



## UBC Field Work Safety Plan

This field work safety plan will aid supervisors who wish to conduct field work activities. This plan will include a review of operational activities to ensure effective controls are in place to prevent incidents.

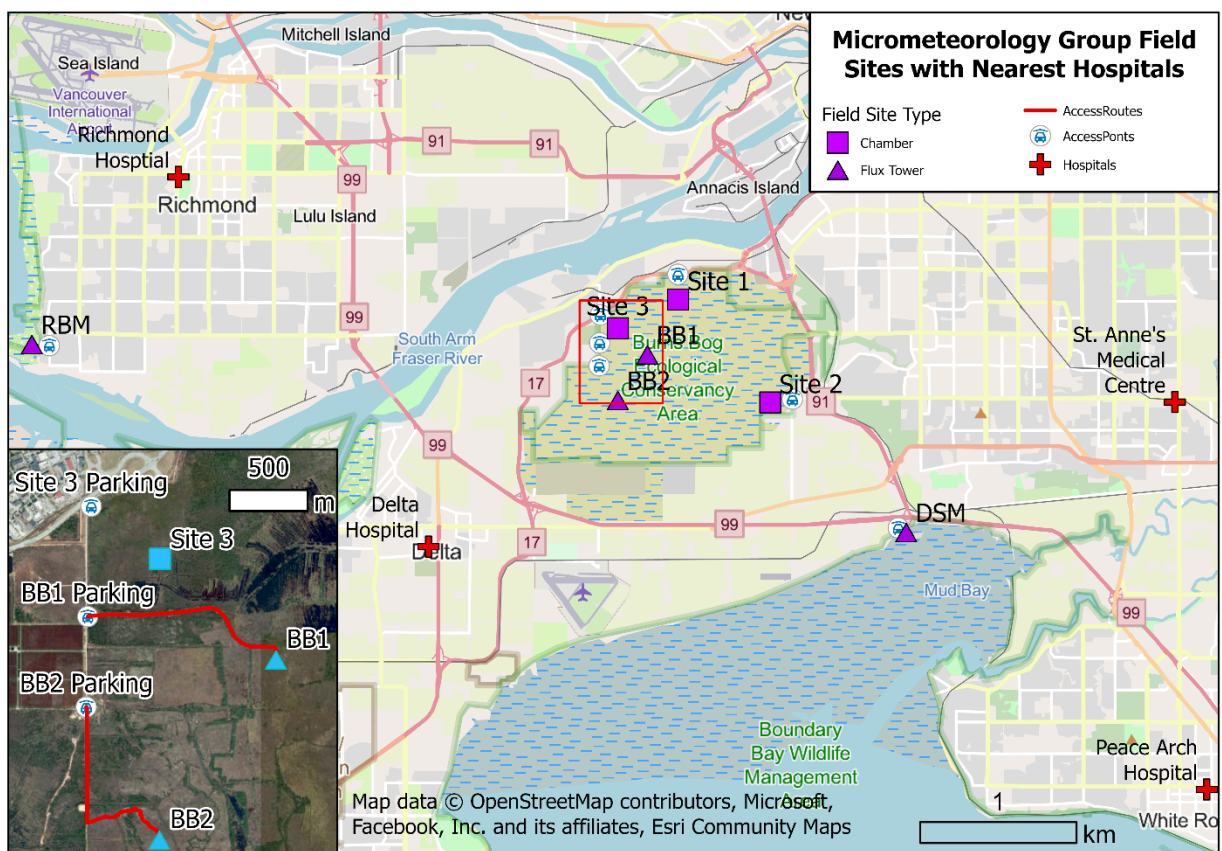
### 1. PROJECT INFORMATION

Date Field Work Safety Plan Prepared	22/05/2022
Faculty	Arts
Department	Geography
Project Name	Integrated Greenhouse Gas Research and Observations in Wetlands (iGROW)
Principal Investigator	Sara Knox (sara.knox@ubc.ca; 604-833-0999)
Number of UBC Participants on site	2 – 6 depending on task
Field Work Activity Summary	<p>Maintenance trips:</p> <ul style="list-style-type: none"><li>• Usually 2, sometimes 3 participants visit sites in Burns Bog (BB1 &amp; BB2), Boundary Bay (DSM), or Stevenson (RBM)</li><li>• Tower visual inspection</li><li>• Data collection</li><li>• Sensor cleaning and calibration</li><li>• Automatic cleaning fluid refill</li><li>• Desiccant swap</li></ul> <p>Installation trips:</p> <ul style="list-style-type: none"><li>• Between 2 and 6 participants constructing flux tower at Stevenson (RBM)</li><li>• Tower infrastructure erection: scaffolding tower and guy wires</li><li>• Solar power system setting up: Solar panels and batteries</li><li>• Research instrumentation mounting</li></ul> <p>Chamber sampling trips:</p> <ul style="list-style-type: none"><li>• Groups of 6 participants (working in pairs) visit plots at three sites in Burns Bog.</li><li>• Flux chamber sampling: use syringe to sample gas from flux chambers &amp; measure soil moisture/temperature.</li></ul>
Site Supervision Summary	<p>Maintenance Trips:</p> <ul style="list-style-type: none"><li>• Participants always travel in groups <math>\geq 2</math> and at least one participant will have prior experience working at each site.</li></ul> <p>Installation Trips:</p> <ul style="list-style-type: none"><li>• Participants always travel in groups <math>\geq 2</math> and installation will be supervised by an experienced UBC technician (Rick Ketler)</li></ul> <p>Chamber Sampling Trips:</p> <ul style="list-style-type: none"><li>• Participants always travel in pairs and at least one participant in each pair will have prior experience at the sites.</li><li>• Trip will be supervised by participant with Level 1 first aid training.</li></ul>

