General Exploration Orientation

Hello, welcome to the General Orientation for Vale Canada Limited's Exploration team training course. This course will ensure that you are aware of the health and safety matters related to your work with us. You must obtain a minimum score of 70% on the evaluation to complete this course.

Module Duration: About 60 minutes
VES ID: General Exploration Orientation
Revision Date: 08/15/23

- **Welcome**
- **Course Outline**
- **Vale: Learning Together**
- **Safety, Health, and Environmental Policy**
- **Critical Activity Requirements (CAR)**
- **Rights and Responsibilities of Workers**

- Human Rights
- Incident Reporting
- Exploration Hazards in Canada
- Fatality Prevention
- Personal Protective Equipment
- General Emergency Response
- Quiz
- Conclusion

Welcome

If you require a refresher on how to navigate online learning courses, please click to play the video below. Otherwise, you may continue with the course.

Upon completion of each section of this module, you will be given an opportunity to submit questions to obtain clarification of any content you are not sure of.

You will also be required to complete a brief survey designed to support continual improvement to your Vale learning experience.

Got a Question?

Submit your question here using Valeforms. Be sure to include your first name, last name, & contact information.

CLICK HERE!

CONTINUE

Course Outline

00:38

Click play to begin the audio.

After completing this course, you will be able to describe Vale's:

1. Learning Together Initiative
2. Safety, Health, and Environmental Policy
3. Critical Activity Requirements
4. Responsibilities and Rights of Workers
5. Human Rights

6 Incident Reporting Requirements

7 Exploration Hazards in Canada

8 Fatality Prevention Initiatives

9 Personal Protective Equipment Requirements

10 General Emergency Response

Got a Question?

Submit your question here using Valeforms. Be sure to include your first name, last name, & contact information.

CLICK HERE!

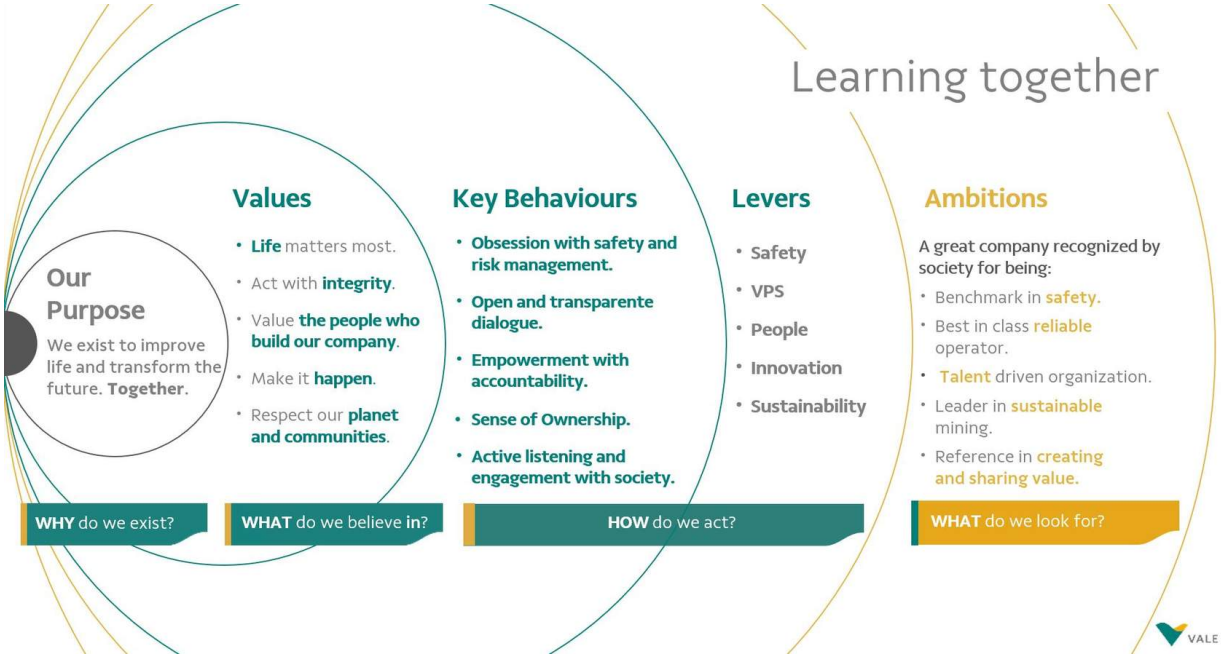
Complete the content above before moving on.

Lesson 3 of 14

Vale: Learning Together

02:12

Click play to begin the audio.



CONTINUE

Question

Which of the following are our Key Behaviours? *Select all that apply.*

- [ ] Sense of ownership
- [ ] Obsession with safety and risk management
- [ ] Active listening and engaging with society
- [ ] Empowerment with accountability
- [ ] Open and transparent dialogue

SUBMIT

Got a Question?

Submit your question here using Valeforms. Be sure to include your first name, last name, & contact information.

CLICK HERE!

Complete the content above before moving on.

Lesson 4 of 14

Safety, Health, and Environmental Policy

00:15

Click play to begin the audio.

Complete the content above before moving on.

00:42

Click play to begin the audio.

Vale's Sustainability Policy

Vale's Global Sustainability Policy (POL-0019-G) contains three strategic dimensions:

Sustainable Operator:

- Manage risks and impacts
- Meet legal requirements
- Continuously improve our processes and products
- Pursue technological innovation

- Promote a healthy, safe, and respectful working environment which will allow us to achieve zero harm to our workers and communities

Local Development Catalyst:

Collaborate towards the socio-economic and environmental development of the regions where we are present by establishing cross-sectoral partnerships which will lead to a positive legacy.

Global Sustainability Agent:

Contribute to the discussion and address the sustainable development challenges shared across the various regions and countries where we are present.

Complete the content above before moving on.

00:26

Click play to begin the audio.

Vale Canada Limited - Exploration Mission Statement

Vale Canada Limited (VCL) Exploration is committed to sustainable development through the execution of work programs designed to locate, evaluate, and define economic mineral deposits.

We recognize that sustainable development includes commitments to health, safety, and the environment through a balanced approach to economic, technical, and social issues.

In relation to Vale Operations, we are a separate entity that derives from Vale's Global Exploration team.

Complete the content above before moving on.

00:37

Click play to begin the audio.

Safety, Health, and Environmental Policy
Key Elements

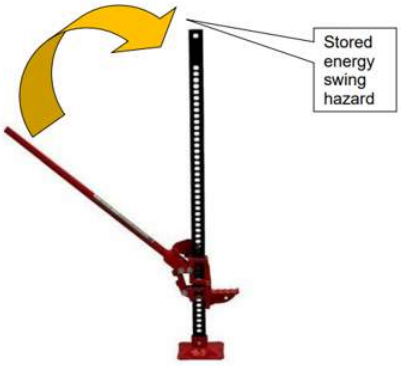
- Environmental, safety, and health risk management practices must be in place.
- Assess, plan, construct, operate, and decommission all projects and facilities in compliance with all applicable legislation and other requirements.
- Meet or surpass standards set by applicable legislation and other requirements through the diligent application of proven and economically feasible measures.
- Continually evaluate operational risks to safety, health, and the environment and apply appropriate risk management principles.
- Promote and encourage employee involvement at all levels in programs.

Complete the content above before moving on.

00:18

Click play to begin the audio.

Banned Equipment and Material



Farmer's Jack / Jack-all

Bungee Cord

Complete the content above before moving on.

Question

Which of the following are banned materials? *Select all that apply.*

- [ ] Box cutting knife
- [ ] Bungee cord
- [ ] Rope
- [ ] Haywire
- [ ] Farmer's jack
- [ ] Machete

SUBMIT

Got a Question?

Submit your question here using Valeforms. Be sure to include your first name, last name, & contact

information.

