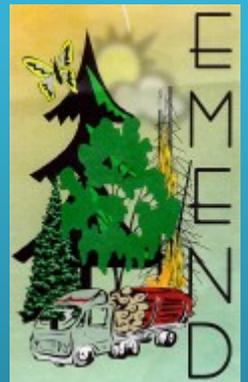


Ecosystem Emulating Natural Disturbance

EMEND Health & Safety Program

University of Alberta, DMI, CanFor

2015



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Important Numbers and Radio Frequencies

Personal Injury / Lost Person

STARS (Camp ID #5439, Site ID# 5659)

1-888-888-4567,
1-403-299-0932
#4567 from a cell phone

Ambulance, RCMP, Fire Department (structure fires)
Ambulance, RCMP, Fire Department (satellite phone)
DMI Forest Resources

911
1-780-624-3911
XXXXXXXXXXXX business hours
XXXXXXXXXXXX on call hours
XXXXXXXXXX
XXXXXXXXXXXX

University of Alberta Incident Reporting (Jane Doe)
DMI's 24-Hour Woodlands Answering Service for Check-in/Out

Forest Fire

Forest Fire
Peace River Wildfire Protection Area, Regional Fire Centre
DMI Forest Resources (supervisor use only)

1-780-310-FIRE (3473)
1-780-624-6190
XXXXXXXXXXXX business hours
XXXXXXXXXXXX on call hours

Other

Poison Control Centre
Environmental Complaints, Alberta Environment
Fish and Wildlife
EMEND Camp
EMEND Satellite Phone
EMEND Program Manager

1-800-332-1414
1-800-222-6514 (24 Hours)
1-800-642-3800 (24 Hours)
XXXXXXXXXXXX

(Lead Scientist, U of A)

XXXXXXXXXXXX (office)
XXXXXXXXXXXX (cell)
XXXXXXXXXXXX

RADIO FREQUENCIES:

Ch 1: XXXXX XXXXX

Ch 3: XXXXX XXXXX (non-road
communications)

Ch _: _____ (Repeater)

Background/Introduction

Safety is a major concern of the University of Alberta; all EMEND partners, and EMEND Management. It is for this reason that this Program and all documents in conjunction to it were created. It is our desire to make EMEND one of the safest field locations to work and stay. With the sort of tasks that are performed on a regular basis at EMEND, it is understandable that there are a number of risks/hazards associated with those tasks. Beyond those hazards related to work tasks, the environment represents a safety risk in and of itself. Remote forest wilderness settings are associated with a diverse collection of hazards. The purpose of this plan is to communicate appropriate behaviors associated with many of these risks both task and environmental. Your involvement is a critical element to making this safety program successful. If you have any near misses or incidents, please report them to your Field Program Manager to ensure that they can be documented and addressed appropriately.

The Plan is made of Cardinal Rules: those rules everyone must follow at all times; Required Work Practices: simple one step practices to reduce risk; Standard Operating Procedures (SOP): mandatory only to use SOPs that are pertinent to your work; and Reference Procedures: useful for reference if needed, these address safe behaviors; Critical Procedures such as the Emergency Response Plan (ERP) necessary in an event that an emergency should happen. It is hoped that if an un-safe situation can be quickly recognized, assessed, and acted upon appropriately, our ERP will no longer be needed. Should an Emergency Situation occur, quick recognition and response, as per our ERP, could prevent escalation of the emergency situation.

Pre-planning is a very key element regardless of the size of the project, job, or task. Whether in the form of a detailed process prior to a projects commencement, or a “tailgate meeting” before work starts, pre-planning serves to identify, explore, discuss, and educate all workers of any potential work site hazards or limitations (i.e. communications, terrain, location etc.). This Health & Safety Program will assist you in prioritizing your pre-planning efforts.

The intent of this plan is three-fold:

- i. Prevention of “near-miss” incidents (events where injury, property damage, or environmental damage does not result but could have)
- ii. Prevention of “accidents” (events where injury, property damage or environmental damage occurs)
- iii. To foster the prevention of reoccurrence in the event of a near-miss incident or accident, through prompt thorough investigation, identification of root cause and contributing factors, and corrective improvements.

This Health & Safety Program is the result of an extensive review of our past plans and is designed to help you prioritize your actions to promote a safe work environment. While all activities carry some level of risk, this Program is designed with the recognition that we have limited resources and limited ability to remember specific safety guidelines. However, by prioritizing our Safety Plan to address the highest risk activities, and/or most frequent activities we are able to significantly reduce the likelihood of near-miss or accident occurrences at EMEND. This being said, not all risks/hazards may be addressed in this manual therefore Caution, Care, and Due Diligence are necessary during all activities related to EMEND.

This Safety Plan does not supersede The University Field Activity Plan (FAP); please use it as a tool to help you in completing and submitting your FAP to the Field Research Office. This plan has been designed to support the Alberta Occupational Health and Safety Act (2000, Current to October 2013) which States:

- (1) Every **employer**, as far as it is **reasonably practicable** shall **ensure**:
 - (a) The health and safety of
 - (i) Workers engaged in the work of that employer, and

- (ii) Those workers not engaged in the work of that employer but present at the work site at which that work is being carried out, and
 - (b) That the workers engaged in the work of that employer are aware of their responsibilities and duties under this Act, the regulations and the adopted code.
- (2) Every **worker shall**, while engaged in an occupation:
- (a) Take reasonable care to protect the health and safety of themselves and of other workers present while the worker is working, and
 - (b) Co-operate with the worker's employer for the purposes of protecting the health and safety of
 - (i) The worker,
 - (ii) Other workers engaged in the work of the employer, and
 - (iii) Other workers not engaged in the work of that employer but present at the work site at which that work is being carried out. ...
- (5) Every **Contractor** who directs the activities of and employer involved in work at the site shall, **ensure** as far as reasonably practicable to do so, that **the employer complies with this Act**, the regulations and the adopted code in respect of the that work site.

Prime Contractors:

- (3) If a work site is required to have a PC under subsection (1), the PC shall ensure, as far as reasonably practicable to do so, that this Act, the regulations, and the adopted code are complied with in respect to the work site
- (4) A PC must do everything that is reasonably practicable to establish and maintain a system or process that will ensure compliance with this Act, the regulations, and the adopted code in respect of the work site.

EMEND Management: University of Alberta Lead Scientist, EMEND Project Coordinator (EPC) along with other potential management such as EMEND Field Program Manager (FPM) commit to doing our utmost to ensure the health and safety of the staff, students, and visitors to the EMEND Field Camp and the EMEND Forest Research Site including but not limited to: implementing clear policy and procedure (Health & Safety Program) along with all necessary documents required by the University of Alberta; informing staff, students and visitors of all aspects of this program, risks and hazards associated with visits to the EMEND Forest Research Site; your right to refuse unsafe work; and to communicate appropriate certifications, trainings, and necessary Personal Protective Equipment (PPE) required to work at the EMEND Site. We will strive to provide all necessary resources (Orientations, Trainings, certification programs, and equipment necessary) for you to work safely while working at our Forest Research Site; listen to feedback from all avenues; and communicate expectations of our workers, researchers, and visitors.

In return we ask that you the staff, students, researchers and visitors of the EMEND Site participate fully in our Health & Safety Program, by knowing and following all Cardinal Rules: No working Alone, Drive to the conditions of the Road, no horseplay on ATVs and Vehicles and never work without adequate training, PPE, training or malfunctioning equipment; Required Work Practices, and appropriate SOPs. Ultimately, to help us the EMEND Management to help implement this Health & Safety Program through continually using wise judgment, while on the EMEND Forest Research Site. Failure to follow this program may result in loss of privileges or dismissal.



 —University of Alberta Lead Scientist



 —EMEND Project Coordinator

 05-01-2015
 Date (MM-DD-YY)

 05-01-2015
 Date (MM-DD-YY)

 Renewable Resources Safety Coordinator

 Date (MM-DD-YY)

Cardinal Rules

Cardinal Rules are lifesaving rules; they are situations that are one misstep away from disaster (fatality, serious injury, extensive property damage, etc.). Breaking a Cardinal Rule is grounds for termination. There are no second chances, you will be terminated on the spot, and asked to leave the EMEND camp and field sites immediately. The EMEND Field Program Manager will contact Program Management, the Study Coordinator, and if necessary Department Heads and Supervisors if Cardinal Rules are violated.

EMENDS CARDINAL RULES ARE:

- 1. No working alone in the field without an approved plan** (SOP: Working Alone in the Field)
- 2. When driving ATV's 60 km/h is the maximum speed, except in emergency circumstances** (SOP: All-Terrain Vehicle Use)
- 3. No horseplay when driving vehicles and ATV's: this includes high speeds, donuts or other dangerous maneuvers** (SOP: Driving and Vehicle Use and All-Terrain Vehicle use)
- 4. Do not proceed if you do not have the necessary training, protective equipment, or if your equipment is broken or faulty****

***Drawing from OH & S regulations, all workers have the right to refuse unsafe work, including circumstances where they feel their competency, training or equipment does not permit them to work safely.*

Required Work Practices

Required Work Practices are work practices that are required of all staff to follow and have only one step. Required Work Practices that are violated will be treated with a strikes system. Initial violation will be treated with a warning and subsequent violations, with consistent disregard for safety, will be grounds for termination or removal from the EMEND field site and camp. The EMEND Field Program Manager will contact Program Management, Study Coordinator and if necessary Department Heads/Supervisors if Required Work Practices are violated constantly and when termination or removal occurs.

EMENDS REQUIRED WORK PRACTICES ARE:

- 1. Drive to the road/trail conditions, weather, training and comfort.** (SOP: All-Terrain Vehicle Use, and Reference Procedure: Trail Etiquette)
 - a. When driving ATV's on side trails, limit speeds and take extra precautions**
- 2. Driving is considered work, you cannot work more than 14 hours in a day, and you must arrive at destination by 10pm** (SOP: Driving and Vehicle Use)
- 3. Obey all road signage and speed limits** (SOP: Driving and Vehicle Use)
- 4. No smoking in any camp structures or near fuel sources** (See Reference Procedure: Living at Camp)
- 5. Nobody uses the gas appliances at the camp facility unless formally trained** (See Reference Procedure: Living at Camp)
- 6. Check-out/-in using white board at EMEND (if possible check in at 12pm (noon) by radio/phone)** (SOP: Signing In and Out)
- 7. Perform/Participate in daily tailgate meetings** (SOP: Daily Tailgate Meeting and Morning Practices and Reference Procedure: Preparing for a day in the Field)
- 8. Assess road and weather conditions regularly** (SOP: Driving and Vehicle Use and All-Terrain Vehicle and Quad Use)
- 9. Charge your radio every evening** (SOP: Radio Use)
- 10. Participate regularly in Safety Meetings**

Critical Procedure

Critical Procedures are procedures that deal with high consequence hazards and tasks (increased risk of fatality, injury, property damage, etc.). These are tasks where it is imperative that every step be followed, and even the most experienced of personnel will benefit from regularly reviewing these tasks before visiting/working at the site. As an example, folks that pilot aircrafts review a checklist every time they take off and land to ensure integrity of their processes. They are a backstop against mistakes, judgment errors, reduced incident occurrence, and becoming too casual around everyday events. It is your responsibility to know, abide by, and refer to your Critical Procedures.

These include knowing and following the:

- Emergency Response Plan
- DMI 24-hour Woodlands Answering Service Check-In/Out Process

EMEND Emergency Response Plan

SIX IMPORTANT STEPS

Regardless of the situation (*Personal Injury, Wildfire, Lost Persons, Accidental Spill*) requiring a response, this plan is developed using a standard six-step response procedure:

- 1. Recognize the problem.**
- 2. Evaluate the hazard(s).**
- 3. Take control.**
- 4. Call out for help.**
- 5. Take action.**
- 6. Follow up.**

EMEND's LOCATIONS

It is extremely important that you know your location at all times. In case of an emergency you may have to give your coordinates to the authorities.

You will be provided with Emergency Response Cards to assist you in case of an emergency. Please carry these with you at all times. (Please see the Appendix for sample emergency cards.) ***Remember to ask you Field Program Manager for your Emergency Response Cards to take with you into the field.***

EMEND FOREST RESEARCH SITE'S MEETING LOCATION:

Muster Point (The Gazebo): Intersection of DMI P2-200 Haul Road with Canfor Haul Road (Km 235), and South Notikewin Road. In the event of a serious incident or safety circumstance, this represents a central gathering location.

Road directions: - 43km North of Grimshaw on Highway 35.

- Turn Left (West) at Sulphur Lake Sign (TWP 874).
- Go 22.5 KM on Sulphur Lake road to intersection of Sulphur Lake Road with DMI P2-200 Haul Road. Continue straight through intersection onto DMI P2-200 Haul Road.
- Drive 35km on Haul Road. Meeting area is just past 235KM on DMI P2-200 Haul Road.

UTM Coordinates: Zone 11V: 0416062.01E 6292656.33N

STARS ID Number: 5659 (this is for the Gazebo muster point)

EMEND RESEARCH SITE IMPORTANT SITES AND COMPARTMENT LOCATIONS

EMEND Important Sites and Compartment Locations (Sulphur Lake Area)									
Map Area	Compartment	Legal Land Description	GPS Coordinates		Map Area	Compartment	Legal Land Description	GPS Coordinates	
		LSD	D-M-S (N)	D-M-S (W)			LSD	D-M-S (N)	D-M-S (W)
	<i>Old Camp</i>	SW-25-89-3-6	56-44-39 N	118-20-30 W	F	907	SW2-90-3-6	56-46-27 N	118-21-52 W
	<i>Muster Point (Gazebo/Intersection)</i>	SE-03-90-3-6	56-46-13 N	118-22-24 W	F	908, 909	SW1-90-3-6	56-46-27 N	118-20-17 W
A	850, 851, 852, 853	NE-25-89-3-6	56-45-8 N	118-19-29 W	G	910, 911, 912, 913, 914	SW11-90-3-6	56-47-19 N	118-21-5 W
A	854, 855, 856, 857, 858	NW-25-89-3-6	56-45-8 N	118-20-17 W	G	915, 916, 917, 918, 919	SW11-90-3-6	56-47-19 N	118-21-52 W
B	859, 860, 863	NE-26-89-3-6	56-45-8 N	118-21-5 W	G	920, 921, 922, 923	NE10-90-3-6	56-47-45 N	118-22-41 W
B	864, 865, 866	NW-26-89-3-6	56-45-8 N	118-21-52W	H	925, 926	NE11-90-3-6	56-47-45 N	118-21-5 W
B	861, 862	SW-26-89-3-6	56-44-42 N	118-21-52 W	H	928, 929, 930, 931, 932	SE13-90-3-6	56-48-12 N	118-19-29 W
C/D	867, 868, 870, 872, 874, 875, 878, 879, 880, 881, 882, 892	NW-27-89-3-6	56-45-8 N	118-23-28 W	H	933, 934	SW13-90-3-6	56-48-12 N	118-20-17 W
					H	936, 937, 938	NE14-90-3-6	56-48-38 N	118-21-5 W
					H	939	SE23-90-3-6	56-49-4 N	118-21-5 W
C/D	883, 891	NE-28-89-3-6	56-45-8 N	118-24-16 W	I	940, 941, 942	SW23-90-3-6	56-49-4 N	118-21-52 W
C/D	885, 887, 888	SW-28-89-3-6	56-44-42 N	118-25-4 W	I	943, 944, 945, 946, 950, 951	NW23-90-3-6	56-49-30 N	118-21-52 W
C/D	889, 890	NW-28-89-3-6	56-45-8 N	118-25-4 W	I	947, 948, 949	NE22-90-3-6	56-49-30 N	118-22-41 W
C/D	895, 897, 898	SE-33-89-3-6	56-45-35N	118-24-16 W	J	952, 953	SE26-90-3-6	56-49-56 N	118-21-5 W
C/D	899, 900, 901, 902	SW-33-89-3-6	56-45-35 N	118-25-4 W	J	954, 955, 956, 957, 958	SW25-90-3-6	56-49-56 N	118-20-17 W
E	903, 904, 905, 906	SW-3-90-3-6	56-46-27 N	118-23-28 W	J	959, 960, 961	NW25-90-3-6	56-50-22 N	118-20-17 W

EMEND RESEACH FACILITY (CAMP) LOCATION

Facility Phone Number (Office): 780-971-2518

Legal Land Description: NE23 87 25 W5M

Muster Point: 0.5 km West of TWP Road 874 (Sulphur Lake Road) and Range Road 251 intersection. (In case of an evacuation of the buildings the Garbage can is the Muster Point). In the event of a serious incident or safety circumstance, this represents a central gathering location.

Road directions: 43 km N of Grimshaw on Hwy 35,

- Turn Left/West at Sulphur Lake Sign (TWP Road 874), go 10 km on Sulphur Lake Road.
- Facility is 0.5km west of Range Road 251.

