

Please review all of the following information, including the gear allocations and field team information, to ensure accuracy. This plan is an agreement between CH2M HILL Polar Services (CPS), formerly VECO Polar Resources, and your group, documenting the logistics support you will receive.

SECTION ONE: PROJECT INFORMATION

Lead Principal Investigator	H.A.J. Meijer
Institute	RuG University of Groningen,
Project Title / Grant #	On-site isotope diffusion experiments conducted by Netherlands Arctic Research (NAP)/ALW-NAPSP/07-03 (NAP-ISO)
NSF Program and Manager	NL\Federal\NWO\NAP, Ms. Renee Crain
PFS Project Manager	Sandra Starkweather

Logistics Summary

For this isotope study funded by the Netherlands Arctic Program (NAP) of the Netherlands Organization for Scientific Research (NOW), researchers will conduct shallow ice-core sampling in Greenland.

From 2007-2011, project researchers will work each year at two sites in Greenland: Summit Station and site "S10" about 150 km east of Kangerlussuaq. At the latter, researchers laid down an isotopically enriched snow layer in 2005; with this project, they will continue studying the layer. They will establish an enriched layer at Summit (and at a third site in Antarctica) for comparative analyses.

In August of 2007, 2 researchers spent two days at Summit Station where they produced a ~6 x 6 meter isotopically enriched labeled layer in undisturbed snow using a snow maker that draws enriched water from a small inflatable swimming pool. The researchers also traveled via helicopter to the S10 site, 150 km east of Kangerlussuaq, to revisit the experiment they set up in 2005.

In July of 2008, a team of two will return to both sites to sample the enriched layer (this plan focuses on the Summit work, which requires CPS support). The development of the isotope-labelled layer will give experimental validation to isotope diffusion models that are in use to correct ice core measurements. This resampling activity will be an annual event.

CPS will support this project with cost-reimbursable transport to and from Summit Station, Summit user days, and access to the Summit infrastructure and science technical services. All other expenses, including helicopter supported work east of Kangerlussuaq, will be arranged by the PI and paid with grant funds.

For the complete CPS online project record for this grant, including science objectives, go to: http://www.vecopolar.com/arlss_reports/arlss_projectsdetail.asp?cbPropNum=NAP-ISO

For up-to-date information on the project's schedule, please view the online [Greenland calendar](http://www.polar.ch2m.com/) (<http://www.polar.ch2m.com/> > Greenland > Calendars/Schedules).

SECTION TWO: SEASON FIELD PLANS

Outstanding Actions and Notes

Issue	Responsibility	Date Completed
Review support plan for accuracy and distribute to all field team members	PI	July, 2008
Obtain all necessary permits for fieldwork	PI	Summit field work is included in Summit permit

Visit all hyperlinks and review all documents referred to in the support plan	Field Team Members	
Contact the GEOSummit Science Coordination Office (SCO) mailto:sco@summitcamp.org regarding your project's plans for the season	PI	Contacted on 7/10/2008
Medical Clearance completed 6-8 weeks before desired deployment date	Field Team Members	Not required for short deployment
Provide cost estimate for billable support Develop a purchase order with CPS prior to field work Provide bill for actual support Note: Actual costs likely will differ from those reflected in the cost estimate due to exchange rates and other influences.	CPS PI CPS	(7/9/2008)
Passports are required for ANG and international travel. It's a good idea to bring two IDs and to pack a copy of your passport in case the original is lost.	Field Team Members	
Complete Critical Success Factors	PI	See below

Allocations and Services

Allocations from Inventory

Quant/Unit	Item
2 ea	Arctic Oven Sleep Tents
4 ea	Sleep Pads
2 ea	Snowmachine
2 ea	Nansen Sled
1 ea	GPS
1 ea	VHF Radio
1 ea	Survival Bag
4	Long bamboo stakes/poles for marking the snow field and tracking the annual snow fall

Other Services

Project Allocations	Comments
R/T flights SFJ><Summit	2 people
Summit user days	2 people x 2 days
Freight	
Snow Pit Assistance	The field team requests assistance with digging ~ 2 shallow (~1m) snow pits near their site since their time on station is short. Pit location and depth will be field-specified by the science group. Included in user day charge.
Science Technical Services - Sampling	As described in the Summit Science protocols, the science techs will visit the CIO site each month to measure the accumulation. ~ 1 hour/month.
KISS accommodations	Note: The researchers have made their own arrangements for accommodations at KISS. These costs are therefore not included in the CPS estimate and will be paid by the field team directly. They will stay at KISS through 8/2 to give them time to take a helicopter to their other field site. This is also paid for and coordinated directly by the field team.

