

Sutherland Excavating Ltd Safety Program

Sutherland Excavating Ltd.



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Millerton, Miramichi

New Brunswick

E1V 5H7



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Section 1 - Mission Statements

Company Safety Policy

We at Sutherland Excavating Ltd. shall consistently strive to provide a safe and workable construction site and work in a spirit of consultation and cooperation with all employees. The safety of our workers and safety on our work site is the highest priority. We also believe that each employee will have valuable input on how we may improve our safety program. I ask that every individual take initiative in what makes a successful and productive work site. We must all accept our responsibility to work safely in accordance with Provincial Occupational Health and Safety Laws - WHMIS and Environmental Legislation and good sense.

Our employees will not be required, or knowingly allowed to work in an unsafe matter or environment. With the commitment and cooperation of all employees, we at Sutherland Excavating Ltd. are confident that we can maintain our record as one of the industry's leading firms in Safety Performance and Quality Workmanship.

It is part of my commitment that we have developed and will maintain our safety program.

Acknowledged By:

President: Blake Sutherland

Date



Sub-Contractor Safety Policy

Prior to awarding any work to a sub-contractor, the Safety and Training Records of the sub-contractor shall be reviewed if required for the job at hand.

All sub-contractors shall have their own Health and Safety plan or follow that of Sutherland Excavating Ltd.

All sub-contractors shall be aware of Sutherland Excavating Ltd Drug and Alcohol policy as well as any such policies of the main client.

Prior to starting work on Sutherland Excavating Ltd. work sites or with Sutherland Excavating Ltd., the sub-contractor must have all required paperwork signed and submitted to Safety Manager with **WCB Coverage and Insurance prior to starting any work.**

The sub-contractor shall submit a signed safety plan and JSA for the work which identifies all hazards and potential hazards and the action taken to control them.

“General inspections and toolbox meetings” shall be carried out according to Sutherland Excavating Ltd. safety policies by the Sutherland Excavating Ltd. Safety Supervisor or Sub-Contractor Safety designate or Supervisor.

Sub-contractors should be aware that Sutherland Excavating Ltd will conduct Post Job Performance Reviews as necessary and inspections.

Acknowledged By: _____
Sub-Contractor Designate

Company Name

Date

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Section 2 - Assignment of Responsibilities

Management Responsibilities

- Establish a safety policy program that provides a commitment and philosophy that sets the level of expectations for safety performance throughout the company.
- Regular inspection of work sites, equipment, work methods and work practices and timely correction of hazardous conditions and unsafe acts by employees.
- Employee health monitoring as well as proper training of workers (as specified by Provincial laws).
- Provide proper Personnel Protective Equipment as well as specialized protective equipment for all employees, and have them readily available.
- Appropriate First Aid personnel, equipment and service.
- Coordination of safety and health activities of employees of Contractors working within the company.
- Training in emergency evacuation procedures where applicable.
- Twice per year, management will review safety and health activities, accident trends and development and implementation of a definitive action plan to identify-manage-evaluate-correct-control.
- Prompt investigation of accidents and immediate implementation of a corrective action plan. Maintenance of records and statistics, including reports of inspections and accident investigations as well as report injuries that require a Form 67 to Work Safe NB.
- Set a good example to all employees.
- Management shall once a year evaluate supervisors as to their job performances and health and safety commitment. This will help to set goals and address any areas that need special attention.
- Evaluate, review and provide minutes to all toolbox meetings and general safety meetings.



Site Supervisors Responsibilities

- To know and apply our safety policy and relevant sections of the Occupational Health and Safety Act.
- Site Supervisors shall perform a site hazard prior to any work project for unsafe areas, point them out and then correct and inform workers. Also conduct inspections, using the site inspection checklist.
- Regular prevention maintenance check for all machinery, equipment and hand tools. (Remove unsafe items found).
- Ensure that the requirements of the Occupational Health and Safety Act and all other applications legislation are met.
- Ensure all necessary signs are posted on site.
- Ensure all necessary documents are available on site.
- Determine clean-up facilities required; provide and maintain them where necessary.
- Hold valid First Aid Certificate.
- Conduct a minimum of one toolbox meeting a week with his/her crew prior to project start.
- Cooperate fully with construction Safety Inspectors/Clients Reps; (deal with supervisor only).
- Promote this safety program through leadership and example.
- Maintain a housekeeping standard and assign definite responsibilities to individuals for good housekeeping.
- Prompt investigation of accidents and immediate implementation of a corrective action plan.



Employees Responsibilities

Each employee is responsible and will be held accountable for complying with established safe work practices as defined by the Health and Safety plan or job (project policies and procedures). Each employee has the right, and is responsible for stopping any work that is considered unsafe. A supervisor must be advised of any such situation immediately.

Each Employee has the following duties and responsibilities:

- Follow all safety rules
- Report to work ready to perform assigned tasks by using established safe work practices and by wearing prescribed personal protective equipment.
- Comply with all safety instructions and manufacturers safety recommendations.
- Wear Personal protective equipment required for individual projects or specific operations. A hard hat, CSA eye protection, workpants, shirt with at least 6-inch sleeves, and CSA approved retro reflective vest.
- CSA approved work boots (Above the ankle) are minimum required safety apparel on projects.
- Use the proper tools and equipment for each job and using them correctly. If knowledge or proficiency with the operation or equipment is questionable, ask before it is used.
- Do not perform any operation that has not been planned or when safety is not an integral part of the process. Do not start any operation without reading, understanding and signing the Safe Start Card.
- Attend all required Safety meetings. Being a participant and engaging in discussion generated at such meetings.
- Report all unsafe acts and/or conditions to your supervisor immediately.
- Take appropriate action if you observe something that could cause immediate injury to a fellow worker.
- Report all incidents or near misses, and injuries to a supervisor immediately, no matter the severity.
- **While operating a Company Vehicle the following must be adhered to at all times:**
 - Cell Phones shall only be used with hands free capability except in Heavy Equipment
 - Seat Belts are Mandatory in light vehicles and equipment
 - Inspect the Fire Extinguisher and First Aid Kit Monthly
 - Ensure strobe light is on vehicle and working while on site when needed
 - Back your vehicle in where possible, park in manner that does not impact project traffic.
 - Drive at a safe and controlled speed at all times, keep headlights on



Safety Representative Responsibilities

Sutherland Excavating Ltd. has a full time employee that was hired by Blake Sutherland as our Companies Safety Representative. The representative is not solely responsible for the health and safety programs within our company. Company owners, individual Supervisors, Foreman and all employees under Sutherland Excavating Ltd. are responsible for complying with the safety requirements that are set out in our safety manual.

The responsibilities of the Safety Representative are as follows:

- 1) Filling out project start up safety forms – knowing where they are stored on the computer and being able to access them and print them.
- 2) Arranging line locates
- 3) Preparing project safety binders
- 4) Ensuring daily, weekly safety forms are being done, reviewed and filed.
- 5) Maintain NBCOR status – filing – know where all files are and what they are used for, etc.
- 6) Review the timesheets weekly and extract / remove safety related material, review the items like site hazard assessments and file. Keep track of how many site assessments are being done. Act on required items and report to me.
- 7) Hold at least one weekly general safety meeting.
- 8) Visit at least one job site per week and do an informal review.
- 9) Once monthly do a formal job site safety review.
- 10) Once in the spring review the company manual with all employees. Review this document first and suggest updates.
- 11) Ensure all employees get POST trained by March of every year.

Equipment

- 1) After the maintenance program is started on the computer, learn to enter data, etc.
- 2) Weekly collect all hours and mileages from equipment and enter into the computer.
- 3) Once weekly inspect at least one piece of equipment and file report.
- 4) Ensure they are filling out maintenance paperwork when doing maintenance.
- 5) Ensure they are posting stickers on every machine when they do oil



changes, and writing the dates on air filters, etc.

6) Ensure they are checking tire pressures, air filters, etc. when checking over the machines. Ensure machines are getting greased, etc.

7) Check machines and trucks for cleanliness and enforce the need to keep things clean.

8) Collect and review, file the logs from the shop trucks. Log any damages. Loss Prevention

9) Prepare a plan to make our yard more secure. We need to organize a better key keeping system – one where we have a duplicate for every truck labeled and locked away, as well need to change keeping the keys for the shop trucks on the window sill – these should be stored in a key cabinet, probably in the installer's office.

10) Perform monthly shop inspections and file report. Inspect for safety and also loss control.

Spill Response Program

- 1) Participate in the spill response program, help organize the guys into a Coordinated unit, practice some spill
- 2) Help manage the ECRC trailer and equipment, ensure our spill response equipment is well maintained.
- 3) Be available to liaison with EH&S and convey information back to their department
- 4) Periodically assess the department's compliance status with the various programs and report to the department head Implementing

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Section 3 - Hazard Assessment Policy

Hazard Assessment Policy

It is the policy of Sutherland Excavating Ltd. to implement a systematic process for the identification and control of hazards.

At minimum, Sutherland Excavating Ltd., will:

- Perform a comprehensive monthly hazard inspection for all project specific activities; equipment; processes and property under the control of Sutherland Excavating Ltd. and review on annual basis.
- Site Supervisors shall follow the POST program and perform a daily safe work permit and Job Safety Analysis prior to any work project for unsafe areas, point them out and then correct and inform workers.
- Depending on the length of a project, a safety inspection shall be conducted to identify any new or unusual safety concerns. Any new or unusual safety concerns will be relayed to the employees and corrected immediately and listed on the POST documentation.
- In some instances, Sutherland Excavating Ltd. Management and Supervisors may be required to perform daily, weekly or bi-weekly inspections due to the scope of work, amount of employees on site or level or amount of site hazards on the project site.

Acknowledged By:

President

Date



Site Hazard Assessment

Work Site / Job Hazard Assessment	
Location: _____	Date _____
Assessment Team: <u>Blake Sutherland</u>	Date _____
Supervisor: <u>Blake Sutherland</u>	Date _____

- Step 1: Complete Box #1 (above)
- Step 2: Check off the hazards in Box #2 that apply to this job. Note: The hazards listed are only a guide to the completion of this report. Other hazards may be present and must be addressed when realized. It is important that all hazards have plans to eliminate or control them and that these plans are put in place.
- Step 3: List the hazards identified in Box #2 in Box #3.
- Step 4: Describe Potential Health & Injury Hazards (Box #4)
- Step 5: Prioritize the hazards using the priority key * (Box#5)
- Step 6: State Action Required (control) (Box #6)
- Step 7: Indicate who is responsible for corrective action (Responsibility) (Box #7)
- Step 8: Indicate date Require Action was completed (Box #8)
- Step 9: Other considerations (Box #9)
- Step 10: Review with employees any hazards that have not been eliminated and have them sign (Box # 10)

Safety Program	Okay	Action Req'd	Equipment	Okay	Action Req'd
Company Safety Policy			Mobile Equipment		
Company Safety Manual			Vehicles		
Safe Work Practices			Power Tools		
Copy(s) of OH&S Act			Hand Tools		
Copy(s) of OH&S Regs			Scaffolds		
Inspection			Ladders		
Investigations			Yards/Grounds		
Administration			Drainage		
Training			Stacking of Materials		
Worker Training			Road Signs/Speed Limits		
Management Safety Training			Lighting		
Supervisory Safety Training			Visibility – Fog, Mist, Dust		
			Parking, Access		
First Aid			Buildings		
Facilities			Lighting		
Supplies			Emergency Lighting		
Personnel			Ventilation		
Records			Heating		
Emergency			WHMIS 2015		
Fire Prevention			Access/Egress		
Smoking/No Smoking Rules			Trailers		
Schedule Fire Protection			Electricity		
Fire Extinguishers			Overhead lines		
Fire Alarm System			Underground Installations		
Fire Department Assist			Transformers		
Personal Protective Equipment			Explosion Proof		
Potential Hazards			Temporary Installations		
Policy/Rules in Place			Extension Cord		
Basic PPE in Use					
Specialized PPE Available					
People					
Chemical					

People, Equipment, Tools, Materials, Tasks, Conditions Box #3	Potential Health and Injury Hazards Box #4	Priority Box #5	Required Action Box # 6	Responsibility Box #7	Date Completed Box #8

Hazard Priority Key *

- 1. To be performed before work commences
- 2. Should be performed within ONE working day (Administrative/Engineering Controls)
- 3. Should be performed as soon as possible, but work can commence

Other Considerations	Box #9

Box # 10														
Print and sign below (all members of the crew) prior to commencing work.														
<table style="width: 100%;"> <tr> <td style="width: 50%;">Workers (PRINT) name and Signature (below):</td> <td style="width: 50%;">Foreperson's Name and Signature:</td> </tr> <tr> <td>_____ / _____</td> <td>_____ / _____</td> </tr> <tr> <td>_____ / _____</td> <td> </td> </tr> <tr> <td>_____ / _____</td> <td> </td> </tr> <tr> <td>_____ / _____</td> <td> </td> </tr> <tr> <td>_____ / _____</td> <td> </td> </tr> <tr> <td>_____ / _____</td> <td>_____ / _____</td> </tr> </table>	Workers (PRINT) name and Signature (below):	Foreperson's Name and Signature:	_____ / _____	_____ / _____	_____ / _____		_____ / _____		_____ / _____		_____ / _____		_____ / _____	_____ / _____
Workers (PRINT) name and Signature (below):	Foreperson's Name and Signature:													
_____ / _____	_____ / _____													
_____ / _____														
_____ / _____														
_____ / _____														
_____ / _____														
_____ / _____	_____ / _____													
Reviewed by Name & Signature														
Use additional sheet for extra names														
All names and signatures should be legible														

Section 4 - Safe Work Practices



Safe Work Practices Policy

Sutherland Excavating Ltd. will establish safe work practices at all its workplaces to minimize the risk of injury, illness and property damage. Specific safe work procedures will be developed for particularly hazardous and critical tasks.

All safe work practices will be available at all job sites as well at the shop and office and online.

Acknowledged By:

President

Date



Safe Work Practices

Safe Work Practice Inventory Sheet												
Safe Work Practices	Development				Review				Review			
	Date			By Whom	Date			By Whom	Date			By Whom
	D	M	Y		D	M	Y		D	M	Y	
Excavating and Trenching	18	06	16	Greg Pickard	18	06	17	Greg Pickard	18	01	18	Greg Pickard
Working Alone	18	06	16	Greg Pickard	18	06	17	Greg Pickard	18	01	18	Greg Pickard
Heavy Equipment Maintenance	18	06	16	Greg Pickard	18	06	17	Greg Pickard	18	01	18	Greg Pickard
Loading and Unloading Heavy Mobile Equipment	18	06	16	Greg Pickard	18	06	17	Greg Pickard	18	01	18	Greg Pickard
Confined Space	18	06	16	Greg Pickard	18	06	17	Greg Pickard	18	01	18	Greg Pickard
Use of Portable Arc Welders	18	06	16	Greg Pickard	18	06	17	Greg Pickard	18	01	18	Greg Pickard
Use Of Portable Ladders	18	06	16	Greg Pickard	18	06	17	Greg Pickard	18	01	18	Greg Pickard
Grinding	18	06	16	Greg Pickard	18	06	17	Greg Pickard	18	01	18	Greg Pickard
Use Of Hand Held Power Circular Saws	18	06	16	Greg Pickard	18	06	17	Greg Pickard	18	01	18	Greg Pickard
Use of Compressed Air	18	06	16	Greg Pickard	18	06	17	Greg Pickard	18	01	18	Greg Pickard
Use of Chain Saw	18	06	16	Greg Pickard	18	06	17	Greg Pickard	18	01	18	Greg Pickard
Use of Propane	18	06	16	Greg Pickard	18	06	17	Greg Pickard	18	01	18	Greg Pickard
Proper Lift Practices – Hoisting	18	06	16	Greg Pickard	18	06	17	Greg Pickard	18	01	18	Greg Pickard
Use of Metal Scaffolds	18	06	16	Greg Pickard	18	06	17	Greg Pickard	18	01	18	Greg Pickard
Fire and Use of Fire Extinguishers	18	06	16	Greg Pickard	18	06	17	Greg Pickard	18	01	18	Greg Pickard



Safe Work Practice Inventory Sheet

Safe Work Practices	Development				Review				Review			
	Date			By Whom	Date			By Whom	Date			By Whom
	D	M	Y		D	M	Y		D	M	Y	
Rigging	18	06	16	Greg Pickard	18	06	17	Greg Pickard	18	01	18	Greg Pickard
Backfilling	18	06	16	Greg Pickard	18	06	17	Greg Pickard	18	01	18	Greg Pickard
Computer Use	18	06	16	Greg Pickard	18	06	17	Greg Pickard	18	01	18	Greg Pickard
Electrical Safety	18	06	16	Greg Pickard	18	06	17	Greg Pickard	18	01	18	Greg Pickard
Portable Generators	18	06	16	Greg Pickard	18	06	17	Greg Pickard	18	01	18	Greg Pickard
Automotive Impact Wrenches	18	06	16	Greg Pickard	18	06	17	Greg Pickard	18	01	18	Greg Pickard
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Bulk Hazardous Liquid Storage	18	06	16	Greg Pickard	18	06	17	Greg Pickard	18	01	18	Greg Pickard
Varsol Tank Usage	18	06	16	Greg Pickard	18	06	17	Greg Pickard	18	01	18	Greg Pickard
Lock Out/ Tag Out	18	06	16	Greg Pickard	18	06	17	Greg Pickard	18	01	18	Greg Pickard
Personal Protective Equipment	18	06	16	Greg Pickard	18	06	17	Greg Pickard	18	01	18	Greg Pickard
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Scaffolds	18	06	16	Greg Pickard	18	06	17	Greg Pickard	18	01	18	Greg Pickard
Pipefitting	18	06	16	Greg Pickard	18	06	17	Greg Pickard	18	01	18	Greg Pickard



Safe Work Practices

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Safe Work Practices	Development				Review				Review			
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	D	M	Y		D	M	Y		D	M	Y	
Motor Vehicles and Heavy Equipment	18	06	15	Greg Pickard	01	06	16	Greg Pickard	18	03	18	Greg Pickard
Housekeeping, Storage and Tool Maintenance	18	06	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Getting On or Off Equipment	18	06	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Emergency Eyewash Equipment	18	06	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Concrete, Concrete Forms and Pre-cast	18	06	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
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Office Safety	18	06	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Refueling Mobile Equipment	18	06	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Excavator Operation	18	06	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Working in the Sun	18	06	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Traffic Control – Temporary Signage	18	06	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Extension Cords	18	06	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Violence in the Workplace	18	06	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Painting	18	06	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard



Safe Work Practice Inventory Sheet

Safe Work Practices	Development				Review				Review			
	Date			By Whom	Date			By Whom	Date			By Whom
	D	M	Y		D	M	Y		D	M	Y	
Planned Lifts and Suspended Loads	01	06	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Excavate and Expose Existing Lines	01	06	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Using Cleaning Solvents	01	06	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Piping Installation	01	06	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard



Excavating and Trenching

Title: Excavating and Trenching

General: Protecting workers from injuries associated with excavating and trenching.

Application:

- No worker shall enter any trench or excavation until the walls have been adequately cut back or temporary protective structures have been installed unless said trench or excavation is shallower than the legal minimums and the soil is stable.
- Supervisors are responsible to facilitate and/or provide proper instruction to their workers on protection requirements and to pre-plan trench/excavation soil condition.
- Prior to commencement of any excavation ensure that all underground and/or overhead lines being crossed have been identified, exposed and well marked/flagged.
- Control traffic near roads or busy access ways.
- Use traffic controllers/flag persons.
- Uses of barricades are a must.
- Provide ladders in immediate area for access/aggress.
- Where the cut back method is not possible, provide timber shoring, trench jacks, sheet piling, cage or other approved methods.
- Good housekeeping will aid in accident prevention. At the top of the trench, all material should be kept at least 1.2 meters away from the edge.
- Stay alert to the location of equipment around you.



Working Alone

Title: Working Alone

General: Protecting workers from injuries associated with working alone.

Application:

- Sutherland Excavating employees participate in a yearly in-house refresher to review this 'Working Alone' Safe Work Practice.
- Assess the hazards of the workplace.
- Talk to workers about their work. Get their input about the work they do and possible solutions.
- Investigate incidents at the workplace, and those from similar workplaces.
- Avoid having a lone worker whenever possible, especially for jobs with a recognized risk.
- Take corrective action to prevent or minimize the potential risks of working alone.
- Provide appropriate training and education.
- Report all situations, incidents or "near misses" where working alone increased the severity of the situation. Analyze this information and make changes to company policy where necessary.
- Establish a check-in procedure. Make sure regular contact is kept with all workers.
- Establish ways to account for people (visually or verbally) while they are working.
- For most lone workers, the telephone will be the main source of contact. If work is at a desk or station, have a telephone close by. If work is away from a main office or work station, the use of a cellular phone is very helpful. If a cellular phone is unreliable in the area, be sure to have alternative methods of communication available (such as use of public telephones, site visits or satellite technology).
- Schedule high risk tasks during normal business hours, or when another worker is capable of helping if an emergency situation arises.
- Position workers, where possible, in locations of highest visibility.
- Allow the use of a "buddy system" in high risk situations - ensure that workers are aware that this option is available to them.
- Where appropriate, use a security system such as video surveillance cameras, mirrors, observation windows, etc., however, ensure that informed consent is obtained from employees prior to use.



Workers Who Perform Hazardous Work Alone

Workers, who perform hazardous work alone, without routine interaction with other workers and the public, may be unable to get immediate help. The primary prevention strategy is to control the hazards associated with the work. Industries that have workers in this category are forestry (e.g., loggers) and oil and gas.

- Safe Work Procedures - Having written safe work procedures for hazardous work is essential.
- Equipment Safety - The employer must ensure that workers use equipment as intended and according to the manufacturer's specification. All equipment used in a workplace must be maintained in good working condition, whether or not it is being used in a "working alone" situation.
- Equipment and Supplies - In addition to proper equipment, appropriate first aid and emergency supplies must be provided to workers who are working alone at a work site.
- Travel Plan - If workers are working alone in a remote location, the employer should establish a sign-out procedure to track their whereabouts. An "overdue employee" procedure should also be in place for locating workers who fail to report on time.

Workers Who Travel Alone

Some of the risk to workers who travel alone involves injuries from motor vehicle accidents. The risk is greater when workers in remote areas are unable to summon help. Workers performing fieldwork alone, workers in the transportation industry and business people in transit are exposed to the risk.

- Safe Work Procedures - Workers must have full concentration on the road when traveling alone. An employer should allow sufficient rest time for workers who are traveling on long trips.
- Equipment and Supplies - Well-maintained vehicles prevent exposure of workers to unnecessary risk. Appropriate first aid and emergency supplies should be provided.
- Travel Plan - An employer should consider a procedure appropriate to the hazards to track the whereabouts of their workers. The travel plan submitted by the employees can be used to assess the rest time available to the employee traveling alone.



Heavy Equipment Maintenance

Title: Heavy Equipment Maintenance

General: Protecting workers from injuries associated with heavy equipment operation and preventing damage to equipment.

Application:

- Supervisors are responsible to facilitate and/or provide proper training instruction to their workers on protection requirements and training.
- Walk around your unit and perform a visual check.
- Conduct pre-start checks.
- Conduct after start checks.
- Follow manufacturer's recommendations for cold weather starts.
- Wear seat belts where machines are equipped with rollover protection.
- Use extreme caution when mounting or dismounting a machine.
- Report all problems or potential problems to your Supervisor.
- Ensure the correct operating procedures are followed when the day's activities have been completed and the machine is being stopped.
- All proper maintenance such as greasing and scheduled oil changes must be performed and reported to the office.



Loading and Unloading Heavy Mobile Equipment

Title: Loading and Unloading Heavy Mobile Equipment

General: Protecting workers from injuries associated with heavy equipment operation and preventing damage to equipment

Application:

- Equipment must be serviced, maintained and operated in a proper manner by trained operators.
- The area where the trailer parks to unload **MUST BE LEVELED** from side to side.
- The ground can slope slightly from front to back on the trailer.
- The truck drivers who deliver and pick up this equipment are to drive the equipment on and off the trailer and perform their work safely.
- Stand clear when the equipment is being loaded and unloaded.
- Use horn to signal employees or others when loading and unloading



Confined Space

Title: Confined Space

General: NB – Occupational Safety Act/Regulation 91-191
Confined Space Section 263-272

Definition: **“Confined space”** means an enclosed or partially enclosed space not designed or intended for continuous human occupancy with restricted access or egress and which is or may become hazardous to a person entering it because of its design, construction, location, atmosphere or the materials or substances in it or other conditions, but does not include a development heading in an underground mine.

“Physical agent” means an energy or influence, such as noise, heat, cold or radiation that may affect the body or a part of the body or a function of the body.

Purpose

Protecting workers from injuries associated with working in confined spaces.

Application

Primary function is something other than human occupancy, has restricted access / egress, and may contain potential or known hazards.

Protective Mechanisms

Job procedure, Confined Space Permit, PPE, Emergency Response Plan

Supervisor Responsibility

Supervisors are responsible to facilitate and/or provide proper instruction to their workers on protection requirements including Confined Space Entry and Emergency Response.

Worker Responsibility

1. Worker must be competent in confined space entry to identify the procedures required to enter the confined space.
2. Ensure that there is reasonable means of egress from all parts of the confined space.
3. Ensure that ventilation and purging is established and allows acceptable air levels to be achieved and maintained.
4. Establish method of communication to allow immediate contact with necessary personnel if rescue or assistance is required.
5. Worker must be trained Confined Space 1.
6. Before entering, the confined space must be tested by a competent person wearing breathing apparatus, for oxygen content, combustible gas, and other hazardous substances.
7. Continuous monitoring may be required to detect changing atmosphere in the confined space.
8. Worker must be conversant with Rescue Procedures.



CONFINED SPACE ENTRY PERMIT

This permit must be completed for each confined space entry. When complete, a copy of this Permit must be submitted to the site supervisor.

- Instructions:
- i. Supervisor completes Sections 1, 2 and 3
 - ii. Workers complete Section 11
 - iii. Qualified Person completes remainder of the permit.

1. Confined Space: _____

2. Qualified Person: _____

Is designated as the Qualified Person for Work Order No.:_____. I hereby certify that this person has been fully briefed on the scope of this work and on his/her specific.

Supervisor (Print Name)	Signature	Position and Unit/Company
-------------------------	-----------	---------------------------

3. Work outline: _____

4. Non-Hazardous Classification of Work: (to be completed by Project Supervisor)
 I have evaluated this work on the basis of the information provided to me by _____ of _____ and it is my opinion that this work should be classified as Non-Hazardous. _____.

Signature of Project Supervisor

5. This permit is valid from: _____ hrs, _____ 20____ until _____ hrs, _____ 20____ and authorizes the entry of the following personnel:

6. Qualified Person Record of Check-in with the Designated Person (Max 30min intervals):

Name: _____ hrs	_____ hrs	_____ hrs	_____ hrs	_____ hrs
Name: _____ hrs	_____ hrs	_____ hrs	_____ hrs	_____ hrs
Name: _____ hrs	_____ hrs	_____ hrs	_____ hrs	_____ hrs
Name: _____ hrs	_____ hrs	_____ hrs	_____ hrs	_____ hrs

7.1 Qualified Person Checklist of Personal Protective Equipment (required for every Confined Space entry)

- | | | |
|--|---|---|
| Hard Hat <input type="checkbox"/> | Safety Foot Wear <input type="checkbox"/> | Work Gloves <input type="checkbox"/> |
| Safety Goggles <input type="checkbox"/> | Hearing Protection <input type="checkbox"/> | Clothing <input type="checkbox"/> |
| Full Body Harness <input type="checkbox"/> | Respiratory Protection <input type="checkbox"/> | Calibrated Air Monitor <input type="checkbox"/> |



7.2 Hazardous Confined Space Entry Equipment:

NOTE: The Qualified Person shall ensure that the all required equipment is on site and inspected for defects. When defective equipment is identified, it shall be immediately removed from service and replaced with equipment that is free from defects.

7.3 The following Emergency Equipment shall be available on site for use by:

- i. any person who takes part in the rescue of a person in the confined space; and
- ii. Any person(s) responding to any other emergency in the tunnels.

This inspection checklist is to be completed by the Qualified Person.

Indicate Passed / Failed / Replaced in the space provided:

- a. Respiratory protection, SCBA or Airline
- b. Life lines and full body harnesses
- c. Ventilation equipment, 12 VDC or 129 VAC
- d. Lifting and fall prevention equipment
- e. Lockouts and tags
- f. Blanks and tag _____
- g. Air monitoring equipment, calibrated, min.-LEL, O2, CO, H2S _____
- h. Communication equipment _____
- i. Non-sparking tools _____
- j. Warning devices (cones, barriers, beacons, signs or flags) _____
- k. Ladders _____
- l. Portable First aid kit _____
- m. Generator, portable, 120 VAC _____
- n. Water pump and hoses _____
- o. Flashlights and lighting equipment: explosion & shock proof _____
- p. Electrical GFI protection _____
- q. Man down alarm _____
- r. Hoisting ropes and buckets _____
- s. Fire extinguishers _____



7. Qualified Person

Air Monitoring Equipment: Brand Name: _____

Serial #: _____ Date last calibrated: _____

Air Monitoring Test Results (Enter time and reading):

_____HRS	_____O2	_____HRS	_____O2
_____HRS	_____O2	_____HRS	_____O2
_____HRS	_____O2	_____HRS	_____O2
_____HRS	_____O2	_____HRS	_____O2
_____HRS	_____O2	_____HRS	_____O2
_____HRS	_____O2	_____HRS	_____O2
_____HRS	_____O2	_____HRS	_____O2
_____HRS	_____O2	_____HRS	_____O2
_____HRS	_____O2	_____HRS	_____O2
_____HRS	_____O2	_____HRS	_____O2
_____HRS	_____O2	_____HRS	_____O2
_____HRS	_____O2	_____HRS	_____O2
_____HRS	_____O2	_____HRS	_____O2
_____HRS	_____O2	_____HRS	_____O2
_____HRS	_____O2	_____HRS	_____O2

Tests completed by: _____
Print Name

Signature

Tests witnessed by: _____
Print Name

Signature



9. Where the health or safety of any employee has been threatened in any way, while in a confined space, the employer shall make a report to their Health and Safety Committee or the Health and Safety Representative, if either exists.

10. Employee Briefings:

Qualified Persons shall ensure that all personnel on this confined space entry:

- i. are familiar with the scope of work;
- ii. are briefed on the hazards of the work;
- iii. are briefed on the inherent dangers of the confined space; and
- iv. comply with the applicable federal or provincial confined space regulations.

11. Qualified Person’s acknowledgement and statement:

I hereby acknowledge that my supervisor has briefed me on the scope and hazards of this work and confined space. As the Qualified Person responsible for this confined space entry, I believe that sufficient instructions have been given and that sufficient support equipment and measures are in place to do this work safely.

Name and Position	Signature	Date
-------------------	-----------	------

12. Employees acknowledgement and statement:

I hereby acknowledge that the Qualified Person has briefed me on the scope and hazards of this work and confined space. I believe that sufficient instructions have been given and that sufficient support equipment and measures are in place to do this work safely.

Print Name and Position	Signature	Date
-------------------------	-----------	------

Print Name and Position	Signature	Date
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Print Name and Position	Signature	Date
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13. Qualified Person Record of Personnel Entry:

LAST NAME	INITIALS	TIME IN	SCHEDULED TIME OUT	TIME OUT
LAST NAME	INITIALS	TIME IN	SCHEDULED TIME OUT	TIME OUT
LAST NAME	INITIALS	TIME IN	SCHEDULED TIME OUT	TIME OUT
LAST NAME	INITIALS	TIME IN	SCHEDULED TIME OUT	TIME OUT



Use of Portable Arc Welders

Title: Use of Portable Arc Welders

General: Protecting workers from injuries associated with portable equipment operation and preventing damage to equipment

Application: Portable arc welders are a piece of equipment that has to be treated like a vehicle. Do not operate them indoors.

