Table of Contents.

Chapter 1 **Safety and Environmental Policy**
- 1.1 Policy

Chapter 2 **Petroleum Industry Guidelines and Principles**
- 2.1 Guideline

Chapter 3 **Chemical and Biological**
- 3.1 Information
- 3.2 Chemical Spill Response Guideline
- 3.3 Storage/Transport
- 3.4 Decanting/Handling/Disposal
- 3.5 Hazard Information/Equipment/Procedures/Spill Response
- 3.6 Spill Response Cont'd/Reporting
- 3.7 Chemical Spill Response Flowchart
- 3.8 Appendix B: Chemical Spill Kits
- 3.9 Appendix B Cont'd
- 3.10 Chemical Spill Response Training
- 3.11 Procedure #3: Determining Whether a Spill is a Minor Spill
- 3.12 Procedure #4: Selecting and Wearing Appropriate PPE
- 3.13 Procedure #6: Preparing a Spill Kit

Chapter 4 **Rights and Responsibilities**
- 4.1 Organizational Chart
- 4.2 Company Positions and Titles
- 4.3 Senior management Responsibilities
- 4.4 Responsibilities cont'd
- 4.5 Responsibilities cont'd
- 4.6 Short Service and New hire responsibilities

Chapter 5 **Subcontractor Safety Management Plan**
- 5.1 Overview
- 5.2 Measurements and Inclusion of Safety Initiatives
- 5.3 Requirements, Reporting and Review Processes

Chapter 6 **Educational and Legislative Requirements**
- 6.1 Requirements

Chapter 7 Lock out/Tag out Policy
7.1 Policy
7.2 Policy Cont'd
7.3 Group Lock out Procedure
7.4 Work/maintenance on energized equipment

Chapter 8 De-Energization
8.1 Locks and Keys De-Energization
8.2 Valves

Chapter 9 Right to Refuse Unsafe Work
9.1 Worker/Contractor Right to Refuse Policy

Chapter 10 Communications Policy
10.1 Policy

Chapter 11 Drug and Alcohol Policy
11.1 Policy
11.2 Table of Contents
11.3 Section 1: Purpose and Scope
Section 2: Testing Occurrences
11.4 Section 3: Prohibitions
11.6 Section 4: Positive Test Results
11.7 Section 5: Return to Work after a Positive Test
Section 6: Confidentiality and Record Keeping
11.7 Authorization and Consent Form
11.8 Appendix "A" Standards
11.9 Appendix "B" Standards

Chapter 12 Impairment
12.1 Impairment Policy

Chapter 13 Emergency Response
13.1 Emergency Response Plan
13.2 Emergency Procedures/Preparedness
13.3 Emergency Response Numbers
13.4 Field / Job Incidents
13.5 Injury or death incidents
13.6 Public Relations and Natural Disasters

Chapter 14 First Aid
14.1 General
14.2 Procedures/First Aid Records
14.3 First Aid Attendant Responsibilities
14.4 First Aid Attendant Qualifications
14.5 First Aid Supplies/Facilities/Resuscitation

Chapter 15 Fire Protection

15.1 Fire Prevention and Equipment
15.2 Discovery and/or Alarm of Fire Procedures
15.3 Fire Extinguishment

Chapter 16 Evacuation and Rescue

16.1 Training and Risk Assessment
16.2 Inspection of Equipment and Maintenance of Records

Chapter 17 Emergency Preparedness

17.1 Risk Assessment and Training
17.2 Fire Emergency Procedures

Chapter 18 Spills and Leaks

18.1 Spills, Leaks and Releases of Hazardous Substances
18.2 Incidents Requiring Immediate Notification
18.3 Chemical and Biological
18.4 Reportable Spill Quantities by Material Class
18.5 H2S
18.6 H2S Cont'd
18.7 Releases of H2S Gases
18.8 Seven Step initial response strategy

Chapter 19 Incident and Hazard Reporting Guide

19.1 General Guidelines for Inspections and Hazard Awareness
19.2 Schedule for Inspection and Appointed Personnel
19.3 Service On Site Safety Committee Chart
19.4 Incident Reporting and Investigation
19.5 Incident and Hazard Investigation
19.6 Procedure for the Investigation
19.7 Incident Reporting Definitions and Classification Guidelines
19.8 First Aid Definitions
19.9 First Aid Definitions Cont'd
19.10 Medical Aid/Restricted Workday/Days Away Definitions
19.11 Fatalities/Status of Personnel/Pre-Existing Conditions
19.12 Total Reportable Injury rate
19.13 Motor Vehicles and Definitions
19.14 Motor Vehicle Incident Interpretations/Definitions
    19.14a Definitions Cont'd
    19.14b Definitions Cont'd
    19.14c Definitions Cont'd

Chapter 20 Safety Rules

20.1 Rules, Safe Work Practices and Procedures

Chapter 21 Violence in the Workplace

21.1 SOS prevention of Violence in the Workplace
21.2 Overview of regulations section violence in the workplace
21.3 community health and violence
21.4 cont'd
21.5 Risk assessment summary report
21.6 Violent Incident Report Form

Workplace Bullying and Harassment

21.7 Purpose, Policy, Scope
21.8 Definitions
21.9 definitions cont'd
21.10 Responsibilities
21.11 Program Procedures
21.12 cont'd
21.13 Follow up and appeal process
21.14 Record Keeping
21.15 Appendix A
21.16 Appendix B

Chapter 22 Disciplinary Policy

22.1 Security and Disciplinary Policy

Chapter 23 Transportation Policy

23.1 Journey Management Plan Form
23.2 Transportation Policy and Defensive Driving
23.3 Winter Driving
23.4 Transportation
23.5 Retention of Records and maintenance of records
23.6 Limitation of on duty time
23.7 cont'd
23.8 Cargo Securement
23.9 Cellular Phone/Radio Use

Chapter 24 Driving/Vehicle Policy

24.1 Motor Vehicle Policy
24.2 cont'd Motor Vehicle Policy
24.3 Standard vehicle equipment

Chapter 25 Personal Protective Equipment

25.1 Personal Protective Clothing & Equipment Responsibilities
25.2 Selection, Use & Maint., Personal Clothing, General Requirement
25.3 General, Head and Foot Protection
25.4 High Visibility Apparel, eye and face protection
25.5 Hearing and Limb & Body Protection
25.6 Annual review

Chapter 26 Workplace Fatigue

26.1 Section 1: Workplace Fatigue
26.2 Section 2: Understanding Fatigue Management
26.3 Work Scheduling/Choosing an Optimum Schedule
26.4 Shift Work Characteristics/Breaks/Task Types and Lengths
26.5 Work and Workplace Conditions

Chapter 27 Thermal Exposure

27.1 Removal From and Treatment for Heat Exposure
27.2 Heat Stress controls
27.3 Cold Exposure

Chapter 28 Noise

28.1 Hearing Protection
28.2 Hearing Tests

Chapter 29 Respiratory Protection

29.1 Fall Protection
29.2 Respiratory Protective Equipment
29.3 Respiratory Protection and maintenance

Chapter 30 Work Area Requirements

30.1 Work Area Requirements

Chapter 31 Ergonomics

31.1 Ergonomics
31.2 Risk Control/Education training/Evaluation/Consultation
31.3 cont'd
31.4 safe work permits

Chapter 32 Working Alone

32.1 Working Alone Policy/Responsibilities/Procedures
32.2 Hazard Assessment
32.3 Annual Review
32.4 Working Alone Check-up Logbook Form

Chapter 33 Containers and Storage

33.1 Compressed Air Tools and Equipment/Cylinders, handling barrels or drums
33.2 cont'd Handling Barrels or Drums
33.3 Container and Storage

Chapter 34 Storing and Handling

34.1 Storing and Handling

34.2 Substances under Pressure

Chapter 35 Confined Spaces

35.1 Confined Spaces
35.2 Confined Space Entry and Responsibilities
35.3 Hazard Assessment and Work Procedures
35.4 updating the information
35.5 Rescue and Lifelines, Harnesses and Lifting Equipment
35.6 Confined Space Entry De-energization

Chapter 36 Electrical Safety Awareness Training

36.1 Electrical Safety Awareness Training outline
36.2 Electrical Safety Training
36.3 Basics of Electricity and Exposure to Electrical Hazards
36.4 Electrical Hazards Cont'd
36.5 Effects of Different Levels of Current on the Human
Path of the Current/Burns caused by Electrical Shock/
Electrical Hazards at Work
36.6 How Can You Protect Yourselves from Electrical Hazards?
36.7 Responsibilities and How Can You Protect Yourselves from Electrical Hazards?
36.8 Reporting Problems/Emergency Response Procedures
36.9 Summary

Chapter 37 Electrical

37.1 Electrical Operations/Safe Limits of Approach
37.2 General Electrical Requirements/Portable Electrical Equip.
37.3 Electrical/Warning Signs

Chapter 38 Rigging

38.1 Rigging and Slings
38.2 Sling Angles/WLL Reductions for Slings at an Angle
38.3 Alloy Steel Chain Sling/Synthetic Web Slings
38.4 Wire Rope Slings
38.5 Metal Mesh Slings
38.6 Rules and Hand Signals

Chapter 39 Excavation, trenches, hoisting and winching equipment

39.1 Jurisdiction excavation and trench depths

Chapter 40 Ladders, Scaffolding and Temporary Work Platforms

40.1 Ladders
40.2 Scaffolding
40.3 cont'd
40.4 Scaffolding cont'd and Electrical Hazards
40.5 Work Platforms on Wheels/Fall Protection
40.6 Fall Protection Cont'd

Chapter 41 Machine Safety

41.1 Machine Guarding/Power Tools
41.2 Machine Safety
41.3 Safety Machinery and Equipment
41.4 Inspection and Maintenance Records
41.5 Hand Tools/Welding
41.6 Signs and Tags/Handling Pipe/Safety Devices

Chapter 42 Tools, Machinery and Equipment

42.1 Fixed Guards/Rotating Hazards/Ground Fault Interrupter

Chapter 43 Welding and Heating

43.1 Flammable and Explosive Substances/Radiation Protection/Protective Clothing and Equipment/Making Hot Work
43.2 Fire Extinguishers/Set-up for and Finishing Welding or Heating/Cutting Attachments Set-up Equipment
43.3 Cont'd
43.4 When You Finish the Cutting Operation/Flashback Arrestors
43.5 cont'd
43.6 Use of Tiger Torches

Chapter 44 Plunger and Charge Pump Repair

44.1 Plunger Pump Repair Procedure
44.2 Charge Pump Repair Procedure
44.3 Inspection Report Form
44.4 Pump Check List Start Up
44.5 Positive displacement Plunger Pump procedure
44.5 cont'd
44.6 cont'd
44.7 cont'd
44.8 cont'd
44.9 Centrifugal Pump Procedure
44.10 cont'd
44.11 cont'd
44.12 Horizontal Pump Procedure
44.13 cont'd
44.14 cont'd
44.15 Accumulator
44.16 cont'd
44.17 cont'd
44.18 cont'd

Chapter 45 Crane, Hoisting and Lifting

45.1 Cranes and Hoists – Identification/Capacity/Load Charts
45.2 Boom Extension/Inspection & Maintenance/Records
45.3 Fire Extinguisher/Annual Inspection

45.4 Crane Lifting and Hoisting Procedure
45.5 Hazards and Controls
45.6 pre use daily check list
45.7 monthly crane inspections
45.8 cont'd

Chapter 46 Power Mobile Equipment

46.1 Introduction
46.2 Responsibilities and General Operating Requirements
46.3 cont'd and Free Moving Equipment or Vehicles
46.4 cont'd Free Moving Equipment or Vehicles
46.5 cont'd and Mobile Equipment Safety Requirements
46.6 cont'd and aerial lifts
46.7 Maintenance
46.8 Forklift Daily Checklist Form

Chapter 47 Hazard Material Information MSDS

47.1 WHMIS / MSDS
47.2 decanted products and availability of MSDS
47.3 MSDS Information
47.4 Cont'd MSDS information
47.5 Cont'd MSDS information

Chapter 48 Transportation of Dangerous Goods

48.1 Transportation of Dangerous Goods
48.2 Dangerous Goods Class Guide

Chapter 49 Hazard Identification and Risk Control

49.1 Hazard Identification and Risk Control and Definitions
49.2 Identifying Potential Hazards
49.3 Pre-Job Analysis/Hazard Assessments/Safe work Permits
49.4 Pre-job meetings / Personnel Observations
49.5 Equipment, vehicle inspections/emergency, fire equipment inspections
49.6 When risk assessment is not appropriate
49.7 Reporting Hazards/Controlling Hazards/Risk Assessment
49.8 cont'd and hazard priority ranking
49.9 Hazard Identification and Risk Control Ranking Table
49.10 cont'd
49.11 Risk Control
49.12 Facility Field Level Hazard Assessment Form
49.13 Service On Site Field Level Hazard Assessment Form
49.14 Management Inspection Form
49.15 Frequency/Probability/Severity/Critical Rating Table
49.16 Risk Assessment Model

Chapter 50 Incident Investigation Report

50.1 Incident Investigation Report Form

50.2 cont'd In Incident Investigation Report Form
50.3 cont'd In Incident Investigation Report Form

Chapter 51 Disability Management Policy

51.1 Disability Management Policy
51.2 Stay at Work or Return to Work Policy
51.3 Statement of Commitment
51.4 Letter to Employee
51.5 Letter to Physician
51.6 Physician Fit for Duty
51.7 Dear Physician/Physical Demands Letter
51.8 Physical Demands Analysis
51.9 Potential Light Duties

Chapter 52 Behavior Based Safety

52.1 Identifying Behaviors
52.2 Communicate the Behaviors and How They Are Performed; Observing the Worker Force
52.3 Observing the Work Force Cont'd
52.4 Collect and Record Observation Data
52.5 Communicate Observation Data and Analysis
52.6 Change Behaviors
52.7 Observation Session Instructions
52.8 Behavior Observation Sheet
52.9 Special High Risk Jobs
52.10 Behavior Observation Auditor Evaluation Form
52.11 Behavior Observation Audit Card
52.12 Behavior Observation Sheet

Chapter 53 Exposure Control Plan

53.1 Carbon Monoxide Exposure Control
53.6 Blood Borne Pathogens Exposure Control
53.9 Mouse Droppings Exposure Control Plan
53.12 Silica Dust Exposure Control Plan

HEALTH, SAFETY AND ENVIRONMENTAL POLICY

Safety is an essential component of Service On Site's operations, intended to protect our employees, contractors, sub contractors, visitors, property, the environment and the public.

There are many costs to accidents and unsafe work practices. Unfortunately the greatest costs are human ones. By protecting our workers, we are also protecting their friends, families, management, the public and the environment from the extended effects of serious accidents. In addition to protecting lives, our safety program assists with worker morale and pride because our people participate in identifying safety needs and developing safe work procedures. Everyone who works for Service On Site is responsible for maintaining our Safety Program.

Managers and safety supervisor and supervisors are responsible for identifying and communicating safety hazards, investigating hazardous conditions and accidents, providing training, supplying and wearing appropriate personal protective equipment, properly maintaining tools and equipment, and meeting government legislative safety standards and requirements. Their role is supported by input from all workers. Service On Site will monitor its performance against the results of the requirements, of this policy.

All Service On Site employees, Visitor and Subcontractors are responsible for obeying all safety rules, following recommended safe work procedures, wearing personal protective equipment when required, participating in safety training programs and informing supervisors of unsafe work conditions.

Everyone has the right and responsibility to identify and refuse unsafe work.

By fulfilling our safety goals, aims and responsibilities, everyone who works for Service On Site will share the benefits of a healthy and safe workplace.

Service On Site has created and will maintain this health, safety and environmental program to achieve our health, safety and environmental performance objectives.

Chris Babcock, President
Reviewed January 2020

Chemical and Biological

General Information requirement

If a worker is or may be exposed to a chemical or biological substance which could cause an adverse health effect, Service on Site will ensure that

a. All Service On Site workers will hold a valid TDG Certificate

b. The identity of the substance, its possible effects on worker health and safety and any precautions required for the health and safety of the worker are clearly indicated by labels, MSDS's, placards, signs, tags or other similar means.

c. The content and meaning of the information required by paragraph (a) is clearly communicated to the worker.

d. Effective written procedures are prepared and implemented to prevent exposure by any route that could cause an adverse health effect.. and to address emergency and cleanup procedures in the event of a spill or release of the substance, and

e. The supervisor and the worker are trained in and follow the established procedures for safely handling, using, and disposing of the substance, including emergency and spill cleanup procedures. Supervisors and workers will be trained knowing if waste can be recycled and understand the process to do so. Whenever practicable waste will be recycled. Prior to the job starting ensure that you have proper waste containers and that you have enough containers to bring all waste out with you.

f. All workers are responsible to make sure that you have proper PPE ie. gloves, safety glasses etc for handling the waste generated on that job.

g. Senior supervisors are responsible to ensure all waste generated on the job will be handle accordingly and make sure all waste is brought out and disposed of properly

Chemical Spill Response Guideline

1. Introduction

A chemical spill is defined as the uncontrolled release of a hazardous chemical, either as a solid, liquid or a gas. Chemical spills while on a job may occur in a variety of worksites to large scale Utilities operations. The challenges related to dealing with chemical spills will vary with the type and volume of chemical involved.

Regardless of the type or quantity of hazardous chemical involved, all worksites must implement measures to reduce the potential for spills and have a plan for responding to chemical spills. This document describes generic methods for preventing chemical spills, roles and responsibilities and information on reporting.

2. Roles and Responsibilities

2.1. The Worker

Under the OH&S Act, the worker has an obligation to protect their own health and safety and that of other workers present while they are working. The worker is also expected to cooperate with their employer for the purpose of protecting their health and safety and that of other workers. Specifically, these responsibilities include:

- Take all necessary steps to minimize the chance of spills when working with chemicals (see **3. Spill Prevention**).
- Cooperate with the Foreman/Supervisor.

2.2. Foreman/Supervisor

Foreman/Supervisors are responsible for performing the duties of the employer specified under the Act as designated representatives of Service On Site. Specifically, these include:

- Ensuring that Service On Site employees are trained and knowledgeable of Service On Site's Chemical Spill Response Guideline.
- Provide site-specific training for the job-site.
- Ensuring there is sufficient and appropriate spill response supplies in the area.
- Take all necessary steps to minimize the chance of spills when working with chemicals (see **3. Spill Prevention**).

3. Spill Prevention

The first step in chemical spill response is to prevent the spill from happening in the first place. The worksite should be examined to identify measures that can be taken to minimize the risk of a chemical spill occurring. These measures can be identified during regular worksite safety inspections.

Chemical spills occur during five types of activities; storage, transport, transfers, usage and disposal.

3.1. Storage

- Ensure shelving units are sturdy, and not overcrowded with containers. Shelves used for chemical storage should be securely fastened to the wall or floor to provide added stability.

- Ensure chemicals are stored within easy reach of everyone in the work area, and no higher than eye level. Large bottles and containers should be stored as close to floor level as possible.

- Do not store chemical containers directly on the floor where they might be knocked over and broken, unless they are in ULC approved safety cans or still in their original shipping carton and packing.

- Do not store chemical containers on top of flammable storage or acid storage cabinets.

- Flammable substances will be stored separate from all ignition source ie: flame , welding , cutting static discharge

- Minimize the number of chemicals and size of containers stored in the work area. For commonly used chemicals (i.e. acids, solvents), a good rule of thumb is to keep quantities in the lab to either a single bottle or a one-week supply, whichever is less.

- Ensure that lighting and ventilation is adequate is the storage area.

- Regularly inspect chemicals in storage to ensure there are no leaking or deteriorating containers. Some items to note:

    - Keep the outside of containers clean and free of spills and stains.
    - Check that caps and closures are secure and free of deformation. Use only screw caps on chemical containers in storage; foil, Parafilm™, corks or other plugs are not acceptable.
    - Ensure that metal containers are free of rust, bulges or signs of pressure buildup.

- Do not store chemicals in unsuitable containers or containers made of incompatible material.

- Do not store incompatible chemicals together (e.g. acids with bases). Chemicals must be stored by hazard category and not alphabetically (except within a hazard group).

- Purchase solvents in containers with a plastic safety coating.

- Ensure that <u>all</u> gas cylinders are securely fastened and upright.

3.2. Transport

- When transporting large, heavy or a multitude of containers use a cart suitable for the load with high edges or spill trays that will contain any spills or leaks. Two people should be involved when transporting large amounts of chemicals.

- Carry glass containers in bottle carriers or another leak resistant, unbreakable secondary container.

- Use a gas cylinder handcart when transporting large gas cylinders. Ensure cylinder is securely strapped to the cart.

- Comply with the Transportation of Dangerous Goods Regulations when transporting hazardous material on public roads.

3.3. Decanting

- When transferring chemicals between containers, pay careful attention to the size of the receiving container to prevent overfilling it.
- When transferring liquids from large containers, use pumps, siphoning (not initiated by mouth) or other mechanical means instead of pouring.
- Use spill containment trays to catch leaks and spills when transferring liquids.
- When transferring flammable liquids, metallic or conductive containers must be electrically bonded to each other or electrically grounded to avoid an explosion initiated by a static electric spark.

3.4. Handling & Use

- In the shop, work in a well-ventilated area whenever possible.
- Check gas cylinder valves and gas tubing for leakage before use.
- If possible, keep cylinders of highly toxic or corrosive gases in a well-ventilated area.
- Ensure you have access and know the location of a suitable chemical spill kit before you start working with chemicals.

3.5. Disposal

- Do not mix incompatible wastes together to avoid uncontrolled chemical reactions.
- Properly identify the contents of all waste containers to avoid inappropriate disposal.
- Leave at least 20% air space in bottles of liquid waste to allow for vapour expansion and to reduce the potential for spills due to overfilling.
- When not in use, keep waste containers securely closed or capped. Do not leave funnels in waste containers.
- Dispose of waste on a regular basis; do not allow excess waste to accumulate in the work area.
- Coordinate with the client for disposal of waste or scrap material

4. Spill Response Preparation

Emergency preparedness is an important element of a chemical spill plan. When worksites are prepared for chemical spills, fewer errors are made and there is a reduced risk to persons, property and the environment. The essential elements of spill response preparation are; training, hazard information, proper equipment, and written procedures as described below.

4.1. Training

Spill response training is provided by Service On Site to all employees. Please refer to the Chemical Spill Response Training immediately following this section. This training should include, but is not limited to, instruction in spill clean-up techniques, and review of hazards found in the work area (chemical, physical, biological) which may be of concern during chemical spill response.

4.2. Hazard Information

Information on the chemical hazards present at the worksite must be kept up-to-date and readily available. Sources of information include Material Safety Data Sheets, signs, container labels, posters, and reference books. The worksite supervisor is responsible for ensuring that this information is readily available to worksite personnel.

4.3. Equipment

Service On Site is responsible for ensuring that an adequate supply of spill response equipment is available and maintained. The equipment required includes; first-aid equipment, personal protective equipment, spill cleanup supplies. The spill response equipment will be periodically assessed to ensure the adequate equipment is available. Recommended contents for generic spill kits are provided in Appendix B.

4.4. Procedures

The procedures given in Section 5 provide general guidance for responding to chemical spills and Appendix A includes a flow chart summarizing the actions which should be taken. A copy of this procedure should be made available to personnel at all worksites for Service On Site.

In addition to the general procedure given in Section 5, chemical specific procedures must also be available at worksites where hazardous chemicals are present or where large quantities of chemicals are stored. Site-specific procedures should include: information on the hazards of the chemical; the quantity and storage location of the hazardous chemical; the personal protective equipment and spill abatement equipment required and their location; the instructions for containing and cleaning up the spill; the first-aid measures and materials required to treat exposed individuals; and the method of waste disposal.

5. Spill Response

When a chemical spill occurs, personnel at the spill scene must act quickly to reduce the consequences of the spill. The actions taken depend on the magnitude, complexity, and degree of risk associated with the spill. The following steps outline the actions which should be taken in response to a chemical spill. See also **Appendix A: Chemical Spill Response Flowchart**.

1*. Stay clear and warn others.*
Proceed with caution and advise others that are in the immediate area of the spill of the potential danger.

2. Assist injured or contaminated persons.
If persons are injured, provide first-aid if you or another available individual is trained to do so. If persons have been contaminated by the spilled chemical, lead them to the nearest eyewash or emergency shower (depending on the extent / location of the contamination) and assist in washing off the material. However, do not put yourself at risk and become a casualty. Injuries resulting from chemical spills are often medical emergencies, and the **Dangerous Goods Spills 1-800-663-3456** (**or *666 on cell)** should be immediately notified when this occurs

3. Assess the situation. Is this an emergency?
An emergency situation exists when there is a high risk to:

- Persons.
- Property.
- Environment.

Always consider the whole situation when determining if an emergency situation exists or not. Whenever a spill occurs in a public area, contact the **Dangerous Goods Spills 1-800-663-3456 (or *666 on cell).**

If an emergency arises, isolate the area and contact the **Dangerous Goods Spills 1-800-663-3456 (or *666 on cell)**. When informed of an emergency situation, the **Dangerous Goods Spills 1-800-663-3456** (**or *666 on cell)** will contact the appropriate emergency response persons or team. For this purpose, specific information is needed from the person reporting the incident. This information must include:

- Identity of the person making the report.
- Nature of the incident (fire, explosion, chemical spill, gas leak).
- Location of the incident (LSD, physical address, etc.)
- Presence of any injuries.
- When and how the incident occurred.

4. Get help for all but minor spills.
If an emergency does not exist, assistance from outside the immediate work area may still be required. Consider the following;

- Number and training of persons required.
- Personal protective equipment required.
- Spill abatement material required.
- Nature of the spill (e.g. amount spilled, hazards of the spilled chemical).

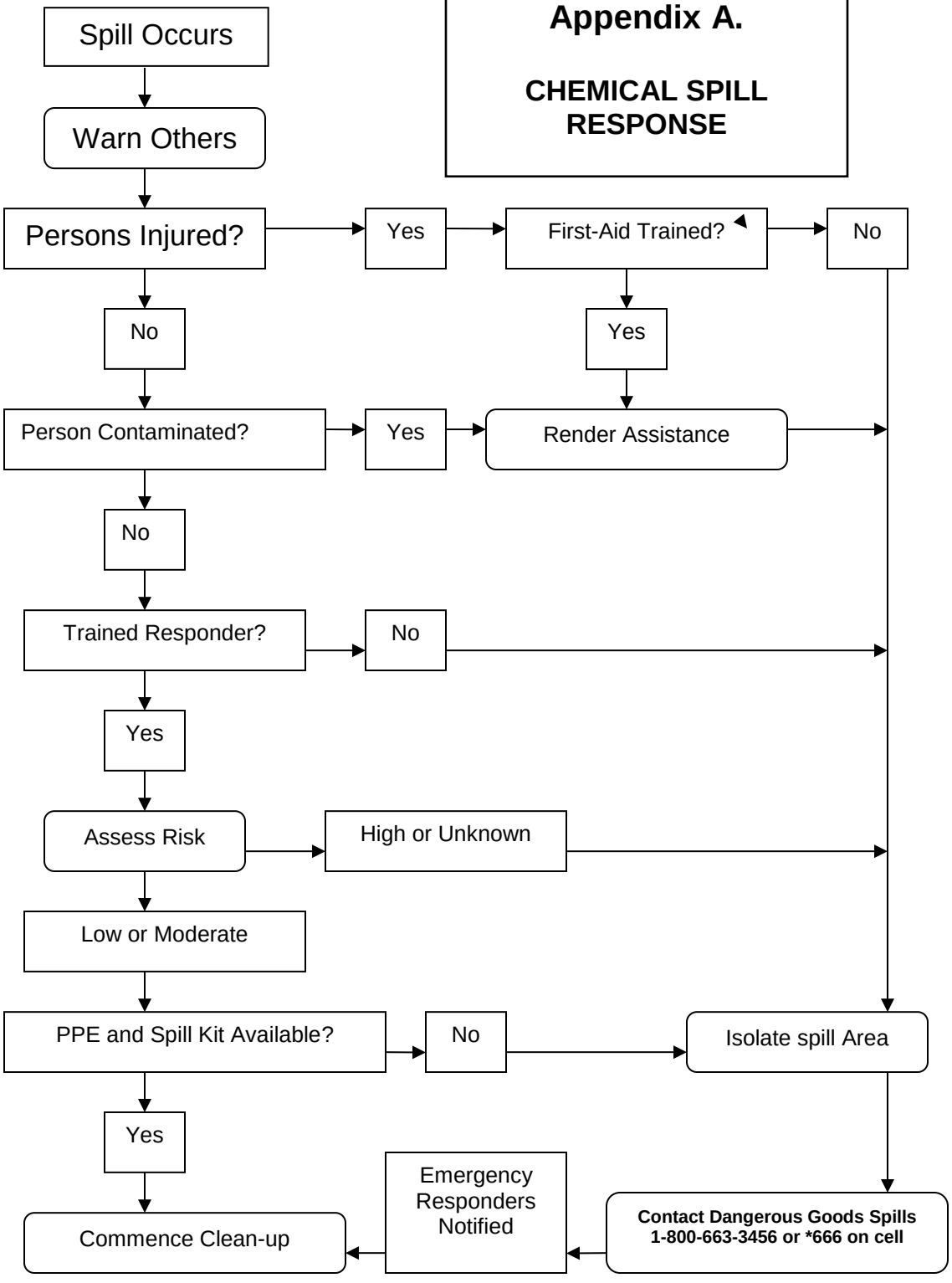
6. Reporting Chemical Spill Incidents

All chemical spills and gas releases must be reported in writing to the Dangerous Goods Spills Reporting Center. The report should include the date, time, location, description of the spill (e.g. type and quantity), personnel injuries or exposures, equipment damage, escape of material (e.g. into sewers or bodies of water), witnesses, and persons involved in supervision and clean-up of the spill. Use the ***Service On Site Incident Report Form***. The report should be submitted to Dangerous Goods Spills Reporting Center within 72 hours of the spill occurring regardless of whether or not the Dangerous Goods Spills Reporting Center was notified.

The purpose of this reporting procedure is not to place blame, but to identify measures that may prevent similar incidents in the future.

Appendix A.

CHEMICAL SPILL RESPONSE



Appendix B: Chemical Spill Kits

Spills kits can be assembled from individual parts or suitable spill kits may be purchased from most chemical or safety supply companies. If you do chose to purchase a commercial kit, however, ensure that it contains all the necessary items as listed below. In addition, note that most commercial spill kits and the lists below are generic; it is important that spill kits be tailored to meet the specific spill control needs of each lab, work area, or department.

1) Small Chemical Spill Kit

A small chemical spill kit should be available in each lab or work area that uses chemicals. It can be used for immediate response to most spills, and to clean up small, low hazard spills that may occur and do not require specialized personnel protective equipment or spill control supplies. Although most small spill kit components are common items found throughout the lab, there must be a consolidated spill kit for emergency use.

a) Personal Protective Equipment
- Chemical Splash Goggles.
- Lab Coat.
- Heavy Nitrile or Neoprene Gloves.

b) Spill Clean Up Equipment
- Plastic Dust Pan & Brush.
- Heavy Plastic Bags (at least 3 mil thickness).
- Universal Spill Absorbent (1:1:1 mix of sodium carbonate: kitty litter: sand), Spill Pillows, or other suitable spill absorbent (enough to absorb a spill of the largest container in the work area).
- Other absorbents / neutralizers as required for the chemicals in the lab.

2) Large / Departmental Chemical Spill Kit

Every department that have significant quantities of chemicals should have one or more large chemical spill kits containing PPE and spill cleanup supplies to compliment the smaller worksite kits, and as backup supplies for outside responders (i.e. EHS). The number and location of these kits will depend on the size of the department, whether the department is located on several floors or in several buildings, the number of chemicals in use, etc. In general, it is recommended that there be a large spill kit for each floor or building.

a) Personal Protective Equipment

- Half-mask air purifying respirator (2)
- Multigas Type Respirator Cartridges (6)
- Safety goggles (2)
- Face-shield (1)
- Disposable coveralls (Tyvek™) (6)
- Gloves
  - Neoprene (4)
  - PVC (4)
  - PVA (4)
  - Nitrile (4)
- Plastic shoe covers (box)
- Duct tape (roll)
- Alcohol swabs (box) or respirator disinfectant

b) Spill Clean Up Equipment

- Chemical absorbent (20 litres)
- Plastic pail (20 litre) with lid (2)
- Felt marking pen (2)
- Heavy Plastic Bags; at least 3 mil thickness (12)
- Plastic bucket with handle (1)
- Long handle sponge mop (1)
- Extra sponges (4)
- Plastic dust pan (1)
- Broom (1)
- Duct tape (roll)
- Detergent (box)
- Citric Acid (500g)
- Sodium Bicarbonate (500g)
- Sodium Thiosulfate (500g)
- Spill Response Guideline

Chemical Spill Response Training

A. Applicability of this training

This training is for those persons identified as Spill Response Personnel for Service On Site when hazardous materials are present or used.

B. Responsibility

The spill response personnel should:

- Address the needs of exposed or injured persons
- Determine whether or not a spill is a minor spill and whether is it appropriate for him or her to clean up the spill material
- Initiate a call to the Dangerous Goods Spills (1-800-663-3456) should the spill be inappropriate for in-house clean-up
- Control the spill area
- Performing the spill clean-up and decontaminating the area

C. Training Refresher

This training should be repeated on an annual basis for all spill response personnel.

D. Training Procedures

1. First Response Activities
2. Addressing the needs of the exposed or injured persons
3. Determining whether a spill is a minor spill or major spill
4. Selecting and wearing appropriate PPE for the clean up
5. Preparing a spill response kit
6. Performing the spill clean-up and decontaminating the spill area

Procedure #1

1. Clear all persons from the area of the spill
2. Check for personal exposure (splash, physical contact or inhalation)
    a. If there has been personal exposure of any sort, notify the Poison Control Center (1-800-567-8911) and follow procedure #2.
3. Determine the severity of the incident and respond accordingly
    a. To determine whether an incident is a major spill (or high risk situation) or a minor spill (or low risk situation), follow Procedure #3

Procedure #2

For a chemical spill on the body:

CONSULT MSDS IMMEDIATLEY AND FOLLOW FIRST AID INSTRUCTIONS FROM THE MSDS.
CONTACT THE POISON CONTROL CENTER (1-800-567-8911) IF NECESSARY

For hazardous material eye contact:

CONSULT MSDS IMMEDIATLEY AND FOLLOW FIRST AID INSTRUCTIONS FROM THE MSDS.
FLUSH EYE FOR 15 MIS. IF STATED IN MSDS RECOMMENDATIONS
CONTACT THE POISON CONTROL CENTER (1-800-567-8911) IF NECESSARY

Procedure #3: Determining Whether a Spill is a Minor Spill (Low Risk) or a Major Spill (High Risk)

Does the quantity of the spill exceed the capacity of the available spill clean-up materials?

Yes → This is a major spill. All people in the area should be evacuated immediately and no attempt should be made to enter the area for any reason. Any persons who may have been contaminated by the material must be taken for immediate personal attention. Contact 911 for any contaminated personnel and Dangerous Goods Spills Center to initiate clean-up.

No ↓

Is the spill more than 10ml of an extremely toxic material such as cyanides or hydrogen fluoride?

Yes → This is a major spill. All people in the area should be evacuated immediately and no attempt should be made to enter the area for any reason. Any persons who may have been contaminated by the material must be taken for immediate personal attention. Contact 911 for any contaminated personnel and Dangerous Goods Spills Center to initiate clean-up.

No ↓

If the material extremely corrosive, is it fuming?

Yes → This is not an appropriate spill for handling by minor spill clean-up personnel. Evacuate area and do not enter unless you are wearing a respirator suitable for the conditions in the room and are CSA approved.

No ↓

Does the spill involve:

- A leaking container or package
- An uncontrolled compressed gas release or
- A spill into a sink or floor drain?

Yes to any → This spill must reported to management. You may perform your clean up response if this can be done without risk. If not, request an outside clean-up service (Dangerous Good Spills).

No, to all ↓

This spill is a minor spill. → If there are no other impediments to a safe response, clean up the spilled material following the procedures provided to you during spill response training.

Procedure #4: Selecting and Wearing Appropriate PPE for the Clean-Up

The following PPE is the minimum that should be used for any spill clean-up:

- Splash googles, not just safety glasses
- Coveralls/smock with sleeves rolled down
- Protective gloves, as appropriate for the material to be handled (Gloves must be in good condition)

Special notes:
The splash goggles are to protect your eyes from splashed. If they do not fit securely to your face, they will not provide this protection. If they have "pinhole" ventilation, they will not provide this protection.

> Note that no one should wear a respirator to clean-up a spill, *or for any other reason*, unless they have been trained. If a respirator is indicated for a spill response and you are not approved to wear one, you must not respond to a spill. Report to management for coordination of the clean-up.

Procedure #5: Performing the spill Clean Up and Decontaminating the Spill Area

Before the clean-up begins, you must accumulate all appropriate spill clean-up equipment. This may include any or all of the following:

- Polypropylene absorbent pads, pillows or socks
- Polypropylene absorbent pads with vapor barrier (for volatile solvents)
- Acid neutralizer
- Caustic neutralizer
- Solvent detergent
- Heavy-duty plastic bags for disposal of waste materials
- Dust pan, scoop or brush, for pick-up of absorbed or neutralized materials

A. After putting on the appropriate PPE, the responder should control the source, if it is still present. For example, a container that was knocked over may still have chemicals in it. The responder should carefully upright the container, place in on a polypropylene pad in a safe location and replace the lid on the container.
B. Next, if the spill is <50mL, control the spread of the spilled chemical and absorb the free liquid. Placing polypropylene pads around and on the spill generally works best. If the spill involves broken glass, it is important to take care of not to get cut or cut one's protective gloves. The used pads should be placed in a trash bag for disposal. Be sure to check under drawers or under equipment for the

remains of a spill. Flammable liquids should be absorbed using polypropylene pads with vapor barriers to prevent unneeded volatilization of the solvent into the air.

C. Remove broken glass, CAREFULLY.
D. Decontaminate the area. Neutralize acid or caustic spill residue with appropriate neutralizing material. Sweep up the spent neutralizer. Moisten a pad and use it to wipe up any remaining residue form the sorbent process. Continue this until the area is clean.
E. Decontaminate the container. Using pads or neutralizers, clean the outside of the container, removing all traces of the spilled material.
F. Inspect the spill area for any further residue or contamination.
G. Place all spill residue/materials in a waste bag and mark it for appropriate disposal.
H. Restock the spill kit with the items used in the clean-up.

Procedure #6 Preparing a Spill Response Kit

All spill response kits typically contain four types of materials.

1) Protective equipment for the responder
2) Absorbent or similar material to clean-up the spill
3) Decontamination materials to decontaminate the spill area
4) Waste disposal materials to assist in the removal of the contaminated product and items

ALL OF THE MATERIALS IN THE SPILL RESPONSE KIT MUST BE APPROPRIATE FOR USE FOR THE TYPE OF HAZARDS PRESENT IN THE WORK AREA

You Will Need:

Protective Equipment

Splash goggles

The correct type of gloves to protect our hands and arms

An appropriate coverall/smock to protect your clothing and body

Absorbent/Collection Materials

Appropriate for the type of material and the size of spill planned for

May include neutralization as part of its activity

Decontamination Material

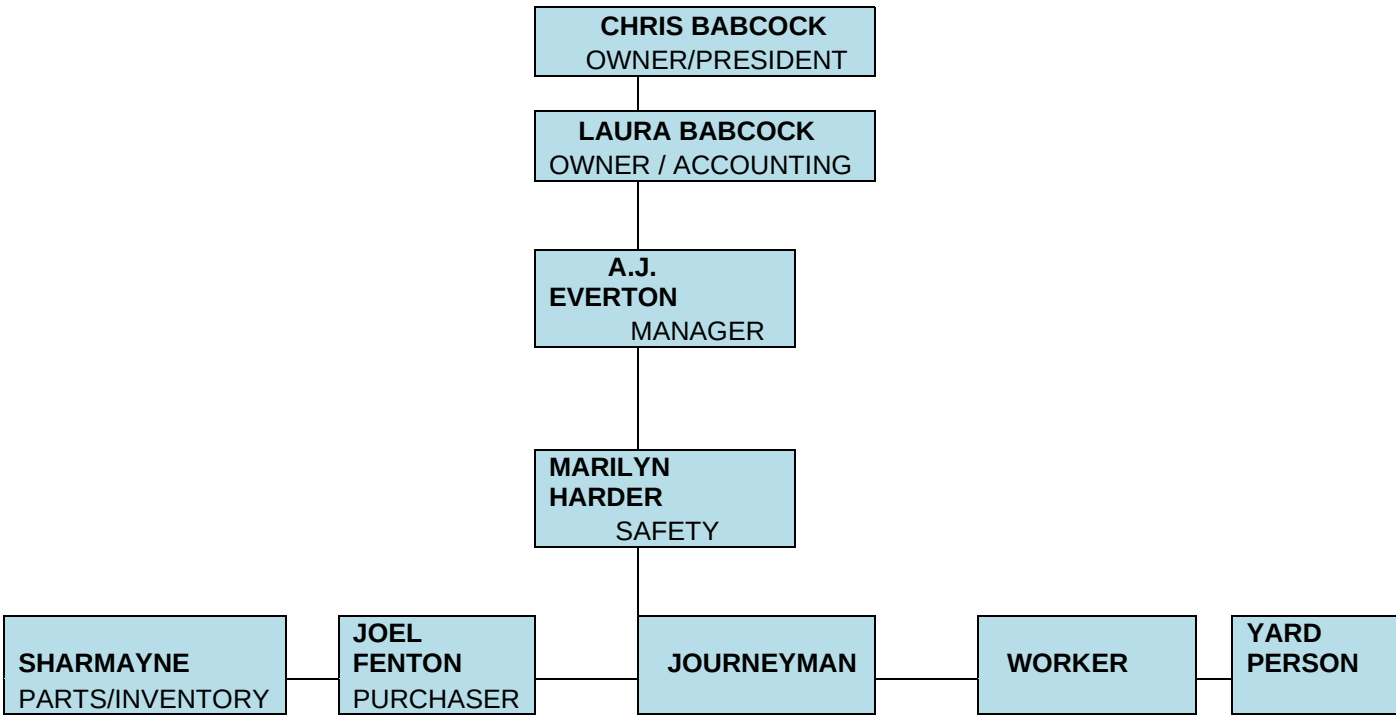
Generally a neutralizer, to remove final traces of hazardous materials

Waste Disposal Items

To contain and remove the contaminated items and pick-up materials-such as disposal bags, scoops for absorbents, rags for final cleaning of spilled areas.

555559 BC Ltd. doing business as SERVICE ON SITE
7806 100TH Ave
Fort St. John, BC
V1J1V9
Phone: 250-787-0082
Fax: 250-787-0051

SERVICE ON SITE ORGANIZATIONAL CHART



Company Positions and Titles

Owner/President
Responsibilities: Oversee the entire business operation. Ensures jobs and tasks are completed in and out of the shop and field. Conduct sales. Hiring and firing employees.
Hazards: Disgruntled employees or customers, ergonomics of work area (i.e. long hours at a desk, improper seating and desk set-up), harassment.

Owner/Accounting
Responsibilities: Oversee entire office operations, invoice, interact with customers, and maintain books and accounting. Travel around town for bank and stationary runs, etc. Human resources, hiring and firing.
Hazards: Ergonomics of work area (i.e. long hours at a desk, improper seating and/or desk set-up), harassment, slips, trips and falls, travelling in town, disgruntled employees.

Manager
Responsibilities: Oversee field and shop operations in and out of the shop and field.
Conduct sales and maintain PM schedules with clients. Hiring and firing employees. Set-up training for employees.
Hazards: Disgruntled employees or customers, ergonomics of work area (i.e. long hours at a desk, improper seating and/or desk set-up), heavy lifting, shop tools, harassment, slips, trips and falls.

Safety
Responsibilities: Ensure employees follow safety practices, make sure PPE is available for their use. Field visit, be available for any safety questions or concerns the employees have, keep up date with Industry standard safety practices and relay to employees.

Parts and Purchasing
Responsibilities: Conduct sales, order parts, invoice, shipping/receiving, interact with customers.
Hazards: Heavy lifting, using ladders, disgruntled customers, ergonomics of work area (i.e. long hours at a desk, improper seating and/or desk set-up), handling of hazardous materials harassment, slips, trips and falls.

Yard Person
Responsibilities: Yard maintenance; remove garbage, used parts and used oil, etc. Pick-up/delivery driver, operate loader and/or forklift to load and offload parts and equipment.
Hazards: Operating loader and/or forklift, driving for parts runs, handling hazardous materials, heavy lifting.

Apprentice/Journeyman Millwright
Responsibilities: Repair equipment, work in shop and yard. Travel to off-site locations to work on equipment. Pick-up and deliver parts and equipment. Operate loader and/or forklift to move items in and out of shop and yard. Use tools and shop equipment i.e. welder, power tools, testing equipment.
Hazards: Driving and travelling, heavy lifting, operating loader/forklift, handling hazardous material and working in hazardous environments, operating power/hand tools, sandblaster, using rigging and hoisting equipment.

SENIOR MANAGEMENT RESPONSIBILITIES

Senior management shall ensure the health and safety of all workers working for employer and any other workers present at the workplace.
Senior management shall develop individual values, institutional values and behavioral expectations for Service on Site to support the implementation of the management system and shall act as role models in the visible promulgation of these values and expectations.
Senior management shall ensure that it is clear when, how and by whom decisions are to be made within the management system.

ORGANIZATIONAL POLICIES

Senior management shall develop the policies of Service on Site. The policies shall be appropriate to the activities and facilities of Service on Site.

PLANNING

Senior Management shall establish goals, strategies, plans and objectives that are consistent with the policies of Service on Site.

Senior management shall ensure that measurable objectives for implementing the goals, strategies and plans are established through appropriate processes at various levels in the organization.

Senior management shall ensure that the implementation of the plans is regularly reviewed against these objectives and that actions are taken to address deviations from the plans where necessary.

RESPONSIBILITY AND AUTHORITY

Senior management of Service on Site shall be ultimately responsible for the management system and shall ensure that it is established, implemented, assessed and continually improved.

PROVISION OF RESOURCES

Senior management shall determine the amount of resources necessary and provide the resources to carry out the activities of Service on Site and to establish, implement, assess and continually improve the management system.

Senior management shall determine the competence requirements for individuals at all levels and shall provide training or take other actions to achieve the required level of competence. An evaluation of the effectiveness of the actions taken shall be conducted. Suitable proficiency shall be achieved and maintained.

Senior management shall ensure that individuals are competent to perform their assigned work and that they understand the consequences for safety of their activities. Individuals shall have received appropriate education and training, and shall have acquired suitable skills, knowledge and experience to ensure their competence. Training shall ensure that individuals are aware of the relevance and importance of their activities and of how their activities contribute to safety in the achievement of Service on Site’s objectives, goals and aims.

GENERAL SAFETY INFORMATION

MANAGEMENT RESPONSIBILITIES

- Management shall be responsible for providing a safe working environment.
- Management will ensure that employees under their control are adequately trained to perform their work in a safe manner and obtain documentation is obtained from employees demonstrating that they meet the qualifications of their job.
- Management will be responsible for ensuring compliance with all government regulations and Company policies, practices and standards pertaining to the work they are supervising.
- Management will ensure that all tools and equipment are maintained and operated in a safe manner.
- Management will ensure that employees under their control use the required safety and personal protective equipment.
- Management will be responsible for recognizing safe performance and correcting unsafe performance.

SAFETY REP RESPONSIBILITIES

- Safety Rep will have an understanding of and be able to ensure compliance with safety regulations, safe work practices and operating instructions.
- Safety Rep will work with management to set realistic objectives, allowing the company to achieve a healthy and safe workplace.
- Safety Rep will provide information, instructions, and assistance to workers and contractors in order to ensure that they have a sound knowledge of the company’s health and safety program.
- Safety Rep will assist workers and contractors in the maintenance of tools, equipment and personal protective equipment.
- Safety Rep will make workers and contractors aware of potential and actual hazards that they will face in their daily activities and will assist them in controlling or preventing those hazards.

- Take action in case of infractions of safety rules and regulations and correct any unsafe acts.

- Identify workers or contractors with problems that could contribute adversely to a safe working environment and assist with ensuring problems are addressed.

- Safety Rep will investigate all incidents and will report to and provide management with recommendations as to how similar occurrences will be prevented in the future.

- Safety Rep will carry out documented inspections of job sites and equipment on a regular basis.

EMPLOYEE AND CONTRACTOR RESPONSIBILITIES

- Employees and contractors shall be responsible for carrying out their work in a manner that will protect themselves, their fellow employees, contractors and the public.

- Employees and contractors shall report to their Supervisor any unsafe practices or conditions which may come to their attention.

- Employees and contractors shall not operate equipment or carrying out work for which they have not been adequately trained and physically capable to do their job.

- Employees and contractors shall be responsible for the use and care of personal protective equipment provided for their work.

- Employees and contractors shall abide by all government regulations and company policies, practices and standards pertaining to their work.

VISITOR RESPONSIBILITIES

- All visitors will take part in any pre job meetings that are conducted by Service on Site on the job site.

- All visitors will wear all appropriate, approved personal protective equipment when hazards are present.

- All visitors are expected to conduct themselves appropriately at all times.

Short service and newly hired employees

RIGHTS AND RESPONSIBILITIES

At Service on Site our short Service employees or newly hired employees have a 6 month probation period where the employee is assessed on performance and ability to perform the tasks. Based on experience and trade qualifications as newly hired employee will not be allowed to work alone with out supervision. All customers will be notified of new employees and introduced as a new member of Service on Site. All new employees will have a light blue hard hat. This will help identify our new employees. After the 6 month probation period and has demonstrated to be competent with Service on Site safety policies and procedures verified by his supervisor then the employee will graduate and be able to perform tasks independently. The dark blue hard hat can be worn at this time. All senior Service on Site employees will help educate and demonstrate proper procedures and policies to the new employees and access their compliance. All sub contractors will follow Service on Site short Service employee guidelines as stated above.

It is everyone's responsibility to practice safe work habits. All Service On Site employees are responsible to report any hazards to supervisors and ensure all slips trips and falls are immediately fixed. No employees will operate machinery or tools without proper training by a qualified person. Service On Site will provide safe tools and equipment for employees to use. If any defects or unsafe operations are spotted, you must report to Supervisor immediately. All unsafe equipment or machines must be locked out until fixed properly by qualified persons.

Service On Site
Subcontractor Safety Management Plan

1. Overview

1.1 Service On Site has established procedures to review and require that subcontractors safety programs, training, procedures and initiatives coordinate with the Company's own standards of safety.

1.2 The process is intended to help ensure that, in the event subcontractors are utilized by service on site as part of a work project, each subcontractors safety programs, training , confirmations, documentations and statistical results of previous safety performance are in accordance with the requirements of both service on site and general contractor.

1.3 Under this program and its associated processes, any subcontractor will be reviewed and qualified by service on site prior to preforming work for a general contractor as part of service on site project.

2. Subcontractor Safety and Health requirements

2.1 Pre-qualifications by service on site will include review of the subcontractors:

2.1.1 Written safety and health programs as required by service on site and /or the respective host employer or general contractor:; if no programs supplied subcontractors will follow service on site safety manual/programs.

2.1.2 Written subcontractor procedures for at work incident, injury, illness and emergency response, reporting and investigation requirement.