Lat/Long Coordinates:

	Degrees (D)	Minutes (M)	Seconds (S)
Latitude (Northing)	56°	33'	56.37"N
Longitude (Westing)	117°	51'	55.65"W

UTM Coordinates: Zone 11V 0446815.81E 6269374.81N

STARS ID Number: 5439

EMERGENCY RESOURCES:

The EMEND Project believes that good emergency response reduces the loss incurred due to accidents and injuries. The following are a collection of resources, available to the EMEND research operation.

Northern Alberta 911

911 should always be the first call made when Emergency Services are needed when using a cellular or landline phone. Through consultation with the caller it will be determined whether STARS has utility or not for the particular circumstances.

STARS Emergency Link Centre

The STARS Emergency Link Centre (ELC) is a 24-hour emergency medical communications centre that offers multiple services to us. Three examples that Users of the EMEND Site are able to take advantage of are:

Emergency Services—oversees STARS helicopter missions, coordinating transportation of critically ill and injured patients, and online medical consultation; **Remote Site Registration**—monitors remote sites and in case of an emergency begins the coordination of medical response and an **Emergency Contact Centre**—provides emergency call answering services and incident notification.

STARS is not a substitute for 911 but can be an essential link between you and emergency responders. However calling 911 on Iridium Satellite phones is often unreliable in Canada. For this reason if using a satellite phone to make an emergency call please call STARS first. They will then find the best possible emergency medical services to respond. When you contact STARS please provide them with the appropriate ID #. We have ID #s for Camp as well as for the Forest Research Site muster location.

**STARS (Camp ID #5439, EMEND Forest Research Site ID# 5659)
1-403-299-0932,
or #4567 from a cell phone**

Alberta Government

As a secondary line resource for specific types of emergency events, the Alberta government has resources available to the EMEND research team. By example, they include:

- Wildfire control response
- Spill response containment advice
- Local field personnel potentially available to assist in missing person searches
- Dangerous wildlife

Key government Contacts

Wildfire events:

Alberta Wildfire Centre: 1-780-310-FIRE (3473)
Peace River Wildfire Protection Area, Regional Fire Centre: 780-624-6190

Spill events:

Environmental Complaints: 1-800-222-6514

Missing Person events:

Local ESRD Office: 1-780-624-6456

Dangerous wildlife:

Fish and Wildlife: 1-800-642-3800

University Of Alberta Renewable Resources Incident & Near Miss Reporting

After any incident/near miss is under control or soon after the event is over it is mandatory that EMEND staff (generally the Field Program Manager) informs the Renewable Resources Department of the incident. Please provide them with a brief description of what is happening/happened, who was/is involved, and any other pertinent information. This step is important as it keeps both our industry and University partners informed, and initiates the critical incident investigation in a timely manner along with a review in the interests of preventing reoccurrence. Ask UAlberta department contact to pass along all required paper work onto all other necessary contacts including Environment, Health and Safety, and if necessary Human Resources.

Jane Doe
X-XXX-XXXX
jane.doe@ualberta.ca

DMI Emergency Response Telephone Numbers

As a secondary line resource for emergency events, DMI has offered the EMEND research team access to specific resources. Therefore a procedure has been developed to enhance the EMEND Emergency Preparedness and Response Plan that includes a 24 hour call centre for communicating emergencies. The purpose of the 24 hour emergency service is to provide DMI early awareness of the emergency situation. **In the event of a serious emergency, you should always call 911/STARS first (or Alberta government in the event of wildfire or spills). The DMI emergency response telephone numbers should be used to report the incident once contact with 911 has been established.** Appropriate DMI staff will receive notification of the emergency event through these contact points.

DMI Woodlands

X-XXX-XXXX Business Hours (0730-1630hrs Monday to Thursday, except holidays)
X-XXX-XXXX On Call After-Hours (including evenings and weekends)

When you call this number, the answering personnel will request confirmation of some key information and will provide the following support to you the caller:

- Confirm your identity and your involvement with the EMEND project,
- Confirm whether 911 was called as required,
- Take pertinent information, and
- They will contact your Supervisor (UofA EMEND personnel) first; if they cannot contact that person they will contact a DMI supervisor pre-determined by a priority list determined by DMI.

Depending on the type of emergency, DMI may make available local field personnel (e.g. potentially available to assist in missing person searches)

STANDARD RESPONSE OUTLINE: SIX IMPORTANT STEPS

A standard response procedure has been developed as a tool to provide a consistent approach or response format to those that find themselves in an untimely and probably stressful situation of having to act or respond to an immediate emergency or operational situation. This standard response procedure should be followed regardless of the type of emergency that may occur (i.e. fires, personal injury, spills etc.).

Whether you find yourself in an emergency situation or have come upon an operational situation in the field, you will need support and direction. The following six steps should be followed:

1. Recognize the Problem

It is important to remain alert to situations that may require immediate attention. These could be fires, personal injuries, environmental situations, or operational problems. An emergency situation may be more obvious, but what is an “operational situation” needing a response? Suppose a field worker has come upon a washout in the road not previously identified on his map. Knowing that there are requirements pertaining to creek crossings, the worker will follow this procedure to notify those whom can assure the appropriate requirements are met.

2. Scene Survey

Take a brief moment to obtain a clear understanding of exactly what the emergency or situation is. Evaluate the magnitude of the hazard and gather as much information as necessary so the appropriate resources can be marshaled in response. Ask yourself: “Can you effectively deal with the situation without putting yourself in a dangerous situation?”

3. Take Control

Whatever the situation, someone needs to take control. This may mean stopping operations, stopping the flow of a fuel spill, notifying co-workers or identifying hazardous exposures. Take whatever action is needed to control the situation. But do not ever put yourself in a dangerous situation.

4. Call Out for Help

Notify your immediate supervisor. The appropriate authority / resource should always be called.

5. Take Action

Take whatever safe necessary/possible action that is required to minimize the impact or effects of the situation. These actions should be based on instructions given to you when you call out for help. Your individual ability, training and equipment on hand will also determine what action you take. Perhaps all you will be able to do is warn, evacuate, and protect any people in the area until other resources or expertise arrives. Do not put yourself in a dangerous situation.

6. Follow up

Situations with potential to jeopardize our health and safety, damage our property and environment, or disrupt our business should not be permitted to reoccur. Document as much information as possible so an effective accident / incident investigation can be done toward preventing reoccurrence. This process may also be a regulatory requirement.

ROLE OF THE FIRST AIDER / CARE PROVIDER

As a “First Responder”, you are in charge of the scene and your primary responsibility is for the safety of yourself, those assisting you, and for the care of your patient(s) until the next higher level of care takes over. Using whatever resources you have available, ensure you follow your Emergency Response Procedure for Personal Injury and remember:

- The safety of yourself and the people around you is your first priority. **PUT ON YOUR PROTECTION!**
- If spinal injury is suspected stabilize the head and caution the patient(s) not to move.
- As soon as your assessment of the situation is complete, get help on the way. Delegate someone to make the appropriate arrangements; and wait for help to arrive.
- Obtain as much information as possible as to “what happened” from the patient and/or bystanders. Use the “**Patient Information Form**” (See Appendix) to assist in relaying all necessary information (can be found in all EMEND first aid kits).
- Conduct a “primary survey” for life threatening injuries and integrity of ABC’s. Treat these injuries as they are encountered.
- Recognize the differences between Acute Stress Reaction (ASR) and shock
 - ASR—decrease and leveling of vitals
 - Shock—steady increase in vitals
- Shock and hypothermia can progress rapidly; continually monitor for decreasing signs of consciousness and/or shock. Rapid transport must then be considered. Check vitals every 5-10 minutes.
- Follow up with a “secondary survey” to identify all other injuries. Treat any non-life threatening injuries as time and priority permits.

INFORMATION TO BE RELAYED TO EMERGENCY RESPONSE PERSONAL (911, STARS)

- Location of the accident / incident. Caller should indicate clearly the degree of remoteness or isolation where applicable. Legal location or GPS information should be provided (found on Emergency Response Cards).
 - When calling STARS just state the site ID number and then if necessary provide extra details about the incidents site.
- Contact number at Site (Sat Phone)
- Hazards (presence/non-presence of S₂H)
- Any access issues / blockages that would impede a ground response.
- Any of the following conditions that would indicate the need for rapid transport:
 - Altered / decreased level of consciousness; severe shock, hypothermia
 - Difficulty in breathing
 - Cardiac (heart) condition
 - Serious head injury
 - Suspected spinal injury
 - Upper leg (femur) fracture(s)
 - Severe bleeding (unable or difficult to control)
 - Suspected internal bleeding
 - Severe burns (2nd or 3rd degree, or burns to face, throat or neck)
 - Anaphylactic shock – an allergic reaction as a result of an exposure (i.e. bee sting, food, chemicals, etc.)
 - Poisoning

REQUESTING A HELICOPTER

Any decision to request a helicopter, for any reason, is made through the EMS / 911 (STARS) operators or DMI Emergency Response Line. To assist in that decision, all appropriate and accurate information must be provided to the operator.

Safety Guidelines

- The landing zone should be on level ground, (less than 5% slope) at least 36 x36 meters and more if possible to include a safety zone
- Check for loose debris in landing zone (vital and important)
- Ensure no one approaches the helicopter STARS crew will approach you when it is safe to do so
- Everyone should be at least 30meters from the landing and take off
- Movement around aircraft is to be in safe area only
- In necessary provide road blocks approximately 500 meters on either side of the landingzone

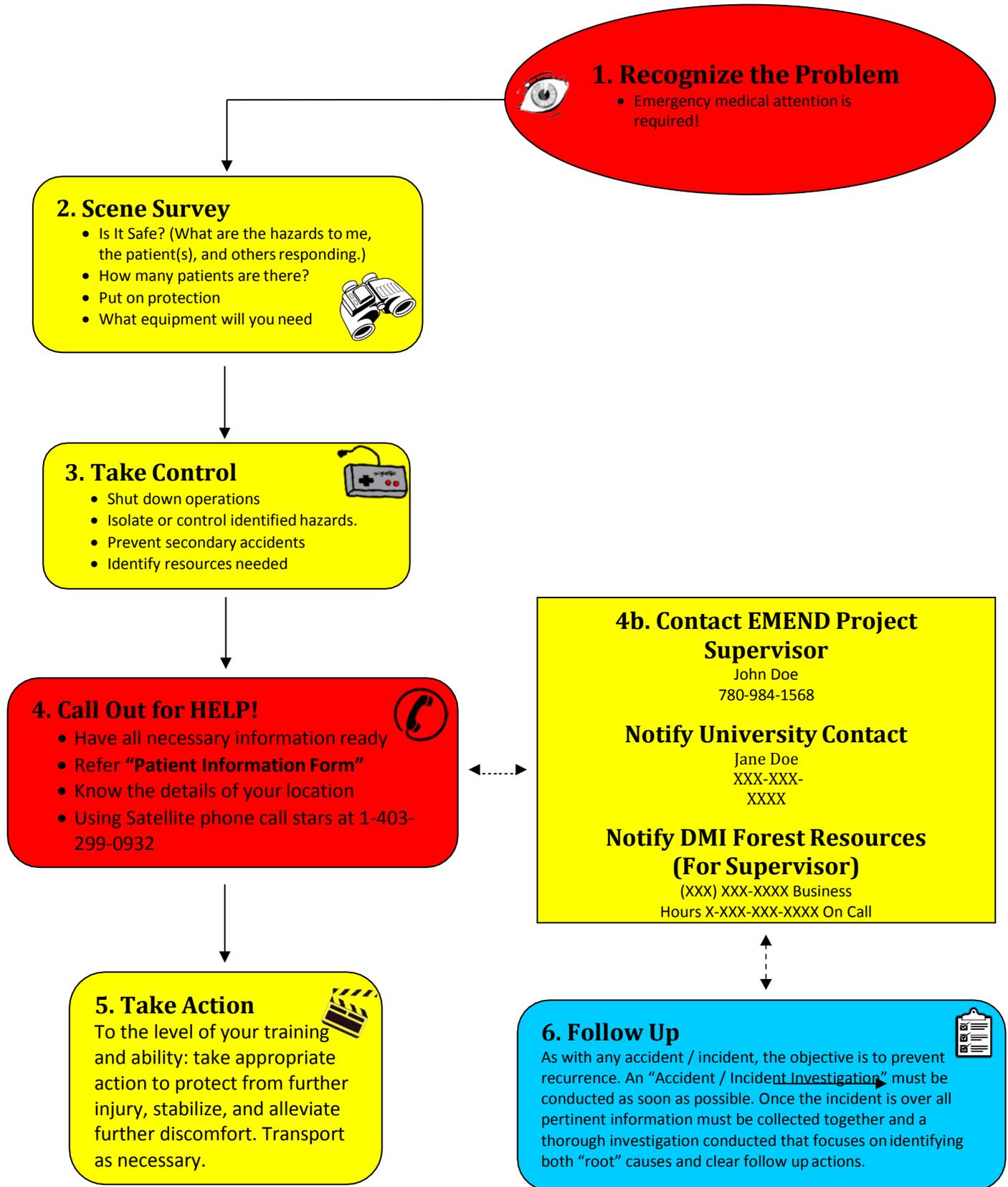
Remember that most helicopter services are limited in their ability to respond by:

- Daylight (visual) flying restrictions. (Less available flying time during winter months.)
- Weather conditions.

IN CASE OF A FATALITY/DEATH

- Emergency care must be continued until appropriate authorities can make the call
 - Continue CPR and first aid and inform EMS at patient transfer/upon their arrival
- RCMP, WCB, Your Supervisor, University of Alberta Workplace Health and Safety and DMI must be contacted immediately.
- All inquiries should be directed to an appointed person who will deal with media and public announcement when necessary
- For purposes of a thorough accident/incident investigation nothing is to be moved or disturbed at the scene of the accident unless it is absolutely necessary for the safety of people or equipment at the scene.
- Write everything down as soon as possible, record times, people, events that occurred, and anything that can help with the investigation
- Halt all other work on site and gather all EMEND staff, students, visitors, contractors, etc. to the muster point; keep everyone as informed and as calm as possible. Move everyone back to camp as soon as it is possible.
- Provide information as quickly as possible and work with inspectors, RCMP, and others to aid in any investigation
- Have crisis incident stress support staff ready for a debriefing, respect everyone's personal needs
- Debrief everyone, only provide the information necessary, keep it professional, but help everyone learn from what happened

PERSONAL INJURY RESPONSE DIAGRAM



PERSONAL INJURY RESPONSE

Finding someone (or several people) in need of emergency medical aid can be a stressful and potentially confusing situation. You must be calm and stay focused on providing your highest level of care possible.

NOTE: The two initial steps are done visually and very quickly...in a matter of seconds!

1. Recognize the Problem

- Remain alert to the environment around you and where your fellow workers are.
- It is important to be able to recognize an emergency situation early that requires emergency medical attention.