CLICK HERE!

Complete the content above before moving on.

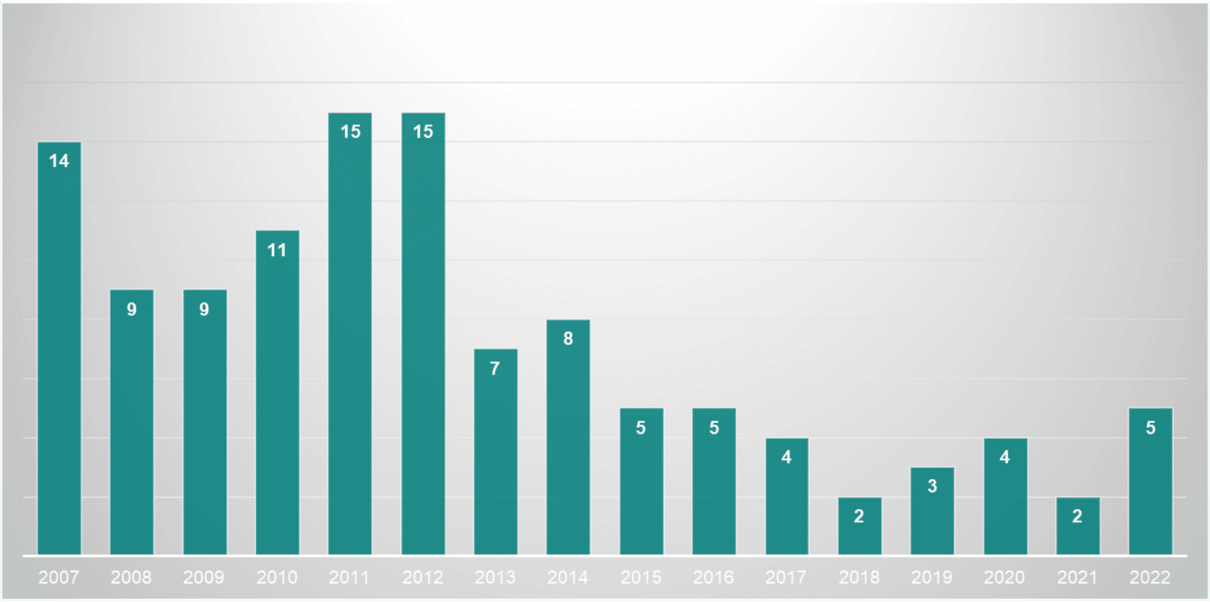
Critical Activity Requirements (CAR)

00:27

Click play to begin the audio.

Vale Fatalities Historical Data

Work-related fatalities of Vale and contract workers



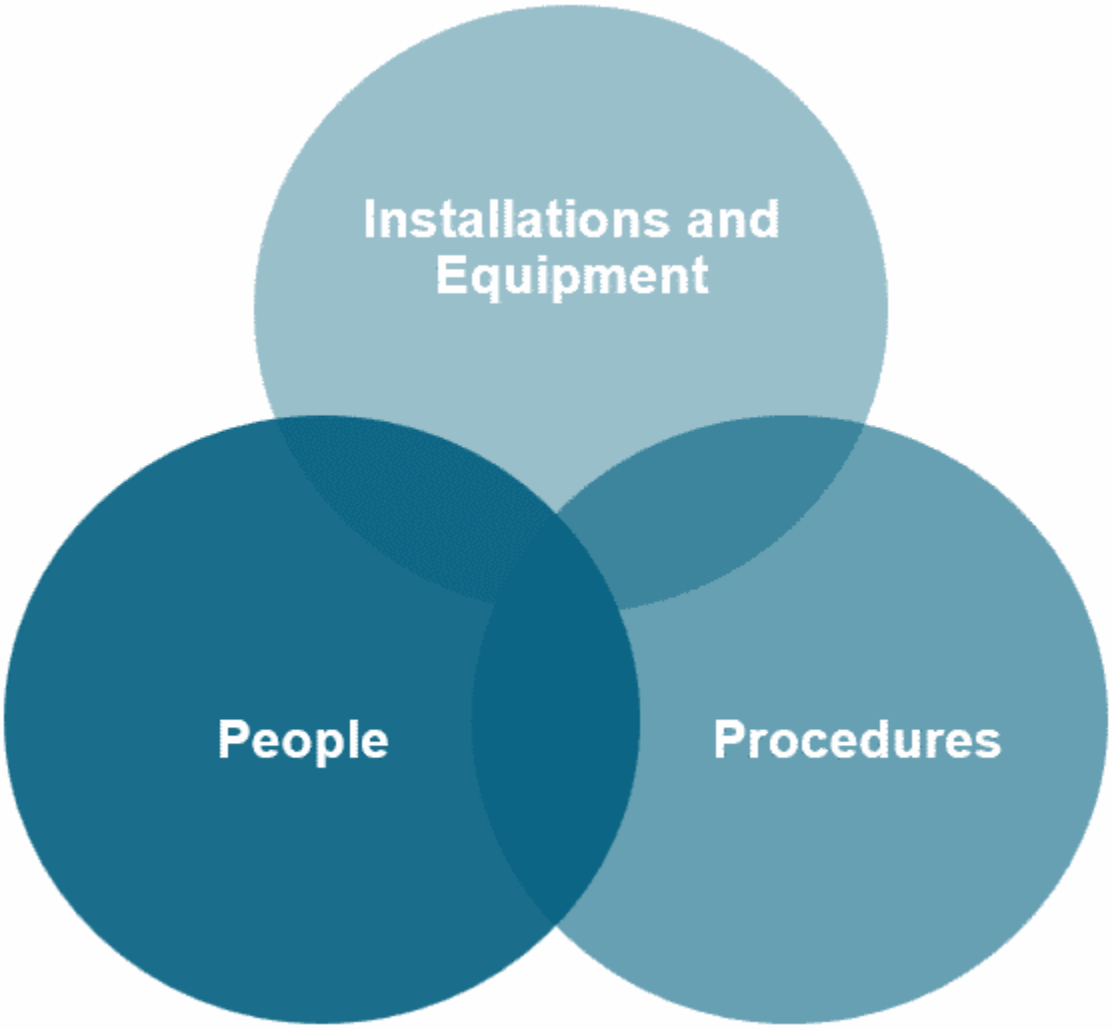
Complete the content above before moving on.

00:46

Click play to begin the audio.

Critical Activity Requirements

- **Working at Heights**
- **Automotive Vehicles**
- **Mobile Equipment**
- **Lockout/Tagout**
- **Lifting of Loads**
- Confined Space
- **Machine Guarding**
- **Ground Stability**
- Explosives
- **Working with Electricity**
- Molten Metal



Complete the content above before moving on.

00:38

Click play to begin the audio.

Installations and Equipment

Aim to ensure that facilities and equipment of Vale:

- meet technical and legal requirements
- are manufactured and installed in accordance with rules and standards
- are kept and used within pre-established standards by manufacturers (no significant changes)

Contributing factors of incidents involving facilities and equipment include:

- poor design
- absence of protection from moving parts
- operation of equipment above the limits of the equipment
- failure to maintain the physical integrity of installations and equipment
- lack of visibility in the operation of mobile equipment

Complete the content above before moving on.

00:32

Click play to begin the audio.

Critical Activity Requirements Procedures

Procedures aim to ensure that risks arising from the implementation of critical activities are properly considered and controlled, as pre-established standards.

Contributing factors of incidents involving procedures include:

- Not using or misusing personal protective equipment
- Breach of procedure
- Lack of equipment inspections

- Lack of pre-operation inspections
- Failure in risk analysis and activity planning
- Failure in risk communication
- Failure to block sources of energy

Complete the content above before moving on.

00:27

Click play to begin the audio.

