last page in the Information Security Awareness User Information Booklet; Non-U.S. Participants will receive form from the SMO. Non-U.S. Science Team Members are required to sign and return the computer form to the SMO intending to use the USAP network or USAP computers. Please contact the SMO if you have any questions or concerns.

H.2 INFORMATION SECURITY COMPUTER SCREENING REQUIREMENTS



United States Antarctic Program Information Security Computer Screening Requirements

Raytheon
Polar Services

The U.S. Federal government requires security and operational practices for computing systems in all government funded programs. The United States Antarctic Program's (USAP) compliance with this federal requirement entails the screening of all computers prior to connecting to the USAP network (wired or wireless). The following requirements apply to personal and business equipment that will connect to the USAP network.

See detailed information below regarding system requirements, operating system specifications, and the process for computer screening. The following requirements are aligned with the *NSF Computer Security Policy*. Please direct inquiries to the USAP Help Desk at (720) 568-2001 or helpdesk@usap.gov.

In order to minimize wait time for computer screening, please ensure your system meets the following requirements prior to deployment. Failure to comply with the following guidelines may result in excessive delays or a denial of access. Please be prepared.

General System Requirements

► Administrator Access

Obtain Administrator password for personal computers prior to deployment. Technicians must have the authority to log on to the personal computers at an Administrator level. This enables the screener to accurately review the system configuration and install any necessary patches and antivirus definition files, run screening software, and make any system configuration modifications necessary to provide network connectivity. If an Administrator password is not available, the screening process, as well as the ability to connect to the USAP network and its resources, will be delayed.

► Connectivity

All the equipment necessary to connect the computer system to a network must be provided, including the NIC (network interface card), external dongles or attachments used by the NIC, device drivers, etc. All equipment must be in working order.

► Antivirus

Administrator ID and password are needed for the antivirus software to update current virus definition files (DAT files). For computers running McAfee antivirus software, the Admin ID and password are needed to configure the software to update automatically from a local USAP server. Raytheon Polar Services Company (RPSC) can provide current DAT files for McAfee and Norton users. All other antivirus software users must ensure proper updates are installed and the computer is virus free prior to deployment. Please note that antivirus software requirements do not apply to computers running a Mac OS X or Linux operating system.

► Patches

Computers running Microsoft Windows operating systems must have the ability to be "patched" and include the most current level of the operating system.

► Client and Server Software

- Client software used for the purposes of email and web browsing, and other client software, such as SSH and SFTP, are permitted.
- Peer-to-peer (P2P) software, e.g., KaZaA, is not allowed.
- Email server software that provides SMTP/POP port services should not be used.
- Web server software that provides HTTP/HTTPS/FTP services should not be utilized.
- Network management servers, such as DNS and SNMP, should not be running.

Operating System Specifications

Operating systems have certain criteria that must be met in order to pass the computer screening process. All operating systems should utilize software supported by the operating system vendor. If a user's OS is not in one of the below categories, their connection to the network must be evaluated at a USAP location by an IT technician prior to connecting to the USAP network.

► Apple

Mac OS X systems are permitted to connect to the USAP infrastructure at any station. If older Mac OS versions are installed, current antivirus software must also be installed.

► Linux

Linux systems/partitions are permitted to connect to the USAP infrastructure at any station. If the computer is configured to dual boot with Microsoft, the Windows partition must comply with the criteria stated below for Microsoft systems.

► Microsoft

Ensure the following conditions are met:

- Windows 2000 (Service Pack 4) or XP (SP1 or SP2) and all hot fixes loaded*
- Current antivirus software with latest virus definition files (DAT files)
- Complete/full system virus scan within the previous two weeks
- System32/wins folder does not contain "dllhosts.exe" or "svchosts.exe"

*Microsoft OS service pack and security patch updates are available at www.microsoft.com

Computer Screening Process

Screening technicians will gather various computer information (see table below), and make it available to all technicians performing screenings on station. Users found using the USAP network without a screening rating of Pass are in violation of IT Security Policy and may be subject to disciplinary action. If possible, computers will be screened during Deployment Orientation for current antivirus software and operating system patches.

► Deployment Orientation or Christchurch, New Zealand

Computer screenings during Deployment Orientation or in Christchurch may take anywhere from two hours to a full day. Computers that receive a Pass rating at Orientation/Christchurch within two weeks of deployment may connect to the USAP network upon arrival. A Fail rating indicates the computer must go through remediation before connecting to the USAP network.