2. Scene Survey

- **Is It Safe!** It is important that you ensure that you and others responding do not become victims.
- What are the hazards?
- Identify resources required to eliminate or control hazards that threaten one's ability to respond.
- How many patients are there? Determine possible mechanism of injury
- PUT ON PROTECTION

3. Take Control

- Take immediate control of the situation, calmly and effectively direct others responding.
- Prevent a secondary accident occurring (for example warning / directing oncoming traffic).
- Eliminate or control those hazards identified as hampering your ability to respond to the patient(s). (this could be numerous bystanders, or those experiencing panic within the group or the patients)

4. Call out for Help—911/STARS

- Dependent on the situation. It may be the on-site First Aider and equipment, or it may mean be 911/ STARS to arrange for an ambulance or helicopter.
- Delegate someone to make the necessary calls and arrangements and have them returned to you with any updates and to assist. If no one is available, you may have to provide initial "critical" first aid and leave your patient temporarily to obtain help yourself.
- Have all patient and location (directions) information complete and ready.
- Know where to use the appropriate communication equipment. Cell phones can only be used at Old Camp and there are many radio dead zones at the EMEND Field Site
- Contact all other necessary emergency contacts as needed. (EMEND Supervisor, DMI, U of A)

5. Take Action

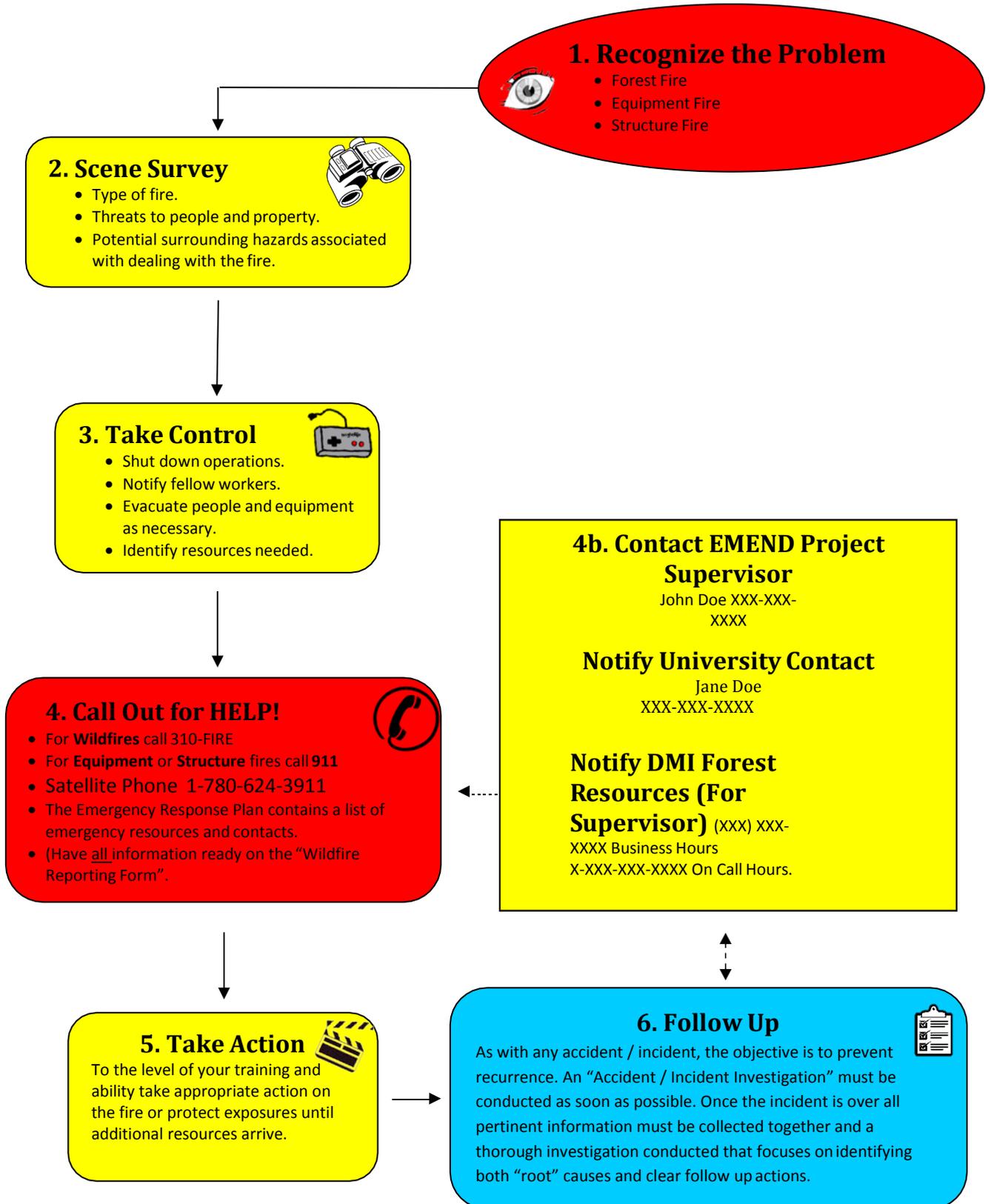
- First aid is provided only to the responder's level of training; if possible let the highest level/most experienced person take the lead
- Priorities are the ABC's, **A** – airway, **B** – breathing, **C** – circulation (bleeding). (Every 5-10mins)
- Identify and evaluate Life threatening injuries/complications and conditions first, such as level of consciousness, spinal injuries, internal injuries / bleeding, cardiac (heart), etc.
- **Treat for ASR and shock.** Continuously monitor for ASR and shock. Keep patients calm and warm. If shock is a concern, transport.
- Treat all non-life threatening injuries and continue to monitor
- **Transport.** Rapid transport is important and should be considered during initial patient assessment. The decision depends on: causing further complications, time, location, distance, weather, etc. If you have to move the patient ensure that all precautions have been taken.

6. Follow up

- The Field Program Manager must make the appropriate contacts: Workplace Health and Safety in cases of serious injuries, WCB within 72 hours, as well as DMI and Renewable Resources.
- Following the event as much information as possible must be collected and a thorough accident/incident investigation should be conducted. If necessary update the safety plan.
- If necessary contact Critical Incident Response for Stress Debriefing for all staff

- Although personal details may be confidential, take the time to discuss the event with all employees as a learning opportunity and a fundamental step toward preventing reoccurrence.

FIRE RESPONSE DIAGRAM



FIRE RESPONSE

All workers are required to immediately report ALL fires (wildfire, equipment or structure) discovered, whether of unknown origin or EMEND activity caused.

NOTE: These two initial steps are done visually and very quickly. In this particular case however, the time it takes and how thoroughly it is done will depend on your knowledge of the area.

1. Recognize the Problem

- Determining what is burning will directly effect the action that is required. (wildfire, equipment fire, structural fire, chemical/fuel spill)
- If it's a wildfire, is it burning in standing timber, slash, grass or a mixture of fuels? (Appendix 33: Government of Alberta Wildfire Reporting Form)

2. Evaluate the Hazard

- Identify and evaluate any potential hazards or problems associated with dealing with the fire. (Power lines, fuel supplies, etc.) Will the wind and weather hamper or control the fire?
- Identify any other potential losses of resources: structures, developments, standing timber, camps, recreation areas or commercial developments. Are evacuations necessary?
- Identify what immediate and follow up resources are required.

3. Take Control (If safe to do so)

- Notify your field staff and the rest of the crews at EMEND as well as your UofA EMEND supervisor. And halt all operations on site.
- Identify a SAFE ZONE from which to organize workers and equipment (Muster Point, old camp, etc.).
- Have immediate / on site resources brought to the scene.

4. Call out for Help

- Delegate one person to contact all necessary organizations
- First call should be "COLLECT" to the Peace River Fire Center at (780)624-6190.
- Second call if there is no response should be "COLLECT" to 310-FIRE (3473).
- Third call should be to DMI Forest Resources XXX-XXX-XXXX (or X-XXX-XXX-XXXX) to ensure appropriate personnel are aware of the situation and available to respond if necessary.
- Depending on the situation, (within M.D., settlement area, community boundaries, etc.) the local fire department may need to be called instead of or in addition to the forest service through **911**.
- Use the "**Wildfire Report Form**" (Appendix 23: Wild Fire Reporting Form (EMEND)) to assist in relaying all necessary information.

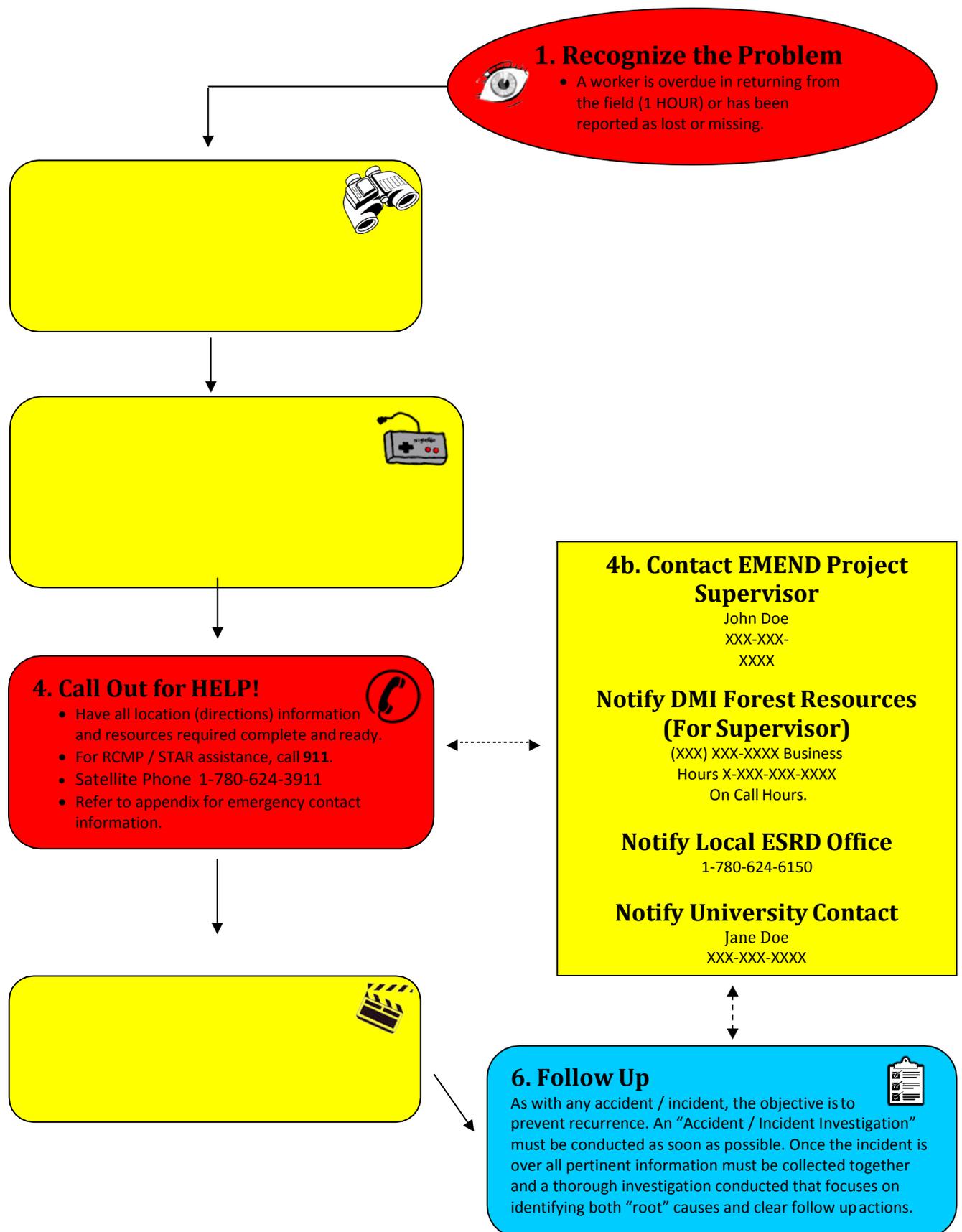
5. Take Action (small fires only, large fires evacuate the area)

- To the crew's level of ability immediate action must be taken toward controlling/suppressing the fire.
- Fire action should continue until the forest service or fire department arrives on site to take over, or it becomes too dangerous.
- Once outside resources arrive to take over the fire, your assistance may still be required.
- Depending on the situation, the only course of action may be an orderly evacuation of the area.

6. Follow Up

- Particularly where the fire was the result of a work related accident / incident, a thorough investigation may be required toward identifying contributing factors and preventing reoccurrence. Consequently, as much information, documentation of actions and corresponding time should be collected. Where it was not your incident but you discovered, reported, and took initial action, this same information would be important to the agency following up.
- If necessary contact Critical Incident Response for Stress Debriefing for all staff

OVERDUE / LOST PERSONS RESPONSE DIAGRAM



OVERDUE / LOST PERSONS RESPONSE

Forest workers often find themselves in remote or isolated locations. These work site locations are often influenced further by environmental factors like the season, weather, short periods of daylight, terrain, and potentially aggressive wildlife. Consequently, a combination of job pre-planning, use of a “buddy” system, and a “check-in” system are critical controls.

1. Recognize the Problem

- An “overdue” person, is someone who has reasonably exceeded a pre-arranged check in or “ETA” (1 hour late, no later than 7pm), or they have been reported to be missing by a colleague.

2. Scene Survey

- Time of day / daylight remaining
- Season / weather
- Availability of resources for search / rescue
- Potential for hypothermia
- The missing individual(s) skill level and level of preparedness
- Communication
- Access to area, distance to main road into block

3. Take Control

- Notify immediate supervisor, employer etc. of the situation.
- Identify a “Search Coordinator”.
- Activate any applicable procedures for “Overdue / Lost Employees”.
- Determine expected or last known location from the “buddy” or “Sign-out / Check-in” system.
- Attempt contact via radio, cell phone, and or SAT. Phone.
- Identify immediately available resources and additional (outside) resources required:
 - Personnel: Searchers, Fish & Wildlife assistance (aggressive wildlife are known), RCMP / search and rescue / helicopter assistance, DMI Emergency Help Line
 - Equipment: map, communications equipment, first aid equipment
- Initiate / coordinate initial search based on immediate information (last known location/expected location). If this is unsuccessful outside resources should be contacted.

4. Call out for Help

- Follow any specific procedures developed for such an event.
- Delegate someone to make the necessary calls and arrangements out from your location for support as needed and have them return to you with any updates and to assist.
- Have all location (directions) information complete and ready.
- Outside search and rescue and helicopter use should be coordinated through the RCMP or DMI.
- Know where to use the appropriate communication equipment. Cell phones can only be used at Old Camp and there are many radio dead zones at the EMEND Field Site
- DMI Forest Resources XXX-XXX-XXXX or 24-hour answering service, as well as local Alberta ESRD office should be notified to ensure appropriate personnel are aware of the situation and available to respond if necessary (for supervisor).

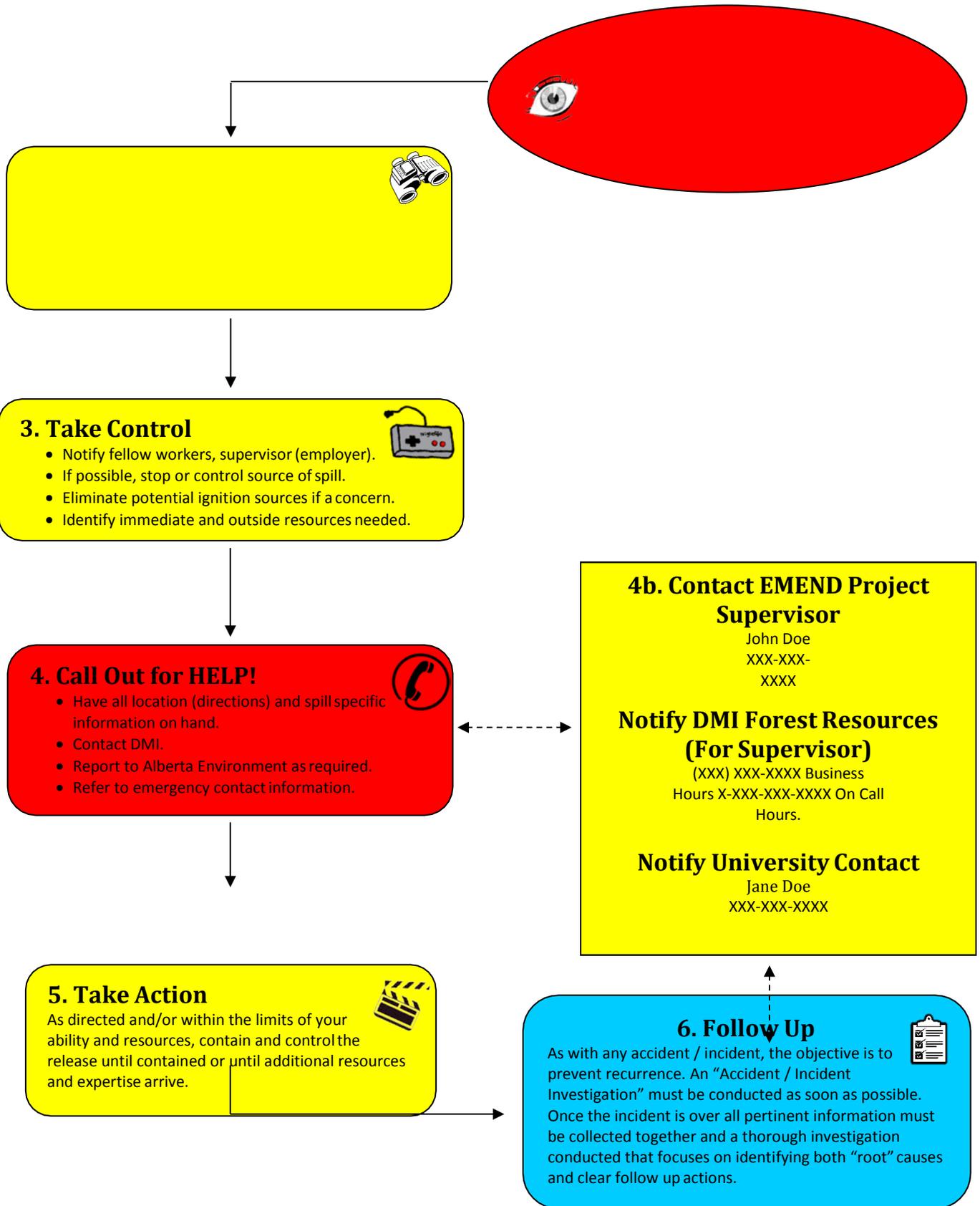
5. Take Action

- Continue search and/or follow instructions provided during your call for help until help arrives.
- Turn search operations over to higher resources (RCMP / SAR) upon arrival and assist as required.
- When the missing person(s) is located, determine the need to initiate any further response for personal injury.

6. Follow Up

- As much information as possible should be documented by the employer for investigation purposes where necessary to prevent reoccurrence and as an opportunity to share findings at safety meetings.