### 2. FIELD WORK SITE INFORMATION



<b>Date of Departure</b>	<p>Maintenance Trips:</p> <ul style="list-style-type: none"><li>• Bi-weekly to Monthly as needed, dates dependent upon weather conditions and maintenance needs</li></ul> <p>Installation Trips:</p> <ul style="list-style-type: none"><li>• Regular trips will be made late May through early June until installation is complete, dates dependent upon weather conditions</li></ul> <p>Chamber Sampling:</p> <ul style="list-style-type: none"><li>• Trips are planned to occur 2x /month:<ul style="list-style-type: none"><li>○ June 1<sup>st</sup> – 7<sup>th</sup> &amp; 16<sup>th</sup> – 22<sup>nd</sup></li><li>○ July 1<sup>st</sup> – 7<sup>th</sup> &amp; 16<sup>th</sup> – 22<sup>nd</sup></li><li>○ August 1<sup>st</sup> – 7<sup>th</sup> &amp; 16<sup>th</sup> – 22<sup>nd</sup></li></ul></li></ul>
<b>Date of Return</b>	All trips will only last one day,
<b>Number of Days on Site</b>	Maintenance Trips: Variable depending on maintenance needs. Installation Trips: Variable depending on progress. Chamber Sampling: 6 days
<b>Name of Field Work Site</b>	<p>Flux Tower Sites:</p> <ul style="list-style-type: none"><li>• Burns Bog (BB1 &amp; BB2)</li><li>• Delta Salt Marsh (DSM)</li><li>• Richmond Brackish Marsh (RMB)</li></ul> <p>Chamber Sites</p> <ul style="list-style-type: none"><li>• Burns Bog Sites 1, 2, &amp; 3</li></ul>
<b>Address of Site or GPS Location</b>	See Figure 1 for a map of field sites & Table 1 for access instructions.
<b>Description of Site (cliffside, mountainside, oceanside etc.)</b>	<p>Burns Bog (BB1, BB2, &amp; Chamber Sites)</p> <ul style="list-style-type: none"><li>• Peat bog with mix of forest, shrub, open peatland, and ponds. Chamber sites are within 15-minute from parking spots. BB1 &amp; BB2 are slightly more remote ~30-minute walk from parking (see Figure 1 inset)</li></ul> <p>Delta Salt Marsh (DSM)</p> <ul style="list-style-type: none"><li>• Tidal marsh with marsh and tidal channels. Visible from boundary bay dyke trail, &lt; 10-minute walk from parking spot.</li></ul> <p>Richmond Brackish Marsh (RBM)</p> <ul style="list-style-type: none"><li>• Tidal marsh with grasses and tidal channels &lt; 10-minute walk from parking spot.</li></ul>



**Figure 1. Field Site Locations along with nearby hospital locations in the event of an emergency. See Table 1 for more details.**



