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3.0 Emergency Response

Introduction

As part of a Health and Safety Program, every mineral exploration company should have an Emergency Management Plan and up-to-date Emergency Response Plans (ERPs) to address potential emergency situations that could occur within the organization and at each project site. In the past, many exploration companies have mainly relied on common sense and experience to deal with emergency situations; the outcomes have been variable at best. When an emergency occurs, there is no time to decide who is in charge, what alternatives will best control a situation, who has training to help, and how to use the communication equipment to obtain help. An emergency response plan addresses these issues and provides information and direction for addressing the situation as quickly as possible. In critical situations the first hour during an emergency (the golden hour) is often the most important, and the outcomes for the people involved and the company will be more successful when a company has an ERP prepared in advance and appropriately trained staff and contractors.

This section addresses emergency response from the point of view of a mineral exploration company. However, individuals conducting geological fieldwork or mineral exploration on their own also need to have an emergency response plan. This may be simply ensuring a third party knows where they are, and when they are expected to return, so a rescue can be launched if the person is overdue. Refer to section19.5 Communications Routine, Schedules and Protocols where notification of traverse routes and check-in schedules etc., are addressed. It is also advisable to be familiar with specific risks and hazards of relevant terrain and climate conditions when developing a personal emergency response plan. Refer to sections 6. Safe Traversing Practices, 8. Survival, 9. Weather and Environmental Risks and appropriate transportation sections.

Acronyms
AHJ – Authority Having Jurisdiction
ELT – Emergency Locator Transmitter
ER – Emergency Response
ERP – Emergency Response Plan
OHS – Occupational Health and Safety
PAL – Possession and Acquisition License
RCMP – Royal Canadian Mounted Police
SAR – Search And Rescue
SOP – Safe Operating Procedure
UTM – Universal Transverse Mercator

3.1 Risks and Hazards

A project or camp may experience the following during an emergency:

- Injury or death to employees, site visitors, the public and/or those nearby caused by lack of appropriate emergency response planning and/or training

- Damage or loss of company property, assets, and/or reputation caused by the lack of an emergency response plan or emergency procedures, lack of staff training to handle publicity and the press

- Environmental damage caused by lack of or inadequate spill kits, lack of emergency response planning and/or training

- Delay in addressing an emergency situation caused by lack of emergency response procedures, lack of employee training, inadequate communication system

3.2 Emergency Management Versus Crisis Management

Definitions

Crisis: A serious, present or potential event that causes harm to persons, the environment or assets of a company and may pose an actual or potential threat to the long term ability to do business due to the impact on the operation, image or liability of the company.

Emergency: A serious, present or potential event that causes harm to persons, the environment or assets of a company, but which will not affect the long term ability of a company to do business. An emergency develops suddenly and unexpectedly and requires immediate attention.

Emergency Management Plan: An integrated set of company policies and procedures created and prepared in advance to protect people, property and the environment from potential crises or emergencies that might occur at company work sites. The emergency management plan also describes the "what", "how" and "who" involved in creating emergency response plans. Emergency management is sometimes referred to as business continuity planning.

Emergency Response Plan: The specific plan that addresses emergencies that may occur within the organization or at a site (e.g., office, warehouse, field project site). The plan sets out details that include responsibilities of emergency response teams, communication plans (including setup and back-up communication), employee training, emergency provisions, resources, and actions to address potential emergency and crisis situations.
For additional definitions and a discussion of "accident versus "incident" please see the Introduction in section 2. General Safety.

Emergency Management Plans

An emergency management plan should classify emergencies into severity levels and include emergency procedures that address the potential degrees of disruptions to the company. By doing this, a company is better prepared to handle potential emergencies and can improve the accuracy of communication regarding an emergency within the company and to the public.

- A low level emergency (accident or incident) is one that can be handled at the site and involves no serious injuries, no disruptions of operations and no publicity. There are no national or international implications.

- A moderate level emergency (emergency) may involve a single serious injury, temporary disruption of operations, some publicity or the likelihood thereof, with possible implications at the national level.

- A high level emergency (crisis) would involve one or more fatalities or multiple serious injuries, sustained disruption of operations, significant publicity or the certainty thereof,

plus implications at the national and possibly international level. There might be a potential threat to the viability of a company.

For moderate and high level emergencies, which might quickly develop into a crisis, it is important to have one or more emergency management teams in place whose members know their assigned roles and who are fully trained to carry out their responsibilities.

Depending on the size of the company, employees and emergency response teams at a project or work site generally manage and resolve emergencies without the direct participation of corporate headquarters. A crisis requires additional handling or support at the headquarters level. The difference between emergency management and crisis management is one of degree.

