

Please review all of the following information, including the gear allocations and field team information, to ensure accuracy. This plan is an agreement between VPR and your group, documenting the logistics support you will receive.

• Project Information •

Lead Principal Investigator	Peter Kuipers Munneke
Institute	Utrecht University, Institute for Marine and Atmospheric Research
Project Title / Grant #	Summit Radiation Experiment (IMAURad)
NSF Program and Manager	NL\Research\Higher Ed\Utrecht University, Ms. Renee Crain
VPR Project Manager	Sandra Starkweather

• Logistics Summary •

The PIs plan to integrate measurements on different components of the radiation and energy budget of snow using a variety of instruments. A team of up to 3 personnel will travel to Summit, Greenland, in early June of 2007 for a 7-week campaign. Upon arrival, the team will install an automatic weather station and a suite of radiation instruments that will gather data for the duration of their campaign. While on site they will also launch 1-2 radiosonde balloons daily.

VPR will provide cost-reimbursable support to this project in the following areas: ANG travel to/from Summit Station, user days at Summit (~113) and in Kangerlussuaq (~18), and purchase/shipment of the project's gases and some chemicals. Additionally, VPR staff will assist the team with instrument installation, and provide access to vehicles and adequate work space near the team's instrument sites, with camp power, and Internet access.

The PIs will arrange all travel and cargo transport from their home institute to Kangerlussuaq and provide all instrumentation and radiosondes.

For the complete VPR online project record for this grant, including science objectives, go to: http://www.vecopolar.com/arlsr_reports/arlsr_projectsdetail.asp?cbPropNum=IMAURad

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

• Outstanding Issues •

Issue	Responsibility	Date Complete/Comment
Review support plan for accuracy and distribute to all field team members	PI	5/7/07
Obtain all necessary permits for fieldwork NOTAM (ballooning notification) pending as of May 7	PI	Pending
Visit all hyperlinks and review all documents referred to in the support plan	Field Team Members	5/7/07
Contact the GEOSummit Science Coordination Office (SCO) mailto:sco@summitcamp.org regarding your project's plans for the season	PI	5/7/07
Medical Clearance completed 8-6 weeks before desired deployment date	Field Team Members	Completed

- Provide cost estimate for billable support - Develop a Purchase Order with VPR prior to field work - Provide bill for actual support	VPR PI VPR	December 2006 January 2007 August 2007
Please note this important information for your field team: Bring 2 different forms of picture ID. Passports are mandatory for entry into Greenland.	Field Team Members	OK
Complete Critical Success Factors	PI	5/7/07
Store CO2 bottles in Kangerlussuaq for keep frozen samples as PI transits on return	VPR	Completed
Notify science techs when chemicals will be used in Clean Air Zone, per NOAA request	PI	On-going
Bring appropriate battery charger to convert power at site to appropriate voltage	PI	

• Allocations & Services •

Allocations from Inventory

Quant/Unit	Item
3 ea	8x8 Arctic Oven sleep tents
6 ea	Thermal sleeping pads
2 ea	Work tables for work tent
3 ea	Folding chairs for work tent
1 ea	Handheld VHF radios
1 ea	Snowmachine and sledge for build-up and break-down of experiment

This support will be provided by VPR on a direct-billable basis:

Other Services

Project Allocations	Comments
Gases	8 tanks Balloon (Industrial) Grade Helium, H size, 6200 gaseous liters at 2015 psig@70 F. CGA 580 4 tanks Pressurized CO2 (75 lb cylinder) with dip tube and CGA 320 cylinder valve. For making dry ice. (HOLD 2 CYLINDERS OF CO2 IN KANGER) Gases provided by VPR.
Chemicals	10 L Diethyl Phthalate 50 gram Black Sudan dye Both provided by VPR at clients request and according to field team spec's.
Area for balloon filling	This group will fill balloons outside adjacent to the GH. Pressure reducer and plastic/rubber tube provided by VPR.
Mobile Weatherport	Deployed near old science trench door for use by the field team for the duration of their experiment.
Use of chemicals in Clean Air Zone (CAZ)	The field team's protocols for use of chemicals in the clean air zone have been reviewed by SCO and NOAA. NOAA requests that the science techs are notified when chemicals will be in use in CAZ.
Electrical Supply	Single 20 amp, 208V circuit out to weatherport. PI's will convert to appropriate voltage via battery charger.
Low-temperature storage for samples at Summit and Kangerlussuaq	-25C in Kangerlussuaq

• Location Information •

Please visit <http://www.vecopolar.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, if traveling to Summit, with the guidelines provided in the *Summit Users' Guide*. Both are available electronically via our web site's Greenland menu.

• Cargo and Customs •

All cargo required for your project should arrive in Scotia, NY, **no later than 2 weeks prior** to the desired northbound Air National Guard (ANG) flight, must be entered into our online Cargo Tracking System, and must be properly registered with Customs.