2.1.3 Workers compensation information

2.1.4 Proof of insurance documented by a current certificate of insurance from the subcontractors insurance agent

2.1.5 Documentation of required safety training of subcontractor employees that will be assigned to the respective project,

2.1.6 including supervisor , competent person training and site safety representative training

2.1.7 Documentation of required operator qualifications and other individual qualifications or certifications as may be requir4ed by the project

2.1.8 Documentation as may be available to explain the subcontractors previous safety performance using a statistical method

2.1.9 Service On Site will ensure that subcontractors are aware of the host company's drug and alcohol policies. Subcontractors must adhere to the policy at all times.

2.2 Review and evaluation will be performed by service on site safety manager, or a qualified third party as designated by safety coordinator.

2.3 Written materials, submissions, results and documentations of subcontractor pre-qualifications reviews will be maintained by the safety coordinator in a file for a period to be determined in coordination with service on site.

3. Measurements of workplace safety and health results

3.1 To manage a process or system, you must be able to measure it. This is why service on site measures safety performance and results as a tool toward identifying and eliminating hazards, mitigating risks and protecting employees and other individuals from workplace injuries and illness

3.2 For purpose of this program, a safety Metric will be considered as any such measurements of safety performance and injury/illness/incident prevention results

3.3 Specific safety metrics to be considered during subcontractor pre-qualification

3.4 Safety metrics will be utilized to help evaluate when, where and how safety programs and initiatives have been successful, and also to identify areas that require additional attention

3.5 Subcontractor safety performance will be reviewed and evaluated in part through comparisons of the subcontractor's safety metrics with levels of accomplishment as identified by service on site

3.6 Subcontractors that evidence safety metrics that are not in accordance with project requirements will not be utilized for that specific project: or they will be utilized in roles and assignments that have lower levels of risk and are acceptable to service on site and the host employer or general contractor

3.7 All determinations of acceptability of a subcontractor's metrics as requested and reviewed in accordance with this program will be made by service on site and/or the host employer or general contractor for the respective project

4. **Inclusion and participation of subcontractors in project safety initiatives**

4.1 Subcontractors assigned by service on site to a project will attend initial safety and planning meetings, projects safety orientations, incident, injury and illness response planning and coordination meetings.

4.2 Subcontractors personnel will participate in these and other activities as required in preparation for working safely at the project location

4.3 Subcontractor personnel will utilize , cooperate with , attend and support all pertinent components of safety programs and procedures, safety orientations , training , tailgate and daily meetings, qualifications and /or certification requirements , periodic safety meetings , awareness activities , safety inspections ,

incident reporting and investigation procedures and other such safety , health and incident prevention initiatives as may be established for all workers are a project location with service on site and host company.

4.4 Subcontractor personnel will participate in and cooperate with Job Hazard analysis (JHA) , Job safety analysis (JSA) and Job safety observation (JSO) as established for the project workplace with service on site

5. Requirements for reporting hazards , incidents , injuries and illnesses

5.1 Subcontractor employees are responsible for reporting and observed near miss hazards or unsafe behavior of another person when there is a potential for causing an incident, chemical release, injury or illness in the project workplace to service on site. Service on site will report to the host company. First report will be made to the subcontractors on site supervisor or to the service on site contact person if the supervisor is not readily available. Reporting should be made without delay to help facilitate intervention and preventive measures.

5.2 Subcontractor supervisors and/or management will forward any such report to the service on site contact person so that additional communications can be made and /or actions taken if service on site deems necessary and will also report to the host company.

5.3 Any on the job injury or illness that requires medical attention by a physician or professional medical provider will be reported immediately to the service on site contact person after the individual(s) requiring treatment are in route to medical care.

5.4 Subcontractors will investigate near misses, first aid injuries, incidents, injuries or illness in the project workplace in accordance with the requirements established for the project with service on site and the host company. Communication will be made to the service on site and the host company

6. Post project review of subcontractor safety performance and results

6.1 On conclusion of a project, service on site will make a timely review of each subcontractor's safety performance, incident and injury experience, and other factors that will be helpful in evaluating the subcontractors the contractor's suitability for future projects.

6.2 In the event that a subcontractor exits or is terminated from a project that remains I progress a similar timely review as explained in 6.1 will be performed.

6.3 Post project evaluations will be performed by the service on site safety rep in coordination with service on site managers and supervisors who worked with the subcontractor during the specific project under review

EDUCATIONAL REQUIREMENTS

The following are courses that are required by Service on Site for all employees and contractors.

- Company Orientation
- Valid Drivers License (Correct class of license for vehicle being operated)
- Clean Drivers Abstract
- H2S Alive Ticket
- WHIMS
- Trade Ticket
- Occupational 1st Aid

Detailed training for specific job classifications will be determined as required with job specific training related to their roles and responsibilities and held on file with human resources.

The initiative that a worker or contractor demonstrates within Service on Site training programs is regarded as a reflection of the employee's overall work performance.

LEGISLATIVE REQUIREMENTS

The following are regulations that Service on Site and its employees and contractors are required to adhere to:

- Workers Compensations Regulations
- Environmental Regulations
- Workplace Hazardous Materials Information Systems
- National Safety Code Regulations
- Motor Vehicle Act

LOCKOUT/TAGOUT
POLICY

PURPOSE
This policy establishes the minimum requirements by Service on Site for safely isolating potentially hazardous energy sources. It shall be followed to ensure that machines or equipment are isolated from all potentially hazardous energy before employees perform service or maintenance activities where there may be an unexpected energization, start-up, or release of stored energy. Types of energy sources include electric, mechanical, pneumatic, chemical, thermal and hydraulic.

SCOPE
The provisions set fourth in this policy apply to all equipment and machinery where potentially hazardous energy exists. All employees of Service on Site who maintain or service such equipment and machinery are subject to the procedures outlined in the policy without exception. Failure to follow these procedures may result in disciplinary actions.

GENERAL REQUIREMENTS
All equipment shall be locked out or tagged out to protect against accidental or inadvertent operation when such operation could cause injury to personnel of Service on Site. Do not attempt to operate any switch, valve, or other energy isolating device where it is locked or tagged out. Service On Site will provide training and authorized employees of Service on Site will be issued locks and equipment on an individual basis and will be accountable for the equipment and appropriate usage. Lockout is always the preferred method of isolating machines or equipment from energy sources. However, when equipment is not capable of being locked out, proper tags may be utilized with nylon/plastic lock-straps. The straps will be destroyed upon completion of the project and reactivation of the equipment.

Preparation for Lockout/Tagout System Procedure
The authorized employee of Service on Site will survey the area, identify all isolating devices and determine which switch(s), valve(s) or other energy isolating devices need to be locked or tagged out. The procedures shall be consistent with those developed by the authorized Service on Site employee's department. More than one energy source (electrical, mechanical, or others) may be involved. Always use a lock rather than a tag when possible to lock the energy source(s) out.

Sequence of Lockout/Tagout System Procedure
1. The authorized employee of Service on Site will notify all affected employees that a lockout or tagout system is going to be utilized and the reason for it. The authorized Service on Site employee shall know the type and magnitude of energy that the machine or equipment utilizes and understand the hazards associated with it.

2. If the machine or equipment is operating, it will be shut down by the normal stopping procedure (depress stop button, close toggle switch, etc.).

3. A Service on Site authorized employee will operate the switch, valve, or the energy isolating device(s) so that the equipment is isolated from its energy source(s).

4. All electrical equipment isolation will be verified with electrical meter testing. Stored energy (such as that in springs, elevated machine members, rotating flywheels, hydraulic systems, air, gas, steam, water pressure, etc) must be dissipated or restrained by methods such as repositioning, blocking, bleeding down, etc. Employees will test and ensure that a state of zero energy is verified after a lockout device is installed

5. Lockout or tagout the energy isolating devices with authorized and assigned individual lock(s) or tag(s). Additionally, all other safety methods or procedures shall be indicated on the standard lockout tag.

6. A Service on Site authorized employee shall check to ensure that no personnel are exposed.

7. The Service on Site authorized employee shall operate the switch or the normal operating controls to make certain that the equipment will not operate and ensure disconnections.

8. The Service on Site authorized employee will then return operating controls to the “neutral” or “off” position after the test.

9. The equipment is now locked out or tagged out for servicing or maintenance.

Restoring machines and equipment to normal operations
1. After the service or maintenance is complete and equipment is ready for normal operations, the authorized employee of Service on Site will survey the area around the machines or equipment to ensure that no one is exposed.

2. After all tools have been removed from the machine or equipment, guards have been reinstalled and employees are in the clear, the authorized employee of Service on Site may remove all lockout or tagout devices.

3. The authorized employee of Service on Site shall operate the energy isolating devices to restore
energy to the machine or equipment.

In the event a lock or securing device must be removed by a Service On Site employee other than the person whom installed the securing device or lock (because that person is not available) must follow the below procedures: Service On Site employer will ensure devices are not removed until:

A) Employer has made every effort to contact employee that installed device. In the event employer could not contact worker he will ensure:
   a) All involved workers are accounted for
   b) Any personal locks placed by workers are removed

c) Ensure no one will be in danger before designated person removes locking devices
d) Service On Site employer will designate a Service On Site worker to remove the device
e) The designated person must ensure him/herself no workers will be in danger due to removal
f) Service On Site employer will ensure the machine is returned back to operation.

Locks And Keys

There shall be no master key, which can be used to open anyone's lock. Likewise, there shall not be more than one accessible key for each individual's lock.

Group lockout procedure

1. If a large number of workers are working on machinery or equipment or a large number of energy isolation devices must be locked out, a group lockout procedure that meets the requirements of subsection (2) to (7) may be used.

2. In a group lockout procedure 2 qualified workers of Service on Site must be responsible for
   a) independently locking out the energy isolation devices,
   b) securing the keys for the locks used under paragraph (a) with personal locks or other positive sealing devices acceptable to the Board, and
   c) completing, signing and posting a checklist that identifies the machinery or equipment components covered by the lockout.

3. Before commencing work each Service on Site worker working on the locked out components must apply a personal lock to the key securing system used in subsection (2) (b).

4. Service on Site employees may lock out a secondary key securing system if 2 qualified Service on Site workers lock out the primary key securing system and place their keys in the secondary system.

5. On completion of his or her work, each Service on Site worker referred to In subsection (3) and (4) must remove his or her personal lock from the key securing system.

6. When the requirements of subsection (5) have been met and it has been determined that it is safe to end the group lockout, 2 qualified Service on Site workers must be responsible for removing their personal or the positive sealing device(s) from the key securing system or systems containing the keys for the locks used under subsection (2) (a), and once those keys are released, the system is not longer considered to be locked out by Service on Site.

7. The written group lockout procedure must be conspicuously posted at the place where the system is in use.

Work/ maintenance on energized equipment

If it is not practicable to shut down machinery or equipment for maintenance, only the parts which are vital to the process may remain energized and the work must be performed by Service On Site workers who

a. are qualified to do the work,
b. have been authorized by Service On Site employer to do the work, and
c. have been provided with and follow written safe work procedures.

LOCKS AND KEYS
DEENERGIZATION

Each personal lock must be removed at the end of each shift. It is the responsibility of the employee to remove his/her lock at the end of their shift.

There shall be no master key, which can be used to open anyone's lock. Likewise, there shall not be more than one accessible key for each individuals lock.

The written group lockout procedure must be posted at the lockout box or cabinet. This will facilitate inspection at any time.

Removal of locks

1. A personal lock must only be removed by the worker who installed it, or if this is not possible, the matter must be referred to the supervisor or manager in charge, who will be responsible for its removal.

2. The supervisor or manager in charge must
   a. make every reasonable effort to contact the worker who installed the lock, and
   b. ensure that the machinery or equipment can be operated safely before removing the lock.

3. A worker must be notified at the start of his or her next shift if the worker's personal lock(s) have been removed since the worker's previous shift.

When are locks not required

The application of a lock is not required under these circumstances

a. the energy isolating device is under the exclusive and immediate control of the worker at all times while working on the machinery or equipment, or

b. a tool, machine or piece of equipment which receives power through a readily disconnected supply, such as an electrical cord or quick release air or hydraulic line, is disconnected from its power supply and its connection point is kept under the immediate control of the worker at all times while work is being done

Work on energized equipment

If it is not practicable to shut down machinery or equipment for maintenance, only the parts which are vital to the process may remain energized and the work must be performed by workers who

a. are qualified to do the work,
b. have been authorized by the employer to do the work, and
c. have been provided with and follow written safe work procedures.

De-energizatoin

VALVES

Workers and contractors that work with valves must:

- Keep the body and face away from the top of the stems when opening or closing high pressure valves.

- Open and close valves on high pressure lines slowly to prevent radical pressure changes, which may rupture or split the lines and fittings.

- Never stop a leaking valve on a connection with a bull plug, a nipple or an extra valve must be used and the extra valve kept open until the connection has been made.

Service On Site
RIGHT TO REFUSE UNSAFE WORK

Any worker or contractor working for Service On Site has the right to refuse work if he or she deems that work to be unsafe.

Any worker or contractor must not carry out or cause to be carried out any work process if that person has reasonable cause to believe that to do so would create an undue hazard to the health and safety of any person.

Any worker or contractor who refuses to carry out any work process must immediately report the circumstances of the unsafe condition to their supervisor or management.

Any work deemed to be unsafe will stop immediately and will not resume until all concerns have been addressed and corrected if any unsafe issues have been found.
The supervisor or management will immediately investigate the matter and will remedy the situation without delay, or if in his or her opinion the report is not valid, must discuss the situation with the worker who made the report.

If the situation cannot be resolved and the worker continues to refuse to carry out the work process, the supervisor and/or management must investigate the matter in the presence of the worker and another worker chosen by the worker making the report.

If the investigation cannot be resolved, the matter must be brought to the attention of a WCB officer who will investigate the matter and the office will provide whatever orders as deemed necessary.

A worker will not be subject to discriminatory action for refusing to carry out work that he or she deems to be unsafe.

Reassignment without loss of pay will not be deemed as discriminatory Action.

All records will be kept regarding any work refusals reports

All employees will receive training on work refusals procedures

Reference to WCB Regulation # 3.12 & 3.13

COMMUNICATIONS POLICY

Service on Site will communicate safety issues in a variety of ways. They will include but not be limited to:

Pre job meetings will be held anytime there are the following conditions:

- New or untrained workers on sites
- Working with identified hazardous tasks
- New or revised activities from normal operations

It will be the responsibility of supervisors and workers to conduct and document pre job meetings as required by the above conditions. All workers on site will be acknowledged on the attendance sheet and the records will be forwarded to the office for filing.

Regular Service on Site safety meetings will be held monthly.

It will be the responsibility of management to organize and conduct regular company safety meetings. The topics will be set quarterly.

Any actions that are required as a result of any meetings will be transferred to the action plan and responsibility will be assigned according to skills and time availability of workers.

Newsletters and other safety information will be passed at least annually that will communicate 2 things:

1. Why safety is important and who it affects
2. Management's commitment to safety.
3. All company policies and procedures will be communicated to all employees by meetings, postings or training sessions.

Service on Site will have effective communications maintained with workers engaged in rescue or evacuation and support persons.

Workers will also be trained on Service on Sites fit for duty policies and procedures.

DRUG AND ALCOHOL POLICY

Service on Site is committed to the health and safety of all employees and contractors, to providing the highest standards of service to its customers and the general public and to care and concern for the environment.

To support this commitment, Service on Site makes every reasonable effort to minimize risks associated with our operations and to ensure a safe, healthy and productive workplace.

The use of illicit drugs and the inappropriate use of alcohol, medications or other substances, can have serious adverse effects on the safety and well-being of the employees, the public or the environment. Service on Site practices a zero tolerance policy, therefore, no worker or contractor under the influence of the above shall undertake any work on behalf of the company at any time.

If any worker or contractor is found to be under the influence of illicit drugs, alcohol, medications or any other substances that effects their ability to perform their duties they may face disciplinary action up to and including immediate dismissal or release from their contract.

To be Fit For Duty an employee can not be under the influence of Drugs , alcohol, or prescribe medication that may alter ones judgment

Chris Babcock
President
Jan 2019

Service On Site

ALCOHOL AND DRUG POLICY

INTRODUCTION

555559 BC Ltd. DBA Service On Site (herein know as Service On Site) is committed to being an industry leader in maintaining a safe and healthy workplace. The use of Drugs, Alcohol and Medications can adversely affect job performance, and can have a negative impact on the worker's personal safety and the safety of all others. Service On Site drug and Alcohol testing will comply with Industry Standard. Service On Site will use a registered drug and alcohol testing company. All tests results will be confidential.

PURPOSE AND SCOPE

This Policy is intended to provide direction to all Service On Site employees and sub-contractors regarding our requirements. It is intended to minimize the risks associated with our operations and to ensure a safe and healthy workplace.

This document outlines the minimum expectations regarding Alcohol and Drug possession and use for all Service On Site employees and sub-contractors.

DEFINITIONS

Sub-Contractor is a company entity who is providing a service for Service On Site.

Worker is an employee, sub-contractor or agent of the Contractor.

Service On Site Business refers to all business activities undertaken by Workers and sub contract workers in the course of performing duties, whether conducted on or off Service On Site premises.

Service On Site Premises includes but is not necessarily restricted to all land, facilities, work sites, and vehicles owned, leased or otherwise controlled by Service On Site for the purpose of conducting Company Business.

Service On Site Worksite includes any site or location where an employee has been assigned to work.

Service On Site Representative refers to the person accountable for a particular area or shift, including managers, and others in supervisory positions who direct others.

Alcohol refers to beer, wine and distilled spirits, and includes the intoxicating agent found in medicines or other products.

Drug means any substance, including Illicit Drugs or Medications, the use of which has the potential to change or adversely affect the way a person thinks, feels or acts. **Drug** means any Drug or substance that is not legally obtainable and whose use, sale, possession, purchase or transfer is restricted or prohibited by law (e.g. street Drugs such as marijuana and cocaine).

Medication refers to a Drug obtained legally, either over-the-counter or through a doctor's prescription.

Drug Paraphernalia refers to any personal property which is associated with the use of any Drug, substance, chemical or agent, the possession of which is unlawful in Canada. This would also include any product or device that may be used to attempt to tamper with a testing sample.

Fit for Work in the context of this policy means being able to safely and acceptably perform assigned duties without any limitations due to the use or after-effects of Alcohol, Illicit Drugs, Medications, or other substances.

Safety Sensitive Role typically refers to any employee who is performing an operations, maintenance, construction or emergency response role.

Serious Work-related Incident refers to any incident that results in, or may reasonably have resulted in, any of the following:

- a fatality;
- serious injury to any individual requiring medical attention away from the scene;
- an environmental incident with significant implications;
- significant loss or damage to property, equipment or vehicles;

Significant loss of Company or client revenues; or

Any other serious work related incident or near miss considered to have had significant potential for more serious consequences.

Reasonable Cause Test refers to testing that takes place whenever a Supervisor has observed out of character behavior and has reasonable cause to believe that the actions, appearance or conduct of an employee or sub-contractor while at work are indicative of the use of Alcohol or Drugs. The decision to test shall be made by a Supervisor after consultation and agreement of Management in person or by phone. The basis for the decision will be documented as soon as possible after action has taken place. Testing will be in compliance with recognized Industry Standard and the referral for a test will be based on specific, personal observations resulting from, but not limited to such indicators as:

- observed use or evidence of use of a substance (e.g. smell of Alcohol);
- erratic or atypical behavior or changes in behavior of the employee;
- changes in the physical appearance or speech patterns of the employee;

or

- any other observations that suggest Alcohol or Drug use may be a factor
- following near miss or incident or accident
- employees performing safety sensitive job tasks and or job tasks

designated location requiring site access may be tested for drugs and or alcohol

RESPONSIBILITIES

Service On Site will educate Supervisors on Drug and Alcohol awareness

- All Service On Site Supervisors , Managers , Workers are expected to refrain from Alcohol or other Drugs in compliance with the standards below when engaged in Service On Site Business, at all times when on Service On Site Premises and Worksites, and when operating Company vehicles and equipment.

- Sub-Contractors are expected to ensure that their Workers remain free from any adverse performance effects of Alcohol or other Drugs in compliance with the standards below when engaged in Service On Site Business, at all times when on Service On Site Premises and Worksites, and when operating Company vehicles and equipment.
- All Service On Site Supervisors, Managers, Workers, Sub-Contractor and their Workers are expected to:
    - report fit for work, and remain fit throughout their work day or shift,
    - adhere to the fitness for work standards set out below,
    - maintain a valid driver's license if it is a condition of work and report any loss of license immediately (no later than 24 hours after losing the license),
    - conduct themselves in an appropriate manner while on Service On Site Business, Premises, and Worksites; and
    - co-operate with an investigation into a policy violation including

any testing requirements. 11.4

Any Service On Site Supervisors, Managers, Workers, Sub-Contractor or their Worker who is scheduled on call is expected to remain fit to respond to a call-in and be in compliance with this policy. If unexpected circumstances arise where a Sub-Contractor or Worker is requested to perform services while under the influence of Alcohol or other Drugs that could impact safe operations, it is the responsibility of that individual to inform the Contractor or a Service On Site Representative that they cannot accept that assignment.

STANDARDS

- **Drugs:** The use, possession, cultivation, manufacture, distribution, offering or sale of Drugs or Drug paraphernalia is prohibited while on Company Business, Premises, and Worksites. Sub-Contractor or Workers cannot:
    - report to work or being at work while under the influence of Illicit Drugs; and
    - have a positive Drug test result as determined through the testing program.
- **Alcohol:** The use, possession, distribution, offering or sale of beverage Alcohol and the possession of beverage Alcohol containers is prohibited when on Service On Site Business, Premises and Worksites.

- All Sub-Contractors and Workers assigned to any work representing Service On Site cannot:
    - report for work or remain at work under the influence of Alcohol from any source;
    - consume any product containing Alcohol during the work day, including during meals or other breaks; and
    - Return to work or report for work after consuming Alcohol at a social event.
    - Any Sub-Contractor or Worker who is working for Service On Site and has an alcohol test result of .02 to 0.39 will be removed from work immediately without pay at least until their next shift.
    - Sub-contractors or employees with a confirmed alcohol level of .04 or greater will be removed from duty and may be suspended without pay. Said person may be subject to disciplinary action.

At any time a Service On Site employee feels they need help to treat an addiction. We will help source out therapy or rehab locations. Service On Site is Not responsible for an monies accumulated for therapy or rehab by employee.

Medications: Sub-Contractors and Workers are expected to responsibly use Medications. They should investigate (through their doctor or pharmacist) whether a Medication can affect safe performance, and take appropriate steps to minimize associated risk, which would include notifying their company or a Service On Site Representative of any need for modified work under the circumstances. The following are prohibited while on Service On Site Business, Premises, and worksites

- Intentional misuse of medications (eg: not using the medications as its intended or using someone else's prescription medication , combining medication and alcohol use against directions),
- The possession of prescribed medications without a legally medically obtained prescription and unauthorized distribution, offering or sale of prescription medications

INVESTIGATIONS

- **Unfit for work Investigations:** Service On Site reserves the right to require a Sub-Contractor or worker to fully investigate a possible policy violation if a Sub-Contractor or Worker is at work in an unfit condition, including requiring a reasonable cause test.

  The Sub-contractor or worker will be removed from the immediate worksite and an investigation will be undertaken by a Service On Site Representative. As a part of the investigation process, the Company reserves the right to request an Alcohol and Drug test at their discretion.

- **Impaired Driving Situations:** If required to operate any Service On Site vehicle, Sub-Contractors or Workers are expected to report the loss of their driver's license. In addition, they are required to immediately report receipt of an impaired driving charge to their company or Service On Site Representative if it is received while operating a vehicle on behalf of Service On Site, and to comply with all investigation procedures and consequences.
- **Incident Investigations:** Service On Site reserves the right to require a Sub-Contractor or Worker to be tested for Alcohol and Drugs as part of an investigation into a serious work-related incident. The decision to refer a Sub-Contractor or Worker or Workers, for a test will be made by the Service On Site Representative investigating the incident.
- **Other Testing Circumstances:** Service On Site reserves the right to require Sub-Contractors or Workers who hold a higher risk position, or who are assigned to work on a high risk operating or project site to be tested prior to assignment. Testing may also be required on a random basis when it is deemed necessary to meet the objectives of this policy. All individuals affected will be advised in advance of these requirements.
- **Testing Program:** Minimum standards for testing undertaken as part of the Service On Site program are provided in the appendix.

- **Possession of Alcohol or Drugs:** Service On Site reserves the right to conduct investigations when there are reasonable grounds to believe that Alcohol or Illicit Drugs are present on Company premises or property, or worksite. A Sub-Contractor or Worker who refuses to submit to an investigation requested by a Service On Site Representative will be removed from the premises.

VIOLATIONS OF SERVICE ON SITE EXPECTATIONS

If there is any reason to believe any Sub-Contractor or Worker is unfit for work or otherwise in contravention of the basic intent and provisions of this Policy, an investigation may take place. The following procedures will be applied depending on the circumstances:

- the Service On Site Representative will disengage the Sub-Contractor or the Worker from the worksite, direct the individual to a safe place

- if the Service On Site Representative confirms that a breach of the policy has occurred, the individual will not be allowed to return to work for Service On Site without written permission, and will be required to adhere to any conditions governing their return

FAILURE TO TEST

Failure to report directly for a test, refusal to submit to a test, refusal to agree to disclosure of a test result to the Program Administrator, a confirmed attempt to tamper with a test sample, or failure to report involvement in an incident which may require testing, are a violation of this Policy

COMPLIANCE

Personnel must comply with all aspects of this document and support others in doing so. Personnel are responsible for promptly reporting suspected or actual violation of this document, applicable law, or any other concern, through available channels so that it can be appropriately investigated, addressed and handled. Personnel, who fail to comply, or knowingly permit personnel under their supervision to not comply, may be subject to appropriate corrective disciplinary action in accordance with the Service On Site policies and procedures.

NON-RETALIATION

We support and encourage employees to report suspected incidents of non-compliance with applicable laws, regulations, and authorizations, as well as hazards, potential hazards, incidents involving health and safety or the environment, and near misses. We take every report seriously; investigate each report to identify facts, and effect improvements to our practices and procedures when warranted. We ensure immunity from disciplinary action or retaliation for employees for the good-faith reporting of such concerns. Reports can be made to Supervisor or Management

Confidentiality and Record Keeping

All drug and alcohol test results are confidential, will be maintained in a secure manner and will be released only to the designated company representative. Confidential information from a substance abuse professional will be handled in a similar manner

APPENDIX A: ALCOHOL AND DRUG TESTING PROCEDURES

555559 BC LTD. Doing business as SERVICE ON SITE
FORT ST. JOHN, BC

AUTHORIZATION AND CONSENT FOR RELEASE OF INFORMATION

I, _____, authorize NORTHWEST HEARING SERVICES LTD. , To obtain a urine and saliva sample in order to determine its chemical and/or drug content. I understand that the results will be used in evaluating my fitness to work according to Service on Site's drug and alcohol policy.

I have taken the following medication within the last two weeks:

I understand that the results are held in confidence by NORTHWEST HEARING SERVICES LTD. And SERVICE ON SITE.

APPLICANTS SIGNATURE: _____

Witness (By authorized person): _____

DATE: _____

Sample: In temperature Range ___ Yes ____ No

TEST RESULTS: _____Negative Positive for: _____
PCP
THC
COC
AMP
OPIATES

ALCOHOL SWAB TEST: _____ Negative

_____ Positive

APPENDIX B: Definitions

Designated Drug Testing Company refers to: NORTHWEST HEARING SERVICES LTD.
8812 100 AVE
FORT ST. JOHN, BC
V1J 1X2
Phone (250) 785-8535

Drug testing procedures will be 5 panel for Marijuana, Cocaine, Opiates, Amphetamines and Phencyclidine. Urine specimens are collected by trained staff.

Alcohol testing procedures will be a done by a QED test which will be a swab of your tongue. The Employer Designated Representative is immediately contacted and advised of any confirmed results at the .02 or higher level. Negative test records are maintained for a minimum of 2 years with all positive test results maintained for a minimum 5 year period.

Alcohol- The intoxicating agent in beverage alcohol, ethyl alcohol or other low molecular weight alcohols including methyl or isopropyl alcohol.

Results of a breath alcohol analysis are expressed in terms of weight to volume, weight of alcohol (expressed in grams) per volume of breath (210 litres). Evidential Breath Alcohol Testing Devices screen at the .020 level.

Drug- Any substance other than food which is taken to change the way the body or mind functions. Drug testing refers to marijuana, cocaine, opiates, phencyclidine and amphetamines with cut off levels as per the Substance Abuse and Mental Health Services Administration of the Department of Health and Human Services which is the certifying agency for forensic urine drug testing laboratories in Canada and the US.

Drug	Screening Level	Confirmation Level
Marijuana	50ng/ml	15 ng/ml
Cocaine	300ng/ml	150 ng/ml
Opiates	2000ng/ml	2000 ng/ml
Phencyclidine	25 ng/ml	25 ng/ml
Amphetamines	1000 ng/ml	500 ng/ml
Alcohol	.020	.020

Substance Abuse Professional (SAP)- A licensed Physician (Medical Doctor or Doctor of Osteopathy), or a licensed or certified psychologist, social worker, employee assistance professional or an addictions counsellor. All must have knowledge of and clinical experience in the diagnosis and treatment of alcohol, drugs and related disorders.

* A ng/ml means nanograms per millilitre. A nanogram is one billionth of a gram. A millilitre is one thousandth of a litre. 11.9

Impairment and Fit for Duty

All Service On Site employees must be fit for duty.

Physical or Mental impairment

A Service On Site worker with a physical or mental impairment which may affect the workers ability to safely perform assigned work must inform his or her supervisor or employer of the impairment, and must not knowingly do work where the impairment may create an undue risk to the worker or anyone else

A worker must not be assigned to activities where a reported or observed impairment may create an undue risk to the worker or anyone else

Substance impairment

A worker must not enter or remain at any workplace while the person ability is affected by alcohol, prescription drugs or illegal drugs

Emergency Response Plan

Pre-planning

Preparation will increase the margin of safety in an emergency. To evacuate successfully:

1. Train employees in ways of assisting others.

2. Inform employees how to communicate in an emergency.

3. Assign specific tasks.

4. Identify employees with specific needs.

5. Provide a building specific plan.

6. Evacuation route maps are posted in the building. Employees should know the evacuation routes. The following information is marked on the maps.

- Emergency and accessible exits
- Evacuation routes
- Location of fire extinguishers
- Fire alarm panel board location

EVACUATION ROUTES & MEETING PLACES

A map of evacuation routes will be displayed in hallways and departments. Each map will show the way to an exit, depending on where employees are located in the building. It will be the responsibility of the first-line supervisor to inform employees of these evacuation routes. The Environmental Health & Safety Manager shall verify that the signs are in place and up to date.

Meeting places will be established to account for individuals.

Primary meeting place: Out front under the “Service on Site” sign.

Establish a procedure to account for employees in shop/office.

Establish a procedure for reporting to the Emergency Operations Team and emergency personnel any missing, trapped or injured occupants.

Fire Procedures: To evacuate the building upon seeing smoke/fire or hearing the fire alarm.

Emergency Procedures / Preparedness

Emergency plan

1. A workplace must have a written emergency plan, appropriate to the hazards of the workplace, that addresses the requirements of the OH&S regulations.

2. The plan must address emergency conditions which may arise from within the workplace and from adjacent workplaces.

3. The plan must be developed, implemented and annually reviewed in consultation with the joint committee or the worker health and safety representative, as applicable.

Procedures for evacuation

1. Written evacuation procedures appropriate to the risk must be developed and implemented to
   a) notify workers, including the first aid attendant, of the nature and location of the emergency,
   b) evacuate workers safely,
   c) check and confirm the safe evacuation of all workers,
   d) notify the fire department or other emergency responders, and
   e) notify adjacent workplaces or residences which may be affected if the risk of exposure to a substance extends beyond the workplace.

2. Notification of the public must be in conformity with the requirements Of other jurisdictions, including provincial and municipal agencies.

Procedures for spill cleanup and re-entry

If workers are required to control a release of a hazardous substance, to perform cleanup of a spill, or to carry out testing before re-entry, Service on Site must provide

   a) adequate written safe work procedures,
   b) appropriate personal protective equipment which is readily available to workers and is adequately maintained, and
   c) material or equipment necessary for the control and disposal of the hazardous substance.

EMERGENCY RESPONSE NUMBERS

Listed are the names of emergency contacts which can be located quickly should an emergency arise where quick and efficient response is of the utmost importance. Dispatchers, secretaries, field foreman, and supervisors should have a copy of emergency contacts with them at all times.

Service On Site # (250) 787-0082
Toll Free # 1-877-372-9966

Ambulance	911	or	250-785-5559
Hospital – FSJ General			250-262-5200
Police	911	or	250-787-8100
Fire Department	911	or	250-785-4333

Helicopters	Bailey	250-785-2518
	Canadian	250-787-0431
	Quest	250-787-5157
	Highland	250-787-7912

BC Oil & Gas Commission	250-794-5200	FSJ Reception
24hr Incident Reporting	1-800-663-3456	
Ministry of Transportation & Highways	250-787-3237	
FSJ Weigh Scale	250-785-3385	
Ministry of Forests	250-787-3237	
Dangerous Goods Spills	1-800-663-3456	or
Reporting and/or Canutec	1-613-996-6666	or *666 on cell
Poison Control Centre	1-800-567-8911	
Electrical Safety Branch	250-787-3230	
Buried Utilities:		
Call Before You Dig / BC on Call	1-800-474-6886	
Workers Compensation Board BC	250-785-1283	or 1-866-922-4357 After Hours Report.

Alcohol & Drug Referral Service 1-800-663-1441

British Columbia	Type of Incident	Phone Number
BC Provincial Emer. Program	Chemical Spill	1-800-663-3456
Ministry of Forests FSJ	Damage to Environment	250-787-3277
BC Oil & Gas FSJ	Oil and Gas Operational	250-261-5700
BC Oil & Gas Ft Nelson	Oil and Gas Operational	250-774-2173
BC Pipeline Spill OGC	All Pipeline Spills	1-888-330-8822

EMERGENCY RESPONSE PLANS

FIELD / JOB INCIDENTS

In the event of an accident or incident in the field, the following procedures will be followed:

1. Assess the situation.

2. Reduce the degree of hazard by closing or blocking off the area.

3. If required administer first aid.

4. Contact site supervisor and Service on Site management.

5. The worker will specify the need for an EMERGENCY RESPONSE and Have the following information ready:

    a. Nature of the problem.
    b. Location of the problem.
    c. Persons injured.
    d. What corrective action you have taken.
    e. What agencies have been notified (Fire Department, RCMP etc)

The site supervisor or management will then notify the following:

a.	Ambulance:	If necessary, at 911
b.	R.C.M.P.:	If the accident was on public street or highway or if a death occurred, at 911
c.	Dangerous Goods Spill:	If necessary, at 1-800-663-3456
d.	W.C.B.:	At 785-1283 or after hours and weekends at 1-866-922-4357

6. Stay at the scene. Do not discuss the liability with anyone.

7. Cooperate with the Fire Department, R.C.M.P., etc.

8. Return to work only after all hazards are removed and clearance is obtained from management.

9. Clean up site including proper disposal of any wastes. Document clean up activities including restoration of surrounding environment if required.

10. Participate in the incident/accident investigation to determine the root cause and appropriate prevention measures.

11. Assist with follow up measures to ensure any corrective actions deemed necessary are taken.

INJURY OR DEATH INCIDENTS

Injury

1. Report injuries no matter how minor immediately to management. Treatment will be given and the incident will be recorded. Should later medical treatment be needed, you will have fulfilled your obligations.

2. You must notify management prior to leaving any job site because of injury or Illness, whether personal or work-related.

3. If outside medical treatment is obtained for a work-related injury or illness, you must notify management at the start of the next workday.

4. Never move an injured or seriously ill person unless necessary to prevent further injury. First aid should not be administered by non-trained personnel. Know your limits. Do only what you are qualified to do.

Death

1. In the event of a death on any job site, cease all operations immediately.

2. Notify management who will notify the proper authorities, i.e. ambulance, RCMP, WCB, as well as family members or next of kin.

3. Follow the instructions you receive from management and authorities. Do not discuss these types of incidents as it can cause undue harm to the company and family members of the victim(s).

PUBLIC RELATIONS DURING AN EMERGENCY

No employee is to speak to media or any person(s) (except investigating Agencies/officers) without the express permission of management who will Coordinate all public relations regarding major incidents.

It is the responsibility of management to notify next of kin or family members in the event of an injury or death within the company. No other individual shall take it upon themselves to perform this duty.

NATURAL DISASTERS

In the event of a natural disaster such as a flood, high wind warnings, lightning strikes or an earthquake the following procedure will be followed:

1. All work is to be stopped immediately. Warning may come in the form of the actual event happening or by a predetermined emergency alarm being sounded.

2. Immediately upon being aware of the emergency you will proceed to the designated gathering point and contact management and the site supervisor.

3. The situation will be assessed and a course of action that will be most effective for everyone's safety will be determined.

It is imperative that you stay together and assist each other & you listen to the direction of management or site supervisor.

4. Once the immediate threat of the event is over it is important To follow through and ensure that you continue to follow the Direction of the site supervisor or management until it is Agreed that it is all clear to resume normal activities.

First Aid

General

. All Service On Site employees must report injures and / or work related illness immediately after they occur to supervisor or co-worker or first attendant on site.

. Service On Site will investigate all incidents ie: injuries/ work related illness, exposure to contaminants immediately after being reported

. All injuries, work related illness, exposure to contaminates are documented and documents will be kept at workplace for 3 years

. All first aid cases shall be recorded in the Injury Record Book located in each first aid kit or the log book in the aid treatment room

. Employees should be familiar with techniques of first aid and cardiopulmonary resuscitation (CPR) and the means of summoning emergency medical aid.

. All first aid certified Service On Site employees must be readily available to assist injured workers/

. Service On Site shall have, as a minimum, the required number of trained first aiders as required by federal and / or provincial regulation.

Basic requirements

1. Service On Site will provide for each workplace such equipment, supplies, facilities, first aid attendants and services as are adequate and appropriate for
   a. Promptly rendering first aid to workers if they suffer an injury at work, and
   b. Transporting injured workers to medical treatment
   c. Service on Site will provide a effective means for
      a. communications between the first aid attendant and the workers and
      b. the first aid attendant to call for assistance
2. Service On Site will conduct an assessment of the circumstances of the workplace , including
   a. The number of workers who may require first aid at any time,
   b. The nature and extent of the risks and hazards in the workplace, including whether or not the workplace as a whole creates a low risk of injury
   c. The types of injuries likely to occur
   d. Any barriers to first aid being provided to an injured worker,
   e. The times that may be required to obtain transportation and to transport an injured worker to medical treatment

Service On Site will review the assessment under subsection (2)

a. Within 12 months after the previous assessment or review, and

b. Whenever a significant change affecting the assessment occurs in Service On Site's operations.

First Aid Procedures

1. Service on Site will keep up-to-date written procedures for providing first aid at the worksite including
    a. the equipment, supplies, facilities, first aid attendants and services available,
    b. the location of, and how to call for, first aid,
    c. how the first aid attendant is to respond to a call for first aid,
    d. the authority of the first aid attendant over the treatment of injured workers and the responsibility of the employer to report injuries to the Board,
    e. who is to call for transportation for the injured worker, and the method of transportation and calling, and
    f. prearranged routes in and out of the workplace and to medical treatment.
2. Service on Site will post the procedures conspicuously in suitable locations throughout the workplace or, if posting is not practicable, the employer must adopt other measures to ensure that the information is effectively communicated to workers.
3. The first aid attendant and all other persons authorized to call for transportation for injured workers must be trained in the procedures.

Communication and Availability

1. Service on Site will provide an effective means for
    a. communication between the first aid attendant and the workers served, and
    b. the first aid attendant to call for assistance.
2. Service on Site will not assign, and the first aid attendant must not undertake, employment activities that will interfere with the attendant's ability to receive and respond to a request for first aid.

First Aid Records

1. Service on Site will maintain at the workplace, in a form acceptable to the Board, a record of all injuries and exposures to contaminants covered by this Regulation that are reported or treaded.
2. First aid records must be kept for at least 3 years.
3. First aid records are, to be kept confidential and may not be disclosed except as permitted by this Regulation or otherwise permitted by law.
4. First aid records must be available for inspection by an officer of the Board.
5. Workers may request or authorize access to their first aid records for any treatment or report about themselves.

Service on Site's First Aid Attendant Responsibilities

1. The first aid attendant must
    a. promptly provide injured workers with a level of care within scope of the attendant's training and this Part,
    b. objectively record observed or reported signs and symptoms of injuries and exposures to contaminants covered by the Regulation, and
    c. refer to medical treatment workers with injuries considered by the first aid attendant as being serious or beyond the scope of the attendant's training.
2. A first aid attendant must be physically and mentally capable of safely and effectively performing the required duties, and the Board may at any time require the attendant to provide a medical certificate.
3. The first aid attendant is responsible, and has full authority, for all first aid treatment of an injured worker until responsibility for treatment if accepted
    a. at a place of medical treatment,
    b. by an ambulance service acceptable to the Board, or
    c. by a person with higher or equivalent first aid certification.
4. The first aid attendant does not have authority to overrule a worker's decision to seek medical treatment or the worker's choice of medical treatment.

First Aid Attendant qualifications

Service On Site will ensure that a person who is designated as a first aid attendant

a. Is at least 16 years of age
b. Has successfully completed the first aid training course or first aid examination developed or approved by the board
c. Has a first aid certificate in good standing at the required level issued by the board or person recognized by the board
d. Meets any other requirements determined by the board for designation as a first aid attendant

Basic Requirements

1. Service on Site will provide for each workplace such equipment, supplies, facilities, first aid attendants and services as are adequate and appropriate for
    a. promptly rendering first aid to workers if they suffer an injury at work, and
    b. transporting injured workers to medical treatment.
2. Service on Site will conduct an assessment of the circumstances of the Workplace, including
    a. the number of workers who may require first aid at any time,
    b. the nature and extent of the risks and hazards in the workplace, including whether or not the workplace as a whole creates a low risk of injury,
    c. the types of injuries likely to occur,
    d. any barriers to first aid being provided to an injured worker, and
    e. the time that may be required to obtain transportation and to transport an injured worker to medical treatment.
3. Service on Site will review the assessment under subsection (2)
    a. within 12 months after the previous assessment or review, and
    b. whenever a significant change affecting the assessment occurs in Service On Site's operations

First aid equipment, supplies and facilities must be kept clean, dry and ready for use, and be readily accessible at any time a worker works in workplace.

FIRST AID SUPPLIES

- Employees shall be familiar with the location and contents of the first aid kits at their workplace.

- Contents of the first aid kits shall be inspected regularly and expended or outdated items replaced.

EYE WASH AND EMERGENCY SHOWER FACILITIES

- Employees shall be familiar with the location and use of eyewash and emergency shower facilities.

- Eyewash facilities shall be inspected at least monthly to ensure they contain an adequate supply of fresh water for immediate eye washing.

- Emergency showers shall be tested monthly to ensure that they are operational.

- In the event that a hazardous material gets into the eye, flush for at least fifteen minutes with plenty of fresh water at a comfortable temperature. Get medical attention.

- Do not attempt to remove objects that are embedded in the eye. Get medical attention.

RESUSCITATION

- In emergencies requiring restoration of normal breathing, the priority of action shall be as listed below:

    1. **Rescue** – move victim(s) to a health breathing environment

    2. **Manual Resuscitation** – where the victim cannot be removed from the hazardous breathing environment and the rescuer(s) is/are suitably protected from the environment, resuscitate the victim using automatic, mechanical resuscitation equipment.

- Employees shall be familiar with the location and use of resuscitation equipment. Operation and maintenance of this equipment shall be in accordance with the manufacturer's instructions.
- Resuscitators shall be inspected at least monthly to ensure that they are operational and that they have a sufficient supply of compressed breathing air or oxygen.

Service On Site Fire Protection

Fire Prevention

. All employees shall be constantly on the alert for conditions that may contribute to a fire and to remove or report hazards

. Oily rags, waste material, paper, and other combustible materials shall be stored in metal containers. These containers shall be emptied regularly

. Before welding operations commence, measures shall be taken to ensure that ignition of flammable materials or atmosphere will not occur and that a safe work permit is in effect.

. Vegetation shall be controlled around tanks, fire wall, buildings and well sites.

. Do not use gasoline or other flammable liquids as degreasing or cleaning agents. Use only approved solvents or other combustible liquids.

Fire Fighting Equipment

. All employees shall know the location of firefighting equipment in their work area.

. Access to any firefighting equipment must never be blocked by any material, equipment or vehicle

. All firefighting equipment shall be inspected at least monthly to ensure that it is in place, accessible, and fully charged. Further inspection and maintenance shall be conducted in accordance with the manufacturer’s instructions by certified personnel only.

. Never return a discharged fire extinguisher to its normal location. Take it out of service for recharging and replace it with a fully charged unit.

. Never use water on an electrical fire.

SERVICE ON SITE

Upon discovery of fire:

- Assess the size of fire and extinguish if possible.
- Leave the fire area immediately and assist anyone in immediate danger to evacuate.

- Close all doors behind you to confine the fire.
- Activate the fire alarm, alert staff and if possible set security monitor to fire.

- Notify the fire department.
- Shut main gas line to building off.
- Meet at designated muster area, (under the sign by 100th Ave.) for a Head count.

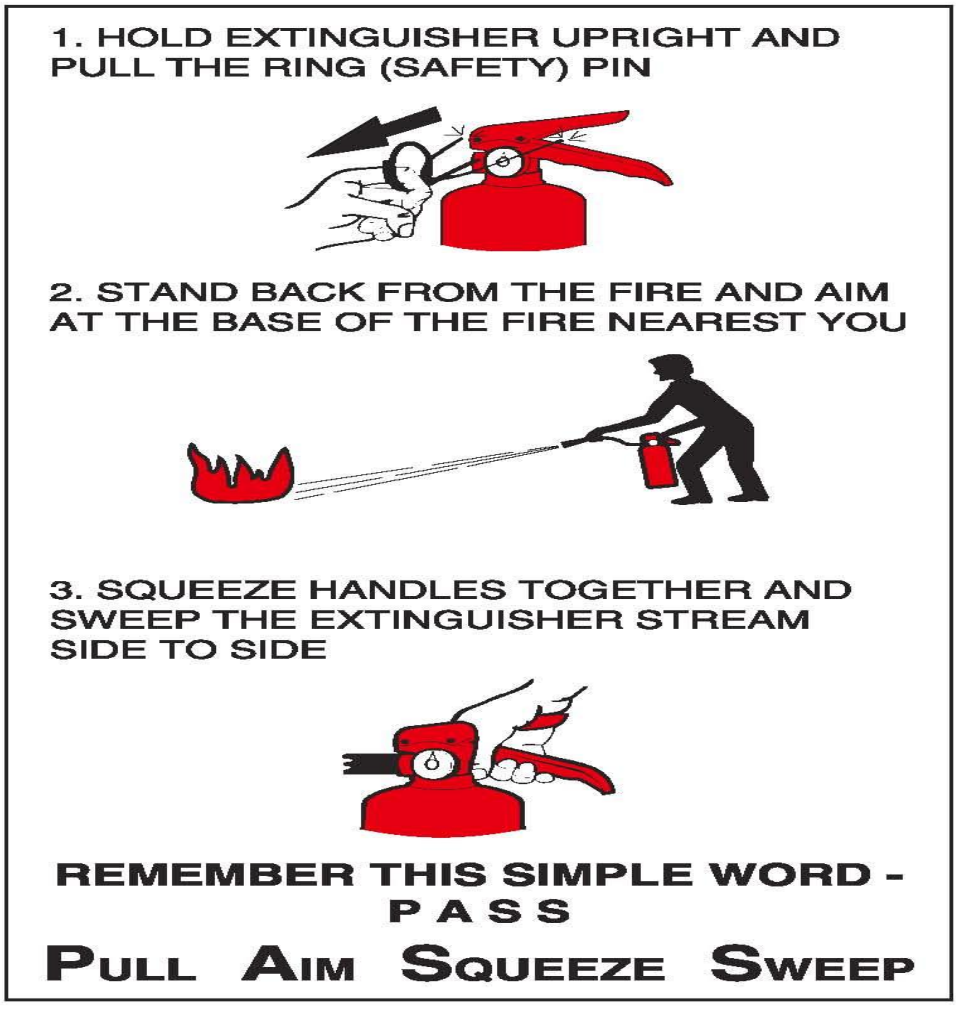
Upon Hearing an Alarm of Fire:

- Shutdown process equipment in a preplanned manner where applicable.

- Leave the building immediately.
- Close all doors behind you to confine the fire.

FIRE EXTINGUISHMENT

- Service On Site employees shall be trained in the proper use of the fire fighting equipment in their work areas.
- All fire extinguisher contents shall be applied from up wind and directed at the base or outer edge of the fire with a sweeping motion.
- Activate the nearest fire alarm or call for help, if it is available, before attempting to extinguish a fire. If the fire is too big to control with the equipment at hand, retreat.
- Never turn your back on a fire. Always back away until you are at safe distance.



Evacuation and Rescue

Training

1) Service On Site workers designated to provide rescue or evacuation services must be adequately trained.

2) The training program must include simulated rescue or evacuations and regular retraining, appropriate to the type of rescue or evacuation being provided, and training records must be kept.

Risk assessment

1) Service on Site will conduct a risk assessment in any workplace in which a need to rescue or evacuate workers may arise.

2) If the risk assessment required shows a need for evacuation or rescue, appropriate written procedures must be developed and implemented, and a worker assigned to coordinate their implementation.

3) Written rescue and evacuation procedures are required for but not limited to

   a. work at high angles
   b. work in confined spaces or where there is a risk of entrapment,
   c. work with hazardous substances,
   d. underground work,
   e. work on or over water, and
   f. workplaces where there are persons who require physical assistance to be moved.

Ropes

(1) Ropes and associated rigging equipment used only for rescue or evacuation or training in such procedures must
   (a) Be of low stretch (static) kernmantle construction or equivalent,
   (b) When new, have a minimum safety factor of 10 to 1,based upon a one person load of 140 kilograms (300 pounds) , and
   (c) Be replaced at intervals stated by the manufacturer, but not exceeding 5 years.

(2) A worker suspended on a rope for rescue purposes other than from a helicopter must, where practicable, be secured to an independent lifeline or belay line.

Inspection of equipment

1. Ropes and associated equipment must be inspected visually and physically by qualified worked after each use for rescue, evacuation or training purpose.
2. Equipment must not be used after it
   a. Has been overstressed
   b. Has been subject to temperatures above 150 c (300 F)
   c. Shows significant damage due to contact with chemicals or due to any other cause.

Maintenance records

Maintenance records must be kept for the shop and office including but not limited to

a. The name of the manufacture
b. The type of equipment
c. The date put into service
d. When and for what purpose the equipment had been used
e. The date of the last inspection and name of the inspecting person
f. Any damage suffered
g. The date and nature of any maintenance

(3) Maintenance records must be available upon request to any worker concerned with the safe operations of the equipment or to an officer

Emergency Preparedness

Risk assessment

1. Service on Site will conduct a risk assessment in the workplace in which a need to rescue or evacuate workers may arise.

2. If the risk assessment required by subsection (1) shows a need for evacuation or rescue, appropriate written procedures must be developed and implemented, and a worker assigned to coordinate their implementation.

3. Written rescue and evacuation procedure are required for but not limited to
   a) work at high angles,
   b) work in confined spaces or where there is a risk of entrapment,
   c) work with hazardous substances,
   d) underground work,
   e) work on or over water, and
   f) workplaces where there are persons who require physical assistance to be moved.

Training

1. All workers must be given adequate instruction in the fire prevention and emergency evacuation procedures applicable to their workplace.

