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**FIELD ACTIVITIES PLAN**

**Canoe Reach May 2015 - BC**

This template is designed to help you ensure you are meeting your due diligence obligation and is to be utilized in conjunction with a review of the [Off-Campus Activity and Travel Policy](https://policiesonline.ualberta.ca/PoliciesProcedures/Policies/Off-Campus-Activity-and-Travel-Policy.pdf). Also, see the [FAP Instruction Sheet](http://www.fieldoffice.ualberta.ca/Planning/Field%20Activities%20Plan/Field%20Activities%20Plan%20Instruction%20Sheet.aspx) on the FRO site for many tips on how to fill this out. The plan should be prepared in advance and shared with all participants and be modified to reflect your risk as your project progresses. The supervising researcher or school/course director should keep a copy of the plan for 7 years. It is a good idea to keep a record of any tailgate meetings (see #7), informal training, orientations etc. held regarding field activities (whether prior to or during the field activity). See an example of a [completed FAP](http://www.fieldoffice.ualberta.ca/~/media/fieldoffice/Documents/JLKavanaugh_FAP_10Feb2012.pdf).

|  |  |
| --- | --- |
| **Date FAP Prepared:**  | 14/05/2015 |
| **Department:** | Physics |
| **Name of Supervising Researcher:** | Dr. Martyn Unsworth |
| **Supervising Researcher’s Contact Info:** |
| Work Phone: | 780-492-3041 |
| Home Phone: |   |
| Email: | unsworth@ualberta.ca |

1. [**Project Description/Overview**](http://www.fieldoffice.ualberta.ca/Planning/Field%20Activities%20Plan/Field%20Activities%20Plan%20Instruction%20Sheet.aspx/#ProjectDescription)

|  |  |
| --- | --- |
| **Date of Departure**  | **20/05/2015** |
| **Date of Return**  | **03/06/2015** |
| **Country:** | Canada |
| **Geographical Site:**  | Kinbasket Lake, British Columbia |
| **Nearest Town:** | Valemount, British Columbia (15 km) |
| **Project Description:** | **Canoe Reach Geothermal Prospect Magnetotelluric Survey** -Magnetotelluric (MT) data will be collected to study the subsurface resistivity contrasts. The goal is to determine whether or not a geothermal reservoir is present beneath the region of study. The instruments will be deployed using vehicles and on foot. In the field we will work with Borealis Geopower, a Calgary based geothermal energy company. This research collaboration will be governed by an agreement developed by the Research Services Office at the University of Alberta. |

1. [**Field Research Participants**](http://www.fieldoffice.ualberta.ca/Planning/Field%20Activities%20Plan/Field%20Activities%20Plan%20Instruction%20Sheet.aspx/#Participants)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name:** | **AHC number** | **Position:** | **Emergency Info Form completed** | **Informed Consent Forms completed** |
| Martyn Unsworth | xxxxxx | Professor | Yes |   |
| Grad Student 1 | xxxxxx | Graduate Student | Yes |   |
| Grad Student 2 | xxxxxx | Graduate Student | Yes |   |
| Summer Student 1 | xxxxxx | Summer Student | Yes |   |

1. [**Document Management**](http://www.fieldoffice.ualberta.ca/Planning/Field%20Activities%20Plan/Field%20Activities%20Plan%20Instruction%20Sheet.aspx/#Document Management)

**Copies of the FAP, Emergency Info Forms, Informed Consent Forms, and Training Certifications will be kept in the field as well as with:**

|  |  |
| --- | --- |
| **Name:** | Research Coordinator |
| **Email:** | Research.coordinator@ualberta.ca |
| **Phone:** |  |