- Be sure the machine is firmly attached to the transporting unit.
- Check all fluid levels, water, oil and gas to be sure they are at acceptable levels
- When fueling, **DO NOT** "top off" the gas tank. Gasoline expands as the outside temperature rises and may result in seepage and an ensuing fire.
- Do not fuel the machine while it is running.
- Be sure the radiator and gas caps are in proper working order and securely attached.
- Do a "walk around" to check for damage and obvious leaks.
- Any repairs should be done by qualified mechanics or technicians.
- Make sure all cables are wound securely when transporting.
- Ensure the side covers are kept closed to protect the engine from any damage from external objects and weather, as well as to protect the operator and others from the moving parts.



Use of Portable Ladders

Title: Use of Portable Ladders

General: Ladders can be used safely if they are given the respect they deserve.

Application: Portable ladders shall be purchased and utilized to comply with and be used in accordance with CSA standard CAN 3-Z11-M81, "Portable Ladders". Before using any ladder, make sure that it is in good condition and is the right ladder for the job to be done. If a defective ladder is discovered it must be removed from immediate and future service.

- When setting up a ladder, the employee must ensure that the ladder is placed on a stable/firm surface.
- "Walk" the ladder up into place.
- The ladder should be set at the proper angle of one (1) horizontal to ever four (4) vertical.
- Before using a ladder, make sure it is secured against movement.
- When in position, the ladder should protrude one (1) meter above the intended landing point.
- Workers shall not work from the top three rungs of a ladder.
- Don't overreach while on a ladder. It is easier and safer to climb down and move the ladder over a few feet to a new position.
- Always face the ladder when using it. Grip it firmly and use the three-point contact method when moving up or down.
- The minimum overlap on an extension ladder should be one (1) meter unless the manufacturer specifies the overlap.
- Keep both metal and wood ladders, away from electrical sources.



Grinding

Title: Grinding

General: Severe injury may occur if proper protective equipment is not used and properly maintained.

Application: Before using any grinder, perform a visible inspection to ensure the tool is in safe working condition.

- Check the tool rest for the correct distance from the abrasive wheel, maximum 1/8" or 3 mm and guards are in place and in good working condition. Tampering with safeguards is prohibited.
- Replace the grindstone when adjustment of the rest cannot provide 1/8" or 3 mm clearance.
- If the wheel has been abused and ground to an angle or grooved, reface the wheel with the appropriate surfacing tool.
- Protect your eyes with goggles or a face shield at all times when grinding.
- Each time a grinding wheel is mounted; the maximum approved speed stamped on the wheel bladder should be checked against the shaft rotation speed of the machine to ensure the safe peripheral speed is not exceeded. A grinding wheel must not be operated at peripheral speed exceeding the manufacturer's recommendation.
- The flanges supporting the grinding wheel should be a maximum of 1/3 the diameter of the wheel, and must fit the shaft rotating speed according to the manufacturer's recommendation.
- Bench grinders are designed for peripheral grinding. Do not grind on the side of the wheel.
- Do not stand directly in front of grinding wheel when it is first started. Employees must not wear loose fitting clothing and/or jewelry if they could come into contact with moving parts



Use of Hand-Held Power Circular Saws

Title: Use of Hand-Held Power Circular Saws

General: This type of power hand tool is one of the most commonly used in construction. Because of this common use there are numerous accidents due to thoughtless acts.

Application: The following are the minimum accepted practices to be used with this saw.

- Approved safety equipment such as safety glasses or face shields are to be worn.
- Where harmful vapors or dusts are created, approved breathing protection is to be used.
- The proper sharp blade designed for the work to be done must be selected and used.
- The power supply must be disconnected before making any adjustments to the saw or changing the blade.
- Before the saw is set down be sure the retracting guard has fully returned to its down position.
- Both hands must be used to hold the saw while ripping.
- Maintenance is to be done according to the manufacture's specifications.
- Ensure all cords are clear of the cutting area before starting to cut.
- Before cutting, check the stock for foreign objects or any other obstruction, which could cause the saw to "kick back".
- When ripping, make sure the stock is held securely in place. Use a wedge to keep the stock from closing and causing the saw to bind.



Use of Compressed Air

Title: Use of Compressed Air

General: Air powered tools in construction range from stapling guns to jack hammers. If not treated with respect, these tools can become a powerful enemy rather than a servant.

Application:

- Compressed air must not be used to blow debris or to clear dirt from any worker's clothes.
- Ensure that the air pressure has been turned off and the line pressure relieved before disconnecting the hose or changing tools.
- Wear personal protective equipment such as eye protection and face shields and ensure other workers in the area are made aware of or have restricted access to the hazard area.
- Hoses must be checked on a regular basis for cuts, bulges, or other damage. Ensure that defective hoses are repaired or replaced.
- A proper pressure regulator and relief device must be in the system to ensure that correct desired pressures are maintained.
- The correct air supply hoses must be used for the tool/equipment being used.
- The equipment must be properly maintained according to the manufacturers requirements



Use of Chain Saws

Title: Use of Chain Saws

General: This type of power hand tool is one of the most commonly used in construction. Because of this common use there are numerous accidents due to thoughtless acts.

Application:

- The proper personal protective equipment to be worn is set out by the manufacturer and Occupational Health & Safety Legislation.
- Fuelling of the saw must be done in a well-ventilated area and not while the saw is running or hot.
- An approved safety container must be used to contain the fuel used along with a proper spout or funnel for pouring.
- The correct methods of starting, holding, carrying, or storage and use of the saw as directed by the manufacturer must be used.
- Ensure that the chain brake is functioning properly and adequately stops the chain.
- The chain must be sharp, have the correct tension, and be adequately lubricated.
- When carrying/transporting a chain saw the bar guard must be in place, the chain bar must be toward the back and the motor must be shut off.
- The chain saw must not be used for cutting above shoulder height



Use of Propane

Title: Use of Propane

General: Since propane is heavier than air and invisible, it is a special concern when it is used on the job-site. All installations and use of this product on the job-site must comply with the Government Legislation set out for its safe use.

Application: Supplier delivering the product or setting up the equipment at the site must be part of the safe work practices.

- Nylon slings must be used in a "choker" fashion when loading, off-loading or lifting propane tanks.
- "Lifting lugs" provided on tanks are not to be used. Slings are to be wrapped around the shell of the tank.
- Tank valves and regulators are to be removed from the tank prior to any movement of the tank.
- Crane hooks shall be equipped with a safety latch.
- All trucks, cranes or equipment used to handle propane tanks must be equipped with a fire extinguisher appropriate for the size and type of tank being handled,
- Except in an emergency, any movement or repositioning of tanks shall be performed by a competent worker.
- Tanks are not to be heated to increase flow.
- When in use, propane bottles are to be securely held in an upright position.
- Tanks are not to be hooked up and used without proper regulators.



Proper Lifting Practices – Hoisting

Title: Proper Lifting Practices – Hoisting

General: Determine the weight of the object or load prior to a lift to make sure that the lifting equipment can operate within its capabilities.
The rated load capacity (or load chart) must be clearly marked on a lifting device.
The statement of the safe working load must be posted legibly on the hoisting apparatus so that the operator of the apparatus is able to see it when operating the apparatus.
The rated lifting capacity of a lifting device must not be exceeded.
Sutherland Excavating Ltd. utilizes a software to track and record maintenance and inspection activities.

Application: **Balance Loads** – Estimate the center of gravity or point of balance. The lifting device should be positioned immediately above the estimated center of gravity.

Landing the Load - Prepare a place to land the load, lower the load gently and make sure it is stable before slackening the sling or chain.

- Ensure to inspect lifting device before using it.
- No person shall operate a hoisting apparatus unless the person is competent or is under the direct supervision of a competent person.
- Select only alloy chain slings and **NEVER** exceed the working load limits.
- Make sure the hoist or crane is directly over the load.
- Use slings of proper reach. Never shorten a line by twisting or knotting. With chain slings, never use bolts or nuts.
- Never permit anyone to ride the lifting hook or the load.
- Make sure all personnel stand clear from the load being lifted.
- Never work under a suspended load, unless the load is properly supported.
- Never leave a load suspended when hoist or crane is unattended.
- Inspect all slings thoroughly at specified intervals and maintain them in good condition.
- Inspect each chain or sling for cuts, nicks, bent links, bent hooks, etc.
- Ensure that safety latches on hooks are in good working condition
- Ensure that the signaller is properly identified and understands hand signals.
- Make sure a tagline is used to control the load.



Use of Metal Scaffolds

Title: Use of Metal Scaffolds

General: The misuse of scaffolding is the cause of numerous serious injuries. Every worker who designs or constructs a scaffold should be competent and know what the manufacturer's specifications are for that type of scaffold.

Application: The scaffold type, which will be best, suited for the job and capable of withstanding the loads to be imposed on it, must be determined before the job begins.

Ensure that:

- The scaffold you intend to use is the correct one for the job;
- The location in which the scaffold is to be constructed is level or is capable of presenting secure footing by use of mudsills or some other device;
- The scaffold will be erected by a competent worker;
- Legislative and manufacturer's requirements have been complied with;
- Safe access and egress to both the scaffold and the general work area has been provided;
- Leveling adjustment screws have not been over extended;
- Tower scaffolds have outriggers or are guyed and have all component parts secured in place (i.e. cross braces, pins, lateral braces);
- Scaffold work platforms have perimeter guardrail
- Horizontal rail- 0.92 meters to 1.07 meters above the platform;
- Intermediate rail- Horizontal rail midway between scaffold platforms
- and top rail;
- Toe board - Horizontal member at platform level no less than
- 140 mm in height above the platform level;
- Scaffold planks are of number one grade materials with maximum spans of 3.1 meters on light duty and 2.3 meters on heavy duty with a maximum projection beyond the ledger of no more than 300 mm.



Fire and Use of Fire Extinguishers

- Title:** Fire and Use of Fire Extinguishers
- General:** Good Housekeeping is essential in the prevention of fires. Fires can start anywhere and at any time. This is why it is important to know which fire extinguisher to use and how to use it.
- Application:** Always keep fire extinguishers visible and easy to get at. Fire extinguishers have to be properly maintained to do the job. Where temperature is a factor, ensure that care is taken in selecting the right extinguisher.

Types of Fires

Class A: These fires consist of wood, paper, rags, rubbish and other ordinary combustible materials.

Recommended Extinguishers

Water from a hose, pump type water can, or pressurized extinguisher, and soda acid extinguishers.

Fighting the Fire

Soak the fire completely-even the smoking embers.

Class B: Flammable liquids oil and grease

Recommended Extinguishers

ABC units, dry chemical, foam and carbon dioxide extinguishers.

Fighting the Fire

Start at the base of the fire and use a swinging motion from the left to right, always keeping the fire in front of you.

Class C: Electrical equipment

Recommended Extinguishers

Carbon dioxide and dry chemical (ABC units) extinguishers.

Fighting the Fire

Use short bursts on the fire. When the electrical current is shut off on a Class C fire, it can become a Class A fire if the materials around the electrical fire are ignited.



Rigging

Title: Rigging

General: Rigging looks like an easy operation that requires no particular skill or experience. But if you have an idea that just anybody can do it, you're on the wrong track. Too many men have lost fingers or hands or have suffered more serious injuries because they thought, "Anybody can do that".

Application: Here are some dos and don'ts to remember:

- Name one member of the crew to act as a signalman, and instruct the equipment operator to recognize signals from that person only. The signalman must be careful not to order a move until he has received the "all ready" signal from each member of the crew
- Each rigger must be sure he's in the clear before he gives an "all ready" to the signalman. When you have positioned the sling or choker you're using, release it, if possible. Before you give the "all ready" signal.
- If you must hold the sling or choker in position, be sure your hand is clear of pinch points. In fact, your hand should be far enough away so there's no possibility of a frayed wire catching your glove and jerking your hand into a pinch point. (Frayed cables should never be used).
- Watch out for the roll or swing of the load. Since it's almost impossible to position the hook exactly over the load centre, there will almost always be a swing over. Anticipate the direction of the swing or roll and work away from it.
- Never place yourself between material, equipment or any stationary object and the load swing. Also, stay away from stacked material that may be knocked over by a swinging load.
- Never stand under the load, and keep from under the boom as much as possible. Chances are that nothing will break, but something might.
- Look over the place where the load is to be set. Remove blocks or other objects that might fly up if struck by the load.
- When lowering or setting the load, be sure your feet and all other parts of your body are out from under. Set the load down easily and slowly so that it rolls on the blocking.



Safe Work Practices

Backfilling

Title: Backfilling

General: Protecting workers from injuries associated in backfilling operations Supervisors are responsible to facilitate and/or provide proper instruction to their workers on protection requirements

Application:

- No backfilling shall commence until all workers are clear of working areas.
- The operators of any vehicles being used in backfilling operations shall keep their swampers in sight at all times.
- Operators/Swampers to be conversant in hand signals.
- PPE required at all times. (Including high visibility vests).
- Walk around your unit and perform a visual check
- Conduct pre-start checks.
- Conduct after start checks.
- Follow Manufacturer's recommendations for Cold Weather Starts.
- Wear seat belts where machines are equipped with Roll Over Protection.
- Use extreme caution when mounting or dismounting a machine.
- Report all problems or potential problems to your Supervisor.
- Ensure the correct operating procedures are followed when the day's activities have been completed and the machine is being stopped



Computer Usage

Title: Computer Usage

Application:

- Computer screens should be positioned at a normal reading distance in front of you. The top should be level with your forehead. The screen should also be positioned so it won't reflect light from windows or overhead lights.
- The chair used while seated in front of a computer should be padded and fully adjustable. The backrest should provide good lower back support, and the chair should be on rollers.
- When operating a computer you should sit upright, with forearms parallel to the floor and wrists straight. A footrest can be used if your feet aren't resting comfortably on the floor.
- The desk and workspace should be large enough to hold the computer monitor, keyboard, and any other needed accessories. It should provide space for writing and doing other work comfortably.
- When working on the computer for long periods at a time, breaks should be taken every couple of hours.
- While working on the computer, eyes should be exercised to ease eyestrain. A conscious effort should be made to blink so eyes won't get dry and eyes should be rested occasionally.
- Be on the lookout for warning signs that your working conditions are not right (eyestrain, headaches, sore hands, wrists, arms, shoulders, back, or numbness in your legs and feet.)



Electrical Electrical Safety

Application:

Only qualified/competent personnel shall perform any required electrical work.

- Do not wear rings, watches or other metallic apparel when working with electrical equipment.
- Do not handle electrical equipment when hands or feet are wet or when standing on a wet floor.
- When working with high voltages, regard all floors as conductive and grounded.
- Be familiar with electrocution rescue procedures, emergency first aid and CPR, especially if working with high voltage.
- Prior to working on electrical equipment, the Lock-out/Tag-out procedure shall be employed.
- Prior to working in the area of the capacitors, check that each capacitor is discharged, shorted and grounded.
- Use shock-preventing shields, power supply enclosures, and shielded leads in all experimental or temporary high-voltage circuits.
- Every electrical tool must be grounded. If it should malfunction or break down, grounding provides a path of least resistance for electrical current to reduce the risk of electric shock. The tool must be equipped with a cord having an equipment-grounding conductor and grounding plug. If the three-prong plug is broken or appears in poor condition, do not use the tool until the plug has been repaired.
- If an electrical tool has two-pronged (polarized) plug, it will fit into a polarized outlet only one way. If the plug does not fit into the outlet, submit a work order to have the outlet changed. Do not alter the plug any way.
- If an extension cord must be used, ensure it is a three-prong (grounded) cord on both ends and the cord is in good condition.
- When working away from the shop area, do not leave the tool when plugged in. Unplug from outlet prior to changing a blade or servicing. To unplug the cord, do not pull on the cord; grasp the plug and pull to remove from outlet.
- Store electrical tools out of the rain. If the tool has been dropped or, left in water or left out in the rain, do not use it until it has been inspected by a qualified service technician.
- While holding or in contact with live electrical tools, avoid body contact with grounded surfaces such as pipes, radiators and large appliances.
- Do not pull or carry the tool by the cord, use the cord as a handle, close a door on the cord or pull the cord around sharp corners. Be careful not cut the cord with the tool. Keep the cord away from hot surfaces.
- Do not use any electrical machine in wet areas, especially when standing in water. If your hands are wet, do not plug in or unplug the tool. If work must be done in wet circumstances, wear rubber gloves, non-skid footwear and plug the tool into a ground fault circuit interrupter (GFCI). If, at any time when working outside the shop area, the power source cannot be confirmed to be protected with a GFCI, a portable GFCI shall be plugged directly into the outlet, and extension cord or tool cord can be then plugged into the GFCI.



Portable Generators

Title: Portable Generators

General:

- Before operating a generator, the operator must be designated or directed by supervisory personnel to operate the machine.
- Read and understand the manufacturer's operational instructions and these safe work practices.
- Receive instruction from experienced shop personnel in the operation of the machine.
- Read and understand the Safe Work Practices for electrical machinery.
- Do not run the engine indoors. If the engine must be run indoors, the room must have at least 200 square feet of ventilated space to the outside air.
- Do not connect the generator to the electrical system of any building unless an isolation switch has been installed by a licensed electrician.
- Allow no sparks, flames or smoking within 25 feet of the generator if the tank has gasoline. (The gas tank is vented to the atmosphere to allow for fuel flow when in operation, so gas vapors are constantly escaping through the lid.)
- When running, parts of the generator are very hot, and should not be touched.
- Be aware of the electricity being generated. Injury or death from electrocution could result from contact with the current when grounded.
- As the generator is heavy and bulky, two or more persons should move or lift it.



Automotive Impact Wrenches

Title: Automotive Impact Wrenches

General:

- Read and understand the manufacturer's instruction manual before operating the Impact wrench.
- Set the air pressure at, but not higher than the manufacturer's recommendation.
- Turn off the air supply and disconnect the supply hose before installing, removing or adjusting any accessory to the tool, or before performing any maintenance on the tool.

Application:

- Do not use damaged, frayed or deteriorated air hoses and fittings.
- Always use clean, dry air and manufacturer's recommended pressure. Dust, corrosive fumes and/or excessive moisture can ruin the motor of an air tool.
- Do not lubricate the pneumatic tool with flammable or explosive liquids such as kerosene, diesel or jet fuel.
- Maintain labels on the pneumatic equipment.
- Do not operate a pneumatic impact tool unless you are able to handle the weight, bulk and power of the tool.
- Always wear eye and ear (vision and hearing) protection when using an impact wrench.
- Keep hands, loose clothing and long hair away from rotating end of the tool.
- Note the position of the reversing lever and be aware of the direction of tool rotation at all times.
- The impact wrench may continue to rotate briefly after throttle is released.
- Keep your body positioned for the sudden changes of motion and speed of an impact wrench. Remain balanced; do not overreach.
- Air-powered tools vibrate while in use. Vibration, repetitive motions or uncomfortable positions may be harmful to your hands and arms. Stop using any tool if tingling feeling or pain occurs.
- Use only impact sockets and accessories. Do not use hand (chrome-plated) sockets or accessories.
- Do not work in or around flammable or explosive liquids.
- Tie air hoses together except when quick-disconnect couplers are used to join sections.



High-Pressure Sprayer

Title: High-Pressure Sprayer

General: The High-Pressure Sprayer is a stationary, electric-powered, gas-heated, high-pressure water sprayer used to power-spray engines, vehicle parts, floor mats and other items that require cleaning by heated, high-pressure water spray. Cleaners and de-scaling agents can be added to the spray mix. This machine may be operated only by one who has received hands-on training and has read the manufacturer's operating instructions and these safe work practices.

Application:

- Safety goggles should be worn when operating this machine. Wear hearing protection if the high-pressure jet results in loud noise.
- Machine must be plugged into a grounded, CFI-equipped outlet.
- Do not spray any live electrical machine, as the sprayer can conduct electricity through the high-pressure nozzle. Do not use the sprayer for cleaning appliances which are operated on flammable liquids or bases.
- Do not use any insecticides, poisons, heat-activated chemicals which produce toxic fumes, or explosive materials in the cleaning agent tank. Use only skin-safe cleaning agents.
- The high pressure cleaner should be operated only in flame-free, spark-free environments. Operate in well ventilated areas
- Do not set up the machine in an area that relies on fan-supplied air.
- Hold on the wand firmly while operating the sprayer. The water jet causes the spray wand to recoil and a torque effect is created through the angled end of the spray wand.
- Never point the high-pressure nozzle toward yourself or another person. Avoid contact with the spray & the hot water.
- Isolate the machine from electrical and gas supply and ensure there is no residual pressure, heat or other energy before doing maintenance work on the machine.
- Do not manually trigger the automatic safety devices, if installed. Do not change the fittings on the pressure switch or the safety thermostat.
- The machine must be inspected by manufacturer's representatives or other designated experts every 12 months.



Bulk Hazardous Liquids Storage

Title: Bulk Hazardous Liquids Storage

General: Procedure to maintain the outside hazardous goods area in a safe working condition.

Application: Personnel handling hazardous liquids shall be a licensed petroleum installer or have been trained in-house by a licensed installer.

- Store combustible scrap, debris and waste materials in covered metal Receptacles and removed from the worksite promptly
- A competent employee shall review a substance's MSDS to determine safe handling and storage procedures. Any substance that may react with another substance to cause a fire or explosion shall be stored separately to eliminate such an occurrence.
- Use approved containers and tanks for the storage and handling of flammable and combustible liquids
- Tighten all connections on drums & combustible liquid piping
- Keep all flammable liquids kept in closed containers
- Ground and bond all bulk drums of flammable liquids during dispensing
- Ensure all storage rooms for flammable and combustible liquids have explosion-proof lights
- Ensure all storage rooms for flammable and combustible liquids have mechanical or gravity ventilation
- "NO SMOKING" signs must be posted on petroleum gas tanks
- Guard all petroleum storage tanks in order to prevent damage from vehicles or other heavy equipment
- fuel gas cylinders and oxygen cylinders should be separated by distance, and fire-resistant barriers while in storage
- fire extinguishers should selected and provided for the types of materials in areas where they are to be used:
 - Class A Ordinary combustible material fires
 - Class B Flammable liquid, gas or grease fires
 - Class C Energized-electrical equipment fires.
- extinguishers should be free from obstructions or blockage
- all extinguishers should be serviced, maintained and tagged at intervals not to exceed 1 year, fully charged and in their designated places
- All spills of flammable or combustible liquids should be cleaned up promptly



Varsol Tanks

Title: Varsol Tanks

General:

- Spray washer [blow gun] to be used only when hand washing is insufficient.
- Be aware of co-workers; avoid use if welding, cutting or grinding is present.
- Use of respirator is recommended when using spray gun.
- Use rubber gloves to avoid contact with Varsol, be aware of open cuts or skin irritation.
- Always close tank lid when not in use.
- Know the signs of over exposure i.e. headache, dizziness, refer to M.S.D.S.
- Shut pump off when not in use.
- Keep area around tank neat; clean up spills a.s.a.p. with floor dry.
- Observe location of fire extinguisher in case of fire.
- Dispose of soiled rags in approved container with lid properly latched.



Locking Out/ Tag Out

Title: Locking out / Tag out

General:

- Only Sutherland Excavating Ltd. employees with Lockout / Tagout training through the New Brunswick Construction Safety Association (NBCSA) shall be permitted to de-energize any device or mechanism before performing any work.
- If there are no Client lockout procedures to follow, at a minimum the competent/trained employee shall place his lock and a 'Danger, Do Not Operate' tag on the piece of equipment being locked out. The piece of equipment must be tested to determine if it will start before any repairs or maintenance takes place.
- Where a machine is to be cleaned, maintained, adjusted or repaired, the competent/trained employee must ensure that no employee works on the machine until a competent person puts the machine in a zero energy state.
- Employers **MUST** advise employees of hazards and risks.
- Employers/employees **MUST** ensure that necessary systems are maintained in good condition and are of minimum risk to health and safety.
- Employees **MUST** be properly trained to operate the tools and machinery of the trade.
- Locking out shall be done by the first person to begin work on the machinery or equipment. That person shall be responsible for "testing" the equipment to ensure that it is not functional prior to commencing any work.
- Each person working on a piece of machinery or equipment must apply their locks to lock-out all power sources. If three people are working on equipment, then three locks must be on each power source.
- Personal locks shall only be removed by the person who originally placed the lock. If however, a person has inadvertently left a lock on or otherwise is or appears to be unavailable and the lock needs to be removed, proceed as follows:
 - (a) Try to contact the person who left the lock on.
 - (b) If contact is made, and it is confirmed that the lock was inadvertently left on, the lock may be removed by the site supervisor. The supervisor shall document when this contact was made.
 - (c) If contact cannot be made, the lock may be removed, under the direction of the appropriate Supervisor, only after a thorough search of the affected area has been made and after notifying all affected personnel that the equipment is ready to be put back into service.
- Locking of control switches or buttons is prohibited since it is not a positive disconnect.
- If in doubt about lock-out rules or procedures ask your supervisor or Occupational Health and Safety Department staff.



Personal Protective Equipment – Clothing

General: (Petro-Canada)

Employees who face possible bodily injury that cannot be eliminated through engineering, work practice or administrative controls, must wear appropriate body protection while performing their jobs. The following are examples of workplace hazards that could cause bodily injury:

- Temperature extremes;
- Hot splashes from molten metals and other hot liquids;
- Potential impacts from tools, machinery and materials; and
- Hazardous chemicals.

Personal protective equipment, or PPE, is designed to protect employees from serious workplace injuries or illnesses resulting from contact with chemical, radiological, physical, electrical, mechanical, or other workplace hazards. Besides face shields, safety

Glasses, hard hats, earplugs, respirators and safety shoes, PPE includes a variety of garments such as goggles, coveralls, gloves and vests.

In most cases, ordinary work clothing, if clean, in good repair, and suited to the job, may be considered safe. Protective Clothing' refers to garments designed for specific, hazardous jobs where ordinary work clothes do not give enough protection against such injuries as abrasions, burns and scratches.

PPE for the Protection of the Whole Body

In some cases workers must shield most or all of their bodies against hazards in the workplace, such as exposure to heat as well as hot metals, scalding liquids, hazardous materials or waste, and other hazards. In addition to fire-retardant wool and fire-retardant cotton, materials used in whole-body PPE include rubber, leather, synthetics, and plastic.

Clothing Types

Protective clothing should fit the wearer in order to offer full protection. Employees should be trained to properly wear protective clothing for the duration of the time they will be exposed to the hazards.

Employees are required to wear personal protective equipment only for the parts of the body exposed to possible injury. There are many varieties of protective clothing available for specific hazards.

Some examples are:

- Coveralls
- Splash (“acid”) suits
- Totally-encapsulating chemical-protective suit (“moon suits”)
- Firefighters “turnout” gear
- Protective sleeves
- Aprons
- Shoe covers.

Guidelines

A good fit is important. Trousers that are too long must be shortened to proper length, preferably without cuffs. If cuffs are made, they should be securely stitched down so the wearer cannot catch a heel in them. Cuffs should never be worn near operations that produce flying embers, sparks or other harmful matter.

Long or loose sleeves, gloves, and loose-fitting garments create a hazard because they can easily be caught in moving or revolving machine parts,



Materials

Protective clothing comes in a variety of materials each suited to particular hazards. If a hazard assessment determines that the possibility of bodily injury exists then protective clothing constructed of material that will protect against the specific hazards in your workplace should be provided.

Materials for protective clothing include the following:

Flame-resistant cotton fabric is often worn by people working near sparks and open flames. Although the fabric is durable, the flame-proofing treatment may have to be repeated after one to four launderings.

Flame-resistant duck, used for garments worn around sparks and open flames, is lightweight, strong, and long-lasting. However, it is not considered adequate protection against extreme radiant heat.

Impervious materials, such as rubber, neoprene, vinyl and fabrics coated with these materials, protect against dust, vapors, mists, moisture and corrosives. Rubber is used often because it resists solvents, acids, alkalis and other corrosives. Neoprene resists petroleum oils, solvents, acids, alkalis and other corrosives.

Leather protects against light impact and against sparks, molten metal splashes and infrared and ultra-violet radiation.

Synthetic fibers such as acrylics and low-density polyethylene resist acids, many solvents, mildew, abrasion and tearing and repeated launderings. Because some fabrics generate static electricity, garments should not be worn in explosive or high oxygen atmospheres, unless they are treated with an antistatic agent.

Water-resistant duck is useful for exposures to water and non-corrosive liquids. When it is aluminum-coated, the material also protects against heat.

Wool may be used for clothing that protects against splashes of molten metal and small quantities of acid and small flames.

Permanent-press fabrics are used in a wide variety of protective clothing. However, care must be taken to determine whether or not the fabrics are flammable.

Be aware that different materials will protect against different chemical and physical hazards. When chemical or physical hazards are present, check with the clothing manufacturer to make sure that the material selected will provide protection from the specific chemical or physical hazards in your workplace.



Removing/Abandoning a Tank

Title: Removing/Abandoning a tank

General: Even if these procedures are carried out by the contractor or consultant, it is essential that the manager fully understands the process to ensure that the work is done safely and effectively.

Application:

- Create a Safe Workplace: Before beginning the tank removal process, the site must be carefully examined for any potential hazards, and the following tasks must be performed:
 1. All buried services must be clearly marked on the ground with tape or spray paint.
 2. The clearance to any buildings or overhead power lines must be measured.
 3. Any ignition sources such as generators must be shut off
 4. Workers must be briefed on the health and safety plan.
- **Emptying the Tank:** The attached piping must first be emptied of product by allowing it to drain back into the tank.
- **Vapor Removal:** For safety reasons, it is essential that all vapors be removed before the tank is removed from the ground. Common methods of vapor removal are as follows:
- **Purging:** Purging involves the removal of all flammable vapors from the UST or AST. Purging can be accomplished by different methods: e.g. diffused air blower, and steam.
- **Inerting:** Inerting is the removal of oxygen (O₂) from the tank. The goal of Inerting is to reduce the level of oxygen below the amount necessary for Combustion. Oxygen can be displaced with dry ice or nitrogen.

Note: The purging method would have to be closely monitored because, it provides oxygen to a highly inflammable area (high risk of explosion if there is an ignition). The most used vapor removal method is dry ice.

Vapor treatment processes (purging, Inerting) do not eliminate vapors entirely. Bottom sludge and scale contain enough products to regenerate vapors. It is important that continuous monitoring be conducted throughout the excavation and preparation for transport process to ensure that the tank is kept safe, even after initial vapor treatment.

- **Tank Removal:** The next stage in tank closure involves the physical removal and disposal of the storage tank. When performing any excavation, the soil must be placed on a tarp to prevent any contamination of additional soil. If this soil is later determined to be uncontaminated, it can then be backfilled into the excavation. Otherwise, the soil will require remediation before backfilling. Once the tank has been removed, sludge and scale must be cleaned from the tank.
- **Tank Abandonment:** In certain circumstances, it is not feasible to remove a UST. In all cases, however, the soil under and around the storage tank has to be analyzed for contamination and a pressure test must be conducted to identify possible leaks. The Environmental Code of Practice for USTs, recommends the abandonment of a UST under the following conditions:



Safe Work Practices

1. The tank is located in whole or in part beneath a permanent building or facility, and the excavation of the tank is not feasible; and/or
2. The tank is inaccessible to the heavy equipment necessary for its removal; and/or
3. The tank is situated in such a way that removing it would endanger the structural integrity of nearby buildings or other facilities.