2. Workers assigned to firefighting duties in their workplace must be given adequate training, by a qualified instructor, in fire suppression methods, fire prevention, emergency procedures, organization and chain of command, firefighting crew safety and communications applicable to their workplace.

3. Retraining for firefighting duties must be provided periodically, but not less than once a year.

4. A worker not covered by Part 31 (Firefighting), who is assigned to firefighting duties, must be physically capable of performing the assigned duties safely and effectively before being permitted to do them.

Notifications of fire departments

1. An employer having at a workplace controlled products covered by WHIMS, explosives, pesticides, radioactive material, consumer products or hazardous wastes in quantities which may endanger fire fighters, must ensure the local fire department is notified of the nature and location of the hazardous materials or substances and methods to be used in their safe handling
2. Subsection (1) does not apply to a workplace
   (a) Where materials are kept on site for less than 15 days if the employer ensures an alternative effective means for notification of fire department is in place in the event of a fire or other emergency , or
   (b) Which is not within the service area of a department

Notification of utility providers

If work activities conducted by or on behalf of an employer cause a utility service to be hit or damaged, the employer must notify the owner of the utility service without delay

SPILLS, LEAKS AND RELEASES OF HAZARDOUS SUBSTANCES

GENERAL

- Before undertaking any work involving the use, handling or exposure to any hazardous materials, employees shall ensure that the required precautions are taken.

    - They are informed of the hazards and the precautions to be taken.
    - Approved personal protective clothing and equipment is worn.
    - Adequate ventilation is provided.
    - Approved fire protection is provided.
    - First aid capability and facilities are available.

SPILLS OR LEAKS OF HAZARDOUS SUBSTANCES

Every precaution must be taken to stop and prevent loss or waste of oil, gas or water in operations.

In the event of any spill, leak or release of hazardous substance, follow the regulations and procedures set out in the Transportation of Dangerous Goods course and handbook, and the WHMIS course and handbook as well as OGC spill reporting guidelines. Basic guidelines are as follows:

- Take whatever action is possible to control any release, spill or leak and to otherwise secure or repair the situation, to minimize the damage.

- If spill is not contained or is in excess of 2 cubic meters, immediately report the type, size and location of the spill to management who will then report as required to the proper authorities.

- A written report will be prepared within 2 weeks of the spill containing at least the following information:

    - The date and time of the spill and its location.
    - A description of the circumstances leading to the spill.
    - A discussion of the spill containment and recovery procedures.
    - A discussion of steps taken to prevent future spills.
    - An outline of the spill site rehabilitation program.
    - Names of other people or agencies advised concerning the spill, and names of people on the scene of the spill.

Incidents requiring **Immediate** Notification:

- Loss of life, Injury (s) caused by accident
- Leaks of sour gas
- Sour oil or sour multiphase spills
- H.V.P. leaks
- Oil or salt water spills of 2 m3 (12.5 barrels) or more
- Oil or salt water spills that have entered or threaten to enter any watercourse
- Fire
- Pressure vessel failure
- Gas leaks on road/railway right of ways, on bridges, or within 500 inches of any dwelling
- Gas leaks that shut down a transmission line for 8 hours or more or where customers are deprived of natural gas

5.53 Workplace monitoring

(1) If a worker is or may be exposed to hazardous substance, Service on Site will ensure that a walkthrough survey is conducted to assess the potential for overexposure taking into account all routes of exposure, including inhalation, ingestion, and skin contact, and reassessment is conducted when there is a change in work conditions which may increase the exposure, such as a change in production rate, process or equipment.
(2) If the walkthrough survey reveals that a worker may be at risk of overexposure to an airborne contaminant, Service on Site must ensure that air sampling is conducted to assess the potential for overexposure.
(3) Additional workplace monitoring to reliably determine worker exposure is required if
a) the assessment reveals that a worker may be exposed to an air contaminant in excess of 50% of its exposure limit, or
b) measurement is not possible at 50% of the applicable exposure limit.
(4) Workplace exposure monitoring and assessment must be conducted using occupational hygiene methods acceptable to the Board.
(5) The results of workplace exposure monitoring and assessment, or a summary of the results, must be provided to workers at their request without undue delay.

Controlling Exposure

Exposure limits
Service on Site will ensure that no worker is exposed to a substance that exceeds the ceiling limit, short-term exposure limit, or 8 hour TWA limit prescribed by ACGIH. No worker will enter or remain in a work area if more than 20% LEL is present in the atmosphere.

If a substance has an 8 hour TWA limit, Service on Site will ensure that a worker's exposure to the substance does not exceed

a) three times the 8 hour TWA limit for more than a total of 30 minutes during the work period, and
b) five times the 8 hour TWA limit at any time.

Emergency Washing Facilities
Service on Site will ensure that appropriate emergency washing facilities are provided within a work area where a worker's eyes or skin may be exposed to harmful or corrosive materials or other materials which may burn or irritate.

Water supply
(1) For a plumbed emergency eyewash facility Service on Site will ensure that only a potable water supply is used.
(2) For a portable (non-plumbed) eyewash unit, Service on Site will ensure that only potable water or an isotonic saline flushing solution is used.

REPORTABLE SPILL QUANTITIES BY MATERIAL CLASS
BRITISH COLUMBIA

Substance Spilled	Specified Amount
Explosives of Class **I** as defined in section 3.9 of the Federal Regulations	Any
Flammable gases, other than natural gas, of Division 1 of Class 2 as defined in section Il 1(a) of the Federal Regulations	10 kg, if the spill results from equipment failure. error or deliberate action or inaction
Non-flammable gases of Division 2 of Class 2 as defined in section 3.11(d) of the Federal Regulations	10 kg, where spill results from equipment failure, error or deliberate action or inaction
Poisonous gases of Division 3 of Class 2 as defined in section 3.11(b) of the Federal Regulations	5 kg, where spill results from equipment failure. error or deliberate action or inaction
Corrosive gases of Division 4 of Class 2 as defined in section 3.110 of the Federal Regulations	5 kg, where spill results from equipment failure, error or deliberate action or inaction
Flammable liquids of Class 3 as defined in section 3.12 of the Federal Regulations	100 1
Flammable solids of Class 4 as defined in section 3.15 of the Federal Regulations	25 kg
Products or substances that are oxidizing substances of Division 1 of Class 5 as defined in section 3.17(a) and 3.18(a) of the Federal Regulations	50 kg
Products or substances that are organic compounds that contain the bivalent "-0-0-" structure of Division 2 of Class 5 as defined in sections 3.17(b) and 118(b) of the Federal Regulations	**1** kg
Products or substances that are poisons of Division 1 of Class 6 as defined in section 3.19(a) to (e) and 3.20(a) of the Federal Regulations	5 kg
Organisms that are infectious or that are reasonably believed to be infectious and the toxins of these organisms as defined in sections 3.19(1) and 3.20(b) of the Federal Regulations	Any
Radioactive materials of Class 7 as defined by section 3.24 of the Federal Regulations	All discharges or a radiation level exceeding 10mSv/h at the package surface and 200uSv/h at I m from the package surface
Products or substances of Class 8 as defined by section 3.25 of the Federal Regulations	5 kg
Miscellaneous products or substances of Division 1 of Class 9 as defined by section 3.27(1) and (2)(a) of the Federal Regulations	50 kg
Miscellaneous products or substances of Division 2 of Class 9 as defined in section 3.27(1) and (2)(b) of the Federal Regulations	1 kg
Miscellaneous products or substances of Division 3 of Class 9 as defined **in** section 3.27(I) and (2)(`c) of the Federal Regulations	5 kg
Waste asbestos as defined in section 1 of the Special Waste Regulation	50 kg
Waste oil as defined in section 1 of the Special Waste Regulation	100 I
Waste containing a pest control product as defined in section **I** of the Special Waste Regulation	5 kg
A substance not covered by items **I**to 19 that can cause pollution	200 kg
Natural gas	10 kg, if there is a breakage in a pipeline or fitting operated above 100 psi that results in a sudden and uncontrolled release of natural gas

HYDROGEN SULPHIDE (H2S)

- Hydrogen Sulphide (H2S) is a killer; an extremely toxic, colourless and flammable gas which occurs naturally as a by-product of organic decay. It is particularly prevalent in the petroleum industry as a component of produced oil and natural gas. It is imperative that every employee in this industry be aware of its physical properties, recognize its hazards, and know how to protect themselves from exposure to it.

- **Physical properties of Hydrogen Sulphide**

Colour	Colourless
Odour	Offensive, likened to that of “rotten eggs”
Vapour Density	Heavier than are (1.188 compared to 1.0 for air)
Explosive Limits	4.3 to 46.0% by volume in air
Flammability	Lower Limit: 4 % Upper limit: 46%
Solubility	Readily soluble in water (4:1), oil and emulsion
Boiling Point	-60.3 C., usually found as a gas

- BC Occupational Exposure Limits (OEL) have been established to protect workers form the toxic effects of hydrogen sulphide.

10 ppm **Ceiling (C) Exposure Level**
No worker should ever exceed without respiratory protection. Even with respiratory equipment no Service On Site employee will be exposed over an 8 hour period

- Various concentrations of hydrogen sulphide and the toxic effect that can be expected on the body are listed below.

  1 ppm Can be smelled

  10 ppm Respiratory protection is required beyond this level

  20-50 ppm Eye, nose, throat and lung irritation

  100-150 ppm Severe eye, nose, throat and lung irritation
  Loss of smell
  Exposure duration of 8 hrs or more maybe fatal
  200-300 ppm headache and drowsiness

  300-500 ppm May cause unconsciousness and death in 1 to 4 hrs

  500-700 ppm Knockdown may be fatal within 1 hour at this level

  Greater than 700 ppm Immediate knockdown may be fatal

- Understand the difference between the parts per million and percent scales. 1 ppm of H2S is a low concentration and safe to be exposed to. One percent H2S (equal to 10,000 ppm) will result in rapid unconsciousness and, without immediate rescue and resuscitation, death.
- All Service On Site employees will be provided with H2S monitors. The H2S monitors will be calibrated on a regular basis and to industry standard.

- All Service On Site Employees who work in an area where there is potential for exposure to H2S must have completed and **H2S Alive or H2S Rescue** course within the last three years. All Service On Site employees will be provided industry standard training.

- At no time will Service On Site Employees be exposed to a concentration of H2S levels exeeding10 ppm <u>at any time</u>.

- Respiratory equipment will be supplied to all employees when necessary to protect from the hazards of H2S.

Service On Site Procedures In the event of
Releases of H2S gases

Seven Step Initial Response Strategy

1. EVACUATE
. Get to a safe area immediately
. Move upwind if release is downwind of you
. Move crosswind if release is upwind of you
. Move to higher ground if possible

---

2. ALARM
. Call for help
. Sound bell, horn, whistle or call by radio

3. ASSESS
. Do a head count
. Consider other hazards

---

4. PROTECT
. Put on breathing apparatus before attempting rescue

5. RESCUE
.Remove victim to safe area

---

6. REVIVE
. Apply rescue breathing if necessary

7. MEDICAL AID
. Arrange transport of victim to medical aid
. Provide information to emergency medical services

GENERAL GUIDELINES FOR INSPECTIONS AND HAZARD AWARENESS

Recognizing potential hazards and taking steps to control them is a major part of the Service on Site safety program. The following activities are integral to assessment and hazard control.

1. **Inspections:**
   The workers, contractors and management must conduct regular documented inspections of equipment, work site conditions, worker and contractor actions and job procedures to identify potential hazards. Every effort will be taken by all parties to provide and immediate response to rectify observed hazards.

2. **Hazard Reports & Control:**
   Workers and contractors should promptly submit verbal reports to management of any hazards observed on the work site. Management and supervisors will quickly correct observed hazards before they cause problems and incidents.

   Workers will conduct hazard assessments at new job sites before the start of operations to ensure the safety of themselves and others.

   When there are changes to a job already underway work activity will not continue until a full assessment of the potential hazards is completed. This information will be communicated to all workers that could be affected by the changes/hazards.

3. **Equipment Preventative Maintenance:**
   Proper equipment maintenance is a preventative measure against accidents and costly breakdowns. Equipment includes vehicles, tools, and personal protective equipment. Workers and contractors are to ensure that proper regular maintenance is done and recorded. Workers are responsible for bringing any equipment or machine deficiencies to managements' attention.

4. **Purchasing and Equipment Controls:**
   Only safety certified equipment is to be purchased. No unsafe equipment shall be purchased, rented or operated by Service on Site. All materials, equipment, parts, facilities and processes must Meet or exceed government requirements.
5. **Safety Audits:**
   The company job sites and procedures will be periodically audited to measure the effectiveness of the company safety program and to ensure that we are achieving our goals of an increased awareness of the safety system and reduced incidents. The company safety program will also be audited as per the Certificate of Recognition Standards.

SCHEDULE FOR INSPECTION AND APPOINTED PERSONEL

TASK	POSITION	FREQUENCY
FIELD SAFETY INSPECTIONS	OWNER MANAGEMENT WORKER SAFETY	3 YEAR
MONTHLY SHOP INSPECTIONS	OWNER MANAGEMENT WORKER SAFETY	MONTHLY
OFFICE	OWNER MANAGEMENT WORKER SAFETY	MONTHLY
ANNUAL FIRE EXTINGUISHER INSPECTION	AAA SAFETY	YEARLY
SHOP AND HAND TOOLS	EVERYONE THAT HAS BEEN TRAINED TO USE	PRIOR TO EACH USE
COMMERCIAL VEHICLE INSPECTIONS (TRUCKS AND TRAILERS)	REGISTERED INSPECTOR	AS REQUIRED

INCIDENT REPORTING & INVESTIGATION

Hazards and incidents are a very real aspect of our industry. Through safety awareness and incident prevention programs our goal is to better identify the hazards we face in our daily work and eliminate and control as many as possible to reduce incidents. The following are Service on Site's guidelines on the reporting of all incidents and hazards.

DEFINITIONS

Incident An undesired event that results, or has the potential to result in harm to a person or damage to property of the environment.

Hazard The property of the company, a piece of equipment or activity that acting alone or in conjunction with other variables, has the potential to cause harm.

Incident Investigation An incident investigation is the analysis of facts and data gathered by a thorough examination of all factors involved. An incident investigation is a structured, analytical process to reveal all causes.

Loss The unnecessary waste of resources.

What Gets Reported?

- Any incidents in which the worker or a co-worker suffers an injury no matter how minor.
- Any incident in which there has been damage to property or equipment.
- Any near-miss incidents in which the potential for injury or damage was significant.
- Any hazards found on job sites or with operating procedures.

Who To Report To & How To Report

Any injury to an employee or contractor, no matter how minor, is to be reported to management immediately. Management will then determine what actions will be taken.

When an incident in which there has been any damage to property or equipment occurs, the employee or contractor will verbally report it to management immediately and then follow up with a written report. Management will then proceed with an investigation.

When a near-miss incident occurs where the potential for injury or damage is significant, the worker shall report it immediately to management who shall then complete a written report and retain it for review in the next safety communications.

When an employee or contractor discovers a hazardous condition or operating procedure, it must be reported to management immediately and the situation will be analyzed and corrective actions taken. Workers and contractors will keep a written record of all reported hazards with follow up reports and present them weekly to management for discussion during future safety communications.

Please Note That All Incidents Must Be Reported <u>In Writing</u> Within 24 Hours

INCIDENT AND HAZARD INVESTIGATION

In order to reduce the number of incidents and hazards in our industry, it is necessary to investigate them thoroughly. When an occurrence has been reported, a proper investigation will be completed in order to correct any equipment or procedural problems and give recommendations to prevent future occurrences. The following are procedures and guidelines on the investigation of all incidents and hazards:

<u>What Will Be Investigated?</u>

1. Any incident where a worker suffers an injury, no matter how minor.
2. Any incident where there has been damage to property or equipment.
3. Any near-miss incidents where the potential for injury or damage is significant.
4. Any hazards found on job sites or with operating procedures.

<u>Who Will Perform the Investigation?</u>

1. <u>Recordable Injuries</u> – a recordable injury is any injury that a worker receives medical attention for but does not have any time away from work except to receive medical attention. Management will investigate these injuries.

2. <u>Lost Time Incidents</u> – a lost time incident is any injury that results in the worker losing time from work for longer than the day of the injury. Management will conduct these investigations.

3. <u>Property/Environmental Damage</u> – any incident where there has been damages of any value will be investigated by management.

PROCEDURE FOR THE INVESTIGATION

All investigation duties will be coordinated and assigned by management. The people with the most suitable qualifications to assist in determining the root cause will be assigned specific duties as indicated below. All Employees that are part of the investigation team will have training and investigation techniques.

1) Respond to the emergency promptly.

- Go immediately to the scene and ensure the injured are cared for.
- Secure the operations to prevent the risk of further injury and provide damage control as needed.
- Estimate the loss potential and decide who should be notified (internal and external contacts.)
- Ensure the evidence is preserved as required by legislation.

2) Collect pertinent information about the incident.

- Who was involved? Who needs to be interviewed?
- What happened? What equipment, tools, material or people were Involved? What failed or malfunctioned?
- Where, When, Why and How did it happen?

3) Analyze the facts to determine all significant causes.

- Identify the energy sources that made contact.
- Identify the substandard acts and conditions (immediate causes) that permitted these contacts.
- Using "why" questioning, identify the job factors, personal factors, and the management systems (root and basic causes) that permitted each of the substandard acts and conditions involved to exist.

4) Develop recommendations for corrective actions.

- The investigators will prepare a report on their findings and recommendations for any required changes will be prepared for management.
- Recommendations will address each of the immediate, root and basic causes that are identified.

5) Review findings and recommendations.

- Management will review the investigation findings and recommendations and will then discuss them with employees as needed.

6) Follow up on each recommendation.

- Management will assign responsibilities for any corrective actions that are required to individuals with a specific deadline for completion.
- Management will then verify that the corrective action has taken place and is adequate to reduce the risks of a repeated incident.

Incident Reporting Definitions and Classification Guidelines for Occupational Injuries and Motor Vehicle Accidents

PERSONAL INJURIES

Foreword

The purpose of these guidelines is to provide a consistent approach to defining and classifying personal injuries and illnesses for CEPA member company employees and contractors. These guidelines are based upon OSHA Recordkeeping Guidelines for Occupational Injuries and Illnesses, however, the classifications under these guidelines are entirely independent of the reporting requirements of HRDC, TSB, OSHA, WCB, NEB, DOT or provincial/state regulations or laws.

Definitions

Occupational Illness

An occupational illness is any abnormal condition or disorder caused by exposure to environmental factors associated with a work-related incident. Exposure may be caused by inhalation, absorption or ingestion, or by direct contact with dust, fumes, vapors or mists. Occupational illnesses may include, but are not limited to, the following categories:

- **Skin Diseases or Disorders —** examples: contact dermatitis, eczema or rash caused by primary irritants (eg. varsol) that sensitizes, poisonous plants, oil acne, friction blisters and inflammations of the skin.
- **Respiratory Conditions —** examples: pneumonitis, silicosis, asbestosis, pharyngitis, rhinitis or acute congestion due to chemicals, dusts, gases or fumes.
- **Poisoning (systemic effects of toxic material) —** examples: poisoning by metals (lead mercury); carbon monoxide, hydrogen sulfide, or other gases; benzene or other organic solvents; insecticides or other chemicals.
- **Disorders Due to Physical Agents (other than toxic materials)** — examples: heatstroke, sunstroke, sunburn, heat exhaustion and other effects of environmental heat; freezing, frostbite and other effects of exposure to low temperatures; effects of ionizing radiation (isotopes, x-rays, radium); and long term effects of non-ionizing radiation (welding flash, ultraviolet rays, microwaves).

Musculoskeletal Disorders (MSD) — examples: carpal tunnel syndrome, rotator cuff syndrome, tendonitis, DeQuervains' disease trigger finger, herniated spinal disk, and low back pain. MSDs do not include disorders caused by a slip, trip, motor vehicle accident, or other similar accident.

- **Noise-Induced Hearing Loss -** change in hearing threshold relative to baseline audiogram of an average 10db in either ear at 2000, 3000, 4000 Hz.
- **Other Possible Occupational Illnesses -** examples: malignant and benign tumors.

Occupational Injury

An occupational injury is any wound or damage (eg. cut, fracture, sprain, and amputation) to the body resulting from an event in the work environment. Conditions resulting from animal bites (eg. insect or raccoon) or from one-time exposure to chemicals are also considered occupational injuries.

Work Environment

The work environment comprises the physical location, equipment, materials processed or used, and the type of operations performed in the course of an employee's work, whether on or off company premises. An injury sustained off company property is normally considered as occurring in the work environment, provided it resulted from and during the course of employment.

First Aid

If the incident required only the following types of treatment, it is considered First Aid:

- Using a non-prescription medication at nonprescription strength (for medications available in both prescription and non-prescription form, a recommendation by a physician or other licensed health care professional to use a non-prescription medication at prescription strength is considered medical treatment for recordkeeping purposes);
- Administering tetanus immunizations (other immunizations, such as Hepatitis B vaccine or rabies vaccine, are considered medical treatment);
- Cleaning, flushing or soaking wounds on the surface of the skin;
- Using wound coverings such as bandages, Band-AidsTM, gauze pads, etc.; or using butterfly bandages or Steri-StripsTM (other wound closing devices such as sutures, staples, etc., are considered medical treatment);

- Using hot or cold therapy;
- Using any non-rigid means of support, such as elastic bandages, wraps, nonrigid back belts, etc. (devices with rigid stays or other systems designed to immobilize parts of the body are considered medical treatment for recordkeeping purposes);
- Using temporary immobilization devices while transporting an incident victim (e.g., splints, slings, neck collars, backboards, etc.);
- Drilling of a fingernail or toenail to relieve pressure, or draining fluid from a blister;
- Using eye patches;
- Removing foreign bodies from the eye using only irrigation or a cotton swab;
- Removing splinters or foreign material from areas other than the eye by irrigation, tweezers, cotton swabs or other simple means;
- Using finger guards;
- Using massages (physical therapy or chiropractic treatment are considered medical treatment for recordkeeping purposes); or
- Drinking fluids for relief of heat stress.

Interpretation Questions and Responses

> Are any other procedures included in first aid? ***No.***

➢ Does the professional status of the person providing the treatment have any effect on what is considered first aid or medical treatment? ***No.***

> What if a physician or other licensed health care professional recommends medical treatment but the employee does not follow the recommendation? ***Record the case even if the injured or ill employee does not follow the physician or other licensed health care professional's recommendation.***

> Is every work-related injury or illness case involving a loss of consciousness recordable? ***Yes.***

> What is a "significant" diagnosed injury or illness that is recordable under the general criteria even if it does not result in death, days away from

From OSHA.

work, restricted work or job transfer, medical treatment beyond first aid, or loss of consciousness? ***Work-related cases involving cancer, chronic irreversible disease, a fractured or cracked bone, or a punctured eardrum.***

Medical Aid (MA.)

Medical aid (M.A.) is any work-related injury or illness that is not in the comprehensive list of First Aid treatment.

Visiting a doctor or health care professional solely for observation or counseling and diagnostic procedures (e.g. X-rays, MRIs etc) including administering prescription medication (e.g. barium) that are used solely for diagnostic procedures are NOT Medical Aid.

Restricted Workday Case (Modified Work)

A restricted workday case (Modified Work) is any work-related injury or illness (or doctor's recommendation) that prevents an employee from doing one or more of their routine functions of his or her job on any subsequent calendar day.

Restriction of motion is recordable as a M.A. if it restricts the employee's ability to perform one or more of their routine functions but not their job proficiency. If an employee's schedule is changed after an injury to prevent restriction of work, it is recorded as an M.W.

When an employee working on a temporary assignment is injured and transferred back to their normal job assignment (which they can perform without limitation), no days of M.W. activities are counted.

Days Away (D.A.)

Days Away (D.A.) is any work related injury or illness that prevents the employee from reporting to work on the next calendar day regardless if the next day is a regular shift or a scheduled day off. If an employee returns to work from a D.A. and cannot do all or part of their regularly scheduled duties, the situation is classified as an M.W case.

Medical Treatment when an employee loses all or part of a workday following the day of the injury due to medical treatment, it is not classified as a Days Away incident. The classification is a function of the injury and not the treatment.

Observation Period — if an employee is injured on the job and the physician places them in the hospital (or at home) for observation only and the employee misses a scheduled shift of work, the case becomes a D.A. This classification is not affected if the physician decides after the fact that the employee could have worked or if medical treatment was rendered.

Fatalities (FT)

An Employee fatality resulting from an occupational injuries or illnesses that included "days away" (because of the time between the original injury/illness and expiration) is recorded as a fatality (FT).

Status of Personnel

Temporary and summer help are on the company payroll to provide a service on a part-time or temporary basis. Since they are paid and supervised directly by the company, the department where they are employed must record their hours and injuries.

Annuitants — occupational injuries or illnesses sustained by the annuitant while employed, but which are not brought to the attention of the employer until after the retirement date, are not recordable incidents.

Contract Labour — workers working for a CEPA member company through another company are not considered employees. Their injuries and illnesses are not recorded. Exposure hours are not recorded.

Loaned Employees (personnel working at a location other than their own) — an injury to an employee loaned to a work group other than their normal group is charged to the organization with administrative control of the injured. Administrative control resides with the organization that exercises control over salaries and other personnel administrative matters.

Examples of loaned employees include personnel working at locations other than their own to provide technical assistance, commissioning assistance or to receive or provide training. Assignments of this nature are generally of short duration, usually less than one year. Injuries incurred during travel in such situations are also charged to the organization with administrative control of the injured.

Pre-Existing Conditions

- Work related injury/illness to a non-work related pre-existing condition (e.g. sporting injury): "Significant" aggravation to a non-work related pre-existing condition is work related if the event or exposure in the workplace has clearly worsened the injury or illness. Significant aggravation results in death, loss of consciousness, modified work, job transfer, days away, or medical treatment (or change in current treatment).
- Work related injury/illness to work related pre-existing condition — employee considered completely recovered by employer: A work related injury/illness to a pre-existing condition that has been deemed completely healed or recovered is deemed as a "new" injury not connected to the original injury/illness even though it may involve the same part of the body (e.g. back injury).

• Work related injury/illness to work related pre-existing condition — employee NOT considered completely recovered by employer: A work related injury/illness to a pre-existing condition that has not been considered completely healed or recovered (e.g. modified work duties) is considered an extension of the original injury/illness even though it may involve the same part of the body (e.g. back injury).

An injury or illness resulting solely from free body motion is not recordable.

Total Reportable Injury Rate is the total injuries, (medical aid plus lost time) per two hundred thousand hours worked, calculated as follows:

$$\frac{\textit{Total Reportable Iniuries x 200,000 Hours}}{\textit{Total Hours Worked}}$$

MOTOR VEHICLES

The following definitions and interpretations are based on guidance provided by ANSI D15.1 — 1976 (standard for recording and measuring motor vehicle fleet incident experience) and an API and CEPA oil and gas industry recognized working sub-committee "interpretation" regarding vehicle incident reporting criteria.

An incident rate will be determined by reporting the total number of incidents per one million kilometers driven.

These guidelines apply to CEPA member-company rented, owned or leased vehicles in which miles/kilometers are tracked.

Definitions

Reportable Motor Vehicle Incident

A reportable motor vehicle incident is any incident involving a licensed motor vehicle while on business use (see definition of Business Use of a Vehicle) which results in death, an OSHA recordable type of injury (regardless of who was injured), or property damage, unless properly parked. Who was injured, what property was damaged, where the incident occurred (on or off-road), or who was responsible is not a factor. Whether incidents occur because of any one driver's fault, mechanical failure, or other "blame placing" factor is not to be considered in determining whether an incident is a reportable motor vehicle incident.

Properly Parked Motor Vehicle

A properly parked motor vehicle is one that is completely stopped and parked where it is legal to park such a vehicle or to stop for the purpose of loading or unloading persons or property. Brakes must be set; wheels chocked if needed, and doors closed. If a vehicle in motion strikes the open door of a standing vehicle, the standing vehicle is not considered properly parked. A vehicle standing in traffic in response to a sign, signal, or traffic condition is not properly parked.

Disabled Motor Vehicle

A disabled vehicle is not considered properly parked unless it is off the main travelled portion of the highway and displays proper warnings as required. A vehicle on a roadway shoulder is only considered properly parked if it is disabled and properly marked.

Motor Vehicle

A motor vehicle is a licensed Company-owned vehicle (COV), employee-owned vehicle (EOV), or rented or leased vehicle. It does not include pieces of equipment operated as vehicles on fixed rails, industrial forklifts, road building machinery, crawler cranes, draglines, farm equipment, or similar equipment. The load (e.g. trailer) on a motor vehicle is to be considered a part of the vehicle, if a motor vehicle incident occurs that involves the load.

Business Use of a Vehicle

Business use of a vehicle covers driving a company-owned, leased, or rented vehicle for business use, or use of a personal vehicle for which the employee is eligible to be reimbursed for the mileage driven. Business use of a company- owned, leased, or rented vehicle includes all miles/kilometres driven while on- duty (ie. working), including direct travel to and from work, driving to and from a call out location, going to and from lunch and attending business functions outside of normal business hours.

Personal Use of a Vehicle

A motor vehicle that is used part of the time as a fleet vehicle and part of the time as a means of private transportation may record only the mileage and accidents for the time it is used as a fleet vehicle.

Total Vehicle Incident Rate

The total vehicle incident rate is the number of motor vehicle incidents per one million kilometers driven for business use and is calculated as follows:

$$\text{Total Vehicle Incident Rate} = \frac{\text{Number of Total Vehicle Incidents x 1,000,000}}{\text{Business Use Kilometers Driven}}$$

Interpretations Motor

Vehicle Incident

Incidents resulting because of errors in judgment or technique of drivers, or of maintenance, are to be considered motor vehicle incidents. The amount of damage or the cost of the repair is not to be a factor. (The term wear and tear was removed due to subjectivity and inconsistent reporting). The definition includes any property damage, regardless of whether or not the damage is repaired. Incidents involving the use of incidental equipment such as cranes and related equipment mounted on a motor vehicle are not to be considered motor vehicle incidents unless the motor vehicle is a licensed vehicle being operated as a motor vehicle at the time of the incident.

The following examples may assist in determining if a particular incident is considered a motor vehicle incident:

- **Non-collision incidents —** Non-collision incidents of the upset, rollover, jackknife, or run-off-the-road types that cause death, injury, or damage are motor vehicle incidents.

- **Two Vehicles from Same Company -** If two vehicles of the same company collide, the incident is to be considered as two motor vehicle incidents unless one of the vehicles was properly parked.

- **No Damage or Injury -** An incident that may be the result of a driver's error, but does not result in a contact with his vehicle involving death, injury, or property damage, is not a motor vehicle incident.

- **Standing in Traffic -** A vehicle standing in a traffic lane in response to an officer, signal, stop sign, or traffic condition is not properly parked, therefore, if it is involved in an incident - for example, struck in the rear - the occurrence is a motor vehicle incident.

- **Company and Non-company Drivers -** Incidents involving vehicles owned, rented, or leased by the Company and operated by Company employees for business are Company motor vehicle incidents. Motor vehicle incidents that occur when a non-Company driver is driving a Company-owned or leased vehicle are also considered as Company motor vehicle incidents.

- **Driverless Motor Vehicle** (Runaways, Etc.) - Death, injury, or property damages resulting from an incident caused by a driverless motor vehicle in motion are motor vehicle incidents.

- **Shifting Cargo** (Abrupt Stops, Starts, Turns) - When abnormal driving (fast starts, stops, or excessive speed on turns or over rough roads, detours, etc.) causes the shifting of cargo, which results in death, injury, or property damage, the incident is a motor vehicle incident.

- **Injury to Pedestrians or Bystanders -** Incidents that result in death or injury to pedestrians or bystanders caused by contact with a moving vehicle, or an object carried on the vehicle or set in motion by the vehicle are motor vehicle incidents.

- **Hitching Rides -** Incidents that result in death, injury, or property damage caused by persons attempting to hitch rides (hanging on, riding pulled bicycles) on moving vehicles are motor vehicle incidents.

- **Persons Falling From Motor Vehicle -** Death, injury, or property damages that result from persons falling from moving motor vehicles are motor vehicle incidents. However, if the vehicle is properly parked, such incidents are not motor vehicle incidents.

- **Vehicle Evasive Action —** If death, injury, or property damage results from an incident caused by an effort of the driver to evade some person or object, the incident is a motor vehicle incident.

- **Carbon Monoxide, etc.** Incidents that result in death or illness solely because of inhalation of carbon monoxide exhaust gases, etc., are not motor vehicle incidents. However, if a driver becomes drowsy from breathing carbon monoxide and the vehicle then runs off the road and turns over, the incident would be a motor vehicle incident.

- **Firearms - Incidents** that result in death, injury, or property damage solely as the result of the discharge of firearms are not motor vehicle incidents. However, if, for example, a bullet strikes a driver and he then loses control of the vehicle and hits an object, the incident would be a motor vehicle incident.

- **Established Intent to Injure or Cause Property Damage -** Incidents that are established by investigation as being planned by the company driver for the purpose of injuring or causing property damage are motor vehicle incidents.

- **Incidents on Private Property -** Whether an incident happens on the public highways or on private property is not a factor.

- **Roadway or Driveway Damage -** Damage to a roadway or driveway, on private property, driven over with the owner's consent, caused solely by the weight of the vehicle is not a motor vehicle incident. If death, injury, or other property damage occurs because, for example, a vehicle skids or is driven off the driveway, the incident is a motor vehicle incident.

- **Mechanical Failures -** Mechanical failures that result in damage to the failed part(s) of the vehicle only (clutch burnout, gear stripping, tire failures, etc.) are not motor vehicle incidents. Failures (such as tire or brake failures) that result in incidents that cause death, injury, or property damage to other parts of the vehicle are motor vehicle incidents.

- **Towing or Pushing -** Damage resulting from towing or pushing operations alone is not a motor vehicle incident. If death, injury, or property damage occurs because, for example, a vehicle or tow gets away; the incident is a motor vehicle incident.

- **Repair and Servicing -** Death, injury, or property damage occurring from repair or service work alone (vehicle falling off jack or hoist, tire explosion while inflating, finger cut off by fan belt, etc.) is not a motor vehicle incident. If death, injury, or property damage occurs because of, for example, an incident while the vehicle is being driven (by company employee) to test brakes, etc., the incident is a motor vehicle incident.

- **Fires or Explosions -** Fires or explosions, or both, causing death, injury, or property damage, that are not the result of a motor vehicle incident or do not cause such an incident, as elsewhere defined, are not motor vehicle incidents.

- **Animals / Birds -** Incidents that result in death, injury, or property damage caused by collisions with animals or birds are considered to be motor vehicle incidents. Incidents resulting only in the death or injury of the animal or bird are not motor vehicle incidents.

- **Rocks, Gravel, Tar -** Damage caused solely by rocks or gravel thrown by vehicles, or by getting road tar on the vehicle is not a motor vehicle incident. If death, injury, or property damage results from hitting a large rock and losing control of the vehicle, the incident is a motor vehicle incident.

- **An Object Falling on a Motor Vehicle -** Damage resulting solely from objects falling on a motor vehicle (e.g. a tree falling on a vehicle in a wind storm or objects dropped from an overpass or building construction job) is not a motor vehicle incident unless the vehicle was improperly parked. If death, injury, or property damage occurs because the driver attempts to dodge a falling object and the vehicle runs off the road and turns over, the incident is a motor vehicle incident.

- **Objects or Liquids Falling From a Motor Vehicle -** When objects or liquids fall from a motor vehicle, and directly and immediately or subsequently are identified with the vehicle that lost its load, cause death, injury, or property damage, the incident is a motor vehicle incident.

- **Road Debris —** Damage resulting from striking road debris is a motor vehicle incident.

- **Flood, Earthquake, Lightning, etc. -** Incidents that result in death, injury, or property damage solely as the result of floods, earthquakes, lightning, etc., are not motor vehicle incidents. However, if a driver enters high water resulting in death, injury, or property damage, the incident is a motor vehicle incident.

RULES, SAFEWORK PRACTICES & PROCEDURES
For Service On Site

PERSONAL CONDUCT

- Use, or being under the influence of alcohol or illegal drugs while on the job is strictly prohibited.

- Employees taking prescribed medication which may impair their ability to work shall not engage in any activity which might endanger the health or safety of themselves or other employees.

- Smoking is prohibited in all Company workplaces, except in designated smoking areas.

- Beards or excess facial hair is not permitted on any employee who may be required to wear respiratory protective equipment.

- Employees shall not work on or around moving machinery if they are wearing loose clothing or jewelry or have long hair that is not contained.

- Employees shall not engage in practical jokes, horseplay, boisterous conduct, or unnecessary running on Company property.

SAFETY MEETINGS

- FLHA's must be completed prior to start of each job on site
- New FLHA's must be completed if job scope changes that day or
- If new personal arrive on site
- All employees engaged in construction, operation and maintenance activities, and other activities which present obvious hazards, shall participate in regularly scheduled safety meetings (at least monthly).

- The monthly safety meetings may be used to discuss topics such as the following:
    - Review of minutes from past meetings.
    - Review of safe operating practices.
    - Review of the safety data sheets (SDS).
    - Unsafe practices and how to correct them.
    - Review of near misses, injuries and vehicle accidents.
    - Safety information received from Corporate Safety.
    - Any other topic appropriate to safety in your workplace.
    - Off-the-job safety topics.

- Monthly meeting minutes and attendance shall be recorded and forwarded for review according to local practice.

SERVICE ON SITE

SERVICE ON SITE-PREVENTION OF VIOLENCE AND HARASSMENT and BULLYING IN THE WORKPLACE

The management of Service On Site recognizes the potential for violent acts or threats and harassment directed against staff by persons other than Service On Site employees.

Service On Site policy is they will conduct regular discussions at safety meetings regarding Violence at the work place, and the companies zero tolerance rule for Violence, Harassment and Bullying.

Service On Site policy also ensures that there will be no Violent acts, threats or harassment made to a co-worker. If a worker experiences any of these acts they are to report to their supervisor immediately. If any non work-related issues arise workers are to resolve prior to work commencing. If said issue can not be resolved workers are welcome to discuss with supervisor. If problem cannot be resolved Supervisor may then mitigate the work schedule

Every effort has been made to identify the sources of such action and procedures have been developed to eliminate or minimize the risks to staff.

The management of Service On Site will ensure that all staff members are aware of the hazards and are trained in the appropriate action to take for protection from acts or threats of violence, harassment or bullying. In order to ensure the protection of staff, Service On Site will have the following control measures in place, signage stating Zero tolerance for Violence, Harassment or bullying. Cameras are installed in the yard and the shop and are monitored by Supervisor. Office staff will consist of two or more working together.

Workers shall follow the procedures implemented for their protection and immediately report all incidents of violence and harassment and harassment

Owner/Manager

Chris Babcock
Date:

PART 1 : AN OVERVIEW OF THE REGUALTION SECTIONS ON VIOLENCE AND HARASSMENT IN THE WORK PLACE

This part of the guide reprints the sections of the Occupational Health and Safety Regulation that deal specifically with violence and harassment in the workplace. Following each section there is a brief discussion that clarifies some of the points made. Also reprinted are 3 other sections of the regulation that help clarify restrictions on workers preforming unsafe acts, checking employee's wellbeing, and improper conduct. A summary of three sections of the workers compensation act dealing with service on site, workers and supervisor responsibilities is also included.

Regulations sections on violence and harassment in the workplace

Definition of violence and harassment

4.27 " Violence and harassment" means the attempted or actual exercise by a person, other than a worker, of any physical force so as to cause injury to a worker , and includes any threatening statement or behavior which gives a worker reasonable cause to believe that he or she is at risk.

Explanation of section 4.27

. Incidents of violence and harassment include attempted or actual assaults or any threatening statement or behavior towards an employee of your company by any person other than a co-worker, which gives the employee reasonable cause to believe that he or she is at of injury.

. Incidents of violence and harassment may not necessarily occur on the job site. These incidents are considered workplace violence and harassment if they arise out of the workers employment.

Risk Assessment

4.28 (1) A risk assessment must be performed in any workplace in which a risk of injury to workers from violence and harassment arising out of their employment may be present.

(2) The risk assessment must include the consideration of

(a) Previous experience in that workplace

(b) Occupational experience in similar workplaces

(c) the location and circumstances in which work will take place

Community Health and Violence and harassment

Instruction of workers

4.30 (1) Service on site must inform workers who may be exposed to the risk of violence and harassment of the nature and extent of the risk.

(2) The duty to inform workers in subsection (1) includes a duty to provide information related to the risk of violence and harassment from persons who have a history of violent behavior and whom workers are likely to encounter in the course of their work.

(3) Service on Site will instruct workers who may be exposed to the risk of violence and harassment in

(a) the means for recognition of the potential for violence and harassment,

(b) the procedures, policies and work environment arrangements which have been developed to minimize or effectively control the risk to workers from violence and harassment,

(c) the appropriate response to incidents of violence and harassment, including how to obtain assistance, and

(d) procedures for reporting, investigating and documenting incidents of violence and harassment.

Explanation of section 4.30

- Existing staff must be made aware of hazards as soon as they have been identified.
- New employees must be made aware of all hazards relating to their employment.
- All staff must be trained in safe work procedures prior to exposure to hazards.
- If one of your identified risks is a known individual – such as a customer or a delivery person – the identity of the individual and the nature of risk must be given to staff likely to come in contact with the individual. The information shall not be indiscriminately distributed.

Response to incidents

4.31 (1) Incidents of violence and harassment must be reported and investigated as Required by Part 3 (Rights and Responsibilities).

(2) Service on site will ensure that corrective actions are taken in Response to incidents of violence and harassment in accordance with the Requirements of Part 3.

(3) Service On Site will ensure that a worker reporting an injury or adverse symptom as a result of an incident of violence and harassment is advised to consult a physician of the worker's choice for treatment or referral.

Explanation of sec 4.31

. Instruct workers to report any incidents of violence and harassment to managers or supervisors. Complete the violent incident report form (see part 5 of this booklet, “ sample documents). Incidents include threats as we as physical acts of violence and harassment.

. Document all incidents of violence and harassment. Violent incident report forms should be completed and kept for review to assist in decreasing or eliminating workplace violence and harassment.

. Investigate incidents of violence and harassment to determine steps needed to avoid their recurrence. Initiate corrective action accordingly.

. Service On Site is required to advise any employee reporting an injury or adverse symptoms resulting from an incident of violence and harassment of the workers right to consult a doctor of his or her choice.(the worker does not have to do so if he or she does not think its necessary.) Such notification should be documented on the violent incident report form.

. Note the general requirements to report and investigate incidents are also covered in the workers compensation act, part 3, division 10 sections 172-177 , as well as in Part 3 of the regulations.

Other Relevant sections of the regulation

Refusal of unsafe work
3.12 (1) A person must not carry out or cause to be carried out any work process or operate or cause to be operated any tool, appliance or equipment if that person has reasonable cause to believe that to do so would create an undue hazard to the health and safety of any person

Explanation of subsection 3.12 (1)

Workers must not undertake activities of a hazardous nature unless they have been trained to do so without undue risk to themselves or other workers. This includes the apprehension of robbers and shoplifters.

Risk assessment summary report

A risk assessment has been conducted at Service on Site on_____

by_____

The following potential risks of violence and harassment were identified:

- □ Travelling to and from work (see page 11)
- □ Shoplifting (refer to Community Health and Violence and harassment)
- □ Working alone (see page 89)
- □ Irate customers (refer to Community Health and Violence and harassment)
- □ Robbery (refer to Community Health and Violence and harassment)
- □ Making deposits (refer to Community Health and Violence and harassment)

Consideration of

- □ Previous experience on job
- □ Occupational experience on similar job
- □ Location and circumstances in which work will take place

Other identified risks

- □ _____
- □ _____
- □ _____

Violent incident report form

Staff who have been victims of violence and harassment at work should complete this report as soon as possible.

1. Identifying Information

Name	Job title
Shift	Department/section
Location of assault	
Type of assault	
Medical attention/first aid obtained?	Advised of right to consult doctor?
Investigation conducted?	WCB forms completed?
Reported to supervisor?	Police called?
Action taken	

21.6

WORKPLACE BULLYING, HARASSMENT and VIOLANCE

Purpose

The purpose of this policy and program is to assist in developing a working environment in which harassment, bullying and violence are known to be unacceptable and where individuals have the confidence to complain about the harassment, bullying and violence, should it arise, in the knowledge that their concerns will be dealt with appropriately and fairly. The program outlines procedures to be followed by Service On Site if a member of staff feels they are being harassed or bullied in the course of their work or as a result of their employment.

Policy

Service On Site welcomes diversity and is committed to ensure that all staff will be treated in a fair and respectful manner. Violence, bullying and harassment are not acceptable or tolerated in the workplace. All incidents must be reported and investigated immediately

Scope

This program applies to all Service On Site employees including permanent, temporary, casual, contract and student workers, managers and supervisors. It applies to face to face and electronic communications, such as email or social media

Definitions
Bullying/ harassment

Any inappropriate conduct or comment by a person towards a worker that the person knew or reasonably ought to have known would cause that worker to be humiliated or intimidated, but excludes any reasonable action taken by an employer or supervisor relating to the management and direction of workers or place of employment.

Bullying / harassment behavior <u>can include</u>

- Verbal aggression, insults or threats
- Humiliating initiation practices or hazing
- Spreading malicious rumors
- Calling someone derogatory names
- Vandalizing personal belongings
- Isolation and /or exclusion from work related activities

The above list is not exclusive, and harassment can also take place on the grounds of a person's age, religion, or other characteristic protected under the Human Rights

Bullying and harassment behavior <u>does not include</u>

- Expressing difference in opinion
- Offering constructive feedback, guidance or advice about the work-related behavior
- Reasonable action taken by an employer or supervisor relating to the management and direction of workers or the place of employment
- (eg. Managing a worker's performance, taking reasonable disciplinary actions, assigning work

Complaint Someone who makes a complaint or files a formal objection

Education Knowledge acquired by learning and instruction

External Investigator	Someone outside the organization hired investigate an incident
Internal Investigator	someone within the organization or designated to investigate an incident.
Respondent	One who responds or is in the position to defend his /her position
Supervisor	A person who instructs, directs, and controls workers in the performance of their duties. This could be a Manager, supervisor, foreman or lead hand.
Target	Person who is the focus of bullying / harassment
Worker	A person employed to perform a function or duty. For the purpose of this program, worker means any permanent, temporary, casual, contract and student worker, managers and supervisors,
Workplace	Workplace is not confined to the offices and buildings where business of Service On Site is being carried out. Harassment can occur during and after working hours, on or off Service On Site property. Harassment can occur during business travel, work related social gatherings through the internet, communications or any other locations where the prohibited conduct may have a subsequent impact on the work relationship, environment or performance of any person to whom this policy applies.

Responsibilities

Senior Management

- support and endorse the workplace bullying and harassment program
- Ensure time and resources are available to conduct training, investigations etc
- Complete all the appropriate forms to document any incidents of bullying or harassment
- Assist in the investigation of any incidents of bullying or harassment where necessary or required

- Not engage in bullying or harassment of workers, supervisors or other managers

Managers/supervisors/foreman/lead hands

- Apply and comply with this program
- Inform and train workers on this program
- Ensure bullying / harassment is never endorsed or engaged in
- Take steps to prevent bullying and harassment
- Promote the process to report incidents and complaints of bullying /harassment
- Complete all appropriate forms to document any incidents of bullying or harassment
- Assist in the investigation of any incidents of bullying / harassment where necessary or required
- Not engage in bullying / harassment of workers, other supervisors or managers

Workers

- Not engage in bullying or harassment of other workers, supervisors, or managers
- Report bullying / harassment observed or experienced in the workplace
- Complete all appropriate forms to document any incidents of bullying / harassment
- Apply and comply with the employers policies and procedures on bullying / harassment

Investigators

- Gather all required information to conduct a full and comprehensive investigation
- Complete investigation free of bias
- Provide follow up and recommendations to assist in eliminating reoccurrence

Program

This program includes:

a. Procedures for reporting incidents of bullying / harassment (complainant)
b. Procedures for investigating incidents of bullying / harassment (employer)
c. Appeal procedure
d. Training
e. Record keeping
f. Annual review

A. Procedures for reporting incidents of bullying / harassment (Complainant)

1. All incidents of bullying / harassment must be reported immediately to a supervisor verbally and in writing (a workplace bullying / harassment complaint form is to be competed. A sample is shown in appendix A)
2. Where the supervisor is the alleged bully, human resources will assist in receiving / follow up on incidents / reports

B. Procedures for investigating incidents of bullying / harassment (employer)

The process for investigating incidents and complaints of workplace bullying and harassment will be:

- Undertaken promptly and diligently, and be as thorough as necessary, given the circumstances
- Fair and impartial, providing both the complainant and respondent equal treatment in evaluating the allegations

- Sensitive to the interests of all parties involved, and maintain confidentiality.
- Focused on finding facts and evidence, including interviews of the complainant, respondent and any witnesses
- Incorporate, where appropriate, any need or request from the complainant or respondent for assistance during the investigation process

1. **Investigator selection**

Most investigations at Service On Site will be conducted internally. Depending on the situation, the supervisor, human resources, union representative or other designate will be the lead investigator. A worker representative from the safety committee may also be involved. In complex or sensitive situations, an external investigator may be hired.

2. **Incident Review**

Investigations will include interviews with the alleged target, the alleged bully and any witnesses. I the alleged target and the alleged bully agree on what happened then Service On Site will not investigate further and will determine what corrective/follow up action to take if necessary.
Documents to be reviewed may include:

- Workplace bullying and harassment complaint form
- Emails or social media evidence
- Notes
- Photographs
- Physical evidence like vandalized objects

3. **Follow up**

All investigations of alleged bullying/ harassment will be followed up and documented. Follow up will include a description of corrective actions a time frame and a means for dealing with adverse symptoms. The complainant(s) will be advised of the outcomes and options available. These could include assistance programs, training, and discipline.

Documents to be completed:

- Workplace bullying and harassment complaint form

4. **Appeal process**

Should either complainant or respondent wish to appeal any outcome of the investigation, they are free to do so.

- An appeal must be made in writing without unreasonable delay, no later than 30 days after the decision
- Full details on the reason for appealing the decision must be provided, clearly explaining why there is a disagreement on the decision
- Every effort must be made to follow the current corrective actions while the appeal is reviewed
- An appeal meeting will be arranged to discuss the appeal and where possible other participants may be included in the decision (different senior manager unbiased 3rd party , union etc) A final decision will be provided in writing within one week of the appeal meeting

5. **Training**

Training for supervisors and workers will include the following

- How to recognize bullying and harassment
- How staff who experience or witness bullying and harassment should respond
- Procedures for reporting and how the employer follows up with incidents or complaints of bullying and harassment
- Documents / forms review

Training will occur as required and will be included in orientation

6. **Record keeping**
Service On Site expects that staff experiencing or witnessing suspected / alleged bullying / harassment to complete the workplace bullying and harassment complaint form. Service On Site will keep all records pertaining to investigations and findings in a secure and confidential manner.

