

Conducting a Comprehensive Hazard Assessment

List the types of work and any related activities i.e.

Work Activity	Related Activities
Operating Dump Truck	Conducting a Circle Check
	Loading
	Unloading
	Operating
	Backing Up
	Tarping Load
	Fueling

Identify the hazards associated with each of the related activities. Be sure to consider People, Equipment, Materials, and the Environment. Ask yourself these questions:

1. Who will be exposed to this operation and how may their actions or presence contribute to hazards? Be sure to consider employees, other contractors, the public, visitors etc.
2. What equipment is involved in this activity and how may it contribute to hazards? Consider the operation of Vehicles, Equipment, Power Tools, Hand Tools, Straps, Slings, Training, Maintenance, Moving Parts etc.
3. What materials are involved in this activity and how may they contribute to hazards? Many materials may create health hazards but also fire and explosion hazards. Inadequate storage, securing and transportation of materials can also create hazards. Is uncontrolled exposure to this material hazardous?
4. What other factors in the environment may contribute to hazards? Consider other people, equipment, the weather, time of day, lighting, noise, exposure to electricity and utilities etc. Is the work being completed at heights? In a confined space? At a construction site? On the side of a road?

What are some useful tools to help us identify these hazards?

- Provincial and Federal Occupational Health and Safety Regulations
- Incident/Accident Reports
- Material Safety Data Sheets
- CSA Standards
- Industry Statistics
- Talk to Workers/Supervisors
- Stop Work Orders/Directives Issued by governing bodies
- Industrial Hygienists

Work Activity	Related Activities	Hazards
Operating Dump Truck	Conducting a Circle Check	<ul style="list-style-type: none"> • Inexperienced operator may miss mechanical deficiencies • Being Struck by other equipment operating in area • Exposure to gas/vapors from equipment in operation • Slips, trips falls
	Loading	<ul style="list-style-type: none"> • Falling Material • Struck by Dropped Load • Struck by moving equipment • Overhead Power Line Contact • Handling Hazardous/Toxic Loads
	Unloading	<ul style="list-style-type: none"> • Overhead Power Line Contact • Struck, Crushed by unloading material • Handling Hazardous/Toxic Loads
	Operating	<ul style="list-style-type: none"> • Inexperienced Operator • Traffic on Public Roadways • Other individuals in working area • Sprains/Strains climbing in and out • Road/Ground Conditions • Weather • Machine Failure • Oversized/Overweight Loads • Restricted Visibility
	Backing Up	<ul style="list-style-type: none"> • Striking object or Individuals in Area • Overhead Power Lines • Drop Offs • Ground Conditions
	Tarping Load	<ul style="list-style-type: none"> • Falling Material from insecure load • Struck By Failing Strap • Sprains and Strains • Struck by • Pinch Points

		<ul style="list-style-type: none">• Cuts• Over Power Lines• Slips, Trip, Falls
	Fueling	<ul style="list-style-type: none">• Spills• Fire/Explosion• Vapors/Gas exposure

Once Hazards are identified, they must be prioritized. Prioritizing hazards helps establish a baseline for corrective measures to be implemented, ensuring that the most hazardous/dangerous conditions are corrected first.

Three factors should be considered when prioritizing hazards:

1. Potential **Severity** of injury should an incident occur with the uncontrolled hazard;
2. The **Probability** of an exposure to the hazard and the likelihood of an occurrence; and
3. The **Frequency** with which workers are exposed to the hazards.

These factors can be ranked, using a method determined by the organization. One such example is listed below.

Severity

+0 No Injury

+1 Minor Injury requiring first aid

+2 Medical treatment with no lost time beyond the day of injury and minor property damage (\$500 or less)

+3 Lost Time Injury or significant property damage (greater than \$500 but less than \$5000)

+4 Permanent Disability/Fatality(ies) or major property damage (greater than \$5000)

Probability

+1 Exposure to the uncontrolled hazard is **unlikely to occur**

+2 Exposure to the uncontrolled hazard **could occur**

+3 Exposure to the uncontrolled hazard **will occur**

Frequency

Number of Persons Exposed	Number of times persons may be exposed to or have contact with the hazard.		
	Less than daily	Few times a day	Many time a day
Few	+1	+1	+2
Moderate	+1	+2	+3
Many	+2	+2	+3

Risk = Severity+Probability+Frequency

Low Risk 0-2

Medium Risk 3-5

High Risk 6-10

Work Activity	Related Activity	Hazards	Risk Ranking Risk = Severity+Probability+F requency			
			S	P	F	R
Dump Truck Operation	Backing Up	Striking object or individual	4	3	2	9
		Overhead Power Lines	4	3	2	9
		Drop Offs	4	2	1	7
		Poor Ground Conditions	4	3	2	9

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Once Hazards have been identified and evaluated/prioritized the company must determine which controls are necessary to eliminate or reduce the hazard to an acceptable level. The hierarchy of risk controls must be considered when implementing controls, in accordance with provincial regulations.

Hierarchy of Risk Controls

1. **Engineering Controls:** Can the hazard be **eliminated, isolated, ventilated or substituted**? Can a **change in design or process** eliminate or reduce the hazard?
2. **Administrative Controls:** Have **safe work practices and job procedures** been developed to teach workers how to work safely around the hazard. Has the necessary **training** been conducted?
3. **Personal Protective Equipment:** Can personal protective equipment provide protection to the worker against the hazard? Has the personal protective equipment been selected for the task? Does it meet industry and regulatory standards and have workers been trained to use the equipment? PPE is always the last resort when controlling hazards as it does nothing to actually eliminate or reduce the actual hazard.

Work Activity	Related Activity	Hazards	Risk Ranking Risk = Severity+Probability+Frequency				Controls
			S	P	F	R	
Dump Truck Operation	Backing Up	Striking object or individual	4	3	2	9	<ul style="list-style-type: none"> • Use of a spotter when visibility is reduced • Audible Back Up Beeper • SWP - Working around heavy equipment
		Overhead Power Lines	4	3	2	9	<ul style="list-style-type: none"> • Job Procedure – Working around Over head Power Lines • Permit from utility required when closer than 18ft to line • Power Line Hazard Training for operator • Emergency Response Plan for Accidental Contact • Fire Extinguishers • First Aid • Use of a spotter required
		Drop Offs	4	2	1	7	<ul style="list-style-type: none"> • Use of a spotter when visibility is reduced • SWP - Working around heavy equipment
		Poor Ground Conditions	4	3	2	9	<ul style="list-style-type: none"> • Pre-Trip Pre-Job Hazard Assessment • Situational Awareness – Only park, operate on firm level ground that the operator is confident can support load. Be aware of

							soft/narrow shoulders <ul style="list-style-type: none"> • Trained Operators • Ensure Loads are Balanced and not overweight
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Evaluation

Once the controls have been established, the company must ensure that they are in place and that:

1. They have effectively controlled the hazard;
2. They have not created any new hazards;
3. Any new hazards identified have been evaluated and controlled;
4. All Incidents are being reported and reports are being analyzed; and
5. Are any new measures required or have any new measures been recommended (i.e. by the OHS Committee).

Risk Ranking

Severity

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Comprehensive Hazard Assessment

Work Activity	Related Activity	Hazards	Risk Ranking				Controls
			Risk =				
			Severity+Probability+Frequency				
			S	P	F	RR	