Once the Environmental Code of Practice provisions have been met for the abandonment process, the abandonment must occur as follows:

- Tanks must be purged of vapors.
- The tank must be filled with inert material (i.e. sand, gravel, concrete). If practical, sufficient holes may be cut along the tank to facilitate filling. If this is not practical, other options for filling must be explored.
- Associated piping must be removed from service
- To determine if the soils around the abandoned tank are contaminated, a site assessment is required. Additional samples must be taken from a location close to the down-gradient of the tank, to determine if the soil has been contaminated.
- Tank Inspection: Once a storage tank has been removed, it must be carefully inspected for evidence of leaks or structural failure such as stress cracks or fractures. Tanks are especially susceptible to leaking along seams, and at pipe fittings. The bottom of the tank must be closely checked for pinholes which are not readily apparent.
- **Closure Assessment:** Regardless of whether or not the tank inspection reveals evidence of a leak, surrounding areas and the excavation pit must be examined for contamination. If the field screening indicates contamination in the walls or base of the excavation, a full environmental site assessment must be conducted. Even if no contamination is evident, several soil and groundwater samples must be collected for analysis to confirm that no release has occurred. Analyses for Benzene, Toluene, Ethyl benzene, and Xylene (BTEX), Total Petroleum Hydrocarbons (TPH).



Scaffolds

Title: Scaffolds

General: Protecting workers from injuries associated with improper use of scaffolds.

Application:

- Employees must use Fall Arrest equipment while working on elevating work platforms.
- The erection and dismantling of scaffolds must be carried out by personnel knowledgeable and experienced in such operations. Temporary work platforms shall be inspected before each use and shall not be used until any defects have been corrected.
- Scaffolds must be erected with all braces, pins, screw-jacks, baseplates and other fittings installed as required by the manufacturer.
- Scaffolds must be equipped with guardrails consisting of a top rail, mid-rail and toe board.
- Scaffold platforms must be at least 46 centimeters (18 inches) wide. If they are over 2.5 meters (8 feet) high they must be planked across their full width.
- Scaffolds must be tied in to a building at vertical intervals not exceeding three times the least lateral dimension, including the dimension of any outrigger stabilizing devices.
- Where scaffolds cannot be tied in to a building, guy lines adequately secured should be used to provide stability.
- Scaffold planks must be installed in a manner that prevents them from sliding.
- Wooden scaffold planks must be of good quality, free of defects such as loose knots, splits or rot, rough sawn, they must measure 51 mm x 25.4 cm (2 in. x 10 in.) in cross section and be made of No. 1 grade spruce or better when new.
- Scaffolds must be erected, used and maintained in a reasonably plumb condition.
- Scaffolds must be equipped with a proper ladder for access.
- Vertical ladders must be equipped with 15 centimeters (6 inch) standoff brackets and a ladder-climbing fall protection device or safety cage when they are more than 5 meters (16 feet) high.
- Scaffolds over 15 meters (50 feet) in height must be designed by a professional engineer and constructed in accordance with the design. Load limits must not be exceeded. The design documents must remain on site for the duration of the scaffold work.
- Remove ice, snow, oil, grease and other slippery material from the platform.
- Wheels or casters on rolling scaffolds must be equipped with braking devices and they must be securely pinned to the scaffold frame.



Pipefitting

Title: Pipefitting

General: PPE Required: Steel-toe boots, safety glasses or face shield, hard hat, gloves, coveralls, fire extinguishers, first aid kit

Application:

- Ensure area is free of toxic gases. If necessary, use a self-contained breathing apparatus (SCBA) for testing.
- Secure the area.
- Ensure all tools are clean and in proper working condition and that all repair parts are handy.

Steps:

- Set up barricades
- Isolate section of pipe to be repaired by slowly closing valves.
- Disassemble pipe, making sure there is no pressure in the pipe before you start removing unions or flanges.
- As work is underway, check often to ensure there are no gasses released into the area.
- Ensure other workers are available to assist when required.
- If pipe cutting is required, the pipe should be cut away from work area. Ensure pipe is secured with clamps or vise prior to cutting.
- Ensure Teflon tape is used on threaded joints of different material.
- When fusing solvent weld joints, ensure there is adequate ventilation.
- Fusing solvent weld joints should not be performed by untrained personnel.
- Clean work area.
- Slowly release pressure into the new section and test each joint for leaks.
- Remove barricades.



Motor Vehicles and Heavy Equipment

Title: Motor Vehicles and Heavy Equipment

General: Protecting workers from injuries associated with improper maintenance of motor vehicles and heavy equipment is of the utmost importance.

Application:

- Construction vehicles and equipment brought on site shall be inspected, tested, and certified to be in safe operating condition. If requested, the inspection, test, and certified document must be available for the Project Manager to review prior to bringing such equipment to the project. Any vehicle or piece of equipment deemed unsafe will be immediately removed from site until repairs are complete and equipment is re-inspected.
- All motor vehicles and equipment, when required, shall be equipped with the following equipment, in good operable condition:
 1. Adequate brake system.
 2. Two headlights and two tail lights.
 3. Brake lights.
 4. Horn.
 5. Seat belts.
 6. Good tires.
 7. Windshields and powered wipers.
 8. Defrosters and heater.
 9. Rear-view mirrors.
 10. Fuel caps.
 11. Reverse warning alarm.
- Only authorized, qualified, licensed, drivers shall be permitted to operate vehicles or equipment. Accidents shall be reported immediately to the Contractors Project Safety Representative and Project Manager.
- Seatbelts are required to be worn by the operator and passengers on all powered mobile equipment fitted with Rollover Protection (ROPS).
- All cab glass shall be safety glass, or equivalent, that introduces no visible distortion affecting the safe operation.
- No employee shall use a motor vehicle or equipment having an obstructed view to the rear unless the vehicle has a backup alarm audible above the surrounding noise level.
- No personnel shall be permitted to mount or dismount moving vehicles or equipment.
- Heavy machinery, equipment, or parts thereof, which are suspended or held aloft by use of slings, hoists, or jacks shall be substantially blocked
- or cribbed, to prevent falling or shifting, before employees are permitted to work under or between them. Bulldozer and scraper blades, end-loader buckets, dump bodies, and similar equipment, shall be either fully lowered or blocked when being repaired or when not in use. All controls shall be in neutral position, with the motors stopped and brakes set, unless work being performed requires otherwise.
- The operator shall be responsible to maintain minimum approach distance from all overhead power lines. That dimension is defined as 20 feet for all Transmission and 10 feet for all Distribution Lines.
- All hauling vehicles, whose payload is loaded by means of cranes, power shovels, loaders, or similar equipment, shall have a cab shield and/or canopy adequate to protect the operator from shifting or falling materials. The operator or driver of all hauling vehicles will leave the cab and stand clear of this equipment while it is being loaded.



Safe Work Practices

- Engines shall be shut off during fueling, maintenance operations or when not attended by an operator.
- Trip handles for tailgates of dump trucks and heavy equipment shall be so arranged so that, in dumping, the operator will be clear.
- All vehicles shall be checked at the beginning of each shift to ensure that equipment and accessories are in safe operating condition and free of damage that could cause failure while in use.
- Employees transported in the back of pickup trucks must sit down inside the bed and the tailgate must be closed.
- No vehicle shall be driven at a speed greater than posted limits. Regard for weather, traffic, width, intersections, and character of the roadway, type of motor vehicle, and other existing conditions may reduce this maximum speed limit.
- Only approved standard hand signals for crane, derrick, and boom equipment shall be used. A copy of these hand signals shall be posted at the operating position of each piece of equipment.
- The manufacturer's specifications and limitations applicable to the operation of cranes and other hoisting equipment shall be followed. When manufacturer's specifications are not available, the limitations of the equipment shall be based on the determinations of a qualified engineer, competent in this field, and such determinations, will be appropriately stamped, posted, documented, and recorded. Attachments used with cranes shall not exceed the capacity, rating, or scope recommended by the manufacturer.
- Rated load capacities, operating speeds and special hazard warnings shall be conspicuously posted on all equipment. Instructions or warnings shall be visible to the operator while he is at his control station.
- All machinery and equipment shall be inspected by a competent person prior to each use. Any deficiencies shall be repaired, and defective parts shall be replaced, before continuing use.
- A thorough, annual inspection of the hoisting machinery shall be made by a Certified Agency. A record of the dates and results of inspections for each hoisting machine and piece of equipment shall be maintained and available for review.
- Belts, gears, shafts, pulleys, sprockets, spindles, drums, flywheels, chains, or other reciprocating, rotating, or moving parts of equipment shall be guarded if such parts are exposed or otherwise create a hazard.
- Accessible areas within the swing radius of the rear of the superstructure of the crane and excavating equipment, either permanently or temporarily mounted, shall be barricaded in such a manner as to prevent an employee from being struck or crushed by this equipment.
- Swinging or suspended loads shall be lowered to the ground and detached from the crane prior to the crane being moved.
- An accessible fire extinguisher of 5BC rating, or higher, shall be available at the operator stations or cabs of all equipment and vehicles. These units shall meet Inspection and Maintenance requirements.
- Documentation of an equipment operator's qualifications to operate the equipment safely is required and records of such certification shall be available on request.
- Trucks with dump bodies, and other hydraulic equipment, shall be equipped with positive means of support that are permanently attached and capable of being locked in position to prevent accidental lowering of the bed or hydraulic attachment during maintenance and/or repair.
- Hooks welded (mounted on backhoe and loader buckets) will not be used for hoisting. Only closed loop (lifting eyes) mounted on buckets by the manufacturer will be used. Hoisting will only be performed with shackles and chokers attached to these lifting eyes.



Housekeeping, Storage And Tool Maintenance

Title: Housekeeping, storage and tool maintenance

General: Protecting workers from injuries associated with improper storage and maintenance of tools and poor housekeeping.

Application:

- Materials and equipment should be stored, moved, piled and transported in a manner that will not endanger workers.
- All compressed gas cylinders (oxygen and acetylene) must be stored in neat rows and in proper holding facility.
- Empty cylinders must be marked M.T. and stored away from full ones. Cylinders must always be used from a cart or from an upright lashed position.
- Barrels shall be stored end to end whenever possible and each barrel shall be adequately wedged to prevent movement.
- Where this method of storage is not possible and barrels have to be placed side by side, each batch shall be securely wedged.
- Waste material and debris shall not be stored in areas of access and egress and should not be thrown from one level to another but be carried down, lowered in containers or deposited in a disposal chute.
- Material to be lifted by a crane or other hoisting device shall not be stored under overhead power lines.
- It is the employer's responsibility to supply and maintain shop tools and other power equipment in good repair.
- It is the worker's responsibility to use such tools properly and to report any defect to the supervisor to ensure repair is initiated and proper tagging of defective tools is carried out.



Getting On or Off Equipment (3 point contact)

Title: Getting On or Off Equipment

General: To ensure that all employees safety embark or disembark all heavy equipment.

Application:

- Ensure that the machine is equipped with side grab rails and steps.
- Clean mud off boots before climbing onto the machine.
- Face the machine and step onto the first step.
- Maintain a 3 point contact at all times (2 hands and 1 foot or 2 feet and 1 hand).
- Climb into cab or other areas provided with non-slip surfaces.
- Make sure the machine is in neutral and brakes are engaged before getting off. Shut off machine if necessary.
- Step out of cab onto ladder and while facing the machine, descend using the 3 point method.



Emergency Eyewash Equipment

Title: Emergency Eyewash Station

General: Under the Workplace Safety and Health Act an employer is required to provide emergency eyewash equipment where there is a risk of eye injury from exposure to hazardous chemical substances. Accidental exposure of eyes to chemical substances in any form can result in irritation, temporary or permanent impairment or blindness. All eyewash equipment must meet proof of certification from the supplier when purchasing.

The following outlines the installation requirements, emergency use practice and solution change out practice:

Application: Installation Requirements

- The water in the eyewash station shall be potable (drinkable).
- A controlled flow of water must be provided to both eyes simultaneously at a velocity low enough not to be injurious to the user.
- There should be no sharp projections anywhere in the operating area of the unit.
- Nozzles shall be protected from airborne contaminants. The removal of such protection shall not require a separate motion by the operator when activating the unit.
- The control valve shall be capable of being quickly located and operated; and capable of being fully activated in one second or less and designed to remain on until intentionally shut off.
- The eyewash unit shall be in an accessible location as close to the hazard as possible, and require no greater than 10 seconds to reach.
- The eyewash unit shall be identified with a highly visible sign. The area around or behind, or both, shall be painted a bright color.
- Water nozzles shall be positioned between 83.8 cm (33 inches) and 114.3 cm (45 inches) from the floor.
- Plumbed eyewash units shall be activated weekly to flush the line and verify proper operation. Self-contained units shall be inspected and operated according to manufacturers' specification. (Includes water change).
- All employees who may be exposed to eye injury shall be instructed in the proper use of emergency eyewash units.
- Outdoor units shall be freeze protected.
- Tepid water temperature in units must not exceed 38 degrees C (100 degrees F); and personal eyewash equipment, such as squeeze bottles, can support but not replace proper eyewash stations.

Application: Emergency Use Practice

- Read and understand the manufacturer's instruction manual.
- All employees must be familiar with the location and use of eye wash stations and drench showers.
- The location and the path to these units must always be clear of obstructions.
- Eye wash stations should be activated weekly to check operation and to flush lines.



Safe Work Practices

1. Activate eye wash station.
2. Hold eyelids open using the thumb and index finger.
3. Water or eye solution should not be aimed directly onto the eyeball, but at the base of the nose.
4. Flush eyes and eyelids for a minimum of 15 minutes. Roll eyes around to ensure full rinsing.
5. Contact lenses must be removed as soon as possible to ensure that chemicals are not trapped behind the lenses.
6. Seek medical attention without delay to ensure there are no lasting effects of the exposure.

The first few seconds following an eye injury are often critical to keeping injury to a minimum. A personal eyewash unit may be kept in the immediate vicinity of employees working in a potentially hazardous area. The main purpose of these units is to supply immediate flushing. With this accomplished, the injured individual should then proceed to a plumbed or self-contained eyewash and flush the eyes for the required 15-minute period. Material Safety Data Sheets (MSDS) should be consulted for additional recommendations.

Application: Solution Change out Procedure

- Manufacturer's fluid change out schedules must be followed.
- Use proper lifting procedures for wall mounted units - full units may weigh up to sixty pounds. Get assistance when lifting unit off and onto wall mounts.
- Drain existing water or eye solution and rinse with clean water.
- Fill with fresh water or eye solution. Ensure fill opening and hands are clean during filling.



Concrete, Concrete Forms and Pre-Cast

Title: Concrete, Concrete Forms and Pre-Cast

General: All equipment and materials used in concrete construction and masonry work shall meet applicable requirements in order to ensure the health and welfare of all Sutherland Excavating Ltd. employees.

Application:

- Employees working more than six feet above unguarded adjacent working surface, while placing reinforcing steel setting or dismantling forms, etc. will use a full body harness with two shock absorbent lanyards with double locking hooks. 100% tie-off/fall protection practices will be followed above 6 feet; also while climbing vertically and moving horizontally on rebar forms.
- The riding on concrete buckets for any purpose is prohibited. Working crews shall be kept out from under swinging and suspended concrete buckets.
- Reinforcing mats used as a walkway shall be covered with plywood to afford safe footing.
- Workmen involved in sandblasting shall wear approved supplied air respirators and hoods.
- Concrete workers will be required to wear the appropriate shirts, boots, and gloves to eliminate the danger of burns.
- All personnel involved in concrete placement who are subject to splatter will be required to wear goggles over their safety glasses.
- All lumber and materials shall be clear of nails and wire. Excess materials shall be removed from the immediate work area, segregated and stored properly.



Cell Phone Safe Driving

Title: Cell phone Safe Driving

General: Safe driving is our first priority. Always buckle up, keep your hands on the wheel and your eyes on the road. Distracted drivers are more likely to make a driving error or react too slowly.

Application: As a driver, your first responsibility is to pay attention to the road.

- Be familiar with the operation of your phone
- During hazardous conditions (such as heavy rain, construction site, etc) -- let your cellular voice mail service take the call and listen to the message later when you are parked, or pull over before answering, if traffic conditions permit.
- If your position requires frequent cell phone use in your vehicle, you must have voice mail service and hands-free equipment for your phone, and use both to avoid distractions.
- Whenever possible, use your cellular phone when parked, or have a passenger use the phone.
- Dial and place all calls when you are not moving. When possible, plan your calls before you begin your trip, or call when your vehicle is stopped.
- Do not look up phone numbers or dial or take notes while driving.
- Let the person to whom you are speaking know you are driving and that the call may need to be suspended at any time. Suspend conversations during hazardous driving conditions or situations.
- Do not engage in stressful or emotional conversations while driving. A stressful or emotional phone conversation while driving is distracting and potentially dangerous. If necessary, suspend the phone conversation.



Safe Work Practices

Office Safety

- Title:** Office Safety
- General:** Protecting Workers from injuries associated with office environment
- Application:** Supervisors are responsible to facilitate and or provide proper instruction to their Workers on protection requirements and training.
- The worker will ensure that you are conversant with emergency evacuations.
- The worker will ensure that all electrical cords are in good condition and are not overloaded.
- The worker will ensure that computer monitors are adjusted to correct height and kept clean.
- The workers will ensure fans/space heaters are used to manufacturer specifications.
- The worker will ensure floors and isles are kept clear and not cluttered.
- The worker will ensure that only one file drawer is open at one time and those drawers are closed when not in use.
- The worker will ensure that the proper type fire extinguisher is available.
- The worker when transporting material of a heavy nature, ensure that handcarts and trolleys are used properly.
- The worker will operate microwave as per manufacturer specification.
- The worker will ensure that the photocopier is maintained according to manufacturer's specification.
- The workers will ensure chairs are in good repair.
- The worker will ensure rugs are kept clean and in good repair – free of tripping hazards.



Refueling Mobile Equipment

- Title:** Refueling Mobile Equipment
- General:** Familiarization with fuel dispensing systems. Fire extinguisher familiarities and awareness of this safe work practice.
- Application:** Ensure a proper fire extinguisher is in the refueling area and an eye wash is readily available.
- Ensure entryway to pumps is clear of people, other equipment, overhead obstructions, and protruding objects and slippery surfaces.
- Ensure all attachments that could strike objects in the refueling area are retracted and secured.
- Reduce speed and use extra caution when near fuel pumps.
Use park brakes or wheel blocks to secure vehicle.
- Engine must be shut off before starting to refuel.
- Ensure no smoking or sources of ignition within 3 meters (10 feet) of the refueling operation.
- Inspect dispensing system for leaks before refueling.
- Ensure fuel nozzle is secure in fuel tank and use manual pressure on the nozzle lever at all times. Operator must not leave dispensing nozzle unattended during refueling.
- Replace the fuel cap and replace the nozzle and hose to the proper location.
- Inspect the vehicle and the site for leaks or spills. All leaks must be repaired before the vehicle is put in use. All spills must be cleaned up or reported to the Supervisor.



Operating Excavators

Title: Operating Excavators

General: Protecting Excavator Operators

Application: When working near water, consider ground stability, removal of brush guards and or other barriers that may impair egress from the cab and any other dangers that working near water can bring.

Perform site inspections of work areas and identify hazards before starting work, continue evaluations as the conditions change during the work day.

Ensure all workers receive adequate instruction in operation of equipment and safe performance tasks.

Equipment maintenance books and any other records must be kept current.

Equipment maintenance must be kept up and reported to Management.

Perform a general “walk around” and inspection of machinery before any operation is performed.

Always be aware of the “swing area” as well of overhead lines and underground facilities such as natural gas pipelines, electrical lines and water and sewer lines. Always perform line locates before doing any work.



Working in the Sun

- Title:** Working in the Sun
- General:** Protecting workers against sunburn, sun stroke, skin cancer and eye damage.
- Application:** Wear a hat, long sleeved shirts and long pants while on the job.
- A hard hat shall be worn at all times on the job site.
- Where there is no danger of entanglement, clothing should be loose fitting, allowing sweat to evaporate.
- Sunscreen will be provided for employees who work outdoors between the hours of 11:00 AM and 4:00 PM.
- Apply sunscreen with a sun protection factor (SPF) of 15 or higher on all exposed skin. The sun screen should be effective in filtering both UV-A and UV-B rays.
- Sunscreen should be applied to dry clean skin 15 minutes before going out to the sun. It should be reapplied every 2 hours, if employee is perspiring heavily.
- Employees should take all scheduled breaks in the shade or in air conditioned areas and Supervisors should schedule extra breaks when in extreme heated or outdoor conditions.
- Employees should keep well hydrated during the day – drink at least 8 – 10 glasses of fluids daily such as water or Gatorade.
- If working indoors in heated conditions, Supervisors and/or workers shall have fans or air conditions installed.



Traffic Control – Temporary Signage

- Title:** Traffic Control – Temporary Signage
- General:** Working on road construction projects, safety precautions must be in place to protect workers and the general public. In order to install temporary traffic control devices, workers should follow this safe work practice.
- Application:** Complete or review the project hazard assessment and communicate the findings to co-workers. Also have the proper training and required crew.
- Traffic Control agent must be present for all set ups and taking down signage.
- Ensure the vehicle is equipped with directional control signage.
- Ensure the vehicle is inspected prior to use.
- Ensure signs, poles, and other traffic control devices are secure before proceeding to the work site.
- Ensure appropriate personal protective equipment is available, in good condition and used (vest, hardhat, foot protection, etc.).
- Do not ride in the back of the vehicle.
- Use approved lifting devices and proper lifting techniques.
- Be aware of pinch points.
- Always attempt to work facing traffic flow



Extension Cords

Title: Extension Cords

General: To protection and educate the worker in the use of extension cords.

Application: All portable extension cords must be of the outdoor type, rated for 300 volts, and have an insulated grounding conductor.

All extension cords will be CSA approved and inspected before use.

Defective cords must not be used. They must either be destroyed or be tagged and removed from the worksite until repaired.

Extension cords must be protected during use to prevent damage from sharp edges, movement of materials, and flame cutting.

All electrical extension cords must be designed for external use and CSA approved.

All extension cords will be inspected before use.

Extension cords are to be protected against damage.

All extension cords are to be placed in such a way that they will not be a tripping or falling hazard.

All extension cords used in hazardous areas or in damp locations are to be protected by approved ground fault protection.

All frayed, cut or spliced extension cords are to be tagged and removed from service.



VIOLENCE IN THE WORKPLACE

Application:

- It is Sutherland Excavating Ltd.'s intent to protect the Health and Safety of all our employees and sub-contractors.
- During site orientations Site Superintendents/Supervisors will ensure that all employees and sub-contractors are aware that violence during both regular and irregular work shifts is not tolerated and disciplinary action will be implemented on those who exhibit aggressive and violent behavior on-site.
- Employees and sub-contractors are required to report any act of violence as soon as it occurs and complete an Incident and Investigation Report.
- During the regular hazard assessments conducted on-site, the potential for violence in the workplace will be evaluated and will include the following items where appropriate:
 - 1) The nature and interactions between workers and the public
 - 2) Providing security or regulatory enforcement services
 - 3) Civil disobedience or labor disputes
 - 4) The attributes of workers
 - 5) Training and experience
 - 6) Personality, culture and attitude
 - 7) The nature of your work environment
 - 8) Work location
 - 9) Number of workers
 - 10) Workplace layout
 - 11) Lighting and security provisions
 - 12) Hours of operation
 - 13) Past history of incidents in your workplace and in similar operations
 - 14) Number or frequency of incidents
 - 15) Type and severity of incidents
 - 16) Time and location of incidents
 - 17) Job classification
 - 18) Attributes of both worker and client
 - 19) Nature of interaction between the worker and client



Painting

Purpose: To protect the Health and Safety of all our employees. Supervisors will ensure that all employees are trained and follow this Safe Work Practice as a term and condition of employment.

- Paint products must be labeled as per legislation
- MSDS must be on site for all paint products being used
- Paint and paint products must be applied as per manufacture's recommendations
- Only workers trained in use of paint products being used and equipment used to apply products shall handle paint or paint products.
- Manufactures recommendation for application, equipment and methods
- A work area or enclosure where hazardous materials are handled or used must be posted with suitable signs or placards warning workers of the hazards within the identified restricted access area and stating the precautions for entry into the area.
- All painting shall be done in accordance will all legislation regarding handling of hazardous chemicals.
- All painting materials will be stored and used as per the manufactures instructions.
- All painting products will be accompanied with all required MSDS information
- All workers must use and wear all respiratory equipment as required.
- An employer must ensure that a less hazardous substance or work process is substituted for a higher hazard substance or process, whenever practicable.
- The employer must ensure that a substitute for a paint containing toxic heavy metal components are used if an alternative product exists.
- Supervisor must ensure all required PPE is available to workers involved in painting.
- Each worker who is or may be exposed to an airborne contaminant must wear approved respiratory protection for the type of paint or material being used.

Workers must use PPE as recommended by manufacturer of products and or Supervisors recommendations.



Planned Lifts and Suspended Loads

Purpose: Protecting workers from injuries associated with lifting operations

Application: Lifts involving mechanical assistance must be planned to ensure the proper use of equipment and rigging.

Protective Mechanism: Safe work procedure
Permit system
Crane and hoisting equipment legislation
Standard crane and hoist signals
Engineered lift procedure
PPE
Barricades and warning signs
ERP (Emergency Response Plan)

Supervisor Responsibility:

- Supervisors are responsible to facilitate and/or provide proper instruction to their workers on protection requirements and training.
- Determine type of equipment
- Hazard Assessment
- Work site inspection

Worker Responsibility:

- Ensure barricades and warning signs are in place.
- Determine the weight of the load.
- Determine the shape and the size of the load.
- Determine the maximum height and final position of the load to be raised.
- Determine the center of gravity of the load so proper length of slings can be determined
- Ensure that safety inspections are completed on equipment and rigging.
- Ensure potential hazards are identified within the work area.
- Communicate with all personnel involved of potential hazards.
- Ensure clear communications with equipment operators are in place.
- Ensure tag lines are used and constructed of non-conductive material.
- Ensure atmospheric conditions are monitored such as temperature, humidity and wind may affect the operator.
- Ensure you understand proper hand signals.
- Ensure ground is firm and level.
- Establish load chart rating of crane.
- Follow lift safe work procedure step by step.



Excavate to Expose Existing Lines or Underground Line Crossings

General: Protecting workers from injuries associated with excavating underground lines and cables

Application: When it is necessary to disturb soil within existing cable pipeline conduit, then that pipeline, cable or conduit must be exposed before work is allowed to proceed.

Protective Mechanisms: Crossing agreement
Notification of owner
Permit system
Survey report
P.P.E.
Safe work procedure
Barricades and warning signs
ERP [Emergency Response Plan]

Supervisor Responsibility: To facilitate and/or provide proper instruction to their workers on protection requirements and training

Worker Responsibility:

- Locate all Lines and determine the probable depth of the lines to be crossed.
- Sweep R.O.W. using radio detection units for line alignment, where applicable.
- Existing pipeline(s) and/or cables must be exposed “BEFORE” commencing any mechanical excavation.
- Hydrovac to expose the line(s) within the critical area to allow for mechanical excavation as per Regulations.
- If for any reason hand excavations are temporarily filled in, they shall be re-exposed before excavation takes place.
- A Signal Person must be present at all times to direct the mechanical excavation during line crossings.
- Workers and operators must be conversant in proper hand signals.



Using Cleaning Solvents

General: Protecting workers from injuries associated with the use of cleaning solvents

Application: Cleaning solvents are used in construction work to clean tools, equipment and within shop, for general cleaning.

Protective Mechanisms: WHMIS

MSDS in place & current
PPE Respiratory protection { if required }
ERP (Emergency Response Plan)

Supervisor Responsibility: To facilitate and/or provide proper instruction to their workers on Protection requirements

Worker Responsibility:

- Ensure all WHMIS requirements are met.
- Check toxic hazards of all solvents before use. (M.S.D.S.)
- When breathing hazards exists, use the appropriate respiratory protection.
- Use non-flammable solvents for general cleaning.
- Store flammables and solvents in special storage containers/areas.
- Ensure that proper containers are used for transportation, storage and field use of solvents/flammables.
- Do not use solvents in areas where food may be contaminated.



Piling Installation

General: Protect workers from injuries associated with piling installation procedures

Application: Piling installation is an integral part in construction of structures.

Protective Mechanisms: Safe work procedure
Site survey
PPE\
ERP (Emergency Response Plan)
Pile driving rig data Permit System

Supervisor Responsibility:

- Supervisors are responsible to facilitate and/or provide proper instruction to their workers on protection requirements and training
- Inspect worksite
- Review piling subcontractor safe work procedures (if applicable)

Worker Responsibility:

- Set up signs and barricades.
- Line locations and scope of locations.
- Hand expose lines and cables.
- Maintain minimum clearance from underground, overhead lines and structures.
- Be aware of pinch points.
- Ensure tag lines are utilized.
- Ensure proper isolation/ barricading/ covering/ of open excavations/ cages/ drive piles.
- Ensure proper offloading of piling materials.
- Ensure that auguring or drilling equipment is on stable ground and anchored properly.
- Ensure you are visible at all times to the rig operator.
- Follow piling safe work procedure step by step.



Hot Work

Title: Hot Work

General: This standard was established for the purpose of ensuring and taking all necessary precautions to prevent accidents caused by any activity that generates spark, flange or ignition sources.
Any work that creates enough heat from spark, molten metal, torches, etc. to ignite combustible or flammable material. Grinding, cutting and welding are all considered Hot Work.

Application:

- If any welding, cutting, grinding is required to take place then it shall be identified on the Petroleum Oriented Safety Training (P.O.S.T.) 'Daily Safe Work Permit' utilized by Sutherland Excavating Ltd. If Hot Work is identified on the 'Daily Safe Work Permit' then the P.O.S.T. 'Hot Work Checklist' (attached) shall be employed by those personnel performing the Hot Work to ensure no accidents happen.
- Where any Hot Work is being performed, a Fire-watch shall be set up to monitor the situation during the work and after the work has been performed. Fire extinguisher(s) shall be within reach of Fire-watch in case of emergency.
- Proper Personal Protective Equipment shall be worn by any individual performing Hot Work. PPE to protect eyes, arms, hands, legs and feet.
- Adequate screening and barricades shall be utilized to protect employees not engaged in Hot Work from harmful radiation and arcing flashes.
- Welding and cutting torches and their fittings and regulators shall be inspected before each use to ensure they are in safe working condition. Any repairs to defective equipment shall be carried out by a competent person using replacement parts or fittings per manufacturer's specifications.
- Oxy/Acetylene rolling carts, utilized by Sutherland Excavating, shall be stored in a well-ventilated and dry area where the temperature does not exceed 52°C. Shall not be stored near readily ignitable substances and kept a safe distance from all operations that produce flames, sparks or molten metal or result in excessive heating of the container.
- Where Hot Work is required is to take place on any tank, vessel, container, pipe or fitting that contained an explosive or flammable substance, the equipment shall be drained, cleaned and ventilated before Hot Work can be performed.



Air Contaminants

Title: Air Contaminants

General: The purpose of this safety policy is to protect the health of employees from hazards due to the inhalation of airborne contaminants.