- If necessary contact Critical Incident Response for Stress Debriefing for all staff



ACCIDENTAL SPILL RESPONSE

Releases of controlled products (ex. fuels) and hazardous waste (ex. used motor oil) has the potential of having an “*Adverse Effect*” on our environment. “*Adverse Effect*” is defined as the “impairment of, or damage to: the environment, human health, or safety of property.” Spills or releases of this nature may have various reporting requirements and may require a rapid and complex response toward minimizing any potential adverse effect.

1. Recognize the Problem

- Recognize that a controlled product or hazardous material has been spilled or leaked.
- Attempt to estimate how much has been released into the environment.

2. Scene Survey

- Identify and evaluate any potential problems that may be associated with *control*, *containment*, or *cleanup* of the spilled / released product(s)
 - Assess: Location, access, contamination into a flowing water body or muskeg, product characteristics (controlled product vs. a hazardous waste), flammability, toxicity, corrosive, etc.
- Refer to MSDS for product characteristics and PPE requirements.

3. Take Control

- It is important that someone take immediate control of the situation once discovered to:
 - Shut down adjacent operations,
 - Ensure fellow workers are notified,
 - If possible, stop the source of the spill,
 - Eliminate ignition sources etc.
 - Identify the resources required toward taking initial or perhaps sustained containment and clean up action.

4. Call out for Help

- The hazards and factors identified earlier toward *control*, *containment* or *cleanup* will determine the type and level of help required.
- Prior to making any call, have as much information as possible about the spill “in hand”.
- Where the spill is out of your immediate capability to control, and/or there is a possibility of an “*Adverse Effect*” on the environment, DMI **must** be contacted and consulted with immediately. DMI will provide initial response direction and will assist in the decision to whether they themselves need to respond and what resources are required.

5. Take Action

- Within the limits of your ability and the resources on hand, take action to minimize the spread and the impact of the spill until additional resources and expertise arrive.
- Specific PPE may be critical and must be provided for. (Refer to MSDS).
- Utilize spill response equipment on hand, including heavy equipment where suitable.
- Contain the spill.
 - Block off drains, culverts and ditches.
 - Surround the spill with earth, peat, straw, sand, commercial booms and sorbents.

6. Follow Up

- As with any accident / incident, the objective is to prevent reoccurrence. An “Accident / Incident Investigation” must be conducted as soon as possible. Once the incident is over all pertinent information must be collected together and a thorough investigation conducted that focuses on identifying both “root” causes and clear follow up actions.

Release Reporting Guideline (Summary)

The *Environmental Protection and Enhancement Act (EPEA)* and the *Release Reporting Regulation, AR 117/93* deal with the release of substances into the environment and set out requirements for the reporting of such releases to Alberta Environment.

Summary of "Release Reporting Guideline" Table #3		
Product	Release Reporting Requirements To:	
	Alberta Environment	DMI
Diesel	=/> 200 litres, or may have an "adverse effect" on environment.	20 litres
Gasoline / Fuels	=/> 200 litres, or may have an "adverse effect" on environment.	20 litres
Glycols	Not regulated. Report any amount that may have an "adverse effect".	20 litres
Hydraulic Oils	Not regulated. Report any amount that may have an "adverse effect".	20 litres
Compressed Gasses	=/> 100 litres, or may have an "adverse effect" on environment.	20 litres
Used Oil & Filters	=/> 5 kilograms or 5 litres, or may have an "adverse effect" on environment.	As per AENV

"Adverse Effect" is defined as "impairment of or damage to the environment, human health or safety or property".

Note: The release of any product in any quantity into a watercourse, groundwater, or surface water is also immediately reportable to Alberta Environment and DMI.

The onus is on the person(s) who causes or permits the release or has control over the released substance to determine whether there is an adverse effect and to report that release accordingly.

EPEA release reporting should be made directly to the "Environmental Services Response Centre" at:

1 – 800 – 222 – 6514 (24 hours a day) **or (780) 422 – 4505**

A reference number will be issued at the time of the report to confirm that the report of the release was made.

Information specific to "Transportation of Dangerous Goods Regulation" (TDGR) such as regulated substances, their class, division, placarding, manifests, transportation precautions etc. may be obtained through the "Coordination and Information Centre of Alberta Transportation at **1 – 800 – 272 – 9600** within Alberta, 24 hours a day.

DMI's 24-Hour Woodlands Answering Service for Check-in/Out

This service is to be used by anyone using the EMEND Field Site during off-season times (September to April). This is a contract service; therefore it is not manned by DMI-staff and not held at the mill-site. Please ensure that you advise the service agent that you are associated with the EMEND research team and you are doing work for DMI and University of Alberta. Please ensure that you follow this procedure completely. The contact number for the answering service is ~~X-XXX-XXX-XXXX~~.

Notification of Site Use

- Workers are to call the number when they leave for the field,
- The following information is to be provided to the Woodlands operator:
 - Employee name,
 - Travel plans (sequentially), detailed information on specific work location is important (e.g. EMEND compartment#, block #'s, not just EMEND area) this information will assist an efficient search-response if need arises
 - Type of work to be completed,
 - Estimated time of arrival home, IT IS IMPORTANT TO ANTICIPATE ANY TRAVEL-TIME NECESSARY TO REACH A LOCATION OF LIVE CELL COVERAGE IN SELECTING & ADVISING OF THIS CALL-IN TIME
 - Personal contact telephone number,
 - Type of communication you can be reached on & if using a hand-held radio, the radio frequency, and safety equipment you might be carrying (e.g. firearms, bear spray, etc.), and
 - Immediate supervisor's name & telephone number.

Change of Travel Plans

- Workers are to call the operator of any changes to their plans; these changes may include but are not limited to:
 - Change of type of work to be completed,
 - Change to estimated time of return home,
 - Change of people travelling with you,
 - Change of personal contact number, and
 - Change of return travel route.

Notification of Safe Return

- When the worker returns they are to call the operator and cancel the registry of their travel plans. FAILURE TO CALL WILL INITIATE A SEARCH RESPONSE SHORTLY AFTER THE DESIGNATED CALL-IN TIME EXPIRES

Notification should not occur until the worker returns to a populated area or basecamp.

Certification and Training

There are a number of certifications and trainings that all participants and workers must possess to be allowed to work on the EMEND site. There are also a number of trainings and certifications that Health and Safety Regulations requires if your job description requires you to use certain equipment/materials.

Training required of all participants at EMEND

- At least Standard First-Aid and CPR C (wilderness first-aid recommended)
- Bear Awareness

Training required when using specific equipment

- ATV training
- Drivers-need Defensive Driving Training and be U of A certified (or certified by home institution)
- Individuals towing trailers must take U of A truck and trailer safetyworkshop
- Chainsaw /Brush-saw

Potential Other Trainings that may be required are:

- Transportation of Dangerous Goods
- WHIMIS

Extra Trainings for Program Coordinator/Field Program Manager

- Incident Investigation

Standard Operating Procedures

Standard Operating Procedures (SOP) are task specific procedures where safety is of the utmost importance. They lay out instructions on how to perform tasks while providing essential safety information. You should understand and be comfortable with the SOPs necessary for your position. It is your responsibility to know and understand all applicable SOPs and to help make EMEND the safest work location possible. For example: all individuals working at EMEND will need to read, know and understand the SOPs for ATV's, Morning Tailgate Meetings, Use of Bear Spray, Wildlife Encounters, Extreme Weather Events, Axes Use, Radio Policy, Driving and Vehicle Use, Campfire Use, Signing In and Out, and Working Alone in the Field.

Mandatory SOPs

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- Entrance and Data Collection in Burned & Slash-Harvest Stands	44
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Standard Operating Procedure: Daily Tailgate Safety Meeting

1. Purpose and Scope:

It is the EMEND program and staff's desire to make the EMEND project the safest working environment that it can be. All work-sites have inherent danger and potential safety problems. The daily tailgate safety meeting is meant to bring awareness of all potential hazards and to address mitigation processes; it is for this reason that this Standard Operating Procedures (SOP) has been set in place. This SOP covers Daily Tailgate Safety Meetings on all EMEND project sites for all staff, students, volunteers, and visitors. Failure to follow these protocols could lead to dismissal or loss of site/camp facility use privileges.

2. Personal Protective Equipment

Mandatory:

-University of Alberta Daily Safety Log Book

3. Procedure:

- Information required when filling out the daily safety log book
 - Weather forecast for the day
 - Road conditions
 - Environmental conditions (boggy, insects, snow still, following paths/bushwhacking)
 - Wildlife sighted in your areas
 - Equipment you may be using
 - Others in the area (road construction, forestry trucks, etc.)
 - Is anyone in your group carrying fire arms
 - Do you have all the appropriate PPE for your activities
 - Do you have enough water for everyone
- At the Tailgate meeting:
 - Go over and confirm all hazard and safety precautions with all team members
 - Go over safety checklist
 - Do a daily vehicle inspection and fill out the form
 - Ensure all necessary equipment is packed including equipment, safety gear (Appendix 30: Field Equipment & Gear), water, etc.
- Date and sign/initial the bottom of the page

Standard Operating Procedure: Signing In and Out

1. Purpose and Scope:

It is the EMEND program and staff's desire to make the EMEND project the safest working environment that it can be. All work-sites have inherent danger and potential safety problems. Fieldwork can present many new hazards and increase response time for emergencies. It is for this reason that this Standard Operating Procedure (SOP) has been set in place, to help mitigate some of these potential hazards. This SOP covers signing out and in procedures for all staff, students, volunteers, and visitors during work-time and time off. Failure to follow these protocols could lead to dismissal or loss of site/camp facility use privileges.

2. Procedure:

1) Pre-Plan Activities

- Review where you are going to be or the schedule of locations to be worked over the course of the day.
- Will there be constant communications (satellite phone) or only upon returning to the vehicle (cell/radio).
- Check the weather forecast and prepare accordingly
- Ensure you have all the gear you need for the day, including gas for the ATVs
- Review and or indicate bear locations on map on a daily basis.

2) Sign Out

- Prior to leaving use the white board to sign out. Include: names, date, location(s) (in order you will visit them and UTM's if needed), expected time of return, and note any dangerous equipment you may be bringing.
 - If you are going to multiple locations list your sites in the order you plan to visit them
- Grab your radio, SAT. phone, first aid kit and any other gear you may need
- Do a radio check
- Do your daily safety tailgate meeting (SOP: Daily Tailgate Safety Meeting)

3) In-field Check-Ins

- At 12 noon a radio check can be conducted among all field teams. If you have made arrangements for a check-in and have not heard from anyone by 1:00pm, please try to call out to another nearby team or checking in with camp via Satellite phone or cell phone.
 - If you are unable to connect with anyone via radio or sat phone and you have made arrangements to make the in-field check-in please move to an opening, closer to the road, and or to an elevation and try again until you reach someone who can pass on your message.
- Relay any updated information, such as new locations, return times and changing of personnel.
- Be aware if you will be working in a 'dead' radio zone.

4) Post Field Activity Check-In

- Ensure you erase your location and time information from the sign-out board **immediately** upon arrival back at the field station.
- If you do not return within 1 hour of your intended check in time, or by 7pm at the latest, a search will be initiated, if you cannot be found the lost persons protocol will be initiated
- Document near misses/incidents/accidents and provide information to the Field Program Manager or into the Safety/Comment box in the common area.
- Recharge radios & any emergency equipment at day-end

- Report equipment malfunctions/damages at day-end

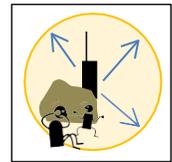
Standard Operating Procedure: Radio Use

1. Purpose and Scope:

It is the EMEND program and staff's desire to make the EMEND project the safest working environment that it can be. All work-sites have inherent danger and potential safety problems. Radios can be an important communication tool especially in an emergency. Knowing how to use one is important for our Emergency Response Plan to be successful. This SOP covers the use of Radios on all EMEND project sites for all staff, students, volunteers, and visitors.

2. Background:

- Radios unlike phones can only allow for one person to speak at a time on one frequency.
- If a "talk" button on one radio is pressed, no other radio can broadcast over the person who was speaking first
- These radios are line of site only. This means that only people within this "line-of-site" can hear you on the radio. Line of site means that if there is a large object between yourself and the person you are trying to communicate with the transmission may not go through



3. Procedure:

- Think about what you are going to say before you use your radio
- Speak in short simple sentences
- Listen before you start your own conversations, after a conversation is over wait 3 seconds then begin.
- Good radio language to use
 - GO AHEAD—resume your transmission
 - SAY AGAIN—re-transmit your message
 - STAND-BY—Transmission has been acknowledged, but I am unable to respond
 - ROGER—Message received and understood
 - AFFIRMATIVE--Yes
 - NEGATIVE--No
 - OVER—Transmission finished
 - OUT—Communication is over and the channel is available for others.
- Calling someone:
 - State the name of who you are looking for then your name and OVER
 - Example: (Adam)- Mike this is Adam. Over.
- Have your conversation, finishing your part with OVER. And the entire conversation with OUT
 - Ex.: (Mike)-Adam this is Mike, Stand-by. Over.
 - (Mike)-Adam this is Mike, Go ahead. Over
 - (Adam)-Mike, all is safe, we are on schedule and will be returning to camp for 6. Over
 - (Mike)-Roger. Take care on the way out; bad weather may be headed your way. Out.
 - (Adam)-Roger. Out.

Standard Operating Procedure: Radio Controlled Roads

1. Purpose and Scope:

It is the EMEND program and staff's desire to make the EMEND project the safest working environment that it can be. All work-sites have inherent danger and potential safety problems. Radio controlled roads are those industry roads where communication between drivers coming and leaving is essential. They offer hazards that are associated with loaded hauling trucks and often narrow forestry roads, as well as line-of-sight screened by dust, corner or hills. This Standard Operating Procedure (SOP) has been set in place, to help manage these potential hazards; it covers the protocol for driving on radio controlled roads for all staff, students, volunteers, and visitors of EMEND. Failure to follow these protocols could lead to dismissal or loss of site/camp facility use privileges

2. Personal Protective Equipment (PPE)

Mandatory

- Functioning Radio

Recommended

- Functioning Truck Radio with extender antenna

3. Procedure:

- LOADED means any traffic headed from an active area (leaving EMEND)
- EMPTY means any traffic headed into an active area (en route to EMEND)
- Identifying yourself as LOADED or EMPTY will indicate which direction you are traveling
- LOADED vehicles ALWAYS have the RIGHT OF WAY, slow down and give the bigger vehicle more room.
- Signs indicating the route and frequency required will be posted at the beginning of each road.
- Each Kilometer will be marked along the road
- Ensure your vehicle has all applicable frequencies and that they are functioning properly
- Radio usage should only be kept to location, direction of travel, each kilometer you pass, and relevant hazard alerts
- Remain on the proper channel at all times
- When entering the road call to identify yourself, current location and intended direction of travel
 - i. Ex.: "Empty pick-up entering at Sulphur Lake Road."
- Call to indicate your location along the way at every Km (on ATVs or in high use areas), or every other KM in vehicles
 - i. Ex.: "Empty pick-up at Kilometer 4"
- Indicate when you are clear of the road, either at a pull-out or when leaving the route all-together.
 - i. Ex.: "Empty pick-up pulled off between Km 2 and Km 3."
- Ex. "Empty pick-up off at Km 2". Do the same when you are re-entering the haul road at any point along it, whether by ATV or vehicle, advising of your entry km-location.
- Report all incidents, including near-miss events.

Standard Operating Procedure: Driving and Vehicle Use

1. Purpose and Scope:

It is the EMEND program and staff's desire to make the EMEND project the safest working environment that it can be. All work-sites have inherent danger and potential safety problems. Driving on loose gravel, dusty forestry roads, and after long days can create many safety concerns. It is for this reason that this Standard Operating Procedure (SOP) has been set in place, to help manage these potential hazards. This SOP covers all driver and vehicle use on all EMEND project sites and commuting to and from all EMEND sites for all staff, students, volunteers, and visitors. Failure to follow these protocols could lead to dismissal or loss of site and camp/facility use privileges.