NOTE: The impact of the same accident or incident on a small company will differ from the impact on a medium size or a large company. A good emergency response plan may mean the difference between financial survival and the demise of a small company.

3.3 Guidelines for Developing Emergency Response Plans

An emergency response plan should be developed by a team of experienced people (e.g., company employees and perhaps emergency response (ER) consultants or skilled contractors). Team members should have a variety of skills and employees should represent different levels within the company. A site specific emergency response plan (ERP) should be developed with input from employees familiar with the specific site activities and services available in the immediate project area, rather than by one person or team at company headquarters.

1. Select competent team members to develop an ERP.

2. Team members or designates should perform risk assessments to determine potential risks and hazards and their severity and impact.

3. From the risk assessments, determine what emergencies the company is capable of handling and where improvements and additional help will be required.

4. Develop the overall ERP that addresses each risk and hazard.

    - Establish criteria for triggering the plan and appropriate alarm signals.

    - Each emergency will require defined response procedures and a sequence of implementation.

    - Assign responsibilities and back-up personnel for each activity.

    - Develop contact lists – general and specific contacts appropriate for the emergency.

    - Define and list required emergency supplies, equipment and communication devices.

    - Define clean-up, remediation and restoration procedures.

    - Train team members and back-ups and conduct practice drills to test the components of the plan, especially the communication equipment, telephone numbers and evacuation transport.

5. Communicate the ERP to all employees and train them to follow the plan as required.

6. Evaluate, test and improve the plan over time.

Risk Assessments

By using a risk assessment process, the resulting ERP will address events that rank as high and moderate risks with all levels of probability, and time and money will not be spent planning for events with low consequences and a low probability of occurrence. The risks and hazards will depend on the size and type of operation or project, the location, accessibility, security issues, climate, terrain of each site, and the numbers and training level of personnel.

- Aim to identify all hazards or safety risk factors including those unique to a particular exploration site.

- Assess all hazards in terms of the severity of consequences and the probability and frequency of exposure.

- Refer to section 2.1.5 Risk Assessments and see section 3.4.2 Risk Assessment of Site Operations.

3.4 Components of Emergency Response Plans

Emergency response plans are composed of several components. Some ERPs may require more and some fewer, depending on the size, location and activities of the project.

Responsibilities and Communications

When drawing up an ERP, consider and incorporate the following situations, as appropriate:

- Designate who has the authority to speak to members of the press during an emergency – at the project level and at headquarters. Have a basic news release prepared. See section 3.5.12 Example of a News Release below.

- Determine the types of information that should be disclosed or kept private. This can be addressed by providing training for those who have been identified as having authority to speak to the media and family members.

- Determine at what stage the project site manager should contact headquarters for additional help and call in outside emergency aid such as search and rescue, RCMP etc.

- Designate who within the organization will interface with employees' family members in the event of a serious injury or fatality.

- Determine what company property requires protection in the event of certain emergencies and who is charged with the responsibility for implementing the protection procedures.

- Determine where emergency operations will be managed from – which room will function as headquarters; designate a back-up headquarters. Establish criteria and guidelines for the emergency operations centre.

3.4.1 Site Operation Information

Every ERP should include the following basic information:

- Name of the "Mine" and the owner with a mailing address and contact information including telephone, fax and email

- Name of the Mine Manager (person in charge) as appointed by the jurisdictional Mines Act

- Mine number and permit number (or designation according to jurisdictional authorities)

- Type of operation: underground, exploration, surface, quarry, placer etc.

- Location: state UTM and/or latitude/longitude

- Number of employees: include management, field crews, contractors

- Accurate mine/site plans: These should identify areas where emergency response teams, personnel or agencies can set up and work, including a room that functions as emergency command headquarters.

- Establish criteria to account for all employees in the event of an emergency (i.e. par system).

- Access routes: Note the roads available to access the mine site and whether they are for seasonal or year round use, provisions for air access (e.g., air strips, float plane or helicopter landing facilities).

- List the nearest medical treatment facility, as required by authorities having jurisdiction (AHJs).

3.4.2 Risk Assessment of Site Operations

Complete a risk assessment to identify potential emergencies that could occur on the site and assess the possible impacts on the operations and on workers. As a general guide, potential emergencies may be broadly broken into five basic categories.