**Table 1. GPS Coordinates and Access Instructions for Sites in Figure 1**

Name	Latitude	Longitude	Access	Closest Hospital
BB1	-122.985	49.12936	First gate is a yellow gate on 80th Street next to the Highway 17. Follow the gate, there is a second gate that is a grey one. Go through the gate and drive ~700m then turn left. There is the third and last gate, which is also grey. Then go straight for ~860m, turn right at first fork. Continue for another ~250m, cross the ditch and turn left. The tower and boardwalks are visible on the right after another ~200m.	Delta Hospital 5800 Mountain View Blvd, Delta, BC V4K 3V6
BB2	-122.995	49.11901	First gate is a yellow gate on 80th Street next to the Highway 17. Follow the gate, there is a second gate that is a grey one. Go through the gate and drive ~1.3km, there is the third and last gate, which is also grey. Then go straight for ~750m, turn left when see the flagged tree with a wood pole. After that, follow the boardwalks and path for another ~550m, the BB2 tower is visible.	Delta Hospital 5800 Mountain View Blvd, Delta, BC V4K 3V6
DSM	-122.895	49.0882	Enter the gate through 112th Street, follow the gravel road for ~1.5km, the tower is visible on the right.	Peace Arch Hospital 15521 Russell Ave, White Rock, BC V4B 5M2
RBM	-123.196	49.13116	Get to the West Dyke Trail through Steveston Hwy, go south about ~250m, the tower is visible on the right.	Peace Arch Hospital 15521 Russell Ave, White Rock, BC V4B 5M2
Site 1	-122.974	49.1416	Park on south side (eastbound lane) of BC17, Enter gate just east of power transmission line. Follow blue flagging tape south for ~750m	Delta Hospital 5800 Mountain View Blvd, Delta, BC V4K 3V6
Site 2	-122.942	49.11827	Park on east side (northbound lane) of 104 St. Delta, Enter gate just across road (west). Follow blue flagging tape west for ~750m	St. Annes Medical Center 6351 152 St, Surrey, BC V3S 3K8
Site 3	-122.995	49.13509	Park in the lot at the 80th st. entrance (after first yellow gate, just before second gate). Follow blue flagging tape southeast for ~750 m.	Delta Hospital 5800 Mountain View Blvd, Delta, BC V4K 3V6



#### FIELD WORK PARTICIPANT CONTACT INFORMATION

Name	Position (instructor, supervisor, student)	Email	Contact Number (cell)
Sara Knox	Supervisor	sara.knox@ubc.ca	604-833-0999
Rick Ketler	Technician	rick.ketler@ubc.ca	307-317-5181
Zoran Nestic	Technician	zoran.nestic@ubc.ca	604-328-6144
June Skeeter	PostDoc	june.skeeter@ubc.ca	604-440-1697
Sarah Russell	PhD Student	srussell@wellesley.e du	508-320-1089
Tzu-Yi Lu	PhD Student	tzuyilu@student.ubc.ca	236-863-2970
Katrina Poppe	PhD Student	poppek@www.edu	778-321-9333
Tin Satriawan	Masters Student	tinsat@student.ubc.ca	360-303-7806
Zoe Zhang	Masters Student	zoezhang0311@gmail.com	508-320-1089
Darian Ng	Masters Student	dng55@student.ubc.ca	778-956-8528
Weiwen Fu	Undergraduate Student	weiwen04@outlook.com	778-558-0409
Azumi Konaka	Undergraduate Student	azumikonaka@gmail.com	604-734-2606
Adin Litman	Undergraduate Student	alitman79@gmail.com	778-863-9180
Yu Mo Song (Molly)	Undergraduate Student	msong978@gmail.com	778-879-9078
Yanhui He	Undergraduate Student	heyanhui18@gmail.com	226-998-4268
Ploykarn Kunkonlakarn	Undergraduate Student	ploykarnkkk@hotmail.com	236-863-9828
Che Wei Tsao (Wally)	Undergraduate Student	wally2191@gmail.com	236-986-9724
Evelyn Wang	Undergraduate Student	eve.ytwang@gmail.com	236-335-0667
Alejandra Livingston	Undergraduate Student	alejandra.maya.livingston@gmail.com	778-723-7275

#### 4. ACCOMMODATIONS AND MEALS

Accommodation Type (e.g. tent, cabin, trailer, hotel/motel)	N/A – All trips will be in the local area and will not require over night accommodations
Accommodation Name (e.g. campground name)	N/A
Accommodation Address or GPS Locations	N/A
Accommodation Phone Number	N/A
Meal Type (e.g. self cooked, catered, restaurants)	Participants will provide their own meals

#### 5. TRANSPORTATION

	Transportation to/from site	Transportation on site
Mode of transportation	Vehicle	Walking
Details of transportation vehicle	UBC Micrometeorology lab truck is a 4-door Toyota Tacoma with 4-wheel drive and seating for 5; UBC Geography Van may be needed occasionally and it is a white 4-door van which typically seats two people;	N/A