2. Personal Protective Equipment (PPE)

Mandatory

- Seatbelt
- Shoes

Recommended

- Sunglasses

3. Procedure:

- Must be able to drive University of Alberta vehicles
 - i. Have a full Class 5 Licence (non GDL)
 - ii. Taken a certified defensive driving course
 - iii. Passed the University of Alberta driver test.
- Follow all posted highway and street signs and speed limits.
- No hand held devices while driving.
- No excessive consumption of alcohol 24 hours prior to driving, no consumption of alcohol 12 hours prior to driving
- Driving is considered work, you cannot work more than 14 hours in a day and you must arrive at your destination by 2200 hours (10pm)
- Reduce distracted driving: have others (front passenger) control radio and temperature, watch the road not your passengers, don't use aggressive hand motions, etc.
- Do not drive if you are excessively tired or emotional, pull over and take a nap, switch drivers, talk to each other
- Drive for the conditions (when necessary drive slow and use caution)
- Use caution when reversing
- Clean up the vehicles at the end of the day. Pick up your garbage restore any equipment used back to its proper place, return keys on the key rack.
- Wash vehicles every time you go into town for gas
- Park vehicles in "ready-to-go-position".
- Refrain from driving on the CANFOR haul road and the South Notikewin road shoulders when either is wet. This creates deep ruts that become major hazards when they later dry up. There is a very large potential to get vehicles stuck on the CANFOR haul road and the shoulders of the South Notikewin road.
- Keep an accurate log of all your trips, note the reason for driving, kilometers driven and whether you are towing
- Report all incidents including near-miss events.
- In the winter when parking vehicles ensure that everything is unplugged from the ACAdapter

Each Vehicle should contain

- Winch and remote
- Jack set and spare tire
- First aid kit and supplies
- Spill kit
- Tire pressure gauge
- Radio and antenna
- Trailer hitch and extra balls
- Fire extinguisher
- Backpack water tank
- Shovel, axe, &/or Pulaski

Standard Operating Procedure: Transportation and Use of Bear Spray

1. Purpose and Scope:

It is the EMEND program and staff's desire to make the EMEND project the safest working environment that it can be. All work-sites have inherent danger and potential safety problems. Bear Spray although rarely used can be a helpful tool or a hazard to your health. It is for this reason that this Standard Operating Procedure (SOP) has been set in place, to help manage this potential hazard. This SOP covers the use of and transportation of bear spray by all staff, students, volunteers, and visitors. Failure to follow these protocols could lead to dismissal or loss of site/camp facility use privileges.

2. Personal Protective Equipment (PPE)

Mandatory

- Bear Spray Clip Engaged
- Zip-lock Bag/air tight Container for storage and transport

Recommended

- Holster for easy carrying

3. Procedure:

- Inspect the can for sharp dents or creases, or cracked/damaged plastic head. Flag and label all such cans "for practice use only"
- Prior to entering a vehicle with bear spray ensure the clip is engaged and the nozzle cannot be activated, place in an air tight container or zip-lock bag to ensure zerocontamination
- Before bringing bear spray out into the field you must have completed the bear safety section in your orientation including Bear Safety Training
- Ensure your bear spray has not expired
- Keep it at close hand (on your belt or side backpack pocket)
- Do not spray into the wind
- Never point it at yourself, another person, or pet
- You must be in fairly close proximity for this deterrent to work (max range of approximately 5m)
- It is only to be used on charging or very aggressive animals, not to scare docile animals away
- Use all defensive practices to keep yourself out of bears proximity (i.e. talk loudly, be vigilant looking for signs of wildlife in the area, use your sense of smell, etc.)
- If needed follow the first aid recommendations as per the Label and MSDS
- Report broken clips to the Field Program Manager

Standard Operating Procedure: Wildlife Safety

1. Purpose and Scope:

It is the EMEND program and staff's desire to make the EMEND project the safest working environment that it can be. All work-sites have inherent danger and potential safety problems. Wildlife is a major concern while working in the field. Bears, wolves, and moose are omnipresent at the EMEND camp and the EMEND forest research site; it is for this reason that this Standard Operating Procedure (SOP) has been set in place. This SOP covers the safety protocols used to prevent wildlife encounters and how to respond to wildlife if they are encountered for all staff, students, volunteers, and visitors. Failure to follow these protocols could lead to dismissal and/or loss of site/campfacility use privileges.

2. Personal Protective Equipment (PPE)

Mandatory

- Bear spray
- Whistle

Recommended

- Bear Bells
- Air Horn
- Bear Bangers

3. Procedure:

- All persons working at EMEND are required to take a certified bear awareness course before coming to the EMEND site, if you have not attended one a mandatory Bear Awareness Orientation will occur.
- Be seen, be heard, be smelled, be aware
- As with any safety issue, you may avoid an area for a period of time if you feel that bears or other wildlife is a threat to you.

At the EMEND Camp Site

- No food in tents. (Please talk to the field program manager if you have any medical conditions that require quick access to food [diabetes])
- No scented products (toiletries, soaps, lotions, etc.) in the tents. These products are to be stored in the main building.
- Each tent has an air horn. Know how to use it. Do not use as a toy.
 - Press button on back, with the horn pointed away from you
- Ensure that the lid is on the garbage bin and recycling can securely.

At the EMEND Field Site

- Use caution while traveling in the bush. Be aware at all times.
- Carry bear deterrent (bear spray or bangers), have it easily accessible, and know how to use it
- Watch for signs of bears in the area (prints, dig-outs, scat, food sources, kills)
- Make noise as you walk and more frequently if you are being still. Conversing with your partner is a great option. Bear bells (bronze or brass) are also a great solution, since no effort is required to gain sound. Use air horns during long periods involving stationary work & doing ground plotwork.
- Control all food attractants (leave no food waste, plastic bottles or packaging at work-site or in pick-up truck beds, double-bag food, avoid scented personal products and gum)
- Make note of where you have seen a bear/animal and alert others to the sightings (use the bear map in the EMEND camp and tell others verbally)
- Contact Fish and Wildlife when a bear has become a problem

- Report all incidents (provoked or predatory wildlife behavior)

Standard Operating Procedures: Extreme Weather Events

1. Purpose and Scope:

It is the EMEND program and staff's desire to make the EMEND project the safest working environment that it can be. All work-sites have inherent danger and potential safety problems. Extreme weather can be very hazardous to anyone caught out in it. Extreme weather event can describe as high winds, extreme hot and cold temperatures, lightning, heavy precipitation, and hail. This Standard Operating Procedure (SOP) has been set in place, to help manage the potential hazards associated with extreme weather for all for all staff, students, volunteers, and visitors of EMEND. Failure to follow these protocols could lead to dismissal or loss of site/camp facility use privileges.

2. Procedure:

- Always be aware of the weather before going out for the day. Keep an eye on the sky and be aware of unexpected changing weather conditions.
- If weather becomes extreme it is best to stop work, and return to camp as soon as possible. Please use your best judgement.
 - i. Examples of this are:
 - Thunder with dark clouds upon you
 - Thunder with dark clouds in the distance
 - Sighted Lightning
 - Winds over 50km/h (observable large branches or trees moving in the wind)
 - Temperatures in excess of 35°C (with or without humidex)
 - Temperatures below -35°C (with or without wind-chill)
- The EMEND Field Program Manager may close the site to work in cases where weather conditions or road conditions caused by weather conditions are at their worst
- Report all incidents/including near misses

Standard Operating Procedure: Use of Winches

1. Purpose and Scope:

It is the EMEND program and staff's desire to make the EMEND project the safest working environment that it can be. All work-sites have inherent danger and potential safety problems. Winches can be unpredictable, causing serious injury or fatality and more damage than good when they are not used responsibly. It is for this reason that this Standard Operating Procedure (SOP) has been set in place, to help manage these potential hazards. This SOP covers the use of winches by all staff, students, volunteers, and visitors. Failure to follow these protocols could lead to dismissal or loss of site/camp facility use privileges.

2. Personal Protective Equipment (PPE)

Mandatory

- Leather Work Gloves
- Hook Strap
- Cable Dampener (heavy jacket, cruise vest, etc.)
- ATV helmet and Safety Glasses (on ATVs)

Recommended

- Tree trunk protector
- Snatch block
- Clevis/D-shackles

Fairlead



D-Shackle / Clevis



3. Procedure:

- Always keep hands, clothing, and remote cord clear of the wire, hook away from fairlead (guide for the winch cable/opening in winch) during operation and spooling
- Inspect the wire rope and hook/clevis before and after each winching operation
 - i. If there are 4 broken wires in one strand or 12 broken layers in Lay (where a strand makes a full rotation around a rope), if there is a kink, it is flattened, or has a "birds nest" it is time to change the wire rope.
- All new winch cables need to be stretched before taking them into the field. (Whether they are new winches or recently replaced winch cables.)
- Need to leave engine running as the winches run off the batteries
- Work at least one arm's length away from the winch
- When recoiling the winch, walk hand over hand on the rope do not let it run along/through your hands
- Never step over the winching line, if it is on the ground step on it
- Only trained personnel can use the winches, only one person should be in control of the winch, rope, and control switches
- Before you pull
 - i. Take the time to analyze every situation, plan your pull carefully
 - ii. Use the right equipment for your situation
 - iii. Think safety at all times
- Set up
 - i. Put on gloves
 - ii. Disengage the winch clutch
 - iii. Free the winch hook and attach hook strap
- Pull wire to anchor point

- i. Secure to the anchor point using extra strapping and D-Shackle (never secure the hook to the wire rope or directly to a tree) (To properly use a D-shackle--finger tightened then let off ½-¾ turn.)
 - ii. Lock the clutch
 - iii. Connect the remote control (if available—ATVs do not have them, but trucks do)
 - iv. Put your wire rope under a bit of tension
 - v. Check your anchor (no kinks, well secured, and free of debris)
 - vi. Check the wire cable to ensure it is neatly wound around the spooling drum
 - vii. Lay a jacket or cruise vest over the wire rope about mid-way (cable dampener) (this will absorb the energy if the wire cable should snap loose).
 - If there is a connection in the line make sure both ropes have a cable dampener
 - viii. Make your intentions clear to everyone within the vicinity/surroundings; ensure no one is in the “No-People Zone” (the length of the wire rope on either side.)
 - ix. If in your vehicle put the hood up and get into your vehicle to add protection to yourself, if you are on an ATV put your helmet and safety glasses on and stay on the ATV
- Winching
 - i. With the vehicles engine on and light tension already on the rope begin to slowly and steadily wind in the winch
 - ii. Be sure that the rope is winding evenly and tightly around the spooling drum
 - iii. If need be the vehicle can be driven slowly backwards while the winch is pulling
 - iv. Avoid over-heating the winch motor, for extended winching stop at reasonable intervals to allow the winch motor to cool down
 - v. With vehicles: if you are able to drive the vehicle the winching operation is complete. Secure breaks and put transmission into park then release the tension in the wire rope.
 - vi. Disconnect wire rope from anchor
 - vii. Rewind wire rope. Walk the rope in hand over hand keeping light tension
 - Ensure that wire rope already spooled is wound tightly and evenly layered
 - Hold hook strap when it becomes necessary (too close for hands)
 - Store the hook at the fairlead or tensioned to a suitable location to the side
 - Disconnect remote control and store in clean and dry place
 - Report all incidents, including near miss events, and equipment malfunctions or damage (cable, hook, clevis, and electronics).

Standard Operating Procedure: Landing Helicopter on Site

1. Purpose and Scope:

It is the EMEND program and staff's desire to make the EMEND project the safest working environment that it can be. All work-sites have inherent danger and potential safety problems. Landing helicopters can add numerous other dangers and hazards to workers if they are not aware. It is for this reason that this Standard Operating Procedure (SOP) has been set in place, to help manage these potential hazards. This SOP covers what to do in the event that a helicopter is being used on for all staff, students, volunteers, and visitors. Failure to follow these protocols could lead to dismissal or loss of site/camp facility use privileges.

2. Background

The EMEND old camp site is also a helicopter landing site and fuel storage area. Throughout the season helicopters related to work being done on the EMEND Site, and work not related to EMEND business can be using the EMEND landing site for refueling or loading and loading supplies and people.

3. Procedure:

- Vehicles, ATVs and Trailers should be parked on the outskirts of the drive through road.
- If helicopter is approaching landing site
 - i. Clear out of middle area and move behind vehicles
 - ii. Move any object that could be hazardous to the helicopter or the passengers
 - iii. Ensure all light loose equipment, clothing, bags, etc. are held down
 - iv. Be aware that the down draft associated with the rotor blades can cause debris to move throughout the area and is a potential inhalation and eye irritant
- If you are waiting for the helicopter, and will be a passenger, wait for
 - i. The blades to stop spinning
 - ii. The blades to slow down
 - iii. Or the pilot to signal the ok to approach. (This should be pre-arranged with the pilot)
- When approaching or exiting the helicopter
 - i. Always approach the helicopter from the front, NEVER FROM THE REVERSE
 - ii. Stay low and keep your head down
- Listen to all pre-flight safety instruction, as all helicopters are slightly different and pilots sometimes have their own rules
- Bear spray requires stowage external to the helicopter and in secure sealed safety containment, in case the canister is compromised in stowage.

4. Tips For New Flyers

- Don't look straight down, focus your sight on something in the distance
- Don't focus on one thing, scan across the horizon, etc.
- Take deep breaths, and relax
- If you feel too hot, ask for the heat to be turned down or open the window (inform the pilot)
- Let the pilot know if you are not feeling well (it is quite common to feel air sickness)
- Try not to focus on something inside the cabin (documents, etc.) unless you have to
- Take pictures...inside and out
- Enjoy yourself...there isn't a better view then the one you have up there!

Standard Operating Procedure: All-Terrain Vehicles and Quads

1. Purpose and Scope:

It is the EMEND program and staff's desire to make the EMEND project the safest working environment that it can be. All work-sites have inherent danger and potential safety problems. The use of All-Terrain Vehicles (ATV) and Quads can increase this danger and create more hazards. It is for this reason that this Standard Operating Procedure (SOP) has been set in place, to help manage these potential hazards. This SOP covers the maintenance and use of All-Terrain Vehicles (ATVs) and Quads for all staff, students, volunteers, and visitors of EMEND. Failure to follow these protocols could lead to dismissal or loss of camp/facility or site use privileges.

2. Personal Protective Equipment (PPE)

Mandatory

- Helmet
- Safety glasses/goggles
- Gloves

Recommended

- Steel-toed Boots
- Tire Fix kit and hand pump

3. Procedure:

- You must provide documentation of having taken a certified ATV training.
- Pre-inspect operating function and breaks, tires, seals/boots
- All mandatory PPE must be worn at all times while operating an ATV.
- There will be no excessive consumption of alcohol/drugs 24 hours prior to the use of any ATV and no use of alcohol or drugs 12 hours prior to the use of any ATV.
- Always adjust your driving to the road and weather conditions.
- No doubling on a quad for any reason.
- 60km/h is an appropriate speed to travel while on open roads. Slower speeds are necessary for trails, curves/bends in the road/trail, and muddy/wet spots and travelling in heavily grassed cut-lines.
- Stay on your side of the road. Yield the way to any large vehicles encountered on the roads. Pull off the road into the ditch to allow large vehicles to pass safely on the road.
- Due to tire kick-back (rock chunks and dust) keep your distance from riders ahead of you.
- Be aware that exhaust manifolds and tail pipes can be exceptionally hot. Do not park ATVs in tall dry grass as this is a potential fire hazard.
- Help keep the quads well maintained. If you are having a mechanical problem with your ATV please immediately notify the field program manager to have the machine repaired.
- Use caution when filling ATVs with fuel.
- Find a fairly level, "hardened" spot to fill your ATV
 - i. Cool tanks slightly
 - ii. Pour slowly from the provided jerry cans
 - iii. Do not over fill
 - iv. Report fuel spills
 - v. Secure tank cap firmly
- Report all incidents including near miss events, equipment malfunction or broken parts

Standards Operating Procedure: Campfire Use

1. Purpose and Scope:

It is the EMEND program and staff's desire to make the EMEND project the safest working environment that it can be. All work-sites have inherent danger and potential safety problems. Fire is especially dangerous, most notably for those who do not respect it. It is for this reason that this Standard Operating Procedure (SOP) has been set in place, to help manage these potential hazards. This SOP covers campfire use on all EMEND project sites for all staff, students, volunteers, and visitors. Failure to follow these protocols could lead to dismissal or loss of site/camp facility use privileges.

2. Personal Protective Equipment (PPE)

Mandatory

- Bucket of water or back-pack sprayer

Recommended

- Fire Extinguisher

3. Procedure:

- Be aware of the forest fire rating. If the rating is high, campfires will be banned at EMEND
- All campfires must be cleared through the EMEND Field Program Manager
- Campfires can only be burnt in the designated campfire pit at camp and on the gravel at old camp (if you are camping at old camp)
- Keep fires small
- Place wood onto fire; do not throw it on. This can cause excess sparking
- Make sure the fire is completely out before you leave it un-attended.
- Do not burn anything other than vegetative matter (wood, leaves, and grass) and paper.
- The Field Program Manager may ask you to burn excess cardboard, if you see excess cardboard piling up and are going to have a fire please check to see if it needs to be burned.

Standard Operating Procedure: Axe Use

1. Purpose and Scope:

It is the EMEND program and staff's desire to make the EMEND project the safest working environment that it can be. All work-sites have inherent danger and potential safety problems. It is for this reason that this Standard Operating Procedure (SOP) has been set in place, to help manage these potential hazards. This SOP covers the use of axes on all EMEND project sites for all staff, students, volunteers, and visitors. Failure to follow these protocols could lead to dismissal or loss of site/camp facility use privileges.