► McMurdo Station or South Pole Station

Computer screening in McMurdo or South Pole is not required for those computers that have received a Pass rating when screened at other USAP locations within two weeks of deployment. If a computer arrives on station either without being screened or having failed a screening, the owner must contact the McMurdo or South Pole Station Help Desk. IT personnel at McMurdo or South Pole will then perform screening and/or remediation as time allows.

► Marine Research Vessels (LMG or NBP)

Screening onboard the Vessels will occur during the port call or within the first two days at sea. IT personnel will perform screening and/or remediation as time allows. Laptops will be returned to their respective owners within 1-2 days.

► Palmer Station

Computers arriving at Palmer Station are required to be screened and configured for proper connection to the USAP network. Owners must contact Palmer Station IT personnel prior to connecting to the network. IT personnel will perform screening and/or remediation as time allows.

Data Potentially Collected During Computer Screening	
<ul style="list-style-type: none">▪ User name▪ Date of check▪ Computer make and model▪ Computer affiliation (personal, grantee, NSF, other)▪ NSF Tag number (if applicable)▪ Computer hostname▪ OS version▪ OS patch level	<ul style="list-style-type: none">▪ Service pack/service release level▪ Serial number▪ MAC address▪ Wireless MAC address▪ Antivirus software▪ Virus DAT file date▪ Pass (computer cleared to connect to network) or Fail (computer needs remediation)

H.3 National Science Foundation Acknowledgment of Information Security Policies and Permission for Use of NSF/USAP Information Systems and Services

NATIONAL SCIENCE FOUNDATION

4201 WILSON BOULEVARD
ARLINGTON, VIRGINIA 22230

Acknowledgement of Information Security Policies & Permission for Use of National Science Foundation/United States Antarctic Program Information Systems and Services

Scope of Authorization

Permission for use of National Science Foundation/United States Antarctic Program (NSF/USAP) information systems and services is restricted to authorized participants in the United States Antarctic Program, designated contractors and U.S. Government employees, official visitors, or individuals otherwise having an authorized purpose for gaining access to, and utilizing the services of, NSF/USAP owned, operated, or provided information systems and services. USAP information systems and services include, but are not limited to, those located at the support contractor's headquarters and at USAP facilities in Port Hueneme, CA; Christchurch, NZ; Punta Arenas, Chile; Antarctic stations and research vessels.

Agreement Provisions

Permission for use of NSF/USAP information systems and services requires the following acknowledgements:

1. Government owned system. The information systems of the United States Antarctic Program are National Science Foundation federal government owned information systems. When attaching or otherwise interconnecting personally or privately owned information systems with government systems, the NSF reserves the right to extend its information security policies, Rules of Behavior, procedures, and guidance to these systems in order to ensure the integrity of NSF/USAP systems.
2. Mandatory awareness training. Individuals using NSF/USAP information systems and services must receive information security awareness training no less than once annually. Awareness training is a prerequisite for gaining permission to use NSF/USAP information systems and services and may be provided by verbal briefings, written reference materials, and/or on-line training systems. Permission to use NSF/USAP information systems and services may be suspended, revoked or denied, as appropriate, for individuals who have not fulfilled the mandatory awareness training requirement.
3. Only authorized use is permitted. Individuals using NSF/USAP information systems and services without authority, or in excess of their assigned authority, are subject to revocation of access privileges, in part or in whole. Further, access for purposes beyond authorization or assigned authority may be a violation of federal law. Penalties for misuse may include, but are not limited to, appropriate administrative sanctions, civil liability or criminal prosecution.
4. No expectation of privacy. Individuals using NSF/USAP information systems and services should be aware that they have no expectation of privacy. Files maintained in NSF/USAP information systems, including electronic mail files, may be reviewed by NSF officials who have legitimate reasons to do so when authorized by the Director or Deputy Director, or by the Inspector General. Individuals should be aware that NSF reserves the right to conduct work-related investigations for the purpose of investigating work-related misconduct, such as violations of the acceptable use policy.
5. Common Authority and Consent to be Monitored. In the course of conducting routine and corrective systems maintenance and administration, NSF designated systems technical personnel have legitimate work-related needs for access to files, contents of files, configuration data, and system log information, as well as monitoring of user activities. This extends to any personally or privately owned information systems attached to, or otherwise interconnected with, NSF/USAP systems such that the electronic exchange of information between the two is possible. If such work-related activities reveal possible evidence of criminal wrongdoing, NSF authorizes system personnel to provide the information gained from such activity to NSF officials for administrative action, with referral of such matters to law enforcement officials when appropriate.