1. [**Emergency Response Information**](http://www.fieldoffice.ualberta.ca/Planning/Field%20Activities%20Plan/Field%20Activities%20Plan%20Instruction%20Sheet.aspx/#EmergencyResponse)

|  |
| --- |
| **University Specific Contact Info:** |
| **Department Contact and Phone Number:** | **Assistant Chair, Physics** |
| **UofA Protective Services:** | **780-492-5050** |
| **UofA Environmental Health & Safety:** | **780-492-1810** |
| **UofA Office of Insurance and Risk Assessment:** | **780-492-8886** |
| **STARS:** | **1-888-888-4567, 1-403-299-0932****#4567 from a cell phone** |
| **Field Specific Emergency Contact Info** |
| Field crew cell phoneField crew satellite phone | 780-499-0244xxx-xxx-xxxx |
| **Local RCMP Detachment:** | **(250) 566-4466 (Valemount)** |
| **Local Emergency Response Number:** | **911 (Ambulance and Police)** |

|  |
| --- |
| **Family Emergency Contact Info** |
| **xxxx** | **xxxx** |
| **xxxx** | **xxxx** |
| **xxxx** | **xxxx** |
| **xxxx** | **xxxx** |

1. **Emergency Response Plan (ERP):**

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| --- |
| **Potential Emergencies and Procedures for dealing with Potential Emergencies:** |

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| --- | --- |
| **Potential Emergencies:** | This fieldwork uses a combination of vehicle, boat and foot travel to access measurement sites in a relatively remote and mountainous area of British Columbia. The potential emergencies that could arise are listed below, along with prevention measures and responses to be taken in the event of an emergency.* 1. **Vehicle accidents**

**Prevention and mitigation*** The field vehicle will be a pick-up truck rented from the University of Alberta motor pool.
* The field vehicle will be checked daily to ensure proper working condition.
* Only drivers approved by the University of Alberta will drive the vehicle. Drivers will have completed the University of Alberta defensive driving course and other requirements.
* Drivers will obey posted speed limits, which must be considered a maximum under ideal conditions. If roads are wet or icy, or when driving on gravel roads, the safe speed will often be less than the maximum speed.
* Be especially aware of wash board on gravel roads. Drive in 4H on gravel roads for additional control.
* When driving on active logging roads, a radio will be carried and used as directed by the logging company. Local advice must be sought to determine if active logging is in progress. Always drive defensively on these roads.
* When backing up, either in a parking lot or on a logging road, a passenger will get out of the truck to avoid collision with stationary objects (other vehicles, rocks, tree stumps). This is especially important if there is a steep drop-off on a logging road.
* When working on busy highways such as the Icefields Parkway, it will be necessary to park on the shoulder. Parking locations should ideally be parking lots or pullouts, or if needed locations with a wide shoulder. High visibility vests must be worn when loading or unloading equipment at the roadside.

**In Emergency*** Evaluate crash site to prevent further injuries. Pay attention to fire hazards from gasoline, broken glass, and other vehicles on highway.
* Assess injuries and administer first aid
* Call emergency number(s) if needed
* Asses vehicle damage to determine if it can be driven to nearest town
* Report incident to police and EHS department or in the case of injury, report to University of Alberta WCB contact.
	1. **Field crew becoming lost or stranded**

**Prevention and mitigation*** The vehicle will be checked daily to ensure proper working condition.
* Fuel levels will be checked and recorded.
* Check the spare tire and know how to change a tire.
* Maps and GPS will always be carried. Do not assume that cellphone coverage will be available as a source of maps.
* Be aware of the weather forecast. If rain or snow is forecast, be prepared to change plans and return to the main highways or mainline logging roads early.
* Carry overnight camping gear in the truck and sufficient food and water **for two days**. Additional water proof clothing and cold weather clothing should also be carried.
* Satellite phone, first aid kit and bear spray will always be carried in the vehicle.
* Avoid carrying keys in bush and hide in agreed location on vehicle. Carry a second set of vehicle keys. Consider if it is really necessary to lock the truck.
* Fieldwork will sometimes involve hiking several kilometers from the truck. Since the field crew will often be carrying equipment, it may be difficult to carry significant personal gear. At minimum, waterproofs, extra warm layer, hat, food, drinking water, flashlight, GPS and small first aid kit should be carried. Take a GPS waypoint of the vehicle location before you leave.

**In Emergency*** If lost or stranded away from a vehicle, stay together and make a plan.
* Review call-in schedule and call emergency contact if necessary.
* Be looking for signs of exposure in field group.
* When a vehicle is stranded, based on distance to help, either stay put and wait rescue, or send two people for help.