- ✓ For the most current ANG flight schedule go to <http://www.vecopolar.com> and navigate to Greenland > Calendars/Schedules.
- ✓ If you are a new user requiring access to the Cargo Tracking System, contact Jason Buenning (jason@polarfield.com).
- ✓ Customs instructions are available on our website at <http://www.vecopolar.com> (go to Greenland > Customs)
- ✓ For Customs requirements please refer to the *Greenland Guide*, also available at <http://www.vecopolar.com> under Greenland.

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

Cargo List

Items	Weight/Cube
See appendix for cargo list	

• Field Team Information •

Name	Location	Date In	Date Out	Email
Boot, Willem	Kangerlussuaq -> CPH	06/01/07	06/21/07	w.boot@phys.uu.nl
Boot, Willem	Summit	06/04/07	06/19/07	
Helsen, Michiel	Kangerlussuaq -> CPH	06/01/07	07/26/07	M.M.Helsen@phys.uu.nl
Helsen, Michiel	Summit	06/04/07	07/23/07	
Kuipers Munneke, Peter	Kangerlussuaq -> CPH	06/01/07	07/26/07	p.kuipersmunneke@phys.uu.nl
Kuipers Munneke, Peter	Summit	06/04/07	07/23/07	

• Project Contact Information •

Research Team

Role	Name	Email	Phone / Fax
Principal Investigator	Peter Kuipers Munneke	p.kuipersmunneke@phys.uu.nl	+31 (0)30 253-3274 /

VPR Team Members

Contact for	Name	Email	Primary Phone(s)
Greenland operations	Jason Buenning	jason@polarfield.com	Denver: 303.638.6669 Greenland: 011.299.524218
Greenland operations	Mark Begnaud	mark@polarfield.com	Denver: 720.320.6160 Greenland: 011.299.524281
Summit operations	Sandy Starkweather	sandy@polarfield.com	Denver: 303.518.8714
Medical & MAS	Kyli Olson	kyli@polarfield.com	Denver: 303.489.2151
Denver operations	Jill Ferris	jill@polarfield.com	Denver: 720.320.6155
Scotia Operations & Customs	Earl Vaughn	earl.vaughn@gmail.com vprscotia@hughes.net	Scotia: 518.331.3103
Purchase Orders	Jan Zanetell	Janet.Zanetell@veco.com	303.268.3553

VPR Offices

Denver	Kangerlussuaq	Scotia
VECO Polar Resources Western Office 8110 Shaffer Parkway Suite 150 Littleton, CO 80127 Tel: 303.984.1450/1439 Fax: 303.984.1445	VECO Polar Resources 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

Summer
VECO Polar Resources 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 011.479.6825011 (Norway) 1.209.658.7142 (USA, messages checked weekly)

• Safety, Environment, Health, and Permitting •

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, rather than through the U.S. State Department. For assistance with the application process, contact:

Poul Henrik Sorensen

E-mail: phs@dpc.dk

Telephone: +45 3288 0100

Medical Clearance

Arctic Program participants traveling into the Greenland field are generally required to pass a National Science Foundation (NSF) mandated physical exam. All field team members should plan to complete their medical clearance process 8-6 weeks prior to their travel to Greenland. For more information refer to VPR's *Greenland Guide*, available at <http://www.vecopolar.com> under Greenland.

• 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 VPR's support. Examples might be the availability of the helicopter or camp gear.

Factors
Snow sample chemicals and dry ice in place (including LCO2 bottles in Kangerlussuaq on return)
208V (or higher) power supply available at measurement site
Snow scooter + sledge available during buildup and breakdown of measurement site
Low temperature storage of snow samples (food storage at Summit and a few days at -25 in Kanger)

• Government Performance and 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 VPR's performance is a "facility-performance metric" which counts the number of productive days your project has in the field while relying on VPR facilities or support. Please keep track of any "lost days" and report these to us at the end of the season.

• Appendices •

Cargo List

CaseNo.	Type of Box	dimension	weight (kg)	
1	VERSA SENS	Al-case	82x45x39 cm	34
2	RADI SENS	Al-case	82x45x39 cm	37
3	POWER	Al-case	82x45x39 cm	52
4	LADER	Al-case	82x45x39 cm	28
5	TOOLS	Al-case	40x45x59 cm	29
6	AWS SENS	Al-case	82x45x39 cm	31
7	SONIC	Al-case	70x60x33 cm	14
8	LOGGERS	Al-case	82x45x39 cm	38
9	CAM180	Al-case	80x58x50 cm	32
10	ISOLATED	Al-case	45x45x39 cm	24
11	MARWIN	Al-case	82x45x39 cm	34
12	RADI MAST	Bag	230x45x39 cm	53
13	AWS MAST	Bag	180x45x55 cm	66
14	SONDES	Al-case	82x45x39 cm	24
15	MPE	Al-case	40x40x59 cm	16
16	PPE	Al-case	40x40x59 cm	18

Total weight				524 kg
Total volume				2.75 m ³