Critical Activity Requirements People

Aim to ensure that the executors of critical activities are physically and mentally fit, with knowledge of the risks, trained and, where required, able to carry out their activities.

Contributing factors of incidents involving people include:

- Insufficient qualification
- Insufficient physical and mental aptitude and/or occurrence of fatigue
- Use of alcohol or illicit drugs

Complete the content above before moving on.

Critical Activity Requirements

Click the arrows to learn more about Critical Activity Requirements in Exploration at Vale.

1

CAR 01 - Working at Heights

00:42

Working at heights is the use of ladders, scaffolding, aerial work platforms, and personnel hoisting equipment where any person could fall 1.8 m or more.

Training and Safety Equipment

- Legislated provincial training program for Working at Heights completed.
- Training for aerial platform and First Aid required.
- Pre-use inspection of scaffolding, guardrails, and aerial work platforms are required.
- Fall protection and a fall protection plan must be developed.
- Elevated work areas must have guardrails, securely fastened flooring. Tools must have lanyards.
- Lower levels must have barricades and signage.

2

CAR 02 - Automotive Vehicles

00:44

Training:

- Operators must possess a Driver's Permit.
- Documented pre-operational inspection.
- Operators must be trained in Defensive Driving, First Aid, and Site-Specific Training.
- Cell phone usage while driving is strictly prohibited.

Safety Equipment:

- The parking brake and wheel chocks must be used when parked at the worksite.
- Telemetry device to measure driving habits (e.g., seatbelt use, accident, speeding).
- Head rest, air bags, elimination of projectiles, and emergency equipment.

- Vehicles on mine sites require added equipment (e.g., stripes, LED flag, roof light).

3

CAR 03 - Mobile Equipment

01:00

Here are examples of Mobile Equipment. The list of examples relevant to Exploration includes graders, loaders, excavators, forklifts, and dozers, among other trucks.

Training and Safety Equipment:

- Operators must have a valid driver's license for equipment, certification for operation of relevant type of equipment, and participated in training of fire detection and suppression if present.
- Pre-use and periodic inspection of mobile equipment.
- Wheel chocks needed when parked at work site unless stabilized by bucket.
- Fire detection and mitigation required such as automatic shut-down, evacuation system, thermal blanket for exhaust ducts, and fire suppression system.
- Excavator operation near power cables must follow precautions (e.g., powerline spotter, use two-way radio, daylight hours, and no active weather).

- No entertainment devices, cellphones, or tablets used unless parked in safe location.

4

CAR 04 - Lockout, Tagout, and Zero Energy

00:40

- Applies to activities in machinery, and equipment requiring energy isolation.
- Each worker must be trained in Zero Energy State on each piece of equipment.
- Each worker must be issued a personal lock (specific for lock-out/tag-out use and not to be shared).
- Any equipment locked out or tagged out by one crew must be discussed and documented to the next crew.
- Lockout devices, lock-out/tag-out procedures, and system to manage isolation of energy must be available to workers.
- Lack of lock-out and tag-out are unsafe situations that are a failure of understanding the risks.

5

CAR 05 - Lifting of Loads

00:50

- Crane Operator must have a certificate and training on the specific crane being used.
- Operators and Riggers must be trained and authorized.
- Do not touch a suspended load. Tag lines must be used. Never transport a load over people.
- Load swing radius must be observed. Barricade the area with red chain.

A detailed written procedure shall be prepared for all critical lifts including:

- Rigging details, wind speed, hoist line speed, crane travel speed, load distribution.

- Examples include a crane lift involving multiple cranes, a mobile crane lift where the load exceeds 75% of its capacity, or when the combined weight is over 10 tons.
- A means of effective communication must be established and maintained between all persons involved during critical lifting operations.

6

CAR 07 - Machine Guarding

00:31

Applies to all machines and equipment where there is the potential for people to be injured as a result of contacting moving parts, falling, projected material, and parts or components that have the potential to cause harm.

- If a guard is damaged or missing, the equipment must be tagged out of service.
- If servicing equipment, the guard must be in place before suspending energy isolation.
- Removing safety devices (e.g., E-Stops, pull cords, & two-handed controls) is forbidden.

7

CAR 08 – Ground Stability

00:13

This applies to activities where there are slopes, excavations, waste rock piles, tunnels, and underground installations.

If you see an area that concerns you, notify your supervisor.

8

CAR 10 – Working with Electricity

00:32

- Electrical substations, panels and energized equipment may only be accessed by trained and authorized workers.
- Working alone on energized equipment or installations is prohibited.
- Arc Flash Clothing and PPE are required for those who work on these installations.
- Operation of electrically-powered equipment with trailing cables must follow the guidelines established for the handling, use, and maintenance of those cables.

- Damaged cables must be taken out of service for repair.

Complete the content above before moving on.

Which of the following Critical Activity Requirements are most relevant to Exploration? *Select all that apply.*

- [ ] Working at Heights
- [ ] Automotive Vehicles
- [ ] Mobile Equipment

- [ ] Lockout/Tagout
- [ ] Lifting of Loads
- [ ] Confined Space
- [ ] Machine Guarding
- [ ] Ground Stability
- [ ] Explosives
- [ ] Working with Electricity
- [ ] Molten Metal

SUBMIT

Got a Question?

Submit your question here using Valeforms. Be sure to include your first name, last name, & contact information.

CLICK HERE!

Complete the content above before moving on.

Rights and Responsibilities of Workers

ONTARIO | MANITOBA | NL

Ontario's Occupational Health and Safety Act Responsibilities
Every worker has the **Responsibility** to:

- Work in compliance with the Act and Regulations
- Use or wear any required equipment, protective devices, or clothing
- Report any known missing or defective equipment or protective device
- Report any known workplace hazards
- Report any known contravention of the Act or regulations
- Not remove or make ineffective any protective device
- Not use or operate any equipment or work in a way that may endanger any worker
- Not engage in horseplay including running, pranks, feats of strength, and rough conduct
- Take reasonable care to protect his or her own health and safety and that of workers and other persons at or near the workplace

While we have Responsibilities, we also have **Rights**:

- To participate in anything to do with health and safety in your workplace
- To know about anything that could affect your health and safety
- To refuse unsafe work that could endanger yourself or others

ONTARIO | MANITOBA | NL

Manitoba's Workplace Safety and Health Act and Regulation – General Duties

- Take reasonable care to protect their safety and health and the safety and health of other persons who may be affected by their acts or omissions at work
- At all times, when the nature of their work requires, use all devices and wear all articles of clothing and personal protective equipment designated and provided for their protection by their employer, or required to be used and worn by them by the regulations
- Consult and co-operate with the workplace safety and health committee, where such a committee exists, regarding the duties and matters with which that committee is charged under this Act
- Consult and cooperate with the worker safety and health representative, where such a representative has been designated, regarding the duties and matters with which that representative is charged under this Act
- Comply with this Act and the regulations
- Co-operate with any other person exercising a duty posted by this Act or the regulations.

Manitoba's Workplace Safety and Health Act and Regulation – Right to Refuse Dangerous Work

- *43(1) Right to refuse dangerous work*
  Subject to this section, a worker may refuse to work or do particular work at a workplace if they believe on reasonable grounds that the work constitutes a danger to their safety or health or to the safety or health of another worker or another person.
- *43(2) Reporting the refusal*
  A worker who refuses to work or do particular work under subsection (1) shall promptly report the refusal and the reasons for it to their employer or immediate supervisor, or to any other person in charge at the workplace.

Newfoundland and Labrador Occupational Health and Safety Act - Specific duties of workers

7. A worker

- (a) shall co-operate with their employer and with other workers in the workplace to protect:
  (i) their own health and safety,
  (ii) the health and safety of other workers engaged in the work of the employer,
  (iii) the health and safety of other workers or persons not engaged in the work of the employer but present at or near the workplace;
- (a.1) shall use devices and equipment provided for their protection in accordance with the instructions for use and training provided with respect to the devices and equipment;
- (b) shall consult and co-operate with the occupational health and safety committee, the worker health and safety representative or the workplace health and safety designate at the workplace; and
- (c) shall co-operate with a person exercising a duty imposed by this Act or regulations.