1. Fire and explosion – types of fires and sources of explosions

2. Injury or illness of workers – on site, off site, multiple, fatality, including means of transportation to a medical facility, if necessary

3. Environment – spills of various types, water pollution, soil pollution, disposal of waste material

4. Climate and natural hazards – floods, potential storms in the region, whiteouts, extreme temperatures, winds, earthquake and other natural disasters, as appropriate

5. Equipment failure – power failures (long and short term), fuel shortages, transportation failures and accidents including on site and travelling to and from the site (vehicles, ATVs, snowmobiles, aircraft, boats)

3.4.3 Emergency Equipment

In some jurisdictions the requirements for emergency supplies and equipment in camps are regulated by the authorities having jurisdiction (AHJs) and compliance with these regulations is required. The details will depend on the size and activity of the camp or project. List the emergency equipment available on site to address the identified potential emergencies and hazards. Develop checklists to keep inventory and inspection records. Also include other sources of equipment that may be necessary in some emergency circumstances:

- First aid supplies

- Firefighting supplies – pumps, extinguishers, hoses

- Forest and brush firefighting supplies

- Rescue equipment (e.g., basket stretcher that fits into a helicopter or vehicle)

- Equipment that can be assigned to an emergency task (e.g., a bulldozer or excavator used to build roads and trails that can be used to dam or dike a flood, or a water truck for firefighting operations)

- Emergency transport vehicle(s)

- Outside sources of specific equipment; mutual aid agreements

- Alternative drinking water supplies in case usual supplies are contaminated

- Rapid test kits for chemical spills, such as cyanide in the case of a gold operation

- Arrange mass evacuation transportation

3.4.4 Trained Personnel

List the available trained personnel who are capable of dealing with the identified potential emergencies and hazards.

- Contact information for all personnel on site who can administer first aid, firefighting and/or security duties

- Identify other sources of trained personnel:

  o Back-up teams

  o Agencies: local fire department, provincial/territorial/state ambulance, RCMP or police, local SAR (search and rescue may require separate groups for land/water)

  o Charter aircraft companies (for help with evacuations, searches)

  o Possible help available from nearby sites and whether a written mutual aid agreement is in place

3.4.5 Implementation of Emergency Response Plans

Clearly define how and when people involved in an emergency are to access and implement the plan.

- First steps – who to call, how to call, when to call

- Identify responsibilities:

  o Designate who is responsible for implementing the ERP and who is second in charge.

  o Designate who is in charge of conducting the emergency operations (depending on the type of emergency).

  o Define all communication systems to be used (i.e., two-way radios, cell phones, satellite phones).

  o Assign tasks by function and how the function will be filled. Examples include:

    ▪ Call-outs and communication with other users of access roads (e.g., logging companies, ice road companies)

- Arranging assistance from other agencies or operations

- Required notifications: Workers' Compensation Board, Mines Inspectors, provincial/territorial/state ER personnel, RCMP or police

  o Include an Emergency Notification and Mobilization Chart that identifies who and in what order the key personnel are to be notified (see section 3.3.7 Contact Lists below).

- Evacuation procedures: List the circumstances for declaration, optional routes and modes of transportation.

3.4.6 Directions to the Site

Provide clear written directions to the site. Include maps that can be used for navigation. This is particularly important in remote areas.

- Clearly define how the directions to the site will be communicated to those who are called to assist but who may not be familiar with the area or the roads.

- Provide copies of directions in advance to parties who are expected to provide emergency response. Indicate who has received them in the plan.

- Establish and identify helicopter landing areas.

- If using radio controlled logging roads, include radio frequencies and call-out procedures.

- On long road transport of injured workers, identify and mark on the map possible transfer sites for ambulances. Note in the plan at what stage of emergency to arrange for helicopter evacuation of an injured worker rather than opt for ground transportation.

- Keep informed about the state of remote roads so that you DO NOT direct emergency vehicles to the project via impassable routes. Depending on the season some roads may be impassable due to snow, washouts, slides etc.

3.4.7 Communications and Contact Lists

Communication – or the lack of it – during an emergency can impact the severity of the emergency. Assign and train personnel within the company to communicate with employees, families, communities and the press regarding various emergencies. At each project site:

- Maintain appropriate fully functioning communication equipment.

- Train everyone to use the communication equipment.

- Post contact lists with the communication equipment and in other appropriate and accessible places. Post the instructions for use at the communication centre.

- Post what information to include when relaying emergency information.