	<p>Additionally, Brett Eaton's (Geography) van may be used on occasion as well. It is a blue two door van that only seats 2;</p> <p>Personal vehicles may occasionally be used when needed</p>	
<b>Source of transportation (UBC, rental, other)</b>	<p>UBC vehicles will be the primary source of transportation; personal vehicles may be used as needed if there are scheduling conflicts with other vehicles.</p>	N/A

## 6. COMMUNICATIONS

	<b>Communication with group on site</b>	<b>Communication with "outside"</b>
<b>Mode of communication (cell phones, satellite phones, radio frequency etc.)</b>	<p>Participants will always be within talking/shouting distance while on site. Participants always maintain eyesight of each other.</p>	<p>All sites are within cell service range, and all participants will carry a personal phone, phones will be primary mode of communication.</p> <p>A safety protocol will ensure regular check-ins with the principal investigator or staff member. One member of the field crew will text: (1) when they leave UBC; (2) when they arrive at the field site and leave the field vehicle; (3) when they finish their field work and return to the vehicle; and (4) when they return to UBC. The second text message will contain the GPS coordinates of the research vehicles.</p> <p>Additionally:</p> <ul style="list-style-type: none"> <li>• For Burns Bog access, we must call Metro Vancouver Central Area office, phone number: 604-520-6442 to check in prior to entry.</li> <li>• For DSM we need to email or phone Harvy Takhar (HTakhar@delta.ca; 604-952-3189) within 24hr of arrival.</li> <li>• For RBM we need to email or phone Brad Gushel (bgushel@richmond.ca;</li> </ul>



		604-516-9477) at least 24 hours before the site visit.
<b>"Phone" (or equivalent) Number</b>	N/A	604-833-0999 (Sara Knox, Supervisor)
<b>Frequency of Communication</b>	N/A	Beginning and end of day check in + communications during the day as needed.

## 7. FIELD WORK ITINERARY

Date	Time	Activity
Maintenance trips BB1 & BB2 (Dates TBD as needed)	9:00am	Leave UBC by in Micromet Truck and drive to Burns Bog Text supervisor to check in and notify of departure.
--	10:00am	Arrive at Burns Bog entrance (80 <sup>th</sup> st. Delta, BC) and call metro Vancouver (604-520-6442) to check-in. Text supervisor to check in and notify of arrival. Park and walk to sites.
--	10:30am	Arrive at sites and perform needed maintenance.
--	5:00pm	Return to UBC by Micromet Truck Text supervisor to check in and notify of departure.
Maintenance trips DSM (Dates TBD as needed)	9:00am	Leave UBC by in Micromet Truck and drive to Delta Salt Marsh
--	10:00am	Arrive at DSM and Text supervisor to check in and notify of arrival. Park vehicle (Boundary Bay Dyke Trail) and walk to sites.
--	10:15am	Arrive at sites and perform needed maintenance.
--	5:00pm	Return to UBC by Micromet Truck Text supervisor to check in and notify of departure.
Maintenance/Installation trips RBM (Dates TBD as needed)	9:00am	Leave UBC by in Micromet Truck and drive to Richmond Brackish Marsh
--	10:00am	Arrive at RBM and Text supervisor to check in and notify of arrival. Park vehicle (7 <sup>th</sup> Ave & Pleasant St. Richmond BC) and walk to sites.
--	10:15am	Arrive at sites and perform needed maintenance/installation.
--	5:00pm	Return to UBC by Micromet Truck Text supervisor to check in and notify of departure.
Chamber Sampling Trips, Burns Bog June 1 <sup>st</sup> & 16 <sup>th</sup> , July 1 <sup>st</sup> & 16 <sup>th</sup> , August 1 <sup>st</sup> & 16 <sup>th</sup> (Dates may	8:00am	Leave UBC by in Micromet Truck and drive to Burns Bog, picking up undergraduate volunteers along the way as needed.



change by up to a week as needed depending on weather)		
--	9:00am	Arrive at Burns Bog entrance (80 <sup>th</sup> st. Delta, BC) call metro Vancouver to check-in. and Text supervisor to check in and notify of arrival.
--	9:15am	Arrive at site1 (see Figure 1) and perform sampling.
--	10:15am	Leave site 1, drive to site 2 entrance (BC Highway 17).
--	10:30am	Arrive at site2 (see Figure 1) and perform sampling.
--	11:30am	Leave site 2, drive to site 3 entrance (104 St. and Kittson Parkway, Delta BC).
--	12:00pm	Arrive at site3 parking (see Figure 1); take lunch break.
--	12:30pm	Go to site3 (see Figure 1); take lunch break; then perform sampling.
--	2:00pm	Return to UBC by Micromet Truck Text supervisor to check in and notify of departure.