Newfoundland and Labrador Occupational Health and Safety Act - Right to refuse to work

- 45. (1) A worker may refuse to do work that the worker has reasonable grounds to believe is dangerous to their health or safety, or the health and safety of another person at the workplace
- (2) Where a worker refuses to do work under subsection (1) their employer may reassign the worker to other work that is reasonably equivalent to the work they normally performs and the worker shall accept the reassignment until they are able to return to work under subsection (1).
- (3) Where a worker is reassigned to other work under subsection (2) the employer shall pay the worker the same wages or salary and grant them the same benefits the worker would have received had the worker continued in their normal work.
- (4) Where a worker has reasonably refused to work under subsection (1) and has not been reassigned to other work under subsection (2) the employer shall pay the worker the same wages or salary and grant the worker the same benefits the worker would have received had the worker continued to work until they are able to return to work under subsection (1).
- (5) A reassignment of work under subsection (2) is not discriminatory action under section 49.

Got a Question?

Submit your question here using Valeforms. Be sure to include your first name, last name, & contact information.

CLICK HERE!

Complete the content above before moving on.

Human Rights

Complete the content above before moving on.

00:52

Click play to begin the audio.

Human Rights are important because they protect people in vulnerable situations. Vulnerable situations take place in mineral exploration and here are four examples:

- When we have mobile equipment working near the homes of landowners, we could cause cracks and damage to their homes due to heavy truck traffic. It means that we may have infringed on their right to adequate housing.
- When return water from the drilling process is released and goes into the streams and lakes nearby, we could be infringing on people's right to access safe drinking water.
- We could have a flatbed truck parked to load/unload mobile equipment or drilling equipment. If the parked flatbed truck interrupts the passage of community cars, we could be infringing on people's right to come and go – Freedom of movement.
- Air pollution and particulate matter emissions from our equipment could impact people's health meaning we could be infringing on their right to health.

Complete the content above before moving on.

Drag and drop to match the Human Right that is being challenged to the Impact that can be generated by mining activities.

Right to adequate housing	Cracks in houses of the community due to heavy truck traffic
Right to access to safe drinking water	Waste discharge in a stream or body of water used by the community
Right to come and go - Freedom of movement	Parked train interrupting the passage of community cars
Right to health	Air pollution and particulate matter emissions impacting people's health

SUBMIT

Got a Question?

Submit your question here using Valeforms. Be sure to include your first name, last name, & contact information.

CLICK HERE!

Complete the content above before moving on.

Incident Reporting

Definitions

Unsafe Condition

A situation or circumstance that could result in an incident or near miss (an incident or near miss waiting to happen.) Remedy the unsafe condition or report these immediately to your supervisor.

Example: An employee observes that pedestrians are required to cross a busy roadway in order to enter a facility where vehicles and/or pedestrians are not signed to yield.

Near Miss

An unplanned event that did not result in injury, illness, or damage but had the potential to do so.
Example: A vehicle screeches to a halt to avoid hitting an employee who was crossing a roadway in order to enter a facility.

Incident

An unplanned event that results in harm to people, assets, or the environment.
Example: A vehicle hits an employee who was crossing a roadway in order to enter a facility.

Incident Reporting

Why do we report incidents and near misses?

- Reporting incidents is about protecting workers and learning from our experiences
- It demonstrates awareness by the worker

Who should report incidents?

Everyone

When do incidents get reported?

- Immediately so that no other worker experiences the same event
- This includes near misses and unsafe conditions

What happens after an incident is reported?

- Supervisor must ensure that the hazards have been eliminated
- Never put yourself in harm's way.
- An incident must be reported to Vale as soon as reasonable

Complete the content above before moving on.

00:29

Click play to begin the audio.

Critical Injuries or Serious Incidents

If a critical injury or potentially serious incident occurs:

- Preserve (freeze) the scene. This is important for incident investigation and is a requirement for critical injuries.
- Do not move anything unless it is necessary to protect people or prevent unnecessary damage to equipment or property.

Spills

All spills constitute an incident that must be reported to Vale immediately.

It is imperative to have a complete spill kit with instructions about the procedure and material in the kit. Follow your Spill Response Plan.

Complete the content above before moving on.

00:19

Click play to begin the audio.

Incident Review

We will now examine two events. Each event will be described, and you will have a chance to select some control measures that could have mitigated or prevented the event from taking place.

Incident 1

A worker was observed positioned on the mast of the surface diamond drill rig. A discussion between the worker and the supervisor took place before completing the task.

Complete the content above before moving on.

Question

What control measures could have mitigated or prevented this incident from taking place? *Select all that apply.*

- [ ] CAR-01 – Working at Heights
- [ ] CAR-07 – Machine Guarding
- [ ] Pre-use inspection of safety equipment needed for task
- [ ] Shut down drilling operation (Zero Energy State)
- [ ] Procedure for working on the drill rooftop
- [ ] Emergency plan for working with electricity

SUBMIT

Complete the content above before moving on.

00:11

Click play to begin the audio.

Incident 2

The operator of a Class-7 forklift reversed the equipment when a worker was handling bags nearby. The worker was struck by the rear right tire of the forklift and suffered critical injuries.

Complete the content above before moving on.

What control measures could have mitigated or prevented this incident from taking place? *Select all that apply.*

- [ ] CAR-03 – Mobile Equipment
- [ ] CAR-05 – Lifting of Loads
- [ ] Procedure for Forklift operation
- [ ] Procedure for Work around the Forklift
- [ ] Safe operation area for pedestrians to travel and work that includes physical barriers

- [ ] Lockout/tagout of the forklift

SUBMIT

Got a Question?

Submit your question here using Valeforms. Be sure to include your first name, last name, & contact information.

CLICK HERE!

Complete the content above before moving on.

Exploration Hazards in Canada

00:33

Click play to begin the audio.

20 Key Identified Hazards

The hazards discussed in this section may be present in Vale Exploration projects in Canada. Some project-specific hazards will be presented during your on-site training. Your site may have additional controls specified in its procedures. The controls presented here are a baseline. You must follow your site-specific procedures.

Some hazards you may be exposed to may not be covered here. Your site is responsible for ensuring you have the appropriate training for the job. If you do not have the training, do not complete the task.

Read through each of the Activities, Hazards, and Controls below.

Complete the content above before moving on.

1. Hazard: Driving Light Vehicles

Activity	Hazards
Driving Light Vehicles	Speed, Road Conditions, Wildlife, Fatigue, Distractions, Bridges, Trains, Traffic, Gates.