7. Annual review
This program and these procedures will be reviewed annually. All workers will be advised and educated on this policy and program when they are hired, through the new employee orientation process

APPENDIX A

WORKPLACE BULLYING AND HARASSMENT COMPLAINT FORM	
COMPLAINANT NFORMATION	
NAME:	POSITION:
DEPT:	DATE:
RESPONDANT INFORMATION (ALLEGED BULLY OR BULLIES)	
NAME(S):	
POSITION/RELATIONSHIP: __ 1	
P E R S O N A L S T A T E M E N T	
Please provide details on the bullying and harassment incident(s), including: - Names of all parties involved - Any witnesses to the incident(s) - Location, date and time of the incident(s) - Details about the incident(s) (behavior and/or words used) - All other relevant information Attach any supporting documents, such as emails, handwritten notes, or photographs. Physical evidence, such as vandalized personal belongings, can also be submitted. Attach additional pages, as necessary.	
Complaint form received by: (Name and Position)	
Date:	

APPENDIX B

WORKPLACE BULLYING AND HARASSMENT INVESTIGATION FORM COMPLETED BY THE INVESTIGATOR	
INVESTIGATOR INFORMATION	
NAME(S):	POSITION(S).
DEPT:	DATE:
DOCUMENT REVIEW	
List all documentation reviewed (emails, notes, photographs, physical evidence etc.)	
INTERVIEWS	
PERSON INTERVIEWED (Name, position)	
SITUATION DESCRIPTION (include dates, words actions) and impact (humiliated, intimidated etc.)	
PERSON INTERVIEWED (Name, position)	
SITUATION DESCRIPTION (include dates, words actions) and impact (humiliated, intimidated etc.)	
PERSON INTERVIEWED (Name, position)	
SITUATION DESCRIPTION (include dates, words actions) and impact (humiliated, intimidated etc.)	
OUTCOMES	
Based on the investigation, did workplace bullying and harassment occur?	Y e s
Reason(s) for this conclusion:	
Follow up with complainant /respondent. Include corrective actions, time frame, training opportunities etc.	

SECURITY

- Employees working for Service On Site shall abide by all local management directives regarding the security of personnel, property and information.

- All thefts, burglaries and vandalism incidents shall be reported to the Supervisor immediately.

- Employees shall keep alert to unauthorized entries or other suspicious activities and report them to the supervisor immediately.

- Gates, padlocks and other site security equipment shall be maintained in good operating condition.

- Material which may aid unauthorized entry to a company facility shall not be piled against the inside or outside of any security fence.

DISCIPLINARY POLICY

The following are disciplinary action guidelines for violations of the general safety rules, policies and/or procedures of not only Service on Site but any customer, as well as federal or provincial regulations.

On first offense, the worker or contractor will be given a verbal warning and management will make note of the warning.

On second offense, the worker or contractor will be requested to submit an explanation for the safety infraction. A written warning will be given to the worker or contractor and a meeting will be held with management.

On third offense, employment or contract may be terminated.

If the safety violation is of a serious nature, employment or contract may be terminated without prior warning.

Service On Site Journey Management Plan

Trip Description:				Names of passenger;	Alternative Driver? Check beside name	
					Is there a need for night driving	
Company:					yes:_____ NO:_____	
Has a Pre-Trip been done?			Is there more than one location travelled?			
Name of person acting as Journey :			Phone #:			
Departure Date		Unit #	Is the vehicle fit for trip ?	Name of main driver and company if not SOS:	Are drivers licences valid for vehicle and province? _____	
Route / Destination			Arrival time	Departure time	rest or breaks	contact required?	Known hazards to destination /rest areas/scales brake checks

Work consisting of a high hazards (high energy,toxic,flammable,high pressure etc.) nature will not be conducted alone
Work consisting of a low hazard nature can be conducted alone but will have a two hour call in requirement prearranged with supervisor

DRIVING LIFE SAVING RULES	Did the trip go as expected and if not ,why?	Drivers signature
 No alcohol or drugs while working or driving  Always wear you seatbelt While driving, do not use cell phone and do not speed   Follow prescribed Journey Management Plan		

DRIVE , WORK, OR PLAY, MAKE IT HOME SAFE TODAY !!

Service On Site Motor Vehicle Policy

The purpose of this policy is to ensure that All Service On Site employees, contracted employees and other visiting personnel use vehicles in a safe manner. Service On Site Employees will not be allowed to operate a company vehicle if impaired by prescription medication, alcohol or illegal drugs.

1) All Service On Site employees and contractors must have a current driver's license in order to drive a company vehicle and must provide proof of an appropriate license on an annual basis.
2) All traffic laws must be followed. Traffic and transportation violations and charges resulting from the same will be the sole responsibility of the driver.
3) Anyone driving a company vehicle shall acquire complete drivers abstract.
4) All equipment, tools or other cargo being transported shall be secured to prevent serious injury to occupants, in the event of a sudden stop or an incident.
5) It is the responsibility of the driver to inform their supervisor within the next working day of a drivers' license suspension. Failure to inform is considered a severe offence and will be subject to disciplinary action.
6) All Service On Site drivers shall have their appropriate class of drivers' license and TDG/DOT certificate (if applicable) in their possession. If products regulated by TDG legislation are carried in a company vehicle the driver must be trained in TDG (specific to class of material being carried) and comply with all safety marking sand documentation requirements.
7) Firearms shall not be carried in a Service On Site vehicle (shotguns are prohibited to use as flare guns)
8) No vehicle shall encroach within 8 meters (9 yards) of any wellhead, piping, process vessel, tank containing combustible fluids or classified area unless required by a specific maintenance or operating function and an appropriate risk assessment and work permit has been completed.
9) The driver will walk around their vehicle prior to each trip to check for potential hazards such as objects, people or other vehicles prior to driving and observe the condition of the vehicle to ensure items such as tires and lights are in good working condition and that windows, lights and mirrors are clean.
10) Pets will not be permitted in the company vehicles.
11) Picking up hitch-hikers is not permitted while driving a Service On Site vehicle.
12) No propane fuelled vehicles are to be parked indoors.
13) All vehicles used on Service On Site business shall be equipped with operable seat belts. All vehicle drivers and passengers must wear seat belts. The number of people rising in cars or trucks cabs is limited to the number of seat belt positions in the vehicle.
14) No vehicle shall be left unattended unless the engine is shut off and the vehicle is secured against accidental movement. The exception to this rule, only during winter conditions, is that the engine may be left running of two condition are satisfied: 1) the transmission is in neutral (standard) or park (automatic) and 2) the parking brake is applied, tested and proven functional.

15) Daytime running lights are required on all Service On Site vehicles. If the vehicle is not equipped with daytime running lights, the headlights are to be turned on.
16) Large trucks with limited visibility must be directed by a spotter when backing or maneuvering in areas with tight clearances.
17) All motor vehicles (gasoline, diesel or propane) must be shut off before refueling and must be refueled at least 4m from any source of ignition.
18) When driving on a plant site, vehicular radio/stereo systems must be tuned off so that alert or evacuation alarms can be easily heard.

CELLULAR PHONES – Use restricted when driving. It is recommended practice that all Service On Site employees restrict their use of cellular phones while driving and if a cellular is to be used that it includes a hands free device and take advantage of all possible phone features that limit driver distraction. (i.e. auto answer, auto dialing presets) When providing billable services to a client that has a more stringent cell phone policy, the clients' policy will take precedent. Zero texting is allowed while operating.

DRIVER FATIGUE RISK – Fatigue and stress are two common mental factors which affect a drivers' ability to perform. When a Service On Site driver finds they are in this condition or feeling sleepy, they should not drive. Pull over and take a break or a nap or pull over and stretch. Driving time should be taken into consideration as part of the hours of travel and work for that day in order to address the issues of fatigue.

INCIDENT REPORTING - All accidents involving shall be investigated by the driver's immediate supervisor and documented on an Incident Report Form. If a serious or fatal accident occurs the immediate supervisor will verbally notify management.

INSURANCE – All Service On Site vehicles must have the vehicle registration and insurance documents available in the vehicle.

TOWING – If a Service On Site vehicle required towing for any reason, a vehicle suited specifically to this application should be used. Under no circumstances shall towing practices lend themselves to a "slingshot" effect in the event of a failure of the towing hook or rope, therefore, nylon tow ropes and/or chains must not be used. Tow trucks are to be used as the first choice for towing.

VEHICLE ENTRY INTO HAZARDOUS AREAS – All Service On Site diesel-powered vehicles that are required to enter sites/plants with likelihood of fugitive flammable gas emissions must be equipped with a Positive Air Shut Off (PASO). In the event of an emergency alarm while driving in the plant area, immediately park the vehicle in a position that will not impede the movement of emergency vehicles, turn off the ignition (leave keys in the ignition) and communication equipment and proceed on foot to the nearest muster area.

VEHICLE & TRAILER LIGHTS – Service On Site employees must check lights when refueling and cleaned as required.

BACKING UP – The best practice for backing up are;

1. First choice is to ensure area is clear of personnel and obstruction prior to backing up. If this cannot be confirmed or cannot be done then a spotter is to be used.
2. Spotters are to 3 meters from the drivers' side of the vehicle, whenever possible.
3. If the driver at any time loses sight of the spotter, all movement must stop until the spotter has cleared the required distance.

Service On Site standard vehicle equipment:

- Twenty pound multi-purpose dry chemical fire extinguisher
- Company insignia and clearly marked unit number
- First aid kit (Industry standard)
- A towing device; sling, cable, or a towrope (chains are not acceptable) and a point designated to hook up to when towing or being towed.
- Street legal
- Spill kit
- Back up alarm
- Positive air shut off if powered by diesel engine
- VHF radios for trucks working on radio controlled roads
- Road flares
- Reflective tape
- Booster cables
- Wool blanket
- Flash light

Additional equipment may be necessary as required by the job, function or Client.

Corrective Action:

Service on Site will not permit a driver to drive, and a driver shall not drive a company motor vehicle unless, before doing so, the company has:

a) Repaired or corrected items listed on the trip inspection report which may affect the safe operation of the company vehicle and certified on the trip inspection report that the defect has been corrected, or
b) Certified on the trip inspection report that correction is unnecessary from service until it is repaired.

The safety information in this policy does not take precedence over applicable government legislation with which all Service On Site employees should be familiar

Personal Protective Clothing and Equipment

Responsibility to provide

1. A worker is responsible for providing
   a) clothing needed for protection against the natural elements,
   b) general purpose work gloves and appropriate footwear including safety footwear, and
   c) safety headgear.

2. Service on Site is responsible for providing, at no cost to the worker,
   all other items of personal protective equipment required by this regulation.

3. If the personal protective equipment provided by Service on Site causes allergenic or other adverse health effects, Service on site will
   provide appropriate alternate equipment of safe measures.

4. Nothing in this section precludes or alters an existing or future agreement between a worker or workers and Service on Site to the effect that Service on Site will be responsible for the provision, either at no cost or some cost to the worker, of any or all of the items described in subsection (1).

Flame Resistant Clothing

Employees must wear flame resistant clothing at all times at Service on Site.

Worker's responsibilities

1. A worker who is required to use personal protective equipment must
   a) use the equipment in accordance, with training and instruction,
   b) inspect the equipment before use,
   c) refrain from wearing protective equipment outside of the work area where it is required if to do so would constitute a hazard, and
   d) report any equipment malfunction to the supervisor or Service on Site rep.

2. A worker who is assigned responsibility for cleaning, maintaining or storing personal protective equipment must do so in accordance with training and instruction

Selection, use and maintenance

1. Personal protective equipment must
    a. be selected and used in accordance with the recognized standards, and provide effective protection,
    b. not in itself create a hazard to the wearer,
    c. be compatible, so that one item of personal protective equipment does not make another item ineffective, and
    d. be maintained in good working order and in a sanitary condition.

2. If the use of personal protective equipment creates hazards equal to or greater than those its use is intended to prevent, alternative personal protective equipment must be used or other appropriate measures must be taken.

Personal clothing and accessories

1. The personal clothing of a worker must be of a type and in a condition which will not expose the worker to any unnecessary or avoidable hazards.

2. If there is a danger of contact with moving parts of machinery or with electrically energized equipment, or if the work process presents similar hazards
    a. the clothing of the worker must fit closely about the body,
    b. dangling neckwear, bracelets, wristwatches, rings or similar articles must not be worn, except for medical alert bracelets snugly to the skin,
    and
    c. cranial and facial hair must be confined, or worn at a length which will prevent it from being snagged or caught in the work process.

General requirement

Service on Site will provide appropriate skin, hand, foot or body protection if a worker is exposed to a substance or condition which is likely to puncture, abrade or otherwise adversely affect the skin, or be absorbed through it.

If there is a danger of injury, contamination or infection to a worker’s hands, arms, legs, or torso, the worker must wear properly fitting protective equipment appropriate to the work being done and the hazards involved.

PERSONAL PROTECTIVE CLOTHING AND EQUIPMENT

GENERAL

- Engineering, work practice and administrative controls are the preferred means of reducing or controlling hazards which may endanger the health and safety of employees.

- Where these controls cannot reduce the hazards adequately, employees shall wear the appropriate personal protective clothing and equipment.

- Employees shall be responsible for the proper care, maintenance, cleaning and use of personal protective clothing and equipment which is assigned to them. Supervisors shall be responsible for ensuring that employees are adequately trained in their personal protective equipment and responsibilities.

- Employees shall not use personal protective clothing and equipment which is defective or unsafe. Such clothing or equipment shall be taken out of service and reported to the Supervisor.

HEAD PROTECTION

- CSA approved (Class B) hard hats shall be worn by all personnel while engaged in construction, operation or maintenance activities, or other activities where a risk of injury to the head may exist.

- Visitors to areas where the above activities are being conducted shall comply with the hard hat requirement.

- Hard hats and hard hat accessories (as required) shall be provided by Service on Site.

FOOT PROTECTION

- CSA approved (Grade 1, identified by a green triangle) safety-toed boots shall be worn by all employees while engaged in construction, operation, maintenance, or other activities where a risk of injury to the feet any exist. This may require additional footwear for wet and winter conditions.

- Visitors who are escorted and kept away from foot hazards need not comply with the above required footwear.

High visibility apparel

1. A worker directing traffic must wear
   a. High visibility apparel meeting Type 1 or type 2 criteria of WCB standard personal protective equipment standard2-1997, high visibility garment
   b. Wrist bands fitted with minimum 5cm (2 in) wide fluorescent retro-reflective strip around their entire circumference, except wrist bands are not required for workers who direct traffic on an emergency or temporary basis and not as part of their normal duties.

2. A worker exposed to hazards of vehicles travelling at speeds in excess of 30 km (20 mph) must wear high visibility apparel meeting Type 1 or type 2 criteria of the standard referenced in subsection (1)

A worker whose duties on the work site result in exposure to the hazards of mobile equipment must wear high visibility apparel meeting

EYE & FACE PROTECTION

- CSA approved eye and face protection shall be worn by all employees while engaged in activities where a risk of injury to the eyes or face may exist.

- Face shields shall be worn when using grinding, drilling, buffing or striking tools.

- Goggles shall be worn when handling liquid or powder chemicals and when draining or breaking joints on any pressure vessel, line or equipment. In some situations, a face shield should be used in conjunction with the goggles for additional eye and face protection.

- Face shields shall be made available or installed wherever they may be required. Goggles shall be provided by the Company, as required.

HEARING PROTECTION

- All work areas where noise levels exceed 85dBA shall be identified.

- All employees entering or working in areas where hearing conservation signs are displayed or where noise levels exceed 85dBA shall wear CSA approved hearing protective devices, with a Noise Reduction Rating of 25 or higher.

- Hearing protective devices may be either of the plug or muff design.

- Service On Site will ensure that a worker is not exposed to noise levels above either of the following exposure limits.
  a. 85dBA Lex daily noise exposure level;
  b. 140 dBC peak sound level.

LIMB & BODY PROTECTION

- All employees shall wear suitable clothing for the existing conditions and the work being performed.

- Where a potential fire and explosion hazard exists, protective clothing shall be worn.

- Approved leg protection shall be worn by all employees operating chainsaws or brush cutters.

- Employees shall wear appropriate gloves or mitts to protect their hands from workplace hazards, including hazardous materials, heat, cold, abrasion and sharp edges.

Annual Review

1. The personal protective equipment program must be reviewed annually by Service On Site worker , Health and Safety representative, as applicable
2. The annual review must
   a. Assess exposure control measures to ensure their continued effectiveness,
   b. Determine the need for further control,
   c. Ensure the adequacy of instruction,
   d. For respiratory protection, assess the adequacy of exposure monitoring data and assess the need for further monitoring and ensure the adequacy of the fit test program

Service On Site WORKPLACE FATIGUE

HOW FATIGUE CAN AFFECT HEALTH AND SAFETY

Fatigue is a feeling of tiredness or exhaustion that comes from physical or mental exertion: it is a message to the body to rest. It can be aggravated by acute lack of sleep or an accumulated sleep debt. It causes slower reaction time and can result in poor decisions, more mistakes, decreased performance, and dangerous lapses from microsleeps and automatic behaviors. No one is immune to fatigue and its effects have an impact on the fatigued person's workplace, family, and community. Service on Site will provide fatigue management program to all employees.

Fatigue has a significant influence on health and safety both at work and at home. When it comes to work and fatigue, research demonstrates that the probability of a workplace incident rises and falls with alertness. The highest rate of industrial incidents is usually found among shift workers and catastrophic incidents are more likely at times when workers are most prone to sleep: between midnight and 6 am and between 1 pm and 3 pm. On the roads, more vehicle collisions occur in the early morning hours than at other times, a time when the fewest vehicles are on the road but when people experience the greatest degree of sleepiness. An analysis of incidents involving commercial trucks found that drivers in fatigue-related incidents had slept an average of five and a half hours during their last sleep period, compared with eight hours for drivers in non-fatigue-related incidents. Also, evidence shows that the one hour lost in the switch to daylight savings time increases collision rates by seven percent. In the week following the change to daylight savings, fatal incidents (on and off the job) increase by six and a half percent.

An Australian study measured the effects of fatigue and rated them against those of alcohol impairment. Findings suggest that after only 20 hours of sustained wakefulness, a person may be as impaired as someone with a blood alcohol concentration of 0.10 percent. The results of this study support the suggestion that even moderate levels of sustained wakefulness reduce performance to an extent greater than is currently acceptable for alcohol intoxication. Since about half of shift workers typically spend at least 24 hours awake on the first night shift of their work period, these findings have important implications. The results are also important for anyone working extended hours over multiple days or weeks without adequate periods of rest. As sleep debt is cumulative, similar performance impairments should be expected in workers fatigued by that.

WHY MANAGE WORKPLACE FATIGUE

There is a moral imperative to manage workplace fatigue. The ill effects of fatigue can be reduced significantly and therefore it is the right thing to do. There is also the business case for managing fatigue. The costs of various programs

elements vary with some interventions requiring very little money. The benefits, however, can be substantial including avoiding the costs of incidents and reducing worker absence and turnover. A fatigue management program can also provide proof of Service on Site's due diligence in meeting fatigue-related and hours-of-service legal requirements.

SECTION 2: UNDERSTANDING FATIGUE MANAGEMENT

Most people need about eight hours of sleep a day – some a bit more and a little bit less. However, those who do not get enough sleep each day can develop a sleep debt that adds up for them over time. A single night's shortened or disrupted sleep may not affect worker performance, but an accumulated sleep debt can. The resultant fatigue can lead to the following hazardous conditions, effects, or behaviors:

- inability to see properly
- slower reflexes and reactions
- microsleeps (up to 60 seconds where the brain goes to sleep and worker blacks out no matter what they are doing)
- automatic behavior (where worker does routine tasks but is not having any conscious thoughts)
- inability to make good decisions or plans
- inability to solve problems
- inability to concentrate, including wandering thoughts
- decreased alertness and watchfulness
- inability to remember things just done, seen or heard
- inability to notice things the worker usually would notice
- more mistakes than usual
- failure to respond to changes in surroundings or situation
- poor logic and judgment, including taking risks the worker usually would not take
- inability to respond quickly or correctly to change
- inability to communicate well
- ability to handle stress

- moodiness (e.g., giddy, depressed, irritable, impatient boredom, restlessness, depression, giddiness, grouchiness, and impatience).

Studies also show fatigued workers more often are absent, sick quit, and cause more incidents than other workers. They also work slower, check their work more, rely more on co-workers, and avoid complex tasks.

Aside from sleep debt, fatigue can occur and affect workplace health and safety for a variety of reasons, including the following:

- work scheduling
- work task type and length
- work and workplace conditions
- worker health and stress, and
- workplace safety culture.

These topics are covered in more detail below in this section.

Service on Site is on a fixed shift schedule 7 day work week Monday to Friday
8 hours per day straight time
3 hours per day time and half
Then double time
Saturday 3 hours time and half then double time for the remaining hours.
Sunday all double time
There must be a rest break every 3 hours.
There must be 8 hours min of rest between shifts.

WORK SCHEDULING

The time of day when people work has a significant bearing on fatigue. For this reason, fatigue management programs should address work scheduling, including such issues as long hours of physical or mental activity, breaks, rest between workdays, shift work, extended or compressed work weeks and day-off patterns, being on call, traveling in multiple time zones, etc.

CHOOSING AN OPTIMUM SCHEDULE

When choosing work schedules, the risks can be better managed when companies take into account employee needs, industry requirements and competitiveness. Optimum scheduling is efficient, effective, and appealing:

- Efficient in terms of the total costs to Service on Site for a particular schedule including both direct labour expenses and indirect cost factors, such as: rates of absenteeism, turnover, incidents, and injuries, which research has linked to the physical adaptation and social compatibility of shift schedules.

- Effective in terms of the extent to which a particular schedule hinders or facilitates employees' adjustment to the schedule.
- Appealing in terms of the desirability of a work schedule that is the extent to which a particular schedule matches employees' need and preferences.

SHIFT WORK CHARACTERISTICS

A significant amount of research has gone into understanding how shift work characteristics impact fatigue. Some key characteristics that need to be considered include:

- Shift length (hours) and times
- Fixed shift schedules
- Rotation of shifts
- Days off
- Weekends off

BREAKS

In general, companies should schedule tasks to allow for sufficient rest breaks and recovery time and should provide access to proper nutrition, suitable rest areas, and opportunities for physical activity. They should also avoid the use of extended/multiple-pay schedules whenever possible but if it is not possible, they should increase the number of rest and nutrition breaks for workers.

WORK TASK TYPE AND LENGTH

Fatigue and its effects are made worse by two kinds of work: boring or simple tasks that last half an hour or more and complex, mentally challenging tasks. The boring ones aren't stimulating enough to keep a tired mind on the task and the challenging ones are too stimulating for a tired mind to cope with. For effective fatigue management, this fatigue factor should be considered when jobs and tasks are designed. In general, jobs should be structured to minimize fatigue hazards of duration, repetition, and monotony. As an example, some typical upstream petroleum tasks that carry these risks are listed in Table 1 below.

Table 1: Typical Upstream Petroleum Tasks Carrying Fatigue Risks

Boring/Simple Tasks	**Mentally Challenging Tasks**
Driving to/from worksite (a complex	Driving to/from worksite
task often treated as a simple one)	
Maintenance	Flow rate calculations
Waiting on lease	Load lift parameters
Repetitious tasks	Determine torque specs
Servicing	Determine clearance on bearing
Clean equipment	Equipment start up

WORK AND WORKPLACE CONDITIONS

Work and workplace conditions can also aggravate fatigue. Taxing environments such as outdoors in the cold or heat, or in a factory with a lot of noise or poor ventilation increase worker susceptibility to fatigue. Even simply being away from home for long periods can fatigue a worker. Also, the need to wear certain personal protective equipment (PPE) such as respirators and heavy clothing can contribute to fatigue.

In general, a company should take the following measures for work and workplace conditions that can contribute to fatigue:

- Create a work environment that promotes alertness
- Implement engineering and administrative controls to avoid or greatly reduce exposure
- Ensure sufficient resources of personnel, equipment, and support
- Structure hours of work to avoid the hottest or coldest periods of the day
- Provide additional fluid/nourishment
- Adjust time factors to incorporate the additional physical requirements and challenging environmental and physical conditions
- Select PPE appropriate to the situation and/or condition that exists and limiting the duration of tasks requiring PPE that affects performance or that places additional physical demands on the worker

WORKER HEALTH AND STRESS

Any signs of fatigue must be reported immediately to your supervisor. Service on Site will take appropriate action to remedy the situation e.g. rest break, add personnel, shorten shift, and replace the employee.

Service On Site
Removal From and Treatment for Heat Exposure

Application:

1. Subject to subsection 2, sections 7.28 to 7.32 apply to a work place if
   a. A worker is or may be exposed to thermal conditions which could cause heat stress
   b. The thermal conditions could result in a workers core body temperature exceeding 38 Celsius (100F) or
   c. The thermal conditions are in excess of the levels listed in the screening criteria for heat stress exposure in the heat stress and strain section of the ACGIH standard for un-acclimatized workers.

2. Subsection (1) does not apply to firefighting if special provisions, satisfactory to the Board, are in place to ensure that the firefighters core body temperature is maintained below 38 Celsius (100F)

Exposure Limits

1. A worker must not be exposed to levels that exceed those listed in the screening criteria for heat stress exposure in the heat stress and strain section of the ACGIH
2. Clothing corrections must be applied in accordance with the heat stress and strain section of the ACGIH standard.

Heat Stress Assessment and Exposure Control Plan

1. If a worker is or may be exposed to the conditions specified in section 7.27 of the OHS regulations Service On Site will
   a. Conduct a heat stress assessment to determine the potential for hazardous exposure of workers, using measures and methods that are acceptable to the Board and
   b. Develop and implement a heat stress exposure control plan meeting the requirements of section 5.54 (2)

Heat Stress Controls

1. If a worker is or may be exposed to the conditions specified in section 7.27, Service On Site will implement engineering controls to reduce the exposure of workers to levels below those listed in the screening criteria for heat stress exposure in the heat stress and strain section of the ACGIH standard.
2. If the action described in subsection (1) is not practicable Service On Site will reduce the exposure of workers to levels below those listed in the screening criteria for heat stress and strain section of the ACGIH standard by providing
   a. Administrative controls, including work-rest cycle, acceptable to the Board or
   b. Personal protective equipment, if the equipment provides protection equally effective as administrative controls.

Provision Of Water

If a worker is or may be exposed to the conditions specified in section 7.27, Service On Site will provide and maintain an adequate supply of cool potable water close to the work area for the use of the heat exposed worker.

Removal From and Treatment for Heat Exposure

If a worker shows signs or reports symptoms of heat stress or strain, the worker must be removed from the hot environment and treated by an appropriate first aid attendant, if available or by a physician.

Cold Exposure

Application

Section 7.34 to 7.38 apply to a workplace if a workplace is or may be exposed to

a. Thermal conditions that could cause cold stress or injury,
b. Thermal conditions that could cause a worker's core body temperature to fall below 36 Celsius (96.8F) or,
c. Thermal conditions that are below the levels classified as "little danger" to workers in the criteria for the cooling power of wind on exposed flesh in the cold stress of the ACGIH standard

Cold Stress Assessment and Exposure Control Plan

If a worker is or may be exposed to the conditions specified in section 7.33 of the OHS regulations Service On Site will

a. Conduct a cold storage assessment to determine the potential for acceptable to the Board and
b. Develop and implement a cold exposure control plan meeting the requirements of section 5.54(2)

Cold Stress Controls

1. If a worker is or may be exposed to the conditions specified in section 7.33 of the OHS regulations Service On Site will implement effective engineering controls to reduce the exposure hazard to levels above those classified as "little danger" to workers in the criteria for the cooling power of wind on exposed flesh in the cold stress section of the ACGIH standard.
2. If the action described in subsection (1) is not practicable , Service On Site will reduce the exposure hazard by providing
   a. Effective administrative controls or
   b. Personal protective equipment, if the equipment provides protection equally effective as administrative controls.

Heated shelters

If a worker is exposed to a thermal environment with an equivalent chill temperature less than -7 C (19F) , as determined using the criteria for the cooling power of wind on exposed flesh in the cold stress section of the ACGIH Standard, a nearby heated shelter must be available to the worker

Removal and Treatment

If a worker exposed to cold shows signs or reports symptoms of cold stress or injury, the worker must be removed from further exposure and treated by an appropriate first aid attendant, if available or a physician.

Service On Site

Hearing Protection

Noise Control and Hearing Conservation Program

If noise in the workplace exceeds either of the noise exposure limits, Service on Site will develop and implement an effective noise control and hearing conservation program with the following elements:

a. noise measurement;
b. education and training;
c. engineered noise control;
d. hearing protection;
e. posting of noise hazard areas;
f. hearing tests;
g. annual program review

Engineered noise control

If a worker is exposed to noise above a noise exposure limit, Service on Site will

a. investigate options for engineered noise control, and
b. when practicable, implement one or more of those options to reduce noise exposure of workers to or below the exposure limits

Hearing protection and warning signs

1. It is not practicable to reduce noise levels to or below noise exposure limits, Service on Site will
   a. reduce noise exposure to the lowest level practicable,
   b. post warning signs in the noise hazard areas,
   c. give to affected workers hearing protection that meets the requirements of CSA Standard Z94.2-02, Hearing Protection devices – Performance, Selection, Care, and Use, as amended from time to time, except as otherwise determined by the Board, and maintain the hearing protection so that it continues to meet those standards, and
   d. ensure that hearing protection is worn effectively in noise hazard areas.
2. Workers in a posted noise hazard area must wear hearing protection.

Hearing Tests

1. Service on Site will give workers who are exposed to noise that exceeds noise exposure limits
    a. an initial hearing test as soon as practicable after employment starts, but not later than 6 months after the start of employment,
    and
    b. a test at least once every 12 months after the initial test.
2. Hearing tests must be administered by a hearing tester authorized by the Board.
3. Service on Site will ensure that the authorized hearing tester sends the test results to the Board.

Records to be kept

Service on Site will keep records of

a. the annual hearing test results for each worker, which must
    - be kept as long as the worker is employed by the employer, and
    - be kept confidential and not released to anyone without the Written permission of the worker, or as otherwise required by law
b. the education and training provided to workers, and
c. the results of noise exposure measurements taken under section 7.3

Noise exposure limits

Service on Site will ensure that a worker is not exposed to noise levels Above either of the following exposure limits:

a. 85 dBA Lex daily noise exposure level;
b. 140 dBC peak sound level.

Service on Site will inform affected workers of the results of any noise exposure measurement and the significance of the measurement to risk of hearing loss.

Service On Site

FALL PROTECTION

- CSA approved safety belts or harnesses and lifelines shall be worn by all Service On Site employees working on elevated platforms without guardrails or other adequate means of protection, where noted below.
- The above applies to all temporary platforms with a height of 3 meters or more, and all permanent platforms with a height of 1.2 meters or more.
- Lifelines shall be securely attached to a fixed anchor point and be protected from sharp edges by padding or rollers.
- Any workers at Service On Site working above 3m or 10ft will be provided with fall protection training.
- All fall protection must be inspected before use and documented in log book.
- All defective fall protection equipment must be removed immediately from service.
- Or upon manufacturers specifications

“Also referenced in Chapter 40.5 = ladders, scaffolding, temp work platforms”

RESPIRATORY PROTECTIVE EQUIPMENT

- Use of respiratory protective equipment shall be in accordance with the manufacturer's instructions and government regulations.

- Employees shall wear approved respiratory protective equipment where they may be exposed to oxygen deficient, toxic or otherwise harmful atmospheres.

- Employees who may be required to use self-contained or supplied air breathing apparatus shall be clean-shaven and physically fit for the use of the apparatus and must be fit tested
- Employees who may be required to use-breathing apparatus shall be properly trained in the operation, maintenance, cleaning and storage of the apparatus.
- In the event Service On Site supervisor determines that breathing conditions at a work site are or could become immediately dangerous to life or health(IDLH), Service On Site will ensure that workers wear self-contained breathing apparatus or an airline respirator that;
  a) Is of a type that will maintain positive pressure in the face piece
  b) Has a capacity of at least 30 min unless hazard assessment indicates the need for greater capacity
  c) Provides full face protection in situations where contaminates may irritate or damage the eyes
  d) In the case of an airline respirator, is fitted with an auxiliary supply of respirable air of sufficient quantity to enable the worker to escape from the area in an emergency
  e) In the case of a self-contained breathing apparatus, has an alarm warning of low pressure

- Air purifying respirators shall not be used where the atmospheric oxygen content is less than 18% or in areas suspected of containing hydrogen sulphide or more than 20% of the lower explosive limit LEL of an explosive substance is present.

- To ensure a healthy breathing air supply when used breathing apparatus, all breathing air supplies and sources shall be sampled a 6 month intervals.

- Respiratory protective equipment shall be inspected before and after each use. If not routinely used, the equipment shall be inspected at least monthly.

Respiratory Protection

Selection

1. Service on Site will select appropriate respiratory protective equipment in accordance with CSA Standard CAN/CSA-Z94.4-93, Selection, Use, and Care of Respirators.
2. Only respiratory protective equipment which meets the requirements of a standard acceptable to the Board may be used for protection against airborne contaminants in the workplace.

Maintenance and inspections

1. Inspection of compressed air cylinders must be done in accordance with CSA Standard CAN/CSA-Z94.4-02, Selection, Use, and Care of Respirators.
2. Self-contained breathing apparatus, including regulators, must be serviced and repaired by qualified persons.
3. Compressed air cylinders must be hydrostatically tested in accordance with CSA Standard CAN/CSA-B339-96, Cylinders, Spheres, and Tubes for the Transportation of Dangerous Goods.

Service On Site
WORK AREA REQUIREMENTS

HOUSEKEEPING

- Workplaces, vehicles and buildings shall be kept clean and orderly at all times.
- Spills of oil, grease, or water on floors shall be promptly cleaned up.
- Where the work in effect produces slippery conditions, mats or other materials shall be used to reduce the slipping hazard.
- Material and supplies shall be stored in an orderly manner so as to prevent their falling or spreading.
- Floors and platforms shall be kept free of dangerous projections or obstructions to eliminate tripping and stumbling.
- Emergency exits, stairways, aisles, roadways, walkways, and access to storage areas shall be identified and kept clear at all times.

Access to work areas

There must be a safe way of entering and leaving each place where work is preformed and a worker must not use another way, if the other way is hazardous.

Restricted entry

Hazardous areas must be locked & access denied and must not be entered unless a safe work procedure has been developed and followed.

LIFTING SAFELY

- If the object is too heavy or bulky, get help before attempting to lift it.
- Take advantage of lift aids such as hoists, dollies and hand carts.
- When lifting ensure good footing and a good grip on the object. Keep your back straight and lift with the leg muscles.
- Avoid carrying objects that are so large as to block your vision.
- When two or more persons are lifting together, one person shall give the instructions for the group.

OFFICE SAFETY

- Drawers of desks and file cabinets shall be kept closed when not being used.
- Only approved step-ladders shall be used to access elevated locations.
- Boxes or chairs shall not be used in place of ladders.

Service On Site
Ergonomics

Risk Identification
Service on Site will identify factors in the workplace that may expose workers to a risk of musculoskeletal injury (MS).

Risk Assessment
When factors that may expose workers to a risk of MSI have been identified, Service on Site will ensure that the risk to workers is assessed.

Risk factors
The following factors must be considered, where applicable, in the identification and assessment of the risk of MSI:

1. the physical demands of work activities, including
    a. force required,
    b. repetition,
    c. duration,
    d. work postures, and
    e. local contact stresses;
2. aspects of the layout and condition of the workplace or workstation, including
    a. working reaches,
    b. working heights,
    c. seating, and
    d. floor surfaces;
3. the characteristics of objects handled, including
    a. size and shape,
    b. load condition and weight distribution, and
    c. container, tool and equipment handles;
4. the environmental conditions, including cold temperature;
5. the following characteristics of the organization of work:
    a. work-recover cycles;
    b. task variability;
    c. work rate.

Risk control

1. Service on Site will eliminate or, if that is not practicable, minimize the risk of MSI to workers.
2. Personal protective equipment may only be used as a substitute for engineering or administrative controls if it is used in circumstances in which those controls are not practicable.
3. Service on Site will, without delay, implement interim control measures when the introduction of permanent control measures will be delayed.

Education and Training

1. Service on Site will ensure that a worker who may be exposed to a risk of MSI is educated in risk identification related to the work, including the recognition of early signs and symptoms of MSIs and their potential health effects.
2. Service on Site will ensure that a worker to be assigned to work which requires specific measures to control the risk of MSI is trained in the use of those measures, including, where applicable, work procedures, mechanical aids and personal protective equipment.

Evaluation

1. Service on Site will monitor the effectiveness of the measures taken to comply with the Ergonomics (MSI) Requirements and ensure they are reviewed at least annually.
2. When the monitoring required by subsection (1) identifies deficiencies, they must be corrected without undue delay.

Consultation

1. Service on Site will consult with the joint committee or the worker health and safety representative, as applicable, with respect to the following when they are required by the Ergonomics (MSI) requirements:
    a. risk identification, assessment and control;
    b. the content and provision of worker education and training;
    c. the evaluation of the compliance measures taken.
2. Service on Site will, when performing a risk assessment, consult with
    a. workers with signs or symptoms of MSI, and
    b. a representative sample of the workers who are required to carry out the work being assessed.

- .Keep aisles, walkways, and work areas clear of obstacles and tripping hazards, such as boxes or electrical extension cords.

- Faulty electrical cords and equipment shall be repaired immediately or removed from service.

- Lock electrical equipment in the “off” position or disconnect from the power source before attempting to clean or adjust moving parts.

- Wear the appropriate personal protective equipment (ie. Goggles, gloves, aprons, etc…) when handling chemicals for photocopiers. Consult the material safety data sheet (MSDS) for the chemical.

- Blades on paper cutter shall be kept in the closed position when not in use.

- Sharp pointed objects shall be kept in the front of the desk drawers where they are visible so as to prevent cuts to the hands.

- Get help when moving heavy or bulky objects. Use a hand cart for very heavy objects or long carries.

- When visiting or working in industrial operations abide by all the safety instructions in effect.

SAFE WORK PERMITS

- Safe Work Permits are intended to ensure that potentially hazardous work is carried out under safe working conditions. The permit system is a two way arrangement and the responsibility for taking special precautions rests on both the issuer and the receiver of the permit.

- Safe Work Permits shall be authorized and issued in accordance with local management directives.

- Work permits shall be required for work involving:
    - Confined spaces
    - Process areas or buildings
    - Operating buildings
    - Complex piping and pumping areas
    - Hot work
    - Radioactive materials
    - Areas designated by signs as Safe Work Permit areas.

Service On Site
WORKING ALONE

Working alone in certain circumstances, situations, or environments is unsafe and requires special arrangements to minimize potential hazards. "Alone" means beyond the visual or audible range of any other individual for more than a few minutes at a time.

Service On Site Employee Responsibilities

a. **Supervisor** - Schedules experiments and work procedures to minimize potential hazards of working alone.
b. **Employee** - Consults with supervisor or safety personnel/Office Staff as necessary to schedule work done after hours or otherwise in isolation and to maintain communications during such work periods.
c. **Office Staff**
    1. Ensures that everyone working after hours is logged in and conforming to the procedures outlined below.
    2. Assists in maintaining communications.
    3. Service On Site will ensure everyone has a means of communication. Everyone needs to ensure they have that means of communication.
    4. In the event there will no means of communication no worker shall be sent out to work alone

Procedures

If the nature of the work performed after normal hours makes an operation relatively safe (e.g., recording data, operating an instrument), a telephone call or visual check may be adequate. Such work tasks are typically part of a written operating procedure of long standing and involve routine procedures that experience has shown to be safe.

Work of a clearly hazardous nature (e.g., tasks involving high energy, toxic, flammable or high pressure materials) must not be conducted alone. Such activities must be scheduled during normal working hours or performed when another worker capable of helping if an emergency is present.

Administrative or clerical employees and others working in low-hazard locations shall not be alone longer than two hours without an established safety check procedure. The procedure may consist of a phone call or work break (e.g., coffee time) with a contact person. The procedure must be prearranged to assure assistance to an ill or injured worker in need of help.

What needs to be done if people you supervise are working alone?

Conduct a hazard assessment of the area and work procedure to identify hazards and try to eliminate them. If you cannot eliminate the hazards, then try to minimize or control them. Make sure there is an effective means of communication available to the worker in case help is needed. Ensure that all workers are trained and educated in how they are to do their work safely.

You should also consider an assessment of work in areas like offices or reading rooms where no 'hazardous activities?' are conducted. In these instances, matters of personal security are likely most important. You could advise someone that you expect to return by a certain time so that they might check on you if you are late. This would be much more important if a person had a medical condition that predisposed them to become incapacitated (e.g. epilepsy). Workers and supervisors need to assess the risk of injury for the individuals in all areas, even those where “activity risks” are considered minimal.

Hazard Assessment

In cooperation with the workers, review all aspects of the work that might be done and anticipate the kinds of hazards that might arise. You are looking for risks of occupational injury as well as potential for personal injury from a violent attack.

Review records of past incidents to help identify potential problems, Identify what can be done to eliminate or minimize the hazards. The assessment should be written and dated. It should be reviewed and updated as needed. You need a hazard assessment for each different set of conditions. If you have 10 offices with similar activities in each, then one assessment should cover all. Your assessment might include restricting certain activities until another person is present. This is exactly the same as prohibiting certain activities if workers are not properly trained or if they do not have the appropriate safety equipment. No one should be permitted to work alone; you should encourage the use of the buddy system where available.

Besides injury from personal actions, consider hazards that might arise from other aspects of the work. Are you exposed to personal attack by animals (bears, dogs, and elk)? Do you have to travel to remote locations and meet with clients you do not know in their office?

In the event that an employee has not made contact at the check up time and three separate 15 min interval calls by phone, radio or other person present at site contact cannot be made a site visit by a Service on Site employee must be made. The visiting employee must have our emergency numbers and contacts on hand in the event of an emergency.

Annual Review

Service On Site will ensure the procedure and system for checking a worker's well being must be reviewed at least annually or more frequently if there is a change in work arrangement which could adversely affect a workers well- being or a report that the system is not working effectively.

Working Alone check up log

employee Name:_____
Phone # : _____
Work location: _____

Date	Check in time # 1	Check in time # 2	end of shift check in	checked by	comments

Supervisor signature

Date

COMPRESSED AIR TOOLS AND EQUIPMENT

- All compressed airline connections for air-powered tools shall be properly made and checked before being pressurized.

- Compressed air shall not be used to blow dust or other material from an employee's clothing or body. Improper used of compressed air can result in serious injuries.

- Employees shall wear appropriate personal protective equipment when operating air-powered tools.

COMPRESSED GAS CYLINDERS

- Compressed gas cylinders shall be handled with care, and not struck, dropped, rolled, or exposed to temperature extremes.

- Compressed gas cylinders shall be lifted by appropriate cradles or slings.

- Cylinders shall be secured when left standing to avoid being upset or falling over.

- Acetylene cylinders shall always be used, transported or stored in a vertical position.

- Fuel gas (propane, etc.) shall not be stored inside any operating buildings.

- Valve caps shall be installed on cylinders when not in use or when being transported.

- Cylinders shall be returned to a storage area after use. Empty and full cylinders shall be stored separately.

HANDLING BARRELS OR DRUMS

Observe the following precautions when handling full drums or barrels:

- Wear gloves for protection against cuts from mill burrs or rough places.

- Test the weight of a drum before putting a hard strain on it; it may be empty
- Place the hands and feet carefully to avoid injury. Release a hand-hold before being pinched by other drums or objects.

- Before pulling drums over on their sides, be sure there is sufficient clearance for your safety and be sure others are in the clear.

- When rolling drums, tilt the drum toward the body, approximately 15 degrees and roll it on its bottom edge.

- Do not use feet to push the drum or change direction of a moving drum.

- Do not attempt to up-end or tilt a full drum without assistance or the aid of an approved mechanical device.

- Drums on steel, concrete, or other smooth surfaces must be up-ended quickly to prevent sliding. Never attempt to up-end a drum on a slippery floor.

- Conductive containers used to transport flammable liquids must be grounded or bonded when contents are transferred.

CONTAINER AND STORAGE

Condition of Containers

The container of a hazardous substance must be designed, constructed and maintained in good condition to securely contain the substance.

Covers

If an open container of a hazardous substance could pose a hazard, the container must be kept sealed or covered when not in use.

Permitted quantities

1. The amount of a hazardous substance in a work area must not exceed the quantity reasonably needed for work in progress, normally in one work shift.
2. Bulk or reserve quantities must be stored in a designated area separate from the work area.

Incompatible substances

Substances which are incompatible must not be stored in a manner that would allow them to mix in the event of container leakage, breakage or other such circumstance.

Storage practices

A hazardous substance must be stored in a designated area, in a manner which ensures that it will not readily fall, become dislodged, suffer damage, or be exposed to conditions of extreme temperature.

Storage area

The designated area for a hazardous substance must be

a. Designed and constructed to provide for the safe containment of the contents,
b. Clearly identified by signs, placards or similar means,
c. Designed and maintained to allow the safe movement of workers, equipment and material,
d. Provided with adequate ventilation and lighting and
e. In a location not normally occupied by workers, and not in a location such as lunchroom, eating area, change room, clothing storage locker or passenger compartment of a vehicle,
f. When a flammable gas or liquid is handled, used or stored, all sources of ignition must be eliminated or adequately controlled.

Storing and Handling

Stacking materials

1. Service On Site employees must ensure that all material and equipment must be placed, stacked or stored in a stable and secure manner.

2. Stacked material or containers must be stabilized as necessary by interlocking, strapping or other effective means of restraint to protect the safety of Service On Site employees or other workers.

Falling materials

Service On Site employees must ensure any area in which material may be dropped, dumped or spilled must be guarded to prevent inadvertent entry by any workers, or protected by adequate covers and guarding.

Flammable Substances

Service On Site employees will ensure that all flammable substances that are stored or used in the work area

a) Will not be a sufficient quantity to produce an explosive atmosphere if inadvertently released
b) Are not stored within 30 metres of an underground shaft
c) Are not stored in the immediate vicinity of the air intake of
   (1) Ventilation supply system
   (2) Internal combustion engine
   (3) Fire box of a fired heater or furnace

d) Stored only in containers approved to CSA standard B376-M1980 (R2008),portable containers for gasoline and other petroleum fuels, NFPA standard 30,flammable and combustible liquids code,2008 edition,0r ULC standard C30-1995,containers,safety,if manufactured on or after July 1 2009

Substances under Pressure

Containers

1. A tank, cylinder, bottle or other vessel containing a substance under pressure, together with any associated pressure or flow regulator and piping or conveyance system, Service On Site employees must ensure that :

    a) Protected from sparks, flames, excessive heat, physical damage, electrical contact or corrosion and
    b) Equipped with suitable pressure relief mechanisms installed so that no worker will be endangered in the event of discharge

Handling and Securing Containers

1. A compressed gas cylinder must not be hoisted by a sling or magnet, dropped, subjected to impact, handled by the regulator or used as a roller or work support
2. A compressed gas cylinder must be secured to prevent falling or rolling during storage, transportation and use, and where practicable, must be kept in the upright position

Cylinder Markings

A compressed gas cylinder must be marked to indicate its rated pressure and the type of gas it contains.

CONFINED SPACES

- A “confined space” is any enclosed or partially enclosed space which has a restricted means of access or egress and is subject to developing an oxygen deficient, flammable or toxic atmosphere and/or presenting other chemical, physical or mechanical hazards.

- A Safe Work Permit shall be in effect for all entries into confined spaces.

- All confined space entries shall be in accordance with site-specific practices.

Confined Space Entry

Confined space entry program

Before a worker is required or permitted to enter a confined space, Service on Site will prepare and implement a written confined space entry program which Includes

a) an assignment of responsibilities,
b) a list of each confined space or group of similar spaces and a hazard assessment of those spaces, and
c) written safe work procedures for entry into and work in the confined space, that address, where applicable
   - identification and entry permits,
   - lockout and isolation
   - verification and testing,
   - cleaning, purging, venting, or inerting,
   - ventilation,
   - standby persons,
   - rescue,
   - lifelines, harnesses and lifting equipment,
   - personal protective equipment and other precautions, and
   - coordination of work activities.

Responsibilities

Supervision

1. Service on Site will assign responsibility for supervision to a person who is adequately trained to supervise the job before any worker enters a confined space.
2. The responsible supervisor must ensure that
   a) pre-entry testing and inspection is conducted based on the written procedures,
   b) the precautions identified in the written procedures and the precautions required by this Regulation or which are otherwise necessary for the health and safety of workers are followed, and
   c) only authorized workers enter a confined space.
   d) All supervisors will have confined space entry training.

Instruction

Each person who is assigned duties or responsibilities related to entry Into a confined space must be adequately instructed and trained in

a) the hazards of the space, and
b) the precautions identified in written procedures to properly perform their duties.

Hazard Assessment and Work Procedures

Hazard assessment

1. A hazard assessment must be conducted for each
   a) confined space, or each group of confined spaces which share similar characteristics, and
   b) work activity, or group of work activities which present similar hazards, to be performed inside a confined space.
2. The hazard assessment required by subsection (1) must consider
   a) the conditions which may exist prior to entry due to the confined space's design, location or use, or which may develop during work activity inside the space, and
   b) the potential for oxygen enrichment and deficiency, flammable gas, vapor or mist, combustible dust, other hazardous atmospheres, harmful substances requiring lockout and isolation, engulfment and entrapment, and other hazardous conditions.

Procedures

Written procedures specifying the means to eliminate or minimize all hazards likely to prevail must be developed, based on the hazard assessment required by section 9.9 in the OHS regulations guide

When permits required

1. An entry permit must be completed and signed by the responsible Supervisor before a worker enters a confined space
   a) with a high hazard atmosphere,
   b) that requires lockout or isolation procedures to be followed, or
   c) in which there is a hazard of entrapment or engulfment.
2. An entry permit must be posted at each designated point of entry to a confined space.
3. Subsection (2) does not apply if
   a) the entry permit is posted at a minimum of one designated point of entry,
   b) the identification at other designated points of entry includes up-to-date information on whether it is safe to enter, and
   c) all workers authorized to enter are informed of the location of posted entry permits.

Updating the information

1. Once issued, the information on any entry permit may only be altered by
   a) the responsible supervisor who signed the permit to update it in accordance with subsection (2) or (3).
   b) the standby worker to update the list of workers inside the confined space, or
   c) the tester to record test results.

2. An entry permit must be reviewed and updated as necessary to ensure the ongoing safety of the workers inside the space.

3. The permit must be re-authorized and signed by the responsible supervisor
   a) if there is a change in the work crew,
   b) after each shift change, or
   c) after a change of the responsible supervisor.

4. Every worker affected must be informed of an alteration of an entry permit regarding a change in the required precautions or work act activity.

Record of permit

A copy of the signed entry permit must be kept for a least one year.

Rescue

Provision of rescue services

(1) Service one Site will provide for the services of rescue persons when a worker enters a confined space.

(2) If the rescue persons are employees or another firm, or an agency such as a fire department, there must be a written agreement detailing the services that are to be provided.

Summoning rescue

Service on Site will ensure that rescue personnel monitor any signaling system that will be used to summon the rescue persons in the event of an emergency whenever they have been informed by the responsible supervisor or the standby person that a confined space entry is in progress.

Rescue procedures

(1) Rescue or evacuation from a confined space must be directed by a supervisor who is adequately trained in such procedures or a qualified rescue person.

(2) Effective voice communication must be maintained at all times between Workers engaged in the rescue or evacuation and the person directing the Rescue.

(3) A rescue worker must not enter a confined space unless there is at least one additional worker located outside to render assistance.

(4) A self-contained breathing apparatus, or air supplied respirator with escape bottle, must be used during rescue operations in an unknown or IDLH atmosphere.

Lifelines, Harnesses and Lifting Equipment

When required

(1) When entering a confined space which contains a high hazard atmosphere, a risk of entrapment or engulfment or with any other recognized serious health or safety hazard, the worker must wear a harness of a type which will keep the worker in a position to permit rescue.

(2) A lifeline must be attached to the harness and be tended at all times by a standby person stationed outside the entrance to the space.

(3) The standby person must be equipped with suitable lifting equipment if Necessary to permit rescue.