2. Personal Protective Equipment (PPE)

Mandatory

- Work Gloves
- Safety Glasses
- Steel-toed Boots

Recommended

- Long Pants

3. Procedure:

- Inspect axe-head fit and handle-integrity
- Stake off and area with flagging tape as a designated wood cutting area. Only people suitably dressed and using the axe may be in this area at one time
- Use the axe in the designated wood chopping area only (this will be flagged off)
- Use the axe in daylight hours only
- Steel toed boots are required when using an axe
- Use the appropriate sized axe for the job
- Ensure that the axe you are using is sharp
- Do not stand near someone who is using an axe
- While handling an axe, watch for mud, loose gravel, or other items that may cause you to slip and fall
- Do not run while holding an axe
- If the axe head is loose ensure you stop using it and notify the Field Program Manager

Standard Operating Procedure: Loading, Securing, & Hauling Trailers

1. Purpose and Scope:

It is the EMEND program and staff's desire to make the EMEND project the safest working environment that it can be. All work-sites have inherent danger and potential safety problems. Trailers can often present a number of challenges and dangers to those who haul and load trailers; it is for this reason that this Standard Operating Procedure (SOP) has been set in place. This SOP covers the loading, securing, and hauling of trailers by all staff, students, volunteers, and visitors of EMEND. Failure to follow these protocols could lead to dismissal or loss of site/camp facilities use privileges.

2. Personal Protective Equipment (PPE)

Mandatory

- Work Gloves
- Security Straps
- Helmet

Recommended

- Long Pants
- Steel-toed Boots

3. Procedure:

- Only individuals who have taken the Truck and Trailer Safety workshop may load and haul trailers
- Individuals who have not attended the workshop may help secure as long as their work is checked by the driver
- Pre-inspect equipment and parts condition (including tires, brakes function, tie-downs, hitch)
- Loading & Unloading:
 - i. Extra precaution needs to be taken when loading/unloading ATVs onto/from trailers or trucks for transport.
 - ii. Ensure the ramps are attached to trailer or truck and are an appropriate distance for wheel spacing and angle for ascent/descent
 - iii. Helmets and other PPE are to be worn while loading and unloading ATVs
 - iv. Slow and gradual speed up the ramps onto trailer or truck bed is important
 - v. Do not turn the wheels; go straight up and straight down.
 - vi. Have a spotter who can be well away from you but see that tires are properly aligned
 - vii. To load stand up and put your weight forward on the ATV. To unload sitting is fine
 - viii. Let the most experienced individual do the quad loading.
- Securing:
 - i. Ensure that you have a strong enough strap for the size and weight of the ATV (check the tags).
 - ii. Always double the weight of the ATV, use 4 tie downs, one on each corner
 - iii. Attach tie downs to non-suspension areas (don't go up and over the seat or cage. This will activate the suspension and cause you to have to tighten the straps every time you drive over a bump)
 - iv. If possible place the latches where you can see them in your mirrors.
 - v. Tie off and tuck in all excess strapping
- Hauling:
 - i. Do a pre-trip inspection of the truck and trailer
 - ii. If trailer has brakes test the brakes manually at a slow speed

- iii. Ensure all ATVs are secured and that no straps are loose
- iv. Adjust mirrors to the trailer
- v. Check the load and straps after 10 minutes of travel
- vi. Any time you stop check the load and all the straps
- vii. Do not over-steer
- viii. Do not drive over 100km/h, drive to the road conditions and weather
- ix. Increase your following distance
- Backing Up:
 - i. Use your mirrors do not look back over your shoulder
 - ii. Have a guide to help you (roll down your window and use vocal and pre-arranged hand signals)
 - iii. The trailer goes in the opposite direction to the towing vehicle in reverse
 - Turning your vehicles wheels to the right will make it go left and vice versa
 - Put your hand on the bottom of the steering wheel the trailer will go in the same direction your hand moves
 - iv. Sharp steering wheel corrections will cause the trailer to jack-knife and may cause damage to your vehicle, the trailer and the ATVs
 - v. If you can find somewhere to pull through and avoid backing up do so.
- Report all incidents including near miss events and equipment damage/wear

Standard Operating Procedure: Chainsaw and Brush-saw Use

1. Purpose and Scope:

It is the EMEND program and staff's desire to make the EMEND project the safest working environment that it can be. All work-sites have inherent danger and potential safety problems. Chainsaws and Brush-saws present an even greater hazard when not dealt with properly; it is for this reason that this Standard Operating Procedure (SOP) has been set in place. It covers the use of chainsaws and brush-saws on all EMEND project sites for all staff, students, volunteers, and visitors. Failure to follow these protocols could lead to dismissal or loss of site/camp facility use privileges.

2. Personal Protective Equipment (PPE)

Mandatory

- Ear Muffs with no alterations (24dbs or higher rating)
- Hard hat with face shield
- Saw Pants (rated 2900)
- Cruise Vest / High visibility
- Leather Work Gloves
- Steel-toed Boots
- Whistle
- Safety Glasses

Recommended

- Forestry Standard Boots (labeled with a green background with white tree)

3. Procedure:

- Only certified individuals can handle chainsaws and brush-saws. Please provide certification to field program manager
- No one goes out alone, other individual should have some form of training
- Pre-inspect all equipment parts & condition, including PPE equipment
- Do not do anything out of your comfort zone, leave tasks that are too big or difficult to seasoned chainsaw veterans
- Assistants must keep back at least 2 tree lengths from the place you are falling a tree and be at least 25 feet from a place where you are bucking
- An assistant must wear a hard hat, ear protection, steel-toed boots, face shield, cruise vest and whistle
- Never stand downhill of a tree you are felling
- Take your time with each cut and know the consequences of each cut you make
- Keep your chainsaw well maintained. Any maintenance problems you cannot deal with on your own please bring to the attention of the Field Program Manager so they can have them properly repaired
- Report all incidents including near-miss events and malfunctioning or missing equipment.

Standard Operating Procedure: Entrance and Data Collection in Burned and Slash-Harvest Stands

1. Purpose and Scope:

It is the EMEND program and staff's desire to make the EMEND project the safest working environment that it can be. All work-sites have inherent danger and potential safety problems. An area where a fire has gone through can be quite dangerous; dead trees with little stability, over hanging branches and many more hazards lurking in burn areas. It is for this reason that this Standard Operating Procedure (SOP) has been set in place, to help manage these potential hazards. This SOP covers the procedure for the entrance and collection of data in burnt stands on all EMEND project sites for all staff, students, volunteers, and visitors. Failure to follow these protocols could lead to dismissal or loss of site/camp facility use privileges.

2. Personal Protective Equipment (PPE)

Mandatory

- Hard Hat
- Steel-toed Boots
- High Visibility Cruise Vest
- Work Gloves
- Safety Glasses

Recommended

- Long sleeves and Pants

3. Procedure:

- Be aware of your surroundings, these are much more unstable than regular forests
- Assume every tree is a hazardous tree
 - i. Watch for snags (large dead trees), overhead dead branches, bare/exposed roots, leaning trees
- Never enter a burned area on a windy day
- Flag particularly hazardous trees to let others know, and inform everyone to their whereabouts
- Avoid physical contact with any hazard tree
- Exercise extreme caution while travelling across areas of deadfall and slippery log surfaces, recognizing sharp-branch penetration hazards
 - While in these areas it is important to check the stability of downed trees before climbing over or under them. If safe it is better to climb over rather than under the downed tree
- Report all incidents including near miss events.

Standard Operating Procedure: Working Alone in the Field

1. Purpose and Scope:

It is the EMEND program and staff's desire to make the EMEND project the safest working environment that it can be. All work-sites have inherent danger and potential safety problems. Fieldwork can present many new hazards while increasing response time for emergencies. Working alone can be even more hazardous. EMEND Management describes working Alone As: working in an area where you cannot easily get help if you are injured, become ill, or there is an emergency; a) regular season: work where you and your partner cannot easily see and hear each other , b) offseason: work in a partner/group, when no other research group is on site. While EMEND discourages working alone in the field it is also understood that there may be a time and a place where it may be necessary. It is for this reason that this Standard Operating Procedure (SOP) has been set in place, to help manage the hazards associated with working alone in the field. This SOP covers those individuals working alone in the field on all EMEND project sites for all staff, students, volunteers, and visitors. Failure to follow these protocols will lead to dismissal or loss of site/camp facility use privileges.

2. Personal Protective Equipment (PPE)

Mandatory

- Radio
- Satellite (SAT) Phone
- First aid equipment
- Whistle
- Adequate clothing
- Fire starter (lighter)

Recommended

- Spot Locator Device /Other location/communication device

3. Procedure:

- Follow all other contingent SOPs
- Working alone in the field is **ONLY** acceptable after approval by the Field Program Manager
- If you feel that it is essential to work alone in the field, present and discuss your safe working practices with the Field Program Manager. You must receive approval from the Field Program Manager in order to work alone. (Please see the appendix for Working Alone in the Field Approval Form)
- Things to think about when creating this plan:
 - i. Number of members going out
 - ii. Distance between crew members
 - iii. Radio communication/contact
 - iv. Well defined and known locations and routes between locations
- Coordination with other crews present at the EMEND site
- Report all incidents including near-miss events.

Standard Operating Procedure: Snowmobile Use

1. Purpose and Scope:

It is the EMEND program and staff's desire to make the EMEND project the safest working environment that it can be. All work-sites have inherent danger and potential safety problems. The use of Snowmobiles can increase this danger and create more hazards. It is for this reason that this Standard Operating Procedure (SOP) has been set in place, to help manage these potential hazards. This SOP covers the maintenance and use of Snowmobiles for all staff, students, volunteers, and visitors of EMEND. Failure to follow these protocols could lead to dismissal or loss of camp/facility or site use privileges.

2. Personal Protective Equipment (PPE)

Mandatory

- Helmet
- Safety glasses/goggles
- Appropriate Winter Clothes (see Appendix 29: Safety Equipment Requirements and Appendix 30: Field Equipment Gear List)
- Winter Safety Kit (see Appendix 29: Safety Equipment Requirements and Appendix 30: Field Equipment Gear List)
- Snowmobile Minor Repair Kit

Recommended

- Steel-toed Winter Boots

3. Procedure:

- You must provide documentation of having taken a certified Snowmobile Safety training.
- Do a pre-ride inspection: throttle, breaks, track, running board, lights, etc.
- All mandatory PPE must be worn at all times while operating a snowmobile.
- There will be no excessive consumption of alcohol/drugs 24 hours prior to the use of any ATV and no use of alcohol or drugs 12 hours prior to the use of any ATV.
- Always adjust your driving to your comfort/training, and road and weather conditions.
 - i. Remember: Slower speeds are necessary for trails, curves/bends in the road/trail, and muddy/wet spots and travelling in heavily grassed cut-lines.
- Yield the right-of-way to oncoming traffic
- Stay on your side of the road. Yield the way to any large vehicles encountered on the roads. Pull off the road into the ditch to allow large vehicles to pass safely on the road.
- When Crossing roads:
 - i. Always bring your Snowmobile to a complete stop
 - ii. Try to stay at least 30m or more from an intersection
 - iii. If possible cross at a 90-degree angle
 - iv. Choose the shortest but safest location where obstructions do not make it difficult/unsafe
- Help keep the Snowmobiles well maintained. If you are having a mechanical problem with your snowmobile please immediately notify the field program manager to have the machine repaired.
- Ensure you have enough gasoline for your trip (there, travel at the site, and back)
- Use caution when filling Snowmobile with fuel.
- Find a fairly level, "hardened" spot to fill your ATV
 - i. Cool tanks slightly
 - ii. Pour slowly from the provided jerry cans

- iii. Do not over fill
- iv. Report fuel spills
- v. Secure tank cap firmly
- Report all incidents including near miss events, equipment malfunction or broken parts

Reference Procedures

Reference procedures are those tasks that are under taken on a regular basis. They are available to those who are unsure (due to newness or generally not a regular task) of how to proceed or need a little help. You only need to know the procedures that are pertinent to your job.

- Reporting Hazards, Near Misses, and Incidents/Accidents 47
- Preparing for a Day in the Field 48
- Living at Camp 49
- Field Work 52
- Camp Cook / Catering Company Duties 53
- Field Program Manager Duties..... 54
- Program Auditing—Internal and External 57

Reference Procedures: Reporting Hazards, Near Misses, Incidents/Accidents

It is the responsibility of all personnel, students and visitors to inform the FPM/PM regarding any hazards observed, and/or near misses and/or incidents/accidents that occur on the EMEND Site and while at the EMEND field camp. It is EMEND management's desire to have an open community where everyone feels comfortable bringing these topics to the attention of the FPM/PM at any time. We are not recording this data to point fingers or accuse individuals of anything. The purpose of this recording is merely to help us create an appropriate Safety Plan that captures all potential hazards and incidents, prevents recurrence and to ensure the safety of all employees, students and visitors. Please tell your FPM/PM or fill out one of the hazard or near miss forms and place in the envelope on the door of the office and bring incidents to the immediate attention of the FPM/PM.

Hazard: (a) a danger or risk. (b) Puts something at risk of being lost or damaged.

Incident: an occurrence or event that interrupts normal procedure and could precipitate a crisis.

Near Miss: an unplanned event that did not result in injury, illness, or damage but had the potential to do so.

Please report hazards as soon as you can and please provide this information to the best of your knowledge:

- The location (get GPS coordinates if possible, and or give landmarks)
- What the hazard is (fallen tree, leaning tree, high winds, behaviour of individuals, bad roads, etc.)
- Any equipment that might be needed to rectify the problem
- Time the hazard was encountered; if filling out the form, the date encountered)

Please report near misses to the FPM/PM as soon as you return to camp (unless they pose a hazard to other on the site, then report the near miss as soon as possible). When reporting near misses please provide:

- The date near miss occurred and the date you are filling out the form
- Your name (if you choose) and anyone else that was involved (if you choose)
- The near miss
- The location (GPS coordinates if possible)
- Describe what happened and any action taken to stop the incident from occurring again

When an incident occurs please report it as soon as possible. Together with the FPM/PM you will complete an incident form with this info:

- Individuals names
- Time and Date of incident
- Description of the incident
- Witnesses names
- Any Property damage
- An assessment of why it happened
- Any corrective actions/measures being set in place to rectify the issues.

Reference Procedures: Preparing for a Day in the Field

If you are new to field work and/or EMEND you may be wondering about many aspects of the day: What to bring, what to wear, how the weather will affect your work and the sort of schedule to expect.

What to wear

- Layers (to adjust to the daily temperature ranges)
 - Long underwear
 - Field pants (water resistant and fast-drying)
 - Long sleeved shirt (keeps bugs and bug spray off your skin)
 - Warmth layer (sweater, jacket)
 - Wool/acrylic socks (keeps your feet warm even when wet)
- Steel-toed boots or hiking boots
- Cruise Vest/other reflective safety vest
- Toque (it can be cool in the morning hours) or hat (to keep the sun off your face and or neck)

What to bring

- Rain gear (should be durable, coated nylon seems to work best)
- Compass (and GPS device)
- First aid kit and whistle (Fox 40)
- Emergency Cards
- Protective safety glasses
- Insect repellent and/or a bug hat/bug jacket
- Bear spray or bear bangers
- Sunscreen
- Water bottles
- Swiss knife or a Leatherman
- Rite in the Rain book and pencil
- Lunch (Tupperware or other hard sided container to keep lunch from being squished)
- Equipment for the day
- Shoes to change into when you get back to the vehicles + extra pair of socks
- Fire starter (lighter)

Morning Schedule

- Check the weather and dress appropriately (be prepared for all weather)
- Fill out the white board appropriately with all the info (Who, Where (compartments &/or UTM's), Time out and expected time in) and record info into your Daily Safety Briefing Log Book. (see SOP morning tailgate safety meeting and Signing out and In)
- Grab your vehicle keys and Radio on the way out.
- Ensure you have your Emergency cards on your person along with radios, Sat. Phones, map books, and bear spray.
- Have your Morning Safety Meeting (ensure everyone is on the same page about the hazards/risk, event schedule, and Emergency first response)

Upon Returning

- Park ready to go in the lot
- Sign in by erasing your info off the white board
- Return your keys to the key board
- Put your radio back onto the charger properly
- Fill out/submit near miss/incident/accident info
- Mark any bears sighted on the Bear Map

Reference Procedures: Living At Camp

Campfires

- Campfire acceptability is based on the Forest Fire Index.
- All campfires must be cleared through the EMEND Field Program Manager
- Keep fires small
- If you are having a fire you may be responsible to burn any excess cardboard at camp. The EPC/FPM will inform you of this when approached for permission for a fire.
- For more on campfires please see the SOP: Campfire Use

Drugs, Alcohol, and Smoking

- The use of banned substances (drugs) is not permitted on University/EMENDs property.
- Minimal alcohol use will be allowed at the EMEND Camp at the discretion of the Field Program Manager. Over indulgence will not be tolerated.
- **NO SMOKING** in any tents, buildings, or near any fuel containers.
- Smoke only in areas with barren, mineral soil ground (i.e. a haulroad).
- Do not walk around with a lit cigarette/cigar. If you are going to smoke, stop and remain in one place.
- When finished, make sure cigarette/cigar is out carry out your filters/butts.
- If you smoke, you must make sure your cigarette/cigar is out. You may be held accountable for costs of fighting a fire caused by your cigarette.
- There is a coffee tin by the picnic table for butts while at camp

Assigned Accommodation

- Accommodations will be assigned by the field program manager.
- Generally opposite sexes do not share sleeping quarters (some exceptions may be required. i.e. sleep schedules, etc.)
- There will most likely be two people per room/tent; although more could be possible in high activity times
- The washroom facilities are shared between men and women

Living in Tents

- **NO FOOD** in tents. No exceptions (talk to EMEND coordinator if you have medical conditions that require you to have food nearby, i.e. diabetes).
- No scented items (toiletries, soaps, lotions, etc.) in tents. These items are to be kept in the provided area.
- Each tent is equipped with an air horn; this is only to be used to scare off wildlife.
- Remember that you are sharing a tent with others. Please be respectful of their space and belongings.
- Ensure you wear clean shoes inside the tents to reduce chances of slivers but make sure you do not wear muddy shoes/boots/clothing inside the tents; leave this in the mud room.
- Keep tent clean and tidy it up before leaving
- Keep doors zipped closed as much as possible to reduce bugs.
- Hantavirus is a potential hazard. Please use proper cleaning procedures to clean out tents. Wear a mask and gloves when handling traps or dead mice and sweep/mop tents.