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NSF/OPP Information Security Acknowledgement
United States Antarctic Program
September 9, 2005

Initials / Date

(over)

6. Prohibition on tampering. Unless explicitly authorized by NSF designated personnel, individuals using NSF/USAP information systems and services do not have permission to physically access, modify, or alter configuration settings or in any way change or disrupt any information system or network infrastructure (data centers, servers, embedded systems, telephone systems, wiring closets, frame rooms, cable plant other than accessing designated outlets, etc.). Individuals found to be in violation of this prohibition may be subject to appropriate administrative sanctions, civil liability or criminal prosecution.
7. Protection of sensitive information. Individuals granted access to NSF/USAP information systems and services may, in the course of their official duties, have access to information designated by NSF as sensitive, or protected by federal law including, but not limited to, personal information, procurement information, trade secrets, and other information types. Individuals in such circumstances agree that the confidentiality, integrity, and availability of this information must be protected from unauthorized disclosure, loss, or corruption. Individuals found to be in violation of this prohibition may be subject to appropriate administrative sanctions, civil liability or criminal prosecution.

Limit of Access Authority

Permission to access or otherwise utilize NSF/USAP information systems and services shall be terminated upon separation from the United States Antarctic Program to include, but not limited to, termination of grant or grant extensions, termination of employment in support organizations, termination of Government employment, termination of guest/visitor status, determinations by NSF designated authorities to restrict or terminate access, etc. Continued use of NSF/USAP information systems and services, once access authority has terminated is a violation of federal law.

Acknowledgement

I, the undersigned, understand that I am authorized to access NSF/USAP information systems and services, as defined under the provisions of this Agreement. I acknowledge that I have received the required information security awareness briefing and my responsibility to abide by all information security policies, Rules of Behavior, procedures, and guidance issued by the National Science Foundation as applied to the United States Antarctic Program information systems and services, either directly or through its duly designated support organizations. I further acknowledge that I have read and understood the terms of this Agreement and agree to abide by them.

Printed Full Name:	Date:
Signature:	
Organizational Affiliation:	
Sponsoring Organization:	

APPENDIX I: EXTREME COLD WEATHER (ECW) and McMURDO CLOTHING LISTS

A. Antarctic ECW Clothing

You are required to wear (or have on your person) the following USAP issued or respective National Program issued items on the flights to and from Antarctica and during flights within Antarctica:

Clothing Bag ~ orange (2 ea)
Balaclava, Polar Fleece (1 ea)
Rubber Boots ("Bunny") (1 pr)
Cap, Yazoo (1 ea)
Neck Gaiter, Polar Fleece (1 ea)
Leather Gloves, w Thinsulate Lining (4 pr)
Snow Goggles (1 pr)
Polar Fleece Jacket (1 ea)
Glove Liners, Polypro (2 pr)
Furback Mittens (1 pr)
Kodalite Mittens (1 pr)
Windproof mittens with pile (1 set)
Polar Fleece Pants (1 pr)
Bibbed Wind Pants (1 pr)
Red Parka (1 ea)
Wool Tube Socks (6 pr; 1 worn)
Expedition Long Underwear (1 pr)
Thermax Long Underwear (1 pr)
Expedition Undershirt (1 ea)
Thermax Undershirt (1 ea)
Red Wind Jacket
Polarized Sunglasses* (2 pr; 1 worn)

Items in bold are typically worn on or packed in carry-on baggage during flights to and from Antarctica.

B. McMurdo Clothing

The following items are considered appropriate for wear at and around McMurdo:

Boots or shoes (climbing, hiking or running)
2 pair of glasses (sun and prescription)
Gym clothes
Jacket (pile and windbreaker)
Pajamas
Pants (cotton or denim)
Shirts (light wool, cotton, flannel, long-sleeved; washable)
Slippers or Soft shoes for indoor wear
Sock (cotton and wool); Sock Liners
Sweaters (light and heavy)
Underwear
Swimsuit (for use in sauna)
Semi-formal wear (suit jacket; dress slacks; skirt or dress, etc.)

Remember you are limited to 75 lbs of baggage. Pack light with clothing that allows for layering and can be laundered (laundry facilities are available in dormitories).

* = Your own personal item, not provided to U.S. participants by USAP; may be provided by other National Antarctic Programs.