Controls
Drive according to conditions
Follow posted speed limits and respect the speed limits on access roads
Plan your route
No cellphones or other distractions (texting, Bluetooth, etc…)
Project operated bridge inspections
Vehicle maintenance / Pre-operational inspections
Do not drive fatigued / Car pool when possible
Training

CONTINUE

2. Hazard: Driving a UTV

Activity	Hazards
Driving a UTV	Trail conditions, fatigue, stuck, rollover, fire, mechanical failure, ergonomics, collision, hot surfaces, lost

Controls
Current training
Ensure cargo is secure and re-check often
Plan your route and carry appropriate communication equipment
Use the required PPE - approved helmet, gloves, face protection, eye protection, long sleeves and pants.
Vehicle pre-op and maintenance
Emergency equipment required: tire repair kit, pump/compressor, winch kit, fire extinguisher, first aid kit
Drive according to conditions

CONTINUE

3. Hazard: Driving a Snowmobile

Activity	Hazards
Driving a Snowmobile	Trail conditions, fatigue, lost, mechanical failure, ergonomics, collision, exposure

Controls
Current training
Ensure cargo is secure and re-check often
Plan your route and carry appropriate communication equipment
Use the required PPE - approved helmet, gloves, face and eye protection
Vehicle pre-op and maintenance
Emergency equipment required: spare belt, tool kit, spark plug, first aid kit, fire extinguisher
Drive according to conditions

CONTINUE

4. Hazard: Getting Lost

Activity	Hazard
Working Outside	Getting Lost

Controls
Do not work alone without a working alone plan. The plan must include your designated contact person and confirm that you are doing low-risk work.
Always have a means of communication, including on access routes: cell phone, satellite phone, SPOT and ensure it is working and has enough power
Let your coworkers know where you are going and how long you plan to be working
Plan your work
Always have a map and a GPS

CONTINUE

5. Hazard: Wildlife

Activity	Hazard
Working Outside	Attacked by Wildlife

Controls
Bear awareness training
Carry deterrents – spray, air horn, other noise makers, etc…
Do not dispose of garbage in the field
Keep work areas clean of garbage
Report animal sightings – especially if you see animals denning or rutting





6. Hazard: Hunters

Activity	Hazard
Working Outside	Hunters

Controls
Post “No Hunting” or “Workers are Present” signs during hunting season.
Report hunting in your work area to your supervisor
Wear blaze orange during hunting season
Be aware that First Nations may be hunting year round

CONTINUE

7. Hazard: Insects

Activity	Hazard
Working Outside	Insects, Lyme Disease, West Nile

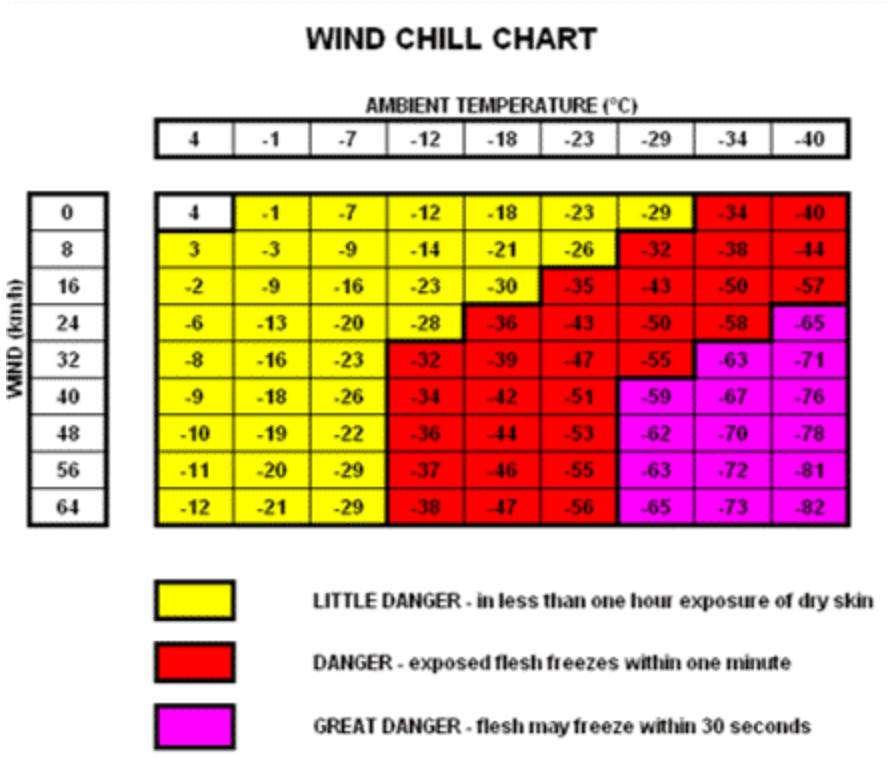
Controls
High population of bugs-black flies, sandflies, horseflies, mosquitos, bees, hornets.
Inform colleagues of any allergies
Use long sleeve shirts, pants, hats and bug net/jackets
Have insect repellant available
With the black-legged deer tick, inspect your body at the end of the day. (Sudbury)
If you have a tick latched to yourself, you may use tweezers designed to remove them or seek medical attention. (Sudbury)

CONTINUE

8. Hazard: Extreme Cold

Activity	Hazard
Working Outside	Extreme Cold

Controls
Avoid working in extreme cold. Plan work for warmer parts of the day when possible
Proper clothing
Know the wind chill
Cold weather training – recognizing the symptoms of cold stress
First Aid supplies

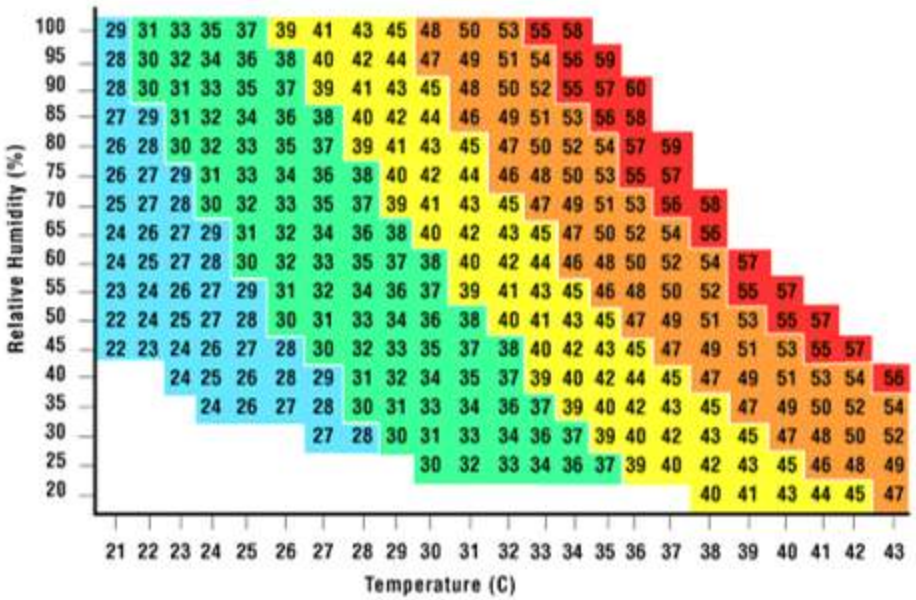


CONTINUE

9. Hazard: Hot Weather

Activity	Hazard
Working Outside	Hot Weather

Controls
Limit strenuous work in hot temperatures
Know the humidex
Carry plenty of water
Frequent breaks
Hot weather training – know the signs of heat stress
Sunscreen
Stop in shaded areas



CONTINUE

10. Hazard: Dry Conditions

Activity	Hazard
Working Outside	Dry Conditions, Forest Fire

Controls
Check fire risk rating daily in Ontario (April 1st to Oct 31st) and in Manitoba (April 1st to November 15th)
Equipment use may be restricted based on fire rating
Firefighting equipment must be present at all worksites with possible sources of ignition at all times of year
Ensure proper extinguishing / disposal of cigarette butts
Fires are not permitted unless necessary for survival

CONTINUE

11. Hazard: Extreme Weather

Activity	Hazard
Working Outside	Extreme Weather – lightning, high winds, heavy rain, and snow blizzard

Controls
Check weather conditions daily
Postpone or change work schedule in extreme conditions
Stop work when changing conditions pose a risk
Avoid geophysical loop wire during electrical storms
Follow the 30 – 30 rule for returning to work in a lightning storm (30 minutes with more than 30 seconds lapse between lightning and thunder). You may also download a lightning detection application to your phone.
Have appropriate clothing available for the weather conditions

CONTINUE

12. Hazard: Dangerous Plants in Sudbury, Ontario

Activity	Hazard
Working Outside	Dangerous Plants

Controls
Know what Giant Hog Weed and Poison Ivy look like
Report dangerous plants in your work area
DO NOT try to remove Giant Hog Weed