(4) The use of a lifeline is not required if the risk assessment identifies Obstructions or other conditions that make its use impractical or unsafe.

CONFINED SPACE ENTRY
De- energization

Isolation

1. Except as provided in subsections (s) and (3), before a worker enters a confined space, adjacent piping which contains or has contained a harmful substance must be controlled by
   a) disconnecting, blanking or binding, or equivalent engineered system, or
   b) if the adjacent piping contains a harmful substance that is not a gas or a vapor, nor a liquid of sufficient volatility to produce a hazardous concentration of an air contaminant in the discharge of the piping, a double block and bleed system.

2. If adjacent piping contains or has contained a substance at a pressure exceeding 100 kPa gauge (15 psig) that is hazardous only because of its pressure, temperature or quantity, before a worker enters the space, the pressure must be controlled
   a) to meet the requirements of subsection (1), or
   b) provided there is not other pressure source or head pressure by de-energizing and locking out the pressure source and depressurizing the line.

3. If adjacent piping contains or has contained a substance at a pressure not exceeding 100 kPa gauge (15 psig) that is hazardous only because of its temperature or quantity, before a worker enters the space, the hazard must be controlled
   a) to meet the requirements of subsection (1), or
   b) by other effective means.

4. Except when used in an acceptable double block and bleed system, the closing of one or more valves in a line is not an acceptable means of isolation.

5. Isolation of confined space from gases found in a gravity-flow municipal or domestic sanitary or storm sewer system may be accomplished by a p-trap, provided that
   a) the integrity of the trap is ensured immediately upon entry, and
   b) the atmosphere is continuously monitored and shown to contain clean respirable air

ELECTRICAL SAFETY TRAINING OUTLINE

- Hazards of Electrical Work
- How one might become exposed to electrical hazards
- Where one can find electrical hazards in the workplace
- Adverse health effects
- How to protect yourselves from electrical hazards
- Supervisors' responsibilities
- Workers responsibilities
- How to respond in an emergency
- How to report problems
- Emergency Response Plan
- Summary

ELECTRICITY IS DANGEROUS SOME SOBERING FACTS

- An average of one worker is electrocuted on the job every day of every year
- Electrocution is the third leading cause of work-related deaths among 16 to 17 year olds, after motor vehicle deaths & workplace homicide
- Electrocution is the cause of 12% of all workplace deaths among young workers

ARE YOU CONCERNED ABOUT ELECTRICITY?

- How many sets of Christmas lights do you plug into one extension cord?
- Do you still use your hot sparking electric drill?
- Is your vacuum cleaner's cord twisted and frayed?
- Have you installed outlet covers to protect your toddler?

BASICS OF ELECTRICITY

- Electrical source
- Electrical user
- Wires
- Electricity travels in a completed circuit
- Electricity always travels in the path of least resistance
- Electricity tries to travel to ground

HOW ONE MIGHT BE EXPOSED TO ELECTRICAL HAZARDS

- Touching two wires that are at different voltages at the same time
- Touching both live wires of a 240 volt cable
- Wearing wet clothing, the presence of water, perspiration & high humidity
- Touching exposed wires
- Touching defective electrical equipment which is energized
- The dangers from electrical shock depend on:
  - □ amount of electric current
  - □ duration of electric current
  - □ path of electric current

- Amount of current is inversely related to the resistance, V=I x R (Ohm's Law)
- Low voltage doesn't always mean low hazards

- High voltages can cause additional injuries, such as:
  - □ violent muscular contractions
  - □ falls
  - □ internal bleeding
  - □ destruction of tissue, nerves and muscles

BODY'S RESISTANCE

- Skin offers most of the body's electrical resistance

- Increased resistance is found in thick & callused skin (foot and hand) and dry skin

- Decreased resistance is found in thin skin (inner forearm), wet or sweaty skin and broken or abraded skin (scratches)

RESISTANCE VARIES

- Different levels of electrical resistance exist for each person

- Ranges from 500 to several thousand ohms

- A similar voltage shock can be minor to one person and deadly to another

EFFECTS OF DIFFERENT LEVELS OF CURRENT ON THE HUMAN BODY

- 1 mA: Can be felt by the body
- 2–10 mA: Minor shock, might result in a fall
- 10-25 mA: Loss of muscle control, may not be able to let go
- 25-75 mA: Painful, may lead to collapse or death
- 75 – 300 mA: Last for ¼ second, almost always immediately fatal

PATH OF THE CURRENT

- Currents through the heart, chest or the nervous system are most dangerous
- Current through part of the limb before exiting the body can cause severe burns
- Current passing through the chest is often fatal
- Current passing between hands and feet involves lungs and the heart and is often fatal

BURNS CAUSED BY ELECTRICAL SHOCK

- **Electrical burns:** occur when improperly used or maintained electrical equipment is touched
- **Thermal burns:** occur as a consequence of electrical burns
- **Arc Blasts:** occur when high amperage current passes through air

WHERE ONE CAN FIND ELECTRICAL HAZARDS AT WORK

- Inadequate wiring
- Exposed electrical parts
- Overhead power lines
- Wires with bad insulation
- Electrical systems and tools that are not grounded or double-insulated
- Overload circuits
- Improper grounding or lack of grounding
- Damaged power tools and equipment
- Using the wrong tool
- Using the wrong PPE
- Defective ladders and scaffolding
- Ladders that conduct electricity
- Wet location, equipment, or worker

HOW CAN YOU PROTECT YOURSELVES FROM ELECTRICAL HAZARDS?

- Electrical systems are inherently safe
- Injuries typically occur when:
    - □ Procedures are inappropriate
    - □ Procedures are not followed or ignored
    - □ Safety systems are circumvented
- Review your assignments and safety practices with your supervisor
- Only work on areas which you are qualified
- Only qualified workers perform electrical work
- Have an action plan and safety plan before you begin you work

- Anticipate problems
- Work with a partner

HOW CAN YOU PROTECT YOURSELVES FROM ELECTRICAL HAZARDS? (cont'd)

- Qualified workers should shut off and de-energize circuits. Lock out and tag out procedures should be used
- Test the circuit to confirm de-energization
- Treat all conductors even "de-energized" ones as though they are energized
- Remove jewelry and metal objects
- Plan to avoid falls
- Avoid wet working conditions
- Prevent overloaded wiring
- Use insulation and wire nuts
- Use overcurrent protection devices
- Use extension cords properly and inspect them routinely
- Use an extension cord with sufficient capacity for the current
- Do not coil or hand extension cords in any manner that could cause kinks or damage to insulation
- Do not pull on cords
- Use and maintain tools properly
- Inspect your tools before each use
- Use the right tool for the job and use it correctly
- Never carry a tool by the cord
- Protect your tools from heat, oil, and sharp objects

- Use double insulated tools
- Wear the correct PPE and follow the manufacturer's instructions
- Wear proper foot protection

HOW CAN YOU PROTECT YOURSELVES FROM ELECTRICAL HAZARDS? (cont'd)

- Wear a proper hard hat, if required
- Use the appropriate insulated gloves
- Use properly rated mats

SUPERVISORS' RESPONSIBILITES

- Review project carefully with your workers, unless they are routine assignments
- Emphasize safety practices
- Train workers on area-specific policies and procedures
- Check your employees' work practices to ensure compliance
- Check the final product to ensure that no deficiencies exist

EMPLOYEES' RESPONSIBILITIES

- Review each project carefully with your supervisor
- Become thoroughly familiar with your assignments
- Only perform work in which you are trained
- If at all in doubt, ask questions
- Have your supervisor review your completed project
- Follow your supervisor's instructions
- Follow safe work practices
- Wear any required PPE

- Alert your co-workers to any unsafe work practices
- Report all problems to your supervisor
- Know what to do in the event of an emergency

REPORTING PROBLEMS

- Do not ignore signs and clues of potential electrical problems
- Report all problems to your supervisor
- Tripped circuit breakers or blown fuses
- Tools, wires, connections, extension cords, cable and fuse boxes or junction boxes that feel warm to the touch
- Burning odor
- Worn, frayed or damaged insulation
- GFIs that trip

EMERGENCY REPONSE PROCEDURES

- Do not panic; remain calm
- In the event of a personal injury:
  - □ Call 911 immediately
  - □ If a person is being shocked, turn off the source of electricity
  - □ Do not touch someone being shocked
  - □ Remove the person away from the electrical source using a non-conductive material
  - □ Call Chris at 262-6763 or AJ at 262-6727
  - □ Notify your supervisor
- In the event of an electrical fire:
  - □ Activate the fire alarm system
  - □ Do not use a Type A, water extinguisher
  - □ If you know how to use an extinguisher, use a CO_2 or dry chemical fire extinguisher
  - □ Alert everyone in the area to evacuate
  - □ Notify Chris at 262-6763 or AJ at 26-26727
  - □ If you are not sure about using a fire extinguisher, leave the area and close any doors behind you
  - □ Wait for the Fire Dept. personnel to arrive

IN SUMMARY

- Electricity will try to reach ground even if it means going through a person
- Even the “small” voltage from your home can cause serious injury
- Always inspect power tools and cords before each use and do not use them if damaged
- Do not attempt to repair electrical equipment unless you are trained and qualified
- Always use lockout/tagout procedures to de-energize electrical systems
- Use electrical tools and equipment that are protected by a GFI
- Review your assignments with your supervisors
- Utilize correct PPE
- Report all problems to your supervisors
- If at all in doubt, ask questions

ELECTRICAL OPERATIONS

- Only authorized Service on Site personnel are permitted to activate, de-activate or lockout electrical equipment.

- An electrical lockout procedure shall be followed before any maintenance or repair work on electrically powered equipment is commenced.

- Electrically powered hand tools shall be operated in accordance with the Service on Site instructions outline on page 126.129 Power Tools.

- Service on Site employees shall not approach nor permit equipment to approach or operate within the minimum distances to power lines, as tabled below.

SAFE LIMITS OF APPROACH FROM POWERLINES

	Voltage (Line to Ground)	Distance
Alberta		
	0-750 V	
	Insulated or Polyethylene	300 mm
	Covered Conductors *	
	Above 750 V	
	Insulated Conductors */**	1.0 m
	0-40 kV	3.0 m
	69 kV, 72 kV	3.5 m
	138 kV, 144 kV	4.0 m
	230 kV, 240 kV	5.0 m
	500 kV	7.0 m
British Columbia and Saskatchewan		
	Up to 75,000	3.0 m
	75,000 – 250,000	4.6 m
	250,000 – 550,000	6.1 m
Areas Under Federal Jurisdiction (Canada Labour Code)		
	Up to 50,000	3.0 m
	50,000 – 120,000	4.5 m
	120,000 – 250,000	6.0 m
	250,000 – 350,000	7.5 m
	Over 350,000	9.0 m

*Conductors must be insulated or covered throughout their entire length to comply with these groups
** Conductors must be manufactured to rated and tested insulation levels.

General Electrical Requirements

Informing workers

A Service on Site employee will be informed of the potential electrical hazards before being permitted to do work in proximity to energized electrical conductors or equipment.

Service rooms

If practicable, service rooms and electrical vaults must be used only for the purpose for which they were intended.

Space around equipment

1. Passageways and working space around electrical equipment must be kept clear of obstructions, be arranged so as to give authorized Service on Site personnel ready access to all parts requiring attention, and not be used for storage.
2. Flammable material must not be stored or placed close to electrical equipment.

Specially trained

Service on Site will permit only competent qualified electrical workers to construct, install, alter, repair, or maintain electrical equipment. Only qualified electrical workers may enter electrical rooms and enclosures containing live parts.

1. A Service on Site employee who has taken a course of instruction approved by the Board may work up to the adjusted limits of approach in Table 19-2 when all the following conditions apply:

a. the high voltage electrical equipment is energized to a potential of not more than 75kV;
b. the Board has determined that rerouting, de-energizing or guarding of the equipment is not practicable for the type of work being performed;
c. the work is not being done for the owner of the power system;
d. the work is of a type that must be done regularly;
e. the worker follows written safe work procedures acceptable to the Board.

2. A qualified electrical worker may work closer than the limits specified in Table 19-2 provided the worker is authorized by the owner of the power system and uses procedures acceptable to the Board.

All Service on Site employees shall be provided basic electrical safety training. Employees should be provided training on working safely with electricity, recognition of electrical hazards, prevention of electrical shock and arc flash, and recognition of electrical shock and arc flash hazard labels.

Portable Electrical Equipment

Portable electrical equipment having double insulation or equivalent protection, and so marked, need not be grounded. Portable electrical equipment, required to be grounded and not permanently connected to the wiring system, must be effectively grounded by the use of approved cords and polarized plugs inserted in grounded polarized receptacles.

ELECTRICAL

Service on Site will ensure that electrical equipment shall be of a type and rating Approved for the specific purpose for which it is to be used.

Service on Site will ensure that an electrical extension or power supply cord used for supplying energy to any electrical equipment:
a. is approved for the intended use and location of the electrical extension or power supply cord;
b. is fitted with approved cord end attachment devices that are installed in an approved manner;
c. is provided with a grounding conductor;
d. is maintained and protected from physical or mechanical damage; and
e. is plugged into an approved GFCI plug adapter or GFCI receptacle (if used in a damp location).

Warning signs

Service on Site employees will mark or tag as unsafe and remove from service any equipment with damaged or defective electrical components (eg – damaged power cord or plug) that may render it unsafe for use. Mark on safety deficiency board.

PPE requirements within the arc flash boundary shall be determined by completing an arc flash hazard analysis. PPE must cover the entire body when working within the arc flash boundary. This may include, but is not limited to, arc flash suit with face shield, safety glasses, non-conductive head protection, and leather gloves and footwear. Rubber insulating gloves shall be worn for protection from electric shock due to inadvertent contract with an energized electrical conductor or circuit parts.

Before completing installation and after energizing low voltage electrical equipment, conspicuous signs visible to workers must be placed close to the equipment stating “**Danger, Energized Equipment**”.

Rigging

Qualified riggers
Rigging and slinging work must be done by or under the direct supervision of qualified Service On Site workers familiar with the rigging to be used and with the code of signals authorized by the Board for controlling hoisting operations.

Detaching loads
Loads to be unhooked by a worker must be safely landed and supported before the rigging is detached.

Component identification

1. Rigging fittings must be marked with the manufacturer's identification, product identifier and the working load limit or sufficient information to readily determine the WLL.

2. The WLL of existing fittings not identified as specified in subsection (1) must be determined by a qualified person, marked on the fitting and such fittings must be removed from service by January 1, 2001.

Slings

Standards
Unless otherwise required by the regulation, wire rope, alloy steel chain, metal mesh, synthetic, fibre rope and synthetic fibre web slings must meet the requirements of ASME B30.9-1900, slings.

Inspection before use
Slings and attachments must be visually inspected before use on shift, and defective equipment must be immediately removed from service.

WLL of slings

1. The determination of the working load limit of a sling assembly must ensure that the WLL of any individual component of the assembly is not exceeded.
2. The WLL of a sling with more than 3 legs is limited to the WLL of any 3 legs of the sling.
3. The load carried by any single leg of a bridle sling must not be greater than the WLL of the leg.

Sling angles
If a sling is used to lift at any angle from the vertical

a. the design factors required by this part must be maintained, and

b. a qualified person or the manufacturer must determine the required reduction of the WLL of the sling, or it must be reduced according to Table

WLL reductions for the slings at an angle

Angle between the sling leg and vertical	Reduce WLL to
Up to 30 deg.	90%
Over 30 up to 45 deg.	70%
Over 45 up to 60 deg.	50%
Over 60 deg.	Not permitted unless part Of an engineered lift

Storage
A sling must be stored to prevent damage when not in use.

Knots
A sling with a knot must not be used.

Sharp edges
When a sling is applied to a sharp edge of a load, the edge or the sling must be protected to prevent damage to the sling.

Slinging loads
1. A sling must be selected and used to prevent slipping or overstressing the sling or the load.

2. A load consisting of 2 or more pieces of material over 3 m (10 ft) long must be slung using a 2 legged sling arrangement positioned to keep the load horizontal during the lift, and each sling must be choked around the load with a double wrap.

Alloy Steel Chain Sling

Sling identification

An allow steel chain sling must be permanently identified with

a. the size,
b. the manufacturer's grade and the WLL,
c. the length and number of legs, and
d. the name or mark of the sling manufacturer.

Chain for hoisting

1. Chain used for hoisting must be approved by the chain manufacturer for hoisting.

Synthetic Web Slings

Sling identification

Synthetic fibre web slings must be permanently identified with the

a. manufacturer's name or mark,
b. manufacturer's code or stock number,
c. working load limits for the types of hitches permitted, and
d. type of synthetic web material.

Synthetic web sling rejection criteria

A synthetic fibre web sling must be removed from service when any of the following circumstances occurs:

a. the length of an edge cut exceeds the web thickness;
b. the penetration of abrasion exceeds 16% of the webbing thickness taken as a proportion of all plies;
c. abrasion occurs on both sides of the webbing and the sum of the abrasion on both sides exceeds 15% of the webbing thickness taken as a proportion of all plies;
d. warp thread damage up to 50% of the sling thickness extends to within ¼ of the sling width of the edge or exceeds ¼ the width of the sling;
e. warp thread damage to the full depth of the sling thickness extends to with ¼ of the sling width of the edge or the width of damage exceeds 1/8 the width of the sling;
f. warp thread damage allows warp thread separation exceeding ¼ the width of the sling and extends in length more than twice the sling width;
g. any part of the sling is melted or charred, or is damaged by acid or caustic;
h. stitches in load bearing splices are broken or worn;
i. end fittings are excessively pitted or corroded, cracked, distorted or broken.
j. a combination of the above types of damage of approximately equal total effect are present.

Wire Rope Slings

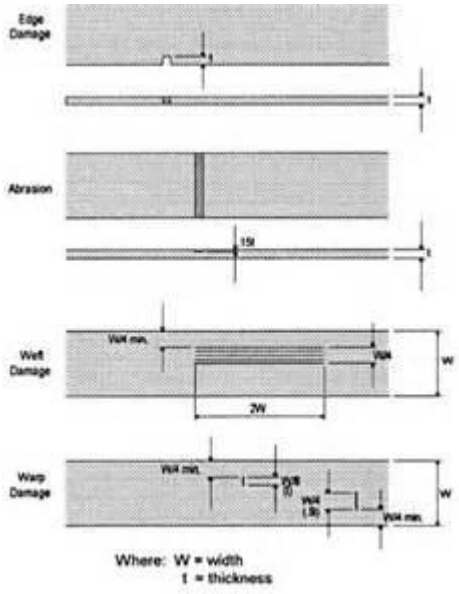
Sling Identification
A wire rope sling with a swaged or poured socket or a pressed fitting must be permanently identified with

a. its working load limit,
b. the angle upon which the WLL is based, and
c. the name or mark of the sling manufacturer.

Rejection criteria
1. A wire rope sling must be permanently removed from service when the applicable rejection criteria of section 15.25 are found.
2. A sling with damaged end fittings must not be used.

Hook rejection criteria
A worn or damaged hook must be permanently removed from service if

a. the throat opening, measured at the narrowest point, has increased by more than 15% of the original opening.
b. the hook has twisted more than 10 deg from the original plane of the hook,
c. the hook has lost 10% or more of its cross-sectional area,
d. the hook is cracked or otherwise defective, or
e. wear or damage exceeds any criteria specified by the manufacturer.



Metal Mesh Slings

Sling Identification

A metal mesh sling must be permanently identified with

a. the manufacturer's name or mark, and
b. the WLL for vertical basket hitch and choker hitch configurations.

Rejection criteria

A metal mesh sling must be removed from service if an of the following damage is visible:

a. a broken weld or a broken brazed joint along the sling edge;
b. a broken wire in any part of the mesh;
c. reduction in wire diameter of 25% due to abrasion or 15% due to corrosion;
d. lack of flexibility due to distortion of the mesh;
e. distortion of the choker fitting so that the depth of the slot is increased by more than 10%;
f. distortion of either end fitting so that the width of the eye opening is decreased by more than 10%;
g. a 15% reduction of the original cross-sectional area of metal at any point around the hook opening or end fitting;
h. visible distortion of either end fitting;
i. a cracked end fitting

When operating hoisting equipment, maintain the minimum power line clearance outlined in the chart on page 37: Electrical operations.

. Hoisting equipment shall not be subjected to loads exceeding the rated capacity of the hoist.

. All hoisting equipment shall be inspected before use, excessively worn or damaged equipment components shall reported to the supervisor and replaced before using

. All hooks on hoisting equipment shall be equipped with safety latches

. Employees shall not stand or pass under a suspended load. If a suspended load must be positioned, tag lines shall be used.

. Employees shall not work or position themselves under a raised load (ie vehicle or trailer) unless it is supported by a vehicle hoist intended for that use, or adequate stands or blocks. Jacks are not adequate by themselves.

. Avoid being near ropes or cables which are under tension. Never stand inside the bight (small angle) of a rope or cable which is under tension

. Before vehicle mounted winch cables are hooked or unhooked, the vehicles shall be stopped and brakes engaged or otherwise immobilized.

.Gloves must be worm when handling lifting and winching ropes or cables. Do not allow such ropes or cables to slide through your hands. Use hand over hand handling technique.

EXCAVATIONS AND TRENCHES

- No employee shall enter an excavation or trench exceeding the depths indicated in the following tables unless it is adequately protected from cave-ins or sliding material.

Jurisdiction	Excavation	Trench
Alberta	1.5	1.5
British Columbia	1.2	1.2
Saskatchewan	1.5	1.2
Northwest Territories	1.2	1.2
Canada Labour Code	1.4	1.4

- Where there is the potential for the presence of flammable or toxic gas or vapour in an excavation or trench, it shall be checked for the presence of such gas or vapour.

- Where there is the potential for a toxic or oxygen deficient atmosphere in a trench or excavation, despite forced ventilation, employees shall wear self-contained or supplied air breathing apparatus.

- Where breathing apparatus is worn by an employee in an excavation or trench, he/she shall wear a harness with a life line attached which is tended by another employee outside the trench or excavation who is equipped with breathing apparatus and capable of affecting a rescue.

- Excavations and trenches shall have adequate warning signs and/or barriers erected to prevent people from driving or walking into the excavation or trench.

- The location of underground pipelines, cables, and conduits in the area shall be identified and marked before excavation or trenching begins.

- Soil within 600 millimeter of pipelines and 300 millimeters (600 mm in Saskatchewan) of an electrical cable shall be removed by hand digging before powered equipment excavating is permitted to continue.

HOISTING AND WINCHING EQUIPMENT

- Hoisting equipment shall be operated only by authorized and qualified employees.

- Where signals are required, only one employee shall give signals and that employee shall have received signaling instructions. This employee shall remain in view of the hoist or winch operator.

Ladders, Scaffolding and Temporary Work Platforms

Inspections

Service On Site must perform inspections on work platforms and associated components before use on each shift, and after any modification, and any condition that might endanger workers must be remedied before the equipment is used.

Manufactured Ladders

A manufactured portable ladder must be marked for the grade of material used to construct the ladder and the use for which the ladder is constructed.
All ladders must be CSA approved.

Position and Stability

A ladder must
(a) be placed on a firm and level base,
(b) be positioned so that the horizontal distance from the base to vertical plane of support is at a 4;1 incline
(c) have sufficient length to project approximately 1 m (3 ft) above the upper landing to which it provides access, and
(d) if necessary, be secured to ensure stability during use.
(e) Never preform work from the top two rungs

Use Restrictions

(1) If work cannot be done from a ladder without hazard to a worker, a work platform must be provided.
(2) A worker must not carry up or down a ladder, heavy or bulky objects or any other objects which may make ascent or descent unsafe.
(3) In the event that a ladder is used to service electrical equipment, Service On Site employees must ensure the ladder is non - conductive

Access

Safe access must be provided to every work platform.

General Requirements

Each work platform must
(a) have sufficient strength to bear the load to be placed on it, and
(b) be secured against separation from the supporting equipment, structure or surface to which it is attached.
(c) Load limits for temporary work platforms must not be exceeded

Hooks and Clamps

(1) Cornice hooks, parapet clamps and thrust-out beams must be secured by tiebacks to a solid anchor on the building or structure.
(2) Tiebacks for cornice hooks, parapet clamps and thrust-out beams must, as nearly as is practicable, be rigged at right angles to the building face.
(3) Each cornice hook, parapet clamp, hanger or stirrup used to support a swing stage must be manufactured of mild steel or other material having similar ductile properties.
(4) Counterweights must be
(a) made of solid material not subject to loss of weight through attrition, and
(b) secured to the thrust-out beam.

Engineering Required

(1) A scaffold must be constructed, installed and used in accordance with the instructions of a professional engineer with respect to
(a) bracing, if the scaffold is enclosed by a tarpaulin or any other cover,
(b) a scaffold exceeding 38 m (125 ft) in height,
(c) a scaffold exceeding 25 m (80 ft) in height if stairways are included as part of the scaffold,
(d) a scaffold used to support a temporary floor,
(e) a scaffold suspended or cantilevered from a structure,
(f) a scaffold system supported by a catenary line,
(g) a needle beam scaffold, and
(h) an outrigger scaffold.
(2) Permanent powered platforms must be constructed, installed and used in accordance with the instructions of a professional engineer.
(3) If a boat is used as a work platform in a pile driving operation, a professional engineer must certify the integrity of the boat for this purpose.
(4) A signed copy of the engineer's instructions or certification referred to in subsections (1) to (3) must be available at the workplace during installation, disassembly and use of the system.

Removal From Service

A work platform must be removed from service until certified safe for use by the manufacturer or a professional engineer if it has
(a) been subjected to a sudden drop,
(b) been in contact with exposed energized electrical equipment or conductors, or
(c) shows signs of any kind of structural or mechanical damage or substantial wear.

Scaffold Responsibilities

Service On Site must ensure that scaffolds used by workers are in a safe condition and are able to withstand the load, regardless of who erected the scaffold.

Service On Site will ensure that a scaffold is color coded using tags at each point of entry indicating its status and condition as follows:

(a) a green tag with “Safe for Use”

(b) a yellow tag with “Caution: Potential or Unusual Hazard”

(c) a red tag with “Unsafe for Use”

The tags will be dated with the date they were attached. There will also be an expiry date wrote on tag. No Service On Site shall enter the scaffold if;

a) The tags have expired or
b) There are no tags
c) In the case of a or b, the scaffold must be inspected by a certified person

Scaffold Platforms

(1) The platform of each scaffold must

(a) be a minimum nominal width of 50 cm (20 in), except that a nominal 30 cm (12 in) wide work platform may be used with ladder jacks, pump jack or similar systems,

(b) not leave more than one opening in the work platform, which must be no greater than 25 cm (10 in) in width, and

(c) if not level, be designed to ensure adequate footing for workers using the platform.

(2) Guardrails may be omitted from the edge of a work platform if

(a) the platform is adjacent to a structure that provides protection equivalent to guardrails, and

(b) the open space between the platform and the structure is equal to or less than 30 cm (12 in).

Manufactured Components

Major components of scaffolds must be used in accordance with technical data provided by the manufacturer, or in writing by a professional engineer, that

(a) shows the rated load, erection procedures and compliance with an applicable standard under section 13.2, and

(b) is available at the workplace for reference.

Lumber for Structural Components

All lumber used to construct a scaffold must be graded and marked to the National Lumber Grades Authority *Standard Grading Rules for Canadian Lumber*.

Scaffold Stability

(1) A scaffold must be erected with the vertical members plumb, and with the ledgers and bearers level.
(2) The base of a scaffold must have bearing plates or sills that rest on a solid surface and are sufficient to support the weight of the scaffold.
(3) The poles, legs and uprights of a scaffold must be securely and rigidly braced to prevent movement.
(4) A scaffold must be effectively guyed or secured to a building or structure
(a) if the height of the scaffold exceeds 3 times its minimum base dimension, or
(b) in any other circumstances if required for stability.
(5) Unless otherwise specified by the manufacturer, height adjustment devices must not extend more than 2/3 of their total length or 60 cm (24 in), whichever is less.

Connections

All connections between the parts of a scaffold must be secure.

Electrical Hazards

A scaffold must be effectively grounded if
(a) it is a metal scaffold and is located close to a high voltage energized electrical conductor or equipment, and
(b) a hazardous level of electrical charge is likely to be induced in the scaffold.

Marking of Equipment

(1) The following equipment must be clearly marked with a rated capacity:
- (a) a platform that is suspended from or attached to a crane or hoist,
- (b) an elevating work platform,
- (c) a swing stage, and
- (d) interchangeable load bearing components of a suspended work platform system.

(2) The rated load for allowable thrust-out beam projections must be clearly marked on a thrust-out beam.
(3) A swing stage platform, counterweight and hoist unit must each be clearly marked with their own weight.
(4) A work platform that is suspended from a crane or hoist or attached to a crane boom must be marked with the weight of the platform and rigging and the rated capacity.

Manuals

(1) For each elevating work platform in use at a workplace,
(a) the equipment manufacturer's operation manual must be available at the workplace, and
(b) the equipment manufacturer's maintenance manual, containing maintenance instructions and replacement part information, must be reasonably available to workers at the workplace.

(2) If either of the manuals required by subsection (1) is not available, the equipment must not be used until
(a) the manual is obtained, or
(b) written instructions for the safe operation and maintenance of the equipment are supplied by a professional engineer.

Maintenance of Records

(1) Service On Site must keep records of inspection, maintenance, repair or modifications for a minimum of 3 months.
(2) If the inspection and maintenance records, other than pre-shift inspections, are not available, the equipment must not be used until it has been inspected and certified safe for use by the manufacturer or a professional engineer.

Work Platforms on Wheels

(1) If a moveable work platform on wheels is not designed for or intended to be moved along the floor or other supporting surface while a person is occupying the platform, the platform must be secured to prevent that movement before a person accesses or occupies the platform.
(2) If a moveable work platform is designed for and intended to be moved along the floor or other supporting surface while a person is occupying the platform, the platform must be moved only in the manner and under the conditions specified by the platform's manufacturer.
(3) Despite subsection (2), if the height of the work platform of a rolling scaffold that is occupied by a person is
(a) not more than one and one half times the least base dimension of the scaffold, the scaffold may be moved by the effort of the person occupying the platform or by the effort of a person on the floor or other supporting surface,
(b) more than one and one half times the least base dimension of the scaffold, the scaffold must be moved only by the effort of a person on the floor or other supporting surface, and
(c) more than two times the least base dimension of the scaffold, the scaffold must not be moved while the person is occupying the platform.

Fall Protection

(1) A person on an elevating work platform must wear a personal fall arrest system secured to a suitable and substantial anchorage point.
(1.1) Despite subsection (1), a person on a scissor lift, or on an elevating work platform with similar characteristics to a scissor lift, that is on a firm level surface with no irregularities to cause platform instability, is exempt from wearing a personal fall arrest system, provided that all manufacturer's guardrails and chains are in place.
(2) If a person is supported on a work platform suspended by fewer than four suspension lines, the person must use a personal fall arrest system secured to an anchor meeting the requirements of the Fall Protection Training and independent of the work platform and its suspension system.

(3) If a person is supported on a work platform suspended by four or more suspension lines, the person must use a personal fall arrest system secured to an anchor on the platform or to an anchor meeting the requirements of the Fall Protection Training and independent of the work platform and its suspension system.
(3.1) Despite subsection (3), a person is not required to use a personal fall protection system on an outrigger or suspended mason's scaffold with guardrails on the open sides.
(4) Each person on a work platform suspended from a crane or hoist must use a personal fall arrest system with a shock absorbing lanyard, secured to
(a) an anchor above the load hook, or
(b) an anchor attached to the platform and designated for that purpose by the manufacturer or a professional engineer, provided that the platform has a safety strap that will prevent the platform from falling more than 15 cm (6 in) if the platform becomes dislodged from the hook.
(5) Each person on a work platform attached to a crane boom must use a personal fall arrest system secured to an anchor on the boom or on the platform.
(6) The personal fall arrest system referred to in subsection (5) must be secured on the boom or on the platform to an anchor that is designated by
(a) the manufacturer, or
(b) a professional engineer.

SERVICE ON SITE

Machine Safety

All Service On Site employees will be properly trained by an appropriate trainer. All PPE will be provided and worn by everyone operating tools. When using hand /power tools keep ergonomics in mind. The proper use will eliminate or reduce strains, sprains, soft tissue injuries

MACHINE GUARDING

- Service On Site employees shall ensure equipment has adequate guards installed for the protection of workers from contact with moving parts.
- Equipment shall not be operated with guards removed, unless required from servicing and under the direct control of an employee.
- Rotating equipment shall be locked out, pinned or otherwise immobilized, before servicing commences.

POWER TOOLS

- Electrically powered hand tools shall be CSA approved.
- Electrically powered hand tools shall be either double insulated or be grounded (have a three-pronged plug). If used in hazardous areas (ie. On damp or metal standing surfaces), electrically powered tools shall be powered through a ground fault circuit interrupter (G.F.C.I)
- Power tools shall not be used with guards removed.
- Disconnect power tool from power source before making adjustments.
- Electrically powered hand tools shall not be used in a flammable atmosphere. For use in a Class 1, Division 1 or Class 1, Division 2 hazardous area, a hot work permit shall be mandatory.
- Do not cut off the ground prong on an electrical extension cord. Its presence is essential to safe electrically powered tool operation.

Power tools will only be operated by a fully trained and competent persons

Machine Safety

Reassembly

If machinery, equipment or a structure is dismantled in a whole or in part and subsequently re-assembled it must be checked by a qualified person and determined to be safe before operation or use.

Information on rated capacity

If a machine or a piece of equipment has a rated capacity which varies with the reach or configuration of the machine or equipment or has other operating limitations

a. Appropriate instructions, load charts and warning notices must be affixed to the machine or equipment so as to be visible to the operator when the operator is at the controls, or
b. The information, in written form must be available to the operator

Rated Capacity

1. Unless provided elsewhere in this regulation, the rated capacity or rated load of a machine or piece of equipment is that specified by the manufacturer of the machine or equipment based on its design.
2. The rated capacity or rated load must be certified by a professional engineer if
   a. The manufactures specification or other acceptable warranty cannot be produced.
   b. The equipment or machine has been modified in a manner which will change its rated capacity or rated load
   c. Wear, corrosion, damage or signs of fatigue are found which may reduce the rated capacity or rated load
   d. The equipment or machine is used in a manner or for a purpose other than that for which it was originally designed, if the use will change the safe working load
   e. In the opinion of the board, the provision of such certification is deemed necessary.

Safe machinery and equipment

1. The employer must ensure that each tool, machine and piece of equipment in the workplace is
   a. Capable of safely performing the functions for which it is used, and
   b. Selected, used and operated in accordance with
      - The manufacturers recommendations and instructions if available
      - Safe work practices and
      - The requirements of this regulation
2. Unless otherwise specified by this regulation, the installation, inspection, testing, repair and maintenance of a tool, machine or piece of equipment must be carried out.
   a. In accordance with the manufacturer's instructions and any standard the tool machine or piece of equipment is required to meet, or
   b. As specified by a professional engineer
3. A tool, machine or piece of equipment determined to be unsafe for use must be identified in a manner which will ensure it is not inadvertently returned to service until it is made safe use.
4. Unless otherwise specified by this regulation, any modification of tool, machine or piece of equipment must be carried out in accordance with
   a. The manufacturers recommendations and instructions, if available ,
   b. Safe work practices, and
   c. The requirements of this regulation

Conformity to standards

1. If this regulation requires that a tool, machine or piece of equipment manufactured before April 15,1998 must meet a code or standard, the tool , machine or piece of equipment must conform to the edition of the code or standard referred to in this regulation or edition of the code or standard published at the time of the tool, machine or piece of equipment was manufactured, subject only to the modification or upgrading specified to be necessary in this regulation or in a directive issued by the board.
2. When this regulation requires a person to comply with
   a. A publication, code or standard of the board or another agency , the person may , as an alternative , comply with another publication, code or standard acceptable to the board , or
   b. Practices, procedures or rules of the board or another agency, the person may, as an alternative, comply with another practice, procedure or rule acceptable to the board.

Inspection and maintenance records

1. If this regulation required a machine or piece of equipment to have an inspection and maintenance record, then an effective written or other permanent recording system or log must be immediately available to the equipment operator and to any other person involved with the inspection and maintenance of the equipment.
2. The recording system must
   a. Identify the make , model and serial number of the equipment and the name and address of the current owner
   b. Contain an entry on each shift , signed by the operator of the machine or equipment reporting the result of each start of shift inspection and safety check and any observed defect operating difficulty or need for maintenance occurring on the shift and
   c. Contain an entry signed by the person responsible for any test, inspection , modification, repair or maintenance performed on the equipment , summarizing work done indicating the status of the equipment , or machine for further use and if appropriate , noting where a detailed record of the test , inspection , modification , repair or maintenance can be obtained
3. If this regulation requires a machine or piece of equipment to have inspection and maintenance, then detailed reports of inspection, maintenance repairs and modifications must be kept for the duration of the service life of the machine or equipment and must be reasonably available to the work place and made available, upon request to the operator and to anyone else involved in the operation, inspection, testing or maintenance of the equipment.

Authorization

1. A machine or piece of equipment may only be operated by authorized persons.
2. A person must not be authorized to operate a machine or piece of equipment until the person has been adequately instructed and trained and has demonstrated an ability to safely operate it.
3. Startup

Before any equipment, machinery or work process is put into operations the persons responsible for doing so, must ensure that

a. Safeguards and air contaminate controls required by this regulation are in place and functioning , and
b. No person will be exposed to undue risk by putting the equipment , machinery or work process into operation

HAND TOOLS

- Defective tools shall not be used. They shall be tagged and taken out of service until repaired or replace.

- Employees shall use the correct type and size of tool for the job. Makeshift or substitute tools shall not be used.

- Sharp edged and pointed tools shall be adequately guarded when not in use. Such tools shall be carried in a carrying belt, tool pouch or in the hand with the sharp edges or points held away from the body – not in a pocket.

- Wrench handles shall not be extended unless they are designed for that purpose.

- Impact tools with mushroomed heads shall be reconditioned before being used.

- Hand tools shall not be thrown from one employee to another or from place to place. They shall be handed, or if to a different elevation, they shall be placed in an appropriate tool pouch or basket and raised or lowered by handline.

WELDING

- Only persons authorized and properly trained shall operate gas and electric welding equipment.

- Flashback devices shall be installed at the regulator end of all lines on gas welding equipment.

- Oil or grease shall not be permitted to come in contact with threads, valves, regulators or other controls on oxygen cylinders.

- Acetylene cylinders shall be kept in a vertical position at all times.

- Arc welding electrodes, new or used, shall not be left lying on floors where they present a falling hazard.

- Welders and helpers shall wear the necessary personal protective clothing and equipment.

- Appropriate fire extinguishing equipment shall be readily available in welding work areas.
  -

SIGNS AND TAGS

- All controlled products must be appropriately labeled as per WHMIS regulations.

- Every accident prevention sign and tag must be posted to provide vital information and warnings. Don't ignore them, they are for your own safety.

- Use danger signs when immediate danger exists. Use caution signs when a potential hazard exists.

- Accident prevention tags are temporary means of warning you of an existing hazard, defective tools or pieces of equipment.

- If an unsafe or defective tool or machine is discovered, tag it, protect the next person.

HANDLING PIPE

Use the following precautions when handling pipe:

- Keep fingers out of the open ends to avoid being caught against nearby objects or being cut on sharp edges or threads.

- Do not roll pipe toward feet.

- When moving pipe on timbers or cross sticks, take precautions to control rolling; use tongs, or slings to move heavy pipe.

SAFETY DEVICES

Safety valves, governors, automatic cutouts, fuses, guards and similar devices are installed for the protection of equipment and prevention of injuries. The Following rules apply:

- Do not alter or tamper with these devices in any way.

- Do not attempt to repair or adjust safety devices unless fully authorized.

- Do not operate machinery unless all the guards are in place.

- Do not remove guards without permission.

- Replace all guards before returning the equipment to service.

Preventative Maintenance Schedule

Equipment	In house inspect / Certified Inspect	Full service / Tranny service
service trucks 1 ton and under	pre/post trip/ yearly	8000 km / once a year
Service trucks 3 ton and over	pre/post trip/ yearly	8000 km / once a year
Loader	prior to each use / NA	500 hrs / NA
Forklift	prior to each use / NA	500 hrs / NA
Respiratory Equipment	prior / after each use	N/A
Gas Monitors	prior to each use / every 3 months	N/A
Fall Protection	prior to each use / yearly	N/A
5 Ton Crane	prior to each use / NA	N/A

Full service includes: oil filter , air filter and greasing

Tranny service includes: change transmission oil and filter

Maintenance logs are filled out in book after each service or repair of motorized equipment

TOOLS MACHINERY AND EQUIPMENT

FIXED GUARDS

A fixed guard must not be modified to be readily removable without the use of tools.

ROTATING HAZARDS

Rotating parts, such as friction drives shafts, couplings, and collars, set screws and bolts, keys and keyways, and projecting shaft ends, exposed to contact by workers must be guarded.

GROUND FAULT INTERRUPTER

When tools and equipment are used outdoors or in a wet or damp location, portable electrical equipment shall be protected by an approved, CSA Certified, ground fault circuit interrupter.

Flammable and Explosive Substances

Service On Site employees must ensure that a container which may have held a combustible substance must be thoroughly cleaned and purged before any welding or burning operation is carried out on the container.
Burning, welding or other hot work must not be done on any vessel, tank, pipe or structure, or in any place where the presence of a flammable or explosive substance is likely until:

- Tests have made by a qualified person to ensure the work may be safely performed and
- Suitable safe work procedures have been adopted, including additional tests made at intervals that will ensure the continuing safety of the workers
- A hot work permit has been completed

Radiation Protection

Arc welding must not be carried out unless any Service On Site employees or any other workers who may be exposed to radiation from the arc flash are protected by adequate screens, curtains or partitions or wear suitable eye protection.
A screen, curtain or partition near an arc welding operation must be made of or be treated with a flame resistant material or coating, and must have a non-reflective surface finish.

Protective Clothing and Equipment

A Service On Site Employee involved in welding or burning operations must wear:

- Flame resistant work clothing,
- Gauntlet gloves of leather or other suitable material and arm protection,
- An apron of leather or other suitable material for heavy work,
- Eye and face protection against harmful radiation, particles of molten metal, and while chipping and grinding welds, and
- Substantial safety footwear made of leather or other suitable material

Hot Work

Service On Site employees will inspect work area prior to any hot work beginning. Recently welded or flame cut work must be marked “HOT” or effectively guarded to prevent contact by a worker, if a worker not directly involved in the hot work is likely to enter the work area.
In the event any welding or allied process is being performed above a work area where any workers are or maybe present Service On Site will ensure that adequate measures taken to protect workers below from spark, debris or other fallings hazards. Service On Site will either do this by keeping everyone from the area or place a shield between the above work area and area below.

Fire Extinguishers

At least one fire extinguisher of a suitable type and capacity must be immediately available at a work location where welding or cutting is done.
Fire extinguisher location must be marked and made known to workers.

Setting up for Welding or Heating

Lighting the Torch and Adjusting the Flame
1. Refer to the appropriate nozzle selection chart to determine the required size tip and operating pressures for the job.
2. Open the oxygen valve on the torch handle. Adjust the oxygen regulator to the desired pressure range and check for leaks
3. Close the torch handle oxygen valve.
4. Open the fuel valve on the torch handle. Adjust the fuel regulator to the Desired pressure range and check for leaks
5. Close the torch handle fuel valve.
6. Wear protective clothing as required.
7. Hold the torch handle in one hand and the spark lighter in the other.
8. Open the fuel control valve approximately 1/8 turn. Ignite the gas with a spark lighter. Be sure that the spark lighter is away from the tip and not obstructing the gas flow.
9. Continue opening the fuel control valve until the flame stops smoking.
10. Slowly open the preheat oxygen control valve until the secondary acetylene “feather” disappears and a neutral flame is achieved.

When You Finish the Welding or Heating Operation

1. First, close the oxygen valve. Then, close the fuel valve. If this procedure is reserved, a “pop” may occur. The pop throws carbon and soot back into the torch and may, in time, partially clog the gas passages.
2. Close both cylinder valves.
3. Open the torch handle oxygen valve. This will release the oxygen pressure in the system. Close the oxygen valve once all gas has been released.
4. Turn the adjusting screw on the oxygen regulator counterclockwise to release all spring pressure.
5. Repeat steps 3 and 4 for the fuel system.

Cutting Attachment Setting Up Equipment and Cutting

1. Inspect the cone end, coupling cut and cutting attachment for oil, grease or damaged parts. DO NOT use if oil, grease or damage is detected.
2. Inspect the torch handle head. The tapered seating surfaces surfaces must be in good condition. If dents, burrs or damaged seats are present, the seat must be repaired or replaced. If the torch is used with poor seating surfaces, backfire or flashback may occur.
3. Connect the cutting attachment to the torch handle. Tighten the coupling nut, hand-tight only. Wrench tightening may damage the o-rings.
4. Refer to the cutting tip flow data chart for the correct size cutting tip, operating pressures and travel speed.
5. Inspect the cutting tip. The tapered seating surfaces must be in good condition. If dents, burrs or burned seats are present, DO NOT use the cutting tip. Inspect the preheat and cutting oxygen holes. Spatter can stick on or in these holes. If these holes are clogged or obstructed, clean them with the proper size tip cleaner.
6. Insert the cutting tip in the cutting attachment head. Place the tip nut on the cutting attachment head. Tighten the tip nut 15-20 ft-lbs of torque.
7. Open the cylinder valves as directed by the “Safety and Operating instructions for Single and Two Stage Regulator”.
8. Open the oxygen control valve on the torch handle completely.
9. Open the preheat oxygen control valve on the cutting attachment. Adjust the oxygen regulator to the desired delivery pressure. Momentarily depress the cutting oxygen lever. Check to see if the proper pressure remains. Adjust the regulator if necessary and check for leaks
10. Close the preheat oxygen control valve.
11. Open the fuel control valve on the torch handle. Adjust the fuel regulator to the desired delivery pressure and check for leaks
12. Close the fuel control valve.

13. Open the fuel control valve approximately 1/8 turn. Ignite the gas with a spark lighter. Be sure that the spark lighter is away from the tip and not obstructing the gas flow.
14. Continue to increase the fuel supply at the torch handle control valve until the flame stops smoking.
15. Slowly open the preheat oxygen control valve until the secondary acetylene "feather" disappears and a neutral flame is achieved.
16. Depress the cutting oxygen lever. If the preheat flame changes slightly to a carburizing flame, continue to press the cutting oxygen lever and increase the preheat oxygen at the cutting torch until the flames are again neutral. If the preheat flames are not the same size or the cutting oxygen stream is not straight, turn off the torch, let it cool and clean the tip.
17. Hold the cutting torch comfortably in both hands so that one hand stabilizes the torch and the cutting tip preheat flames are approximately 1/8 from the base metal and the other hand is free to depress the cutting oxygen lever.
18. Direct the preheat flames to the spot where the cut is to be started. Before cutting action can start, the base metal must be preheated to a bright cherry red. When the red spot appears, depress the cutting oxygen lever slowly and firmly.
19. When the cut starts, move the cutting torch in the direction you wish to cut.
20. Continue to depress the cutting oxygen lever past the final edge of the base metal for a good "drop cut".

When You Finish the Cutting Operation

1. First, close the preheat oxygen valve. Then, close the fuel valve. If this procedure is reversed a "pop may occur. The pop throws carbon and soot back into the torch and may, in time, partially clog the gas passages.
2. Close both cylinder valves.
3. Open the cutting torch preheats oxygen valve and cutting oxygen valve. This will release the oxygen pressure in the system. Close the torch and reheat valve once all gas has been released.
4. Turn the adjusting screw on the oxygen regulator counterclockwise to release all spring pressure. Close the oxygen valve.

Safe Handling and storage of compressed gas

Service On Site employees must make sure that:

a. Compressed or liquefied gas containers are used, handled, stored, and transported in accordance with the manufactures specifications
b. A cylinder of compressed flammable gas is not stored in the same room as a cylinder of compresses oxygen, unless the storage arrangements are in accordance with part 3 of the Alberta fire code (1997)
    a. (b) Applies when cylinders are stored in Alberta. When cylinders are stored in BC. Service On Site will follow BC regulations
c. Compresses or liquefied gas cylinders, piping and fittings are protected from damage during handling, filling, transportation and storage
d. Compresses or liquefied gas cylinders are equipped with a valve protection cap if manufactured with a means of attachment
e. Oxygen cylinders or valves, regulators or other fittings of the oxygen using apparatus or oxygen distributing system are kept free of oil and grease.

Flashback Arrestors

1. All Service On Site torches and handles are equipped with internal flashback or external arrestors and reverse “flow” check valves. These models are indicated by an “F” in the model name, for example, 315FC. The flashback arrestor is designed to prevent flashback flame from the burning in the hose and gas supply system. A very fine “filter-like” sintered stainless steel flame barrier stops flashback flame.
2. For maximum service life of the flashback arrestor, purge all supply lines and hoses before installing onto the torch handle. This removes loose material contained in the hose or regulator that could restrict flow through the flashback arrestor.
3. Flow restriction and torch over-heating results if dirt or “oily LPG residuals are allowed to flow into the flashback arrestor. Make sure not to draw liquid. Always store and use cylinders in the upright position.
4. The flame arrestor element cannot be field tested or repaired. The flame arrestor element must be replaced after a maximum of 5 years of service or whenever there are signs of discoloration of the flame arrestor element caused by heat, poor torch performance caused by restricted flow, signs of carbon soot in the torch inlet, flame damaged or melted check valves, or if the flashback arrestors have become loose in the body.

If any of these conditions exists, have the torch tested and repaired by a Qualified repair technician.

5. Operating Data

GAS	Max Pressure	Max Capacity
Oxygen	150 PSI	Welding - 3”
Acetylene	15 PSI	Cutting - 8”
Hydrogen	30 PSI	Heating - VICTOR
Other fuel gas	50 PSI	10 MFA, 10 MFN

USE OF TIGER TORCHES

General

Tiger torches, although valuable to a job-site, are sometimes misused in a manner that can make them dangerous.

- When torch is used, an adequate fire extinguisher must be present.
- Torches are not to be used for heating of work areas or thawing of lines and equipment etc., when not in use.
- Ensure that the propane bottles are properly shut off.
- Fuel lines are to have regulators.
- Propane bottles shall be secured in an upright position.

Service On Site employees will ensure that all equipment used for Hot Work, welding and heating will meet manufactures specifications.

PLUNGER PUMP REPAIR PROCEDURE

- Hazard assessment
- Work permit if required
- Lock out tag out as per policy also deenergize charge pump
- Bleed off depressurize
- Double block and bleed if required
- Bump test motor to confirm isolation
- Remove guard and remove belts
- Visually check motor bearings and previous alignment

Pump disassembly

- Clean power end and fluid end
- Remove fluid end, pull valves and seats
- Check for cracks or washouts
- Repair valves and blue in seats
- Clean and reassemble fluid end
- Remove, clean stuffing boxes and plungers, pony rods
- Check for wear and replace repair as needed
- Remove crankshaft, clean and inspect
- Remove crossheads and connecting rods

Pump assembly

- Inspect and replace worn components
- Install new bearings and set crank end float
- Reinstall crossheads and connecting rods
- Torque up connecting rods to manufacturer's spec
- Install new crank seals and pony rod seals
- Assemble power end to fluid end
- Reinstall pump install belts and align
- Startup as per policy, OEM (44.14)

Centrifugal PUMP REPAIR PROCEDURE

- **Hazard** assessment
- Work permit if required
- Lock out tag out as per policy
- Bleed off depressurize
- Double block and bleed if required
- Bump test motor to confirm isolation
- Remove guard check coupling and rotate
- Remove pump for repair or replace

Pump disassembly

- Drain oil and clean or flush
- Remove volute and inspect impellor
- Remove impellor, check run out on shaft
- Disassemble bearing element
- Remove mechanical seal inspect for failure
- Clean all parts

Pump assembly

- Install bearing on shaft
- Install shaft in bearing element
- install seal *do not set seal
- Install impellor
- Install volute
- Set impellor approx .015 from volute
- Set seal snug up set screws
- Press test pump 50 psi for 15 min.