Create and post a stand alone page(s) with complete contact information for all emergency contacts listed in the ERP. (The following lists are not all inclusive):

General Contact List

- Project/Mine Manager

- Corporate head office – appropriate names and telephone numbers

- Company hotline, if applicable

- First aid – full telephone number and/or radio channel

- Emergency services personnel

    o Fire

    o Police

    o SAR (for both land and water, as required))

- Expeditor – full telephone number and/or radio channel frequency

- Outside agencies: federal, provincial/territorial/state, local government (all necessary AHJs)

- Transportation companies including air service (fixed wing and/or helicopter)

- Back-up rescue team, if applicable

First Aid Contact List

First Response

1. First aid attendant – name and full telephone number and/or radio frequency

2. Project/camp person in charge – name and full telephone number and/or frequency

Transportation

1. Contact office (closest location) – full telephone number

2. Expeditor – full telephone number and/or radio channel frequency

3. If expeditor/office cannot be reached:
   Contact aircraft contractor in the nearest airport – full telephone number and/or radio channel

Initial transport to camp and medical facility is by_____ (state means)
In addition, list the time required to transport a patient to the medical facility by each potential mode of transportation. For example:
   Time required by vehicle by road _____
   Time required by off-road vehicle_____
   Time required by boat_____
   Time required by helicopter_____
   Time required by fixed wing aircraft_____

Emergency Telephone Numbers and/or Radio Channels and Frequencies

List what is appropriate for the location, region and country.

- General hospital – name and location

    o Emergency – full telephone number

    o Outpatient – full telephone number

- Nursing station – full telephone number

- Health centre – full telephone number

- Poison control – full telephone number

- Police – full telephone number

- Military – full telephone number

- Workers' Compensation Board (or equivalent) – full telephone number (day/night)

- Forest Fire Report – full telephone number

- Environmental Agencies – full telephone numbers for appropriate agencies

- Chemtrec or similar HazMat communication centre

- Welfare agencies

- Civil Defence teams

- Red Cross/Red Crescent

- Public works and highway departments

- Port or Airport authority

3.4.8 Training and Testing Emergency Response Plans

Establish a minimum time frame (annually, bi-annual, quarterly etc.) for the completion and testing of the ERP. Prepare a written test scenario of the objectives and components of the practice drill and randomly select participants not affiliated with the ERP to complete the tasks. Include provisions for training all persons on site regarding application of the ERP. These may include:

- Fire drills

- Evacuation drills

- Spill control drills

- Testing the communication equipment under various weather and terrain conditions

- Earthquake drills

- Table-top exercises

- Adjust the plan to improve it from the lessons learned from drills and experiences.

- A substantial change in site, activities, or personnel may necessitate a revision and repeat testing of the ERP.

3.4.9 Documentation

Keep records that pertain to ER planning, preparation, training and testing.

- Training records – practice drills, table-top exercises, equipment tests

- Equipment checks – first aid, survival equipment, firefighting equipment etc., use and replenishment

- Implementation – records of actual incidents, if applicable

- Incident debriefing – as applicable

3.4.10 Recovery

Develop policies that will reduce disruption to the company following an emergency or crisis. Polices should address:

- Injured workers and their return to work
- Back-up office and communication plans
- Clean-up and remediation plans for spills etc.
- Provision for assistance to employees for stress
- Replacement of lost or damaged equipment etc.

3.5 Guidelines for Developing Emergency Response Procedures

Emergency response procedures list basic actions to follow in the event of a specific emergency.

The sections below are examples that should be adapted by projects to be site specific. Within each procedure, the following should be defined and addressed, as appropriate.

- What constitutes an emergency
- How to alert employees of the emergency
- Potential need for evacuation and the evacuation routines and routes
- Muster stations: (Have a back-up muster station in a second location if there is a chance the main muster station could be the site of the emergency.)
- Required first aid and medical assistance
- Emergency contact lists – comprehensive and/or specialized
- How to report the emergency to authorities
- Clean-up and remediation

3.5.1 Medical Emergency

1. Assess the situation. Assure your own personal safety and the safety of others.
2. Summon help if necessary.
3. Stop or contain the emergency, if possible, without placing yourself or anyone at further risk.

   - Administer first aid using the primary survey "ABC". The primary survey checks the airway, breathing, circulation and for bleeding and shock.

     - A – Airway: Check the airway and clear it, if necessary
     - B – Breathing: Check for breathing; if there is none, start rescue breathing
     - C – Circulation: Establish the presence or absence of a pulse. Start CPR if there is no pulse. Control bleeding.

- o Treat for shock. Protect from cold and dampness. Elevate the feet. Administer oxygen if possible.

4. If required, immediately contact an ambulance or Medevac aircraft.

- • If the victim is unconscious, try to list all obvious injuries.

- • If the victim is conscious, establish the extent of injuries.