Application:

- Steps shall be taken to ensure that an air contaminant is kept at a level of concentration that does not constitute a hazard to the health or safety of an employee exposed to it. Where a threshold limit value exists in respect of an air contaminant, that the exposure of the employee to the air contaminant at no time exceeds the threshold limit value.
- Where exposure can occur, the installation of engineering controls shall be installed and utilized to reduce or eliminate such exposure.
- Air contaminants shall be removed at their source where practical.
- Ambient air must be tested where it is believed the level of concentration of an air contaminant may be approaching 50% of the threshold limit value.
- Employees shall be provided adequate respiratory equipment who may be exposed to the following conditions:
 - The level of concentration of an air contaminant may exceed 50% of the threshold limit value in conditions that are part of the normal work procedure;
 - There is the possibility of accidental exposure to a level of concentration of an air contaminant in excess of the threshold limit value;
 - The oxygen content of the atmosphere is less than or may be less than 19.5% by volume.



Traffic Control

Title: Traffic Control

General: To provide public and employee safety around or through construction zones.

Application:

- Employer shall provide competent signalers to control the flow of traffic where construction is being carried out in an area where an employee's safety may be endangered by vehicular traffic.
- All signalers shall wear a reflectorized vest or jacket when controlling the flow of traffic.
- All signalers shall use reflectorized paddles to control the flow of traffic.
- If employee safety may be endangered by vehicular traffic where construction is being carried out on a highway or bridge, concrete barriers or material offering equivalent protection shall be erected at both ends of the construction and as a divider between the traffic and the work area of the highway or bridge, and appropriate lane control devices, flashing lights or flares shall be employed.

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Section 5 - Job Work Procedures



Job Procedure Inventory Sheet

Job Procedures	Development				Review				Review			
	Date			By Whom	Date			By Whom	Date			By Whom
	D	M	Y		D	M	Y		D	M	Y	
Putting on and off your Fall Arrest Harness	18	04	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Chemical Spills	18	04	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Excavation	18	04	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Underground Tank Removal/Disposal	18	04	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Scissor Lift Procedure	18	04	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Confined Space Procedure	18	04	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Lock Out	18	04	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Working Alone	18	04	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Dips and Readings Procedure	18	04	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Contaminated Soil Management	18	04	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Marine Handling Facility	18	04	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Light Duty	18	04	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Petroleum Storage Systems	18	04	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
How to Change Motor Oil	18	04	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Fork Lift Truck Procedure	18	04	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Pile Driving	18	04	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard



Putting on your Harness

Sutherland Excavating Ltd. provides Fall Protection training for their employees through the New Brunswick Construction Safety Association. This training provides the employees the knowledge to safely work at heights.

Fall protection systems must be used when there is the possibility of a fall from 3m (10ft.) or more.

The following procedure shall be followed for anyone that requires the use of a **Fall Arrest Harness**:

***** All harnesses should be inspected before and after use**

***** Remove any harness that proves to be defective or not in proper working order**

***** All employees will be properly trained in Confined Space in order to work in Confines Space.**

Putting On Your Harness:

1. Grasp harness by the back D-ring and shake the unit to allow all straps to fall in place.
2. If waist and/or leg straps are buckled, release straps and unbuckle at this time.
3. As if putting on a vest, slip straps over shoulder so D-ring is located in middle of back.
4. If the harness is equipped with a waist strap, connect the waist strap. The strap should be tight but not binding. Adjust strap under bottom.
5. Pull buckle portion of leg strap between the legs and connect it to the opposite end of leg strap. Repeat this process with the second leg strap. Note: On some harnesses the procedure will be reversed. The buckle portion will be on outside of leg and strap will be pulled between legs.
6. After all straps have been connected, tighten all buckles so that the harness fits snug but allows a full range of movement.
7. If the harness contains a chest strap, pull the chest strap around the shoulder strap and fasten it to the mid chest area. Tighten chest strap to keep shoulder straps in place.

Taking off your harness:

1. To remove harness, reverse the procedures listed above.
2. Reconnect the waist strap after removing harness. This gives the next user a starting point when donning the harness.
3. When not in use, the harness should be stored hanging by the back D-ring. This will assist in the unit retaining its original shape.



Chemical Spill

The following procedures have been developed to minimize the severity of damage to human health and the environment in the event of an unexpected hazardous materials release.

GENERAL:

- If there is reason to believe that the level of concentration of an air contaminant may be approaching 50% of the threshold limit value, then the air shall be tested to determine the level of concentration of the air contaminant using the appropriate air monitoring device.
- Respiratory protective equipment must be used when engineering controls are not practicable to ensure employees are not exposed to an airborne concentration of a chemical/biological substance that exceeds its occupational exposure limits.
- Eye Wash stations and First Aid kits must be easily accessible where exposure to hazardous substances can occur.

EMERGENCY CHEMICAL SPILL:

A chemical spill is classified as an Emergency Spill when it:

- 1) Causes personal injury or chemical exposure that requires medical attention.
- 2) Causes a fire hazard or uncontrollable volatility
- 3) Requires a need for self-contained or supplied air breathing apparatus to handle the materials involved.
- 4) Involves or contaminates a public area.
- 5) Causes airborne contamination that requires local or building evacuation.
- 6) Causes damage to property that will require repairs.
- 7) Cannot be properly handled due to a lack of properly trained personnel and/or equipment to perform a safe effective clean up.
- 8) Requires a prolonged clean up.
- 9) Involves an unknown substance.

SPILL CLASSIFICATIONS:

Chemical spills are typically classified as either minor or major.

Minor Spills:

A minor chemical spill is one where the individual(s) responsible for the spill feel that they are capable of handling the spill safely **without** the use of respiratory protection or the assistance of specially trained safety and emergency response personnel. In the event of a minor spill:

- a. Alert people in the immediate area of the spill.
- b. Wear protective equipment as needed, including safety goggles or face shield, gloves when addressing the spill.
- c. Avoid breathing vapors from the spill.
- d. Confine the spill to a small area with absorbent materials.
- e. Minor spill cleanup procedures include:
 - Use an appropriate spill kit to neutralize and absorb inorganic acids and bases. For other chemicals absorb spill with vermiculite, dry sand, diatomaceous earth or paper towels.
 - Collect residue, place in a container and label the container.
 - Clean spill area with water.



- If broken glass is involved do not pick it up with your gloved hands. Use a scoop or tongs to place it in a plastic bag then place the bag in a strong cardboard box or plastic container.

Major spills:

- a) Arrange for the immediate evacuation of the area and notify emergency response personnel.
- b) In the case of personnel contaminated, remove affected clothing and flush the contaminated skin with water for at least fifteen minutes. **SEEK MEDICAL ATTENTION IMMEDIATELY.**
- c) Notify the Department of Environment.
- d) Alert people in the surrounding area to evacuate.
- e) If there is no health or safety risk, turn off sources of ignition and heat.
- f) Have someone knowledgeable of the incident assist emergency personnel upon their arrival.
- g) Only qualified personnel shall perform a major chemical spill cleanup.
- h) Major spill cleanup procedures include:
 - evacuate the area and restrict access if the spill poses an immediate danger or involves an unknown
 - attend to injured or contaminated persons
 - In the event of a fire, follow the fire plan for that building
 - shut off all ignition sources if safe to do so
 - attend to any injured persons if safe to do so
 - try to control spread of spill if safe to do so
 - Arrange for cleanup personnel to attend at the scene, provide them with the Material Safety Data Sheets for the product involved and inform them of other possible hazards in the area.

GENERAL CLEAN UP PROCEDURES:

Never proceed to clean up a spill if you do not know the hazards associated with the chemical or if you are unsure of how to clean up the spill, vacate the area and notify your supervisor.

1) Liquid Spills Other Than Flammable Liquids:

- a) Alert other persons to the spill and the need to evacuate the area.
- b) Determine the degree of hazard before attempting clean up and take the necessary preventive measures (i.e. protective equipment, eye protection, etc.)
- c) Confine or contain spill to smallest area possible.
- d) Wear protective equipment, goggles and face shield, gloves appropriate for the situation
- e) For small quantities of other materials, absorb the materials with non-reactive materials (i.e. vermiculite, clay, dry sand or towels).
- f) Mop up the spill, wringing out the mop in a pail equipped with rollers. Do not use your hands.
- g) Double bag contaminated clean up materials and seal.
- h) Materials must be disposed of as hazardous waste.
- i) When cleanup operations are complete, wash hands with soap and water for at least one minute. Check any non-disposable personal protection equipment (boots, respirators, etc.) for contamination. Clean and dry completely.

2) Flammable Liquid Spills:

- a) Control all sources of ignition.
- b) Lay the chemical spill pads over the spill. These pads are designed to suppress the vapors emitted by a volatile liquid.



Safe Job Procedures

- c) Allow pads to completely soak up the liquid.
- d) Pick up pads with tongs or any other device that minimizes direct contact with the gloved hand.
- e) Place in a polyethylene bag.
- f) Wipe the area down with a wet paper towel.
- g) Dispose paper towel with the waste generated from the spill cleanup.
- h) Seal bag with tape and attach a completed hazardous waste sticker to the bag.

3) Solid Spills:

- a) Alert other persons to the spill and the need to evacuate the area.
- b) Determine the degree of hazard before attempting clean up and take the necessary preventive measures (i.e. protective equipment, eye protection, etc.)
- c) Generally solids of low toxicity can be swept up into a dustpan and placed in a container compatible with the chemical. Damp toweling should be used to pick up and transfer materials of a higher toxicity level to a compatible waste container. Make sure the material is not water sensitive before using this procedure.
- d) Care should be taken so as not to create dust or cause the contaminated powder to become airborne.
- e) Dispose of residue as hazardous waste
- f) Use a plastic scoop to place the spilled material into a polyethylene bag.
- g) After the bulk of the material is cleaned up, wet a spill pad and wipe the area down.
- h) Place the pads into a polyethylene bag. Wipe the area down with a wet paper towel. Dispose of paper towel with the waste generated from the spill cleanup. Seal bag with tape and attach a completed hazardous waste sticker to the bag.

NOTE: The information contained in Material Safety Data Sheets with respect to spill and leak procedures provides the most effective means of dealing with chemical spills.



Excavation Procedures

The activities covered by these procedures include all excavations which involve the removal of earth to a depth greater than or equal to 5 feet or involve excavations with potentially hazardous atmospheres at depths four feet or greater.

DEFINITIONS:

Excavations: A man-made cavity or depression in the earth's surface formed by earth removal and includes a trench, deep foundation, tunnel, shaft or open excavation.

Open Excavations: An open excavation means an excavation where the width is equal to or greater than the depth.

Trench Excavations: A narrow excavation (in relation to its length) made below the surface of the ground. In general the depth is greater than the width but the width of a trench is not greater than 15 feet.

Shoring: A structure such as a metal hydraulic, mechanical or timber apparatus that supports the sides of an excavation and which is designed to prevent cave-ins. All shoring shall be installed from the top down and removed from the bottom up.

EXCAVATION PROCEDURES:

1. No excavation shall commence until all the public utilities (telephone, hydro, gas, steam, etc.) have been notified and the accurate location of all underground facilities has been determined.
2. A professional engineer must approve excavations greater than 20 feet deep.
3. An experienced and trained worker shall be designated to directly supervise each excavation project. This worker must be familiar with all aspects of excavation work, from shoring requirements to emergency rescue procedures. The supervisor must directly supervise all excavation work during the entire period the workers are in the excavation.
4. No worker shall enter or work in an excavation, which is deemed unsafe or has unsafe conditions and evacuate any excavation where hazardous or potentially hazardous situations have been identified.
5. A hazard assessment must be undertaken to determine the risks associated with workers entering an excavation.
6. A suitable means of access and egress must be provided for workers entering an excavation. This is usually provided by means of a ladder or stairway.
7. Work shall not be performed in an excavation in which there is accumulated water or in which water is accumulating unless precautions are taken.
8. Shoring, or the proper sloping (45 degrees) of an excavation must be provided where a worker is to enter an excavation that is considered to be:
 - an open excavation exceeding 8 feet in depth
 - a trench excavation exceeding 6 feet in depth
9. The shoring support structure must be designed to withstand all external forces that may be caused by:
 - Soil pressure
 - Nearby structures
 - Additional loadings and vibrations
10. If an open excavation exceeds 8 feet in depth then the walls of the excavation must be vee'd-out (45 degrees) or a shoring support structure designed and installed.



Safe Job Procedures

11. An excavation greater than 4 feet deep may be classified as a confined space and require issuance of a permit prior to entry.
12. If entry is required for an excavation greater than 4 feet deep, ladders or sloped exits must be placed no further than 25 feet apart.
13. Where the stability of adjoining buildings, walls, or other structures is endangered by excavation operations, support systems such as shoring, or bracing should be applied.
14. If the excavation is greater than 5 feet deep, sloping and/or a shoring/trench box must be used to prevent the sides from collapsing.

TRAINING:

All Sutherland Excavating Ltd. personnel who are or may be working in or around excavations shall receive training to familiarize them with Workplace Safety and Health excavation standards and other issues related to excavation projects. This awareness training shall include potential safety hazards, safe excavation work practices, hazardous atmosphere testing, inspection procedures, protective systems and standard rescue procedures.



Underground Tank Removal/Disposal

(Includes degassing procedures)

1. Provide 5 days' notice to owner and site supervisor or dealer.
2. Define job.
3. Check site plans for underground lines and electrical services.
4. Erect fence, install signs.
5. Dealer / agent to remove product to limits of suction system.
6. Dip tanks.
7. Disconnect or lock out electrical to tank area.
8. Remove asphalt, concrete and fill to uncover top of tank and lines.
9. Drain product lines into tank.
10. Remove product lines and fill tube.
11. Cap or plug open ends of lines.
12. Excavate tank, leave in hole with one end at a higher elevation,
13. Remove remaining product from tank.
14. Segregate liquids from sludge and place in appropriate containers.
15. Label containers according to content with WHMIS label.
16. Add dry ice to tank through bungs (2.0 kg per 1000 liters).
17. After ice has evaporated check for O₂ (If not 5% O₂ add more dry ice).
18. Cap tank openings.
19. Lift tank from excavation, place on truck for removal or on ground with suitable blocking
20. Remove ID tags.
21. Paint identification on tank (I.D. number or location).
22. If holes or rupture is evident in tank determine extent and relate to CO₂ loss.
23. Temporary repair as required.
24. Cleanup.
25. Complete reports and transfer documentation,

Possible Hazards

- Spill.
- Fire.
- Site Contamination.
- Vapor escape.
- Tank re-use.
- Transport mishap.
- Worker injury.
- Worker exposure to hazardous substance.

Precautions

- Ensure site plan is up to date.
- Check weather conditions, cease work if electrical storm threatening or in progress.
- Cease work if wind might carry vapors where they might create a hazard.
- Check for backhoe clearance regarding overhead or adjacent lines or structures.
- Remove product and sludge promptly.
- Provincial regulations to take precedent
- Personnel must not be in excavation or on tank during removal process.
- Ensure backhoe or lifting equipment rating is sufficient fit tank weight.
- Ensure tank destruction forms are completed and signed and tank identification is correct.



Safe Job Procedures

- Ensure transporter is approved, tank properly blocked and transported promptly. Do not leave on site overnight
 - Any contamination of workers to be attended immediately with appropriate cleansing and change of clothing.
- Isolations**
- Fencing.
 - Electrical lock out.
- Disposal**
- Product and sludge.
 - WHMIS identification.
 - Approved disposal site.
- Outside Authorities**
- Provincial Government (Environment), MUST, or similar Programs.
- Additional Site - Specific Data and Information**
- Site address and phone number,
 - Emergency contact list.
 - Emergency response procedures.



Scissor lift Procedure

Note: Check all overhead obstructions and high voltage power lines. A minimum distance of 10 feet from energized high voltage conductors shall be maintained at all times!

DO NOT OPERATE UNLESS AUTHORIZED AND TRAINED TO RUN LIFT!

- Ensure that boom lift is on a firm and level surface. Do not drive on soft or uneven terrain. Failure to take caution could give lift to tip-over. The aerial work platform shall not be driven on grade, side slopes or ramps exceeding those for which the aerial work platform is rated by the manufacturer.
- Inspect the work area thoroughly for all obstacles, debris, drop-offs, holes, slopes and depressions.
- Inspect the lift thoroughly for all obstacles before each use. Test all functions before raising platform. Check fluid levels, tire pressure, hoses for leaks, breaks in the cable and elevating assembly. **NEVER OPERATE A DAMAGED MACHINE!!!**
- Ensure that all guard rails are properly secured and gates and openings are closed. Do not sit, stand, lean or place loads on guard rails.
- Personnel shall maintain a firm footing in the basket at all times. Do not use ladders or other objects on the lift to gain greater height. **ALWAYS KEEP YOUR TWO FEET ON THE PLATFORM.**
- Hard hat, safety glasses and safety shoes should always be worn by operator.
- If unit has outriggers, do not raise platform until outriggers are extended fully and stabilizers are down.
- Know the rated capacity of the aerial lift. Distribute the load evenly over the platform. **DO NOT OVERLOAD. SERIOUS INJURY COULD OCCUR.**
- Do not lift when the wind velocity exceeds 25 MPH or in thunderstorm conditions. **EXTREME WIND COULD CAUSE THE LIFT TO TIP-OVER!**
- Do not drive the platform raised. When raised, move only to maneuver.
- Do not allow ropes, cords, etc., to become entangled in the elevating parts.
- Stunt driving and horse play could result in injury or death! Be safe!
- The operator is responsible for ensuring that all personal protective equipment is used.
- The aerial work platform shall not be used as a crane.
- Before operating any aerial work platform, operators shall have read and be familiar with the operator's manual and shall abide by the safety rules and practices.

If the person receiving this handout will not will not be the user of the equipment, they will be forwarded to the operator. If there is any doubt as to the operator or safety of the equipment - DO NOT USE!!!

FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN INJURY OR DEATH!



Confined Space Procedures

Sutherland Excavating Ltd. provides Confined Space training to its employees through the New Brunswick Construction Safety Association. This training provides the employees the knowledge to properly manage confined spaces.

A confined space is not normally designated or intended for human occupancy. Special precautions are required to protect workers who must enter from flammable or harmful atmospheres, oxygen depletion or enrichment, or situations of possible entrapment. Examples include, but are not limited to: tanks, silos, storage bins, process vessels, pipelines, sewers, double hulls, underground utility vaults, boilers, pits, vats and tunnels.

Rescue personnel must be readily available and properly equipped to respond to a confined space emergency.

Confined spaces have the following general characteristics:

- Not designated or intended for human occupancy;
- Provide limited means of entry and exit;
- Have poor natural ventilation with the presence of or the potential for a dangerous atmosphere;
- Pose another danger such as entrapment;
- Require special precautions prior to and during entry, including the means for immediate rescue.

Prohibition

No Sutherland Excavating Ltd employee or student shall enter a confined space in which a harmful atmosphere exists or may develop until:

1. Tests to determine the nature and quantity of harmful vapors, gases, fumes, mists, dusts and oxygen deficiency have been made and recorded and;
2. Written work procedures have been established to ensure a safe environment for the worker.

These spaces include tanks, vessels, sewers, utility bunkers or other spaces which may allow harmful substances to accumulate in the atmosphere.

Sampling for Harmful Substances

1. Utility Bunkers

Grab samples for % Oxygen, CO₂, and CO will be taken and results logged in each bunker prior to employee entry. Where levels of CO₂ or CO exceed 50% of the TWA or TLV, or % Oxygen falls below 18%, the Health and Safety Coordinator shall provide written procedures for protecting employees.

2. Sewers, Tanks, Vessels

Samples for % Oxygen, % combustibles, SO₂, CO₂ and CO will be taken and results logged prior to employee entry. Where levels of SO₂, CO₂ or CO exceed 50% of the TLV or TWA, or % Oxygen falls below 18%, or % combustibles exceed 10% for the lower explosive limit of a flammable substance, the Health and Safety Coordinator shall provide written procedures for protecting employees.



Procedures

1. Where the tests made indicate unsafe conditions, the confined space shall be ventilated and/or cleaned and retested to ensure that the harmful substances are below acceptable levels as per WCB Health and Safety regulations and that the oxygen content is greater than 18% before a worker enters the confined space.
2. Where tests made indicate the presence of harmful or explosive substances and it is not practical to provide a safe, respirable atmosphere, then:
 - a. The worker entering the confined space shall wear respiratory and personal protective equipment as outlined by WCB Health and Safety Regulations, and
 - b. The concentration of flammable substances shall be maintained below 20% of the lower explosive limit (LEL) of that substance or substances and determined by repeated testing, and
 - c. Where flammable or explosive gases or liquids are present all sources of ignition shall be eliminated or controlled.
3. A worker who is required or permitted to enter a confined space in which a harmful substance exists or may develop or where the worker may become trapped by material shall, in addition to the above,
 - a. wear safety harness or belt of a type which will keep the worker in a position to permit rescue, and
 - b. Have a life-line attached to the belt or harness which is tended at all times by another person, stationed outside the entrance to the confined space, who shall be equipped for and capable of effecting rescue.
4. Where one or more workers enter a confined space, provision shall be made to prevent the entanglement of life-lines and other equipment.
5. A worker entering a confined space shall be:
 - a. Attended by, and in communication with, another person stationed at or near the entrance, or
 - b. Provided with a means of continuous communication with a person outside, and
 - c. Visually checked by a designated person at intervals as often as may be required by the nature of the work to be performed.
6. Where work is carried out in any confined space:
 - a. The confined space shall be ventilated continuously, and
 - a. T e s t s for harmful or explosive substances and oxygen deficiency shall be made and recorded immediately prior to entry, after any interruption in the work procedure, and at intervals to ensure the continuing safety of the workers in the confined space.

Blanking Requirements

1. Before a worker enters a confined space:
 - a. Piping containing hazardous substances or substances under pressure or so located to allow hazardous substances to enter such space, shall be disconnected, blanked or blinded off; or
 - b. Where it is impractical to employ blanks or blinds, as in welded piping systems, written work procedures shall be developed and implemented to ensure equivalent protection to all workers exposed to the hazard, and
 - c. The closing of a valve or any line will not be acceptable as a substitute for blanking or blinding.



Safe Job Procedures

2. When blanking or blinding a piping system, blanks or blinds shall be of sufficient strength and so installed as to provide adequate safety for the particular conditions of anticipated pressure, temperature and service.
3. Visual indication that a blank or blind has been installed shall be provided at the point of installation.
4. When required, a gasket shall be installed on the pressure side of blanks or blinds and flanges shall be tightened to make the blanks or blinds effective.
5. Where threaded lines are used threaded plugs or caps shall be used to blank the lines.
6. Records shall be kept which identify the blanked lines and the locations of blanks and blinds.



Lock-Out Procedure

The following procedure shall be followed for all machinery or equipment, (except plug-in equipment), where maintenance is required to be performed.

1. Shut off the machinery or equipment
2. Shut off the power source
3. Place multiple lock attachment(s) in lock-out loop or alternate locking device. Combination locks cannot be used for this procedure.
4. Apply personal lock(s) to multiple lock attachment(s). Each personal lock must be marked or tagged to identify the person using it.
5. Procedures must be implemented for shift or personnel changes, including the orderly transfer of control of locked out energy isolating devices between outgoing and incoming people.
6. Test control buttons to be sure that the power source has been disconnected.
 - a. Push start button
 - b. Push stop button
7. Perform repairs and/or maintenance.
8. All employees working on a machine are to remove their lock(s) as soon as they have completed their maintenance.
9. Upon completion, clear away all tools and personnel.
10. Replace all guards and protective devices
11. Ensure that everyone is clear of the machine and start the equipment to return it to normal.
12. All employees shall be provided with training as required



Working Alone Procedure

The following procedure shall be followed for any job or task that requires working alone:

1. Assess the hazards of your workplace.
2. Talk to employees about their work. Get their input about the work they do and possible solutions.
3. Investigate incidents at your workplace, and those from similar workplaces.
4. Avoid having a lone work whenever possible, especially for jobs with a recognized risk.
5. Take corrective action to prevent or minimize the potential risks of working alone.
6. Provide appropriate training and education.
7. Report all situations, incidents or 'near misses' where being alone increased the severity of the situation. Analyze this information and make changes to company policy where necessary.
8. Establish a check-in procedure. Make sure that regular contact is kept with all employees. Establish ways to account for people (visually or verbally) while they are working.
9. Schedule higher risk tasks to be done during normal business hours, or when another worker capable of helping in an emergency is present.

When traveling out of the office, the main contact person should know the following details:

- destination,
- estimated time of arrival,
- return time or date,
- contact information,
- mode of travel (public transit, car, plane, etc.) and,
- Alternate plans in the event of bad weather, traffic problems, etc.

Check-in procedure is as follows:

1. Prepare a daily work plan so it is known where the lone employee will be and when.
2. Identify one main person to be the contact at the office, plus a backup.
3. Define under what circumstances the lone employee will check in and how often.
4. Stick to the visual check or call-in schedule. You may wish to have a written log of contact.
5. Have the contact person call or visit the lone employee periodically to make sure he or she is okay.
6. Pick out a code word to be used to identify or confirm that help is needed.
7. Develop an emergency action plan to be followed if the lone employee does not check-in on time.



Dips and Readings Procedure

The following procedure was adapted to help Sutherland Excavating Ltd Management and employees to obtain the dips and readings for Shell, Petro Canada and Imperial Oil at the Ultramar Bulk plant in Miramichi, New Brunswick.

Before entering the Ultramar Bulk plant facility:

Sign in at the head office and have one of the Ultramar Bulk plant employees fill out a “Safe work permit” for the area.

Materials required for the procedure:

- 1) Rubber gloves
- 2) Safety glasses
- 3) Large screwdriver
- 4) Hard hat
- 5) Work boots
- 6) Appropriate papers and pens for recording dips and readings



Reading Procedure

Esso Canada Readings:

Regular gas readings: (located on left side of south rack)

Same procedure as Shell EXCEPT “PAR” reading has to read 12.

Supreme gas readings: (located beside the regular gas box)

Same procedure as Shell EXCEPT “PAR” reading has to read 12

Proceed to second set of racks - North

Esso Regular # 2 Reading

Same as written procedure above (PAR should read 12)

Shell Regular #2 Reading

Same as written procedure above (PAR should read 11)

Petro Canada Reading:

Follow the same steps for Petro Additive as listed above.

- 1) Proceed to tank farm.
- 2) Take plastic black protection cover off of meter.
- 3) Record reading.
- 4) Replace black protection cover.



Dips Procedure

- 1) Proceed to tank farm
- 2) Put on rubber gloves
- 3) Get 4 – 5 absorbent pads
- 4) Get dip stick out of holder (located on the inside wall of tank farm)
- 5) Use ladder to get into tank farm
- 6) Proceed to Shell tank
- 7) Open tank cover
- 8) Put in stick until it reaches bottom of tank
- 9) Raise stick and clean off with absorbent pads
- 10) Put stick to bottom of tank again
- 11) Raise stick
- 12) Locate level of product on stick
- 13) Take reading
- 14) Raise and clean off stick
- 15) Replace cover
- 16) Check for leaks around tank and fittings
- 17) Repeat procedure for both Esso and Petro tanks
- 18) Replace stick to holder
- 19) Dispose of absorbent pads in garbage bag and bring back to shop

Before leaving facility, go in main office and sign out. Make sure Valero Bulk Plant employee signs site hazard sheet.



Contaminated Soil Management

1. Minimize onsite storage. Contaminated soil should be disposed of properly in accordance with all applicable regulations.
2. Test suspected soils at an approved certified laboratory.
3. Work with the local regulatory agencies to develop options for treatment or disposal if the soil is contaminated.
4. Avoid temporary stockpiling of contaminated soils or hazardous material.
5. Take the following precautions if temporary stockpiling is necessary:
 - i. Cover the stockpile with plastic sheeting or tarps.
 - ii. Install a berm around the stockpile to prevent runoff from leaving the area
 - iii. Do not stockpile in or near storm drains or watercourses.
6. Remove contaminated material and hazardous material on exteriors of Transport vehicles and place either into the current transport vehicle or into the excavation prior to the vehicle leaving the exclusion zone.
7. Monitor the air quality continuously during excavation operations at all locations containing hazardous material.
8. Procure all permits and licenses, pay all charges and fees, and give all Notices necessary and incident to the due and lawful prosecution of the work, including registration for transporting vehicles carrying the contaminated material and the hazardous material.
9. Collect water from decontamination procedures and treat or dispose of it at an appropriate disposal site.
10. Collect non-reusable protective equipment, once used by any personnel, and dispose of at an appropriate disposal site.
11. Install temporary security fence to surround and secure the exclusion zone. Remove fencing when no longer needed.
12. Excavate, transport and dispose of contaminated material and hazardous material in accordance with the rules and regulations.



Water Control

All necessary precautions and preventive measures should be taken to prevent the flow of water, including ground water, from mixing with hazardous substances or underground storage tank excavations. Such preventative measures may consist of, but are not limited to, berms, cofferdams, grout curtains, freeze walls, and seal course concrete or any combination thereof.

If water does enter an excavation and becomes contaminated, such water, when necessary to proceed with the work, should be discharged to clean, closed top, watertight transportable holding tanks, treated, and disposed of in accordance with federal, state, and local laws.

Inspection and Maintenance

Arrange for contractor's Water Pollution Control Manager, foreman, and/or construction supervisor to monitor onsite contaminated soil storage and disposal procedures.

Monitor air quality continuously during excavation operations at all locations containing hazardous material.

Coordinate contaminated soils and hazardous substances/waste management with the appropriate federal, provincial, and local agencies.



Marine Vessel Transfer Operations – Irving Oil

BACKGROUND

Customer products are received re-shipped via marine tankers to/from the Terminal nominated storage tanks.

This is the most economical mode of transport for shipping large parcel (over 500 metric tons) bulk products. However, weather and other factors such as pump rates can significantly affect the economics of such transfers – significant care must be exercised to closely coordinate the transfer operations and mitigate any delays to these transfers In/Out from the facility.

Flexible cargo hoses are used as the transfer medium using either the ship's pump in the case of import into the Terminal, or Terminal Load Out pump in the case of export out of the Terminal.

Cargo hoses initially are to be supplied by vessel and properly tested certify for the transfer operation.

PURPOSE AND SCOPE

To detail Standard Operating Procedures for the safe, consistent and efficient loading or unloading of customer products at the Terminal via marine vessel.

RESPONSIBILITIES

It is the responsibility of all Terminal employees to read, understand, and adhere to the procedure and to ensure that the respective parties involved; i.e. the independent surveyor and the marine vessel's crew perform their work in safe and sound manner.

If at any time this is not the case, report this immediately to the Marine Vessel Person in Charge (PIC) or Terminal Management immediately. These persons will take corrective action, either by ceasing transfer operations or ensuring that the respective parties adhere to Terminals Safety Rules.

When and if this occurs, a Corrective Action Form will be filled out and given immediately to the Port Authority and Customer.

DEFINITIONS

Gauges: a linear measurement that correlates the volumetric amount of product in a storage tank. (Ullage or inn age)

Manifold: an area on the ship or terminal (shore side), which permits product transfer to/from multiple storage tanks or vessel tanks.

Seals: a device that eliminates tampering of product within a tank and is normally applied by a third party Inspection Company and is alpha numeric for recording and re-verification purposes.

Ullage: refers to the distance from the product surface level in a tank to the reference point where the gauge is made.



PROCEDURES

Prior to receipt of a vessel, terminal lines and hoses are washed if applicable, pressure tested (if time allows) and then visually inspected to be clean, dry and odor free by an independent inspection company.

A record is kept by the Terminal of previous cargo contents of the Terminal pipelines and is submitted to the inspection company upon request.