Install Pump

- Clean base and install pump
- Install coupling and align .005 TIR
- Stall piping confirm no pipe strain
- Install guard
- Continue with startup procedure as per OEM (44.14)

SERVICE ON SITE

INSPECTION REPORT

Pump#

7804 100 AVE

Fort 5t.John BC
Phone: (250) 787-0082 Fax:(250) 787-0051

MILL WRIGHT:	DATE:
COMPANY:	LOCATION:
PUMP MAKE:	PUMP MODEL:
SERIAL #	Application:

FLUID END MA TERIAL:	0 Stainless Steel	0 Aluminum Bronze	CONDITION: °Good
MAKE & STYLE OF VALVES:	SUCTION: °Good	DISCHARGE aGood	
DISCHARGE PRESSURE:			
SUCTION PRESSURE:			

PACKING: 0 Good	0 Rope ©838	Part #	Size:	
CONNECTION	0 Good			
STUFFING BOX MATERIAL:	Ø Stainless Steel	0 Aluminum Bronze	CONDITION: 0 Good	
PLUNGERS:	0 Rockide	0 Hardco	°Tungsten Carbide	U Ceramic (]Threaded 0 Clamped

POWER END CONDITION	#1	#2	#3	#4	#5
Pony Rods					
Power End Seals					
Crosshead Clearance					
Pins &Bushings					
Con Rods					
i Rod Shells					ĵ
Jnk Shaft Seals					
Crank Shaft Journal					

Main Bearings			
SUCTION DAMPNER:	Make:	Model:	SERIAL#:
I aThreaded		Charge Pressure	
	DISCHARGE DAMPNER: I		
CFlanged	I ❑Threaded	Charge Pressure	

MOTOR SHEAVE•	Size:	Grooves.	Shaft:
PUMP SHEAVE:'	Size	Grooves:	Shaft:
I			
FRAME:'	PHASE'	VOL TAGF	ENCLOSURE

SHUTDOWNS:	VIBRATION		OIL TYPE:
Charge Pump:	Make: Impeller:	Model: Coupling	Serial# Shaft:
Charge Pump Motor:	Make: Frame:	HP: Phase:	Voltage: Enclosure:

REMARKS & RECOMMENDATIONS:

Careful planning of the plant layout will save considerable time and expense, both initially when the installation is made and later during operation of the plant. In selecting the location for the pump, consideration should be given to the fact that a positive suction head at the pump inlet contributes toward the pump efficiency. However, the layout of the piping, the arrangement of the fittings and restrictions in the suction and discharge lines has more effect. For this reason, all fittings and valves should be full opening; all bends should be of long radius or should be eliminated where possible. Long radius 45 degrees elbows should be used, particularly if installed near the fluid cylinder. The following points outline the basic requirements for an installation that will contribute greatly toward good pump operation.

Suction Line:

The suction line must not be smaller than the suction intake of the fluid cylinder and maybe be larger. The length of the suction line should be held to a minimum and should run straight from the supply tank to the pump. When bends are required, they should be made with long radius 45 degree elbows. Do not use a bend directly adjacent to the fluid cylinder. Avoid using 90 degrees bends if at all possible. Provide a full opening gate valve in the suction line adjacent to the supply tank to permit the line to be drained when necessary. Do not use any type of restricting valve. Do not use meters or other restriction in the suction line. Eliminate any rise or summit in the suction line where air or vapor can collect. Pulsation dampening devices are strongly recommended

When necessary to manifold a number pf pumps to a common suction, the diameter of the manifold and suction pipe leading from the supply tank must be such that it has a cross sectional area equal to or greater than the area of the combined individual suction pipes. When a charging or booster pump is used in the suction line, it must have a capacity equal to twice that of the pump output. This is necessary to provide a charging pump with an output great enough to meet the peak volume requirements of the plunger pump during the suction stroke and not act as a restriction in the line.

All piping both suction and discharge must be solidly and independently supported. The first support must be as close to the pump as practical. This is necessary to prevent placing the pump in a strain and to keep any vibration in the system from acting directly on the pump.

Discharge Line: Use a pulsation dampener or a desurger in the discharge line. It should be placed in the line as near the fluid cylinder as possible and ahead of any bend in line.

Do not reduce the size of the discharge line below that of the pump outlet until the line has passed through the desurger, and is away from the pump approx.: 6M (20 feet)

Any bend in the discharge line should be made with a long radius 45 degree ell. Do not use a bend directly adjacent to the fluid cylinder, particularly a 90 degree bend.

A pressure relief valve should be installed in the discharge line. The relief valve should be set to operate at a pressure rated for the plunger size being used. It should be installed in the line ahead of any valve and be piped so that any flow is returned to the supply tank rather than the suction line. This will prevent possible damage to the suction line and suction dampener.

A bypass line should be installed to permit the pump to be started without load. This allows oil to circulate and reach all parts in the power end before they are loaded.

Bypass Piping:

Some designers ignore this important aspect of proper design of pump piping systems.

A reciprocating pump, especially after maintenance of valves or plungers, **starts with one or more fluid chambers full of air.** Pumps operating on propane, butane, or other volatile liquids **start with vapor in the fluid chambers.**

Positive displacement pumps do not automatically purge themselves of air and gas after shutdown. For example a quintuplex plunger pump will after servicing expel the air in four of the five pup chambers. Thus, the pressure from four of the “active” cylinders will keep shut the discharge valve of the inactive” or “air bound” cylinder. Then the air or gas in this cylinder will be compresses and expand by its reciprocating plunger and never leave the chamber. Similar effects occur in the duplex and triplex pumps.

To overcome these difficulties, adequate provisions for expelling the gas in the “air bound” cylinders must be present. Common practice is to totally relieve the pump of all discharge pressure during the startup, after servicing. Consider the operational advantage of a full sized bypass line (return tank) which substantially removes discharge pressure from all cylinders during the start. This requires a block valve on the discharge side and a full opening bypass valve on the other side.

Power End:

The pump must be mounted level and should be grouted in and be free of strain. This applies to a skid mounted pump or a pump mounted directly on a concrete base.

V belt drive: A properly designed, well aligned V-belt will provide years of reliable, economical service if properly tensioned and kept dry, free of oil and ventilated. Alignment is critical for long life. If the shaft axes are not truly parallel, or if the sheave grooves are not positioned in the good alignment, some belts will carry most of the load, resulting in their disproportionate load share and may actually twist or turn over in the groove. Use a straight edge across the rim of the sheaves to detect and correct for misalignment. After about one week of operation, new v-belts will have stretched somewhat. The motor must be moved on its slide base to re-establish proper belt tensioning. Insufficient tension results in slippage, burning, squealing (especially during start-up) and shortened belt life. Overtightening imposes excessive loads on pump and motor bearing and cause early shaft fatigue failure.

When connecting a direct driven pump, the shaft must be correctly aligned. Couplings should not be expected to compensate for avoidable misalignment.

Direction of Rotation:

Before placing pump in operation, check that crankshaft rotation agrees with the arrow cast on top of the power frame by briefly jogging the electric motor. Crankshaft rotation must be clockwise as viewed from the right side of pump. If the pump is gear driven, remember that the pinion shaft turns opposite the crankshaft, if using a single reduction geared drive or in the same direction as the crankshaft when using planetary gear.

Lubrication:

Oil requires only a non-foaming additive and should possess good water separation

(antiemulsion) characteristics. Such oils are often labeled “industrial” or “turbine” quality lubricants. If these oils are not available, a good quality gear oil or EP oil may be substituted. See lubrication guidelines.

Automatic (safety) Shutdown:

Carefully check all electric shutdown devices present, such as crankcase oil level, discharge pressure, vibration, lubricator oil level, motor thermostat, etc.

Provisions should be made to stop the pump automatically in the event of supply fluid failure.

Fluid End:

The fluid cylinder is shipped assembled to the pump complete with valves and cover plates. The stuffing boxes, plungers, and related items have also been assembled and tested with the pump and require no further assembly. Before the pump is started these parts should be checked for tightness as well as for possible damage during shipment.

Thoroughly clean the suction line piping before the pump. Weld spatter, slag, mill scale etc will damage a pump in short time.

Plunger Packing:

The recommended style of packing has been installed and run at factory. It does however require further setting up as the pump is started and brought to pressure.

Perform alignment as per manufactures specifications.

Once alignment is complete ensure all guards and decals are in place to prevent injury

Installation for a Centrifugal Pump Procedure

Pump handling

Make sure that the unit cannot roll or fall over and injure people or damage property. These pumps might use carbon or ceramic silicon carbide components. Do not drop the pump or subject it to shock loads as this can damage the internal ceramic components.

Lifting

All lifting must be done in compliance with all applicable regulations/standards. Assembled units and their components are heavy. Failure to properly lift and support this equipment can result in serious physical injury and/or equipment damage. Lift equipment only at the specifically identified lifting points. Lifting devices such as hoist rings, shackles, slings and spreaders must be rated, selected, and used for the entire load being lifted. Do not attach sling ropes to shaft ends.

Pump storage requirements

Storage requirements depend on the amount of time that you store the unit. The normal packaging is designed only to protect the unit during shipping.

Storage requirements

Upon receipt/short-term (less than six months)

- Store in a covered and dry location.
- Store the unit free from dirt and vibrations.

Long-term (more than six months)

- Store in a covered and dry location.
- Store the unit free from heat, dirt, and vibrations.
- Rotate the shaft by hand several times at least every three months

Risk of damage to the mechanical seal or shaft sleeve on units supplied with cartridge mechanical seals. Make sure to install and tighten the centering clips and loosen the setscrews in the seal locking ring.

Treat bearing and machined surfaces so that they are well preserved. Refer to drive unit and coupling manufacturers for their long-term storage procedures.

Installation

When installing in a potentially explosive environment, make sure that the motor is properly certified. You must ground all electrical equipment. This applies to the pump equipment, the driver, and any monitoring equipment. Test the ground lead to verify that it is connected correctly.

Keep the pump as close to the liquid source as practically possible. This minimizes the friction loss and keeps the suction piping as short as possible. Make sure that the space around the pump is sufficient. This facilitates ventilation, inspection, maintenance, and service. If you require lifting equipment such as a hoist or tackle, make sure that there is enough space above the pump. This makes it easier to properly use the lifting equipment and safely remove and relocate the components to a safe location. Protect the unit from weather and water damage due to rain, flooding, and freezing temperatures. This is applicable if nothing else is specified. Do not install and operate the equipment in closed systems unless the system is constructed with properly-sized safety devices and control devices. Acceptable devices:

- Pressure relief valves
- Compression tanks
- Pressure controls
- Temperature controls
- Flow controls

If the system does not include these devices, consult the engineer or architect in charge before you operate the pump. Take into consideration the occurrence of unwanted noise and vibration. The best pump location for noise and vibration absorption is on a concrete floor with subsoil underneath. If the pump location is overhead, undertake special precautions to reduce possible noise transmission

Install the pump, driver, and coupling, Mount and fasten the pump on the baseplate. Use applicable bolts. The driver should be bumped without coupling for correct rotation. Install the coupling.

Pump-to-driver alignment

Follow shaft alignment procedures in order to prevent catastrophic failure of drive components or unintended contact of rotating parts.

Always disconnect and lock out power to the driver before you perform any installation or maintenance tasks. Failure to disconnect and lock out driver power will result in serious physical injury. Check the alignment of frame-mounted units before you operate the unit. Failure to do so can result in equipment damage or decreased performance.

Perform Alignment
Alignment checks
When to perform alignment checks
You must perform alignment checks under these circumstances: The process temperature changes, the piping changes, the pump has been serviced.

If the medium being pumped is very hot (hot alignment), second alignment should be done after all components have reached running temps.

Once installation is complete ensure all guards and decals are in place to prevent injury

Installation of Horizontal Pump Procedure

A pump is a pressure vessel with rotating parts that can be hazardous. Hazardous fluids may be contained by the pump including high temperature, flammable, acidic, caustic, explosive, and other risks. Operators and maintenance personnel must realize this and follow safety measures. Personal injuries will result if procedures outlined in this manual are not followed. Manufacturer will not accept responsibility for physical injury, damage or delays caused by a failure to observe the instructions in this manual and the IOM provided with your equipment.

NEVER operate pump without coupling guard correctly installed.

NEVER run pump below recommended minimum flow when dry, or without prime.

ALWAYS lock out power to the driver before performing pump maintenance.

NEVER operate pump without safety devices installed.

NEVER operate pump with discharge valve closed.

NEVER operate pump with suction valve closed.

DO NOT change service application without approval of an authorized Manufacturer representative.

Safety Apparel: Insulated work gloves when handling hot bearings or using bearing heater
Heavy work gloves when handling parts with sharp edges, especially impellers
Safety glasses (with side shields) for eye protection
Steel-toed shoes for foot protection when handling parts, heavy tools, etc.
Other personal protective equipment to protect against hazardous/toxic fluids

Receiving: Assembled pumping units and their components are heavy. Failure to properly lift and support equipment can result in serious physical injury and/or equipment damage. Lift equipment only at specifically identified lifting points or as instructed in the current IOM.

Note: Lifting devices (eyebolts, slings, spreaders, etc.) must be rated, selected, and used for the entire load being lifted.
Alignment: Shaft alignment procedures must be followed to prevent catastrophic failure of drive components or unintended contact of rotating parts. Follow coupling manufacturer's coupling installation and operation procedures.

Before beginning any alignment procedure, make sure driver power is locked out. Failure to lock out driver power will result in serious physical injury.

Piping: Never draw piping into place by forcing at the flanged connections of the pump. This may impose dangerous strains on the unit and cause misalignment between pump and driver. Pipe strain will adversely affect the operation of the pump resulting in physical injury and damage to the equipment. Flanged Connections: Use only fasteners of the proper size and material. Replace all corroded fasteners. Ensure all fasteners are properly tightened and there are no missing fasteners. Startup and Operation: When installing in a potentially explosive environment, please ensure that the motor is properly certified.

Operating pump in reverse rotation may result in contact of metal parts, heat generation, and breach of containment. Lock out driver power to prevent accidental start-up and physical injury. The impeller clearance setting procedure must be followed. Improperly setting the clearance or not following any of the proper procedures can result in sparks, unexpected heat generation and equipment damage. If using a cartridge mechanical seal, the centering clips must be installed and set screws loosened prior to setting impeller clearance. Failure to do so could result in sparks, heat generation, and mechanical seal damage.

The coupling used in an Explosion proof environment must be properly certified and must be constructed from a non-sparking material. Never operate a pump without coupling guard properly installed. Personal injury will occur if pump is run without coupling guard. Make sure to properly lubricate the bearings. Failure to do so may result in excess heat generation, sparks, and / or premature failure.

The mechanical seal used in an Explosion proof environment must be properly certified. Prior to start up, ensure all points of potential leakage of process fluid to the work environment are closed.

Never operate the pump without liquid supplied to mechanical seal. Running a mechanical seal dry, even for a few seconds, can cause seal damage and must be avoided. Physical injury can occur if mechanical seal fails. Never attempt to replace packing until the driver is properly locked out and the coupling spacer is removed.
Dynamic seals are not allowed in an Explosion proof environment. DO NOT operate pump below minimum rated flows or with suction and/or discharge valve closed. These conditions may create an explosive hazard due to vaporization of pumpage and can quickly lead to pump failure and physical injury. Ensure pump is isolated from system and pressure is relieved before disassembling pump, removing plugs, opening vent or drain valves, or disconnecting piping. Shutdown, Disassembly, and
Reassembly: Pump components can be heavy. Proper methods of lifting must be employed to avoid physical injury and/or equipment damage. Steel toed shoes must be worn at all times.

The pump may handle hazardous and/or toxic fluids. Observe proper decontamination procedures. Proper personal protective equipment should be worn.

Precautions must be taken to prevent physical injury.
Pumpage must be handled and disposed of in conformance with applicable environmental regulations. Operator must be aware of pumpage and safety precautions to prevent physical injury.
Lock out driver power to prevent accidental startup and physical injury.

Allow all system and pump components to cool before handling them to prevent physical injury.

Never apply heat to remove an impeller. The use of heat may cause an explosion due to trapped fluid, resulting in severe physical injury and property damage. Wear heavy work gloves when handling impellers as sharp edges may cause physical injury. Wear insulated gloves when using a bearing heater. Bearings will get hot and can cause physical injury.

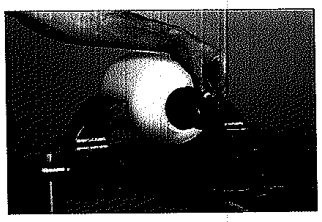
EXPLOSION PROOF CONSIDERATIONS and INTENDED USE

Special care must be taken in potentially explosive environments to ensure that the equipment is properly maintained. This includes but is not limited to:
1. Monitoring the pump frame and liquid end temperature.
2. Maintaining proper bearing lubrication.
3. Ensuring that the pump is operated in the intended hydraulic range.

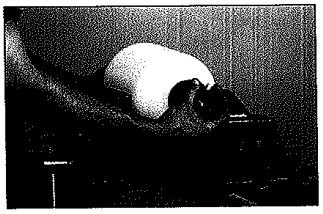
The EXPLOSION PROOF conformance is only applicable when the pump unit is operated within its intended use. Operating, installing or maintaining the pump unit in any way that is not covered in the Instruction, Operation, and Maintenance manual (IOM) can cause serious personal injury or damage to the equipment. This includes any modification to the equipment or use of parts

- ❑ Roll over pump by hand
- ❑ Remove locks
- ❑ Open suction & discharge valves
- ❑ Bleed air from system
- ❑ Air out of pulsation dampeners & check for charge
- ❑ Check for leaks out of stuffing boxes
- ❑ Check for leaks on areas worked on
- ❑ Start charge pump
- ❑ Minimum 20 psi
- ❑ Air bleed main pump
- ❑ Finish
- ❑ Start lubricators
- ❑ Check packing for leaks & adjust
- ❑ Check packing is not too hot
- ❑ Check rate for fluid loss
- ❑ Check pressure
- ❑ Check running oil level
- ❑ Manually prime lubricators (to give extra oil)

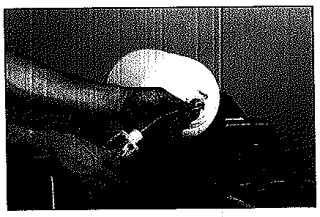
Check day tank level



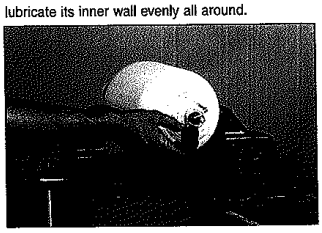
12. Install the bleeder plug and tighten it.



13. Rotate the accumulator shell around its axis to lubricate its inner wall evenly all around.



14. Using a charging and gauging assembly, precharge to the desired pressure at a moderate rate, using DRY NITROGEN only. Check the valve for leaks with snoop or soap water.



15. Remove charging and gauging assembly, install valve cap and protective cap. Retighten the Assembly locknut & jamnut.

STORAGE:

Accumulator storage instructions
If after reassembly, the accumulators are stored, they must be charged with a low nitrogen pressure of 25 psi (1.5 bar) and store in a cool and dry area. The fluid port must be sealed. The accumulator can be stored in any position. The protective cap on the gas charging valve must be securely tightened to protect it from any shock.

Attach a label to the accumulator stating that they must be precharged before installing in the system.

If the accumulator is stored for longer than 6 years, all the elastomeric components (bladder, seals etc.) must be replaced.

BLADDER STORAGE INSTRUCTIONS:

DO NOT OPEN PLASTIC BAG UNTIL READY FOR INSTALLATION.
DO NOT USE RAZOR OR SHARP OBJECTS TO OPEN THE PLASTIC BAG.

Bladder in the plastic bag must be stored in a cool (preferably below 72°F), dry and dark place out of direct sunlight, fluorescent light, ultraviolet light and away from electrical and welding equipment.

Direct sunlight or fluorescent light may cause the bladder to weather check and/or dry rot, which appears on the bladder surface as cracks.

OILAIR ORIGINAL EQUIPMENT LIMITED WARRANTY

OILAIR warrants each of its products against original defects in materials and/or workmanship and will repair or replace any product which is determined by OILAIR, within one (1) year of its installation, to be defective or below the manufacturing standards of OILAIR, including warranty of merchantability, fitness for the purpose intended, consequential and incidental damage of liability. This Original Equipment Warranty which anticipates installation by third parties, expressly excludes warranty of merchantability, fitness for the purpose and consequential or incidental damage liability.

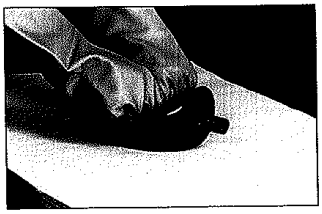
OPERATION OF ANY OILAIR ACCUMULATOR OR COMPONENT BEYOND THE MANUFACTURER'S WORKING PRESSURE LIMITATIONS, OR IN VIOLATION OF ANY OPERATING OR SERVICE INSTRUCTION STAMPED OR ATTACHED TO THE PRODUCT, EXPRESSLY VOIDS THIS WARRANTY AND MAY BE DANGEROUS TO LIFE AND PROPERTY.

44.15

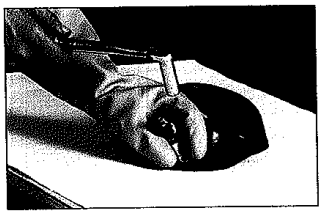
OILAIR maintenance

Cleaning & Inspection

Clean all the metallic parts of the accumulator with an organic solvent. Avoid exposing the rubber parts to the solvent to prevent any attack on the rubber. Inspect the condition of the metallic components of the fluid port (poppet, spring, stop nut and piston) and replace the complete fluid port assembly if any of the components are damaged. Push the poppet valve head to make sure it slide freely through the guide in the fluid port. Clean the bladder with isopropyl alcohol or equivalent. Inspect the bladder for any visual damages. Replace if necessary. Check that there is no corrosion inside or outside of the shell. Replace all parts considered defective. The "O" Rings and back up rings must be replaced.

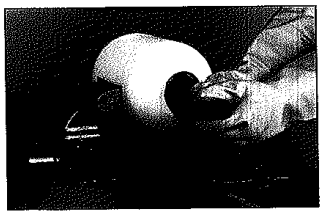


1. Squeeze the bladder to discharge air from it by rolling it up from the bottom.



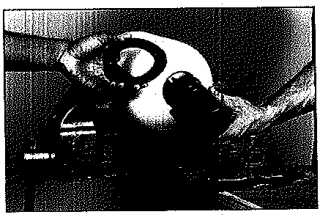
2. Then install the valve adaptor to a torque value of 90 in.lbs (10 Nm). (For the two piece valve stem design).

3. Then install the valve core to a torque value of 4 in.lbs. (.45 Nm). (For the one piece valve stem design).



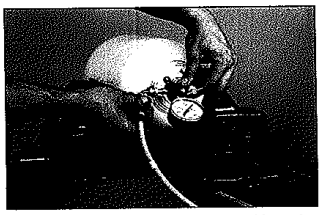
4. Lubricate the accumulator shell and the bladder either with the medium used in the system or a similar product. Attach the bladder pull rod to the valve and fold the bladder and pull into the shell. Avoid twisting the bladder while pulling it into the shell.

5. Reinstall the name plate and the jamnut. Do not tighten the jamnut.

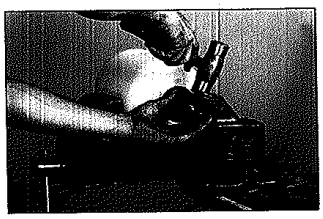


6. Insert the fluid port and the anti-extrusion ring into the shell.

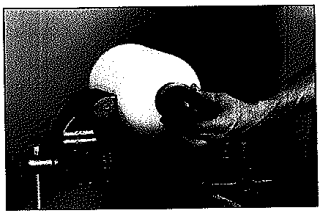
7. Slide the anti-extrusion ring over the fluid port. Pull the fluid port through the port opening.



8. Install a charging and gauging assembly on the gas valve and put a low precharge of 30 psig (2 bar) to seat the fluid port and the anti-extrusion ring in place.



9. Hammer slightly the fluid port body at various angles using plastic hammer.



10. Install the metal back up, O-ring, rubber back up and spacer in that order.

11. Tighten the locknut .

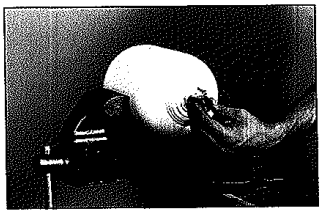
44.16

DISASSEMBLY

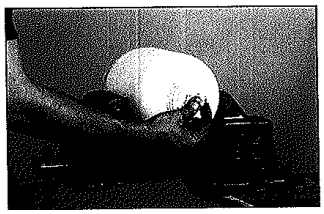
OILAIR maintenance

Instructions for disassembling the accumulator.

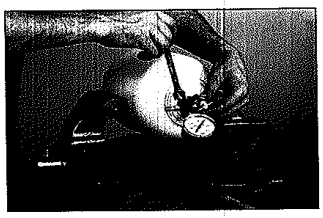
Release all the hydraulic system pressure in a safe manner (eg: bleed valve or automatic discharge valve installed in the system). Remove the accumulator from the hydraulic system and place it horizontally in a vice or a clamping device. Protect the clamping jaws with wood or rubber so as not to damage the accumulator shell.



1. Remove the protective cap on the gas valve.



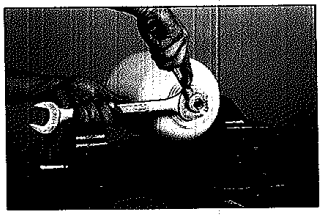
2. Remove the valve sealing cap from the valve adaptor.



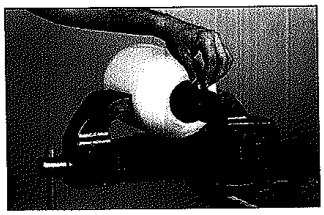
3. Connect a suitable charging & gauging assembly to the valve adaptor and release all the nitrogen precharge pressure from the accumulator until the gauge reads zero.

4. Remove the valve adaptor from the gas valve body. (2 piece valve stem design)

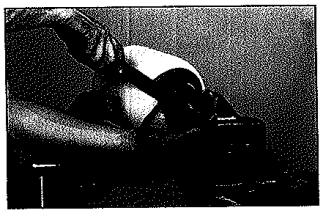
5. Remove the valve core if the gas valve body has a core inside. (1 piece valve stem design)



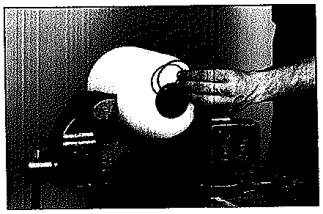
6. Remove the jamnut and the name plate from the gas valve body. While removing the jamnut hold the gas valve body with a wrench so that the bladder will not rotate.



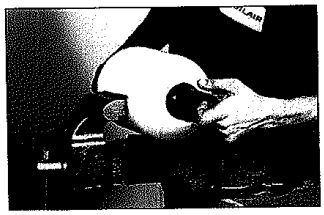
7. Remove the bleeder plug from the fluid port. Loosen locknut with a spanner wrench by turning 2 or 3 threads, then push the fluid port body into the accumulator shell if there is no hydraulic pressure. *



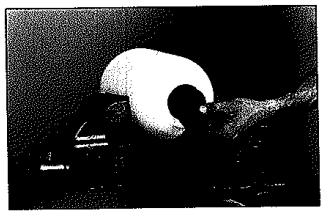
8. Remove the locknut and then remove the spacer.



9. Push the fluid port body into the shell and remove the back-up ring , "O" ring and the metal back-up ring.



10. Slide the anti-extrusion ring off of the fluid port. Carefully fold the anti-extrusion ring until it's sufficiently folded to allow removal from the shell and remove fluid port from the shell.



11. By squeezing the bladder discharge as much air as possible by hand, then pull the bladder out slowly through the fluid port opening of the shell.

44.17

* If the fluid port body does not go inside, then there is some hydraulic pressure left inside the accumulator. If this happens, do not attempt to do any maintenance. Consult the factory.

OILAIR maintenance

Instruction Manual for the Accumulator

INSPECTING THE CONDITION OF DELIVERY

After unpacking the accumulator, inspect it for possible damage caused during transit.

1. Inspect the Locknut and the Jamnut and bleeder plug for tightness.
2. Check the precharge tag. The accumulator is either precharged to 25psi (1.7 bar) for shipping purpose or charged to a pressure specified on the purchase order.
3. Check that the working pressure stamped on the accumulator shell is equal to, or greater than, the maximum pressure of the system.

PROTECTION & PRECAUTIONS

1. Protective Gloves:
   Use chemical resistant gloves, if needed, to avoid prolonged or repeated skin contact from the cleaning solutions or solvents.
2. Eye protection:
   Use safety glasses before performing any maintenance on the accumulator.

OTHER PRECAUTIONS:

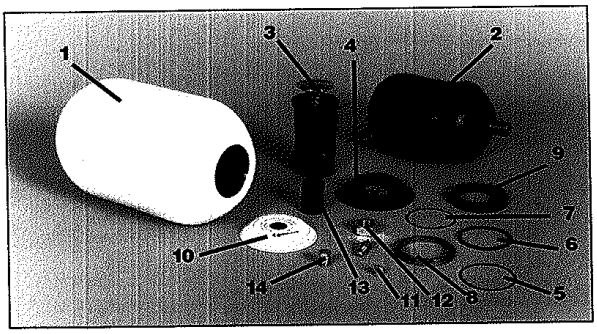
DO NOT operate the accumulator beyond the allowable working pressure and temperature limitations stamped or attached to the product.
Use only the tools recommended in this manual to perform the maintenance procedures.
Use only DRY NITROGEN for charging accumulator. NEVER USE OXYGEN OR AIR, due to risk of explosion.
Use only valve cores approved for accumulator service and NEVER USE AN AUTOMOTIVE TYPE VALVE CORE.

PRECHARGING:

1. Use DRY NITROGEN ONLY to precharge the accumulator.
2. Use the charging assembly recommended in this manual to charge the accumulator to the required precharge if it is not already charged at the factory.
3. Check the charging valve for leaks using snoop or soap water.
4. Tighten the jamnut at the gas valve stem and also the locknut on the fluid port with a wrench.
5. Tighten the protective cap on the gas valve stem to hand tight.
6. Check the gas precharge pressure periodically. This must be done after all the hydraulic system pressure is released. The precharge must be checked once in the first week of operation, and then every six months during normal working or every month during high cycling or high temperature condition.

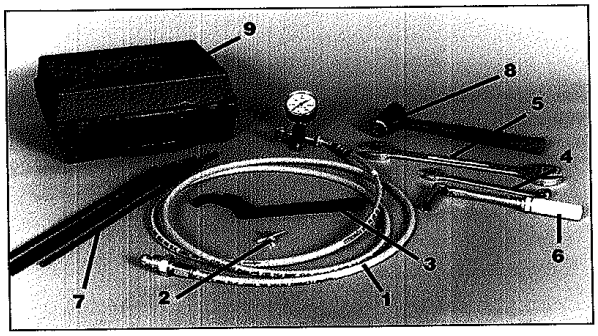
INSTALLATION:

The accumulator should be mounted vertically with fluid port on bottom and gas valve on top with supporting brackets and saddles specifically designed for accumulator mounting. For other type of mounting, consult factory.
Fluid port must not be used to support the accumulator. Do not weld any support to the accumulator. For ease of maintenance and periodic checking of the precharge, an automatic discharge valve fitted between the accumulator and the system pressure line is recommended.



SPARE PARTS

1. Shell
2. Bladder
3. Plug & Poppet Assembly
4. Anti Extrusion Ring
5. Metal Back Up Ring
6. "O" Ring
7. Rubber Back Up (Not available for 1 quart and 1 gallon sizes)
8. Spacer
9. Locknut
10. Name Plate
11. Valve Cap
12. Hex Jamnut
13. Protective Cap
14. Bleeder Plug



TOOLS

1. Charging & Gauging Assy - P.N. CG-3000
2. Valve Core Tool - P.N. 11-501
3. Spanner Wrench - P.N. 11-502
4. Open End Box Wrench (Corresponds to valve stem wrench flats width)
5. Open End Box Wrench (Corresponds to hex jamnut size)
6. Ratchet Wrench (Corresponds to elastic stop nut and bleeder plug size)
7. Bladder Pull Rod - P.N. 11-503
8. Rubber Mallet
9. Tool Box

44.18

Cranes and Hoists

Identification

1. All Service On Site employees will ensure a crane or hoist must be permanently identified by the legible display of a manufactures name, model and serial number on the structure.
2. Each major interchangeable structural component of a crane or hoist must be legibly marked to identify compatibility with the crane or hoist and be uniquely identified.

Rated capacity

1. The rated capacity of a crane or hoist must never be exceeded.

Rated capacity indication

1. The rated capacity of a crane or hoist must be permanently indicated on the superstructure, hoist and load block of the equipment except as provided by subsection 3 and must on a crane or hoist manufactured after January 1, 1999 is indicated in SI (metric) units.
2. The rated capacity of a monorail crane must be permanently marked on the hoist and in 10m (33ft) intervals on the monorail beam.
3. Rated capacity indication is not required on a crane or hoist if the rated capacity is affected by
    a. The vertical or horizontal angle of a boom or jib
    b. The length of a boom or jib
    c. The position of a load supporting trolley
    d. The use or position of out riggers to increase the stability of the structure

Load Charts

If the rated capacity is affected by a factor listed in section14.5 (3) a legible load chart, showing the rated capacity in all permitted working positions and configuration of use must be

a. Permanently posted on the equipment or
b. Issued to the equipment operator who must have it available at all times when operating the equipment.

Boom angle indicator

A crane or hoist with a boom movable in the vertical plane must have a device to indicate the boom angle if the rated capacity is affected by the boom angle and the device must be readable by the operator at the control station

Boom Extension and load radius indicators

A crane or hoist must have a means device to indicate the boom extension or load radius if the rated capacity of the equipment is affected by boom extension or load radius.

Manual

1. The manufacturer's manual for each crane and hoist must be reasonably available to the workplace where the equipment is being used.
2. The manual must show the approved methods of erection, dismantling, maintenance and operation of the component parts and of the assembled crane or hoist.
3. The portions of the manufacturer's manual, or copy of them, related to safe operations of the crane or hoist must be available at the workplace where the equipment is boing used.

Inspection and maintenance

1. Each crane and hoist must be inspected and maintained at a frequency and to the extent required to ensure that every component is capable of carrying out its original design function with an adequate margin of safety.
2. A crane or hoist must not be used until any condition that could endanger workers is remedied.
3. Any repair to load bearing components of a crane or hoist must be certified by a professional engineer or the original equipment manufacturer as having returned that component to a condition capable of carrying out its original design function with an adequate margin of safety

Inspection and maintenance records

Records of inspection and maintenance meeting the requirements of Part 4 (general conditions) must be kept by the equipment operator and other persons inspecting and maintaining the equipment ,for

a. A crane or hoist with a rated capacity of 1000kg(2200 lbs) or more
b. A crane or hoist used to support a worker
c. A tower
d. A mobile crane ,boom truck or aerial ladder crane
e. A side boom tractor or pipe layer
f. A construction material hoist
g. A chimney hoist and
h. Any other type of hoisting equipment specified by the board

Fire extinguisher

A fire extinguisher with a 10 BC rating will be available for each crane

Annual Inspection

1. A mobile crane or boom truck must be inspected in accordance with good engineering practice at intervals not exceeding 12 months, and certified as safe for use by a professional engineer ,the crane manufacturer or the crane manufacturer's authorized representative
2. A mobile crane or boom truck temporarily located at a remote workplace may have the annual inspection and certification required by subsection (1) delayed up to 3 months after its due date, but the next annual inspection and certification must be done within 12 months of the due date.

Crane Lifting and Hoisting Procedure

Introduction:
Crane lifting and hoisting is performed to assist workers in handling heavy, long and awkward equipment. Workers must be trained on the rigging requirements and use of crane prior to use. Please refer to rigging handbook.

Steps:

1) Perform and document the pre-trip on the picker/crane using the inspection form. Make sure the floats are available and rigging equipment is in good condition. Check hydraulic fluids. Inspect for current Crane Certification decal.
2) Spot the picker/crane on location a safe but reasonable distance away from the item to be lifted.
3) Visually inspect for any OVERHEAD LINES in or around your picker radius.
4) Engage your PTO for use of picker/crane.
5) Pull out floats and place them on solid and secure ground, so that the stabilizing legs will land on them.
6) Level out the picker/crane using the stabilizer legs.
7) Unlatch the crane hook from its secure position. Lift up the boom and extend the boom out for use.
8) Bring out the lifting slings, cables and clevises for visual inspection.
9) Make sure that the lifting slings, cables and clevises are rated for the proper load that they are about to take. Inspect the lifting equipment for wear against the manufacturer's guidelines (gaps between openings, tears on slings, etc.)
10) Put the slings, cables and clevises in the proper place for lifting the load safely and secure them. Double check that all slings, clevises and cables are secured for lifting (do not allow others to perform this task for you. Example: consultant).
11) Have a pre-job meeting with all workers involved in the lift. Discuss using a tag line, about the lifting rout the object will take and about the final resting spot of the lifted equipment, designate a competent person to be the signaller. Keep the spotter in visual contact at all times.
12) Lift object and set into desired place using the pre-lift meeting details (Example: on deck of truck).
13) All Service On Site employees who operate a lifting device must be certified to do so. Certification must be provided to employer prior to using devices

Hazards	Controls
Contact with Overhead Lines	-Stay 7m away from any overhead lines (Safe Limit of Approach)
Equipment Failure	-Annual Crane Certification Inspection -Inspection of rigging prior to every lift -Know the weight of the equipment being lifted, use only rigging rated for the lift. -Pre-trip inspections completed on Tractor and Picker/Crane -Place outriggers on solid even ground -Personnel basket must comply with CSA Standard -Lift calculations must be completed for any lift exceeding 70% of a cranes rated capacity
Communication Failure	-Hold a pre-lift meeting with everyone involved -Have a planned route the object will travel -Use Enform hand signals and/or 2-way communication -Keep visual contact with spotter at all times, stop lift if visual is obstructed -Do not pass load over workers if possible -Do not stand or work under a suspended load
Human Error	-Use workers who have a Boom Truck Crane Apprentice who has contact with a Journeyman; or a certified Crane Journeyman
Pinch Points	-Use tag lines when a person can be caught between load being moved

SERVICE ON SITE

Inspection Date: _____ Crane Manufacturer:_____

Inspector Signature _____ Unit # _____

Any deficiency shall be carefully examined and determination made as to whether they constitute a safety hazard.

In addition to the inspection items listed all cranes must be inspected as specifically recommended by the manufacturer.

PRE USE DAILY CHECK LIST

Yes	No	
___	___	Inspect all control mechanisms for maladjustment interfering with proper operation. Daily.
___	___	All control mechanisms for excessive wear of components and contamination by lubricants or other foreign matter.
___	___	All safety devices for malfunction.
___	___	Deterioration or leakage in air or hydraulic systems, daily.
___	___	Crane hooks for deformations or cracks.
___	___	Rope reeving for non compliance with manufacturer recommendations?
___	___	Electrical apparatus for malfunction, signs of excessive deterioration, dirt and moisture accumulation.

Comments:

_____

_____

_____

_____

_____

SERVICE ON SITE

MONTHLY CRANE INSPECTION

	Yes	No
HOOK:		
1. Throat opening more than 15%	____	___
2. Hook in twisted (not straight or on one plane).	____	___
3. More than 10% wear at the throat.	____	___
4. Any cracks or corrosion	____	___
WEDGE SOCKETS:		
1. Wire rope size and wedge socket is a proper match.	____	___
2. Dean end of the wire rope is secured properly.	____	___
SHEAVES:		
1. The wire rope is seated properly in the sheaves	____	___
2. The wire rope keeps (keep cable from coming out of the sheaves) are in good shape	____	___
3. Check the bolts on the sheave plates for tightness	____	___
4. Check for any weld cracks.	____	___
5. Signs of bent or buckled panels or parts.	____	___
BOOM:		
1. Hydraulic leaks.	____	___
2. Check all 4 sides of boom for bent parts or buckled panels	____	___
3. Boom extensions working properly	____	___
TIRES:		
1. Properly inflated (look on load charts for Manufacturing Recommendations)	____	___
2. Cuts in the tires or bulges.	____	___
FLUIDS:		
1. Crank case oil is clean and full.	____	___
2. Antifreeze level	____	___
3. Check hydraulic oil level.	____	___
MISCELLANEOUS:		
1. Out rigger pads not cracked.	____	___
2. Hydraulic hoses in good condition.	____	___
3. The drum cable is properly spooled.	____	___
4. Limit switch working.	____	___
5. Fire extinguisher is available.	____	___
6. Load chart visible.	____	___

7. Boom angle indicator is available and working ____ ___
8. Back alarm is working ____ ___
9. Engine is started and gauges are checked, working properly ____ ___
10. Out riggers are extended out; working properly. ____ ___
11. Crane is leveled, working properly. ____ ___
12. Out rigger pads available. ____ ___
13. Swing through 360 degrees, does boom angle indictor stay the same throughout rotation. ____ ___
14. Does the horn work. ____ ___
15. Does boom swing break work properly? ____ ___
16. Extend out the boom, are all sections extending evenly. ____ ___
17. Brakes & brake systems check out. ____ ___
18. Safety pressure relief valves check out. ____ ___

Comments:

_____

_____

_____

_____

_____

_____

_____

_____

POWER MOBILE EQUIPMENT

Service On Site recognizes the hazards associated with the operation of heavy equipment/mobile equipment. This policy has been developed to establish guidelines to eliminate injuries or fatalities related to this type of equipment.

Scope

This policy applies to all free moving mobile equipment that may be propelled by gasoline, propane, diesel or electricity. Only competent personnel may operate heavy equipment/mobile equipments. An individual's competency must be demonstrated by successful completion of the training and evaluation process specified in this policy. This policy establishes requirements to work in or around all types of mobile equipment.

Service On Site employees are required to comply with the procedures outlined in this document. Individual departments / agencies who have an existing Heavy Equipment/Mobile Equipment Safety Policy or Program in place may continue to use that program if it provides the same degree of protection.

All Service On Site powered mobile equipment must be inspected as per manufacturers specifications. Inspections must be done by a qualified inspector. Any deficiencies found must be immediately corrected by a qualified person before going back into work force. The daily pre and post inspections must still be done.

Definitions

Competent Person - Person who by possession of a recognized degree in an applicable field or a certificate of professional standing, or who by extensive knowledge, training and experience, has successfully demonstrated the ability to solve or resolve problems relating to the subject matter and work.

Free Moving Mobile Equipment - Operator controlled mobile equipment not constrained by Fixed Rails and can include Industrial Fork Trucks, Aerial Lifts, Buggies, Sweepers and Backhoes.

Mobile Equipment - Free moving equipment propelled/powered by gasoline, propane, natural gas, diesel or electricity used to haul, transport, excavate, move, maneuver, or hoist materials, equipment, products or personnel.

Pre-use Inspection - Required inspection of a piece of mobile equipment completed when the facility has not operated the mobile equipment for each shift.

Responsibilities

Management

Ensure that this policy and all department rules in the equipment training procedure are followed.

Ensure a Competent Person is available for heavy equipment/mobile equipment training.

Provide a resource for training the operators of heavy equipment/mobile equipment that is needed to operate all equipment safely.

Supervisors

- Enforce this policy and all departmental rules in the equipment training procedures.
- Identify and provide the appropriate training for the Competent Person to conduct heavy equipment/mobile equipment training.
- Ensure that operators of heavy equipment/mobile equipment's are trained, evaluated, observed and given skills needed to operate the equipment safely.
- Document random observations and on the spot corrections or department refresher training.
- Enforce these safety procedures and rules as related to heavy equipment/mobile equipment such as but not limited to seatbelt use.

Employees

- Follow this policy and other safety rules pertaining to the pre-shift inspection of, operation and routine maintenance of heavy equipment/mobile equipments.
- Perform pre-shift inspections prior to start of work for respective equipment.
- Report any pre-shift inspection deficiencies with equipment to their immediate supervisor for maintenance or further action prior to operation of the equipment.
- Obey traffic signs and signals and audible or visual warning devices.

General Operating Requirements

- The location shall determine the vehicle speed limit and post the information.
- All incidents involving mobile equipment shall be formally investigated following Service On Site Accident Investigation Guidelines.
- Equipment operators are responsible for keeping the equipment under control at all times.
- All equipment operators must obey traffic signs and signals, and audible or visual warning devices.
- Alteration or modification of equipment is not permitted without prior written consent of the manufacturer and location management.

- When parking equipment, the operator must not block fire aisles, access to stairs, stretcher storage, fire equipment, or other emergency response areas or equipment.
- Stunt driving and horseplay are strictly forbidden.
- All equipment rated capacities shall not be exceeded.
- Equipment operators shall perform a pre-shift inspection on all equipment using the appropriate form in the Attachments.
- Any deficiencies found in the pre-shift inspections shall be reported and the equipment taken out of service until repairs are made and equipment is safe to operate.
- The right of way must be yielded to emergency vehicles.
- Riders are not permitted except for the operator unless approved by location management.
  Operators must keep both hands free such as not eating, reading and drinking while operating.

Free Moving Equipment or Vehicles

- If governors are in use and are set to a specific speed, they must not be removed or altered in any way.
- Equipment operators must maintain a safe following distance from other equipment or vehicles (three truck lengths or three seconds).
- For intersections with obstructed views, the equipment operator is responsible to slow down, sound the horn and use fixed convex mirrors, where provided to check for cross-traffic.
- Equipment operators must stay within the floor markings and out of the pedestrian lanes.
- Seatbelts must be worn at all times.
- Load backrest extension will not increase the maximum weight, which can be handled and provides overhead protection for operators and helps prevent parts of the load from falling on employees.
- Excess counter-weighting is forbidden.
- Unstable or unsafely arranged loads shall not be picked up and restacked, banded, taped, or shrink-wrapped.
- Transfer loads from broken pallets or containers to sound ones before picking them up and promptly remove these same pallets or containers to void their future use.
- The proper attachments must be used for the respective equipment.
- Be aware of bystanders and pedestrians that may be in the target zone of an unstable load.
- Level the top of the forks and do not lift with only one fork.
- Lift from the broadest side of the load and set the forks at the greatest width the pallet allows.
- Fork extensions shall be used for deep loads and can cause a pallet behind the load being lifted to move or fall over.

- Heavy equipment must be wedged; a spotter used; and controls not run from the floor unless made for that type of operation.
- Off-center loads must be strapped if it could become unstable; operate slower; and use controls such as raise and tilt smoothly.
- Center of gravity of the load must be as close to the mast as possible. The stability is greater as the center of gravity of the load is brought closer to the front axle.
- Tilt the mast gently backward to stabilize the load when the load is elevated.
- Loads become less stable when the load is raised, turning, on slopes, tilting the load, and on rough or uneven surfaces.
- Traveling surfaces must be able to support the weight of the equipment and the load.
- Railroad tracks and similar edges shall be crossed at a 45-degree angle, where possible.
- There must be adequate overhead clearance maintained such as from lights, sprinklers and pipes.
- Employees are responsible to report and help correct leaning stacks.
- Equipment operators must maintain a safe distances from edges such as elevated ramps, platforms and docks.
- Equipment operators must not pass forks or attachments over anyone, nor shall anyone pass under them whether the equipment is loaded or empty.
- Equipment operators shall not pass other vehicles moving in the same direction at intersections, blind spots or other dangerous locations.
- Equipment operators shall check that wheels are blocked; brakes are set; and use dock locks before loading a trailer.
- Dock boards or bridge plates must be substantial to hold the equipment and the load; secured; and equipment operators travel slowly on them.
- Condition of the floorboards must be satisfactory and enough overhead clearance prior to boarding a trailer.
- Equipment operators need to look back over both shoulders before changing direction or moving in reverse.
- Equipment operators shall travel with the load as close to the floor as possible (one or two inches at the heel of the forks and four to six inches at the tips, with the load resting against the mast).
- Equipment operators must follow rules for refueling.
- When traveling loaded on ramps greater than 10%, equipment operators shall always have the load upgrade.
- When traveling unloaded on ramps, forks shall be down ramp and mast tilted back.
- When leaving free moving equipment or industrial trucks unattended (greater than 25 feet away is abandoned), the operator shall place the forks on the floor; put the truck in neutral; set the brakes; shut-off the truck; and block the wheels if on a ramp.

- Equipment operators shall keep their bodies within the dimensions of the truck and not between the mast uprights.
- When parking near railroad tracks, equipment operators must park no closer than 25 feet from the center of the railroad tracks.
- Equipment operators shall travel with the load trailing if it obstructs their view.
- Equipment operators must avoid running over loose materials, uneven or soft surfaces and slippery areas including oils slicks. The equipment operator must report and help correct these situations.
- Equipment operators shall slow down for the conditions including wet or slippery floors and weather factors.
- Equipment operators shall avoid running on ice and snow, where possible.
- All free moving mobile equipment shall have back-up alarms.
- Back-up alarms and lighting must be inspected during the pre-shift inspections and any deficiencies corrected.
- Flatbed truck operators shall avoid steering wheels all the way in either direction.
- The load must clear the floor for a flatbed truck before engaging the reverse speed.
- Flatbed truck operators shall pre-examine loads to ensure they do not overload the truck.
- Flatbed truck operators shall not use the reverse direction power for braking.
- Flatbed truck operators shall allow sufficient clearance for lowering loads into storage spaces.

Mobile Equipment Safety Requirements

Forklift

(1) Only certified personnel are permitted to operate the forklift.
(2) The operator shall perform pre-shift inspections. The form shall be readily available for review.
(3) Defective equipment must be locked out until repairs are complete.
(4) A preventative maintenance program shall be utilized and documented.
(5) Seatbelts shall be worn at all times the forklift is being operated.
(6) Make sure there is a clear path before moving loads.
(7) Always move at a safe speed.
(8) Always face in the direction of travel.
(9) When necessary to travel in reverse, or there is obstruction to vision, have another person guiding.
(10) Always sound horn when coming around blind corners, at intersections or traveling in reverse.
(11) In picking up a load, be sure forks are set squarely and as far as possible under the load. Never raise or lower loads while travelling. Whether loaded or empty forks shall be carried as low as possible.

(12) Never swing or suspend loads over people. No one is permitted to walk or stand under raised material handling equipment.
(13) On inclines, forklifts must be driven with the load on the upgrade side of the driver.
(14) Check to make sure loads are firmly fastened and positioned to prevent tipping or slipping.
(15) Avoid any action that might dump the load.
(16) Moveable or replaceable forks must be firmly in place by use of a proper securing pin.
(17) Never use improvised attachments. Use only those approved by the manufacturer and be certain all attachments are properly secured.
(18) Only the operator is permitted to ride the forklift.
(19) The forklift may not be left unattended unless the load is lowered, controls are in neutral, brakes are set and the lift is turned off.
(20) When the forklift is parked on an incline the wheels shall be chocked.
(21) The forklift shall be used only for the purpose for which it is designed. Raising personnel on the forks, for example, must be prohibited.