- • Contact the hospital and advise them of the incoming patient(s). Give the following information as a minimum:

  - o Name of patient(s)

  - o Age and sex

  - o Nature of injury

  - o State of consciousness

  - o Estimated time of arrival

  - o Request an ambulance to meet the aircraft/boat/vehicle at the designated location.

  - o Have the pilot notify the hospital 10 minutes before landing of the revised time of arrival and again request an ambulance to meet the aircraft or boat at the designated location.

5. Report the accident to the supervisor as soon as possible (contractor foreman, project geologist, senior geologist etc.).

6. If the accident is serious, notify the jurisdictional Workers' Compensation Board or authority and the local police etc. within the required time in addition to the company contacts.

7. Take notes to document the accident. Include: what happened, names of witnesses, sketches and photos if possible. Complete and submit an accident report form to the appropriate company personnel.

3.5.2 Vehicle Accident or Incident

1. Assess the situation. Assure your personal safety and the safety of others.

2. Administer first aid, if practical.

3. Call for an ambulance (or air charter) if necessary.

4. Place reflective warning triangle signs, flares or both behind and ahead of the accident scene away from vehicles (beware of fuel spills).

5. Move the vehicles off the road to the shoulder if there are no injuries and the vehicles can be driven. Turn off the ignition and do not smoke.

6. If there are injuries or the damage is in a public area and more than $1,000.00 (in Canada), call the police, request a police report and call your company contact. Know the laws and limits that apply in the country where you work.

7. Report the accident or incident to the supervisor as soon as possible.

8. Take notes to document the accident. Include: what happened, names of witnesses, sketches and photos if possible. Complete and submit an accident report form to the appropriate company personnel.

3.5.3 Missing Persons

1. Confirm that the person has failed to check in at the predetermined time.

2. Contact the person's supervisor and provide details such as where the person was working, how late they are, if he/she is alone.

3. Do not endanger yourself during a rescue.

4. If you plan to start a search, inform a supervisor of your plans before heading out. Always go with a second person or a team if possible.

5. Every search team must carry a first aid kit, communication equipment and appropriate provisions.

6. Go to where the person is most likely to be found (i.e., where his/her truck is parked).

7. If the missing person is not found right away, the appropriate SAR authority and/or local police should be notified within the appropriate length of time as specified in the ERP.

8. Notify *all* authorities when the missing person is found so all search and rescue participants are informed and can cease their efforts.

3.5.4 Survival – Stranded Crew

Field crew on traverse

1. Assemble the field party at the site where the survival cache is located, which is usually at the end of the traverse (air drop or vehicle).

2. Contact the camp office by radio and inform them of your position and conditions.

3. Determine whether it is possible to safely return to the project site by foot. This can <u>only</u> be done if:

    *   The site is reasonably close – this distance should be determined before the traverse starts.

    *   Weather conditions are good.

    *   The GPS equipment is functioning and there are spare batteries.

    *   Emergency food and shelter are available to carry.

    *   Everyone is in good physical shape and capable of completing the trip.

4. When it is not feasible to return to camp, the survival cache and personal survival kits should provide temporary shelter and supplies.

5. Remain at the site until transportation arrives.

6. Maintain communication abilities; do not waste battery power.

Drill crew at a remote site

A survival situation may occur due to bad weather, whiteout conditions, flooding, bear activity, unavailable aircraft, vehicle breakdown etc.

1. Assemble the drill crew and keep everyone together at the survival cache location.

2. Contact the camp/office and inform them of the conditions.

3. Determine whether it is possible to safely return to the project site by foot. This can <u>only</u> be carried out if the same conditions are met as in #3 above in "Field crew on traverse".

4. When it is not feasible to return to camp, the survival cache and personal survival kits should provide extra temporary supplies at the drill site shelter.

5. Remain at the site until transportation arrives.

6. Maintain communication abilities; do not waste battery power.

3.5.5 Aircraft Accident

At the site of the aircraft accident:

1. Assure your own personal safety and the safety of others.

2. Administer first aid, as needed.

3. Remove and set up the ELT if it did not automatically begin operation.

4. Build a shelter (and fire) near the accident scene and make everyone comfortable. Remain near the scene.

5. Make signals that are visible from the air to aid in the search (e.g., fires, signal mirror, large symbols). Refer to sections 8.6 Search and Rescue Guidelines and 16.15.2 Ground to Air Emergency Signals.

At the project site or base:

1. Attempt to contact the aircraft by normal means when it is 15 minutes overdue. Use local resources when possible. Use (1) the base radio, (2) a radio in another aircraft on site, and (3) a cell phone to reach the satellite phone on the aircraft if it is so equipped. If near civilization, phone places along the planned flight route for information.