APPENDIX J: ANDRILL ACRONYMS

The following list consists of acronyms related to the ANDRILL Program
(Note: the list also includes acronyms specific to ANDRILL but not used in this document)

ACE	Antarctic Climate Evolution (SCAR initiative)	COMSUR	Commercial Surface Shipping
AESOP	ANDRILL Education and Science Outreach Panel	DSC	Drilling Science Coordinator
AISP	ANDRILL International Science Proposal	DSDP	Deep Sea Drilling Project
AGTP	ANDRILL Guide to Participation	DSG	Deployment Specialist Group (RSPC term)
ANDRILL	ANtArctic geologic DRILLing (Program)	DTL(s)	Discipline Team Leader(s)
ANTEC	Antarctic Neotectonics (SCAR Initiative)	DVDP	Dry Valley Drilling Project
AOMG	ANDRILL Operations Management Group	EAIS	East Antarctic Ice Sheet
APO	Air Post Office (McMurdo Station)	ECW	Extreme Cold Weather
ARISE	ANDRILL Research Immersion for Science Educators	ENEA	The Authority for New Technologies, Energy, and Environment (Italy)
ASAP	ANDRILL Science Advisory Panel	EPICA	European Project for Ice Coring in Antarctica
ASC	ANDRILL Science Committee (2003-present)	EPO	Education and Public Outreach
	ANDRILL Steering Committee (2001-2003)	FASTDRILL	Fast-Ice Sheet Drilling
ASIC	ANDRILL Science Implementation Committee	FRST	Foundation for Research Science and Technology (New Zealand)
ASMP	ANDRILL Scientific Measurements Panel	FSU	Florida State University
ASP	ANDRILL Science Plan	GER	Germany
ASSP	ANDRILL Site Survey Panel	GNS Science	(changed from IGNS; see IGNS below)
AUSSP	ANDRILL U.S. Science Support Program	IGNS	Institute of Geological and Nuclear Sciences Limited (New Zealand)
AWI	Alfred Wegener Institute for Polar and Marine Research Science (Germany)	IMAGES	International Marine Global Changes
BAS	British Antarctic Survey	IODP	Integrated Ocean Drilling Program
CDC	Clothing Distribution Center (Raytheon)	IPPC	Intergovernmental Panel on Climate Change
CIROS	Cenozoic Investigations in the Western Ross Sea	IPY	International Polar Year
CHRONOS	Network of Chronostratigraphic databases, tools and information www.chronos.org	IT	Italy
COMAIR	Commercial Air Shipping	JOI	Joint Oceanographic Institutions
CoreWall	Data visualization tool http://www.evl.uic.edu/research/res_project.php3?indi=282	k.y.	thousand years
CRP	Cape Roberts Project	MAF	Ministry of Agriculture and Forestry (NZ)
CRST	Cape Roberts Science Team	MARGINS	A research initiative to understand the complex interplay processes that govern the evolution of continental margins; supported by NSF
CSEC	Crary Science and Engineering Center	M-ASIC	McMurdo Sound- ANDRILL Science Implementation Committee
		MIS	McMurdo Ice Shelf (ANDRILL Project)
		MRI	Major Research Instrumentation Program (NSF)
		MSP	McMurdo Sound Portfolio
		MSSTS	McMurdo Sound Sediment and Tectonic Studies

MoU	Memorandum of Understanding	SIP(s)	Support Information Package(s)
m.y.	million years	SLIP	Science Logistics and Implementation Plan
NERC	Natural Environmental Research Council (U.K.)	SMO	Science Management Office (University of Nebraska-Lincoln)
NIU	Northern Illinois University	SMS	Southern McMurdo Sound (ANDRILL Project)
NRs	National Representatives	TAM	Transantarctic Mountains
NSCs	National Steering Committees	TBD	To Be Determined
NSF	National Science Foundation	ToR(s)	Terms of Reference
NZ	New Zealand	TRW	Travel Request Worksheet (RSPC term)
ODP	Ocean Drilling Program	U.K.	United Kingdom
OMO	Operations Management Office (Antarctica New Zealand)	UMass	University of Massachusetts
OPP	Office of Polar Programs	UNL	University of Nebraska-Lincoln
OSU	Ohio State University	USDA	United States Department of Agriculture
OWR	Oxford Workshop Report	U.S.	United States
PANGAEA	Network for Geological and Environmental Data (Germany)	USAP	United States Antarctic Program
PDC	Project Development Coordinator [2004-present] Portfolio Coordinator [2001-2004]	USSC	United States Steering Committee (Science)
PNRA	National Program for Research in Antarctica (Italy)	VLB	Victoria Land Basin
PoC	Point of Contact	WAIS	West Antarctic Ice Sheet
PQ	Physical Qualification	WARS	West Antarctic Rift System
REU(s)	Students-Research Experience for Undergraduates		
RIS	Ross Ice Shelf		
RISP	Ross Ice Shelf Project		
RoU	Record of Understanding		
RPSC	Raytheon Polar Services Co.		
SCAR	Scientific Committee on Antarctic Research		
SHALDRIL	SHALlow DRILLing Project		