Aerial Lifts

(1) Lift controls shall be tested prior to use to ensure safe working conditions.
(2) Manlift must not be used to carry any load that does not completely fit into the basket, or, with the addition of the operator's weight, exceeds the rated capacity of the lift.
(3) An exception to the above rule can be allowed for installation of pipe or conduit. Pipe or conduit less than ten feet long may be straddled across the top of the manlift provided the total load (operator and materials) is not in excess of the rated capacity of the lift. Operators must abide by safe lifting limits as prescribed in these procedures and must survey the area for possible contact with electrical conductors.
(4) Only the appropriate departmental personnel shall approve any exceptions to the above.
(5) Operators shall always stand firmly on the floor of the basket and not sit or climb on the edge of the basket or use planks, ladders or other devices for work position.
(6) The brakes must be set and outrigger, when used, shall be positioned on pads or a solid surface. Wheel chocks shall be installed before using an aerial manlift on an incline surface.
(7) The aerial manlift may not be moved when the boom is elevated in a working position with personnel in the basket. The exception is for equipment specifically designed for this type of operation.
(8) If the aerial manlift is to exceed 16 feet inside a facility, all overhead cranes must be locked out and tagged or an observer must be in place to ensure the safety of the personnel.

Maintenance

The location shall follow the manufacturer's recommendations in their equipment preventative maintenance program.
Only designated maintenance personnel shall be authorized to perform service on equipment.
Maintenance shall conduct a pre-release inspection on equipment prior to service.
Inspections should be reviewed periodically and retained for three months.

FORKLIFT DAILY (Each Shift) CHECKLIST

Vehicle Description _____**Operator**_____

Date _____**Supervisor**_____

Check: (S) each safe item, (D) each defect, NA for non-applicable

_____(1) Engine Oil Level
_____(2) Radiator Water Level
_____(3) Seat-Belts
_____(4) Hydraulic Fluid Level
_____(5) Gauge and Instruments
_____(6) Light (front and rear)
_____(7) Warning Device
_____(8) Brakes (hand and foot)
_____(9) Steering and Hydraulic controls
_____(10) Tires and Wheels
_____(11) Fluid Leaks
_____(12) Physical Damage
Y___N___ Recent _____Does it affect safe operation? _____
_____(13) Exhaust System
_____(14) Air Cleaner
_____(15) Hour Meter Reading
_____(16) Neutral Safety Switch

Service Required? Yes____ No____ Technician Called? Yes ____No ____
By Whom? _____ Date: _____
Service Performed? Y___N___ By Whom? _____
Date: _____ Lock/Tag/Try Required? Y__N__

Vehicle Back in Service? Y___N___ Date: _____ _____

WHIMS 2015 / SDS

All Service On Site employees that handle or work near hazardous products will only do so once they have had a WHIMS 2015 training course, and only then once office has received a copy of your certificate.

Supplier SDS

1. When Service On Site acquires a hazardous product for use at a workplace must obtain a supplier SDS for that hazardous product if the supplier is required to prepare a SDS
2. When a supplier SDS obtained under subsection(1) for a hazardous product is 3 years old , the employer must, if possible obtain form the supplier an up to date supplier SDS for the product if any if the product remains in the workplace
3. Is Service On Site is unable to obtain a SDS as required by subsection(2) ,the employer must add to the existing supplier SDS any new hazard information of which the employer is aware applicable to that hazardous product on the basis of the ingredients disclosed in that document.
4. Service On Site may provide at a workplace a SDS in a format different from the format provided by the supplier or containing additional hazard information if the SDS provided by the employer
    a. Subject to section 5.18 , contains at least the content of the supplier SDS and
    b. The supplier SDS is available at the workplace and the SDS provided by the employer indicates that fact

Service On Site will ensure that all supplier labels on hazardous product containers are not removed, modified or altered if containers have remaining product inside. If a supplier label becomes illegible, removed or detached Service On Site will immediately replace the label with another supplier label or worksite label.

*__Hazardous products will not be purchased and put into use without obtaining a copy of the SDS Sheet and ensuring that copies are distributed to all workers and to the office. Hazardous products must meet the purchasing guidelines of the company.__

Workplace label for decanted products

1. If a hazardous product in a workplace is in a container other than the container in which it was received from a supplier, the employer must ensure that the container has a workplace label applied to it.
2. Subsection (1) does not apply to a portable container that is filled directly from a container that has a supplier label or workplace label applied to it.
   a. If the hazardous product
      - Is under the control of and is used exclusively by the worker who filled the portable container.
      - Is used only during the shift in which the portable container was filled, and
      - The content of the container is clearly identified , or
   b. If all of the hazardous product is required for immediate use.

Availability of an SDS

1. Service on Site must ensure that a copy of SDS is made Readily available.
   - At the workplace to workers who may be exposed to the Hazardous product, and
   - To the worker health and safety Representative, as applicable.

2. Service On Site will make an SDS readily available, it may be Made available on a computer system if Service On Site
   - Takes all reasonable steps to keep the system in active working order,
   - Makes the SDS readily available on the request of a worker, and
   - Provides training in accessing computer-stored SDS to
     a. one or more workers working at a workplace where the SDS is available on a computer terminal, and
     b. members of the joint committee or the worker health and safety representative, as applicable

SDS INFORMATION

A Safety Data Sheets , often referred to as SDS, is a detailed informational document prepared by the manufacturer or importer of a hazardous chemical, which describes the physical and chemical properties of the product.

Information included in a Safety Data Sheets / SDS aids in the selection of safe products, help employers and employees understand the potential health and physical hazards of a chemical and describes how to respond effectively to exposure situations.

The format of a Safety Data Sheets / SDS may vary but there is specific information that must be included in each sheet. It is useful to review this information to increase your ability to use a Safety Data Sheets / SDS.

<u>All Safety Data Sheets / SDSs should include the following information:</u>

Section 1: Chemical Product & Company Information – provides the chemical name on the label to the SDS. Also listed are the name, address and the phone number of the company, manufacturer or distributor who provides the chemical.

Section 2: Composition & Ingredients – identifies all hazardous ingredients, OSHA permissible exposure limits (PEL & ACGIH (American Conference of Governmental Industrial Hygienists) Threshold Limit Values (TLVs).

Section 3: Hazard Identification – information about the health effects of exposure. Description of the material appearance, potential symptoms & health effects, routes of entry & target organs.

Section 4: First Aid – Provides first aid procedures for each route of entry.

Section 5: Fire Fighting – information on the explosive & fire properties, extinguishing agents and items and general fire-fighting information.

Section 6: Accidental Release – information on material spill response, containment and required spill response PPE.

Section 7: Handling and Storage – information about chemical storage & handling and measures to prevent over-exposure.

Section 8: Exposure Controls & Personal Protection – engineering controls & personal protective equipment to reduce chemical exposure.

Section 9: Physical & Chemical Properties – this section tells about the physical and chemical properties of the chemical. Characteristics include appearance, odor, physical state, pH, vapor pressure vapor density, boiling point, freezing/melting point, solubility in water and specific gravity or density.

Section 10: Stability & Reactivity – all potentially hazardous chemical reactions are identified in this section. Includes information on chemical stability, conditions to avoid, incompatibility, hazardous decomposition and hazardous polymerization.

Section 11: Toxicological Information – provides information such as acute data, carcinogen potential, reproductive effects, target organ effects, and other physiological aspects.

Section 12: Ecological Information – information concerning the environmental impact if a chemical is released into the environment.

Section 13: Disposal Considerations – information concerning proper chemical disposal, recycling and reclamation.

Section 14: Transport Information – shipping information includes the hazardous materials description, hazard class and the identification number (UN or NA numbers).

Section 15: Regulatory Information – provides information about applicable federal regulations.

Section 16: Additional Information – provides other information about the chemical such as hazard ratings, preparation and revisions of the SDS, and label information.

WHMIS 2015 Pictograms

	This pictogram is used for indicating flammable gases, aerosols, liquids and solids; pyrophoric liquids, gases and solids; self-heating substances and mixtures; substances and mixtures that produce flammable gases when in contact with water; organic peroxides; and self-reactive substances and mixtures.		For hazardous products that can cause death or acute toxicity after exposure to small amounts of the products, this Pictogram is used to warn users of the potential dangers. It is placed on labels of materials with acute oral, dermal and inhalation toxicity. For instance, the pictogram can be used on containers for cleaning chemicals
	The pictogram is flame over a circle plus a distinctive red "diamond" shaped border. It is used to indicate oxidizing gases, liquids and solids.		This Pictogram is used to indicate a product that causes or is suspected of causing serious health effects. It forms part of labels of products that cause respiratory sensitivity, skin toxicity, germ cell mutagenicity, carcinogenicity, reproductive toxicity, aspiration hazard, specific target organ toxicity after single exposure, and specific target organ toxicity after repeated exposure.
	This pictogram is used to indicate the hazard of gases under pressure such as dissolved gas, liquefied gas, compressed gas and refrigerated liquefied gas.		Used for hazardous products that cause less serious health effects, the Exclamation Mark Pictogram indicates acute toxicity (oral, dermal or inhalation), skin corrosion (irritation), eye irritation, skin sensitivity, respiratory damage, and specific target organ toxicity on single exposure.
	The corrosive pictogram indicates a substance that can irritate the skin and eyes, and damage metals. It is used for hazardous products that are corrosive to metals, cause skin irritation (corrosion), and cause serious eye irritation or damage.		Indicates the presence of organisms or toxins that can cause diseases in humans and animals, The Biohazardous Infectious Materials pictogram has been retained from WHMIS 1988. The pictogram is used on labels of biohazardous infectious materials. For instance, it is used on growths of micro-organisms like E. coli or salmonella bacteria cultures.
	Used to indicate explosion or reactivity hazards, the Exploding Bomb Pictogram is placed on the labels of self-reactive substances and mixtures, and on labels of organic peroxides.		This GHS pictogram has not been integrated into WHMIS, however it stands for Environmental Hazards.

TRANSPORTATION OF DANGEROUS GOODS

- Transportation of Dangerous Goods (TDG) Regulations were brought into effect to promote safety in the handling, shipping, transporting and receiving of dangerous goods by air, rail, road and marine modes. The regulations deal with four main areas-classification, documentation, safety marks and training.

- Anyone shipping, transporting, receiving or otherwise handling dangerous goods for the purpose of transporting them must be trained or working under the direct supervision of a trained person. A trained person must have a valid TDG training certificate.

- Goods regulated under TDG fall into nine classes as listed below. Some of these classes are further divided depending upon the nature and degree of hazard they present.

  Dangerous Goods Classification

Class 1	Explosives
Class 2	Compressed Gases
Class 3	Flammable Liquids
Class 4	Flammable Solids, Spontaneously Combustible and Water Reactive Solids
Class 5	Oxidizers and Organic Peroxides
Class 6	Poisonous and Infectious Substances
Class 7	Radioactive Materials
Class 8	Corrosive Substances
Class 9	Miscellaneous Substances

- A document containing certain information about the dangerous goods must accompany each shipment of the goods, unless a permit exempts the goods from this requirement.

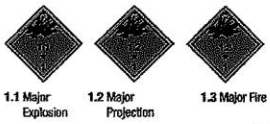
- Safety marks identify the dangerous goods and include placards, labels and a variety of package markings.

- “Dangerous occurrences” must be reported immediately to the police, employer, vehicle owner/leaser and the dangerous goods owner. Such events would include spills, bulk container damage, fire explosion and transportation accident involving dangerous goods.

Dangerous Goods Class Guide

CLEAR LANGUAGE EDITION

1 EXPLOSIVES



1.1 Major Explosion | 1.2 Major Projection | 1.3 Major Fire

** Add Compatibility Group*

1.4 Localized Explosion | 1.5 Insensitive Mass Explosion | 1.6 Extremely Insensitive

2 GASES

2.1 Flammable Gas | 2.2 Non-Flammable, Non-Toxic Gas | 2.3 Toxic Gas | Oxidizing Gas

3 FLAMMABLE LIQUIDS

4 FLAMMABLE SUBSTANCES

4.1 Flammable Solid | 4.2 Spontaneously Combustible | 4.3 Dangerous When Wet

5 OXIDIZERS / ORGANIC PEROXIDES

5.1 Oxidizer | 5.2 Organic Peroxides

6 TOXIC / INFECTIOUS SUBSTANCES

6.1 Toxic | 6.2 Infectious *(Label)* | 6.2 Infectious *(Placard)*

7 RADIOACTIVES

(Labels or Placards) | *(Placard only)*

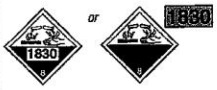
8 CORROSIVES

9 MISCELLANEOUS

UN NUMBER, PACKING GROUPS, MIXED LOAD

UN Number *Label*

UN Number *Placard*



Packing Groups

I Great Danger
II Moderate Danger
III Minor Danger

Mixed Load *Placard*

Hazard Identification and Risk Control

Service On Site employees will complete a task hazard assessment
for each new location they are working on. The assessment must be filled out with all employees present that are entering the site and must be filled out prior to entering location. If new hazards become noticed then all Service On Site personal on the location must stop work and conduct a new Hazard assessment
Service On Site will visit and revise if necessary hazard assessments every 12 months or when work relates duties or equipment are modified or when a previous unrecognized hazard becomes apparent.
If new equipment, additional workers or job scope changes service On Site will conduct a new hazard assessment will be done.

Purpose

Every worksite contains hazards that must be controlled to ensure worker safety. Hazard Identification and Risk Control describes how to conduct hazard identification within the operations to identify and assess the hazards that our workers are exposed to on a daily basis. It describes how inspections are used to identify and control hazards before they cause accidents. It also describes how to utilize hazard reporting as an ongoing process to focus attention on the hazards that arise during everyday operations and fill in the gaps between regularly scheduled inspections. All employees and subcontractors will be trained on risk assessment and hazard identification.
The review process is to minimize the risk of the hazard becoming more severe and subsequently causing major injury, damage to property or loss of process and to ensure that they do not create any “new hazards”.
The hazard identification and controls will be designed and followed to meet legislative requirements

Definitions

Hazard: a source of danger; potential for loss or injury; a condition or practice with the potential for accidental loss.

Risk: the chance of a loss occurring; a measure of the probability and potential severity of harm or loss.

Types of hazards that you may find:

- Slip/trip/fall hazards (i.e. cords on floor, slippery surfaces, spilled liquids, etc.)
- Presence of dangerous gases (i.e. H2S, Chlorine, Nitrogen, etc.)
- Faulty or missing emergency equipment (i.e. discharged fir extinguishers, empty first aid kit, empty breathing air cylinders, etc.)
- Poor housekeeping (i.e. clutter, excessive paper products, etc.)
- Confined spaces (i.e. vessels, working areas with limited access or egress, etc.)

- Toxic chemicals (i.e. WHMIS controlled products, TDG regulated products, etc.)
- High voltage (i.e. overhead power lines, buried lines, etc.)
- Elevated loads (i.e. forklift operations, crane operations, etc.)
- Flammable hydrocarbons (i.e. fuel handling and storage, etc.)
- Blocked emergency exits (i.e. emergency doors locked, material stored in front of doors, etc.)
- Strain due to lifting (i.e. manual lifting of heavy objects, improper lifting technique, etc.)
- Congested work area (i.e. proximity to other workers, equipment, etc.)

As an aid to identifying potential hazards (during the critical task analysis process) employees may use questions such as these. This is not a complete list:

- Do tools, machines, or equipment present any hazards?
- Can the worker make harmful contract with objects?
- Can any body part get caught in or between objects?
- Is the worker exposed to extreme heat or cold?
- Can the worker suffer strain from lifting, pushing or pulling?
- Is excessive noise or vibration a problem?
- Is there danger from falling objects?
- Is lighting a problem?
- Are there dusts, fumes, mists, or vapors in the air?
- Can contract be made with hot, toxic or caustic substances?
- Is harmful radiation a possibility?
- Can weather conditions affect employee safety?

Pre job Hazard Identification requires the following steps:

1. Identifying the hazards associated with a particular task or job.
2. Identifying the hazards associated with a new worksite/environment.
3. Identifying the required controls designed to either eliminate or mitigate the hazards so that they cannot result in loss.
4. Implement the required controls, through:

a. effective communication and training of workers as to the location/nature of the hazards and required controls.
b. development of task-specific procedures.
c. provision and use of required equipment.
d. eliminating, barricading and identifying hazards.

Some formal tools to ensure effective pre-job hazard identification and risk control using this method involve the use of and performed before work begins To identify and access hazards:

1. **Pre-Job Safety Analysis/Hazard Assessments,** a semi-formal work group planning tool for carrying out a job or task. It is also a powerful tool for creating involvement in work planning by the frontline workers. It can be described as a workshop for identifying the best method of carrying out a job or task. Service on Site will comply with all Prime Contractor Safe Work Permitting systems to help ensure the safety of all workers on sites at which we perform tasks.

2. **Safe Work Permits,** designed to ensure that all workers engaged in hazardous work, other than normal production activity, are not exposed to undue risk. This Permit performs two functions:

   a. It is a checklist to ensure that all necessary safety precautions have been taken prior to work beginning.

   b. It reminds employees and contractors of the necessity to work safely when engaged in any work on behalf of Service on Site.

The responsibility for ensuring a Safe Work Permit is in place prior to the work commencing lies with the Prime Contractor employee at the work site. Failure by the Prime Contractor to issue a permit may expose Service on Site personnel to unacceptable liability. Remember that any Service on Site employee has the authority and responsibility to stop any work which is, in their opinion, being carried out unsafely or under unsafe conditions.

3. **Pre-job Safety Meetings** which are used to discuss the results of the pre-job hazard identification (plans, permits, checklists) with all those working on the site. Topics of discussion and attendance are recorded on a pre-job meeting minutes form: If written procedures exist for the task to be undertaken, these should also be reviewed in this meeting.

4. **General Site Inspections** include all field and office worksites, maintenance shops, work camps. All these sites should be regularly inspected for any possible hazards, including unsafe work practices and conditions. Inspections should be scheduled according to the hazards at the sites and the hazardousness of the work. Worksite inspections should assess the:

   - Physical layout and conditions of the site, including location, season and weather
   - Hazards of materials handled
   - Condition of equipment and tools used
   - Work practices and behaviors of people at the site (employees, contractors, subcontractors, visitors and clients)
   - Level and quality of supervision given worker

5. **Personnel Observations.** Workers should be observed and questioned where applicable, to ensure they:

   - know and follow standard work procedures
   - properly use tools and equipment
   - correctly use personal protective and other safety equipment
   - are adequately trained to perform their work properly
   - know emergency response procedures
   - properly supervise and direct workers under their supervision

If an inspector notices any unsafe behaviors, work practices or conditions, the worker should stop the work immediately and ensure the problems are rectified. This sends a strong signal that proper behavior and work practices must always be followed. Also, if the inspector witnesses safe work or safe worksites, he or she should let the workers involved know that their efforts to maintain a safe workplace are working and appreciated.

6. Equipment and Vehicle Inspections

All vehicles and equipment must be thoroughly inspected daily by their operators to monitor wear and tear. If more than one person is responsible for the equipment or vehicle, responsibility for inspections will be assigned. (refer to Pre-Trip Inspection)

7. Emergency & Fire Equipment Inspections

All emergency equipment must be routinely inspected to ensure it is kept in useable condition, is easily accessed and in its pre-determined location. Government regulations in each province dictate the inspection requirements for different pieces of equipment (Occupational Health & Safety Regulations, First Aid Regulations, Fire Codes, etc.).

Manufacturers also stipulate preventative maintenance and inspection requirements for fire, recue and emergency equipment. Emergency equipment can either be included in other inspection processes or be a separate process, with its own checklist. Either way, this equipment should be inspected monthly. After every inspection, you must specify who is responsible for controlling any hazards found. You must also set deadlines for implementing control measures. Some control measures are:

- performing maintenance on equipment and vehicles
- marking hazards with signs, flags, lights, alarms, barricades, fences, labels, placards or other materials
- providing protective and other safety equipment to workers
- using engineering controls to eliminate or reduce the impact of hazards
- using purchasing controls to replace unacceptable or faulty items
- informing workers of the hazards

Whenever possible, hazards should be eliminated. If elimination is not possible, other control measures must be used to protect workers.

Situations Where Risk Assessment is Not Appropriate

Situations where risk assessment is not appropriate include:

1. When the probability of happening is close to 100% and the Consequence is well-known.

For example, if it is known that a pipe has corroded to a thickness below an acceptable minimum and will start leaking soon, we know that the probability of an accident occurring is certain. Likewise, if it is known that the leak will only cause minor soil contamination (and nothing else), the consequence is also certain. In such cases, risk assessment may not be appropriate; but a simple cost-benefit analysis would be beneficial.

2. When there is non-compliance of government regulations.

Risk assessment should never be used to justify an out-of-compliance situation.

Hazard Reporting

Purpose

Hazard reports are used to alert site supervisors to any hazardous conditions or work procedures found by workers and others on the site.

Hazard reports fill in the gaps between your company's regular inspections, enabling supervisors to provide a continuously safe worksite.

Reporting Hazards

Employees, contractors and subcontractors must notify the appropriate supervisor of any hazards they notice at the worksite. Hazard reports can be given verbally or in writing. A hazard report should include:

- a description of the hazard and its location
- the risks it presents
- control measures needed and interim actions taken

All hazards must be immediately investigated and controlled. Written hazard report forms will be kept on file.

Controlling Hazards

After every report of a hazard, a worker should be assigned to correct the hazard by a specific date. Some corrective measures are:

- using engineering controls to eliminate or reduce the impact of hazards
- informing workers of the hazards
- marking hazards with signs, flags, lights, alarms, barricades, fences, labels, placards or other materials
- providing personal protective and other safety equipment to workers
- following purchasing controls to replace unacceptable or faulty items

Whenever possible, hazards should be eliminated. If elimination is not possible, other control measures must be used to protect workers.

Risk Assessment

Risk assessment is used to formulate the criteria for developing controls and precautions such as elimination, substitution, engineering, segregation, procedures, practices, rules, equipment type, personal protective equipment, training, etc. There are two variables involved – determining the **Severity** of injury that the hazard could produce, and the **Probability** that the hazard will result in an accident. **Severity** is based on how severe the event would be if no preventative measures are introduced. **Probability** is based on the chances of the event happening if the existing hazards or conditions are not corrected. Through risk mitigation processes, the objective is to move risk to a lower category by either:

- Reducing the probability of occurrence through loss prevention (engineering controls), or
- Reducing the severity of a loss should it happen through loss control (administrative controls or PPE).

Risk assessment should address any or all of the following areas relating to people, property, production and environment

- Worker health and safety (stall and contractors).
- Emergency response requirements.
- Pipeline integrity, production reliability, process reliability.
- Environmental damage/impact.
- Training requirements, such as, but not limited to, the following:

    a. On-the-job training
    b. Specific training modules
    c. Safety training
    d. Personal protective equipment usage
    e. Rules and Procedures

Hazard Priority Ranking

Having identified the hazards through the hazard identification process, the next step is to decide if action is required to minimize the hazard or its effects. The hazards need to be prioritized according to the risk associated with them. One method, to assist with prioritization, is to quantify the risk.

The first ranking estimates the severity of the problem if the potential accident/incident were to occur:

1. Imminent Danger (e.g., causing death, widespread occupational illness, loss of facilities)
2. Serious (e.g., severe injury, serious illness, property and equipment damage)
3. Minor (e.g., non-serious injury, illness, or damage)
5. Negligible/ 01K (e.g., minor injury, requiring first aid or less)

The second ranking estimates the probability (think in terms of risk assessment) of the accident/incident occurring:

A. Probable – likely to occur immediately or soon
B. Reasonably probable – likely to occur eventually
C. Remote – could occur at some point
D. Extremely remote – unlikely to occur

Service on Site

HAZARD IDENTIFICATION and Risk Control

Procedures Ranking Table

Chemicals	**4C**
Lockout/Tagout	**4D**
De-energization	**4D**
Valves	**4C**
Driving	**4D**
Containers/Storage	**4D**
Confined Spaces	**4D**
Electrical	**4D**
Portable Equip.	**4D**
Hoisting	**4D**
Rigging	**4D**
Ladders	**4C**
Power Tools	**4D**
Machines	**4D**
Welding	**4D**
Pump Repairs	**4D**
Pump Inspections	**4D**
Air Compressor Inspec.	**4D**

Hazard Priority Ranking Table

Severity	probability	A. Probable- Likely to occur Immediately or soon	B. Reasonably probable – likely to occur eventually	C. Remote – Could occur at some point	D. Extremely Remote – unlikely to occur
1. Imminent Danger (eg, causing death, widespread occupational illness, loss of facilities)		1 a	1 b	1 c	1 d
2. Serious (eg, Severe injury, serious illness, property and equipment damage		2 a	2 b	2 c	2 d
3. Minor (eg, non Serious injury, illness, or damage		3 a	3 b	3 c	3 d
4. Negligible / OK (eg, minor injury, requiring first aid or less		4 a	4 b	4 c	4 d

Each hazard is assigned both rankings, and the result is clear priorities in terms of corrective action. A hazard ranked 1-A obviously is more important than one ranked 1-D; 2-B comes ahead of 3-A, and so on.
For each hazard, identify appropriate corrective action and set a specific target date for its completion. Whenever possible, identify and correct the cause as well as the specific problem. Forward the report to those who have the responsibility and authority to implement the corrections you are recommending. Inspection findings also should be communicated to workers during safety meetings.

NOTE: A critical task, as determined by use of the Hazard Priority Ranking Table above, needs to be identified to the Prime Contractor site supervisor. At this time the site supervisor will be asked to assist in the Risk Control of the hazards associated with the task to be performed. The Critical Task will not be performed until contact has been made with the site supervisor and he/she is aware of the situation. It may be determined that the site supervisor's presence is not needed but this will be a decision that is made prior to starting the task and will be made specifically for each Critical Task situation as it arises.

Risk Control

The final stage in conducting the hazard identification review is to determine ways to eliminate or control the hazards identified. The generally accepted measures, in order of preference, are:

- **Eliminate the hazard:** this is the most effective measure. These techniques should be used to eliminate hazards:
- **Choose a different process.**
- **Modify an existing process.**
- **Substitute with less hazardous substance.**
- **Improve environment (e.g. ventilation)**
- **Modify or change equipment or tools.**
- **Revise work procedures:** consideration might be given to modifying steps which are hazardous, changing the sequence of steps, or adding additional steps (such as locking out energy sources).
- **Contain the hazard:** If the hazard cannot be eliminate, contact might be prevented by using enclosures, machine guards, worker booths or similar devices.
- **Reduce the exposure:** these measures are the least effective and should only be used if no other solutions are possible.

One way of minimizing exposure is to reduce the number of times the hazard is encountered (e.g. scheduling of workers to minimize hazardous exposures, taking work breads in hot or cold temperatures, etc.)

The use of appropriate personal protective equipment may be required (e.g. respirators and self-contained breathing units, fire retardant clothing, etc.). Remember, for each hazard that you have identified there should be at least one control in place to prevent exposure to the hazard resulting in an incident or accident in the workplace. A high risk associated with the hazard would also mean that you may require more than one control in place.

REMEMBER, PERSONAL PROTECTIVE EQUIPMENT IS YOUR LAST LINE OF DEFENCE.

SERVICE ON SITE
Phone: (250) 787-0082 • Cell: (250) 262-6763
• Fax: (250) 787-0051
7804 - 100th Ave. Fort St. John, BC V1J 1V9

FACILITY FIELD LEVEL HAZARD ASSESSMENT

YOU HAVE THE LEGISLATED OBLIGATION TO REFUSE UNSAFE WORK

Check off the hazards that apply to this job. List the item # in the 2nd column (other side), Identify the plans to eliminate or control them in the 3rd column (other side).

ENVIRONMENTAL HAZARDS		ERGONOMIC HAZARD		EQUIPMENT HAZARDS		OVERHEAD/HEIGHT HAZARDS	
Work area clean		Awkward body position		Operating of power mobile equipment		Harness/lanyard required	
Material storage identified		Over extension		Operating of motor vehicle		Appropriate tie-off identifies	
Dust/Mist/Fume		Prolonged twisting bending motion		Working with Grinders		Proper anchor points identified	
Noise in area		Working in tight area		Cutting torch equipment		Others working overhead/below	
Extreme temperatures		Lift to heavy/Awkward to lift		Welding machines		Falls from heights	
Spill potential		Parts of body in line of fire		Hand tools - saws, knives, hammer		Hoisting or moving loads overhead	
Waste containers needed		Repetitive motion		Check training certification for equipment operators		Lifting areas ribboned/marked	
MSDA reviewed		Working above your head				Use of scaffolding	
Other work in area		Report all injuries to your supervisor		Inspection logs for equipment		Object/debris falling from above	
Weather conditions		Limited access/egress				Tag lines used	
						Lifting procedure reviewed	

PERSONAL LIMITATIONS		TESTING		PERMITS REQUIRED		SAFETY EQUIPMENT	
Am I competent to perform the task		Review the practices/procedures		Ground disturbance permit		Gas monitors required	
First time performing task		Working with high pressures		Confined space permit		Monitors bump tested daily	
No training for task or tools to be used		Ensure testing equipment in good working condition		Safe work permit		Bump test logs available	
Procedure not available for the task		Testing signage in place		Hot work permit		S.C.B.A. required	
Report all injuries to supervisor		Ensure that all test heads and fittings are secured and in good condition		Cold work permit		Have workers been fit tested?	
Report all near misses to the supervisor		Good communication when testing		Safety watch required		All safety training tickets verified	
		Proper P.P.E. used for the task				Lock out/tag out claims or tags required for the test	
		MSDS reviewd				Fire extinguisher required	

& THINK

It is important that all hazards have plans to eliminate them and the plans are put in place.
Ensure that all associated permits are closed off at the end of the job.
Remember: "Stop & Think" & "See It Again For The First Time".

49.12

FIELD LEVEL HAZARD ASSESSMENT	SERVICE ON SITE	JOB#
Work to be done:		Date:
Location:	Muster Point:	

Identify and prioritize the tasks and hazards below, then identify the plans to eliminate/control hazards.

TASKS	HAZARDS	PLANS TO ELIMINATE/CONTROL
Is specialized P.P.E. required for the task? Yes / No	What?	
Is the worker working alone? Yes / No	If yes, explain	

Job Completion

Are all permit(s) closed out?	Yes	No	Are there Hazards remaining?	Yes / No	(If yes, explain)
Was the area cleaned up at end of job/shift?	Yes	No			
Were there any incidents/injuries? Yes / No	If Yes, explain				

Please print and sign below (All memberss of thecrew) prior to commencing work and initial when task is completed or at end of shift

Worker Name and Signature (below)		REVIEWED BY SUPERVISOR
(print)	(sign)	
(print)	(sign)	(print)
(print)	(sign)	
(print)	(sign)	(print)

ALL NAMES AND SIGNATURES SHOULD BE LEGIBLE

49.13

Position: Management Inspection

Tasks	General Loss Exposures	Risk Evaluation					Program Needs				
List all tasks normally done or that might be done by a person in the occupation.	Consider safety, health, damage, fire, quality, people, equipment, materials and environment interactions.	Frequency	Probability	Severity	Criticality Rating		Practice	Procedure	Skill Training	Engineering	Special Rules
1.											
2.											
3.											
4.											
5.											
6.											
7.											
8.											
9.											
10.											
11.											
12.											

Completed By: (please print) _____ Signature _____

Supervisor Review (please print) _____ Signature _____

Date of Completion _____ Date for Review _____

Frequency	
Item	Rating
Frequent (hourly / daily)	10
Occasional (weekly / monthly)	6
Rare (a few times per year)	3
No significant exposure (once every year)	2

Probability	
Item	Rating
Might well be expected (happens often)	10
Occurs but not expected (includes near misses)	6
Has happened rarely	3
Only remotely possible	1

Severity	
Item	Rating
One or more fatalities	100
Serious injury permanent disability or life threatening illness	75
Serious injury disabling injury or illness	50
Temporary disability – minor injury, acute health effects	30
Medical Aid	10
First Aid or Less	2

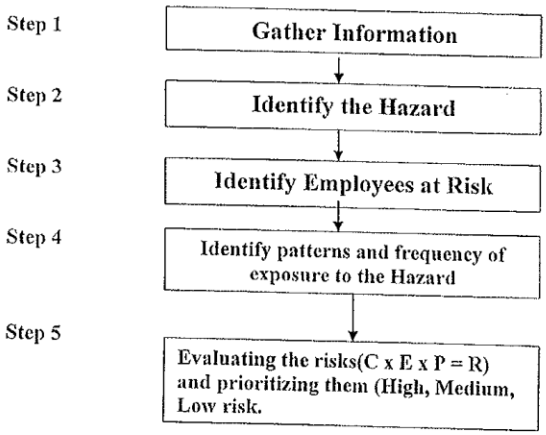
Criticality Rating	
Rating	Score
Very High	> 750
High – Correct Now	250-750
Medium – Correct	90-250
Low – Indicator	20-90
Perhaps Risk Acceptable	< 20

49.15

Risk Assessment Model

Evaluating Hazards

Evaluating hazards is the fifth step in the risk assessment process:



Hazard Identification

A *hazard* is a thing or condition that exposes a person to a risk of injury or occupational disease. Hazard types include:

- ***Type A hazard*** – Imminent risk of serious exposure, injury, or occupational disease. Immediate corrective action required. Activity that could expose staff to the hazard must be discontinued until the hazard is corrected.

- ***Type B hazard – An*** urgent situation where the risk of exposure injury or occupational illness exists but is not imminent. Corrective action required as soon as possible. Caution taken to ensure that hazard does not pose risk to workers.

- ***Type C hazard*** – Not an urgent situation. The risk of exposure, injury, or occupational disease is low. Corrective action required without undue delay. Caution taken to ensure that hazard does not pose risk to workers.

4.9.16

Employer Incident Investigation Report (EIIR)

Please refer to the companion **quick guide** for assistance completing the investigation and this form.

1. Employer's information

Employer's name (legal name and trade name)	Operating location number	WorkSafeBC account number
Employer's head office address		
City	Province	Postal code
Employer's representative's name		Phone number (include area code)
Email address		

2. Injured persons

Last name	First name	Job title
a)		
b)		
c)		
d)		

3. Place, date, and time of incident

Location where incident occurred (street address or GPS coordinates)		
City (nearest)	Province	Postal code
Date of incident (yyyy-mm-dd)	Time of incident ☐ a.m. ☐ p.m.	

4. Type of occurrence (select all that apply)

- ☐ Death of a worker
- ☐ Serious injury to a worker
- ☐ Major structural failure or collapse
- ☐ Major release of hazardous substance
- ☐ Blasting accident causing personal injury
- ☐ Dangerous incident involving explosives other than blasting incident
- ☐ Diving incident, as defined by regulation
- ☐ Incident of fire or explosion with potential for serious injury
- ☐ Minor injury or no injury but had potential for causing serious injury
- ☐ Injury requiring medical treatment beyond first aid

An incident investigation report is NOT required under the *Workers Compensation Act* if none of the above applies or if this incident is a vehicle accident occurring on a public street or highway.

5. Report type (select all that apply) If this is a revised version of a previous report, please check here ☐.

☐ Preliminary Investigation Report If requested only, provide a copy to WorkSafeBC.	☐ Interim Corrective Action Report	☐ Full Investigation Report Must be provided to WorkSafeBC within 30 days* Fax 1.866.240.1434	☐ Full Corrective Action Report
Report date (yyyy-mm-dd)	Report date (yyyy-mm-dd)	Report date (yyyy-mm-dd)	Report date (yyyy-mm-dd)

50.1

Employer Incident Investigation Report (EIIR)

Employer's name (legal name and trade name)	Operating location number	WorkSafeBC account number

Officer's name		Date sent (yyyy-mm-dd)	

6. Witnesses

Last name	First name	Job title
a)		
b)		
c)		

7. Other persons whose presence might be necessary for proper investigation

Last name	First name	Job title
a)		
b)		

8. Sequence of events that preceded the incident

Required in Preliminary Report. Update in Full Report if necessary. Describe events earlier that day or even in previous years that led up to the incident. Examples may include events such as training given or changes in equipment, procedures, or company management.

9. Unsafe conditions, acts, or procedures that significantly contributed to the incident

Required in all reports. Describe anything, or the absence of anything, that contributed to the hazard such as poor housekeeping or poor visibility, using equipment without guards, or the lack of safe work procedures.

10. Nature of the serious injury (optional — complete only if there has been an injury)

- ☐ Life threatening or resulting in loss of consciousness
- ☐ Major broken bones in head, spine, pelvis, arms, or legs
- ☐ Major crush injuries
- ☐ Major cut with severe bleeding
- ☐ Amputation of arm, leg, or large part of hand or foot
- ☐ Major penetrating injuries to eye, head, or body
- ☐ Severe (third-degree) burns
- ☐ Punctured lung or other serious respiratory condition
- ☐ Injury to internal organ or internal bleeding
- ☐ Injury likely to result in loss of sight, hearing, or touch
- ☐ Injury requiring CPR or other critical intervention
- ☐ Diving illness such as decompression sickness or near drowning
- ☐ Serious chemical or heat/cold stress exposure
- ☐ Other (specify)

11. Brief description of the incident

Required in Preliminary Report. Briefly, summarize the sequence of events, the unsafe factors, and the resulting injury, if any.

12. Corrective actions identified and taken to prevent recurrence of similar incidents

Action (Required in Preliminary Report and Interim Corrective Action Report. Update in Full Report, if necessary.)	Action assigned to (name and job title)	Expected completion date (yyyy-mm-dd)	Completed date (yyyy-mm-dd)

Employer Incident Investigation Report (EIIR)

Employer's name (legal name and trade name)	Operating location number	WorkSafeBC account number

Action (Required in Preliminary Report and Interim Corrective Action Report. Update in Full Report, if necessary.)	Action assigned to (name and job title)	Expected completion date (yyyy-mm-dd)	Completed date (yyyy-mm-dd)
a)			
b)			
c)			
d)			
e)			

13. Explanation of blank areas on this Preliminary Report, if any

If there are blank areas, describe the circumstances beyond your control that explain this lack of information.

14. Persons who carried out or participated in the preliminary investigation

Representative	Name	Job title	Signature (optional)	Date signed (yyyy-mm-dd)
Employer representative				
Worker representative				
Other				
Other				

End of report

Completing all the sections above satisfies the requirements for a Preliminary Investigation Report and an Interim Corrective Action Report.

Note: If this was a simple investigation and **all needed corrective actions have been completed within 48 hours**, the Preliminary and Full Investigation portions of the report can be completed at the same time. If so, you can check both the Preliminary Investigation Report and the Full Investigation Report boxes in section 5 on page 1.

As of January 1, 2016, copies of **all** reports must also be provided to the joint occupational health and safety committee or worker representative, as applicable.

15. Determination of causes of incident

Required in Full Report. Analyze the facts and circumstances of the incident to identify underlying factors that led to the incident. Underlying factors include factors that made the unsafe conditions, acts, or procedures in the Preliminary Report possible. Update items from section 9, if needed.

16. Full description of the incident

Required in Full Report. Use the brief description from the Preliminary Report and update it, if necessary.

Employer Incident Investigation Report (EIIR)

Employer's name (legal name and trade name)	Operating location number	WorkSafeBC account number

17. Additional corrective actions necessary to prevent recurrence of similar incidents

Additional corrective action (Required in Full Report and Full Corrective Action Report.)	Action assigned to (name and job title)	Expected completion date (yyyy-mm-dd)	Completed date (yyyy-mm-dd)
a)			
b)			
c)			
d)			

18. Persons who carried out or participated in the full investigation

Representative	Name	Job title	Signature (optional)	Date signed (yyyy-mm-dd)
Employer representative				
Worker representative				
Other				

19. Other relevant workplace parties

	Company name	Contact person	Contact number or email address
a)			

End of report

Completing all the sections above satisfies the requirements for a Full Investigation Report and a Full Corrective Action Report.

Employers are required to submit **full** investigation reports to WorkSafeBC **within 30 days* of the incident.** Reports may be submitted by fax to 604.276.3247 (Greater Vancouver), toll-free fax 1.866.240.1434, or by mail to PO Box 5350, Stn Terminal, Vancouver BC V6B 5L5. Do **NOT** submit a preliminary report unless you have been so directed by a WorkSafeBC officer.

* Employers can request an extension from a WorkSafeBC officer, **if the full investigation cannot be completed within 30 days.**

As of January 1, 2016, copies of **all** reports must also be provided to the joint occupational health and safety committee or worker representative, as applicable.

Disability Management Policy

Disability Management Policy

Between

555559 B.C. Ltd doing business as Service On Site

And

Employee

Service on Site is committed to the wellbeing and rehabilitation of all employees unable to perform their normal duties as a result of being injured on or off the job or recuperating from an illness. Service On Site has developed a Disability Management Program, incorporating modifies/alternate return to work, to meet this objective.

Stay at Work or Return to work is individualized for each employee and is supported by medical documentation. This program provides for a timely job modification/placement to a temporary or permanent disabled employee who cannot perform their duties as a consequence of an occupational or non-occupational injury/illness. The alternative job will be productive and valued work which can be performed safely and without risk of re-injury or aggravation to the disability, or risk to other employees.

It is Service On Site's intent that this program will be compatible with current statutory laws.

All employees who become injured / disabled, regardless of cause, will be eligible and encouraged to participate in the program.

The intent of this Disability Management Program is to provide us with a guideline. It should be recognized that this program does not cover all circumstances.

It is also our intent to maintain and expand the cooperative efforts of management, and the occupational health and safety committee towards the awareness of accident and injury prevention.

Date: _____ _____

Signatures: _____ _____

Management Representative **Employee**

Stay at Work or Return to Work Policy

In fulfilling this workplace's commitment to providing a safe and healthy working environment, a Return to Work program has been established for workers who sustain workplace injuries.

Service On Site undertakes to accommodate injured workers through early assistance, rehabilitation and placement, where possible, to the benefit of the entire workplace. This program provides gradual and consistent rehabilitation to all injured workers.

Service On Site will work toward facilitating injured workers to an appropriate and timely Stay at Work or Return to Work in pre-injury positions. If this is not possible, the original department will make every effort to place workers in suitable, alternative positions. In the event that alternative positions are not available within the original department, every reasonable attempt will be made to find appropriate positions in other departments. All attempts to place the worker in other area must be done, in an appropriate manner, in cooperation with manager, health care providers, Workers' Compensation Board representatives, union representatives and the worker.

Any personal information and any records received from or about the worker will be held in the strictest confidence and maintained. Information of a personal nature will be released only if required by law or with the approval of the worker who will specify the nature of any information that maybe released and to whom it can be released.

Signed: _____ **Date:** _____

Signed: _____ **Date:** _____

Statement of Commitment

Statement of Commitment

(Joint Occupational Health & Safety Committee)

Service On Site is committed to the prevention of workplace injury and/or illness. In the event of injury or illness, Service On Site is committed to minimizing the impact of the injury and ensuring a safe, timely return to the workplace. Service On Site is committed to a workplace program that is designed to assist employees to Stay at Work or Return to Work safely and in a timely manner, to assist with treatment, recovery and reduce time away from the workplace.

The program is:

- Voluntary
- Respectful of all employees
- Flexible
- Specifically designed for each employee's abilities
- Within the scope of collective agreements
- Individualized programs are planned and documented with timelines
- Communicated and promoted through the company

Safe and timely return to work recognizes that while an employee cannot perform the full range to his/her duties, meaningful, productive work can be performed.

We are committed to the principles of the program, and will work cooperatively towards the successful, safe return to work for all employees of the company.

Signed at Fort St. John, BC **This** **Day** **20**

_____**CEO** _____

On Behalf of the Employer On Behalf of the Employee

Letter to Employee

Date _____

Dear _____,

We are concerned to hear of your recent injury. We wish to assist you in your recovery and have you return to your regular duties when appropriate.

We have provided you with the following information package that includes,

1. **Letter to Physician:** this form explains the light duty program to the physician and authorizes the physician to disclose information pertaining to this injury.

2. **Physician; Fit for Duty:** Details what the employee is physically fit to do during their recovery.

3. **Other: _____**

_____

Kindly forward this package to your physician and ask them to return the completed forms to _____ as requested in the attached documentation. Please be assured that all information provided will be kept confidential. If your physician has any questions regarding our program or related matters, we have provided the following numbers they can call Laura Babcock at **phone number** (250) 787-0082.

After you have seen your physician, please contact your supervisor, Laura Babcock, at **phone number** (250) 787-0082 to let them know your condition. If you are capable of performing light or modified duty, you will be expected to report to work.

If you have any questions or concerns, do not hesitate to call. With your participation and cooperation we may work together towards your return to your regular duties.

Sincerely,

_____
Laura Babcock

(250) 787-0082

Letter to Physician

To the Attending Physician,

Modified work programs assist in the rehabilitation, Stay at Work or an earlier Return to Work of employees with work related injuries while enabling companies to reduce the cost of injury and illness. The employee suffers no loss in remuneration and is assigned productive work, which take into consideration any physical restrictions, identified by you the medical practitioner. The modified work may consist of modifying the employees existing job by removing those tasks the employee is currently unable to do or providing transitional/part-time work until the employee is able to return to full time duty; or, providing an alternate productive job; or, providing a training opportunity; or, a combination of the above. It is a mutually beneficial situation for both the company and the employee. Thank you for your valuable time and cooperation. If there are any questions in regard to this program, please contact Laura Babcock at (250) 787-0082.

In order that we the employer, may help in rehabilitation following this injury, we would like you to be aware that we may be able to offer the employee, _____, Stay at Work light duties subject to your instructions. This is done to enable the injured employee to remain on the job. **This does not; in any way negatively affect the employee's WCB claim.**

As appropriate, the injured employee or the Physician must return the accompanying form to Laura Babcock.

Please Fax to: (250) 787-0051

Mailing Address:

7806 100th Ave.
Fort St. John, BC
V1J 1V9

Yours Sincerely,

Laura Babcock
Service On Site

Physician Fit for Duty

Employee Name _____

☐ Sickness ☐ Non-Occupational Injury

☐ Work Related Injury ☐ Pre-existing Condition

Date of Visit / / Next Visit / /

Nature of injury:

_____

If modified duty is required, please complete the following:

Lifting from waist	(weight/frequency)	Sitting	(duration/frequency)
Lifting from shoulder	(weight/frequency)	Walking	(distance/frequency)
Prolonged standing	(duration/frequency)	Climbing stairs	(distance/frequency)
Work in damp areas	(duration/frequency)	Ladders	(number/frequency)
Work in cold areas	(duration/frequency)	Work at heights	_____
Work in hot areas	(duration/frequency)	Bending	_____
Work outdoors	(duration/frequency)	Operate/repair equipment	_____
Repetition hand/arm	(duration/frequency)	Typing	(typing)

Other/comment: _____

Employee may commence Stay at Work duties on / / (date)

Employee may return to modified duties on / / (date)

Employee may resume regular duties on / / (date)

Temporary restricted hours or gradually increasing hours is available. Please indicate any restrictions of this type: _____.

_____ _____

Name of Medical Authority Telephone

_____ _____

Signature Date

Dear Physician/Physical Demands Letter

I authorize Dr. _____ to release medical information to my employer, but only that of which is related to the "Nature of Injury" as agreed to by me.

Nature of Injury: _____

Employee Name: _____ Employee Number: _____

Employee Signature: _____ Date: _____

Physicians, please complete the following:

Is the employee able to return to work on modified work/modified duty assignment: Yes ☐ No ☐

Please circle restrictions:

Standing	Lifting/Carrying	Climbing	Repetitive Motion
Walk/flat	Lifting < 25lbs	Driving	Keyboarding
Walk/uneven	Lifting <50lbs	Heights	Dust/wet

Specific restrictions/comments:

_____

_____

Duration of restrictions: 1 2 3 4 Shifts 1 2 3 4 5+ Weeks

Return to work effective date: _____

_____ _____

Physician's name (print) Address

_____ _____

Signature of attending Physician Phone

_____

Date

Physical Demand Analysis

A Physical Demand Analysis describes the physical requirements of the job or position. It focuses on the strength, flexibility, sensory and environmental requirements or conditions of specific tasks. It should be completed for the employee's present position and modified duty positions available so that it may be used by the health care provider to determine if an employee is physically able to return to work on regular duties or modified duties.

Job or Position: _____ Date form completed: ____/____/____

Regular hours of work/day: _____ Completed by: _____

During a regular work day, the employee must circle number of hours and indicate if intermittent [I] or constant [C] for each activity.

Sit	0 1 2 3 4 5 6 7 8 hours	I / C
Stand	0 1 2 3 4 5 6 7 8 hours	I / C
Walk	0 1 2 3 4 5 6 7 8 hours	I / C
Drive	0 1 2 3 4 5 6 7 8 hours	I / C
Bend	0 1 2 3 4 5 6 7 8 hours	I / C
	0 1 2 3 4 5 6 7 8 hours	I / C

Job Requirements

- ☐ **Squatting**
- ☐ **Kneeling**
- ☐ **Bending**
- ☐ **Twisting**
- ☐ **Reaching**
- ☐ **Crawling**
- ☐ **Ladder Work**
- ☐ **Stair Climbing**
- ☐ **Walking on rough ground**
- ☐ **Working at heights**
- ☐ **Exposure to heat or cold (circle)**
- ☐ **Exposure to dust, fumes or gases**
- ☐ **Exposure to high humidity**
- ☐ **Exposure to noise**
- ☐ **Repetitive movements**
- ☐ **Work above shoulder**
- ☐ **Work below shoulder**
- ☐ _____
- ☐ _____

Lifting Requirements

	Never	Occasionally	Frequently	Continuous
Up to 10lbs	☐	☐	☐	☐
11 to 24lbs	☐	☐	☐	☐
25 to 34lbs	☐	☐	☐	☐
35 to 50lbs	☐	☐	☐	☐
51 to 74lbs	☐	☐	☐	☐
75 to 100lbs	☐	☐	☐	☐
Above 100lbs	☐	☐	☐	☐

Carrying Requirements

	Never	Occasionally	Frequently	Continuous
Up to 10lbs	☐	☐	☐	☐
11 to 24lbs	☐	☐	☐	☐
25 to 34lbs	☐	☐	☐	☐
35 to 50lbs	☐	☐	☐	☐
51 to 74lbs	☐	☐	☐	☐
75 to 100lbs	☐	☐	☐	☐
Above 100lbs	☐	☐	☐	☐

Pushing Requirements

	Never	Occasionally	Frequently	Continuous
Up to 10lbs	☐	☐	☐	☐
11 to 24lbs	☐	☐	☐	☐
25 to 34lbs	☐	☐	☐	☐
35 to 50lbs	☐	☐	☐	☐
51 to 74lbs	☐	☐	☐	☐
75 to 100lbs	☐	☐	☐	☐
Above 100lbs	☐	☐	☐	☐

Potential Light Duties

All Positions

- ☐ Safety person assistant
- ☐ Safety Orientations
- ☐ Monitor
- ☐ Tool Crib Attendant
- ☐ Update manuals
- ☐ Review tool lists
- ☐ Training
- ☐ Yard Man
- ☐ Inventory
- ☐ QC Assistant
- ☐ Update skills, First Aid, WHMIS, etc.
- ☐ Confined space monitoring

Labourer

- ☐ Cleaning trailers or site
- ☐ Assist in office – photocopying, other clerical work
- ☐ Update and/or restock First Aid kits
- ☐ Safety inspections
- ☐ Wash Company Equipment
- ☐ Update MSDS
- ☐ Jobsite Stat Keeper
- ☐ Driver
- ☐ Technical training
- ☐ Sweeping
- ☐ Garbage Removal
- ☐ Organize/File Safety Paperwork
- ☐ Wash Company Vehicles
- ☐ Job Scheduling Assistant
- ☐ Office Janitor
- ☐ Pre-job Hazard Analysis

BEHAVIOUR BASED SAFETY

Identify the behaviours critical to obtaining required safety performance.