2. Relay contact attempts through other aircraft in the area.

3. After 30 minutes or if an accident is confirmed, contact the nearest aircraft home base and advise them, as appropriate, that the aircraft is overdue or that there has been an accident. Contact the operations base manager of the aircraft charter company.

   - Report an accident or incident to the supervisor (foreman, project geologist, senior geologist etc.), to the air charter company concerned and to the relevant government authority (Transportation Safety Board of Canada investigation office) as soon as possible.

4. After 60 minutes overdue: Contact the nearest operations base manager. Brief the manager on the action taken and the following information:

   - Name of the pilot
   - Type of aircraft, registration and colour
   - Number of crew/passengers
   - Planned flight route
   - Departure time, estimated time of arrival
   - Last known position
   - Hours of fuel on board

- Emergency equipment on board

5. Notify appropriate company contacts.

6. Record all actions taken.

7. Share information ONLY with the aircraft/helicopter company and the rescue coordination centre. Do not speak to media.

8. If necessary, contact an ambulance or Medevac aircraft or equivalent as soon as possible.

9. Provide first aid, as required, upon arrival at the site.

10. It the accident is serious, notify the jurisdictional Workers' Compensation Board authority and the local police etc., within the required time in addition to the company contacts.

11. Complete and submit an accident report forms to the appropriate company personnel.

3.5.6 Boat Accident

At the site of a boat accident:

2. Assure your own personal safety and the safety of others.

3. Stay with the boat. Be familiar with and follow procedures in 17.12 Water Survival.

4. Once on shore, administer first aid, as required.

5. Build a fire and shelter in a visible location near shore and make everyone comfortable. Remain near the accident scene or shoreline.

6. Make signals that are visible from the air to aid in the search (e.g., fires, signal mirror, large symbols). Refer to sections 8.6 Search and Rescue Guidelines and 16.15.2 Ground to Air Emergency Signals.

At the project site or base:

1. Attempt to reach the boat by normal means when it is one hour overdue. Use local resources when possible. Use (1) the base radio, (2) a cell phone to reach the satellite phone on the boat if equipped, and (3) a radio in an aircraft if available. If near civilization, phone places along the known boating route for information.

2. In addition, after 60 minutes overdue, report the overdue boat to a supervisor (foreman, project geologist, senior geologist etc.) and the project manager. Brief the manager on the action taken and the following information:

- Captain's name
- Type of boat, registration, size and colour
- Number of crew/passengers
- Planned route
- Departure time, estimated time of arrival
- Last known position
- Hours of fuel on board
- Emergency equipment on board

3. Notify appropriate company contacts.

4. Record all actions taken.

5. If the accident is serious, notify the jurisdictional Workers' Compensation Board authority and the local police etc., within the required time in addition to the company contacts.

6. Complete and submit an accident investigation forms to the appropriate company personnel.

3.5.7 Fires

Fire in camp is one of the most serious risks.

1. Try to put out the fire only if it is safe to do so.

2. Sound the fire alarm

3. Assure your own personal safety and the safety of others.

4. Evacuate all persons to the muster point and hold a roll call.

5. Locate any missing or injured persons and organize a rescue, as required.

6. Arrange for camp evacuation, if necessary.

7. If required, contact an ambulance or Medevac aircraft immediately.

8. Provide first aid, as required.

9. Call the 24 hour local forest fire telephone number.

10. Report the fire to a supervisor as soon as possible (foreman, project geologist, senior geologist etc.).

11. Arrange for temporary shelter once all persons are accounted for, as required.

12. An emergency shelter should be separate from the rest of the camp and be equipped with emergency food, blankets, means of heating the shelter, sufficient seating for everyone and emergency communication equipment.

13. If injuries resulting from the fire are serious, notify the relevant authorities within the specified time (i.e., jurisdictional Workers' Compensation Board authority in Canada, or equivalent).

14. Complete and submit an accident/incident investigation forms to the appropriate company personnel.

Forest Fire

1. Assure your own personal safety and the safety of others.

2. If safe, return to camp as soon as possible.

3. Arrange for camp evacuation, if necessary.

4. If required, immediately contact an ambulance or Medevac aircraft.

5. Provide first aid, as required.

6. Call the 24 hour local forest fire number.

7. Report the fire to a supervisor (foreman, project geologist, senior geologist etc.) and to the forestry company in the area as soon as possible.

8. If a serious accident is associated with the fire, notify the relevant authorities within the specified time (e.g., Workers' Compensation Board in Canada or the jurisdictional equivalent).