**5.3 Injury from walking and working with instruments****Prevention and mitigation*** Follow proper heavy lifting guidelines (batteries and induction coils)
* Ask for assistance if load is too heavy or unwieldy
* Be aware of hazards regarding walking on uneven terrain. Areas that have been clear cut can often be very hazardous.
* Wear sturdy work boots/hiking boots at all times in field to avoid twisted ankles
* When walking in the bush, carry heavy items in a backpack, even for short distances
* Use ski poles for stability when carrying heavy backpacks in rugged terrain
* First aid kit with field crew at all times

**In Emergency*** Assess injuries and cause of accident
* Administer first aid if required
* Call emergency number if needed

**5.4 Wildlife encounters (bears)****Prevention and mitigation*** Take the training course offered at the University of Alberta, or equivalent.
* Review material at <http://www.bearaware.bc.ca/>
* Make noise when walking in the bush (talk loudly and shout)
* When arriving at an instrument location by vehicle, sound the vehicle horn before going into the bush.
* Carry bear spray in a holster and know how to use it effectively
* Dispose of waste and food appropriately at camp sites
* Travel in pairs, or a larger group, where possible

**In Emergency*** Do not run away from a bear
* Stand ground or back away slowly from the bear
* Use bear spray only when charged
* In the event of an attack, assess injuries and administer first aid if needed
* Call emergency numbers if needed to report a confrontation

**5.5 Hazardous equipment**Most of the geophysical equipment used in the study is not dangerous. Items to be careful with are the 12 V deep cycle batteries used to power the geophysical instruments. The following guidelines should be followed.**Prevention*** store 12V batteries in a plastic box at all time
* terminals covered when transported
* charge in a well ventilated area

**In Emergency*** wash clothing and skin that had contact with chemical
* seek medical help if rash or irritation develops

**5.6 Boating accident****Prevention*** If a river needs to be crossed, carefully investigate the depth and current strength of the channel.
* Always wear a flotation device
* Do not overload the boat
* Securely beach the boat to avoid it drifting away
* People remaining on shore should have lifelines to rescue anyone in the water.
* Satellite phones, first aid kits and other safety equipment should be stored in a dry bag.

**In Emergency*** Use lifelines to rescue people in river and pull to shore
* Assess victims for hypothermia and make sure they change into dry clothes

**5.7 Equipment security**The equipment used in the field is expensive and often on loan from another university. Insurance does not cover equipment left in the field unattended, so the following steps are to be followed to minimize the risk of theft.**Prevention*** Instruments placed in the bush should be out of sight of the access road. The instrument must be more than 100 metres from the road.
* Minimize the time spent unloading gear at the side of the highway. Displaying the equipment to passers by as a yard-sale, will attract curious visitors. Best practice is to load backpacks with gear at another location, and on arriving at the field site, move quickly into the bush.
* Field crew should camp close to instruments to monitor security

**In Emergency*** Report theft of missing gear to the local police and University of Alberta Protective services as soon as possible.
 |
| **Identification and location of emergency equipment:** |  An expedition grade first aid kit will be carried in the field daily.  |
| **Location and use of emergency facilities:**  | Valemount Health Centre: 250-566-9138Seton-Jasper Healthcare Centre: 780-852-3344 |
| **Fire protection requirements:** |  Fire extinguisher is stored in the truck |
| **Procedures for rescue and evacuation:** | Field crew will work with one vehicle in the field. In the event of a vehicle break down or becomes stuck in mud, cell phones or radios can be used to contact help in Valemount.  |

1. [**Hazard Assessment and Control:**](http://www.fieldoffice.ualberta.ca/Planning/Field%20Activities%20Plan/Field%20Activities%20Plan%20Instruction%20Sheet.aspx/HazardAssessment)

|  |  |
| --- | --- |
| **Potential Hazard** | **Mitigation or Controls**  |
| Driving on highway or logging roads | See above in 5.1 |
| Working in remote field conditions | See 5.2 and 5.3 |
| Bear encounters | See 5.4 |
| 12V batteries | See 5.5 |
| Boat travel on river | See 5.6 |

1. [**Daily Field Safety Meetings**](http://www.fieldoffice.ualberta.ca/Planning/Field%20Activities%20Plan/Field%20Activities%20Plan%20Instruction%20Sheet.aspx)