## 8. TRAINING REQUIREMENTS

Name	Position	Name of Course, specialized training (e.g. first aid) or safe work procedure	Training Completed/Procedure Reviewed
June Skeeter	Post Doc	First Aid	<input checked="" type="checkbox"/>
June Skeeter	Post Doc	Heat Stress Awareness Course	<input checked="" type="checkbox"/>
Darian Ng	Masters Student	First Aid	<input checked="" type="checkbox"/>
Zoe Zhang	Masters Student	First Aid	<input checked="" type="checkbox"/>
Azumi Konaka	Undergraduate Student	Heat Stress Awareness Course	<input checked="" type="checkbox"/>





## 9. MATERIALS/EQUIPEMNT

Equipment/Tool/Material/Personal Protective Equipment (PPE)	UBC/Rental/Other	Standard Operating Procedure Available? (Y/N or N/A)
<b>Emergency &amp; Protective Equipment</b>		
First Aid Kit	UBC	Participants will be encouraged to obtain first aid training
One 5-lb. Fire extinguisher	UBC	Participants will be trained on use of fire extinguisher
Hard Hats (as needed)	UBC	N/A
Footwear: Hip waders, rain boots, or steel toe boots depending on context	UBC	N/A
Safety Eyewear (when needed)	UBC	N/A
Hearing protection (when needed)	UBC	N/A
Sun Protection (hats/Long-sleeves/sunscreen)	Personal	N/A
Personal Communication Device (phone) w/ emergency procedures kept on each personal device	Personal	N/A
Battery Pack	UBC	N/A
Compass	UBC	N/A
Knife	Personal	N/A
Flagging tape	UBC	N/A
Flashlight	Personal	N/A
<b>Cleaning Supplies</b>		
70% (or greater) alcohol solutions	UBC	N/A
Dilute bleach solutions (1 bleach :10 water) – Do not use in carpeted rooms or on fabric.	UBC	N/A
Chlorox disinfection products	UBC	N/A
Cavicide / Caviwipes	UBC	N/A
Spray nine	UBC	N/A
Lysol Multi-Surface Cleaner	UBC	N/A
Chlorox hydrogen peroxide cleaner disinfectant	UBC	N/A
Disinfectant Fantastik All Purpose Cleaner	UBC	N/A
<b>Tools</b>		
Screwdrivers	UBC	N/A
Hammers	UBC	N/A
Wrenches	UBC	N/A



Hex Keys	UBC	N/A
Wire Cutters	UBC	N/A

## 10. OTHER IMPORTANT INFORMATION

### Incident Reporting

As per UBC protocols, 'All incidents and accidents must be reported to a supervisor and on-line through the UBC Centralized Accident/Incident Reporting System (CAIRS) as soon as possible following the incident/accident'.

See UBC accident and incident reporting for supervisors See UBC Incident Site Investigation Guide.docx

All incidents will be reported to: Sara Knox.

A UBC CAIRS report will be completed by: Injured person

(Note: incidents need to be reported within 48 hours of the occurrence of the incident. We do not foresee any occasions where incidents cannot be reported within 48 hours of the occurrence)

### Communication with Prime Contractor

Prime contractors are responsible for the coordination of site safety. They must know at all times who and where everybody is for a defined area. You are required to contact the Prime contractor prior to visiting the site. For Burns Bog sites, we need to call the prime contractor (Metro Vancouver Central Area office, phone number: 604-520-6442) for check in and check out. For the DSM and RBM sites, we need to email or phone Harvy Takhar (HTakhar@delta.ca; 604-952-3189) and Brad Gushel (bgushel@richmond.ca; 604-516-9477), respectively, at least 24 hours before the site visit.