CONTINUE

13. Hazard: Water

Activity	Hazard
Working Outside	Working Around Water

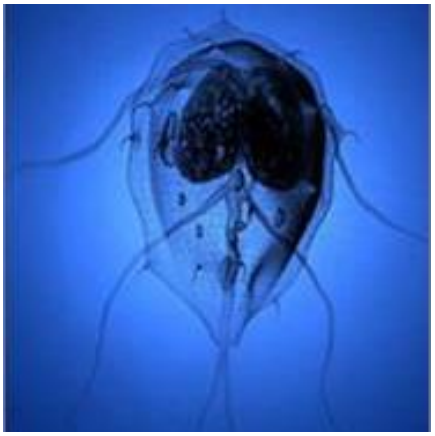
Controls
Certified life vest must be in the area of sumps if working near water with no barricades (within 10ft) life vest must be worn
Emergency response and rescue plans to be in place
Never work alone near water. ALWAYS use the “buddy system”

CONTINUE

14. Hazard: Drinking Lake or River Water

Activity	Hazard
Drinking Lake or River Water	Giardia (beaver fever)

Controls
Do not drink untreated surface water from springs, streams, rivers, lakes, or ponds
Wash your hands before eating or handling food
Know the symptoms: digestive tract issues that may include diarrhea, gas, stomach/abdominal cramps, upset stomach, nausea/vomiting, dehydration



CONTINUE

15. Hazard: Falling

Activity	Hazard
Traversing	Slips, Trips and Falls

Controls
Use proper footwear – no damage, ankle support, non-slip soles
Traverse with caution
Do not take risks on slippery or steep slopes
Avoid moss/lichen covered outcrop
Have hands available to use trees/rocks for leverage
Choose safe routes up/down hills
Take precautions to avoid muscular fatigue

CONTINUE

16. Hazard: Loud Noises

Activity	Hazard
Working around Loud Machinery	Hearing Damage

Controls
Ensure you know the dB level you are exposed to – Should be posted. >85dB can cause hearing damage.
Wear appropriate PPE – Earplugs, earmuffs or both for double hearing protection.

Noise Exposure Limits	
Allowable Level dB(A)	Maximum Permitted Daily Duration (hours)
85	8
88	4
91	2
94	1
97	0.5
100	0.25

Noise-induced hearing loss is often called the "invisible hazard"

- No visible trauma
- Is unnoticeable in its earliest stages
- Accumulates with each overexposure

CONTINUE

17. Hazard: Pollution

Activity	Hazard
Working Near Water Bodies	Pollution

Controls
Plan your worksite and access route to meet construction standards.
Ensure that silt fencing and hay bails are in place prior to a silting event occurring.
Have appropriate spill kits on site.
Sumps must be a minimum of 100 m from any water body in Manitoba.
Sumps must be a minimum of 30 m from any water body in Ontario.
Generators must be placed in a drip pan with spill pads.

CONTINUE

18. Hazard: Carrying Heavy Loads

Activity	Hazard
Carrying Heavy or Awkward Loads	Back Strain / Other Injury

Controls
Know the weight of your load
Ask for help
Use equipment to move heavy loads when possible
Know and use proper lifting techniques
Take breaks

From 2012 – 2016, a total of 580 exertion-related injuries resulted in 41% of all Lost Time Injuries in the mining sector.

CONTINUE

19. Hazard: Rotating Parts

Activity	Hazard
Working Around Drills	Rotating Parts

Controls
Only those trained and authorized should be working around rotating machinery
Pre-ops to ensure all equipment and safety guards are in place and working properly
Interlock guards to automatically shut off equipment
Appropriate signage to warn of hazards
Ensure loose clothing and long hair are suitably constrained. No jewelry.
Follow lock out - tag out procedures (ZES) before conducting any repairs or maintenance

CONTINUE

20. Hazard: Overhead Hazards

Activity	Hazard
Working Around Drills	Overhead Hazards

Controls
Unless involved in drill operations, do not approach drill when pulling rods
Be aware of the angle of the hole and do not walk under the tower
Clear drill site and access of dead or dying trees

CONTINUE

What are some of the controls for the **Hazard: Driving Light Vehicles**? *Select all that apply.*

- [ ] Follow posted speed limits
- [ ] Pre-op inspection
- [ ] No texting while driving
- [ ] Driving while fatigued
- [ ] Drive according to conditions

SUBMIT

What are some of the controls for the **Hazard: Getting Lost**? *Select all that apply.*

- [ ] Inform co-workers where you're going and how long you'll be
- [ ] Do not take a map or GPS
- [ ] Have a means of communication
- [ ] Have a plan when working alone

SUBMIT

What are some of the controls for the **Hazard: Wildlife - Working Outside**? *Select all that apply.*

- [ ] Bear awareness training

- [ ] Carry bear deterrents
- [ ] Do not dispose of garbage in the field
- [ ] Keep work areas clean of garbage
- [ ] Report sightings to your supervisor
- [ ] Take a selfie with wildlife

SUBMIT

What are some of the controls for the **Hazard: Dry Conditions**? *Select all that apply.*

- [ ] Check fire risk rating daily according to date
- [ ] Dispose of all cigarette butts

- [ ] Restrict some equipment use based on fire rating
- [ ] Flick cigarette butts where they can't be seen
- [ ] Firefighting equipment on all worksites

SUBMIT

What are some of the controls for the **Hazard: Extreme Weather**? *Select all that apply.*

- [ ] Change work schedule if extreme conditions exist
- [ ] Touch the geophysical loop wire during electrical storms
- [ ] Stop work if extreme conditions exist
- [ ] Check weather conditions daily

- [ ] Follow the 30-30 rule for returning to work in a lightning storm

SUBMIT

What are some of the controls for the **Hazard: Falling**? *Select all that apply.*

- [ ] Wear shoes without ankle support
- [ ] Choose safe routes up and down hills
- [ ] Avoid moss and lichen covered outcrop
- [ ] Take risks on slippery slopes
- [ ] Have hands free to use rocks or tree for leverage/balance

SUBMIT

What are some of the controls for the **Hazard: Back Injury** due to carrying heavy loads? *Select all that apply.*

- [ ] Take breaks
- [ ] Ask for help
- [ ] Never use equipment to move heavy loads
- [ ] Know the weight of your load
- [ ] Know proper lifting techniques

SUBMIT

Got a Question?

Submit your question here using Valeforms. Be sure to include your first name, last name, & contact information.

CLICK HERE!

Complete the content above before moving on.

Fatality Prevention

00:27

Click play to begin the audio.

Hazard elimination is the most effective method of Risk Reduction. However, this is not always possible. In cases where an activity could result in serious injury or death, Critical Controls are required to protect those who may enter harm's way.

Vale Exploration has an active Fatality Prevention Committee, the sole purpose of which is to identify critical controls designed to prevent fatalities.

The most High-Risk activities Exploration has assessed are:

Driving Automotive Vehicles

Critical Controls
Click image to zoom.

Routemap (including training)
Monitoring of adverse weather conditions (rain, fog, snow, ice, strong winds)
Monitoring of roadways conditions (including bridges) and road maintenance program
Traffic Management Plan
Signalization of roadways critical points and bridges
Complementary trainings in off road 4WD
Fatigue Management Plan (check the breaks for rest, orientation about feeding, rest and critical analysis of the program)
Education campaigns, Safety alerts
Speed Management (register, monitoring and consequences management)
Golden Rules (including trainings)
Compliance with CAR 02 (training, medical examinations and vehicle requirements)
Scheduled Maintenance Plan
Daily Pre-start inspections
Inspections and Audits of vehicles
Traffic Stop (Blitz for inspection)
Risk Analysis (Preliminary Risk Assessment, Journey Plan)

Working Around Diamond Drill Rigs

Critical Controls

Click image to zoom.