9. Complete and submit the appropriate accident investigation forms to the appropriate company personnel.

3.5.8 Whiteouts and Extreme Cold

- Everyone should remain within the camp accommodations until the emergency has passed. Cease travel and work that could result in injury.

- Cease work with equipment or cutting tools, as an injured employee may not be able to reach a first aid station and evacuation may not be possible until conditions improve.

- Equip all remote work sites, such as drill rigs, with heat and emergency supplies including food and water. Regularly check emergency stores to be sure they are complete and food items are replaced when they reach their expiry date. Depending on location, 3 days of supplies should be made available.

- All work crews and individuals working away from the immediate project or camp should be supplied with and carry fully functioning communication equipment and have access to survival equipment and/or caches. This includes anyone travelling by any type of vehicle or aircraft.

3.5.9 Wild Animals

Develop emergency response procedures appropriate for the specific dangerous species at the project location.

- Identify the local dangerous animals and train employees to take appropriate precautions. Make sure that everyone understands their responsibility to prevent animals from becoming human habituated and food conditioned. Do not leave food where it will attract large animals, rodents, reptiles etc.

- Situate projects and camps to avoid locations where animals may live or feed, and arrange structures so that large animals have escape routes.

- Emergency procedures must conform to wildlife regulations of the AHJs. Post contact information for the area wildlife officer in order to request assistance, as required.

- Attempt to scare animals away with noise or other appropriate means.

Bears

- The ERP should include emergency procedures when bears approach and/or enter camps. Refer to section 10.3 Bears for recommendations.

  o Employees should be trained to recognize bear behaviour and correctly respond to bear encounters. Refer to section 10.3.10 Guidelines for Bear Encounters.

  o An ERP should include plans for a designated person to shoot the bear if the situation demands this action. All employee permitted to handle firearms must follow the laws and regulations of the AHJs. In Canada, this means that anyone in camp who has permission to handle firearms must be trained and hold a Possession and Acquisition License (PAL). Refer to section 18.2.2 Firearms Regulations and Policies.

- Attempt to scare a bear away by making noise and using appropriate deterrents (refer to section 10.3.9 Bear Deterrents).

- Inform the appropriate wildlife officials if a bear persistently returns and arrange for them to remove it.

- Where relevant, address the possibility of killing a polar bear with the local indigenous landowners, including compensation costs if a bear must be killed in self defence.

Wolverines

- Attempt to scare the wolverine away by making noise.

- Make sure a wolverine has an escape route. Never corner a wolverine as it will fight; they are ferocious and will attack humans and an animal much larger than itself.

Reptiles

- Obtain local expert advice to develop appropriate emergency response procedures to remove large or venomous snakes or crocodiles. Avoid killing reptiles whenever possible.

Emergency procedures when an animal enters camp

1. Verify that a threatening animal (e.g., bear) is sighted approaching or within the camp boundaries.

2. Sound the alarm. The alarm for an animal in camp must sound very distinct and different from the fire alarm so people react appropriately. (People assemble in one place in response to a fire, whereas they stay inside or go to the nearest shelter in response to an animal in camp.) The animal alarm might be three short blasts of a siren.

3. People in shelters should shout or use radios to confirm their location. Do not go to a muster point. Maintain a low position. Locate a canister of pepper spray in the shelter.

4. Designated people should attempt to isolate the animal from the areas where people are sheltering and drive it away using appropriate deterrents. If present in camp, trained bear guards should respond to face the bear rather than employees from out of the region (territory/province/country).

5. Notify appropriate wildlife officials to capture and relocate the animal, if required.

6. Develop plans and tactics that address (1) an animal entering a tent, the kitchen or dining structure, (2) if someone is attacked, (3) handling the invasion during the day and during the night, (4) if it is necessary to kill the animal.

3.5.10 Spills

1. Assure your own personal safety and the safety of others.

2. Assess the situation without risking employee safety. Determine the substance of the spill, if possible.

3. Safely stop the spill/leak, if possible.

4. Take immediate action to minimize the effects of the spill (containment) if it is safe to do so.

5. Report the spill to a supervisor as soon as possible. If the supervisor is unavailable, work through the phone list; if nobody is available, call the appropriate government environmental authority.

6. Record detailed notes:

   - Time of occurrence

   - Who was contacted and when

   - Actions taken to contain spill

7. What to report:

   - When and where the spill occurred

   - When the spill was discovered and by whom

   - What was spilled, how much was spilled, and where could it go

   - Whether the spill has been stopped and contained

   - What, if any, remediation measures have been started

   - Your name and telephone number

8. Complete and submit an environmental spill report or appropriate investigation form to the company and government authorities within the specified time.