The Terminal Person in Charge (PIC) Operator(s) are present for the berthing of the vessel to ensure proper lining up of the ship's manifold to the shore's Terminal's manifold.

The inspection company gives notice to Terminal of vessel's NOR (readiness) normally at point of "Vessel All-Fast" and is typically NOR + 6 hours.

Any inspection of Terminals storage tanks or opening gauges are normally done prior (concurrently) with the inspection of Terminals lines and hoses by the customer nominated third-party inspection company. Terminal Operators are to physically gauge and witness (Inspection Company) all such gauging and record, for our own internal purposes, the results obtained.

The Terminal's valves are tagged and sealed and blind flanges are connected to product discharge lines if applicable, as per customer requirements.

Terminal has a vessel pre-inspection checklist, which must be duly filled out by the Terminal's Person in Charge (PIC) and the Chief Mate of the vessel. Furthermore, a log sheet is used to record the times of all important actions such as, but not limited to: vessel berthing, lines tied, connections made, start of transfer, finish of transfer, etc.

The inspection company rep and vessel rep (chief mate) mount a flag over the ship's manifold where the shore connection is to be made. The Terminal PIC verify with the shop to ensure that it is the proper connection.

The ship's personnel perform the connection on board ship, while Terminal will make all the connections on shore. Ground cables should not be used as "Insulating Flanges" are the preferred method. Depending on the product to be discharged, Terminal and shop's emergency fire protection equipment will be installed on the shore and the ship respectively.

A **NO SMOKING SIGN** and appropriate hazardous material placard are to be posted next to the manifold area prior to commencing pumping operations.

As per customer request, a flushing could be made to ensure cargo is clean, clear and normal through a visual inspection by the inspector, prior to discharge into the Terminal (shore) tank in the case of import, or to the ship's tank in the case of export. Please refer to Standard Operating Procedure for Flushing.

A more detailed analysis of the flushing sample can be performed by an independent laboratory if the customer (product owner) so desires.

Upon the inspector's notice, the shore tank head valve is opened to receive cargo discharged from vessel (import) or the ship's valve is opened to receive export cargo from the Terminal, at an initial slow fill rate. If filling a shore storage tank with floating roof, velocity should not exceed 1000 bbl/hr until the IFR is floated off the leg supports – check tank pedigree for height of leg support



Safe Job Procedures

Hourly checks of tank level and Terminal lines are to be documented. Furthermore, the dock hose is manned at all times by the shore (terminal representative) and is part of the vessel transfer checklist sheet. It is imperative that the dock hose is never to be left unattended while transfer operations are taking place as per the Canadian Coast Guard/Canadian Shipping Act regarding Oil Handling Facilities. Additionally, individuals will be assigned the responsibility of Person in Charge (PIC) during all marine transfers. The PIC designate is to have completed the Marine Operations Orientation/Qualifications Training Module and approved by the Terminal.

Upon completion of transfer operation(s), the inspector visually checks the ship or shore's tanks for emptiness.

Terminal Operators are to obtain and document all opening and closing gauges and witness gauges performed by the marine surveyor.

Lines are blown and/or pigged from appropriate source vessel to receiving vessel. Nitrogen purging and/or blanketing services are available upon request.

Under no circumstances are nitrogen, steam or fresh water services to be made available to the shop or its agent nor are we to provide assistance with tying or untying of vessels without authorization from the Terminal.

Flexible hose connections are disconnected from vessel to shore line. The Terminal or vessel's transfer hose is then returned back to the warehouse/storage area for cleaning or safekeeping.

Lines are washed out and residue/slops are drummed off and stored for customer pick-up and/or disposal where applicable. If dedicated service line, do not clean line.



Light Duty

PROCEDURE

1. If an injured employee is to be out of work for more than seven (7) days, steps should be taken to keep a positive bond between the employee and the employer, and the employer should make every effort to bring the employee back on light duty work, if possible.
2. Light duty assignments will be determined either by the Employer or Health and Safety Rep. In most cases, individuals will be assigned duties in the shop or office. Work hours will be 08:00 – 17:00, Monday through Friday unless otherwise indicated.
3. Once an individual accepts a light duty assignment, he/she will be informed as to the reporting date, time and place.
4. If the employee(s) fail to report for work, any disciplinary action will be taken by the employer.
5. At the end of the light duty period, the light duty supervisor will inform the employer as to the employee(s) performance and date of return to regular duty.
6. Light housekeeping, stock reorganization, inventory, run necessary errands, filing, answering the telephone, typing, and other jobs of this sort can be accomplished by most light duty employees. If the employee is offered a job and the job is approved by the attending physician, that employee must accept light duty work.
7. The employee who returns to light duty is monitored closely by a supervisor. The supervisor should take time to reinstruct the employee on safety procedures and good work practices.
8. Employees on light duty assignment can return to their regular duties upon receipt of a Report of Attending Physician.



Construction Standards Petroleum Storage Systems

General Description

The construction standards shall be followed for the installation and decommissioning of all petroleum storage systems. The development of these standards does not relieve the proponent of any provisions under the National Fire Code, the Petroleum Product Storage and Handling Regulation (87-97) or any other codes that may apply.

Plans and specifications are to be submitted for every installation, where the total capacity on a site exceeds 5000 liters, and must be stamped by an **ENGINEER** licensed to practice in the Province of New Brunswick.

All installations and decommissioning of petroleum storage systems are to be completed by **INSTALLERS** licensed by the Province of New Brunswick. A list of installers is available upon request.

Prior to commencing any installation, the proponent shall complete a **SCHEDULE A APPLICATION FORM** and receive an **ENVIRONMENTAL APPROVAL** signed by the Minister of the Environment.

The **ENVIRONMENTAL INSPECTOR** has the right to stop construction on any site on which contamination is found, until the system owner agrees to an environmental cleanup to the satisfaction of the department.

Only materials certified to ULC standards and labeled may be used in the installation of storage tanks. See appendix for a listing, and note items marked “*” in these standards.

Further information concerning these construction standards can be obtained by contacting:

DEPARTMENT OF THE ENVIRONMENT
POST OFFICE BOX 6000
(364 ARGYLE STREET)
FREDERICTON, NEW BRUNSWICK
E3B 5H1
TELEPHONE: (506) 453-7945 FAX: (506) 453-2390

SECTION 1

UNDERGROUND PETROLEUM STORAGE SYSTEMS

SECTION 1.1 NON-SENSITIVE SITES (CLASS B)

A. Tanks

- A.1 * Tanks shall be ULC labeled and made of steel or fiberglass material suitable for use with all types of petroleum products.
- A.2 * Steel tanks shall be cathodically protected to conform to ULC standards. Test wires shall be brought above the surface and fastened at an accessible location for yearly test reading.



Safe Job Procedures

A.3 * Steel tanks shall be coated with a ULC conforming corrosion resistant material. Prior to burial, the tank shall be inspected for breaks in the coating and shall be repaired using a compatible material and recommended for use by the manufacturer.

A.4 Tanks to be reused for the storage of petroleum product must be re-certified by a ULC approved tank manufacturer prior to being put back into service.

Proof of re-certification shall be given to the department prior to the installation of the tanks.

A.5 Where any doubt arises concerning the depth to the groundwater table, the department shall advise that each tank be anchored to resist uplift. The acceptable means of anchoring shall be a reinforced concrete slab or concrete deadmen under the tank of sufficient size and weight to resist the total uplift force of the tank when empty and completely submerged in water.

A.6 Sniffer tubes, which can be utilized for groundwater monitoring and sampling shall be used at every site.

The number of sniffer tubes required will be determined by the number of tanks installed. One sniffer tube for every two tanks installed in an excavation, with a minimum of one at each installation.

When a concrete slab is not installed, the tank shall be underlain by a sheet of petroleum resistant material and placed in such a manner as to allow for early detection and collection of petroleum product in the ground by sloping to the sniffer tube.

A concrete slab is installed; the sniffer tube shall be connected to slotted horizontal drainage tile placed around the perimeter of the slab.

A sniffer tube shall be properly capped and protected from traffic. Cap to be identified and different from fill pipes.

The vertical portion of the sniffer tubes shall be slotted in such a manner as to allow inflow of groundwater at any elevation along its vertical axis.

A.7 Testing, bedding and backfilling of the tank shall be according to the manufacturer's specifications and applicable codes. All tanks shall be pressure tested, except steel oil/water separators.

The environmental inspector may order that a precision leak test be performed immediately following air testing and subsequent backfilling of the system.

A.8 Steel tanks shall be electrically isolated from one another, the dispenser island and any other existing facility that may be located on that site.

A.9 Steel tanks shall have the cathodic protection system tested by a trained corrosion protection system tester. The installer shall certify in writing to the owner that acceptable cathodic protection has been achieved.

A.10 * Fill pipes shall be fitted with a UCL labeled spill containment device, properly fastened to the fill pipe and surrounded by concrete.



Safe Job Procedures

- A.11 * Tanks shall be equipped with a UCL labeled overflow protection device. This device shall be located within the fill pipe of the tank. (This criteria shall not apply to tanks that contain Bunker C.)

Heating fuel tanks can be equipped with a whistle fill in the vent pipe in lieu of the overflow protection device when the fill pipe is installed with 50mm pipe, and with a spill containment device.

- A.12 Excavations using pea gravel or crushed stone for backfill shall have a Geotextile fabric placed around the perimeter of the excavation to prevent the migration of backfill material.
- A.13 Tanks containing flammable product should be equipped for the future introduction of vapor recovery systems.
- A.14 Waste oil tanks shall be fitted with a suction tube to facilitate the removal of product.
- A.15 Tanks consisting of more than one compartment shall only be used for the same class of product.

B. Piping

- B.1 * Piping between the storage tanks and the dispensing unit shall be Schedule 40 galvanized steel, black iron, or ULC labeled fiberglass or ducted flexible piping. Copper tubing may be used for heating oil tanks.
- B.2 For galvanized piping where screwed fittings are used, the fittings, exposed threads and all wrench marks must be thoroughly coated with a mastic material capable of protecting the bare steel from corrosion.
- B.3 * Where black iron pipe is installed, the exterior of the line shall be fully coated or wrapped with a mastic or other similar ULC approved coating material.
- B.4 Only licensed installers who have received certification from the pipe manufacturers may install fiberglass or ducted piping.
- B.5 * Connections between rigid pipe and tank or dispenser shall be made by a joint system or ULC labeled flex connectors that will provide for three-dimensional movement of the separate components.
- B.6 * Direct buried galvanized steel piping and flex connections shall be cathodically protected to conform to ULC standards.
- B.7 A vertical check valve under the dispenser shall be used on all suction piping installations.
- B.8 * Delivery systems utilizing pumps located other than at the dispenser shall be equipped with a shear valve below the dispenser and the ULC labeled line leak detection device.
- B.9 Submerged turbines or remote pumping equipment shall have a system that will indicate when the pump is running. This system shall be located in plain view at the operator's console.



Safe Job Procedures

- B.10 Piping shall be air pressure tested prior to any backfilling for a period of at least two hours.
- B.11 Piping shall be connected to the top of the tank and sloped towards the tank (a minimum of one cm per M) for a suction system.

C. Dispenser Island

- C.1 * Openings in new or re-used dispenser islands shall be equipped with ULC labeled under-dispenser sump.
- C.2 A concrete apron shall be constructed at all new or upgraded dispenser locations. The apron shall be a minimum of 0.5 meters beyond the length of the hose at single dispenser locations. At multiple dispenser locations, the above shall apply perpendicular to the island with a width 0.5 meters beyond the length of the island at each end.
- C.3 A concrete apron slab with an oil/water separator shall be installed at all new or upgraded installations where diesel fuel is dispensed at self-service outlets (with more than one dispenser), and at all key lock and Cardlock installations.

D. Site Monitoring

- D.1 * ULC labeled leak detection devices must be installed at all locations.
- D.2 This leak detection equipment shall have a probe located at each sniffer tube with an audible and visual alarm signal located within view of the operator's console. The equipment shall be connected with a relay that will shut down the power to all supply pumps when the leak detection system is disconnected from the power supply. The probe selected is to be compatible to the product stored in the tank. This criteria shall not apply to sniffer tubes located adjacent to waste oil tanks, or oil water separators.

E. Site Protection

- E.1 Fill pipes, sniffer tubes, man ways, air vents and other appurtenances shall be fully protected from possible vehicle traffic damage by means of curb, barrier, etc.
- E.2 Vent lines above the ground surface shall be metal piping. All free standing vent lines over 2 M in height shall be supported to a vertical distance of at least half height.

F. Vertical Monitoring Wells

When monitoring wells are required, they shall be constructed as follows:

- F.1 Monitoring wells shall be constructed of such a material and such a diameter as to provide for the intended purpose, and shall be detailed on the drawings when submitted for environmental approval.
- F.2 If more than one well is necessary to effectively monitor an installation the monitoring wells shall be numbered such that all monitoring and testing results may be easily correlated to a specific monitoring well location. A site plan shall be provided accurately locating the monitoring wells.



- F.3 Monitoring wells shall be properly distinguished from fill pipes and protected from physical damage.

SECTION 1.2 SENSITIVE SITES (CLASS A)

(Additional Requirements to Section 1.1)

A. Tanks

- A.1 * Tanks shall be ULC labeled with double wall construction (steel, fiberglass or combination) with interstitial space ULC labeled leak detection devices.
- A.2 For double wall tank installations, the underlined of petroleum resistant material is not required.
- A.3 Double wall tanks shall be equipped with a man way where the product supply piping connects to the tank.

B. Piping

- B.1 * Product supply and transfer lines shall be complete with ULC labeled secondary containment. This secondary containment shall extend from the man way at the tank to the under-dispenser sump.
- B.2 The secondary containment must be air pressure tested to the manufacturer's standard, prior to any backfilling.
- B.3 For heating fuel applications, the copper tubing may be placed in flexible petroleum resistant tubing where buried.

C. Containment Liner Systems

- C.1 * In lieu of double wall tanks and/or supply lines, single wall tanks and supply lines may be enclosed by a ULC labeled secondary containment liner. The system is to be designed to contain any spill or leak that may occur in the tanks or supply piping. The system must be complete with a top cover.
- C.2 A sniffer tube shall be installed within the tank liner system in such a manner as to act as a monitoring/detection device as well as a method recovery of lost product. A liquid monitoring probe is to be installed at half height. Sniffer tubes shall also be located within the pipe trench liner system.
- C.3 A sniffer tube shall also be located outside of the tank liner system.
- C.4 Containment liner systems shall not be installed at temperatures less than -5 Celsius.
- C.5 Excavations for tanks shall have a geotextile fabric placed in the excavation prior to placing the liner system. The fabric shall be minimum 150 mil thickness for excavations in rock or debris.
- C.6 Tanks within a liner system shall be anchored.
- C.7 Liner systems shall be installed under the direct supervision of a technician qualified by a manufacturer.



Safe Job Procedures

- C.8 The manufacturer of the approved liner system shall permanently affix the trade name and manufacturer's name to the liner material.
- C.9 Liner systems shall be installed with a minimum of 450 mm of the sides of the tank liner extending above the top of the tank before folding.
- C.10 Liner systems which become flooded with ground or surface water must be pumped out when the monitoring system indicates a liquid within the liner. If contamination is present in the liquid, contact the Environmental Inspector prior to pumping.

D. Site Monitoring

- D.1 * A ULC labeled leak detection device must be installed within the man ways of all double wall tanks, in the interstitial space of double wall fiberglass tanks, and inside liner systems. For double wall steel tanks, only a vacuum monitor is acceptable for the interstitial space.
- D.2 * Where double wall tanks are installed, the leak detection device in the sniffer tube is not required.

SECTION 1.3 BULK PLANTS

(Additional requirements to Section 1.1 or 1.2)

- A.1 * A security fence shall be placed around all bulk plant facilities and kept locked when the site is unattended. The fence is to be a minimum of 1.8 meters in height.
- A.2 Above ground pumps, loading/off-loading racks and truck spotting areas shall be underlain by concrete environmental aprons constructed in such a manner as to collect all spillage and drips and direct them to an oil/water separator.

SECTION 2

ABOVEGROUND PETROLEUM STORAGE SYSTEMS

SECTION 2.1 GENERAL

- A.1 A security fence shall be placed around all bulk plant facilities and kept locked when the site is unattended. The fence to a minimum of 1.8 meters in height.
- A.2 Storage tanks shall not be located in any area that may be subjected to flooding.
- A.3 * Relocated shop fabricated storage tanks may be reused aboveground if inspected, repaired and tested in accordance with technical supplement CAN/ULC – S601(A) or CAN/ULC – 630(A) or under the special acceptance procedures of a recognized certification organization.
- A.4 Reconstruction or relocated field erected storage tanks shall be erected and tested in conformance to API Standard 653 – “Tank Inspection, Repair, Alteration and Reconstruction” and verified by a recognized certification organization.
- A.5 Where corrosion protection is used, it shall be installed in conformance with API RP 651 – “Cathodic Protection of Aboveground Petroleum Storage Tanks”.



- A.6 Waste oil tanks shall be fitted with a suction tube to facilitate the removal of product.
- A.7 Aboveground storage tanks shall be permanently marked to identify the product they contain, on at least two sides.

SECTION 2.2 VERTICAL STORAGE TANKS

- A.1 Field erected storage tanks shall conform to API Standard 650 “Welded Steel Tanks for Oil Storage” and have a secondary containment system.
- A.2 * Shop fabricated storage tanks shall be ULC labeled and have a secondary containment system.
- A.3 Accepted secondary containment systems shall be as follows:
 - A single wall and single bottom storage tank placed entirely within a dyked area complete with a full surface impermeable barrier.
 - A single wall, double bottom storage tank placed entirely within a dyked area where the floor under the tank does not have an impermeable barrier.
- A.4 All new storage vessels in excess of 15,000 barrels capacity, normally in hydrocarbon service, with fluids having a True Hydrocarbon Vapor Pressure greater than 10.3 kpa shall be equipped with floating roofs, vapor recovery system or their equivalent.
- A.5 All tanks must have a mechanism to allow for measuring the amount of product. Tanks with the capacity of 50,000 L and greater must have an automatic shut down with a high level alarm with both audible and visual alarms.

SECTION 2.3 HORIZONTAL STORAGE TANKS

- A.1 * Tanks shall be ULC labeled and made of material suitable for use with all types of petroleum products, and have a secondary containment system.
- A.2 Tanks installed for heating fuel or waste oil do not require a security fence. A form of barrier is to be installed to protect the tank from possible traffic damage.
- A.3 * Each tank shall be equipped with a ULC labeled overfill protection device when equipped with a 100 mm fill pipe. Heating fuel tanks with a 50 mm fill pipe may be equipped with a whistle valve in the vent pipe. All fill pipes must be equipped with a ULC labeled overfill containment device.
- A.4 Tank systems proposed for use with motive fuels must also be approved by the Office of the Fire Marshal before receiving an environmental approval.
- A.5 For tanks where the discharge pipe leaves the bottom of the tank an electrically operated solenoid valve that fails shut shall be installed where the pipe joins the tank.

SECTION 2.4 SECONDARY CONTAINMENT

- A.1 Secondary containment shall be provided for all aboveground tank installations, and shall have an impermeable barrier that consists of a material through which petroleum product will not pass.



- A.2 Field erected diking shall be sized in accordance with NB Regulation 87-97 Part VI and liquid tight to a permeability of 1×10^{-7} cm/sec.
- A.3 * Impermeable barriers shall conform to the following:
- Flexible liner systems, that are ULC labeled and compatible with the product being stored, shall be installed under the direct supervision of a technician qualified by the manufacturer. The liner system shall not be installed at temperatures less than -5 Celsius. The manufacturer of the flexible liner system shall permanently affix the trade name and manufacturer's name to the liner material.
 - Concrete barriers designed to good engineering practices with expansion joints sealed with petroleum resistant sealants.
 - Clay barriers shall be a minimum 300 mm thick, chemically compatible with native and cover soil, and covered with a minimum of 300 mm of material to prevent dry out.
 - Steel barriers shall be a minimum of 4.5 mm in thickness and have corrosion protection.
- A.4 Provision should be made for draining water from the secondary containment area by means of providing a uniform slope of not less than 1 percent towards a sump or other means of collecting drainage. The discharge pipe at bulk plant facilities shall be routed through a separator that is designed to separate accumulated petroleum product from the drainage water.
- A.5 * Secondary containment may also be attained by shop fabricated storage tanks designed and labeled to ULC standards.

SECTION 2.5 PIPING & DISPENSING

- A.1 Any piping passing from the inside to the outside of a diked area shall pass over the dyke and be suitably supported to prevent undue stress and possible rupture. Consideration will be given to pipes passing through the dykes providing adequate stops are taken to prevent seepage of spilled product and excess forces being exerted on the piping.
- A.2 Aboveground piping outside of any built in secondary containment systems shall be properly supported to prevent stress and possible rupture.
- A.3 Underground piping shall be installed in accordance with Section 1 of these standards.
- A.4 Any loading or unloading area, delivery rack, pump base, air eliminator, drummed product storage areas or other location where there is a possibility of a petroleum product spill shall be placed on an environmental slab sloped to a drain. All such drains shall be connected to an oil/water separator.
- A.5 Loading and unloading areas, delivery racks, etc., shall be constructed outside of a diked area. No provision shall be made to allow traffic inside the diked area.
- A.6 Any dispensers proposed for distribution of product must be shown on the drawings submitted for approval, and be constructed on a base with a catchment area for containing any leaked product. A concrete apron shall be constructed at all locations, (see Section I for size).



- A.7 Electrically operated hose reels will be required where the dispenser hose exceeds 6 meters in length.
- A.8 An environmental concrete apron and an oil/water separator shall be installed at all new or upgraded installations where diesel fuel is dispensed at self-Serve outlets (with more than one dispenser) and all key lock and Cardlock installations.
- A.9 Aboveground piping and fittings shall be protected from external corrosion, firmly supported, and protected from vehicle impact. Piping shall be permanently marked to identify the product they contain; valves shall be identified with a metal or petroleum resistant plastic tag.

SECTION 3

Marina Site

SECTION 3.1 TANKS

- A.1 The conditions of Sections 1 and 2 of this standard shall apply to all storage tank systems installed at a marina.
- A.2 Where practicable an underground storage tank shall be located at a vertical distance of at least four and one-half meters above the high water mark.
- A.3 All aboveground tanks shall be located above the highest high water mark on record for the area. The tanks shall be located and protected from damage due to ice and debris. Tanks shall be protected from traffic by a fence.
- A.4 Any temporary aboveground tanks with a capacity of 230 L or greater may not be located on a pier or wharf, unless the pier or wharf is constructed of a concrete or other non-combustible material.
- A.5 Subject to the National Fire Code, storage tanks may be located in non-combustible buildings on a piers and wharves of the solid fill, non-combustible construction type.

SECTION 3.2 PIPING

- A.1 Where a storage tank at a marina is at an elevation above the dispensing unit, the storage tank outlet shall be equipped with an electrically operated, normally closed safety control valve positioned adjacent to and down gradient of the tank, isolation valve so as to prevent syphoning in the event of a rupture of the supply line to the dispensing unit. The safety control valve shall not open unless the dispenser pump is activated.
- A.2 Lines between a storage tank located on shore and a dispensing unit located on a floating structure shall be equipped with a suitable length of flexible hose to accommodate changes in water levels.
- A.3 Joints between flexible lines and the dispensing units shall be equipped with a device that, when severed, will automatically stop the flow of petroleum product.
- A.4 Where piping is located on or above the surface of a pier or wharf, the line shall be protected from impact and damage in a manner acceptable to the Minister.



- A.5 Where piping changes from belowground to aboveground, the transition shall be through a suitable flexible joint system to allow for any differential movement
Between the two segments of line.

SECTION 3.3 DISPENSERS

- A.1 The dispenser unit located on any pier or wharf shall be protected from accidental damage by water craft or motor vehicle.
- A.2 The dispenser unit shall be securely mounted to the pier or wharf. For seasonal installations, the dispenser unit shall be removed from the pier or wharf, and the lines drained and capped during the off—season.
- A.3 The flexible hose between the dispenser and the dispensing nozzle shall not be over 4.5 meters in length. Where a retracting mechanism is used, the hose shall not exceed 6 meters in extended length.
- A.4 Under no circumstances shall a permanently installed dispenser unit be located at a point below the high-high water mark.
- A.5 The dispenser nozzle shall be the automatic closing type without a hold-open device.
- A.6 All marinas shall be equipped with a containment device into which portable containers are placed when being fueled.
- A.7 The operation of the marina shall include sufficient petroleum absorbent material and/or equipment required to contain and clean up any spilled product.

SECTION 4

OIL/WATER SEPARATORS

SECTION 4.1 DESIGN REQUIREMENTS

- A.1 * The separator, ULC labeled, shall be so designed as to remove free petroleum product from water when subjected to runoff flows resulting from a storm event equal to a 1 in 10 year rainfall.
- A.2 At sensitive sites, an underground separator must be installed with secondary containment.
- A.3 An aboveground separator is to have secondary containment of sufficient size to contain 110% of the capacity of the tank, and is to be supported on a fire—resistant cradle. A security fence shall also be placed around the facility and kept locked when the site is left unattended.
- A.4 The separator shall be designed, maintained, and operated such that the effluent discharge from the separator has a concentration of petroleum product not exceeding 15 ppm.
- A.5 All separators shall be equipped with a watertight manway and where located under a building slab, be vapor proof except for a vent which shall extend outdoors.

SECTION 4.2 EQUIPMENT



- A.1 The separator shall be equipped such that an easy access is available for monitoring and effluent sampling.
- A.2 The separator shall be vented so as to prevent the buildup of hydrocarbon vapors in the system.
- A.3 The separator shall be equipped with a gate valve so as to shut down the system in an emergency.
- A.4 The separator shall be equipped with a sludge baffle to retain settleable solids and sediments and prevent them from entering the separation chamber.
- A.5 The separator shall be equipped to allow for the removal of the separated petroleum products from the separator.

SECTION 4 OPERATIONAL REQUIREMENTS

- A.1 The effluent water from the separator shall be discharged to one of the following.
to a municipal domestic sewer system with the permission of the operating agency to an on—site domestic sewage disposal system with a septic tank and disposal field, subject to capacity to handle flow to a separate holding tank for collection and disposal at an approved sewage treatment plant to free drainage where site conditions are acceptable and the waste will not affect other properties. This discharge system must be approved by the Minister prior to approval and may require additional treatment of the discharge.

Also, discharging waste water from a separator beyond acceptable limits of petroleum concentration shall be subject to prosecution for discharge of a contaminant.

- A.2 The collection and disposal of the petroleum product and sludge from the separator shall be done in accordance with the regulation and in a manner acceptable to the Minister. For petroleum product, recycling is the only acceptable method.

Sludge is to be disposed of at a regional disposal facility in accordance with environmental guidelines and policies set by the Minister.

- A.3 The separator system is to be inspected regularly and emptied before filling beyond its capacity.
- A.4 The separator system is to be operated and maintained so as to prevent the discharge of free floating petroleum products from the system.

SECTION 5

DECOMMISSIONING PETROLEUM STORAGE SYSTEMS

A. PRIOR TO DECOMMISSIONING

Prior to the abandonment or removal of any petroleum storage facility, the owner must notify the department FIVE DAYS PRIOR to the date on which the facility is to be dismantled and removed except in the case of an emergency. Abandonment and removal of petroleum storage facilities shall be done by a licensed petroleum installer.



Safe Job Procedures

Because of the problems that have been created by the reuse of old petroleum storage tanks, all removed tanks must be destroyed unless re-certified by a ULC approved tank manufacturer.

B. REMOVAL PROCEDURE-

The following procedures are recommended during the removal process:

- B.1 All products in the piping must be drained and flushed into the tank.
- B.2 All liquid which can be pumped out, including the liquid requiring a hand pump to remove, must be removed from the tank, and any liquids which cannot be used for their originally intended purpose shall be disposed of in accordance with approved environmentally sound practices; (recycling is the only approved method).
- B.3 The top of the tank must be exposed.
- B.4 The fill (drop) tube must be removed. Disconnect fill, gauge and product lines. The open end of all lines must be kept plugged except for the vent line. DEGAS. All remaining openings must then be temporarily plugged and the excavation completed. Remove the tank from the ground and block the tank to prevent movement.

NOTE: An Environmental Inspector must inspect the excavation from which the tank was taken prior to the backfilling of the site. Contaminated material shall be disposed of at a place and in a method approved by the Minister.

- B.5 All tanks which contain gasoline and other class I liquids must be rendered gas free using a method acceptable to the Occupational Health and Safety Commission of New Brunswick.
- B.6 Plug or cap all holes including corrosion holes after the tank has been purged and before it is removed from the site, except that one 3 mm vent hole must be left to prevent the tank from being subjected to an excessive pressure differential caused by extreme temperature changes. If transported, the tank must be secured on a truck such that the 3 mm vent hole is located on the uppermost point on the tank.

C. STORAGE PRIOR TO DISPOSAL

Should the abandoned and removed tanks require storage prior to destruction the following provisions apply?

- C.1. The area chosen for storage must be inaccessible to the general public and approved by the Minister.
- C.2 If openings are to be tightly plugged, use screwed plugs with one plug having a 3 mm vent hole to prevent the tank from being subjected to an increased pressure differential caused by extreme temperature changes.
- C.3 All petroleum storage tanks must be labeled as to the previous use, former contents, and present vapor state.

**“TANK HAS CONTAINED LEADED/UNLEADED GASOLINE”
(OR FLAMMABLE LIQUID)**

NOT GAS FREE



(NOT SUITABLE FOR FOOD OR DRINKING WATER)

D. DISPOSAL OF TANKS

Once the tank has been properly removed from the site, the following conditions shall apply:

- D.1 The only acceptable location of disposal is at a site approved by the Minister for the disposal of used petroleum storage tanks.

This requirement shall be strictly adhered to. A list of the approved petroleum tank decommissioning sites is available upon request.

- D.2 The only acceptable means of disposal is for the tank to be cut up and sold for scrap metal.
- D.3 The owner of the tank shall notify the disposal site and the department within 10 days of disposal.
- D.4 No person shall deliver to a disposal site an abandoned petroleum storage tank unless that person has certified that the tank is petroleum product free and in the case of flammable liquids, vapor free.
- D.5 Once delivered to the disposal site, the site operator shall verify that the tank meets item D.4 above and shall provide a receipt for the tank.
- D.6 All tanks to be disposed, regardless of Condition, must be labeled with the information as stipulated in C (3) above.

E. ABANDONMENT IN PLACE

As part of considering an application for abandonment in place of a petroleum storage tank, the proponent must prove to the department that the tank has never leaked or caused Contamination of the ground surrounding the tank.

The Minister may grant approval to a facility owner for abandonment in place where removal is not physically possible or practical for one of the following reasons:

- If it is located beneath a building or other permanent structure and cannot be practically removed.
- As a result of a size and type of construction that cannot be removed.
- Inaccessible to heavy equipment necessary for removal.
- Positioned in such a manner that removal would endanger the structural integrity of nearby tanks.

Should the Minister grant the request for abandonment in place, the tank owner shall:

- Follow all of the provisions as stated in the section on removal procedures except that the vent pipe shall not be capped or plugged until the abandonment procedures are complete.
- Introduce a suitable solid inert material through the hole in top of the tank so that the tank is completely filled with this inert material. The following materials are suitable for this purpose:



- Sand that is free of rocks suitable for filling. It may be poured as long as it flows freely. When the tank is near full, sand should be washed into the tank with a nominal amount of water and puddled to cause sand to flow to the tank ends. The use of a large amount of water shall be avoided.
- Sand and earth fill. The tank can be 1) filled with sand to approximately 80% of the calculated capacity, and 2) filled to overflowing for the remaining capacity using a mixture of soil and water in a free flowing mud.
- The tank may be filled with concrete slurry.
- Other material approved by the Minister.