## 11. RISK ASSESSMENT

Key Activity/Task	Hazards and possible outcomes	Pre-Control Risk			Controls	Post-Control Risk		
		Consequence	Likelihood	Risk Level		Consequence	Likelihood	Residual Risk Level
Walking to sites	Tripping; Cuts, scrapes, or sprains	Minor	Moderate	Low	Work in pairs; Sticking to designated trails; Carry first aid kit	Minor	Moderate	Low
Site Installation	Injury from dropping heavy objects	Moderate	Low	Moderate	Lifting in pairs; Wearing of gloves & steel toed boots; Carry a first aid kit; Work in pairs; Only experienced participants are allowed on tower; Non-slip footwear	Minor	Minor	Low
Tower maintenance; Site Installation;	Falling from scaffolding (<3m)	Moderate	Low	Low	Work in pairs; Carry a first aid kit; Training with specific tools	Moderate	Minor	Low
Tower maintenance; Site Installation; Chamber sampling	Minor injuries when using tools	Minor	Low	Low	Avoid working during mid-day high humidex days; Regular breaks with water; Work in pairs; Carry first aid kit	Minor	Low	Low
Tower maintenance; Site Installation; Chamber sampling	Hot weather + direct sun exposure; Heat exhaustion	Moderate	Low	Low	Avoid work on heavy rain days; Chest waters + raincoats; Work in pairs; Carry first aid kit	Minor	Minor	Low
Tower maintenance; Site Installation; Chamber sampling	Cold weather + Soaked clothing; Hypothermia	Moderate	Moderate	Moderate		Minor	Minor	Low

See [Risk Assessment Guidance Document](#) for support.



## 12. EMERGENCY CONTACT INFORMATION

UBC Specific Contact Info	
Department Contact Name (this person should not be at the field site)	Geography main office
Department Contact's Phone Number	604-822-2663
UBC Safety & Risk Services	604-822-2029
Field Site Specific Emergency Contact Information	
Local Contact Name	June Skeeter
Local Contact's Phone Number	604-440-1697
Local Emergency Response Number	911 available <input checked="" type="checkbox"/>
Local RCMP Detachment	
Nearest Hospital to the Site	<b>See Figure 1 &amp; Table 1</b> BB1; BB2; Chamber Sites 1 & 3 (Delta Hospital); Chamber Site 2 (St. Annes Medical Center); DSM (Peace Arch Hospital); RBM (Richmond Hospital)
Canadian Coast Guard (if applicable)	N/A

## 13. FIRST AID

Number of UBC participants (workers, students)	19 in total, 2-6 on any given trip
Hazards in the workplace (low/moderate/high risk of injury)	Low Risk
Types of injuries likely to occur	Cuts, scrapes, sprains, heat stress, hypothermia
Barriers to providing first aid to an injured worker	Minimal; site conditions (wetland) may slow process a bit
Transportation to hospital (< 20 minutes or > 20 minutes)	<p>DSM to Peace Arch Hospital &lt;20 minutes:</p> <ul style="list-style-type: none"><li>• 5 minute walk to vehicle</li><li>• 10-15 minute drive to hospital</li></ul> <p>RMB to Richmond Hospital &lt;20 minutes</p> <ul style="list-style-type: none"><li>• 5 minute walk to vehicle</li><li>• 10-15 minute drive to hospital</li></ul> <p>BB1 &amp; BB2 to Delta Hospital &gt; <b>20 minutes</b></p> <ul style="list-style-type: none"><li>• 20-30 minute walk to vehicle</li><li>• 15-20 minute drive to hospital</li></ul> <p>BB Chamber Sites to hospital (Delta Hospital for Site 1 &amp; 3; St. Annes Medical Center for Site 2) &gt; <b>20 minutes</b></p> <ul style="list-style-type: none"><li>• 10-15 minute walk to vehicle</li><li>• 15-20 minute drive to hospital</li></ul>
Supplies, equipment and facilities required ( <a href="#">Schedule 3-A</a> )	<p>For Burns Bog with 6 participants (chamber sampling)</p> <ul style="list-style-type: none"><li>• Level 1 first aid kit &amp; Level 1 first aid certification for at least one participant</li></ul> <p>For all other trips (&lt;6 and/or less than 20 minutes to a hospital)</p>



- Basic or Level 1 First Aid Kit; certification is not required for these trips, but all lab participants have been encouraged to take level 1 first aid if possible.

**Name(s) of First Aid Attendants (Level of Training)**

June Skeeter (Level 1); Zoe Zhang (Level 1);  
Darian Ng (Level 1); Rick Kettler (Level 1?)

#### 14. COMMUNICABLE DISEASE PREVENTION

*A communicable disease is an illness caused by an infectious agent or its toxic product that can be transmitted in a work, research or academic environment from one person to another (i.e., influenza, COVID-19, norovirus)*

	Yes	No	N/A	Details	
Have communicable disease entry/exit requirements been identified and addressed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If yes, list requirements here:	
Have all participants been directed complete a daily health check, wash hands, not attend activities if symptomatic?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	If no or N/A, describe why	
If a participant at the field site develops symptoms, is there a plan to ensure the worker/student is cared for or safely transported home	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Describe the plan or why there isn't a plan	Trips are less than a day, so it is unlikely symptoms will develop on a specific trip as we conduct daily health checks before departing. However, if symptoms develop and participant is incapacitated, they will be transported home in lab vehicle and other participants in contact with them will self-monitor for symptoms.
Will there be access to testing kits and /or required vaccination records for any applicable communicable diseases?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	If yes, describe	Testing kits will be made available by Sara Knox if needed or requested.
Is self-isolation or quarantining required for any communicable disease?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	If yes, how will you manage this?	All field work trips are < 1 day, so participants who need to isolate can do so at home without being in contact with other participants.