Rules

- Respect others, the camp and your equipment.
- Conserve water as much as possible.
- Keep it clean...to keep yourself and others healthy.

- Washroom – Always wash your hands after using the washroom! Wipe the taps/sink area after use so it is clean for others. Wipe out and spray the shower with daily cleaner after you are finished showering.
- Common Room/Mud Room - If you make a mess, clean it up. Remove soiled footwear/clothing outside and carry it in. Try to keep work areas tidy in case others need to use them.
- Keep it quiet...There are others who may be working/sleeping on a different schedule than you are. Sound carries and you do not wish to disturb others.
- If you need to borrow an item from the core crew/camp, please ask first. Return the item when you are finished using it. Respect borrowed items and return them clean and undamaged (see Appendix for Equipment sign out form)
- Place refundable containers (bottles/aluminum cans/juice containers/milk jugs) and *rinsed* recyclables (cardboard, plastics, cans and glass) in the appropriate sorting containers provided. Ask if you are unsure about the location of the sorting containers.
- Return dishes to the kitchen after use so they are available for the next meal. Clear your dishes from the tables diligently after meals so the cook is not waiting on you to finish their work.
- Close any open windows in the bedrooms and lab areas if you are leaving for extended periods of time. If it rains, the window casings will be damaged.
- If you empty the bottle of drinking water at the water cooler, replace it with a new one. Full bottles can be found outside. Place the empty bottle outside beside the full ones.
- Use the shoe rack in the boot room so others don't trip coming into camp.
- Manage wildlife attractants around camp to prevent wildlife risk. Coyotes and bears are omnipresent, opportunistic and nocturnal.

The Kitchen

- The Kitchen is the COOK'S DOMAIN and they are the boss of it! Please follow these "rules" for your safety and the health of others. If you need something from the kitchen please ask first.
- Inside shoes must be worn at all times while in kitchen and dining room (no bare feet!).
- Wash hands before meals. There are many people handling same serving utensils.
- Handle food with tongs or serving fork/spoon; never with hands. Ask the cook if serving utensils are absent.
- Do not wash your dishes. Simply rinse them in the far left sink and leave them beside the sink
- Do not attempt to operate the range, fryer, oven, or dishwasher without proper instruction.
- Do not go into the kitchen/pantry room fridges without asking first.
- If you make a mess in the dining room, please tidy it up.
- Do not use the kitchen as a pass through between hallways; use the common room or the washroom.

First Aid Equipment

- First Aid Supplies can be found in the main building, the lab, and each of the vehicles (please see the attached appendices a list of the contents of each type of first aid kit)
 - The main building (common room) and Labs have #3 First Aid Kits, 3 blankets, and a splint
 - The main building also has an AED machine found in the common room (rented from the U of A)
 - The trucks have #2 First Aid kits with 3 blankets, a splint and one vehicle will have a stretcher. (please see the attached appendices for first aid contents)
 - All personnel traveling into the field will carry with them a personal first aid kit.
- All first aid kits will be sealed. If you are injured please break the seal and have someone treat your injuries. Fill out the First Aid Report Form, Incident Report Form, WCB Workers Incident Report form, and First Aid Equipment Use and restocking form. (See attached appendices)

- First aid kits will be checked on a yearly basis or when used

Fire Extinguishers

- Fire Extinguishers are designed to put out a small fire, not a large one. Extinguishers are labelled ABC or D. Ensure you use the right extinguisher for the appropriate type of fire
 - Ordinary Combustibles:** Fires started with paper, wood, drapes and upholstery requires a Class A type extinguisher.
 - Flammable and Combustible Liquids:** Fires originating from fuel oil, gasoline, paint, grease in a frying pan, solvents and other flammable liquids require a Class B type extinguisher.
 - Electrical Equipment:** Fires started with wiring, overheated fuse boxes, conductors, and other electrical sources require a Class C type extinguisher.
 - Metals:** Certain metals such as magnesium and sodium require a special dry powder Class D type extinguisher.
- A multi-purpose dry chemical labeled ABC puts out most types of fires: wood, paper, cloth, flammable liquids and electrical fires.
- If you need to use one remember to PASS:
 1. **Pull** the pin. Some units require the releasing of a lock latch, pressing a puncture lever, inversion or other motion.
 2. **Aim** the extinguisher nozzle (horn) at the base of the fire.
 3. **Squeeze** or press the handle.
 4. **Sweep** from side-to-side at the base of the fire and discharge the contents of the extinguisher.

Emergency Exits

- The main building has 4 emergency exits. Please follow the posted emergency routes to escape in case of a fire (Please see the emergency route appendix)

Positive Mental Health and Isolation

- Positive mental health is the balance of all aspects of your life (social, physical, spiritual, and mental). Finding this balance is not always easy. Everyone's balance is different.
- Assess your personal mental health regularly. Consider the demands and stresses you are facing and how they are affecting you.
- Mental health issues affect 1 in 5 Canadians during their lifetime. This means that all of us will either be personally affected, or know someone affected by poor mental health.
- Mental health issues affect all ages, races, genders, and religions.
- It is common to experience mental health issues when you are away from your family and friends, in an unfamiliar place, and/or isolated.
- There are a number of things you can do to practice/keep positive mental health:
 - Connect with family and friends on a regular basis
 - Eat a balance diet and exercise
 - Give yourself leisure time and/or practice a hobby
 - Find something to relieve the stress (walking, kick-boxing, reading, watch a movie, etc.)
 - Do one thing at a time (take a walk...don't be thinking about all your problems)
 - Collect positive emotional moments (good memories)
 - Set personal goals (make sure they are attainable)
 - Try new things/Challenge yourself (don't go too far out of your comfort zone though)
 - Treat yourself well (you deserve it!)
 - Ask for help if you need it (someone is always there)

- If you are experiencing unusual changes in mood, behavior, emotions, or thoughts; or you are noticing them in a friend or co-worker please speak to your supervisor or the EMEND Field Program Manager.

Winter/Off-Season Use

- Ensure you leave enough time in your day to start the heating in the building, it takes a good 4 hours to get the building up to temperature
 - Slightly lower the temperature (15-18C) while you are in the field and then turn the temp back up when you arrive back at camp (this will save energy)
- Wear slippers or indoor shoes, it will keep you warmer
- If possible keep to the first two trailers (kitchen and common area trailers)
- There are no washroom facilities or running water.
 - Please bring your own water, enough for drinking and cooking
 - Melting snow water for washing dishes is acceptable
 - There is a portable camp toilet with disposable “duty” bags please use these responsibly, and replace if you use.
- You will be responsible for your own food purchasing, preparing and cleaning up.
 - Keep the kitchen clean and tidy
- Ensure when you leave the camp that it is as clean or cleaner than when you go there.

Reference Procedures: Regular Season Field Work

Trail Etiquette

- Speed is the main cause of trail damage and accidents occurring. Keep in mind that trail damage can be avoided in most cases.
 - When going through mucky/wet trail conditions, down shift into a lower gear as this will minimize trail damage and help you avoid getting stuck.
 - When stuck, do not gun the throttle. This will only deepen the ruts/hole that you're in. Try to push it out, reverse out while applying moderate pressure to the throttle, get your partners help, or use the winch (see winching SOP)
 - Try not to widen the trail by creating go-arounds or drive in the landing or machine corridors.
 - Try to repair the trail before creating a go-around and before the ruts get too deep. If there are fallen trees across the trail, try to move them or attempt to contact someone with a chainsaw certification to remove them rather than creating a go-around (See chainsaw use SOP).
- If trail or road conditions are unsafe, are consistently worsening, or impassable please inform the EMEND Field Program Manager.
- The EMEND Field Program Manager will monitor trail use and damage.

Safety Cards

- **At the beginning of the season you will be given two cards.**
 - Block Location
 - Indicates every block EMEND work will occur in, legal land description and GPS Coordinates.
 - EMEND Project Central Location Card
 - Indicates Radio Frequency of the base and handheld radios, legal description, GPS Coordinates and road directions on how to get to meeting area. The back of the card gives you directions when calling 911.

Reference Procedures: Preparing for a Day in the Field in the Off-Season

If you are new to field work and/or EMEND you may be wondering about many aspects of the day: What to bring, what to wear, how the weather will affect your work and the sort of schedule to expect.

What to wear

- Layers (to adjust to the daily temperature ranges)
 - Long underwear (top and bottom)
 - Field pants (water resistant and fast-drying)
 - Long sleeved shirt (keeps bugs and bug spray off your skin)
 - Warmth layer (sweater)
 - Winter Jacket and Water resistant pants
 - Wool/acrylic socks (keeps your feet warm even when wet)
- Winter boots (steel toed are preferable) High tops work well or hiking boot style with gaiters
- Cruise Vest/other reflective safety vest
- Toque/ balaclava , mitts (have a warm pair for when you are not working and a good warm work pair) (keep a spare set in case they get wet), neck warmer/scarf (tucked into coat), balaclava

What to bring

- Whistle
- Compass (and GPS device)
- First aid kit and whistle (Fox 40)
- Emergency Cards
- Protective safety glasses
- Sunglasses (glare caused by snow is a lot worse than from the sunlight and can cause snow blindness)
- Bear spray or bear bangers
- Sunscreen
- Lip balm with SPF 15 or more
- Water bottles
- Thermos with hot liquid
- Swiss knife or a Leatherman
- Rite in the Rain book and pencil
- Lunch (Tupperware or other hard sided container to keep lunch from beingsquished)
- Equipment for the day
- Shoes to change into when you get back to the vehicles + extra pair of socks
- Fire starter and lighter
- Emergency blanket
- Depending how you are traveling and how far you will be from your vehicle your vehicle winter equipment kit

Morning Schedule

- Check the weather and dress appropriately (be prepared for all weather)
- Call into the DMI Check-In, Check-Out Service. (Who, Where (compartments &/or UTMs), Time out and expected time in) and record info into your Daily Safety Briefing Log Book. (see SOP morning tailgate safety meeting and Signing out and In)
- Text or Email the field program manager your plan for the day and your Expected Time in
- Grab your vehicle keys and Radio on the way out.
- Ensure you have your Emergency cards on your person along with radios, Sat. Phones, map books, and bear spray.

- Have your Morning Safety Meeting (ensure everyone is on the same page about the hazards/risk, event schedule, and Emergency first response)
- You may be required to travel on snowmobile into the site (depending on: whether DMI is using the site, road conditions, and weather conditions)
- If using snowmobiles ensure you have enough gasoline for your day in the field.

Upon Returning

- Park ready to go in the lot
 - You may be the only users at camp and if its late in the winter park the vehicle as close to the buildings as possible
- Plug in your vehicle and unplug anything from the ACAdapter
- Call in to the DMI Check-In Check Out Services
- Text or Email your field project manager that you have returned and relay any other information about the day (incidents, near misses, hazards, etc.)
- Return your keys to the key board
- If you are using Snowmobiles ensure they are filled and ready to go for the morning
- Put your radio back onto the charger properly
- Fill out/submit near miss/incident/accident info
- Mark any bears/wildlife sighted on the Bear Map

Reference Procedures: Off-Season/Winter Field Work

- Please follow the procedures in Regular Season Field Work Reference Procedure
- Remember when you are working in the off-season, even when in pairs/groups EMEND management still considers you to be working alone and a working alone plan must be developed and approved by the field Project manager prior to site use.
- Ensure you carry all required Winter field safety equipment (see Appendix 29: Safety Equipment Requirements and Appendix 30: Field Equipment Gear List)
- If using snowmobiles ensure you have enough gasoline for your entire trip
- Remember that everything takes longer in the winter and prepare adequately for this
- Remember that the day is much shorter in the winter then it is in the regular season, prepare adequately for this and do not attempt to fill the day with work. You should be back at your vehicles with enough time to drive to camp in the light. (mid-winter this is 3:30pm (1530))

Reference Procedures: Camp Cook / Catering Company Duties

Food Safe

- Ensure food is handled safely and disposed of appropriately
- Monitor expiry dates and produce freshness
- Ensure food is cooked appropriately and safety
- Leave adequate food and instructions for EMEND staff members to make meals on Cooks days off
- Order food and have delivered or picked up in a timely fashion

Safe Use of Kitchen Equipment

- Ensure they are knowledgeable of the kitchen equipment and are confident using it
- Ensure EMEND staff are trained in the use of kitchen equipment that will be needed in the preparation of said meals

Proper Hygiene

- Wash, rinse and sanitize dishes after every meal
- Ensure kitchen and pantry room are clean and orderly
- Sweep, vacuum, mop floors in dining room, kitchen, halls, and washrooms
- Ensure washrooms (toilet stalls and showers) are clean and fully stocked
- Clean and fold kitchen towels and bathroom floor mats in a timely, water conserving manner
- Clean sheets after users have left permanently

Monitoring Water and Septic Tanks and Garbage Bin

- Monitor water tanks daily and ensure water has been ordered (do it yourself or notify the Field Program Manager)
- Ensure water is checked on a monthly basis
- Monitor septic tank on a weekly basis and ensure contractor has been contacted to empty (do it yourself or notify the Field Program Manager)
- Ensure that the garbage bin is emptied on a monthly basis

Point of Contact at Camp While Field Program Manager is in the Field or Away

- Ensure workers arrive back to camp at their designated ETA and start Emergency Response if unable to locate
- Welcome and settle new guests into assigned accommodations if Field Program Manager is away from Camp
- Contact necessary utilities services if necessary (ATCO electric, AB North Internet, etc.)

Other

- Know appropriate information from the EMEND Safety Plan
- Communicate needs, schedules, etc with Field Program Manager
- Manage food-related refuse to prevent wildlife attraction to camp (coyotes, bears)

Reference Procedures: Field Program Manager Duties

Yearly Check-List

Preparing for the Season—Inventory of tasks:

- Contact Whitemud catering to arrange for opening camp
 - Heath Inspection
 - Cleaning
 - Inventorying equipment and food
 - Water, sewer, garbage contracts
 - Fire extinguisher/fire alarm inspections
 - Insurance coverage
 - Plumber contract for antifreeze removal from water system
 - Hiring a cook
 - Have gas tank filled & gas equipment, lines, pilot-light checked
- Contact DMI for Spring Safety Meeting
 - To discuss relevant issues related to the coming seasons
 - Arrange contacts for both groups (who to contact for what information)
- Assess the number of vehicles that will be needed for the summer crew (additional trucks, cars for Edmonton trips, etc.)
 - Contact Vehicle pool to book these well in advance
- Contact the Field Research Office (FRO) to rent AED, and Satellite Phones as needed
- Assess and book necessary trainings and orientation for staff (First aid, bear awareness, ATV safe riders, Defensive Driving and road course, chainsaw, truck and trailer, etc.)
- Contact Dave Langor at Natural Resources Canada—Northern Forestry Centre to arrange a time to pick up equipment and files stored in their facility
- Contact Dick Puurveen at Ellerslie Farm to pick up the stored ATVs
- Check the EMEND Inventory to access whether ATVs, trucks, and trailers need to be serviced, safety inspected, etc.
- Print off new and laminate as needed(*): Map books*, bear map, safety cards*, Safety Plans, and vehicle documents
- Complete all necessary U of A paperwork and documentation (FAP, Assumption of Risk and Indemnity, Health Form, etc.)
- Purchase necessary field and safety equipment and supplies for the season

Opening up camp – inventory of tasks

- Assess and clean tent frames (if work is needed complete work before setting tents up)
 - Painting should be done on a 2-5 year basis depending on use and weathering
- Set up tents, put in beds, safety items, and heaters, use extension cords to connect tents to electricity (see Program Manager/Field Program Manager Resource Book for how to set up tents)
- On a 2-5 year basis have the carpeting in the bedrooms should be steam cleaned
- Set up Communication board/area including: key board, renew sign-out board, set up bear map, weather, EH&S section, Message board, etc.
- Unlock all safety windows to ensure windows can be used as emergency exits if needed
- Put away files and equipment transported from Edmonton, update any inventories
- Take ATVs and trailers to old camp
- Safety and Duties discussion with cook
- Ensure all First Aid Kits are adequately stocked and have all the appropriate paperwork
- Perform Safety Orientations with all staff and researchers that are onsite.
 - Use the Safety Orientation Check-list and contract (Appendix 4: EMEND Research Station Orientation Contract)

Closing camp – inventory of tasks

- Dry and take down tents, re-store in their bags in the lab, along with all tent safety materials.