F. SLUDGE AND OILY WATER DISPOSAL

Any accumulated sludge or tank bottoms and other debris take from within the tank shall be disposed of in a manner acceptable to the Minister. At present, the only acceptable method of disposal is recycling. The recycling company and its method of disposal shall be approved by the Minister.

Upon completion of the decommissioning of all tanks, the owner shall be responsible for completing a **SCHEDULE D** form. This form is available from the Environmental Inspector, and must sign by the licensed installer performing the work.

APPENDIX A

LIST OF ULC STANDARDS AND DOCUMENTS

<u>Standard or Document No.</u>	<u>Title</u>
*** Tanks and Tank Accessories ***	
CAN/ULC-S601-M93	Standard for Shop Fabricated Steel Aboveground Horizontal Tanks for Flammable and Combustible Liquids
CAN/ULC-S602-M92	Standard for Aboveground Steel Tanks for Fuel Oil and Lubricating Oil
CAN/ULC-S603-92	Standard for Steel Underground Tanks for Flammable and Combustible Liquids
CAN/ULC-S603.1-92	Standard for Galvanic Corrosion Protection Systems for Steel Underground Tanks for Flammable and Combustible Liquids
CAN/ULC-S615-M92	Standard for Reinforced Plastic Underground Tanks for Petroleum Liquids
CAN/ULC-S630-M93	Standard for Shop Fabricated Steel Aboveground Vertical Tanks for Flammable and Combustible Liquids



CAN/ULC-S643-M90	Standard for Shop Fabricated Steel Aboveground Utility Tanks for Flammable and Combustible Liquids
ULC/ORD-C58.10-1992	Jacketed Steel Underground Tanks for Flammable and Combustible Liquids
ULC/ORD-C142.3-1991	Contained Steel Aboveground Tank Assemblies for Flammable Liquids
ULC/ORD-C142.23-1991	Aboveground Waste Oil Tanks
ULC/ORD-C58.24	Underground Oil/Water Separators
ULC/ORD-C142.24	Aboveground Oil/Water Separators
ULC/ORD-C142.5-1992	Concrete Encased Steel Aboveground Tank Assemblies for Flammable And Combustible Liquids

LIST OF ULC STANDARDS AND DOCUMENTS

Standard or Document No.

Title

***** Tanks and Tank Accessories *****

CAN/ULC-S616-M93	Standard for Liquid Protective Coating Materials for Steel Tanks and Associated Equipment for Flammable and Combustible Liquids
CAN/ULC-S618-M	Standard for Magnesium and Zinc Anode Assemblies and Zinc Reference Electrodes
CAN/ULC-S631-M84	Standard for Isolating Bushings for Steel Underground Tanks Protected with Coatings and Galvanic Systems
ULC/ORD-C58.12-1992	Leak Detection Devices (Volumetric Type) for Underground Flammable Liquid Storage Tanks
ULC/ORD-C58.14-1992	Non-volumetric Leak Detection Devices for Underground Flammable Liquid Storage Tanks
ULC/ORD-C58.19-1992	Spill Containment Devices for Underground Flammable Liquid Storage Tanks
ULC/ORD-C58.15-1992	Overfill Protection Devices Flammable Liquid Storage Tanks
ULC/ORD-C58.9-1993	Secondary Containment Liners for Underground and Aboveground Flammable and Combustible Liquid Tanks



ULC/ORD-C142.19-1992	Spill Containment Devices for Aboveground Flammable and Combustible Liquid Storage Tanks
ULC-S653-94	Standard for Aboveground Steel Contained Tank Assemblies for Flammable and Combustible Liquids

LIST OF ULC STANDARDS AND DOCUMENTS

<u>Standard or Document No.</u>	<u>Title</u>
*** Piping & Pipe Accessories ***	
ULC/ORD-C107.7-1992	Glass Fiber Reinforced Plastic Pipe and Fittings for Flammable Liquids
CAN/ULC-S633-M90	Standard for Flexible Underground Hose Connectors for Flammable and Combustible Liquids
ULC/ORD-C107.4-1992	Ducted Flexible Piping Systems for Flammable and Combustible Liquids
ULC/ORD-C107.19-1992	Secondary Containment of Underground Piping for Flammable and Combustible Liquids
ULC/ORD-C107.21-1992	Under-Dispenser Sumps
ULC/ORD-C107.12-1992	Line Leak Detection Devices – for Flammable Liquid Piping
CAN/ULC-S642-M87	Standard for Compounds and Tapes for Threaded Joints
*** Dispensing ***	
CAN/ULC-S651-M90	Standard for Emergency Valves for Flammable and Combustible Liquids
CAN/ULC-S612-M88	Standard for Hose for Flammable and Combustible Liquids
CAN/ULC-S620-M90	Standard for Hose Nozzle Valves for Flammable and Combustible Liquids
CAN/ULC-S634-M89	Standard for Hose Swivel Connectors for Flammable and Combustible Liquids
CAN/ULC-S644-M90	Standard for Emergency Breakaway fittings for Flammable and Combustible Liquids
ULC/ORD-C842-1992	Valves for Flammable and Combustible Liquids



Petroleum Storage and Handling

Why should I be concerned?

Above-ground and underground storage of liquid petroleum products such as motor fuel and heating fuel presents a threat to public health and the environment. Nearly one out of every four underground storage tanks in United States may now be leaking, according to the U.S. Environmental Protection Agency. If an underground petroleum tank is more than 20 years old, especially if it's not protected against corrosion, the potential for leaking increases dramatically. Newer tanks and piping can leak, too, especially if they weren't installed properly.

Even a small gasoline leak of one drop per second can result in the release of about 400 gallons of gasoline into the groundwater in one year. Even a few quarts of gasoline in the ground water may be enough to severely pollute a farmstead's drinking water. At low levels of contamination, fuel contaminants in water cannot be detected by smell or taste, yet the seemingly pure water may be contaminated to the point of affecting human health.

Preventing tank spills and leaks is especially important because of how rapidly gasoline, diesel and fuel oil can move through surface layers and into groundwater. Also, vapors from an underground leak that collect in basements, sumps or other underground structures have the potential to explode. Selling property with an old underground tank may also be difficult.

Petroleum fuels contain a number of potentially toxic compounds, including common solvents, such as benzene, toluene and xylene, and additives, such as ethylene dibromide (EDB) and organic lead compounds. EDB is a carcinogen (cancer-causer) in laboratory animals, and benzene is considered a human carcinogen.

This worksheet focuses on storage of gasoline, kerosene and liquid heating fuels. It does not apply to LP (liquid propane) gas, since leaks vaporize quickly and do not threaten groundwater.

The goal of Farm*A*Syst is to help you protect the groundwater that supplies your drinking water.

How will this worksheet help me protect my groundwater?

- It will take you step by step through your petroleum product storage practices.
- It will rank your activities according to how they might affect the ground water that provides your drinking water supplies.
- It will provide you with easy-to-understand rankings that will help you analyze the risk level of your petroleum product storage practices.
- It will help you determine which of your practices are reasonably safe and effective, and which practices might require modification to better protect your drinking water.

Glossary

Petroleum Product Storage

These terms may help you make more accurate assessments when completing Worksheet #4. They may also help clarify some of the terms used in Fact Sheets #4.



Cathodic protection: One of several techniques to prevent corrosion of a metal surface by reversing the electric current that causes corrosion. A tank system can be protected by sacrificial anodes or impressed current. (See sacrificial anodes and impressed current.)

Certified Installer: A person certified by the state to install and repair petroleum storage tanks.

Corrosion: Deterioration of metallic material (rust) due to a reaction with its environment. Damage to tanks by corrosion is caused when a metal underground tank and its underground surroundings act like a battery. Part of the tank can become negatively charged, and another part positively charged. Moisture in the soil provides the connecting link that finally turns these tank batteries on. Then, the negatively charged part of the underground tank system - where the current exits from the tank or its piping - begins to deteriorate. As electric current passes through this part, the hard metal begins to turn into soft ore, holes form, and leaks begin.

Corrosion protection: One method of corrosion protection is cathodic protection. Steel tanks can be protected by coating them with a corrosion-resistant coating combined with cathodic protection. Steel underground tanks can also be protected from corrosion if they are bonded to a thick layer of non-corrosive material, such as fiberglass-reinforced plastic. Also, the corrosion problem can be entirely avoided by using tanks and piping made completely of non-corrosive material, such as fiberglass.

Galvanized: The result of coating an iron or steel structure with zinc. Galvanized materials do not meet corrosion protection requirements.

Impressed current: This protection system introduces an electric current into the ground through a series of anodes that are not attached to the underground tank. Because the electric current flowing from these anodes to the tank system is greater than the corrosive current attempting to flow from it, the underground tank is protected from corrosion.

Interior liner: A liner for petroleum storage tanks made of non-corrosive synthetic materials that can be effective in protecting metal tanks.

Inventory control: Measuring and comparing the volume of tank contents regularly with product delivery and withdrawal records to help detect leaks before major problems develop.

Sacrificial anodes: Pieces of metal attached directly to an underground tank that is more electrically active than the steel tank. Because the anodes are more active, electric current runs from the anodes rather than from the tank. The tank becomes the cathode (positive electrode) and is protected from corrosion. The attached anode (negative electrode) is sacrificed or consumed in the corrosion process.

Secondary containment: A system such as a sealed basin and dike that will catch and hold contents of a tank if it leaks or ruptures.

Soil permeability: The quality that enables soil to transmit water or air. Slowly permeable soils have fine-textured materials like clays that permit only slow water movement. Moderately or highly permeable soils have coarse-textured materials like sands that permit rapid water movement.

Spill and overflow protection: Spill protection usually consists of catch basin for collecting spills when the tank is filled. Overflow protection is a warning or prevention of an overflow, such as an automatic shutoff or buzzer. These precautions can prevent a number of small relapses over a very long period of time from polluting the groundwater.



Tank tightness testing: A procedure for testing a tank's ability to prevent accidental release of any stored substance into the environment, or intrusion of groundwater into an underground tank.

The Farm*A*Syst Program is a cooperative program funded nationally by: USDA Cooperative State Research Education Service (CSREES), USDA Natural Resources Conservation Service (NRCS), and the US Environmental Protection Agency.

This worksheet has been produced by the National Farm*A*Syst Office located at B142 Steenbok Library, 550 Babcock Drive, Madison, WI 53706-1293, Phone: (608) 262-0024. This worksheet is based on the original Wisconsin Farmstead Assessment Program.

The principal author for this worksheet was Pat Walsh, Department of Agricultural Engineering, University of Wisconsin-Madison, and University of Wisconsin-Extension, Cooperative Extension.

Under Ground Storage Tanks

FRP Tanks

1. FRP tanks are supplied complete with hold downs, FRP manway risers, FRP turbine enclosure and FRP enclosure lid, Tank Dip Chart(s) and dip sticks.
2. Tank hold downs to be installed on all tanks unless noted otherwise.
3. The Contractor are is to ensure that tank charts & dip sticks are kept in good condition during construction and same are turned over to the site operator at completion of the project.

Fittings and Accessories

1. All fittings and required accessories are to be supplied by the Contractor unless noted otherwise on Petro-Canada standard drawing #P06.
2. The specified manufacturer and model number of all fittings etc. must be used. No substitutions will be acceptable, unless approved by Petro-Canada.

Product, Syphon and Vent Piping

1. The following flexible piping system is only acceptable for product piping:
 - APT - Poly-Tech P-175-SC
- as manufactured by Advanced Polymer Technology, Inc.
 - GIG-"O" – 100mm dia. used for "conduit" to run APT with-in.
2. For siphons use FRP. (Poly-Tech P-175-SC (APT) may be used), sizes as specified on the drawings.
3. For vent piping use FRP, sizes as specified on the drawings

2. Product, Syphon and Vent Piping

U/G Tank Removal / Yard Work / Demolition

The contractor shall perform all yard work, both inside and outside the property line as required to properly execute this contract, and shall include but not be limited to the following:



Safe Job Procedures

1. The removal of u/g tanks and all related items or equipment shall be done in strict accordance with all procedures and regulations as set forth by one or more of the following governing Codes or Associations, in the applicable Province:
 - National fire Code (1998), Section 4.10
 - Alberta fire Code (1998), Section 4.10
 - British Columbia Fire Code (198), Section 4.10
 - P.T.M.A.A, Most current rules, regulations & guidelines for tank removalAll workers performing the tank removal must be certified for tank removal as required by the applicable Provincial Authority having jurisdiction.
2. The Contractor is to contact the Fire Marshall and advise of any tank removal 48 hours or greater, prior to tank removal.
3. The Contractor is responsible for coordinating all utility locates. These locates must be completed prior to any excavation work taking place.
4. The complete demolition and removal, above and below ground level, of the following items: (or as stipulated in the Scope of Work)
 - a. Petroleum piping, including vents lines
 - b. Product and waste oil tanks
 - c. Tank slabs
 - d. Aprons and islands (Partial or Full as specified on the drawings)

Note: for any product lines that are not feasible to remove, they shall be flushed with water, drained and capped at both ends or inject a concrete slurry in both ends. Every reasonable effort shall be made to remove obsolete piping when uncovered during the course of normal excavation.
5. All asphalt and concrete areas to be excavated shall be saw cut so that patching will be neat and clean.
6. Rubble to be hauled away to recognized disposal site at Contractor's expense.
7. Shoring of the excavation may be required to preserve the integrity of existing structures. Shoring costs incurring with prior Petro-Canada approval shall be an extra to the contract. Repair of structures damaged due to insufficient excavation shoring shall be the sole responsibility of the Contractor.
8. Drain all underground product pipes back into the tanks prior to disconnecting and removing the tanks. Do not allow product lines to drain under islands, into trenches or into tank excavation.
9. Petro-Canada will be responsible for removal of the majority of product from the existing tanks.
10. For any sites that have existing cathodic protection in place, disconnect power at source and remove and dispose of existing cathodic protection rectifier.



Safe Job Procedures

11. De-gas existing tanks in accordance with all applicable regulations and Authorities having jurisdiction. Dispenses explosive vapors to create inert atmosphere confirm with gas meter
12. All steel tanks shall be destroyed beyond redemption and possible further use. The Contractor shall ensure that all tanks are maintained in a gas-free condition while being cut up and destroyed and that all W.C.B rules and regulations are strictly enforced during this procedure. "Caving-in" or "Ripping" of tanks is not acceptable. The Contractor shall be liable for any tanks under his control that are later discovered to be back in service.
13. The Contractor shall provide Petro-Canada with a Statutory Declaration, indication tank and piping destruction.
14. The Contractor is to apply a temporary label on each tank, bearing the date, outlet number & outlet name, then take photo of each tank. Label must be large enough to be legible in the photo. Photos to be turned over to Petro-Canada's site representative.
15. Contact the Construction Advisor if any contaminated material, water problems or unstable soil conditions are encountered when excavating the existing tanks. Subsequent work shall be carried out in accordance with Petro-Canada's instructions.
16. The contractor shall notify Petro-Canada's field representative when tanks are being removed, for inspection of the tanks and tank nest. This inspection must be done prior to backfilling and removal of tanks from site.
17. Backfill excess excavated area at existing tank nest with backfill approved for FRP tanks.
18. Remove dispensers from islands and other salvageable material and temporarily store on site if to be reused or shop to location advised by Petro-Canada's field representative. Contractor to ensure that all junction box covers and panel doors etc. are reinstalled immediately upon pump removal.

Tank Installation

1. All workers performing the tank installation must be certified for tank, vent piping and product pipe installation as required by the applicable Provincial Authority having jurisdiction.
2. The Fire Marshall approved stamped drawings must remain on site for the entire duration of the project and returned to Sutherland Excavating site representative upon project completion.
3. Sutherland Excavating will deliver to the site, product tanks, and/or waster oil tanks c/w hold downs, as shown on the drawings.
4. The Contractor shall excavate to provide a minimum of 1.254 cover to tanks below finished grade. Place 300mm base of clean pea gravel under tanks. The Company must be notified if the ground water level is above the bottoms of the tanks or if unsatisfactory soil conditions exists. The Contractor shall be responsible for the installation for one year after completion of backfilling, if tank floatation occurs due to conditions not reported.



Safe Job Procedures

5. All tanks to be installed in strict accordance with the manufacturer's instructions.
6. During installations, all tank and line openings which are open temporarily shall be securely capped and plugged.
7. If the tanks are ballasted using product, ensure that they are properly temporary vented until the permanent vents are in place.
8. Fiberglass tanks shall not be filled until backfilling to top of tank is completed. Follow Manufacture's recommendations for tank ballasting during wet hole installation.
9. To eliminate any chances of tank popping, it is highly recommended to ballast tanks during all installations. If product is not available or cannot be delivered due to site conditions, use water to ballast. Water ballast is to be removed by pumping out from both ends of the tank and using Isopropyl Alcohol to displace any residual water.



How to Change Motor Oil

The following procedure has been included to minimize the severity of damage to human health and the environment in event of an accident or unsuspected oil spill.

Remember, it is illegal to dispose of used motor oil improperly.

Here's a list of tools and things you'll need to perform this procedure:

- 3/8-drive socket set (metric will work for both)
- a combination wrench set (closed- and open-ended, metric)
- an oil filter wrench
- something to catch the old oil -- an oil pan, a used kitchen basin, a kid's pail
- a couple of empty one gallon milk containers with screw-on lids.
- a funnel and a one quart Ziploc baggie
- a lot of old newspapers and several dirty rags
- presoiled work clothes and, if you have long hair, a baseball cap
- two pair surgical gloves (optional; no, we won't ask you to cough)
- a new oil filter (see vehicle's owner's manual for requirements)
- enough oil to refill the engine (check back page of owner's manual for grade and number of quarts); we recommend name brands, such as Valvoline, Castrol, Pennzoil, Quaker State, Mobil, etc.

STEP ONE: Before you do anything, pick out a flat spot on your driveway. Now take your car for a drive around the neighborhood. We do this to heat the oil and make it nice and thin, so it will drain more completely from the engine block. Drive the vehicle far enough and long enough so that the temperature gauge begins to register. If you don't have a temp gauge, or if you have gauges but they're broken, turn on the heater and drive until your feet get toasty. The engine is now warm. Park it in your pre-chosen spot.

STEP TWO: Turn off the engine, put the car in gear, and set the parking brake firmly. For safety, block the tires with several bricks or large rocks. Go in the house and put on your dirty clothes and cap. Come out and line up your tools.

Now slide under the car and locate the oil drain plug. If there isn't enough room to slide under, you may have to jack up the car to get beneath it. Raise the car with a hydraulic pump and settle it on jack stands. CAUTION: Never get under a car held aloft only by a jack. Always use jack stands.

O.K., now locate the drain plug. It should be about the closest thing to the ground, a fairly large nut with a slim washer under it. Sometimes it will even be labeled "drain plug." (Caution: Make sure you're not looking at the transmission drain plug. It's usually a larger nut. If not sure, feel the metal around it. The metal around the engine oil plug should be a lot hotter than around the trans plug. If still not sure, call a friend.) Find your socket set and pull out several sockets that look about the same size as the nut until you find one that fits over it.

STEP THREE: If you have them, put on your surgical gloves to keep your hands clean. Grab the socket wrench and put the correct-sized socket on it. Place it over the nut and turn it counter-clockwise. It won't budge? Try again -- really put some force into it this time. If it still won't dislodge after several tries, locate the same sized closed-end wrench and use that instead. After you get the nut loosened, work it slightly loose with your fingers. Not too loose, though -- you don't want oil all over the place.



STEP FOUR: Now take the newspaper and spread it under the car. Make sure to cover where the oil filter sticks out, because it drips after removal. Look up into the engine. See the oil filter? It looks like a miniature, upside-down version of the mountain from "Close Encounters of the Third Kind." Get the drain pan (or kitchen basin, or kid's pail) and slide it under the drain plug. Position it so the stream hits it just right (if the plug points to the side and not straight down, the oil will shoot out sideways like from a fire hydrant). Loosen the plug and set it aside. Most of the oil will drain in about two minutes.

STEP FIVE: Locate the oil filter wrench. Take the socket off the socket wrench and set it next to the drain plug. Slip the oil filter wrench onto the socket wrench. You'll probably want to use the short extension, too. The oil filter wrench is like a round dog collar that only chokes in one direction. Set it up to "grab" or "choke" counterclockwise. Slip it over the oil filter and give it a tug. It shouldn't be that tight. When you feel it give, loosen it a little more, then slide the wrench off and do the rest by hand. Careful -- it has hot oil in it! Make sure your face is not under it. Remove it all the way and pour the contents into the drain pan. Set the used oil filter right-side-up on the newspaper.

STEP SIX: Slide out, open the hood (if you haven't already) and remove the oil filler cap. Set it aside. This will help the oil drain a little easier. O.K., take a breather. Now, here's the deal. If you're in a hurry, you can dive right in and finish the oil change. But think about it. Drops of dirty oil are still dripping down. Personally, we like to give it a good hour to drain completely. They don't do that in the quick-lube places. If you have the time, peel off your gloves and take a break. Grab a bite, drink some soda, and watch the tube.

STEP SEVEN: Put your gloves on and get to work. Before you thread the new oil filter in place, dip a finger into the drain pan and coat the rubber gasket on the bottom of the filter with oil, and set it aside. This will help it seat better against the engine block. With a clean rag, wipe off the round metal circle on the engine where the oil filter fits, then thread the new filter onto the post. When it's finger-tight, either tighten it by hand if you're strong enough (it takes about one-half to three-quarters of a turn, no more: read the instructions on the filter), or flip the oil filter wrench over on the socket wrench and tighten it that way.

STEP EIGHT: We recommend using a new sealing washer on the drain plug. Put the washer in place and thread the drain plug back into its hole. Scooch it up tight with the socket set, but not so tight that you can't get it off the next time (remember your struggles earlier; better to have it snug but not stripped.) Now take the oil drain pan and the empty milk bottle and the funnel. If you have a friend, have him hold the bottle while you pour the oil into it. When most of the oil has found the bottom of the bottle, seal it with the lid, then wipe out the inside of the funnel with a clean rag. (We sometimes prop the drain pan against a wall and let it continue to drip into the bottle while we do the next step. You'll need an extra funnel to do this.)

STEP NINE: Set the cleaned funnel into the oil filler hole and pour in as many quarts as the manufacturer recommends. As the oil fills, begin cleaning up. Throw the newspapers in the trash and wipe down all your tools. Discard the empty oil containers in a recycling bin. After the oil is all in, twist the oil cap back on and check the dipstick for oil level, just to make sure. Take the old oil filter, place it in oil barrel at shop.

STEP TEN: Start the engine and let it idle for about five minutes, looking for leaks.



Fork Lift Truck Safety

Fork Lift Truck Operation - Forklift operators are to follow all applicable Vehicle and Mobile Equipment safety rules.

Prestart

1. Perform a pre-shift inspection once per day prior to use, and complete an inspection checklist which is handed in to the Supervisor or Instructor.
2. Do not operate a forklift that has a maintenance problem, or is not safe to operate. Remove the key from the ignition switch and put an "Out of Service" tag on the forklift.
3. WorkSafe NB regulation requires all forklift operators to wear seat belts when forklift is in operation.

Loading

1. Check the rating capacity on the forklift nameplate.
2. Determine if the load weight is within the capacity of the forklift. Note that for every one inch further away from the carriage that the load is placed, there is a loss of approximately 100 pounds carrying capacity.
3. The forklift should be started with the forks down.
4. Lift the forks to 3 inches.

Lifting a Palletized Load

1. Drive to the pallet. This applies to either a pallet on a lower or upper shelf. Stop with the fork 3 inches from the load.
2. Level the mast. The mast must be at right angles to the load.
3. Raise the forks to 1 inch below the slot on the pallet.
4. Drive forward into the pallet.
5. Lift forks 4 inches.
6. Tilt back load until secured for travel. If load will obscure vision drive the lift in reverse taking care while turning as the extra swing may cause load instability.
7. Look back. Honk. Drive back so that load clears the pallets below.
8. Lower the load to 3 inches above ground. Do not drag forks on the ground.
9. Materials and equipment are to be loaded on the forklift in a manner that prevents any movement of the load that could create a hazard to workers or others.



10. All loads that could be subject to shifting during transport are to be restrained if shifting would result in the forklift becoming unstable.

Picking up Drums

1. Place drums securely on a pallet. If there is any possibility of shifting of the drums, have drums strapped together to minimize movement.
2. Tilt mast forward, slide fork tips along floor to position forks under object, raise forks and tilt back slightly to prevent shifting of the drums.
3. If drums are filled with a liquid, be careful to drive slowly as the fluid in the drums may cause shifting during transportation.

Traveling

1. Do not drive with arms, head or legs outside the confines of the forklift
2. Always wear your seatbelt while operating a forklift.
3. Turn forklift only when the forks are lowered to a safe travelling height.
4. Drive only on smooth surfaces such as cement or asphalt, this vehicle is not designed to operate on rough terrain.
5. Ensure that the operating (road) surface is free from ice. Use tire chains if required.
6. Avoid operating forklift in high volumes of pedestrians. Wait for a quieter time to deliver to busy congested areas.
7. When operating in area of pedestrian traffic minimize risk to others by cordoning off areas with signage and/or traffic cones to prevent walk through traffic.
8. Use horn as a warning device for oncoming pedestrians.
9. Drive to point of deposit. Position the forklift in front of deposit area.

Unloading Pallets

1. Raise load 5-10 inches above the unloading point (space permitting).
2. Drive forward stopping 3-4 inches in front of deposit point.
3. Tilt mast forward to a right angle position so load is level.
4. Drive forward until load is aligned with corners of the stack.
5. Stop. Lower load to resting-place. Stack pallets loaded with cases, cartons straight and square. Stagger the top tier to "tie-in place".



Unloading Round Objects

1. Stack round objects together tight and straight.
2. Hold securely in place with wedges.
3. To nest round objects - place the bottom tier tightly together and secure with wedges. Place wedges against each roll in the bottom for a more secure stack.
4. Look behind you. Back up so that forks clear other pallets.
5. Lower forks to 3 inches from the ground.

Parking

1. Tilt the upright forward until the forks are level or flat on the floor.
2. Apply the parking brake place transmission in neutral; chock the wheels if you have any doubt about the forklift moving.

Operations on Grades and Ramps

1. Never turn on an angled grade.
2. Keep unloaded forks facing downgrade.
3. When driving a loaded forklift up a grade, ensure that forklift is driven forwards
4. When driving a loaded forklift down a grade, the forklift must be driven in reverse.



Pile Driving

This Part applies to every workplace where piles are driven into, or removed from the ground.

An employer must:

- develop and implement safe work procedures respecting the use of pile driving equipment;
- train workers in the safe work procedures; and
- Ensure that workers comply with the safe work procedures.

Pile Hoisting

An employer must ensure that:

No worker operating pile driving equipment hoists piles in the leads when a worker who is not directly involved in the pile driving operation -

- is on the superstructure of the pile driving equipment, or
- within range of the pile if it falls; and

No worker

-

- remains or rides on a load or part of a load being moved, raised or lowered by pile driving equipment, or
- Is on the superstructure of the pile driving equipment or within range of a pile if it falls, if the worker is not directly involved in the pile hoisting.

Ladder Systems:

- An employer must provide an appropriate ladder system for use by a worker who is required or permitted to climb on a lead.
- A worker must use the ladder system when one is provided.

Support of Piles and Sheet-piles:

- An employer must ensure that piles and sheet-piles are adequately supported to prevent their uncontrolled movement while they are being hoisted, placed, cut, removed or withdrawn.

Rigging suspended pile hammer:

- An employer must ensure that a pile hammer that is suspended by the hammer line is securely rigged when the equipment is not operating.

Pile driving:

An employer must ensure that

- workers in the area of a pile being struck by a pile driver are protected from any risk to their safety or health that may result from the pile shattering;
- before piles are placed in position for driving, pile heads are trimmed to fit the follower on the pile-driving cap and are free of debris;



- a follower or pile-driving cap is of a size and type suitable for the type of piling to be driven.

Extraction of Piles:

- An employer must ensure that a pile may only be extracted by the use of a device approved by a professional engineer.

Crane Boom Inspection:

An employer must ensure that a crane boom used for driving piles with a vibratory hammer is inspected and certified by a professional engineer as safe for continued use

- at intervals of not more than 600 operating hours while it is in use; and
- When not in use, before being returned to hoisting service.

An employer must ensure that a crane boom with a vibratory pile extractor is inspected and certified by a professional engineer as safe for continued use

- at intervals of not more than 200 operating hours while it is in use; and
- When not in use, before being returned to hoisting service.

An employer must ensure that a crane boom used for dynamic compaction is inspected and certified by a professional engineer as safe for continued use

- at intervals of not more than 200 operating hours while it is in use; and
- Before it is returned to hoisting service.

Definitions:

The following definitions apply in this Part:

"Lead" - means a wood or steel frame with one or two parallel members for guiding the hammer or piles in the correct alignment.

"Pile" - means a slender deep foundation unit made of materials or a combination of materials such as wood, steel or concrete, which is premanufactured and placed by driving, jacking or screwing.