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| --- | --- | --- |
| **Field Safety Log Book Obtained from FRO:** | **Date Obtained:** | **Discussion with research team**  |
| YES | 26/03/2015 | YES |

1. [**Field Worksite Safety Inspection**](http://www.fieldoffice.ualberta.ca/Planning/Field%20Activities%20Plan/Field%20Activities%20Plan%20Instruction%20Sheet.aspx)

**It is important the PI or research supervisor attend at the site and do a field worksite safety inspection. Here is an example of** [**a form**](http://www.fieldoffice.ualberta.ca/Planning/Field%20Activities%20Plan/~/media/fieldoffice/Documents/Field_worksite_safety_inspection_checklist.docx) **that could be used. It will need to be tailored to the activities you are doing.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Worksite Inspection completed by:** | **Date completed:**  | **Inspection Type:** | **Inspection Form Attached** |
| Martyn Unsworth |   |  | 🞏 |

1. [**Permits Required or Ethics Clearance Needed**](http://www.fieldoffice.ualberta.ca/Planning/Field%20Activities%20Plan/Field%20Activities%20Plan%20Instruction%20Sheet.aspx/#Permits)

**There is a** [**list of frequently needed permits**](http://www.fieldoffice.ualberta.ca/Planning/Permissions/List%20of%20Permits.aspx) **that FRO has created.**

|  |  |  |
| --- | --- | --- |
| **Permit/Clearance:** | **Date Obtained:** | **Expiry Date:** |
| N/A  |  | N/A |

1. [**Training**](http://www.fieldoffice.ualberta.ca/Planning/Field%20Activities%20Plan/Field%20Activities%20Plan%20Instruction%20Sheet.aspx/#Training) **Copies of training certificates or records are kept with the Field Activities Plan for easier reference.**

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| --- | --- | --- | --- |
| **Name**  | **Position**  | **Training** | **Training****Completed** |
| Grad Student 1 | Graduate Student | Wilderness Advanced First Aid  | February 2015 |
| Martyn Unsworth | Supervisor | Standard First Aid | September 2014 |

1. [**Immunizations**](http://www.fieldoffice.ualberta.ca/Planning/Field%20Activities%20Plan/Field%20Activities%20Plan%20Instruction%20Sheet.aspx/Immunizations)

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| --- |
| Travel Immunization Requirements:  |
| **None Required** |

University of Alberta personnel are up-to-date on immunizations.

1. [**Accommodations**](http://www.fieldoffice.ualberta.ca/Planning/Field%20Activities%20Plan/Field%20Activities%20Plan%20Instruction%20Sheet.aspx/#Accommodations)

|  |  |
| --- | --- |
| **Type** | **Info** |
| **Hotel** | Cougar Mountain Lodge, Valemount (250-566-9119) |
| **Other** | Tent |

1. [**Meals**](http://www.fieldoffice.ualberta.ca/Planning/Field%20Activities%20Plan/Field%20Activities%20Plan%20Instruction%20Sheet.aspx/#Meals)

|  |  |
| --- | --- |
| **Type** | **Info** |
| **Self cooked** | In field  |
| **Restaurants** | In Valemount and on highway travelling to and from field area |

1. [**Transportation**](http://www.fieldoffice.ualberta.ca/Planning/Field%20Activities%20Plan/Field%20Activities%20Plan%20Instruction%20Sheet.aspx/#Transportation)

**To, from and at Field Camp**

|  |  |  |
| --- | --- | --- |
| **Type**  | **Details** | **Source**  |
| Road / Off-Road  | 4x4 Pickup truck ADD LICENSE PLATE WHEN AVAILABLE | University of Alberta Fleet Vehicle Rental |

1. [**Drivers**](http://www.fieldoffice.ualberta.ca/Planning/Field%20Activities%20Plan/Field%20Activities%20Plan%20Instruction%20Sheet.aspx/#Drivers)

|  |  |  |
| --- | --- | --- |
| **Names of Approved Drivers** | **License, type/class** |  |
| Martyn Unsworth  | 5 (UAlberta authorized driver) |   |
| Grad Student 1 | 5 (UAlberta authorized driver) |  |
| Grad Student 2 | 5 (UAlberta authorized driver) |  |