Location Information

Please visit <http://www.polar.ch2m.com/> and navigate to the Greenland menu for en route and location-specific Greenland information. Prior to deployment, your entire field team should be familiar with the content of the *Greenland Guide* and the *Summit Users' Guide*. Both are available electronically via our Web site's Greenland menu.

Cargo and Customs

For Customs requirements please refer to the Greenland Guide, also available at <http://www.polar.ch2m.com/> under Greenland.

The following is our current understanding of your overall cargo requirements:

Cargo List

Items	Weight/Cube
Aluminum box 80x60X40 cm	25 kg / 0.2 m3
Firn drill in case 130x25x16 cm	20 kg / 0.05 m3

Field Team Information

Name	Location	Date In	Date Out	Email
Van der Wel, Gerko	Kangerlussuaq via CPH	7/20/2008	8/2/2008	L.G.van.der.Wel@rug.nl
Van der Wel, Gerko	Summit	7/22/2008	7/24/2008	L.G.van.der.Wel@rug.nl
Been, Henk	Kangerlussuaq via CPH	7/20/2008	8/2/2008	H.A.Been@rug.nl
Been, Henk	Summit	7/22/2008	7/24/2008	H.A.Been@rug.nl

Project Contact Information

Research Team

Role	Name	Email	Phone / Fax
Principal Investigator	H.A.J. Meijer	H.A.J.Meijer@rug.nl	(0) 05 363-4739 /

SECTION THREE: CPS CONTACT INFORMATION

CPS Team Members

Contact for	Name	Email	Primary Phone(s)
Summit operations	Sandy Starkweather	sandy@polarfield.com	Denver: 303.518.8714
Greenland operations (project support)	Jason Buenning	jason@polarfield.com	Denver: 303.638.6669 Greenland: 011.299.524218
Greenland operations (On-island support)	Mark Begnaud	mark@polarfield.com	Denver: 720.320.6160 Greenland: 011.299.524281
Greenland operations (project support)	Robin Abbott	robin@polarfield.com	Denver: 303.748.8507
Denver operations	Jill Ferris	jill@polarfield.com	Denver: 720.320.6155
Scotia operations & customs	Earl Vaughn	earl.vaughn@gmail.com yprscotia@hughes.net	Scotia: 518.331.3103
Purchase orders	Mike McKibben	mike.mckibben@ch2m.com	720.286.0410

CPS Offices

Denver	Kangerlussuaq	Scotia
CH2M HILL Polar Services Western Office 8110 Shaffer Parkway Suite 150 Littleton, CO 80127 Tel: 303.984.1450/1439 Fax: 303.984.1445	CH2M HILL Polar Services Attn: Name of Employee/Researcher Postboks 1015 DK-3910 Kangerlussuaq, Greenland Tel: 011.299.841598 Fax: 011.299.841599	Earl Vaughn C/O 109 th Aerial Port Bldg. 20 Stratton Air Base Scotia, NY 12302-9752 Tel: 518.331.3103 Fax: 518.334.2537

Summit Station

Winter	Summer
CH2M HILL Polar Services Western Office Attn: Name of Employee/Researcher 8110 Shaffer Parkway Suite 150 Littleton, CO 80127 Tel: 303.984.1450/1439 Fax: 303.984.1445	CH2M HILL Polar Services Attn: Name of Employee/Researcher - Summit Station C/O Earl Vaughn 109 th Aerial Port Bldg. 20 Stratton Air Base Scotia, NY 12302-9752 Tel: 518.331.3103 Fax: 518.334.2537

Other

Organization	Internet	Phone
Summit Science Coordination Office	http://www.geosummit.org sco@summitcamp.org	John Burkhart 209.658.7142

SECTION FOUR: SAFETY, ENVIRONMENT, HEALTH and PERMITS

Permits

All science teams planning to conduct research in Greenland must complete an **annual application** in order to obtain approval from the Danish Polar Center (DPC). The application forms are available from the DPC at <http://www.dpc.dk/>. Applications are submitted directly through the DPC. For assistance with the application process, contact:

Poul Henrik Sorensen

E-mail: phs@dpc.dk

Telephone: +45 3288 0100

Critical Success Factors

Please list the factors that are most important for the success of your science. We track these factors in order to measure the success of CPS' support. Examples might be the availability of the helicopter or camp gear.

Factors
Maintenance of the CIO site, no traffic or disturbances inside the area marked by bamboo poles
Availability of sampling snow pits

Government and Performance Reporting Act of 1993 (GPRA)

NSF/OPP requires your help in complying with the Government Performance and Reporting Act of 1993 (GPRA). One measure of CPS' performance is a "facility-performance metric" which counts the number of productive days your project has in the field while relying on CPS facilities or support. Please keep track of any "lost days" and report these to us at the end of the season.