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Section 6 - Critical Task Inventory



Critical Task Inventory Sheet

Critical Task Inventory	Development			Review				Review				
	Date			By Whom	Date			By Whom	Date			By Whom
	D	M	Y		D	M	Y		D	M	Y	
Handling Contaminate Soil	18	04	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Installation of Petroleum Tanks	18	04	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Marine Handling Operations	18	04	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Dips and Reading	18	04	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard
Confined Space	18	04	16	Greg Pickard	18	03	17	Greg Pickard	18	01	18	Greg Pickard



Critical Task Inventory

Hazard Priority Key*

1. No risk of loss of life
2. Low risk of loss of life
3. High risk of loss of life

Handling Contaminated Soil

Item	Hazard Identified	Priority	Control Method
1.	Excavation and Backfilling Of holes	3	Excavation and Trenching Practice
			Backfilling Practice
			Heavy Equipment Maintenance practice
			Loading and unloading Heavy Equipment Practice
			Excavation Procedure
			Head protection info sheets
			Foot protection Info Sheets
			Hand Protection Info Sheets
2.	Loading soil on trucks	2	Heavy Equipment Maintenance
			Excavation and Trenching Practice
			Loading and unloading heavy mobile equipment
			Contaminated soil management procedures
			Excavation Procedures
			Eye and face protection info sheets
			Head protection info sheets
			Call before you dig



Critical Task Inventory

Hazard Priority Key*

1. No risk of loss of life
2. Low risk of loss of life
3. High risk of loss of life

Installation of Petroleum Tanks

Item	Hazard Identified	Priority	Control Method
1.	Excavation and Backfilling of holes	3	Excavation and Trenching Practice
			Backfilling Practice
			Heavy Equipment Maintenance practice
			Loading and unloading Heavy Equipment Practice
			Excavation Procedure
			Head protection info sheets
			Foot protection Info Sheets
			Hand Protection Info Sheets
2.	Installing Electrical Connections	3	Electrical Safety Practice
			Call before you dig
			Lock out/ Tag out Practice
			Use of Portable Ladders
			Working Alone Practice
3.	Placing tanks in hole	2	Heavy Equipment Maintenance practice
			Use of Portable Ladders
			Head protection info sheets
			Bulk hazard liquid storage practice
			Excavation and Trenching Practice
			Loading and unloading heavy mobile equipment procedure
			Proper lifting practice - Hoisting
			Rigging practice



Critical Task Inventory

Hazard Priority Key*

1. No risk of loss of life
2. Low risk of loss of life
3. High risk of loss of life

Marine Handling Operation

Item	Hazard Identified	Priority	Control Method
1.	Spraying Product from leak	2	Bulk liquid storage practice Confined space practice Lock out/Tag out Chemical spill procedure Eye and face protection info sheets Respiratory protection info sheets
2.	Trips and falls when checking pipeline		Working alone practice Working alone procedure Foot protection info sheet Head protection info sheets
3.	Fall from tank		Bulk liquid storage practice Confined space practice Fall harness Practice Fall harness procedure Dips and Readings procedure Working alone practice Working alone procedure



Critical Task Inventory

Hazard Priority Key*

1. No risk of loss of life
2. Low risk of loss of life
3. High risk of loss of life

Dips and Readings

Item	Hazard Identified	Priority	Control Method
1.	Traffic	3	See – Working Alone Practice
			See – Dips and Reading Procedures
			See – Bulk Hazardous Liquid Storage Practice
			See – Lock Out/ Tag Out Practice
			In House Training
			Do Not Work When Trucks are Offloading
2.	Getting Additive On Hands – Chemical Danger	2	See – Working Alone Practice
			See – Personal Protection Info Sheets
			See – In House Training



Critical Task Inventory

Hazard Priority Key*

1. No risk of loss of life
2. Low risk of loss of life
3. High risk of loss of life

Working in Confined Spaces

Item	Hazard Identified	Priority	Control Method
1.	Atmospheric Contaminants: <ul style="list-style-type: none"> • Methane, hydrogen sulphide (sewerage) • Gas, diesel • Other contaminants based on past experiences 	3	<ul style="list-style-type: none"> • Confined space permit • Test before entering • On-going monitoring with alarm system • PPE (self-rescue may be required) • Mechanical ventilation • Stand-by persons • Signs erected • Full parachute harness worn at all times • Restrict time in space • Ensure contaminants from outside do not enter space (vehicle exhaust)
	Flammable contaminants: <ul style="list-style-type: none"> • Methane • Gas • Diesel, etc. 	3	In additional to above: <ul style="list-style-type: none"> • Individual on-going flammable gas monitoring • Intrinsically safe equipment
	Unsafe oxygen : <ul style="list-style-type: none"> • Deficiency 	3	In additional to above: <ul style="list-style-type: none"> • Individual on-going oxygen monitoring
	Plant/Process hazards: <ul style="list-style-type: none"> • Ignition sources i.e. generator • Mechanical, electrical noises • Poor lighting • Road traffic 	3	In additional to above: <ul style="list-style-type: none"> • Hearing protection, safety helmet • Refer to procedure for confined space Road signage and barricades
	Environmental hazards: <ul style="list-style-type: none"> • Uncontrolled introduction of substances (sewage) • Biological • Temperature • Slippery surfaces 	3	In additional to above: <ul style="list-style-type: none"> • Barricades for traffic • Heat stress policy • Non slip footwear

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Section 7 - Hazard Risk Assessments



Hazard Risk Assessment Policy

It is the policy of Sutherland Excavating Ltd. to implement a systematic process for the identification and control of hazards.

The execution, development and implementation of such programs is the joint responsibility of Sutherland Excavating Ltd. and the department responsible for the systems are being assessed.

Sutherland Excavating will follow the POST (Petroleum Orientated Safety Training) Program and Hazard Assessments will be conducted when required by that program.

Employees' have a duty to cooperate with their managers and local risk assessors when they are conducting risk assessments. They are also responsible for cooperating with their managers in implementing any remedial action to reduce the risk. Failure to cooperate is a serious matter as this can place the employee and possibly others at risk.

Sutherland Excavating Ltd will provide employees with appropriate Hazard Risk Assessment training as required.

Risk assessments can be conducted on any entity within Sutherland Excavating Ltd. or any outside entity that has signed a Third Party Agreement with Sutherland Excavating Ltd.

All managers will maintain records of risk assessments which will be brought to the attention of all employees and contractors who may be affected by the risks, and the measures they need to take to avoid the risk before they work in the area.

This policy will be reviewed no later than once every three years or early if required.

Acknowledged By:

President

Date





Driving

Procedure Break the job down into steps	Potential Safety & Environmental Hazards	Likelihood	Potential Impact	Control Measures	Person Responsible
Preliminary walk-around inspection of vehicle	Slips, fall on same level, bump of body part, pinched hands/finger	D - Unlikely	2 - Minor	Marked parking spaces with proper footing, road and parking lot maintenance, proper footwear	All Personnel
Entering/Exiting parked vehicles	Slips, fall on same level, bump of body part, pinched hands/finger	D - Unlikely	2 - Minor	Vehicle design- handles, headliner/door/dash padding, marked parking spaces with proper footing	All Personnel
				Vehicle design- headliner/door/dash padding, marked parking spaces with proper footing, road and parking lot maintenance	All Personnel
Entering/Exiting parked vehicles- driver or passenger	Struck by moving vehicle	D - Unlikely	3 - Moderate	High percentage of parking lots versus on-street parking, lower speeds on parking lots, street lighting, rear view mirrors	All Personnel
Driving car/light truck, motorcycle around site	Vehicle accident- striking another vehicle or stationary object (inclement weather for approximately 6 months/year). Slipping on sand.	C - Moderate	2 - Minor	Speed limit; Police enforcement of driving rules & speed limits; design of vehicle, seat belt; licensed drivers; vehicle, road and parking lot maintenance; fencing at pool during summer camp program.	All Personnel
Bicycle, Pedestrian & Animals travel around site	Vehicle striking pedestrian or bicyclist- injury to pedestrian, bicyclist or vehicle occupant	D - Unlikely	3 - Moderate	Vehicle lighting, marked crosswalks, sidewalks, street lighting; speed limit lessons injury potential, bicycle helmets	All Personnel
	Vehicle striking animal- injury to vehicle occupant	D - Unlikely	3 - Moderate	Vehicle lighting, seat belts, driver awareness of need for caution via ESH reminders	All Personnel
Gas & LP fill-up and vehicle maintenance	Fire from fuelling or Injury opening engine compartment- risk to vehicle operator	D - Unlikely	3 - Moderate	On-site trained service personnel for filling gas and LP and checking vehicles at stations	All Personnel
Loading and un-loading larger packages	Sprain/ strain injury from lifting	C - Moderate	3 - Moderate	Use proper lifting techniques.	All Personnel



Portable Hand Tools

Procedure Break the job down into steps	Potential Safety & Environmental Hazards	Likelihood	Potential Impact	Control Measures	Person Responsible
Portable Tools	Hair or clothing becoming entangled in moving parts	D - Unlikely	3 - Moderate	Loose clothing and long hair to be kept clear of moving parts of power tools.	All Personnel
	Eye injuries from dust, swarf or other fragments	C - Moderate	3 - Moderate	Operatives shall be trained in the correct use of portable tools.	All Personnel
	Wrist and hand injuries due to tool jamming or binding	C - Moderate	3 - Moderate	Suitable eye protection to be worn where there is a foreseeable risk of eye injury.	All Personnel
	Hand/Arm Vibration Syndrome	C - Moderate	3 - Moderate	Suitable RPE to be worn where there is a foreseeable dust hazard.	All Personnel
	Air/hydraulic lines becoming detached or bursting	C - Moderate	3 - Moderate	Tools must be used in accordance with manufacturer's instructions.	All Personnel
	Tool Malfunction	C - Moderate	3 - Moderate	Qualified persons will test all portable electrical equipment at recommended regular intervals,	All Personnel
	Injury from tool vibration	C - Moderate	3 - Moderate	Select power tools with lowest vibration level. A tool producing high levels of vibration to have anti-vibration handles to reduce the risks Hand/Arm Vibration Syndrome (HAVS)	All Personnel
	Worker Fatigue	C - Moderate	3 - Moderate	Minimize the time individuals use the equipment i.e. job rotation.	All Personnel
	Air born dust	C - Moderate	3 - Moderate	Where dust is likely to be a hazard to health a suitable personal protective equipment (PPE) will be provided and worn	All Personnel



Personal Protective Equipment

Procedure Break the job down into steps	Potential Safety & Environmental Hazards	Likelihood	Potential Impact	Control Measures	Person Responsible
Eye and Face Protection	Flying fragments, objects, hot sparks from welding, dust, high temperature exposure	C - Moderate	3 - Moderate	Spectacles with side protection, goggles and/or face shield to be used. Face shields can be worn over goggles. Screen face shields and reflective face shields can be worn during welding and cutting.	All Personnel
	Light and radiation hazards. Electric arc from welding. Gas from welding. Chemical splashes and spills.	C - Moderate	3 - Moderate	To prevent optical radiation damage to eyes use welding helmets or proper shields while welding. Typical shades: 10:14. To prevent thermal exposure use protective eyewear with an optical density for the specific application. To prevent chemical burns from splashes wear goggles, eyecups and/or face shields.	All Personnel
Foot Protection	Impact: Falling objects. As a general guide, routinely lifting hard edge objects, weighing 10 pounds or more, at waist level should be considered a hazard.	C - Moderate	3 - Moderate	Use safety shoes or boots that comply with standard regulations	All Personnel
	Compression: Rolling or pinching equipment and objects.	C - Moderate	3 - Moderate	Use safety shoes or boots that comply with standard regulations	All Personnel
	Puncture: Stepping on nails, tacks, screws, large staples, scrap metal or broken glass.	C - Moderate	3 - Moderate	Use safety shoes or boots that comply with standard regulations or boots with puncture resistant soles.	All Personnel
	Electrical: Electric shock and electrocution	C - Moderate	3 - Moderate	Use electrical insulating safety shoes.	All Personnel
	Chemical: Splash - skin burns and absorption toxicity.	C - Moderate	3 - Moderate	Use impervious rubber boots or bootie covers. Pant leg should pass over top of boot/shoe to prevent chemical from entering.	All Personnel
Head Protection	Impact/Penetration: Overhead hazards, falling objects	C - Moderate	3 - Moderate	Use proper type A, B, C protection helmets.	All Personnel
	Electrical: Electric shock and electrocution	C - Moderate	3 - Moderate	Class A Protective helmets	All Personnel
	Entanglement: Hair becoming entangled in moving parts.	C - Moderate	3 - Moderate	Use of caps or other protective hair protection.	All Personnel
Hand Protection	Sharp tools/materials: Lacerations from blades, knives, glass, sheet metal. Splinters from rough lumber. Severe abrasions.	C - Moderate	3 - Moderate	While cutting dicing or handling sharp objects use leather gloves, flame retardant gauntlet gloves or chemical treated cloth gloves to protect hands.	All Personnel
	Thermal heat: Thermal heat/burns	C - Moderate	3 - Moderate	When cooking, welding, soldering, brazing, foundry work, steam line/furnace repair use leather gloves, flame-retardant gloves or chemical treated cloth gloves.	All Personnel
	Extreme cold: Frostbite	C - Moderate	3 - Moderate	Use permeable or impervious non-insulated/ insulated gloves.	All Personnel
	Chemical: Glove permeation and degradation causing dry skin, dermatitis, burns, irritation or ulceration	C - Moderate	3 - Moderate	Use gloves composed of chemically resistant material. Refer to the MSDS sheet.	All Personnel
Hearing Protection	Noise reduced hearing loss	C - Moderate	3 - Moderate	When using high speed tools, heavy equipment and frequent use of mechanized equipment use ear plugs, ear muffs with the appropriate noise reduction rating.	All Personnel
Respiratory Protection	Oxygen deficient atmospheres, irritants, carcinogens, sensitizers and other health effects.	C - Moderate	3 - Moderate	Employees exposed to activities creating dust, mist, fumes and vapors must use supplied air respirators and air-purifying respirators (half and full face). Also can use face mask or face shields.	All Personnel



Welding

Procedure Break the job down into steps	Potential Safety & Environmental Hazards	Likelihood	Potential Impact	Control Measures	Person Responsible
Personal Protection	Eye damage from exposure or particles in eyes. Burns	C - Moderate	4 - Major	<input type="checkbox"/> Are only authorized and trained personnel permitted to use welding, cutting or brazing equipment,? <input type="checkbox"/> Does each operator have a copy of and follow the appropriate operation instructions? <input type="checkbox"/> Are employees exposed to the hazards created by welding, cutting, or brazing operations protected with PPE and clothing? <input type="checkbox"/> Do eye protections, helmets, hand shields and goggles meet appropriate standards?	All Personnel
Electrical Hazards	Electric shock.	C - Moderate	4 - Major	<input type="checkbox"/> Under wet conditions, are automatic controls for no-load voltage used? <input type="checkbox"/> Is grounding of the machine frame & safety ground connections of portable machines checked periodically? <input type="checkbox"/> Is it required that electric power to the welder be shut off when no one is in attendance? <input type="checkbox"/> Is the welder forbidden to coil or loop welding electrode cable around his body? <input type="checkbox"/> Are work and electrode lead cables frequently inspected for wear and damage, and replaced when needed? <input type="checkbox"/> Are personnel protected from possible electric shock when floors are wet? <input type="checkbox"/> Are wet machines thoroughly dried and tested before use? <input type="checkbox"/> Are cable connectors adequately insulated? <input type="checkbox"/> Is open circuit (no-load) voltage of arc welding & cutting machines as low as possible & not exceed recommended limits? <input type="checkbox"/> Are electrodes removed from the holders when not in use?	All Personnel
Fire/Heat	Burns. Fire and explosion from ignition of flammable gases and/or other flammable materials. Hot materials eg metal spatter and hot work pieces. Exposure to Ultra Violet and Infra Red light, leading to eye and skin damage.	C - Moderate	4 - Major	<input type="checkbox"/> Are precautions taken to prevent the mixture of air or oxygen with flammable gases, except at a burner or in a standard torch? <input type="checkbox"/> Are combustible floors kept wet, covered with damp sand, or protected by fire-resistant shields? <input type="checkbox"/> Is suitable fire extinguishing equipment available for immediate use? <input type="checkbox"/> Are precautions taken to protect combustibles on the other side of metal walls when welding is underway? <input type="checkbox"/> Are fire watchers assigned when welding or cutting is performed in locations where a serious fire might develop? <input type="checkbox"/> Are used drums, barrels, tanks & other containers thoroughly cleaned of substance that could explode, ignite or produce toxic vapors before work begins? <input type="checkbox"/> Are employees trained never to crack a fuel gas cylinder valve near sources of ignition? <input type="checkbox"/> Are signs posted reading: "DANGER, NO SMOKING, MATCHES, OR OPEN LIGHTS," or the equivalent? <input type="checkbox"/> Are only approved apparatuses (torches, regulators, pressure reducing valves, acetylene generators, manifolds used?	All Personnel
Musculoskeletal Injuries	Musculoskeletal problems associated with heavy lifting or difficult postures.	C - Moderate	4 - Major	<input type="checkbox"/> Is proper lifting techniques used to prevent back injuries, shoulder pain, tendonitis, reduced muscle strength, carpal tunnel syndrome and knee joint diseases. Work Postures (especially welding overhead, vibration and heavy lifting) can contribute to these disorders.	All Personnel
Welding In Confined Spaces	Asphyxiation or respiratory problems from exposure to gases and fumes	C - Moderate	4 - Major	<input type="checkbox"/> When working in confined spaces, are environmental monitoring tests done and means provided for quick removal of welders in case of an emergency? <input type="checkbox"/> When welding or cutting is being performed in any confined space, are gas cylinders & welding machines left outside? <input type="checkbox"/> Is a check made for adequate ventilation in and where welding or cutting is performed?	All Personnel

<p>Hazards of Compressed Gas and Cylinder Storage</p>	<p>Fire and explosion from ignition of flammable gases and/or other flammable materials. Asphyxiation from gases, fumes etc. Oxygen-rich atmospheres due to leakage leading to serious fire risk.</p>	<p>C - Moderate</p>	<p>4 - Major</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Are liquefied gases stored and shipped valve end up with valve covers in place? <input type="checkbox"/> Are pressure reducing regulators used only for the gas and pressures for which they are intended? Are empty cylinders appropriately marked and their valves closed? <input type="checkbox"/> Are compressed gas cylinders regularly examined for obvious signs of defects, deep rusting, or leakage? <input type="checkbox"/> Is care used in handling and storage of cylinders, safety valves, relieve valves, etc to prevent damage? <input type="checkbox"/> Is it prohibited to use cylinders as rollers or supports? <input type="checkbox"/> Is care taken not to drop or strike cylinders? <input type="checkbox"/> Are regulators removed and valve-protection caps put in place before moving cylinders, unless they are secured on special trucks? <input type="checkbox"/> Before a regulator is removed, is the valve closed and gas released? <input type="checkbox"/> Do cylinders without fixed wheels have keys, handles or non adjustable wrenches on stem valves when not in service? <input type="checkbox"/> Is red used to identify the acetylene (and other fuel-gas) hose, green for the oxygen hose and black for the insert and air hoses? 	<p>All Personnel</p>
<p>Dangerous Machinery</p>	<p>Moving equipment. Slips, Trips. Pinch points. Electrocutation.</p>	<p>C - Moderate</p>	<p>4 - Major</p>	<ul style="list-style-type: none"> <input type="checkbox"/> When repairing machinery by welding or brazing, is power disconnected, locked out and tagged so machinery cannot start up accidently? 	<p>All Personnel</p>



Confined Space

Procedure Break the job down into steps	Potential Safety & Environmental Hazards	Likelihood	Potential Impact	Control Measures	Person Responsible
Entry	Trip Slip or Fall Hazard. Maiming or injury requiring hospitalization	D - Unlikely	4 - Major	Is the space likely to or intended to be entered? Does the space have a limited or restricted means of entry and exit for personnel? Has the proper testing been carried out before entry?	All Personnel
Atmosphere	Inhalation. Toxic Fumes and Gasses Suffocation Explosive. Unconsciousness or Death	B - Likely	4 - Major	Is there a risk of the atmospheric pressure within the space changing to an unsafe level ? Is the space likely to contain a harmful level of any contaminant (eg fumes, vapour, gas, steam, mist or explosive gas)? Does the space have a safe oxygen level? Does the space have any stored substance that could cause engulfment (eg sand, garnet, grit, blast or grain)?	All Personnel
Lighting	Explosion. Death or Dismemberment	B - Likely	4 - Major	Could there be insufficient lighting? Are there any possible hazards associated with the lighting in the space, such as explosion?	All Personnel
Electricity	Shock. Severe burns. Death	B - Likely	4 - Major	Are any electrical hazards present?	All Personnel
Communication	Visual or Verbal loss of contact	C - Moderate	3 - Moderate	Is continual communication between the personnel inside the space and the standby difficult?	All Personnel
Personal Protective Equipment	Entanglement	C - Moderate	3 - Moderate	Does the design, purpose or layout of the space require PPE irrespective of the work carried out inside the space?	All Personnel



Excavators

Procedure Break the job down into steps	Potential Safety & Environmental Hazards	Likelihood	Potential Impact	Control Measures	Person Responsible
Approaching excavators	Crushed or struck by excavator or debris. Death or serious maiming	D - Unlikely	5 - Catastrophic	Before approaching excavator ensure the driver is aware of your presence and has signalled that it is safe to approach. When people are approaching your excavator, lock out the hydraulics and indicate that it is safe to approach. Excavator to have flashing beacon on when in use and reversing beeper installed and working.	All Personnel
Maintenance of machinery	Excavator Failure. Lost time expense	C - Moderate	1 - Insignificant	Ensure that excavator is regularly serviced and maintained.	Operator
Working around moving parts	Entanglement. Maiming or injury requiring hospitalization	D - Unlikely	3 - Moderate	Machinery should not be serviced, repaired or adjusted while machinery is in use nor should oiling of moving parts be attempted, unless the parts are designed or fitted with safeguards.	All Personnel
Operating Machinery	Crushing Machinery, Tipping/ Rolling, Poor Visibility	C - Moderate	3 - Moderate	Only trained and competent persons should operate an excavator. Ensure that there is adequate light available during times of darkness. Wear seatbelt so that you remain confined within the structure in the event of a roll-over. Never leave unattended excavator running. Lower the bucket when not in use. Do not exceed the manufacturers recommended load limits.	Operator
Mounting or dismounting excavator	Trip/Slip/Fall. Injury requiring hospitalization	C - Moderate	3 - Moderate	Always use 3 points of contact when entering/exiting the machine.	Operator
Operating on unstable ground	Machine becoming stuck, ground giving way. Death or serious maiming	C - Moderate	5 - Catastrophic	Inspect ground conditions prior to working. Don't work on slippery / wet slopes Only work on flat/stable ground	Operator
Raising Bucket	Boom hitting overhead objects. Damage to structure	D - Unlikely	3 - Moderate	Use spotters in congested areas	Operator
Digging near services	Damaging existing services Electric shock or gas explosion. Death, serious maiming loss of time and cost to repair	D - Unlikely	5 - Catastrophic	Ensure that existing services have been located prior to digging. Permit to be in place prior to all digging	Operator

Sutherland Excavating Ltd.

**Sutherland Environmental &
petroleum**

Fax (506) 627 1217, Phone 506 622 5437



Office

Procedure Break the job down into steps	Potential Safety & Environmental Hazards	Likelihood	Potential Impact	Control Measures	Person Responsible
Slips and trips	Staff and visitors may be injured if they trip over objects or slip on spillages.	D - Unlikely	2 - Minor	General good housekeeping. All areas well lit, including stairs. No trailing leads of cables. Staff keep work areas clear. Deliveries stored immediately. Offices cleaned every day.	Office Personnel
Manual handling of paper, office equipment, etc	Staff risk injuries or back pain from handling heavy/bulky objects	C - Moderate	3 - Moderate	Trolley used to transport boxes of papers and other heavy items when collecting deliveries or storing. Lift with the knees not the back. High shelves for light objects only.	Office Personnel
Display screen equipment	Staff risk posture problems, pain, discomfort or injuries to their hands from overuse or improper use or from poorly designed work stations or work environments. Headaches or sore eyes can also occur if the lighting is poor.	C - Moderate	3 - Moderate	Work station and equipment set to ensure good posture and to avoid glare and reflections off the screen. Shaded work stations are assessed for all users. Work planned to include regular breaks and change of activity. Lighting and temperature suitably controlled. Adjustable blinds at windows to control natural light on screen. Noise levels controlled.	Office Personnel/ Management
Working at height	Falls from any height can be bruising and cause fractures.	D - Unlikely	3 - Moderate	Appropriate step ladders bought and staff shown how to use it safely.	Office Personnel/ Management
Stress	All staff could be affected by factors such as lack of job control, bullying, not knowing their job, etc.	C - Moderate	3 - Moderate	Staff understand what their job duties and responsibilities are. Staff can talk to Supervisors or management if they are feeling unwell or at ease about things at work. No "Bulling" policy.	Management
Electrical	Staff could get electrical shocks or burns from using faulty electrical equipment. Electrical faults can also lead to fires.	D - Unlikely	3 - Moderate	Staff trained to spot and report any defective plugs, discoloured sockets or damaged cables/equipment. Defective equipment to be taken out of use safely and promptly replaced. Staff told not to bring in their own appliances, toasters, fans, etc.	Office Personnel/ Management
Fire	If trapped, staff could suffer fatal injuries from smoke inhalation/burns.	D - Unlikely	4 - Major	Perform a Fire risk assessment. Check to see that the fire exits are clearly marked. Fire drills are performed annually. Fire Extinguishers are clearly marked. Training on the proper use of a fire extinguisher is performed annually. Fire extinguishers are well maintained.	Office Personnel/ Management
Lone Working	Staff could suffer injury or ill health while out of the office visiting clients or while working alone in the office.	D - Unlikely	2 - Minor	Staff leave contact number and let someone know their where about when out of the office. Staff check all areas of the office, including toilets, before locking up at night.	Office Personnel



Trenching

Break the job down into steps	Potential Safety & Environmental Hazards	Likelihood	Potential Impact	Control Measures	Person Responsible
Excavation/ Trenching	Obstructions to trenching path such as tree stumps, abandoned	B - Likely	2 - Minor	Check Trenching path before starting for obstructions	All personnel/ operator
	Equipment in unsafe operating condition	D - Unlikely	2 - Minor	Thoroughly inspect equipment before use. Make sure all safety devices and guards are intact and operate.	All personnel/ operator
	Damaging buried Utilities	C - Moderate	3 - Moderate	Ensure locates are in place and are current, check terrain for excavation that may have been missed. Check for private buries lines that would not be identified through your locate. If contact is made with energized equipment/cables while operating, jump from your equipment (do not step off) with both feet, clear and secure the work zone, make contact with appropriate personnel.	All personnel/ management
	Excavating around energized cables.	C - Moderate	3 - Moderate	Use extreme caution around existing utilities. Always use a look out! While hand digging, use caution. Wear FR clothing, "Hot Boots" and appropriate rubber goods for the voltage involved. Always have a partner standing by.	All personnel/ operator
	Toxic material in ground.	B - Likely	3 - Moderate	Be aware of unusual doors and ground colour while excavating	All personnel/ operator
Unloading Excavating Equipment	Equipment sliding off of trailer, trailer moving while unloading	C - Moderate	2 - Minor	Check the angle limits of the equipment and operate well below them. Know the limits of the machinery and operate well within them.	All personnel/ operator
	Struck by or caught in equipment	C - Moderate	4 - Major	Watch for spinning buckets, stay clear of trenching blades, make sure the operator is aware of your presence if on the ground.	All personnel/ operator
Working inside trenches/Excavations	Cave-ins, unstable trench walls	C - Moderate	4 - Major	Use shoring, sloping or shielding per OSHA standards for all excavations 5 feet deep or greater. If working on knees in excavating less than 5 feet deep, may have to shore, slope or shield also. Never enter any excavation if you feel the dirt is unstable.	All personnel/ operator
	No egress or unsafe egress from excavation	C - Moderate	4 - Major	Ladders must be accessible within 25 feet either direction of travel in all trenches 4 feet deep or greater. Use ladders when depth gets below standard stepping height.	All personnel/ operator
Trenching in frost conditions	Equipment damage/personal injury - snapped blade	C - Moderate	4 - Major	Change trenching blades while working in frost conditions	All personnel/ operator
Trenching in snow	Obstruction not visible under snow	C - Moderate	3 - Moderate	Slow operation considerably as obstructions and hazards will not be visible.	All personnel/ operator
Setting pad mounted	Equipment tipping over, overloading	C - Moderate	3 - Moderate	Be sure capacity of equipment is adequate, set up on even ground, use soil stabilizer when required.	All personnel/ operator
	Dropping transformer while setting	C - Moderate	3 - Moderate	Pick with transformer ears, use properly sized slings, use caution not to damage slings, do not get under load.	All personnel/ operator
General items before leaving job site	Open pits/trenches - Public or employees exposed to falling in	C - Moderate	4 - Major	Secure all open pits and trenches with caution tape, plywood or barricades such as fencing before leaving site.	All personnel/ operator
	Messy or unsafe work sites - looks bad for Company and unsafe for public	C - Moderate	4 - Major	Restore property to its original condition to the best of your ability.	All personnel/ operator
	Debris falling from vehicles or trailer while traveling on road	C - Moderate	4 - Major	Clear all mud and debris from equipment and trailer, secure all material before exiting the job. Clean all debris from tires including mud, gravel and shale.	All personnel/ operator

Section 8 - Harassment Policy and Company Safety Rules



Harassment Policy

Sutherland Excavating Ltd. will take a firm stand on maintaining a Harassment free workplace. Harassment in any form, verbal, physical or sexual in nature, will not be tolerated. Offenders could be subject to disciplinary action.

Even the smallest amount of harassment in the workplace can affect morale, productivity, and profitability. If you feel that you are being harassed in some way, let the harasser know that his/her behavior is unwelcome and you want it to stop. If it doesn't stop, make notes of times, places and nature of the harassment and report it to your supervisor. Corrective action will be taken to stop the harassment behavior. All incidents of this type will be held in the strictest confidence and dealt with in a concerned and respectful matter.

Acknowledged By:

President

Date



Company Safety Rules - General Rules

1. Consuming or being in possession of alcohol or illegal drugs on company premises, or on any company job site, is prohibited.
2. Theft, vandalism or any other abuse or misuse of company property is prohibited.
3. Fighting, horseplay, practical jokes or harassing or interfering with other workers is prohibited.
4. All unsafe acts and conditions, including “near miss” incidents are to be reported to appropriate supervision promptly.
5. All incidents that result in damage or injury are to be reported to the supervisor immediately.
6. All work shall be carried out in accordance with appropriate safe work practices.
7. Only those tools that are in good repair with all guards and safety devices shall be used.
8. Every worker shall keep his/her work area neat clean and orderly.
9. Possession of firearms on company premises, or on any company job site, is Prohibited.
10. Arriving for work or remaining at work, when ability to perform the job safely is Impaired, is prohibited.
11. We always wear all necessary, task specific, Personal Protective Equipment.
12. We ask for help when we do not know how to perform a task in a safe manner.
13. We know the emergency procedures/safety rules for our project sites.
14. We drive our company vehicles safely and in conformance with the applicable laws and regulations always practicing back in or pull through parking.
15. We make the necessary effort to keep our environment clean and minimize pollution.
16. All Employees shall comply with the Occupational Health and safety act and regulations.



All Sutherland Excavating Ltd. management and employees are expected to comply with **ALL** general rules. Any employee found to be non-compliant should expect the following:

1. Verbal warning
2. Written warning
3. Written warning and week off without pay
4. Dismissal

Sutherland Excavating reserves the right to surpass all discipline procedures if immediate dismissal of the employee is warranted due to the serious nature of the offence.

Sutherland Excavating Ltd. will support any employee found to have problems with drugs, alcohol or any other problems interfering with safe work practices if the employee is willing to participate and complete an appropriate program.

Examples of our verbal and written policies are shown on the following pages:

Record of Verbal Warning

NAME

TRADE JOB NO. & SITE

DATE AND TIME OF WARNING

REASONS:

SIGNATURE OF SUPERVISOR

SIGNATURE OF EMPLOYEE

SIGNATURE OF WITNESS



Record of Written Warning

NAME

TRADE JOB NO. & SITE

DATE AND TIME NUMBER OF WARNINGS

REASONS: _____

INTERVIEW: (DATE & TIME):

SIGNATURE OF SUPERVISOR

SIGNATURE OF EMPLOYEE

SIGNATURE OF WITNESS

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Section 9 - Personal Protective Equipment



Personal Protective Equipment (PPE) Policy

One of the important safe work practices required by Sutherland Excavating Ltd concerns personal protective equipment (PPE). It is our policy that personal protective equipment shall be used where it is not possible to eliminate or control hazards by other means, including engineering and administrative controls. Further:

- This policy, as it relates to thermal stress, is reviewed in-house on a yearly basis.
- Where an employee is exposed to work conditions that may present a hazard because of excessive heat, a competent person shall instruct the employee in the significance of symptoms of heat stress such as heat exhaustion, dehydration, heat cramps, prickly heat and heat stroke and in the precautions to be taken to avoid injury from heat stress. Where an employee is exposed to work conditions that may present a hazard because of excessive cold, a competent person shall instruct the employee in the significance of symptoms of cold stress such as severe shivering, pain in the extremities of the body and reduced mental awareness, and in the precautions to be taken to avoid injury from cold stress.
- For Heat Stress control measures employees are provided water, frequent breaks and areas where employees can cool off by natural shade or man-made shade areas. Air conditioning areas may also be provided. Work to rest cycles shall be adjusted depending on climate.
- For Cold Stress control measures employees must ensure they're wearing the proper clothing for the climate. Heated areas, such as heated office trailers may be provided to employees to get out of the cold. Work to rest cycles shall be adjusted depending on climate.
- All employees and other persons present at a workplace shall wear the personal protective equipment required for the workplace when present at that workplace.
- All persons needing to wear personal protective equipment at department workplaces shall be instructed in its proper use, and where appropriate, in its service and maintenance.
- All personal protective equipment shall be inspected routinely, kept in good working condition, and maintained in accordance with the manufacturer's instructions.
- Any personal protective equipment found to be of questionable reliability, damaged, or in need of service will be removed from use, reported to the supervisor, and repaired by a qualified person or replaced.
- All company supplied PPE including specialized PPE will conform to the Occupational Health and Safety Act, Regulations and Codes of Practice.
- Sutherland Excavating Ltd. will maintain appropriate inspection and service logs for specialty PPE which is to include safety harnesses and respiratory protective equipment.
- No piece of PPE will be modified or changed contrary to manufacturer's instructions or specifications or New Brunswick's Occupational Health and Safety Act.
- The safety information in this policy does not take precedence over Occupational Health and Safety Act, Regulations and Codes of Practice. All employees should be familiar with the Occupational Health and Safety Act.