All workers at Service On Site will perform behaviours which are ***the observable actions of people.*** A behaviour can also be observed as having been performed by observing the result of the behaviour. E.G. the required behaviour is: *Complete a field level risk assessment.* It is unlikely that an observer will actually observe the worker completing the field risk assessment but by looking at the field level risk assessment card the observer can confirm the behaviour has been satisfactorily performed.

In this step the behaviours that the workers need to perform to achieve the desired safety performance E.G. zero injuries, are identified. Behaviours expected of workers, supervisors and management should be identified. There can be a number of sources of possible required behaviours.

Learning experience reports
Incident Investigations
Individuals who actually perform the work
First Aid/Injury records and details (i.e. part of the body injured, action causing injury), incident and inspection trends.

Representatives of all segments of the workforce should be involved in identifying behaviours: experienced workers, supervisors, new workers, management. Involving workers in choosing the behaviours helps to get them involved and get their buy-in to the process.

Behaviours should be described as specifically as possible.
Behaviour descriptions should meet the following criteria:
Measurable -can be measured.
Active - something the worker has to do.
Reliable - the behaviour is repeatable the same each time and at least two people should be able to see the behaviour and measure it in the same way.
Controllable - the action is the control of the worker performing it.
Observable – can be observed, seen happening.
Specific – described so that the worker doing it know exactly what to do.
Note: In BBS “workers” includes all levels in an organization. Foremen, general foremen, superintendents, project managers, managers, owners. Everyone should expect to have behaviours defined for them that will help bring about injury elimination. A critical behaviour for management might be:
Start every meeting with a safety top or reference. Complete all observations as part of BBS implementation. When visiting a job site perform one observation accompanied by another worker.
No one is exempt from participating in BBS.

Some examples of behaviours are:
Wear hearing protection when required through posted signs, work permit, field risk assessment.
Attach fall prevention harness to a secure anchor point.
Complete a field level risk assessment before starting a task.
Wear a seat belt while driving a motor vehicle.
Check hand tools for defects before use.
Intervene with co-workers to provide coaching/correction when they perform an "at risk" behaviour.

Communicate the Behaviours and How They Are Performed Correctly to All Employees

All workers need to know what the required behaviours are and most important, how the required behaviours are performed safely. E.G. wear a fall protection harness when working at height. A person can wear a fall protection harness safely or in an "at risk" way. If it is not fitted properly to the workers body, the cross strap it too high etc. then the worker is not wearing the harness safely.

In this step the required behaviours and how to do them safely is communicated clearly to all workers. It is important to the success of a BBS process that all participants receive a clear, easily understood communication. Weekly/monthly safety meetings provide a good forum for this to happen.

Observe the work force and record safe/unsafe behaviours and intervene with workers to give positive reinforcement when safe behaviours are observed. Provide coaching/correction when unsafe behaviours are observed.

In this step workers who have received the proper training in how to:

a) Perform observations and
b) Interact with the workers observed to provide feedback/correction/coaching
c) Go out in the workplace to observe the workers.

Observations should be planned when possible. There are a variety of different factors to be considered when performing an observation. These include:

a) Consider observing work where the higher risk hazards, or the experience of the workers may be a factor.
b) Avoid interfering with the work activities
c) Do observations in two person teams
d) Complete the observation report away from the work area
e) Examine the work area for access/egress, housekeeping

When planning observations here are some of the worker groups that can be observed:

a) New employees
b) Younger employees
c) People under pressure/stress (mind on task)
d) New sub-contractors
e) People rushing/running

A possible set of steps to perform a complete observation/interaction are:

a) Observe the workers for 30-60 seconds as you approach them, introduce yourself to the workers. When doing this the observer should not distract the workers at a critical moment (e.g. cutting, lifting, using ladders, etc.) Wait until the interaction can occur when there will be no risk posed to the workers.
b) Explain what you are doing and that you will observe them for a bit longer,
c) Observe them for some additional time
d) Stop workers
e) Feedback what you have observed in a positive manner with awareness of the self-esteem of the workers that have been observed
f) Provide positive reinforcement for all those behaviours that were performed in a safe manner
g) When at risk behaviours are observed ask for feedback from the workers to help understand why the at risk behaviours are being performed and provide coaching/correction so that the required safe behaviour is obtained
h) Thanks the workers for their assistance
i) Encourage them to continue working safely

It is more important that all observed behaviours that immediately dangerous to life, health or the environment are stopped as soon as they are observed. In this situation the observer does not follow the observation steps. The first priority is to stop the dangerous behaviour. If the workers do not accept the observers action and challenge the observer aggressively the observer should not confront the worker. The observer should stop the discussion and deal with the problem by talking to a foreman or supervisor.

It is important that observers make it their primary objective to look for behaviours being performed safely. It is too easy and in fact it is human nature to only look for the at risk or wrong behaviours. For a Behaviour Based Safety process to give the best results the emphasis must be on recognizing/rewarding the workers when they perform the behaviours safely. After the observers have completed their observations they must intervene with the workers to either provide positive reinforcement/feedback to the workers on their successful performance of the required behaviours or to provide correction/coaching to the workers when the required behaviours have been performed unsafely.

The positive reinforcement the observer provides to the worker when the safe behaviours are observed are a key part of improving the overall behaviour performance of a work group. It is essential that this positive reinforcement is given every time safe behaviours are observed.

The comments made by the workers observed should be recorded when possible. Often these comments will give good indications of why the required behaviour is not being performed. E.G. wearing gloves-if the observed workers comments all suggest they are uncomfortable to wear then it points to the need for making a wider range of sizes available to workers.

The more information that can be obtained from the workers as to why they are not performing the correct behaviours the better. It will help to identify the appropriate changes required to get the behaviours performed correctly.

It is important that whenever an “at risk” behaviour is observed, there is an interaction with the person performing it, so that some coaching/correction can occur. If this does not happen, particularly when a supervisor sees an “at risk” behaviour and ignores it, then the workers will get the feedback that “at risk” behaviours are acceptable. They will see there is no consequences resulting from the “at risk” behaviour and there will be no influence on the worker to stop doing the “at risk” behaviour.

To assist an observer to document the observation results properly an observation form listing the behaviours being observed should be available to the observers. It is recommended that the number of behaviours being observed is limited so that a one-page observation form can be used.

Collect and record observation data

In this step, the results of the observations are collected from the observation forms and recorded in a data collection/analysis system. This can be manual or electronic. An electronic system is the better option because it can also provide an ability to analyze the observation results.

Summarize and analyze observation data

In this step the observation results recorded in the previous chapter are summarized and analyzed. Observation data should be summarized into a format that will be simple to interpret and enable extraction of behaviour performance data. During the analysis it is important to review the observation data for quality and consistency. Problems with either can lead to invalid data. The frequency at which the data is summarized and analyzed is at the choice of the work group. Some suggested summaries are:

a) Overall % acceptable for all behaviours
b) % acceptable for each separate behaviour
c) Observation comments
d) Trend chart –overall % acceptable for all behaviours plotted over time
e) Trend chart- % acceptable for each behaviour plotted over time
f) Observation and intervention activity data- # observations performed for each behaviour
g) Charts showing correlation between behaviours and incidents

When the data is summarized, an analysis of behaviours that are not being done at risk can be done. An ABC analysis technique can be used to do this. The analysis will typically result in suggestions for changes to: Antecedents or Consequences of the behaviour. Changes in conditions are sometimes the outcome. E.G. buy a wider range of glove sizes.

Communicate observation data and analysis results to all employees

In this step the results of the observations, the summarized data, the data analysis and any changes to Antecedents, Consequences or Conditions are communicated to the employees. It is essential that this communication happen. It ensures that the workers are kept informed of the results of the observations and changes that may be happening. This should encourage their continued cooperation.

Communication to the work group can act as a antecedent in the ABC model. What is not known cannot be corrected. It is expected that the simple act of communicating the information will prompt the work group proactively correct their unsafe behaviours.

The communication method should be one most suited to the audience. Notices on bulletin boards, story boards or at meetings are all suitable alternatives. A prominent bulletin board can be very effective because It is always visible and thus gives continuous feedback on the behaviours.

Provide recognition or celebrate when safe behaviour improvements occur

In this step the appropriate recognition of the workers or celebrations happen when the desired or improvements in behaviour performance occurs. Often this is not done and the workers get the impression that no one cares that the behaviours are done safely. This is step is very important to provide the positive reinforcement to the workers for performing the behaviour safely.

Recognition and celebration happen when the behaviours are being done safely. Often the % acceptable behaviour reaches 95% plus scores. When this happens it may be appropriate to change the behaviours that are critical to obtaining required safety performance. If the critical behaviours are changed the behaviour observation forms need to be changed also.

Change behaviours to be observed or change activators or change consequences as appropriate

In this step any changes to Antecedents to, or Consequences of, the behaviour resulting from the ABC analysis are made. Changes in conditions resulting from the analysis are also made in this step. E.G. buy a wider range of glove sizes. The changes should be properly recorded on all relevant BBS documentation.

When the % acceptable behaviour reached 95% plus scores, or other inputs suggest it (E.G. first aid causes) it may be appropriate to change the behaviours that are critical to obtaining required safety performance.

To help with problem solving the following can be considered:

a) Improvement opportunities can be identified through observation, intervention and root cause trends
b) Positive intervention techniques present the best opportunity for improvement
c) Use knowledge and experience of others to assist
d) Management system failures can typically account for 85% of unacceptable behaviours

Improvement strategies can include:

a) Consider impact on existing safety program
b) Obtain necessary support and resources
c) May require changes to behaviour based training
d) Monitor implementation and evaluate impact on behaviours

Communicate any changes to work force

In this step any changes made in the previous step are communicated to the work force. If the changes are going to be made it is essential that all the work force know what they are so they can change their behaviors accordingly.

Service On Site Employee competency check

Date: _____ Employee Name: _____

He / She has been employed by SOS for _____ months / year (circle one)

Was the employee aware you were observing him/her? Yes / No (circle one)
Please mark with a (check) if compliant and mark with(x) if non-compliant

____ Wearing proper PPE for task at hand

____ Knowledgeable of machines operations

____Body position while handling/lifting objects

____Operates machines safely

____ Work area clean of debris

____Communicates well with fellow workers

____ Following direction

____ Aware of surroundings (watches for other fellow workers)

List which procedures where checked:

_____ _____
_____ _____
_____ _____

Additional comments: _____
_____
_____

Discuss all non-compliances with employee.

_____ _____
Observer Print Name Employee Sign Name

SERVICE ON SITE Carbon Monoxide Exposure Control Plan

Internal combustion engines produce localized high-hazard quantities of carbon monoxide, particularly in confined spaces or areas where there is poor ventilation. Once inside a human body, carbon monoxide binds to the blood and reduces the body's ability to carry oxygen to the brain and muscles. [Organization] has a duty to protect its workers from carbon monoxide exposure in the workplace.

Potential sources of CO include emissions from:

- Vehicles
- Portable generators
- Gasoline-powered tools (for example, K-12 saws)
- Natural gas space heaters
- Kilns, furnaces and boilers
- Welding

CO levels emitted by construction equipment	
Equipment	**Concentration in parts per million (ppm)**
Propane floor polisher	155
Water pump	200 to 400
Air compressor	320
Chainsaw	455
Pressure washer	450 to 575
Chop Saw	Up to 900

Effective controls will be implemented to control worker exposure to carbon monoxide.

RESPONSIBILITIES

Service On Site is responsible for

- Ensuring workers are not exposed to CO levels above the occupational exposure limits. In British Columbia, the OEL's for CO are an 8 hour time weighted average of 25 parts per million and a 15-minute short-term exposure limit of 100 parts per million.
- Ensuring that the materials (e.g., tools, equipment, personal protective equipment) and other resources (i.e., worker training materials) required to fully implement and maintain this exposure control plan (ECP) are readily available where and when they are required.
- Providing a job-specific ECP for each project, which outlines in detail the work methods and practices that will be followed on each site. Considerations will include
  - Availability and delivery of all required tools/equipment
  - Scope and nature of work to be conducted
  - Control methods to be used
  - Coordination plan
- Conducting a periodic review of the effectiveness of the ECP. This would include a review of the available exposure-control technologies to ensure these are selected and used when practical.
- Initiating sampling of worker exposure to carbon monoxide
- Ensuring that all required tools, equipment, and personal protective equipment are readily available and used as required by the ECP.
- Ensuring supervisors and workers are educated and trained to an acceptable level of competency.
- Maintaining records of training, fit-test results, crew talks, and inspections (equipment, PPE, work methods/practices).
- Coordinating the work with the prime contractor and other Service On Sites to ensure a safe work environment.

The supervisor is responsible for

- Obtaining a copy of the ECP from the Service On Site, and making it available at the worksite
- Selecting, implementing, and documenting the appropriate site-specific control measures

- Providing adequate instruction to workers on the hazards of working with gas-powered engines which emit carbon monoxide, and on the precautions specified in the job-specific plan covering hazards at the location
- Ensuring that workers are using the appropriate personal protective equipment, if appropriate
- Directing the work in a manner that ensures the risk to workers is minimized and adequately controlled
- Communicating with the prime contractor and other sub-contractors to ensure a safe work environment

The worker is responsible for

- Knowing the hazards of carbon monoxide exposure
- Knowing the signs and symptoms of exposure to carbon monoxide in themselves and others
- Leaving the work area or ensuring co-workers leave the work area, if over exposure to carbon monoxide is evident
- Using the assigned protective equipment in an effective and safe manner
- Setting up the operation in accordance with the site-specific plan
- Following established work procedures as directed by the supervisor
- Reporting any unsafe conditions or acts to the supervisor
- Knowing how and when to report exposure incidents

CARBON MONOXIDE WARNING SIGNS AND SYMPTOMS

The effects of CO poisoning vary from worker to worker, but there are certain predictable responses that result from the lack of oxygen available to the body tissue as the level of CO increases. The progression of signs and symptoms of CO poisoning depends on muscular activity, time of exposure and concentration of CO.

People who have been exposed to high concentrations of CO might complain of:

- Headaches – particularly a frontal headache
- Dizziness
- Nausea/vomiting
- Fatigue

People who have been exposed to extremely high concentrations might:

- Faint/lose consciousness
- Have cherry red lips and/or fingertips

The following table describes the signs and symptoms that may occur at specific CO levels. Tobacco smoking and pre-existing medical conditions can increase the risk of workers being exposed to unsafe levels of CO.

CO Warning signs and symptoms	
Concentration in parts per million (ppm)*	**Observations and health effects**
1 to 3	Normal.
25	Occupational exposure limit averaged over a period of up to 8 hours.
30 to 60	Exercise tolerance reduced.
100	15-minutes short-term exposure limit (STEL).
60 to 150	Frontal headache. Shortness of breath on exertion.
150 to 300	Throbbing headache, dizziness, nausea, and impaired manual dexterity.
300 to 650	Severe headache; nausea and vomiting; and confusion and collapse.
700 to 1000	Coma and convulsions
1200	Immediately dangerous to life and health (IDLH).
1000 to 2000	Heart and lungs depressed. Fatal if not treated.
Above 2000	Rapidly fatal

* 1 ppm = 1 part of gas per million parts of air by volume

HOW TO PREVENT EXPOSURE

- Use powered equipment in well-ventilated areas
- Avoid using generators and other gasoline, diesel or LP powered equipment indoors
- Provide additional ventilation in areas where powered equipment is in use

Use carbon monoxide monitoring equipment to assess the worker exposure to carbon monoxide. Establish procedures for workers to follow if the gas detector alarms

PERSONAL PROTECTIVE EQUIPMENT

Do NOT use quarter or half-face piece respirators fitted with chemical cartridges. If there is prolonged exposure to CO or a high concentration of CO, workers must wear one of the following two types of breathing protection:

- Positive-pressure, self-contained breathing apparatus (SCBA)
- Positive-pressure, supplied-air respirator (PAPR or SAR)

All workers must understand the proper use and limitations of the respirator equipment available to them.

FIRST AID AND RESCUE

In the event of a poisoning, follow these guidelines:

- Summon the first aid attendant for your worksite
- If a worker must be rescued from an area with high CO levels, rescue workers must be wearing SCBA or SAR. Only qualified persons should perform rescue.
- If available, give 100% oxygen through a tight-fitting mask. Continue oxygen therapy for at least two hours.
- If the worker is having trouble breathing or is not breathing, start assisted ventilation using a pocket mask. Add oxygen to the mask, if available. If the worker has no pulse, begin CPR.
- Get the worker to a hospital while continuing first aid treatment.

Workers who are accidentally exposed to CO usually recover fully, if the exposure has not caused unconsciousness.

Blood Borne Pathogens Exposure Control Plan

The Occupational Health & Safety Regulation requires an employer to develop and implement an exposure control plan, if a worker has or may have occupational exposure to a blood borne pathogen. Workplaces where occupational exposure to blood borne pathogens may be reasonably anticipated to occur include worksites with occupation first aid attendants.
The policy of Service On Site is to ensure that our Workers are protected from occupational exposure to blood borne pathogens, and that it is done in a manner that complies with the BC Workers Compensation act and Occupational Health & Safety Regulation, and human rights legislation.
The purpose of this exposure control plan covers all Workers, as it is reasonably anticipated that they may have harmful contact with blood or other potentially infectious materials (OPIMs), because of performing their normal job duties.

Purpose and Responsibilities

The purpose of this exposure control plan is to eliminate or minimize the Workers risk of occupational exposure to blood borne pathogens in blood and OPIMs, as well as to reduce the risk of infection should exposure occur.

Management

- Conduct the risk identification and assessment of the Workers' potential occupational exposure to blood borne pathogens.
- Implement engineering control, safe work practices and written work procedures to eliminate or reduce the Workers' potential exposure to blood borne pathogens.
- Provide Workers with appropriate personal protective equipment.
- Ensure Workers are provided with education and training on blood borne pathogens and the exposure control plan.
- Provide Workers with the Twin Rex vaccination (most of cost is covered by benefits)
- Ensure that all pertinent records are maintained.
- Set up a check system to ensure that Workers who have had an exposure incident to blood or OPIMs are medically evaluated, then seen by a physician for follow- up if deemed necessary by the by the medical evaluation.
- Ensure that accident investigations of Workers exposure incidents to blood or OPMIs are conducted and corrective actions are taken to prevent similar incidents from occurring.
- Annually review the exposure control plan and update it as necessary.
- Ensure that Workers use engineering controls, and follow safe work practices and written work procedures.
- Ensure that Workers wear appropriate personal protective equipment.

- Ensure that Workers receive education and training on blood borne pathogens and the exposure control plan initially and biannually.
- Initiate accident investigations of exposure incidents to blood or OPIMs.
- Use the provided engineering controls.
- Follow safe work practices and written work procedures.
- Wear the appropriate personal protective equipment provided.
- Attend education and training (occupational first aid training course and additional company training sessions).
- Follow the post-exposure health management procedure in the event of an exposure incident to blood or OPIMs.
- Participate in accident investigations of exposure incidents to blood or OPIMs.

Risk Identification and Assessment

All Workers have the potential for occupational exposure to blood borne pathogens. Workers may have harmful contact with blood or OPIMs via:

- Percutaneous injury
- Mucous membrane contact or;
- Non-intact skin contact

It is reasonably anticipated that such contact may occur when attendants are providing occupational first aid to co-workers, including rendering first aid, and performing post- treatment and accident scene clean up.

Control Procedures

Engineering and safe work practice controls are the preferred means to eliminate or minimize our OFAA's exposure to blood borne pathogens at this worksite. If such controls are unavailable or impracticable, or do not completely eliminate exposure, Workers will wear the appropriate personal protective equipment provided.

Engineering Controls

Although first aid kits and equipment contain only a few items that could break through the skin, Workers must always watch out for other sharp objects that may be encountered and pose a risk of percutaneous injury (e.g. contaminated broken glass at an accident site).

Pocket masks with one-way valves are available in the First Aid Kit for Workers to use when ventilating patients. These masks should not be shared before being washed and disinfected, or the valves should be changed if there is insufficient time to do this between use by different individuals.

Work Practice Controls and Written Procedures

As specified in the Occupational First Aid Training Guides, Workers will:

- Follow standard precautions.
- Use pocket masks with one-way valves when ventilating patients.
- Follow safe sharps handling procedures, such as discarding any disposable, contaminated sharp items in sharps disposal containers as soon as possible.

- Wear waterproof, disposable medical examination gloves when assessing and treating patients (if there is potential contact with patients' blood, body fluids, secretions, excretions, mucous membranes or non-intact skin), and when touching contaminated items or surfaces. Also wear such gloves if they have non-intact skin on their hands, after first covering the affected skin with a waterproof dressing.
- Replace gloves as soon as practical if they're torn, cut, punctured or leaking, and when they become contaminated or damaged such that their ability to function as a barrier is in question.
- Not wash or decontaminate disposable gloves for re-use.
- Follow the procedures for glove removal and hand washing.
- Follow the cleanup procedures for spills of blood and OPIMs that minimize splashing.
- Not store or consume food or drink in first aid facilities.
- Follow the post-exposure health management procedure, if they have an exposure incident to blood or OPIMs.

Personal Protective Equipment

All personal protective equipment for blood borne pathogens used at worksites will be provided by the Service On Site at no cost to our Workers.
Latex gloves are available in the First Aid Kit. They will be worn and used as and training guides, and the safe work practices and written work procedures outlined above.
Eye/face protection in the form of safety goggles and/or face shields are available in the service trucks. They will be worn by Workers when it can be reasonably anticipated that the mucous membranes of their eyes, nose or mouth may be splashed or sprayed with blood or OPIMs.

Mouse Droppings Exposure Control Plan

What Is Hantavirus

Hantavirus is a virus that is found in the urine, saliva, or droppings of infected deer mice. It causes a rare but serious lung disease called Hantavirus pulmonary syndrome (HPS). The virus does not remain active for long once outside of its host -- less than 1 week outdoors and a few hours when exposed to direct sunlight.

How common is it?

The virus was first reported in Canada in 1994. Since 1989, there have been 100 confirmed hantavirus cases and 27 deaths in Canada according to the Public Health Agency of Canada (as of January 2014). Most cases in Canada have been reported in the western provinces (British Columbia, Alberta, Saskatchewan, and Manitoba).

How can it enter my body?

People can contract the Hantavirus infection through inhalation of respirable droplets of saliva or urine, or through the dust of feces from infected wild rodents, especially the deer mouse. Transmission can also occur when contaminated material gets into broken skin, or possibly, ingested in contaminated food or water. Person-to-person transmission in North America has not been reported. A few situations of Hantavirus pulmonary syndrome in South America suggest person-to-person transmission is possible. However, the viruses isolated in South America are genetically distinct from those described in North America.

How does it affect my health?

The disease caused by Hantavirus is called Hantavirus pulmonary syndrome. Symptoms appear within 1 to 5 weeks after exposure. The average is 2 to 4 weeks. This disease is extremely serious since about 40% of the people who get the disease die. The disease begins as a flu-like illness. In the early stage, a worker may experience fever, chills, muscle aches, headaches, nausea, vomiting, and shortness of breath, rapid heartbeat and gastrointestinal problems. However, the disease progresses rapidly and infected people experience an abnormal fall in blood pressure and their lungs will fill with fluid. Severe respiratory failure, resulting in death, can occur within a few days of the early stage symptoms.

What is the treatment?

There is no specific vaccine, treatment or cure for Hantavirus infection but early recognition and medical care in an intensive care unit can help with recovery. Infected people may be given medication for fever and pain and oxygen therapy.

What occupations are at risk?

Cases of Hantavirus infection contracted in Canada and the United States have been associated with these activities:

- Sweeping out a barn and other ranch buildings.
- Trapping and studying mice.
- Using compressed air and dry sweeping to clean up wood waste in a sawmill.
- Handling grain contaminated with mouse droppings and urine.
- Entering a barn infested with mice.
- Planting or harvesting field crops.
- Occupying previously vacant dwellings.
- Disturbing rodent-infested areas while hiking or camping.
- Living in dwellings with a sizable indoor rodent population.

For workers that might be exposed to rodents as part of their normal job duties, employers are required to comply with relevant occupational health and safety regulations in their jurisdiction. Typically, employers are required to develop and implement an exposure control plan to eliminate or reduce the risk and hazard of Hantavirus in their workplace.

Procedure to control the hazard

Service On Site will attempt to reduce the presence of mice and limit contact with their droppings, urine and saliva by:

- Storing food (including pet food), water and garbage in heavy plastic or metal containers with tight fitting lids.
- Sealing any holes in structures where mice may enter.
- Cutting back thick brush and keep grass short. Keep woodpiles away from the building.
- Using rubber or plastic gloves when cleaning up signs of rodents, handling dead rodents, or other materials. When finished, clean gloves with soapy water before taking them off. Wash hands with soapy water (again) after removing the gloves.
- Setting traps when necessary. Put rodents in a plastic bag, seal the bag, and dispose.

Since human infection occurs through inhalation of contaminated material, clean-up procedures must be performed in a way that limits the amount of airborne dust. All Service On Site employees will treat all mice and droppings as being potentially infected. All Employees involved in general clean-up activities where there is not heavy accumulation of droppings should wear disposable protective clothing and gloves (neoprene, nitrile or latex-free), rubber boots and a disposable N95 respirator. For cleaning up rodent contaminated areas with heavy accumulations of droppings it is necessary to use powered air-purifying (PARP) or air-supplied respirators with P100 filters and eye or face protection to avoid contact with any aerosols.

Dead mice, nests and droppings should be soaked thoroughly with a 1:10 solution of sodium hypochlorite (household bleach). Bleach kills the virus and reduces the chance of further transmission. The contaminated material should be placed in a plastic bag and sealed for disposal. Disinfect by wet-wiping all reusable respirator surfaces, gloves, rubber boots and goggles with bleach solution. All disposable protective clothing, gloves and respirators should be placed in plastic bags and sealed for disposal. Thoroughly wash hands with soap and water after removing the gloves.

SILICA EXPOSURE CONTROL PLAN

PURPOSE AND RESPONSIBILITIES

Service On Site has a duty to protect our workers from overexposure to crystalline silica (herein referred to as silica) during a variety of oil and gas related activities. According to the Enform Controlling Chemical Hazards Guideline and web-tool, silica exposure is ranked as an Extreme risk in industry work sites. It is identified as a risk requiring special controls, including seeking the advice of experts. Studies show that a variety of oil and gas activities generate airborne contaminants in excess of occupational exposure limits. Effective controls are available to protect workers from harmful exposure.

A combination of control measures will be required to achieve this objective. We commit to being diligent in our efforts to select the most effective control methods available, and to ensure that the best practices, as described in this exposure control plan (ECP), are followed at our work sites.

The work procedures we establish will not only protect our workers, but also any other workers onsite who are not involved in these operations.

This ECP applies to the site prime contractor, at-risk service providers such as the driller, the hydraulic fracturing company, the trucking company, and their employees, as well as any other third party companies and their employees when at risk as determined by a risk assessment.

SERVICE ON SITE IS RESPONSIBLE FOR THE FOLLOWING:

- Ensure that, at a minimum, the ECP meets or exceeds the prime contractor's ECP and provincial regulatory requirements.
- Ensure that the materials (for example, tools, equipment, and personal protective equipment [PPE]) and other resources (for example, worker training) required to fully implement and maintain this ECP are readily available.
- It is the employer's responsibility to provide required materials and documentation in order to comply with other applicable health and safety legislation (e.g. safety data sheets).
- Ensure supervisors and workers are educated and trained in the hazards of silica exposure and to work safely with silica.
- Maintain written records of training (e.g. proper use of respirators), fit-test results, crew talks, and inspections (of equipment, PPE, and work methods and practices).

- Conduct an annual review (or more often if conditions change) of the ECP's effectiveness. This includes a review of available control technologies to ensure they are selected and used when practical.
- Coordinate work with other employers to ensure a safe work environment.

SUPERVISORS ARE RESPONSIBLE FOR THE FOLLOWING:

- Provide adequate instruction to workers on the hazards of silica exposure associated with their respective oil and gas activity.
- Select and implement the appropriate control measures.
- Ensure that workers using respirators have been properly trained and fit-tested, and that the results are recorded.
- Make sure that work is conducted in a manner that minimizes and adequately controls the risk to workers and others. This includes ensuring workers use appropriate engineering controls as well as administrative controls; they should only wear the necessary PPE as the last line of defense.
- Site supervisors (i.e. wellsite supervisors and other third-party supervisors) are responsible for making sure that workers have been educated and trained in this exposure control plan. They must ensure that workers understand the plan's expectations, as well as enforce it on the work site.

WORKERS ARE RESPONSIBLE FOR THE FOLLOWING:

- Read, understand, and adhere to the controls set out in this exposure control plan when at risk. A copy of this plan, or a similar one, must be present on every oil and gas site where at-risk activities are underway.
- Use the assigned protective equipment in an effective and safe manner. For example, workers must be clean-shaven where a respirator seal is established with the worker's face.
- Follow established work procedures as directed by the supervisor.
- Report any unsafe conditions or acts to the supervisor.
- Report any exposure incidents or any signs or symptoms of illness from silica exposure to the employer.
- The workers will acknowledge that they understand the ECP's requirements prior to commencing their work activities.

HEALTH HAZARDS FROM SILICA EXPOSURE

Silica exposure is predominantly associated with the inhalation of crystalline silica. In general, quartz is the predominant form of crystalline silica; however, cristobalite does exist in certain materials. Exposure to silica is usually in the form of an airborne dust; however, other forms of airborne exposures are possible as well, such as mists. Silica inhalation is concerned with the respirable fraction of the dust. This is the fraction that is small enough to get deep into the lung where gas exchange takes place.

Crystalline silica dust can cause a disabling, sometimes fatal disease called silicosis. The fine particles are deposited in the lungs, causing thickening and scarring of the lung tissue. The scar tissue restricts the lungs' ability to extract oxygen from the air. This damage is permanent, but symptoms of the disease may not appear for many years.

A worker may develop any of three types of silicosis, depending on the concentrations of silica dust encountered and the duration of exposure:

- Chronic silicosis—develops after 10 or more years of exposure to crystalline silica at relatively low concentrations
- Accelerated silicosis—develops 5 to 10 years after initial exposure to crystalline silica at high concentrations
- Acute silicosis—develops within a few weeks to a few years, after exposure to very high concentrations of crystalline silica[1]

Initially, workers with silicosis may have no symptoms; however, as the disease progresses, a worker may experience:

- Shortness of breath
- Severe cough
- Weakness

These symptoms can worsen over time and lead to death.

Exposure to silica has also been linked to other diseases, including bronchitis, tuberculosis, chronic obstructive pulmonary disease (COPD), kidney disease, and lung cancer. Silica is classified as a human carcinogen (Group I) by the International Agency for Research on Cancer (IARC).Other hazardous materials may be present in the silica-containing materials or involved in the process such as heavy metals or NORM that have additional health effects. Examples of this include abrasive blasting dust, refractory brick removal or bauxite-based ceramic proppants.

RISK IDENTIFICATION

When silica containing materials are agitated, disturbed, moved, or otherwise handled, silica exposure can occur. Worker exposure is primarily limited to inhalation. The presence of silica dust on skin, hair, clothing and PPE represents the possibility of this dust being re-entrained into the air and then subsequently inhaled by the worker or other workers. Silica may also represent a mechanical abrasion hazard to the eye when concentrations are very elevated.

In general, inhalation exposure to silica can occur in three ways as a function of:

- the work location;
- the activity (task); and/or
- the occurrence of unplanned events.

THE NATURE OF THE HAZARD

Silica dust is not ordinary dust! The hazardous component of silica is the respirable fraction: this means the very small particles that can penetrate deep into the lung. Different types and sources of silica may have different size ranges. For example, dust generated from hydraulic fracturing may be comprised almost entirely of respirable particles. In contrast, silica dust generated while cutting concrete generally has a wider range of particle sizes. Silica that is comprised mainly of respirable dust is less visible, because the particles do not block, scatter, and reflect light. The net result is that with many silica hazards, by the time it is visible, the silica levels are well above what would be defined as an acceptable risk.

The absence of visible dust may not mean the absence of an airborne silica hazard!

Silica dust generated from sand can come from existing fines in the dust, or it can come from breaking the sand grains apart during handling. The dust generated in high energy environments is newly fractured: this makes it more toxic to the lung.

AIRBORNE EXPOSURE LIMITS

Crystalline silica, such as quartz and cristobalite, has exposure limits described below in Table 1. When other hazards such as heavy metals or NORM are present, those hazards need to be considered as well.

Table 1 - Silica Exposure Limits

Jurisdiction	8-hour Exposure Limit	12-hour Adjusted Exposure Limit
ACGIH TLV[2]	0.025	0.0125
Alberta[3]	0.025	0.025
British Columbia	0.025	0.0125
Saskatchewan	0.05	0.05

Note. Exposure limits are subject to change by the agencies that set them. Excursion limits also exist for silica such as the 30-minute TWA, which is 3 times the full-shift exposure level.[4]

The 8-hour exposure limit of 0.025 mg/m^3 is recommended to standardize risk management across the Western provinces. This is based on this value being adopted by two of the three western provinces and the risks of silicosis, lung cancer, and other disease being markedly elevated at levels above 0.025 mg/m^3.

The current understanding of the risk of silicosis disease over 45 years of exposure at 0.025 mg/m^3 is between 5 to 40 cases of silicosis per 1,000 workers versus 20 to 170 cases per 1,000 workers at 0.050 mg/m^3. At the older 2006 ACGIH TLV of 0.1 mg/m^3 the silicosis risk ranged from 60 to 773 cases per 1,000 workers.[5] The range is a reflection of different industries and different studies and therefore may not be appropriate for all types of silica exposures.

SKIN AND INGESTION

Skin and ingestion exposure to silica is generally not thought to be a concern in and of itself; however, the re-entrainment of silica back into the air creates an airborne hazard that warrants attention. Sometimes other hazardous ingredients, such as heavy metals and NORM (Naturally Occurring Radioactive Materials), may be present with silica. Such ingredients represent ingestion and skin hazards: thus, good hygiene practices, gloves, body protection (coveralls), and proper hand washing is required. In general, workers should limit skin contact with silica whenever possible.

RISK ASSESSMENT AND CONTROLS

Exposure to silica has been recognized as a concern in several industries, including the oil and gas industry. NIOSH and Alberta OH&S have conducted and published

independent studies of silica exposures in select oil and gas activities and identified exposures of concern. WorkSafeBC has created a variety of silica awareness campaigns, templates, and training videos. Links to these are provided in the Resources section of this ECP template.While many assessments have been completed within industry, individual site variations, configurations, and activities, as well as other site-specific conditions, may affect the exposure risk.

FACTORS OF EXPOSURE RISK

A variety of factors impact the degree of exposure risk on site. Some factors that commonly apply to the majority of silica exposures are detailed below.

- Time – How long is the duration of the exposure? Cumulative exposure is a better predictor of silica disease. As such, exposure levels are full-shift time-weighted averages (TWA) like 8-hour Exposure Levels (EL). Some task-based exposures may last only minutes, while others may last the entire work shift. It is important to remember that excursion limits also exist and require compliance; one example is the 30-minute TWA, which is 3 times the full-shift EL.
- Proximity – How close are you to the emission source? The closer you are to the emission source, the higher the airborne silica concentration is likely to be. As a general rule of thumb, keep sources of exposure at least an arm's reach away.
- Relative Dustiness – How dusty is the material or process? The dustier the material is, the more airborne dust is likely to be generated. It is important to recognize that the manner in which the material is disturbed can impact the dustiness. For example, a product that is not dusty, such as clean sand, can generate dust when it is ground to make silica flour. This is especially important since, for silica, the respirable fraction is hazardous. Relative dustiness is grouped into three categories – low, medium, and high – in accordance with Enform's Controlling Chemical Hazards Guideline.
- Energy – Is energy being imparted into the silica-containing material? The more energy, the greater the airborne concentration of silica. Energy can come from the speed of telebelts, the speed of a chop saw blade, the pressure and associated speed of abrasive blasting media coming out of the gun nozzle, the air pressure used to pneumatically convey bulk materials, etc.
- Quantity in use – How much is being used? Generally, the more product in use, the greater the airborne hazard created.

- Quantities are grouped into three categories including grams, kilograms, and tonnes, in accordance with Enform's Controlling Chemical Hazards Guideline.
- Percentage Silica – What is the bulk silica percentage? Higher silica concentrations generally result in more risk, especially for pure products.
- Ventilation – Can silica build up in the air? The amount of ventilation can make a significant difference to exposures. Exposures in well-ventilated environments, like wide-open windy outdoor locations, may be less significant than exposures in poorly ventilated indoor environments. This is particularly true when the source of exposure is greater than an arm's reach away from the workers breathing zone for small sources, but does not hold true for large sources. However, it does not hold true for large sources. Wind can dilute the hazard, but can also take the hazard from one area and make it a hazard for others downwind. This is of particular concern when the concentration is very high, as in hydraulic fracturing and abrasive blasting operations. In general, the benefits of dilution are negated by the difficulties that accompany a loss of hazard control.

RISK ASSESSMENT

Because silica is so toxic, it is categorized in Enform's Controlling Chemical Hazards guideline and associated web-tool into Hazard Group E. This means that an exposure control plan and Control Approach 4 is required (i.e. seek expert advice). See Guidance sheet GS-304 for more information. This ECP template and its associated silica exposure guidance sheets provide that special advice.

Personnel at risk for silica exposure need to:

- conduct risk assessments for their specific operations as a component of their health and safety program; and
- implement appropriate controls to mitigate risks to acceptable levels.

Common activities are broken down into four categories of risk based as detailed below in Table 2.

Table 2 - Risk Category

Risk Category	Airborne Silica Level (mg/m^3)[6]
Tier 0	<0.0125
Tier I	0.0125 - <0.125
Tier II	0.125 - <0.625
Tier III	≥0.625

CONTROLS

Risk assessment and evaluations lead to the implementation of effective exposure controls. Most Occupational Health and Safety Regulations require employers to select controls based on the following hierarchy:

- Elimination and Substitution;
- Engineering controls (i.e. local exhaust ventilation, barriers);
- Administrative controls (i.e. limiting time workers are in a potentially contaminated area, procedures and signage); and
- Personal protective equipment (i.e. respirators and disposable coveralls).

Because silica exposure may increase the risk of lung cancer, exposure should be maintained as low as reasonably achievable (ALARA) in keeping with the theory that even small doses may represent a cancer risk.

Ideally, the hazard should be eliminated or substituted. The substitution of non-silica based products is not applicable to many of the silica exposures associated with oil and gas activities, because many of the exposures come from naturally occurring silica such as sand, rock, and cement and the use of silica-free alternatives is not feasible. One activity where substitution is appropriate is the use of non-silica abrasive blasting media. It is worth noting that contraire to what may be indicated in a product SDS some of these alternative media may result in silica exposures of concern. Regardless of product substitution, engineering (e.g. ventilation), administrative (e.g. work procedures) and personal protective controls (e.g. respirator) are needed.

Of these controls, the use of engineering controls is typically the most desirable and effective. Personal protective controls should only be considered when engineering controls and/or administrative controls are either not practical or not

effective on their own. The goal should be to apply engineering and administrative controls to Tier III exposures first; so, over time, only Tier 0 exposures remain.

ENGINEERING CONTROLS

In many cases, engineering controls offer the most effective exposure control. This is because exposure can be very significant, which means using respiratory protection is less successful. Another reason is the challenge of managing exposures to adjacent personnel. In some instances, engineering controls can be very simple and highly effective, such as the use of wetting to prevent dust generation.Engineering controls that are applicable to silica exposure control include the following:

- Wetting;
- Enclosed processes;
- Enclosed people spaces;
- Use of ventilation;
- Filtration;
- Barriers; and
- Remote monitoring systems such as cameras to remove the need for a worker to be present.

Implementing change in a process often creates other health and safety risks that require assessment and management. Engineering controls typically require on-going maintenance to be effective. Worker training and other administrative controls are also necessary.

For more information on engineering controls, please refer to the Controlling Chemical Hazards Guidance Sheets GS 300, GS 301, GS 302, and GS 303.

ADMINISTRATIVE CONTROLS :Personnel on site must follow established practices and procedures to limit contact with or exposure to silica. Where engineering controls are in place, procedures for their use and maintenance must exist. Signs must indicate that a silica hazard is present and that respiratory protection is required. They must be present when a Tier I, Tier II or Tier III hazard exists. Restrictive barriers such as banner tape are recommended, when practical. In general, proximity and duration of exposure can be managed by way of administrative controls. Examples include procedures limiting access, limiting time in select areas, maximizing distance from sources and control zones indicating where personnel are permitted, and when and what type of respiratory protection is required.

Procedures are required for the use of a variety of PPE, including respirators, and for personal decontamination.

PERSONAL PROTECTIVE EQUIPMENT

Respirators

Different types of silica-generating activities or operations require different levels of respiratory protection. Options range from a half-face air purifying respirator (APR) with a protection factor of 10 to a tight-fitting full-face powered-air purifying respirator (PAPR) that has a protection factor of 1,000. These different respirator types correspond with different exposure risk levels. At a minimum, the NIOSH-approved respirator must consist of a non-disposable elastomeric half-face respirator equipped with P100 filter cartridges.

The superior fitting qualities of a non-disposable face-piece paired with the oil-proof particulate and mist filter (P100) make this the best minimum respiratory protection for silica exposure (as opposed to disposable, N95 respiratory protection).

The biggest limitation of respirators is leakage where the respirator meets the face. As a result, respirators are assigned protection factors. For example, a half-face respirator has a protection factor of 10 meaning that it can reduce the concentration of the contaminant from outside the respirator to inside the respirator by 10 times. These protection factors are assigned by the CSA and NIOSH and adopted by the various health and safety regulatory jurisdictions.

Regardless of the type of respiratory protection used, a respiratory protection program must be in place to ensure that workers are clean-shaven, have been fit-tested and are trained in the use, care, and maintenance of their respirators. Respirators will be used, cleaned, and stored in accordance with the respiratory protection program. For more information on a respiratory program please refer to GS 401 and the Alberta requirements for a Respiratory Code of Practice.

The presence of other chemical hazards may necessitate the need for a higher degree or different type of respiratory protection.

Table 3 describes equipment and configurations necessary for certain situations.

Table 3 – Risk Category and Respirator Types

Risk Category	Required Protection Factor[7]	Respirator Type and Filter
Tier 0	NONE	Acceptable risk, no protection required
Tier I	10	Half-face & P100 filters
Tier II	50	Full-face & P100 filters
Tier III	1,000	Tight-fitting full-face PAPR & P100 filters or Supply Air[8]

Respirators are only effective if they are worn properly and consistently 100% of the time!

A worker in a Tier III exposure control zone who takes off their respirator for just 1 minute out of their 12-hour work shift may be 2 times overexposed.

The use of tight-fitting full-face PAPRs instead of full-face respirators for work situations that require full-shift use should be considered to increase comfort, reduce stress on the worker, and improve adherence to proper use. PAPRs are not recommended for Tier III exposures that are sustained for numerous hours, because the main limitation on use is filter dust loading. This requires the filter to be changed numerous times in a day.[9] A recommended filter change-out schedule is provided in Table 4; however, the filters should be changed whenever it becomes hard to breathe.

Table 4 - Respirator Filter Change-out Schedule

Respirator	Duration of Use	Change-out Frequency
Half-face APR (Tier I)	12-hour Shift	Daily
	<2 hours	Weekly
Full-face APR (Tier II)	Any	Daily
Tight-fitting Full-face PAPR[10] (Tier III)	Any	~Every Two Hours

Coveralls

Decontamination is an integral component of exposure control. The goal is to remove contamination of skin and personal protective equipment to prevent the potential inadvertent secondary inhalation of contaminants. Coveralls such as FR coveralls must not be worn off site and must be laundered on a regular basis. Inadvertent secondary inhalation may occur when silica dust that is present on PPE, skin or head hair is disturbed, re-entraining the silica into the air.

Disposable coveralls are required when working with bulk silica frac dust and for Tire III (PAPR or Supply Air) exposure risks.

In general, fire retardant coveralls and disposable coveralls should be sized and worn in a manner to limit exposed skin such as at the arms, ankles and neck. For more information on coverall selection, please refer to GS 400 and GS 403.

Gloves

Gloves suited for the physical hazards of the task are recommended, but not required, for protection against silica. It is not generally considered a skin hazard. For more information on glove selection and use please refer to GS 404.

RISK/CONTROL GUIDANCE SHEET SELECTION AND IMPLEMENTATION

This is the most important part of this ECP. It is where you determine which category of risk applies to your work site, implement controls to protect workers' health, and comply with the law.

Qualitative assessment involves judging exposures based on various factors. Assessing the factors present, and how similar or dissimilar they are to various exposures, allows you to determine how much risk is present. Risk is categorized into Tiers. Use exposure measurement to verify those qualitative assessments.

Exposure measurement is used to answer a variety of questions. It is important that one first knows what questions you want to answer and then design your measurement strategy to answer those questions. For more information on exposure measurement, please refer to the Exposure Measurement Guidance Sheet (GS 305).

An assortment of risk assessment and control guidelines have been prepared for hydraulic fracturing. Perhaps in the future other industry documents will exist. Take the guidance sheets that are applicable to your work site and check off the various risks and control strategies that apply. Then, implement them on the work site.

It is not recommended to deviate from the enclosed data sheets. It is only acceptable to deviate from the recommendations in favor of lower standards of controls if quantitative exposure data has been collected to support the decision.

Insert Guidance Sheets Here as per Table 5.

Table 5 – Guidance Sheets to be Inserted into ECP

Industry Sector	Guidance Sheets
Completions (Hydraulic Fracturing)	GS 407 Sources of Exposure, GS 408 Controls and GS 409 Risk Assessment
Other Sectors	To be developed in the future at the request of industry, please refer to GS 003 for a list of potential silica exposures in Upstream Oil and Gas

HYGIENE FACILITIES AND DECONTAMINATION PROCEDURES

In order to protect workers, decontamination is an integral component of exposure control. The goal is to remove contamination of skin and personal protective equipment to prevent inadvertent secondary inhalation of contaminants. Inadvertent secondary inhalation may occur when silica dust that is present on PPE, skin, or hair is disturbed, which reintroduces the silica into the air.

Prior to eating, drinking, and leaving the worksite, workers should thoroughly wash their face and hands with a mild detergent solution. Adequate washing facilities must be provided on site to enable worker decontamination. Eating and drinking is restricted to authorized areas only.

Adequate washing facilities must be provided on site to enable worker decontamination. A shower is not required, but may be advisable for those working with bulk silica dust and Tier III exposures.

Procedures are required for decontamination and, specifically, the use of disposable coveralls. Procedures should consist of the following:

1. Remove disposable coveralls (if applicable) and place in waste receptacle
2. Remove FR coveralls and place in laundry receptacle
3. Wash hands, face, head and respirator
4. Remove respiratory protection
5. Properly store respirator

HEALTH MONITORING

A program of monitoring and evaluating worker health is recommended and is required in some jurisdictions. Lung spirometry, at a minimum, to detect changes in lung function and the onset of lung disease for anyone who works in an environment that is at or above the exposure level (full-shift TWA) for 30 days in a year is recommended and required by some provincial regulations, such as Alberta. This easy to administer test is non-invasive, can be conducted for minimal cost and disruption, does not create risk for the patient, and is already a recommended component of a respiratory program. In contrast, chest x-rays are not recommended unless required by legislation, as is the case in Alberta.

Lung spirometry must be conducted by competent medical health professionals. It must include forced vital capacity (FVC), forced expiratory volume in 1 second (FEV(1)), and should be conducted initially and every two years thereafter.

In addition, a medical history must be collected that includes past work and non-work related occupational exposures, any medical symptoms, and smoking status.

Contractors are expected to address health and wellness issues with their employee. Discussion should include general fit for work expectations, ability to wear a respirator (often includes lung spirometry), and other related components, such as respirator fit testing. These should be elements of their health and safety program.

TRAINING

Training will be performed by the employer or the employer's designate.

Records of attendance, dates of training, and training material will be documented and retained.

Additional training or reference material on silica exposure will be made available to employees upon request.

TRAINING TOPICS

- Health hazards of silica exposure;
- Operations that can produce silica exposure;
- Engineering controls and safe work practices used to protect workers;
- The importance of proper equipment control and maintenance;
- Housekeeping procedures;
- Proper use of respirators and the respirator program;
- Personal hygiene decontamination procedures to reduce exposures; and
- Review the details of the exposure control program for silica.

As with all hazard controls, training is paramount to the success of any program.

ANNUAL REVIEW

This ECP will be reviewed at least annually and updated as necessary by the employer, or the health and safety representative. This review should take into account any voluntary certification programs (i.e., COR Audit) in place, as well as any changes in regulatory requirements. Substitution and control technologies are evolving quickly and must be considered in the annual review. Proposed changes to this practice can be directed to the Management

DEFINITIONS

ACGIH - American Conference of Governmental Industrial Hygienists

APR - Air Purifying Respirator

CSA - Canadian Standards Association

DOP Testing – DOP or Dioctyl Phthalate is an aerosol that is used to test HEPA filters and the seal of the filter to the housing of a vacuum or negative air unit. It is recommended that this testing occur at least yearly.

ECP - Exposure Control Plan. A term referenced in WorkSafe BC legislation, but generally considered synonymous with the Code of Practice requirements of the Alberta OH&S legislation.

Exposure Level - the maximum allowable exposure to a chemical or other agent or hazard. It is often expressed as an average over eight hours or 15 minutes or as a ceiling above which no exposure is permitted at any time. Exposures longer than eight hours are often adjusted to account for extended exposure and reduced recovery time. Exposure levels can also be referred to as occupational exposure levels (OEL) or permissible exposure levels (PEL).

Heavy Metals - general a term used to describe metals with high atomic weights that are very toxic such as mercury, cadmium, lead, arsenic, manganese, chromium, etc.

IARC – International Agency for Research on Cancer

Mist - the presence of liquid droplets suspended in the air

(M)SDS - Material Safety Data Sheet or Safety Data Sheet

NIOSH - National Institute of Occupational Safety and Health – a federal department of the Centre for Disease (CDC) Control in the United States of America. NIOSH is responsible for conducting research and making recommendations for the prevention of work-related disease and injury.

NORM - Naturally occurring radioactive materials. These are typically decay products of thorium and uranium such as radium-226, radium-228, radon-222 and lead-210. NORM may be concentrated in oil and gas process equipment in the form of gas, sludge, scales and films. Certain products such as refractory brick insulation may naturally contain NORM.

PAPR – Powered Air Purifying Respirator. A respirator that is equipped with a filter and a blower motor such that a slight positive pressure within the face piece is created. PAPR's can be either tight-fitting or loose-fitting.

Respirable - Delineates a specific size of airborne contaminant that is capable of accessing the lower regions of the lung where gas exchange takes place. A variety of definitions exist but in general airborne particulate that has a diameter of less than 10 micrometers is regarded as respirable.

Silica (Quartz or Cristobalite) - an abundant crystal form of silica that can be present in many dry products, present in refractory brick insulation, and present in naturally occurring products such as sand, cement and soil and rock. It is highly toxic and can cause serious disease and lung cancer.

Silicosis - A progressive and often fatal lung disease that is caused by the inhalation of respirable crystalline silica such as quartz or cristobalite. Silicosis is an auto-immune disease where the body reacts to the presence of the silica in the lung with the formation of scar tissue that leads to difficulty in breathing and reduced gas exchange in the lungs.

Spirometry - tests that measure pulmonary lung function (PFT) in order to diagnose a variety of lung diseases. Often includes the forced vital capacity (FEV) and forced expiratory volume in one second (FEV(1)) tests.