Scheduled Maintenance Plan
Inspections and Audits of drilling equipment
Daily Pre-start inspections
Monitoring of adverse weather conditions (rain, fog, snow, etc.)
Trainings and license (CARs, procedures, local legislation, etc)
Golden Rules (including trainings)
Compliance with the minimum requirements: CAR 01 - Working at Heights, CAR 04 - Lockout and Tagout, CAR 05 - Lifting of Loads, CAR 07 - Machine Guarding
Consult registers of soil interferences
Preliminary Risk Assessment (PRA), Work Permit
Fatigue Management Plan (check the breaks for rest, orientation about feeding, rest and critical analysis of the program)
Work area lightning
Work area signaling
Education campaigns, Safety alerts
Safety valve during drilling operations
Hardwire Methane detector
Work Plan (route, interference, place of unloading, etc.)
Operational procedure with highlight to critical component
Management of medical examinations (realization and monitoring)

Working With Mobile Equipment

Critical Controls

Click image to zoom.

Monitoring of internal roadway conditions (including bridges) and access maintenance
Traffic Management Plan
Signalization of roadways critical points
Trainings beyond RAC 03 (procedures, local legislation, etc.)
Fatigue Management Plan (check the breaks for rest, orientation about feeding, rest and critical analysis of the program)
Education campaigns, Safety alerts
Speed Management (register, monitoring and consequences management)
Golden Rules (including trainings)
Compliance with RAC 3 (mandatory trainings and mobile equipment requirements)
Scheduled Maintenance Plan
Daily Pre-start inspections
Inspections and Audits of mobile equipment
Checkponits for safety inspection
Preliminary Risk Assessment (PRA)
Routemap (including training)
Monitoring of adverse weather conditions (rain, fog, snow, ice, strong winds)
Communication between operator and support staff
Supervised activities
Operational procedures
Management of medical examinations (realization and monitoring)
Pre-evaluation of the equipment (inspection) during contracting phase

Complete the content above before moving on.

Activity

Drag the Critical Control card to the correct high-risk activity.

Driving Automatic Vehicles

Monitoring of external roadway conditions

Inspections and audits of vehicles

Working Around Diamond Drill Rigs

Inspections and audits of drilling equipment

Consult registers of soil interferences

Working with Mobile Equipment

Monitoring of internal roadway conditions

Got a Question?

Submit your question here using Valeforms. Be sure to include your first name, last name, & contact information.

CLICK HERE!

Complete the content above before moving on.

Personal Protective Equipment

00:14

Click play to begin the audio.

Personal Protective Equipment (PPE) Requirements

The following are general PPE requirements for all employees:

- **Hard Hat & Head Protection:** Classification - CSA approved, Type 2, Class E, (no white)
- **Foot Protection:** CSA green tag with a 6” upper
- **Eye Protection:** CSA approved (no contact lenses)
- **High Visibility Clothing:** CSA Class 2 (no hoodies, florescent background only)
- **Gloves** for the specific task
- **Hearing Protection**, as required
- **Face Shields**, as required
- **Respiratory Protection**, as required

Complete the content above before moving on.

PPE Requirements

The following are PPE Requirements for specific tasks. Click the arrows to learn more.

1

Drill Site

00:13

- An approved safety hard hat
- Sturdy work gloves
- Approved metatarsal boots
- Approved eye protection (safety glasses)
- Approved hearing protection (ear muffs or ear plugs)
- Approved long-sleeved and legged high-visibility clothing (class 3)

2

Laying Loop

00:15

- High visibility clothing and outerwear suited to conditions (class 2 or 3)
- Boots suited to the conditions (Safety boots where required)
- Navigational Equipment: Maps, GPS and/or compass, SPOT
- Sturdy work gloves
- Climber's/hiker's helmet for rough terrain (when required)
- Safety eyewear suited to conditions

3

UTV

00:09

- Approved helmet
- Gloves
- Eye and face protection
- Long sleeves and pants
- Sturdy boots

4

Snowmobile

00:09

- Approved helmet
- Gloves
- Eye and face protection
- Weather appropriate clothing
- Sturdy boots

5

Chainsaw

00:10

- Hard hat with screen
- Gloves
- Metatarsal boots
- Safety glasses
- Hearing protection
- Chainsaw pants

Additional Notes

Additional activities may have further PPE requirements.

Please consult the procedure or talk to your supervisor.

Got a Question?

Submit your question here using Valeforms. Be sure to include your first name, last name, & contact information.

CLICK HERE!

Complete the content above before moving on.

General Emergency Response

Emergency Response Procedures by Site

The following tabs show the Emergency Response Procedures according to site location.

Click each tab to learn more.

SUDBURY & THOMPSON | VOISEY'S BAY

In **Sudbury**, call **911**
In **Thompson**, you must call **1 (204) 677 7911**

- Give the injured person's condition
- Give the EMS number (found on the Emergency Response Plan)
- Answer all questions asked by dispatch to the best of your ability
- Provide First Aid if required
- Emergency Responders will go to the designated EMS site. Follow the arrows through the (bush) roads.
- Follow the Emergency Response Plan

In the event of an emergency in Voisey's Bay, a **CODE 1** is called to activate the Emergency Response Team.

FIRE:

- All fires must be reported, require Code 1 call to be made
- If a FIRE ALARM has been activated, the ERT will respond
- If able to extinguish a small fire, Emergency Coordinator must be contacted immediately to ensure no residual threat

MEDICAL:

- When there is a Medical Occurrence that requires immediate MEDICAL ATTENTION, call Code 1

ENVIRONMENTAL:

- Any spills over 70L or spills into a water source
- If there is an uncontrolled release of a hazardous substance that poses a serious, immediate threat to the environment, call Code 1

If an incident occurs involving personal injury that is not serious enough to warrant a "Code 1" but may require medical assistance, the Health Centre should be contacted:
Telephone: 922-4444 (Non-emergency phone line)
Radio: Channel 1 (Emergency channel)

Active Genuine Care
To ensure site personnel receive immediate and quality care, it is imperative that all injuries/non-occupational illnesses are reported immediately.

Non-Occupational Illness
All non-occupational injuries MUST be reported and assessed at the site clinic. Personnel are not permitted to remain in their dorm room without consulting with their direct supervisor and being assessed by the site medical team.

CONTINUE

EMS Site Locations

The following tabs show the EMS Site Location requirements.

Click each tab to learn more.

SUDBURY & THOMPSON | VOISEY'S BAY

What is an EMS site in Sudbury, Ontario?
A designated assembly location for Sudbury's Emergency Medical Services (EMS) crew.
An EMS site is:

- Easily accessible by ambulance
- Near worksite
- Evaluated by EMS supervisor to ensure that it is suitable
- For remote sites, EMS may respond with an Argo or air ambulance
- Posted with signage by the Vale Exploration Group:
  Sign with contractor name, number and distance to worksite is posted at the EMS assembly area. Arrows are posted at each fork along the route to and from the EMS assembly area to ensure that EMS responders can find the work site. Upon completion of the work program, arrow signs are removed.

SUDBURY & THOMPSON

VOISEY'S BAY

Emergency Meeting Points

These are designated points on site that provide ERT with a precise location to respond to once a Code-1 Emergency is initiated. Contractors are to be familiar with the nearest EMP and note it on their daily FLRA.

How are EMP's utilized?

- Personnel calling a Code-1 shall use the nearest EMP sign as a reference to their specific location (Example: "Emergency Meeting Point #7 – Surface Maintenance Shop").
- A person in the area shall be designated to meet the ERT/MRT at the EMP sign and direct the response team to the exact location of the Emergency.

CONTINUE

Emergency Response Plans

This is an example of an Emergency Response Plan. Check your site for your specific Emergency Response Plan.