Refer to sections 10. Hazardous Material and 11.0 Spill Management in the e3 Plus Environmental Stewardship Toolkit for information regarding specific hazardous substances and spill containment procedures. Website: http://www.pdac.ca/e3plus/

3.5.11 Bomb Threat and Security

1. It is most important to keep people safe.

2. Evacuate people from the building or site quickly and in an orderly way.

3. If the message is from a caller, try to find out when the device is set to detonate.

4. Contact the police as soon as possible.

5. If there is a suspicious package or item in the mail or an opened item revealing suspicious material:

   - Immediately place it aside with all content and wrappings.

   - Evacuate the room and close the door.

   - Turn off the building's air heating and air conditioning system to prevent the spread of potential contamination. Contact the appropriate building manager or site manager for this to be done.

6. Do not re-enter the building or the site until the police advise that it is safe to do so.

3.5.12 Example of a News Release

The following basic news release can be adapted to cover numerous emergencies when it is necessary to release information to the news media. The priorities are:

- Release the news quickly once the basic facts are known. Keep the news release factual and brief.

- It is best to have one spokesperson reporting for the company. This person should set the place and time for update reports.

- Note: It is best for the company to name the incident in the initial news release – i.e., this will aid to manage how the incident is "named" in third party reporting. It is best to use location names and focus on recovery type activities (i.e., the ABC Mine Rescue Operation, rather than the ABC Exploration Company Ltd. Mine Disaster, in order to encourage the adoption of this naming by other agencies.

<u>Briefing Note</u>

ABC Exploration Company Ltd., {LOCATION}

Time: {TIME of news release}
Date: {DATE}
Issue No: {#}

INCIDENT NAME and {LOCATION}

ABC Exploration Company Ltd. confirms that an incident has occurred at {LOCATION} on {DATE} at around {TIME}.

Right now, we have few precise details concerning the incident, except that {VERY BRIEF DESCRIPTION OF WHAT OCCURRED BASED ON CONFIRMED FACTS AND INFORMATION ONLY}. We can also confirm that {INSERT SPECIFICS: E.G., SEVERAL PERSONNEL WERE INJURED AND A QUANTITY OF CONDENSATE HAS BEEN SPILLED}.
Our full incident response team has been mobilized to assist local (and list other) emergency services {INSERT NAMES AND STATUS OF EMERGENCY SERVICES THAT ARE ON SITE, MOBILIZED and/or ON STANDBY}.
At this stage, we can provide no more information, except to stress that our immediate priorities are {INSERT IMMEDIATE PRIORITIES E.G., ENSURE THE SAFETY OF ALL PERSONNEL AND CONTAIN THE SPILL, PROVIDING ASSISTANCE TO AFFECTED FAMILIES}. We will provide additional details concerning the incident as soon as they become available.
<u>Notes to media</u>

{IF THIS IS KNOWN}. A press conference will be held at {VENUE} at {TIME}.

{Meanwhile} a media response service is available on {provide COMPANY MEDIA RESPONSE CONTACT and NUMBER}.

3.6 Resources

The Prospectors & Developers Association of Canada (PDAC) thanks the following for granting permission to include material from their publications.

Association for Mineral Exploration British Columbia (AME BC)

Their permission does not imply that they endorse the PDAC Health and Safety Guidelines. The PDAC is solely responsible for the content of these Health and Safety Guidelines.

Books

Canadian Centre for Occupational Health and Safety. (2004) *Emergency Response Planning Guide.* ISBN 0-660-18910-0.

Oliveri, Stephen R., Bohacs, Kevin. (2005) *Field Safety in Uncontrolled Environments: A Process-Based Guidebook.* American Association of Petroleum Geologists *and* Division of Environmental Geosciences *and* Exxon Mobil Upstream Geoscience.

Internet Resources

Association for Mineral Exploration British Columbia. *Basic Emergency Response Guidelines.* May 15, 2007. http://www.amebc.ca/Libraries/Taxation_Ecomonic_Incentives/Basic_Emergency_Guidelines.sflb .ashx. Accessed January 20, 2010.

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Oil and Gas Commission. *Emergency Response Planning.* Information Sheet 12. http://www.ogc.gov.bc.ca/documents/publications/Fact%20Sheets/12_Emergency%20Response %20Planning.pdf. Accessed January 20, 2010.

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Transport Canada. *CANUTEC – Emergency Response Guidebook 2008.* http://www.tc.gc.ca/canutec/en/guide/guide.htm. Accessed January 20, 2010.