- Have all guests ensure their rooms are clean and orderly
- Wash walls and floors of all rooms
- Have cook inventory all equipment and supplies
- Have all perishable foods removed from buildings
- Complete an inventory of all Camp and Core Equipment and Supplies
- Box up files and important/costly equipment and transport back to Edmonton for storage
- After everyone is out, lock all safety bars on windows in all the rooms
- Have the floors stripped and waxed on an as needed basis (1-3 years)
- Remove all garbage and recycling from camp
- Ensure all equipment and tools are in their proper places
- Lock up buildings, double check all doors, except the shed
- Record Fuel amount and lock tank
- Close but do not lock the gate to the yard

Yearly 'tests' of Emergency Response Plan

- The ERP should be tested on a yearly/bi-yearly basis to ensure staff, students, and visitors understand and know what to do in case of an emergence
- This will also help to pinpoint any holes in the ERP or the Safety Plan

Review and update the Safety Plan and the ERP before and after each field season

- Every year the ERP and Safety Plan should be reviewed and updated
- Make changes where incidents and near misses or flaws have been found

Monthly Check-list

Check AED

- AEDs must be checked to ensure their batteries are still viable. Use the AED manual if you have little experience with AEDs.

Water Testing

- This needs to be done to ensure the water quality is adequate for human consumption (contractor should ensure this is completed)

Monthly road inspections and road inspections after severe weather events

- Regular road inspections must be done and reported on a monthly basis
- If a severe weather event occurs please do an extra road inspection to ensure the safety of everyone
- Assess the road conditions, river crossings, bridges, and ditches
- Report poor conditions to the appropriate individual (EMEND Administrative Coordinator and DMI representative) these can be but are not limited to:
 - Deep ruts
 - Wash outs
 - Full culverts/ditches that are not draining
 - Deep pot holes
 - Downed trees
- Fill out the report and file it in its appropriate place
- Inform EMEND users of any necessary risks/hazards associated with the roads

Safety Meetings

- Safety meetings should be held on a monthly basis
- These meetings are used to discuss both negative and positive safety behaviours witnessed on site.
- These meetings can be geared towards a theme if one is emerging from group incident/near miss reports

House Meetings

- These meetings are used to communicate information to camp users regarding upcoming events, potential new safety concerns, changes, and personal grievances.
- These meetings will also be used to review house rules and any changes

- These meetings may include a fun component used to break stress and help with group mechanics
- These meetings will occur once a week and will be 30mins or less.

Garbage Removal

- Most likely garbage will be removed on a monthly basis
- Ensure that the bin is closed to reduce animal interest

Camp Safety Inspections

- Use the appropriate form to do regular safety checks at Camp (see Appendix 12: Field Camp Monthly Checklist)

Daily/Weekly Check-List

Check-out-in board (Daily)

- Post the weather, highlight any potentially dangerous weather and make any judgement calls based on whether to cancel field work for the day
- Ensure Safety Check-ins and vehicle inspections are occurring
- Take a picture to help yourself remember where other groups will be on the site, and in case of an emergency
- Perform Noon Check-In with field crews, either with sat phone or radio to ensure work progress, change of plans and that all is well
- Ensure All guests have returned from the field at the appropriate times and have removed themselves from the board
- Keep people accountable for the board and ensure people are checking out and in at appropriate times

DMI Check-ins

- Are there any relevant issues that need to be brought up with DMI Staff?
- Are there any documents that need to be passed on to pertinent contacts?
- DMI Staff will contact us regarding any issues on their end as well

Radios (Daily)

- Make sure all radios have been returned and that they are turned off and sitting in their bases correctly (if not they may not charge)

Keys (Daily)

- Ensure all keys are returned to their proper places on the key board

Data storage – backing up to servers, fire proof box for data sheets (Daily)

- Ensure all EMEND seasonal data is stored on a removable hard drive as well as the computer
- Ensure all paper data files are stored in the fire and water proof safety box
- The fire safety box may be used by researchers (dependent on space)

Data collection – steps to ensure integrity of EMEND data

- Ensure all personnel are trained appropriately with adequate knowledge and tools to complete their tasks
- Ensure adequate time is planned for each task (reduce loitering and excessive hurrying)
- Build in safety checks to make sure data is entered correctly
 - Have data collectors, and in-putters initial and date the original paperwork
 - Have “spot” checks where groups are selected at random and accompanied by the FPM.

Check Water and Sewage Levels

- If there are a number of people staying at camp, it is essential that water and sewage is monitored closely. We do not want to run out of water or have the septic tank over-flow

Keep cook informed of guest arrivals or changes in plans

- You should be communicating on a regular basis the number of expected guests and any dietary needs that will need to be addressed
- This check in should be pre-arranged between yourself and the cook

Reference Procedures: Program Auditing—Internal and External
Making a “Living Document”

It is important that this safety plan remains a “living” document. This means that it is always adapting, changing and growing as it is needed. To ensure this we have put in a mandatory EMEND internal auditing system that is intended to examine for performance of the system, as reflected in near-miss events, accidents/incidents and trends.

- On a yearly basis all incidents, and near misses should be assessed and changes made to address the essential, “trending” issues.
 - Discuss these with the EMC and attempt to find a reasonable mitigation strategy
- On a regular basis during the summer all near misses and incidents should be assessed, reviewed for trends and changes made as needed.
 - This could be tailoring safety meeting topics
 - Ensuring more training for individual that may be involved in multiple incidents/near misses of one kind
 - Developing easy strategies to mitigate hazards and risks
 - Changing Policy and procedure to better suit the problem
 - Addressing a safety “laissez-faire” community

Appendix List

All necessary supplementary documentation that is needed for the EMEND Safety Plan. Below is a list of Appendices and their corresponding page number.

Forms:

- Employee / Project Forms
 - 1) University of Alberta Field Activities Plan (FAP) Blank..... 59
 - 2) University of Alberta Assumption of Risk and Indemnity Agreement 66
 - 3) University of Alberta Emergency Information for Field Activities Form..... 68
 - 4) EMEND Research Station Orientation Contract..... 70
 - 5) EMEND Near Miss & Incident Tracking Summary 72
 - 6) EMEND Working Alone in the Field Approval Form 73
 - 7) EMEND Road Inspection Forms 74
 - 8) EMEND Vehicle Safety Check List 77
 - 9) EMEND Trailer Safety Check List..... 78
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References

Main Document:

Fire Prevention Canada. Fire Extinguishers. Found on May 26, 2013 from:

<http://www.fiprecan.ca/?section=2&show=fireExtinguishers>

http://www.cmha.ca/mental_health/information-for-employees/#.UxUePvldV8E

University of Alberta. (2013) Whitemud Catering LTD. University of Alberta Contract of Services Provided.

MSDS:

Science Lab.com. (2013.) MSDS: Isopropyl Alcohol. Found July 2013 from:

<http://www.sciencelab.com/msds.php?msdsId=9924412>

Petro-Canada. (2013) MSDS: 4-Season Advanced Non-Smear windshield washer. Found July 2013 from:

http://www.online.petro-canada.ca/datasheets/en_CA/4saww.pdf

Monsanto Canada Inc. (2007) Vision Silviculture Herbicide Label. Found April 2013 from:

http://www.monsanto.ca/products/Documents/vision_label_en.pdf

Nelson Paint Company of Canada. (2007). MSDS: Tree and Log Marking Paint. Found July 2013 from:

http://www.forestry-suppliers.com/Documents/875_msd.pdf

SOPUS Products. (2002) MSDS Quaker State Peak Performance Conventional Motor Oil-All Grades. Found April 2013 from:

<http://www.lamarpa.edu/dept/pp/msds/Automotive/Quaker%20State%20Peak%20Performance%20MotorOil.pdf>

Hess Corporation. (2007) MSDS: Gasoline, All Grades. Found April 2013 from:

<http://www.co.vermillion.il.us/MSDS/EMA/9950allgradesgasoline.pdf>

Science Lab.com. (2013) MSDS: Ethylene glycol. Found July 2013 from:

<http://www.sciencelab.com/msds.php?msdsId=9927167>

Petro-Canada. (2001) MSDS: Diesel Fuel. Found April 2013 from:

http://www.for.gov.bc.ca/ftp/TCH/external/!publish/EMS2/Supplements/TCH-MSDS/Diesel_Fuel_MSDS.pdf

S.C. Johnson. (2012) MSDS: Off-Deep Woods, 3 Insect Repellent. Retrieved April 2013 from:

<http://www.scjohnson.ca/pdfViewer.aspx?pkMSDSId=122&language=en>

Stihl Incorporated. (2010) MSDS: Stihl Bar and Chain Lubricant. Found: April 2013 from:

http://www.stihlusa.com/WebContent/CMSFileLibrary/MSDS/Bar_Chain.pdf

BP Lubricants USA. (2007) MSDS: Castrol Automotive Antifreeze. Found April 2013 from:

[http://datasheets.bp.com/usds/amersdsf.nsf/0/04226F062D82F07186257307004F931C/\\$file/014244US-Lubes%20Americas-BP%20\(Wayne,%20NJ%20US\).pdf](http://datasheets.bp.com/usds/amersdsf.nsf/0/04226F062D82F07186257307004F931C/$file/014244US-Lubes%20Americas-BP%20(Wayne,%20NJ%20US).pdf)

Frontiersman. (2013) MSDS: Frontiersman Bear Attack Deterrent. Found April 2013 from:
<http://www.homedepot.com/catalog/pdfimages/c0/c0ed3fb7-1123-4118-b4d7-9f5735fb95b7.pdf>

Scholar Chemistry. (2008) MSDS: Ethyl Alcohol 70%. Found April 2013 from:
http://www.onboces.org/safety/msds/S/Scholar%20Chemical/Ethyl_Alcohol_70Pct_273.00.pdf

Flexo Products Limited. (2011) MSDS White Vinegar. Found April 2013 from:
<http://msds.flexoproducts.com:8000/MSDS%20for%20Distributors/VINEGAR.pdf>

S.C. Johnson (2010). MSDS: Toilet Duck Automatic-Blue. Found April 2013 from:
<http://www.scjohnson.ca/pdfViewer.aspx?pkMSDSId=383&language=en>

S.C. Johnson. (2012) MSDS: Windex Original Glass Cleaner. Found April 2013 from:
<http://www.scjohnson.ca/pdfViewer.aspx?pkMSDSId=375&language=en>

Ecolab (2013) MSDS: Keystone Apex Pot and Pan Detergent. Found April 2013 from:
<http://portal.ecolab.com/servlet/PdfServlet?cntry=US&langid=en-US&sid=999174-05>

S.C. Johnson. (2012) MSDS: Pledge Furniture Spray-Lemon Fresh. Found April 2013 from:
<http://www.scjohnson.ca/pdfViewer.aspx?pkMSDSId=645&language=en>

The Procter & Gamble Company. (2010) MSDS: Mr. Clean Multi-surfaces. Found April 2013 from:
http://www.pg.com/productsafety/msds/fabric_and_homecare/hard_surface_cleaners/Mr_Clean_All_Purpose_Cleaner.pdf

Ecolab. (2013) MSDS: Keystone Orange Multi-Surface Cleaner. Found March 2013 from:
<http://portal.ecolab.com/servlet/PdfServlet?cntry=US&langid=en-US&sid=910226-04>

The Procter & Gamble Company. (2012) MSDS: Febreze Fabric Refresher. Found April 2013 from:
https://www.google.ca/url?sa=t&rct=j&q=&esrc=s&source=web&cd=4&ved=0CEUQFjAD&url=http%3A%2F%2Fistudio.pgpro.com%2FAssets%2FDownloadMSDS%2F89R2BJTVAQFZACH2&ei=TwYVU9b1MIKmqQHymI DgAg&usq=AFQjCNEOVFIPXZ4Obw246bsjbdw53_2WnQ&sig2=PwhDAak4bbSyLbICr_Kh8w

S.C. Johnson. (2011) MSDS: Fantastik Original Disinfectant All Purpose Cleaner. Found April 2013 from:
<http://www.scjohnson.ca/pdfViewer.aspx?pkMSDSId=362&language=en>

The Procter & Gamble Company. (2012) MSDS: Comet Bathroom Cleaner. Found April 2013 from:
http://www.pg.com/productsafety/msds/professional_line/professional_line/Pg_Professional_Comet_Disinfecting_Sanitizing_Bathroom_Cleaner.pdf

The Procter & Gamble Company. (2013) MSDS: Bounce Dryer Sheets. Found March 3, 2014 from:
http://www.pg.com/productsafety/msds/fabric_and_homecare/fabric_conditioner/Bounce_All_Varieties_Except_Free.pdf

The Clorox Company. (2009) MSDS: Clorox Regular Bleach. Found April 2013 from:
http://www.thecloroxcompany.com/downloads/msds/bleach/cloroxregularbleach0809_.pdf

The Procter & Gamble Company. (2013) MSDS: Tide Liquid Detergent (all 2x concentrated variations for retail). Found July 2013 from:
http://www.pg.com/productsafety/msds/fabric_and_homecare/detergents/Liquid_2X_Tide_Laundry_Detergent.pdf

Sysco. (2013) MSDS: Reliance Liquid Hand Soap. Found January 2013 from:
<http://portal.ecolab.com/servlet/PdfServlet?cntry=US&langid=en-US&sid=947036-03>

Appendices:

Government of Alberta, Dangerous Goods: Vehicle & Rail Safety Branch. (2012) A Guide to the Transportation of Dangerous Goods Regulations. Found on March 3, 2015 from:
<http://www.transportation.alberta.ca/Content/docType272/Production/guide.pdf>

Government of Alberta. (2013) Occupational Health and Safety Legislation. Found on March 3, 2015 from:
<http://work.alberta.ca/occupational-health-safety/295.html>

Environment and Sustainable Resource Development. (n.d.) Report a Wildfire. Found on: March 3, 2015 from <http://esrd.alberta.ca/wildfire/wildfire-status/help-prevent-wildfires/documents/310-Fire-ReportForm.pdf>

Work Safe Alberta. (2013) WHMIS—Information for Employers. Found on March 3, 2015 from:
http://humanservices.alberta.ca/documents/WHS-PUB_ch008.pdf

Workplace Health and Safety. (2001). Alberta's Occupational Health and Safety Regulations: An Explanation of the New First Aid Regulations. Found April 2013 from: <http://safety.eas.ualberta.ca/forms/WHS-AnExpalnationoftheNewFirstAidRegulations.pdf>

Environment Canada. (2012) Beaufort Wind Scale Table. Found on April 2013 from:
<https://www.ec.gc.ca/meteo-weather/default.asp?lang=En&n=80C039A3-1>

Lacicco, A.A. (2011) Diary of a Crisis Mapper: Risk Assessment Part 2. Found September 2014 from:
<http://crisismapper.wordpress.com/2011/12/14/crisis-mapping-and-cybersecurity-part-ii-risk-assessment/>

University of Alberta: Human Resources Services. (n.d.) WCB Reporting. Found April 2014 from:
<http://www.hrs.ualberta.ca/HealthandWellness/InjuryIllness/WCBReporting.aspx>

University of Alberta: Environmental Health and Safety. (n.d.) Personal Injury. Found April 2014 from:
<http://www.ehs.ualberta.ca/ReportanInjuryIncidentorConcern/PersonalInjury.aspx>

Wilderness Medical Associates International. (2011) SOAP Notebook Patient Documentation. Raven Rescue Wilderness Advanced First Aid Course, University of Alberta.

University of Alberta: Environmental Health and Safety. (n.d.) Faculty/Department Incident & Investigation Report. Found February 21, 2014 from:
<http://www.ehs.ualberta.ca/ReportanInjuryIncidentorConcern/NearMissEvent.aspx>

University of Alberta: Field Research Office. (n.d.) Emergency Information for Field Activities Form. Retrieved April 2013 from:
http://www.fieldoffice.ualberta.ca/en/~/_media/fieldoffice/Documents/emerg_info_form.pdf

University of Alberta: Field Research Office. (n.d.) Field Activities Plan. Retrieved April 2013 from:
<http://www.fieldoffice.ualberta.ca/Planning/Field%20Activities%20Plan.aspx>

University of Alberta: Field Research Office. (n.d.) Informed Consent. Found April 2013 from:
<http://www.fieldoffice.ualberta.ca/en/Planning.aspx>