VALE EXPLORATION EMERGENCY RESPONSE PLAN – South North Ella

Project Information

Project Name: South North Ella	**EMS # 13**
Project Location: Capreol Township	
Latitude: 46° 42' 49'' N	
Longitude: 80° 52'18'' W	
ERP Approved by: Steve MacPhail	
Date Approved: January 6th, 2021	

Emergency Contact Numbers

Emergency Numbers	**POLICE**	**911**
	FIRE	**911**
	AMBULANCE	**911**

Hospital: Health Sciences North **Phone #:** 705-523-7100	**Address:** 41 Ramsey Lake Road Sudbury, ON, P3E 5J1

Other	Poison Control Centre	1-800-268-9017	MNRF – Report Forest Fires	310-3473 (FIRE)
	Sudbury & District Health Unit	(705) 522-9200	MNRF – Fire Intensity Codes	(705) 564-6083
	Collision Reporting Centre (Azilda)	(705) 675-9171	MNRF – Rabies Information Line	1-888-574-6656
	Boyuk Towing Services	(705) 522-4500	MOECC Spills Action Centre (Ontario)	1-800-268-6060
	Ontario Provincial Police (Sudbury)	(705) 564-6900	MOECC (Sudbury)	(705) 564-3237
	Ministry of Labour	1-877-202-0008	CANUTEC	1-888-226-8832
	Environment Canada Weather	(705) 677-7928	KRT	(705) 677-2900

Vale Contact Numbers

Name	Mobile	Office
Lisa Gibson (Sudbury Exploration Manager)	(705) 618-5195	
Carrie Forget (Project Lead – Senior Geologist)	(705) 618-3844	
Brett Atkinson (Project Geologist)	(705) 822-2336	
Andrew Mackie (Interim HSE Manager)	(705) 682-8477	
Randy Battochio (HSE Advisor)	(705) 280-7137	
Josh Rheaume (Exploration Technologist)	(705) 562-2989	
Sean Dickie (Senior Geophysicist)	(705) 682-8291	
Steve Drisdelle (Earthworks Coordinator)	(705) 822-1340	
Steve Kant (Geophysics Coordinator)	(705) 690-0014	

Contractor Contact Numbers

Name	Mobile	Office
Orbit Garant Drilling- Myron McCubbin	(705) 923-3443	
Lamontagne Geophysics- Brad O'Bomsawin	(705) 626-6786	(705) 855-1220
Sheldon Fielding Services- Sheldon Fielding	(705) 562-5396	(705) 866-2512
Gyro Data- Don Black	(705) 494-0075	
Frequency Geophysics – Jason Forget	(705) 561-3521	

Emergency Response Plan Example - Page 1

VALE EMERGENCY RESPONSE PROCEDURE

IN THE EVENT OF AN INJURY OR MEDICAL EMERGENCY:

1. Remain calm and take charge.
2. Assess the situation. Remove immediate hazards and make the area safe for the injured and yourself. Do not enter and prevent others from entering dangerous areas.
3. If required call 911. If possible, delegate the responsibility to call 911. If you are unable to delegate the responsibility of initiating the emergency response procedure and there is no immediate danger to rescuer or casualty.
4. Evaluate the severity and type of injury.
5. If safe and trained to do so, begin First Aid treatment.
6. Remain with injured person(s) and provide appropriate support.

TO REPORT A FOREST FIRE: Call 310-FIRE (3473)

Injuries that require immediate medical attention include: life in jeopardy, unconsciousness (even if momentary), substantial loss of blood, amputation of any body part, significant burns and loss of eye sight (*Critical Injury Definition*)

Motor Vehicle Incidents
- If there is an injury call 911 and give location
- Contact supervisor
- Exchange documentation with other driver (if applicable)
- If combined damage is >$1000 contact OPP - 1888 310 1122

Project Leader	Carrie Forget (cell) 705-618-3844

Property Location – SOUTH NORTH ELLA	
Latitude	46° 42' 49" N
Longitude	80° 52'18" W

Directions to Hospital from Project Area

-Access onto West Bay Road
-Follow West Bay Road to Capreol Lake Road (RR 97)
-Turn left onto RR 84 towards Hanmer
-Turn right on Cote Bolvd/RR 80 in Hanmer at T-junction
-Follow RR 80/Notre Dame/Paris Street to Ramsey Lake Road
-Turn left onto Ramsey Lake Road then turn right into Health Sciences North

Emergency Response Plan Example - Page 2

Got a Question?

Submit your question here using Valeforms. Be sure to include your first name, last name, & contact information.

CLICK HERE!

Complete the content above before moving on.

Quiz

You will now take an evaluative test regarding the content of this training.

In order to receive credit for this training, you need to pass the following quiz with a score of 70% or better.

Good luck.

Question

01/09

What are Vale's Values? *Select all that apply.*

- [ ] Life matters most
- [ ] Act with integrity
- [ ] Value the people who build our company
- [ ] Make it happen
- [ ] Respect our planet and communities

Question

02/09

At all locations, you must call 911 to begin the emergency response procedure.

- ◯ True
- ◯ False

Question

03/09

Which of the following are banned materials and equipment? *Select all that apply.*

- [ ] haywire
- [ ] flashlights
- [ ] machete
- [ ] lithium batteries
- [ ] box cutting knife
- [ ] farmer's jack/jack-all
- [ ] bungee cord

Question

04/09

Which of the following are contributing factors of incidents involving **people**? *Select all that apply.*

- [ ] Failure in risk analysis and activity planning
- [ ] Failure in risk communication
- [ ] Insufficient qualification
- [ ] Poor design
- [ ] Use of alcohol or illicit drugs
- [ ] Insufficient physical and mental aptitude and/or occurrence of fatigue

Question

05/09

Match the information from the critical activity requirement to its CAR type.

Crane Operator will have a certificate and be training in the specific crane being used	CAR 01 - Working at Heights
Operators must have driver's license and certificate for operation of the equipment.	CAR 02 - Automotive Vehicles
Each worker must be issued a personal lock	CAR 03 - Mobile Equipment
Operators must possess a Driver's Permit	CAR 04 - Lockout/Tagout & Zero Energy
Fall protection and a fall protection plan shall be developed	CAR 05 - Lifting of Loads

Question

06/09

Who should report incidents?

- Supervisors only should report an incident
- The person involved in the incident
- Anyone can report an incident

Question

07/09

All spills constitute an incident that must be reported to Vale immediately.

- ◯ True
- ◯ False

Question

08/09

Which of the following are some controls for working outside with a hazard of extreme weather? *Select all that apply.*

- [ ] Check weather conditions daily
- [ ] Postpone or change work schedule in extreme conditions
- [ ] Stop work when changing conditions pose a risk
- [ ] Avoid geophysical loop wire during electrical storms
- [ ] Follow the 30 – 30 rule for returning to work in a lightning storm

Question

09/09

Which of the following are PPE requirements for a drill site? *Select all that apply.*

- [ ] Safety hard hat
- [ ] Sturdy work gloves
- [ ] Metatarsal boots
- [ ] Ear muffs or ear plugs
- [ ] Chainsaw pants
- [ ] Safety glasses

Conclusion

00:28

Click play to begin the audio.

You should now be able to describe Vale's:

1. Learning Together Initiative
2. Safety, Health, and Environmental Policy
3. Critical Activity Requirements
4. Responsibilities and Rights of Workers
5. Human Rights
6. Incident Reporting Requirements

7 Exploration Hazards in Canada

8 Fatality Prevention Initiatives

9 Personal Protective Equipment Requirements

10 General Emergency Response

If needed, you can review any part of this course again to gain a better understanding of these policies.

Online Training Survey

Submit your evaluation here using Valeforms.

All submissions are anonymous. Thank you.

CLICK HERE!

Thank you for completing the Vale Online Module Training.

Complete Your Module Validation

PLEASE CLICK HERE