## 15. EMERGENCY PROCEDURES

<b>List of Potential Emergencies</b>	<b>#1 Environmental Hazards</b>
	#1.1 Wildfire
	#1.2 Electrical Storm
	#1.3 Windstorm
	<b>#2 Work Hazards</b>
	#2.1 Injury while working
	#2.2 Heat exhaustion
	#2.3 Cold exposure

### Procedure for dealing with Potential Emergency #1 Environmental Hazards:

#### #1.1 Wildfire

If a fire starts at the site, do not attempt to fight the fire beyond the capabilities of your equipment at hand (fire extinguisher). Leave the site immediately and report the fire to the authorities as soon as possible. If safe to do so, wait at access point until fire authorities arrive.

- Provincial Fire Reporting: 1-800-663-5555
- Delta Fire Department: (604) 946-8541
- Metro Vancouver: (604)-520-6442

#### #1.2 Electrical Storm

As soon as you hear the thunder, climb down the tower. Take refuge in the car/truck if possible. If in Burns Bog away from vehicle minimize your profile, make yourself shorter than surrounding objects by crouching/laying down and waiting for storm to pass.

#### #1.3 Wind

Always leave the work site immediately if small branches and debris are falling. If you are unsure if it is too windy – it probably is.

### Procedure for dealing with Potential Emergency #2 Work Hazards:

#### #2.1 Injury while working

Seek/perform first aid: see Section 13 for first aid certified participants. In case of emergency call 911. See section 2 for site coordinates, access details for first responders, and nearest hospital.

#### #2.2 Heat exhaustion

Stop work, seek out shade, rest, and drink water. Cease work if symptoms do not improve. In case of severe symptoms call 911. See section 2 for site coordinates, access details for first responders, and nearest hospital.

#### #2.3 Cold exposure

Stop work and attempt to slowly warm affected participant slowly with dry layers. Escort participant to vehicle or other warm/dry environment. In case of severe symptoms call 911. See section 2 for site coordinates, access details for first responders, and nearest hospital.



## 16. SAFE WORK PROCEDURES

### Before Commencing Work At The Site:

Confirm medical and physical requirements are in good standing to perform work activities

- 1) Conduct a pre-job briefing outlining:
  - a. Hazards and associated risks as per the completed risk assessment, and respective controls
  - b. Review maps/charts of the area
  - c. Environmental conditions for the day
  - d. Itinerary of the day
  - e. Reminder for all to carry their communication devices on them all the time
  - f. Mandatory Personal Protective Equipment required
  - g. Accident/Incident reporting
  - h. Emergency Procedures
  - i. Level of supervision to be adhered to
    - i. On chamber sampling trips ensure each pair knows where they are going and who they can report to.
- 2) Safety Gear Checklist:
  - a. First Aid Kit.
  - b. Footwear:
    - i. Hip waders, rain boots, or steel toe boots depending on context
  - c. Sun Protection (hats/Long-sleeves/sunscreen)
  - d. Personal Communication Device (phone) w/ emergency procedures kept on each personal device
  - e. Battery Pack
  - f. Compass
  - g. Knife
  - h. Flagging tape
  - i. Flashlight
  - j. One 5-lb. Fire extinguisher (for Burns Bog)
  - k. Hard Hats (as needed)
  - l. Safety Eyewear (as needed)
  - m. Hearing protection (as needed)
- 3) Check to ensure appropriate tools/supplies are packed for the given task.
- 4) Check in prior to departing for the field

### Commencing Work/Work Procedure:

- 1) Walking to/from sites
  - a. Check in via text when participants arrive at the field site and leave the field vehicle. The text message will contain the GPS coordinates of the research vehicles.
  - b. Check weather conditions and surroundings, double check you have appropriate gear and know the route.
  - c. Check in via text when participants finish work and return to the vehicle
- 2) Site Installation
  - a. Visually assess site being careful to look out for any hazards, double check you have adequate supplies, communicate plan between all participants.
- 3) Tower maintenance
  - a. Visually inspect tower being careful to look out for any hazards; collect data; check and refill cleaning fluid, clean sensors; calibrate sensors as needed; and replace desiccant.