1. [**Communications**](http://www.fieldoffice.ualberta.ca/Planning/Field%20Activities%20Plan/Field%20Activities%20Plan%20Instruction%20Sheet.aspx/#Communications)

|  |
| --- |
| **With Outside** |
| **Device type** | **Number** | **Time of day monitored / check-in procedure** |
| **Field crew cell phone** |  xxx-xxx  |   |
| **Field crew Satellite telephone** | xxx-xxx |  |
| **Edmonton contact** | Xxxxx Xxxxxxxx e-mail : xxxx@gmail.com tel : 780-xxx-xxxx |  |
| **Communication protocol for daily check-in** | 1. Field crew will check-in with the designated Edmonton contact each evening at 8 pm. This check-in can be by e-mail, cellphone or satellite phone.
2. If the Edmonton contact does not receive a message by 9 pm they will attempt to contact the field crew on the cellphone or satellite phone.
3. If contact cannot be made, the Edmonton contact will call the lodging in Valemount (Cougar Mountain Lodge @ 250-566-9119 or a representative of Borealis Geopower @ 403-XXX-XXXX.
4. If there is still no contact by 11 pm, the Edmonton contact will contact UAlberta Protective Services / RCMP.
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1. [**Equipment**](http://www.fieldoffice.ualberta.ca/Planning/Field%20Activities%20Plan/Field%20Activities%20Plan%20Instruction%20Sheet.aspx/#Equipment)Please note this [**Vehicle Inspection** **Log**](http://www.fieldoffice.ualberta.ca/Planning/Field%20Activities%20Plan/~/media/fieldoffice/Documents/VehicleInspectLog.doc) should be completed if you have vehicles/ATVs/etc. you are using in the field and kept with the Field Activity Plan.

|  |  |  |
| --- | --- | --- |
| **Equipment** | **UofA / rental / other** | **SOP [Standard Operating Procedure] Prepared (‘yes’) or not applicable (N/A)** |
| MT equipment | University of Alberta (other) | As per Operators’ manual |
| Battery Chargers | Other | As per Operators’ manual |
| **Personal Protective Equipment Recommended** |
| Sturdy boots, windproof and cold-weather clothing, hat, sun-screen and sunglasses, bugspray, bearspray |

1. [**Insurance Needs**](http://www.fieldoffice.ualberta.ca/Planning/Field%20Activities%20Plan/Field%20Activities%20Plan%20Instruction%20Sheet.aspx/#Insurance)

**Check off if addressed**

|  |  |
| --- | --- |
| Off-Campus Equipment registered? | YES |
| Participants informed of need to purchase extra travel insurance | YES |
| Medical Evacuation Insurance | YES |
| Certificate of Insurance required? | N/A |

1. [**Approval**](http://www.fieldoffice.ualberta.ca/Planning/Field%20Activities%20Plan/Field%20Activities%20Plan%20Instruction%20Sheet.aspx/#Approval)

**Signature of Supervising Researcher:**

**I acknowledge that this safety plan has been prepared in keeping with the requirements of the** [**University of Alberta Off-Campus Activity and Travel Policy**](https://policiesonline.ualberta.ca/PoliciesProcedures/Policies/Off-Campus-Activity-and-Travel-Policy.pdf) **and according to my review of** [**Appendix B (Risk Assessment Matrix)**](https://policiesonline.ualberta.ca/policiesprocedures/infodocs/%40finance/documents/infodoc/cmp_072390.pdf) **and consideration of the research personnel, activities that will be performed and the research site, the risk for this FAP is Medium:**

|  |  |  |
| --- | --- | --- |
| **Name:**  | **Signature:** | **Date (MM/DD/YY)** |
|  |  |  |
| Dr. Martyn Unsworth |  |   |

The following members of the research team have been informed and/or provided with a copy of this Field Activities Plan and any additional procedures/protocols that are attached to form part of the FAP and are aware of the hazards identified and the methods used to control or eliminate the hazards.

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| **Name:**  | **Signature:** | **Date (MM/DD/YY)** |
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| --- | --- | --- |
| **Name:**  | **Signature:** | **Date (MM/DD/YY)** |
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|  |  |  |
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| **Name:**  | **Signature:** | **Date (MM/DD/YY)** |
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