### Post-Work Procedure:

- 1) Check in via text upon returning to campus



- 2) Unload vehicles and ensure gear is properly put away.
- 3) Park vehicles, note milage, and return keys.





## 17. DOCUMENT APPROVAL SIGNATURES

This Field Work Safety Plan has been shared with staff both through email and will be made available as a shared document. Staff/Faculty can either provide a signature or email confirmation that they have received, read and understood the contents of the plan. Sign off when complete. Note: Participant confirmation can be documented below.

Sara Knox

Name of Supervisor

Geraldine Pratt

Name of Department Head

Signature of Supervisor

Signature of Department Head

Date

Date

### Participant Document Confirmation of Understanding

To be completed by each participant:

By confirming below, the following participants have been informed of and/or provided with a copy of this Field Work Safety Plan and any additional procedures/protocols and are aware and understand and agree with the hazards identified and the methods used to control or eliminate the hazards. The following participants, by signing, also confirm that they have discussed with responsible persons relevant medical and physical requirements.

Participant's Name	Email	Signature	Date
Rick Ketler	rick.ketler@ubc.ca		
Zoran Nestic	zoran.nestic@ubc.ca		
June Skeeter	june.skeeter@ubc.ca		
Sarah Russell	srussell@wellesley.edu		
Tzu-Yi Lu	tzuyilu@student.ubc.ca		



Katrina Poppe	poppek@wwwu.edu		
Tin Satriawan	tinsat@student.ubc.ca		
Zoe Zhang	zoezhang0311@gmail.com		
Darian Ng	dng55@student.ubc.ca		
Weiwen Fu	weiwen04@outlook.com		
Azumi Konaka	azumikonaka@gmail.com		
Adin Litman	alitman79@gmail.com		
Yu Mo Song (Molly)	msong978@gmail.com		
Yanhui He	heyanhui18@gmail.com		
Ploykarn Kunkonlakarn	ploykarnkkk@hotmail.com		
Che Wei Tsao (Wally)	wally2191@gmail.com		
Evelyn Wang	eve.ytwang@gmail.com		
Alejandra Livingston	alejandra.maya.livingston@gmail.com		



## Appendix A: Definitions and Responsibilities

### DEFINITIONS

- **Administrative Controls:** The modification of work processes or activities to minimize risk
- **Engineering Controls:** The modification of the physical work environment to minimize risk
- **Hazard:** A potential source of harm to a person that can lead to a risk of injury or occupational disease
- **Risk:** The chance of injury or occupational disease
- **Risk Assessment:** The process where hazards are identified, their risk evaluated, and controls for the risk are determined to eliminate the hazard or minimize the risk
- **Supervisor:** The person directly responsible for overseeing the tasks of the worker
- **Worker:** All employees of UBC including faculty, staff, and paid students

### RESPONSIBILITIES

#### Department Head

- Review and approve safe work procedures outlined in this document prior to their implementation

#### Supervisor

- Conduct a risk assessment to identify the potential hazards associated with a particular job and their associated risks
- Implement controls using the hierarchy of controls to minimize the risk due to the hazard
- Complete a safe work procedures to accompany the risk assessment for a particular job by using this template
- Ensure proper training has been provided to workers PRIOR to commencing work (e.g. safe work procedures, use of equipment or tools, personal protective equipment requirements, identifying and reporting hazards, etc.) and that the training has been documented
- Ensure workers have access to and understand any required documentation such as manuals, Safety Data Sheets (SDS) etc.
- Educate workers on emergency procedures, contacts and numbers. If emergency contact information is not posted at the workplace, provide the worker with a copy to carry with them. The worker must know what to do in case of emergency/injury
- Ongoing consultation with Joint Occupational Health and Safety Committee in the review and revision of this procedure to ensure the content is adequate and relevant to current research
- Communicate risks that may arise outside of those that are predetermined
- Complete necessary insurance requirements
- Consult with participants regarding relevant medical and physical requirements or concerns

#### Workers

- Understand and follow this safe work procedure
- Complete the required training for the task
- Use proper personal protective equipment
- Report any unsafe conditions to their supervisor
- Report all incidents in [CAIRS](#) within 48 hours of the occurrence of the incident

#### Other Persons

Please complete this section if there are other categories of workers/supervisors that have distinct responsibilities (if required) e.g. Spotter, Field Supervisor etc.