Acknowledged By:

President

Date



“Info Sheet” for Foot Protection

General Information

Safety footwear is designed to protect against foot hazards in the workplace. Safety footwear protects against compression, puncture injuries, and impact.

Safety footwear is divided into three grades which are indicated by colored tags and symbols.

The **tag color** tells the amount of resistance the toe will supply to different weights dropped from different heights.

The symbol indicates the strength of the sole. For example, a triangle means puncture-resistant sole able to withstand 135 kg (300 ft. lbs.) Of pressure without being punctured by a 5 cm (2 inch) nail for more information, look at OSGR Part 3 12(1).

In construction, it is recommended that only the **green triangle** grade of footwear, which also gives ankle support, be used.

Your choice of protective footwear should always over protect, not under protect.

Do

- choose footwear according to job hazard and CSA Standards
- lace up boot and tie laces securely; boots don't protect if they are a tripping hazard or fall off
- Use a protective boot dressing to help the boot last longer and to provide greater water resistance. (wet boots conduct current)
- choose a high cut boot to provide ankle support (less injuries)

Don't

- wear defective safety footwear (i.e., exposed steel toe caps)
- Under protect your feet or modify safety footwear.



‘Info Sheet’ for Limb and Body Protection

General Information

Due to the nature of the construction workplace and the number of different hazards, it is not possible to cover specialized limb and body protection in detail. These types of hazards are known as “job exposures” (exposure to fire, temperature extremes, body impacts, corrosives, molten metals, cuts from sharp or abrasive materials). PPE in the category would be items such as:

- leg, arm, chin and belly guards,
- specialty hand pads and grips,
- leather aprons and leggings,
- full body suits,
- flame and chemical resistant clothing, and
- Various types of plastic boot covers, and overshoes.

For more information on the type of specialty PPE you require, check your local Department of Labor office. With all PPE, following the manufacturer’s instructions on its use, care and cleaning is critical and will help you get the full service life from your specialty PPE.

Hand PPE (Gloves and Mitts)

PPE for the hands include: finger guards, thimbles and cots, hand-pads, mitts, gloves, and barrier creams. Choose hand PPE that will protect against chemicals, scrape, abrasions, heat and cold, punctures and electrical shocks.

Types

PPE for the hands come in many forms, each designed to protect against certain hazards. Gloves most commonly used in the construction industry are made from leather, cotton, rubber, synthetic rubbers and other man-made materials, or combinations of materials.

Vinyl coated or leather gloves are good for providing protection while handling wood or metal objects. When you select hand PPE, keep the following in mind: look for anything at the job-site that may be a hazard to the hands. If gloves are to be used, select the proper type for the job to be done. Inspect and maintain hand PPE regularly. If in doubt about the selection or need for glove or hand PPE, consult your safety supplier or Material Safety Data Sheet (MSDS).

Do

- inspect hand PPE for defects before use
- wash all chemicals and fluids off gloves before removing them
- ensure that gloves fit properly
- use the proper hand PPE for the job
- follow manufacturer’s instructions for care/use of the hand PPE you are using
- ensure skin is covered (no gap between the sleeve and the hand PPE).

Don’t

- wear gloves when working with moving machinery (gloves can get tangled or caught)
- wear hand PPE with metal parts near electrical equipment
- use gloves or hand protection that is worn out or defective.



“Info Sheet” for Respiratory Protection

General Information

Where ventilation is not practicable to control respiratory hazards, workers potentially exposed to airborne contaminants must wear respiratory protective devices.

Respiratory protection falls into two major categories. The first is Air Purifying Respirators (APRs) which are particle (dust) chemical cartridge but NO visor plate. The second category is Atmosphere Supply Respirators, including self-contained breathing apparatus (SCBA), air line systems and protective suits that completely enclose the worker and incorporate a life support system.

Only APRs will be dealt with here. The second category of respirators requires much more specific information and training. If you need to use Atmosphere Supplying Respirators, you should get expert advice.

APRs

There are two basic types of APRs

- disposable fiber type with or without charcoal or chemical filter “buttons”;
- the reusable rubber face mask type with disposable or rechargeable cartridges.

The choice depends on your job, labor, cost, and your maintenance facility.

It’s important to remember that APRs are limited to areas where there is enough oxygen to support life
APRs don’t supply or make oxygen

The service life is affected by the type of APR, wearer breathing demand, and the concentration of airborne contaminants when an APR is required, consult the Material Safety Data Sheet (MSDS) or supplier for the exact specifications for the APR

Facial hair can prevent a good seal and fit of an APR: One to three days growth is the worst. Follow the manufacturer’s instructions to the letter regarding the mask, filters, cartridges and other components.
Workers who must use respiratory protection should be clean shaven.

An APR is only as good as its seal and its ability to filter out the contaminants it was designed to filter.
Therefore, fit-testing of respiratory protective equipment is critical to ensure a proper facial seal.



“Info Sheet” for Combination Respirators

This type of APR combines separate chemical and mechanical filters. This allows for the change of the different filters when one of them becomes plugged or exhausted before the other filter (usually the dust filter plugs up before the chemical filter). This type of respirator is suitable for most spray painting and welding. For more information check the:

- Material Safety Data Sheet (MSDS)
- the local Department of Labor office, or
- the safety equipment supplier.

For more information, look at the

- Occupational Health and Safety Act, Regulations and Code of Practices
- OSGR Part 3 Section 13
- “Selection, Care and Use of Respirators” Z94.4-M 1982

Do

- ensure the APR has been fit-tested to ensure a proper facial seal.
- train workers very carefully in the APR’s use, care and limitations
- ensure that respirators are properly cleaned and disinfected after each shift, according to the manufacturer’s instructions
- dispose of exhausted cartridges and masks in sealed bags or containers
- keep new, unused filters separate from old, used filters
- monitor APR use; they are useless just hung around the neck
- replace filters when breathing becomes difficult.

Don’t

- use for protection against materials which are toxic in small amounts
- use materials that are highly irritating to the eyes
- use with gases that can’t be detected by odor or throat irritation
- use with gases not effectively halted by chemical cartridges regardless of concentration (read the cartridge label)
- use respirators or masks if the serviceability is in doubt
- use APRs where oxygen content in the air is less than 18% or 18 kilopascals (partial pressure or greater)



“Info Sheet” for Eye and Face Protection

General Information

This PPE is designed to protect the worker from such hazards as:

- flying objects and particles,
- molten metals,
- splashing liquids, and
- ultraviolet, infrared and visible radiation (welding).

This PPE has two types. The first type, “basic eye protection”, includes:

- eyecup goggles, and
- momoframe goggles and spectacles with or without side shields.

The second type, “face protection,” includes:

- metal mesh face shields for radiant heat of hot and humid conditions,
- chemical and impact resistant (plastic) face shields,
- welders shields or helmets with specified cover, and
- filter plates and lens.

Hardened glass prescription lens and sport glasses are not an acceptable substitute for proper, required industrial safety eye protection.

Comfort and fit are very important in the selection of safety eye wear. Lens coatings, venting or fittings may be needed to prevent fogging or to fit with regular prescription eyeglasses.

Contact lens should **NOT** be worn at the work-site. Contact lenses may trap or absorb particles or gases causing eye irritation or blindness. Hard contact lens may break into the eye when hit.

Basic eye protection should be worn with face shields. Face shields alone often aren’t enough to fully protect the eye from work hazards. When eye and face protection are required, advice from the O.H. & S. office, Material Safety Data Sheet (MSDS) or your supplier will help in your selection.

Do

- ensure your eye protection fits properly (close to face)
- clean safety glasses daily, more often if needed
- store safety glasses in a safe, clean, dry place when not in use
- replace pitted, scratched, bent and poorly fitted PPE (damaged face/eye protection interferes with vision and will not provide the protection it was designed to deliver).

Don’t

- modify eye/face protection
- use eye/face protection which does not have a CSA certification (GSA stamp for safety glasses is usually on the frame inside the temple near the hinges of the glasses).

Eye Protection for Welders

Welders and welders’ helpers should also wear the prescribed equipment. Anyone else working in the area should also wear eye protection where there is a chance they could be exposed to a flash.



Info Sheet” for Hearing Protection

General Information

Hearing protection is designed to reduce the level of sound energy reaching the inner ear.

Employees must conduct a noise survey of the worksite to determine those areas where noise levels exceed 80 dba. Posted noise signage on a worksite must be complied with which could require implementing the necessary controls as needed.

Where the installation of engineering controls is practical, such engineering controls shall be installed and used to reduce noise.

The “rule of thumb” for hearing protection is: use hearing protection when you can’t carry on a conversation at a normal volume of voice when you are three feet apart.

Remember, this is only a rule of thumb. Any sustained sounds over 80 dba requires hearing protection. Hearing loss can be very gradual, usually happening over a number of years.

The most common types of hearing protection in the construction industry are earplugs and earmuffs. If you choose to use the other types of hearing protection, ask your safety supplier or Department of Labor office for further information.

It is important to have different styles of hearing protection available. Different styles allow a better chance of a good fit. Each person’s head, ear shape and size are different. One style may not fit every person on your crew. If hearing PPE does not fit properly or is painful to use, the other person will likely not use it. If the hearing protection is not properly fitted, it will not supply the level of protection it was designed to deliver.

Most earplugs, if properly fitted, generally reduce noise to the point where it is comfortable (takes the sharp edge off the noise).

If your hearing protection does not take the sharp edge off the noise, or if workers have ringing, pain, headaches or discomfort in the ears, your operation requires the advice of an expert.

Workers should have their hearing tested at least every year, twice a year if they work in a high noise area.



“Info Sheet” for Head Protection

General Information

Safety headwear is designed to protect the head from impact from falling objects, bumps, splashes from chemicals or harmful substances, and contact with energized objects and equipment.

In construction, only CSA approved Hard Hats are acceptable. There are many designs but they all must meet the CSA requirements for industrial head protection. Most head protection is made up of two parts:

- the shell (light and rigid to deflect blows)
- the suspension (to absorb and distribute the energy of the blow)

Both parts of the headwear must be compatible and maintained according to manufacturer’s instructions. If attachments are used with headgear, they must be designed specifically for use with the specific headwear used. Bump caps are not considered a helmet.

Inspection and Maintenance

Proper care is required for headgear to perform efficiently. The service life is affected by many factors including temperature, chemicals, sunlight and ultraviolet radiation (welding). The usual maintenance for head gear is simply washing with a mild detergent and rinsing thoroughly.

Do:

- Replace headgear that is pitted, holed, cracked or brittle.
- Replace headgear that has been subjected to a blow even though damage cannot be seen.
- Remove from service any headgear if its serviceability is in doubt.
- Replace headgear and components according to manufacturer’s instructions.
- Consult the Department of Labor or your supplier for information on headgear.
- Use liners that are only specified for brand of hard hat.

Don’t

- Drill, remove peaks, and alter the shell or suspension in any way.
- Use solvents or paints on the shells (makes shells “break down”).
- Put chin straps over the brims of headgear.
- Use any liner that contains metal or conductive material.
- Carry anything in the hard hat while wearing the hard hat.

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Section 10 - Maintenance Policy



Maintenance Program Policy

All tools, equipment and facilities shall be properly maintained to reduce risk of injuries to employees or damage to property. On a weekly basis all employees shall check the tools and equipment that they are working with and shall take out of service any tools and equipment that possess a hazard due to a need for repair.

Supervisors shall ensure that all preventative maintenance is carried out by qualified personnel according to regulations, standards or manufacturer's specifications. Established schedules are to be followed and records maintained. Should any maintenance be required for any equipment, a Maintenance Repair Record shall be filled out and passed in with their time sheets.

In order to maintain proper servicing of equipment, including vehicles, the mileage will be reported on the employees' work orders which are submitted daily. Should a repair be required, the employee is responsible for the following:

- make management aware
- arrangements all necessary repair
- complete & submit a Maintenance Repair Record
- note it on the daily Canvas work order

Acknowledged By:

President

Date



Maintenance and Repair Record Keeping System

Project # -	Kms :	Hours :
Start Time -	Finish Time -	
Unit # -	Next Maintenance Due -	
Date -	Performed by -	
Engine Oil & Filter Changed		
Hyd. Oil Changed		
Hyd. Oil Filter / Pilot Filter Changed		
Trans. Oil Changed		
Final Drives Oil Changed		
Swing Gere Oil Changed		
Fuel Filter(s) Changed		
Trans. Filter (spin-on) Changed		
Trans. Filter (inner) Changed		
A/C Filter(s) Changed		
A/C Filter(s) Checked / Cleaned		
Air Filter Outer Changed		
Air Filter Outer Checked / Cleaned		
Air Filter Inner Changed		
Air Filter Inner Checked / Cleaned		
Coolant Changed		
Tire Rotation		
Greased		
Lube Locks & Hindges		

CHECKLIST ITEMS

Lights	Tires / Pressure
Brakes	Windshield Wipers
Antifreeze Level	Windshield Fluid
Battery	Brake Fluid
Belts and Hoses	Glass
Front / Rear End	Trans Fluid
Muffler / Exhaust	Hyd. Oil
Back Up Alarm	Swing Gear Oil
Horn	Final Drive Oil
COMMENTS:	



Motor Vehicles and Heavy Equipment Policy

General: Protecting workers from injuries associated with improper maintenance of motor vehicles and heavy equipment is of the utmost importance.

Application:

1. Construction vehicles and equipment brought on site shall be inspected, tested, and certified to be in safe operating condition. If requested, the inspection, test, and certified document must be available for the Project Manager to review prior to bringing such equipment to the project. Any vehicle or piece of equipment deemed unsafe will be immediately removed from site until repairs are complete and equipment is re-inspected.
2. All motor vehicles and equipment, when required, shall be equipped with the following equipment, in good operable condition:
 1. Adequate brake system.
 2. Two headlights and two tail lights.
 3. Brake lights.
 4. Horn.
 5. Seat belts.
 6. Good tires.
 7. Windshields and powered wipers.
 8. Defrosters and heater.
 9. Rear-view mirrors.
 10. Fuel caps.
 11. Reverse warning alarm.
3. Only authorized, qualified, licensed, drivers shall be permitted to operate vehicles or equipment. Accidents shall be reported immediately to the Contractors Project Safety Representative and Project Manager.
4. Operators are not to operate any equipment or vehicles while impaired in any way, including from drugs, alcohol, medication, etc.
5. Operators are not to exceed 14 hours of service within 24 hours, or to exceed NBDOT Hours of Service regulations.
6. Operators will complete Driver Log Books when operating more than 160 KM away from Miramichi, NB or when required by NBDOT Regulations.
7. All loads are to be secured properly according to industry best practice and NBDOT requirements.
8. All vehicles shall be inspected by the operator daily, before and after each trip and at least once every 24 hours.
9. Any deficiencies found shall be documented and reported immediately.
10. Seatbelts are required to be worn by the operator and passengers on all powered mobile equipment fitted with Rollover Protection (ROPS).
11. All cab glass shall be safety glass, or equivalent, that introduces no visible distortion affecting the safe operation.
12. No employee shall use a motor vehicle or equipment having an obstructed view to the rear unless the vehicle has a backup alarm audible above the surrounding noise level.
13. No personnel shall be permitted to mount or dismount moving vehicles or equipment.
14. Heavy machinery, equipment, or parts thereof, which are suspended or held aloft by use of slings, hoists, or jacks shall be substantially blocked or cribbed, to prevent falling or shifting, before employees are permitted to work under or between them.
15. Bulldozer and scraper blades, end-loader buckets, dump bodies, and similar equipment, shall be either fully lowered or blocked when being repaired or when not in use. All controls shall be in neutral position, with the motors stopped and brakes set, unless work being performed requires otherwise.
16. The operator shall be responsible to maintain minimum approach distance from all overhead power lines. That



Dimension is defined as 20 feet for all Transmission and 10 feet for all Distribution Lines.

17. All hauling vehicles, whose payload is loaded by means of cranes, power shovels, loaders, or similar equipment, shall have a cab shield and/or canopy adequate to protect the operator from shifting or falling materials. The operator or driver of all hauling vehicles will leave the cab and stand clear of this equipment while it is being loaded.
18. Engines shall be shut off during fueling, maintenance operations or when not attended by an operator.
19. Trip handles for tailgates of dump trucks and heavy equipment shall be so arranged so that, in dumping, the operator will be clear.
20. All vehicles shall be checked at the beginning of each shift to ensure that equipment and accessories are in safe operating condition and free of damage that could cause failure while in use.
21. Employees transported in the back of pickup trucks must sit down inside the bed and the tailgate must be closed.
22. No vehicle shall be driven at a speed greater than posted limits. Regard for weather, traffic, width, intersections, and character of the roadway, type of motor vehicle, and other existing conditions may reduce this maximum speed limit.
23. Only approved standard hand signals for crane, derrick, and boom equipment shall be used. A copy of these hand signals shall be posted at the operating position of each piece of equipment.
24. The manufacturer's specifications and limitations applicable to the operation of cranes and other hoisting equipment shall be followed. When manufacturer's specifications are not available, the limitations of the equipment shall be based on the determinations of a qualified engineer, competent in this field, and such determinations, will be appropriately stamped, posted, documented, and recorded. Attachments used with cranes shall not exceed the capacity, rating, or scope recommended by the manufacturer.
25. Rated load capacities, operating speeds and special hazard warnings shall be conspicuously posted on all equipment. Instructions or warnings shall be visible to the operator while he is at his control station.
26. All machinery and equipment shall be inspected by a competent person prior to each use. Any deficiencies shall be repaired, and defective parts shall be replaced, before continuing use.
27. A thorough, annual inspection of the hoisting machinery shall be made by a Certified Agency. A record of the dates and results of inspections for each hoisting machine and piece of equipment shall be maintained and available for review.
28. Belts, gears, shafts, pulleys, sprockets, spindles, drums, flywheels, chains, or other reciprocating, rotating, or moving parts of equipment shall be guarded if such parts are exposed or otherwise create a hazard.
29. Accessible areas within the swing radius of the rear of the superstructure of the crane and excavating equipment, either permanently or temporarily mounted, shall be barricaded in such a manner as to prevent an employee from being struck or crushed by this equipment.
30. Swinging or suspended loads shall be lowered to the ground and detached from the crane prior to the crane being moved.
31. An accessible fire extinguisher of 5BC rating, or higher, shall be available at the operator stations or cabs of all equipment and vehicles. These units shall meet Inspection and Maintenance requirements.
32. Documentation of an equipment operator's qualifications to operate the equipment safely is required and records of such certification shall be available on request.
33. Trucks with dump bodies, and other hydraulic equipment, shall be equipped with positive means of support that are permanently attached and capable of being locked in position to prevent accidental lowering of the bed or hydraulic attachment during maintenance and/or repair.
34. Hooks welded (mounted on backhoe and loader buckets) will not be used for hoisting. Only closed loop (lifting eyes) mounted on buckets by the manufacturer will be used. Hoisting will only be performed with shackles and chokers attached to these lifting eyes.

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Section 11 - Safety Training Policy



Safety Training Policy

Purpose

The purpose of this policy is to ensure that all employees receive adequate safety training.

Policy

Sutherland Excavating Ltd. will provide, and employees will participate in all safety and related training that is necessary to minimize losses of human and physical resources.

This training will include, but not be limited to:

- new hire safety orientation;
- job-specific training;
- safety training for supervisors and management
- task and trade-specific training and certification
- specialized safety and related training

Acknowledged By:

President

Date



WHMIS 2015 POLICY

Sutherland Excavating provides:

- 1) Training for all employees who work with or near controlled products WHMIS and update that training yearly
- 2) Labels that must be affixed to the original containers of controlled products. If labels are missing or illegible, they should be replaced with workplace labels.
- 3) Labels to be affixed to controlled products that have been transferred from the original container into another container
- 4) Material Safety Data Sheets (MSDS) are obtained for all controlled products and copies are provided in an easily visual place at each employee's work station

Acknowledged By:

President

Date

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Section 12 - Inspection Policy



Inspection Policy

Purpose:

The purpose of this policy is to control losses of human and material resources and correcting unsafe acts and conditions.

Policy:

Sutherland Excavating Ltd. will maintain a comprehensive program of safety inspection at facilities and job sites. The frequency of each project site inspection will be determined by the scope of activities, amount of employees on site and the hazards associated with the activities that are to be undertaken at the site. In some instances, it may warrant daily, weekly or bi-weekly inspections. It is the policy of Sutherland Excavating Ltd. to maintain a program of safety inspections. The objective of the inspection process is to ensure compliance with company rules, legislation and this program. All inspections and corrective actions will be reviewed and signed by senior Management.

Responsibilities:

The manager is responsible for the overall operation of the program.

At project start, management will decide the frequency of formal inspections for that particular project. Some projects will not require formal inspections due to their length, number of employees or hazards present.

Supervisors are responsible for directing inspection on job sites and for involving workers on such inspections.

Workers are responsible for participating in and contributing to the inspection program.

Acknowledged By:

President

Date



Sutherland Excavating Ltd. Site Safety Inspection Form

Location: _____

HS Advisor Name: _____ Date: _____ Time _____ AM - PM

Items Inspected: CHECK ONLY THE ITEMS YOU ACTUALLY INSPECT

- | | |
|--|---|
| <p>1 <input type="checkbox"/> P.P.E compliant for task</p> <p>2 <input type="checkbox"/> First Aid Kit On site</p> <p>3 <input type="checkbox"/> Housekeeping</p> <p>4 <input type="checkbox"/> Construction Signs and Posters Posted</p> <p>5 <input type="checkbox"/> Excavations Barricaded Properly with Warning Signs</p> <p>6 <input type="checkbox"/> Using proper Tools for Task</p> <p>7 <input type="checkbox"/> Open Holes Marked, Covered and secured?</p> <p>8 <input type="checkbox"/> Overhead Power lines Identified with signs</p> <p>9 <input type="checkbox"/> Flammables Stored Properly</p> <p>10 <input type="checkbox"/> Compressed Gases Stored properly</p> <p>11 <input type="checkbox"/> GFCI used for Power Tools</p> <p>12 <input type="checkbox"/> Equipment Greased</p> <p>13 <input type="checkbox"/> Cleanliness of Equipment</p> | <p>14 <input type="checkbox"/> Dump Trucks, Bull Dozers, Excavators operating safe.</p> <p>15 <input type="checkbox"/> Risk Assessment Reviewed and signed onto Yes__ No__</p> <p>16 <input type="checkbox"/> Ladders Set Up and Used Properly</p> <p>17 <input type="checkbox"/> Mobile Equipment/JLG</p> <p>18 <input type="checkbox"/> Rebar Protected</p> <p>19 <input type="checkbox"/> Cranes & Boom Trucks Log Books Checked</p> <p>20 <input type="checkbox"/> Personnel Assisting Reversing Equipment/Vehicles</p> <p>21 <input type="checkbox"/> Access and Egress Routes to work areas maintained.</p> <p>22 <input type="checkbox"/> Dust Control Maintained</p> <p>23 <input type="checkbox"/> WHMIS Labels all products</p> <p>24 <input type="checkbox"/> Fire Extinguishers Inspected</p> <p>25 <input type="checkbox"/> Seat Belts Equipment/Vehicles</p> <p>26 <input type="checkbox"/> Washrooms available</p> |
|--|---|

Deficiencies: HAZARD PRIORITY		A – IMMEDIATE HAZARD	B – SERIOUS HAZARD	C – MINOR HAZARD	
Contractor	Location	Deficiency	Reg.-Act	Priority	Action by: [date]

Safety Advisor/Foreman Name: _____ Signature: _____ Date: _____

Safety Managers Name: _____ Signature: _____ Date: _____

President Name: _____ Signature: _____ Date: _____

Employees Involved in Inspection:

Comments:

1. _____
2. _____
3. _____
4. _____
5. _____



Section 13 - Incident/Investigation Policy/Form And Light Duty Policy



Incident Investigation Policy

- All incidents are to be reported to management immediately after they occur.
- It is the policy of Sutherland Excavating Ltd. to investigate all incidents as per legislative reporting requirements stated in the New Brunswick Occupational Health and Safety Act Section 43.
- The purpose of such investigation shall be to determine causes of the incidents so that appropriate action can be taken to prevent recurrence.
- Supervisors, with the help of the safety rep shall be responsible for conducting investigations, documenting and submitting reports to the manager.
- Management shall determine and implement the appropriate measures to prevent reoccurrence.
- The company safety representative shall receive training on Incident Investigation.

Acknowledged By:

President

Date



Light Duty Policy

The purpose of this policy is to provide employees of Sutherland Excavating Ltd. with an understanding and description of Light Duty.

Definition:

Light duty shall consist of any light work which does not conflict with restrictions set forth by a physician.

Responsibilities:

- The supervisor responsible for assigning light duty will be responsible for supervision of the member(s) assigned to do it.
- The light duty supervisor is responsible for contacting the employer if the member fails to report for work or cannot perform the light duties assigned to him or her.

Policy:

- Light duty shall be a means to have useful work for a member to do when, because of injury or illness, he/she is unable to do the regular work.
- Sutherland Excavating Ltd employees, who are either on injury leave or sick leave, are expected to return to work as early as medically feasible.
- During incapacity from regular duty, when a member is medically able to perform light work, the employer will make every effort to find light work which the employee is able to perform, even if it is in a different department.
- If an employee accepts light duty, he/she maintains eligibility for salary continuation.
- For those employees (on injury leave) who refuse light duty, no injury leave or salary will be paid. In addition, the employee loses eligibility for Workers' Compensation payments.

Acknowledged By:

President

Date



Accident / Investigation Report

Accident File # _____

I. Background Data

Employee Name: _____ Accident Location: _____

JOB #: _____ DATE of Accident: ____ / ____ / ____ Time of Accident: _____
Day Month Year AM/PM

Day of Week: _____ Company Employee(s) Injured? ____ YES ____ NO

INJURED EMPLOYEE: (1) _____ (2) _____

Witness (es): (1) _____ (2) _____

Employee's experience level performing this type of task: ____ / ____ / ____
Years Months N/A

Did this accident involve property damage? ____ YES ____ NO

Was a motor vehicle or mobile equipment involved? ____ YES ____ NO

Employee's Drivers Licence Master # _____ Vehicle or

Equipment Type: _____ Company # _____ Damage: _____

WAS THERE 3RD PARTY INVOLVEMENT? ____ YES ____ NO

Name of 3rd Party Driver: _____ 3rd Party Master #: _____

3rd Party Vehicle Type: _____ Year: _____ Licence Plate # _____ Province: _____

3rd Party Insurance Co: _____ Policy #: _____

**Damage to 3rd Party Vehicle: _____
_____ Estimate Cost \$ _____**

Name(s) of Injured 3rd Party Person: (1) _____ Phone #: _____

(2) Type of Injury _____ Phone #: _____

*** IF additional information is required put on separate sheet and attach to this form.**

3RD PARTY STATEMENT

Please describe below the sequence of events leading up to the accident:



IV. SAFETY DEPARTMENT

Is this a Personal Injury to Company Employee(s)? YES _____ NO _____

Is this a WCB Claim? YES _____ NO _____ *(Form 67 required if employee goes to a Doctor)*

Classification: *LTA* (Loss Time Accident) _____ *ANI* (Accident No Injury) _____

MA (Medical Aid) _____ **FA** (First Aid) _____ **N-M** (Near Miss) _____

TYPE OF INJURY

Head/Neck _____	Toes _____	Fingers _____	Arms _____
Back _____	Eyes _____	Shoulders _____	Foot/Ankle _____
Hand/Wrist _____	Legs _____	Trunk/Chest _____	Ears _____
Contusion _____	Strain _____	Fracture _____	Foreign Body _____
Burns _____	Sprain _____	Heart Attack _____	Wounds _____

Other (describe): _____

Describe nature and extent of injuries / illness. Give as many details possible; attach any medical information.

Other

INSURANCE ADJUSTERS CONTACTED (3RD PARTY INJURIES AND/OR \$2,500.00 DAMAGE) _____ YES _____ NO

Was the effected employee(s) performing a routine task? _____ YES _____ NO

Was this employee trained for this task? _____ YES _____ NO

What was this accident preventable by the employee performing the task? _____ YES _____ NO



Section 14 - Emergency Preparedness Information



Emergency Preparedness Information

Emergency Policy

The risk of an incident cannot be totally eliminated; therefore Sutherland Excavating Ltd. will take the following steps to ensure the proper reaction to any situation:

- Provide initial First Aid training and refresher training to all personnel to ensure they are readily available to assist injured workers
- Ensure First Aid training personnel are known, or names posted on jobsite
- Coordinate transportation of injured person(s) to the nearest medical facility by ambulance or a company vehicle
- Provide training on fire extinguishers
- Provide communications in the form of cell phones, pagers and radios
- Provide appropriate and easily accessible First Aid kits during all working hours in employee vehicles and at each specific job site and ensuring records are kept for kit locations
- Provide a “Site Specific” safety manual for all projects that are in operation for more that one week, which will include all emergency phone numbers and locations to the nearest hospitals.

Acknowledged By:

President

Date



Emergency Contacts

Site Location:

Emergency Response

Fire	911
Ambulance	911
Police	911
Poison	911
Environment	1 800-565-1633
Department of Natural Resources	1 506-755-4040
Enbridge Gas	1 800-994-2762
Maritimes & Northeast Pipeline	1 888-444-6677
Brunswick Pipeline	1 888-410-2220

Company Representatives

SUTHERLAND EXCAVATING LTD MAIN OFFICE	506 622 5437
---------------------------------------	--------------

New Brunswick Agencies / Associations

Work Safe NB	1 800- 222- 9775
NBSCA	1 506 -627 -1477
NB Power	1 800- 663- 6272
Bell Aliant	1 800 -332 -3333

Other

Blake Sutherland	President	506-627-9690
Stacey Sutherland	Office Manager	506-627-9305
Greg Pickard	Safety Manager	506-625-0346
Francis Dennis	Shop Manager	506-622-5437
Ella Lavoie	Office	506-622-5437
Aylre Roy	Installer	506-625-3867
Mike Trask	Operation Manager	506-627-9409
Adam Esson	Installer	506-627-6385
Billy Sherrard	Float Operator	506-624-3345

Site Address:

Nearest Hospital:

First Aid Attendants:

Please enter all Certified First Aid Attendants.

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Section 15 - Environmental Policy



Environmental Policy

Sutherland Excavating Ltd. will ensure that all possible safe guards are taken to protect our environment and to comply with Environmental Acts and Regulations. We will educate our employees on environmental issues that pertain to the work being carried out.

To the best of our ability we will ensure that we reduce, reuse and recycle as much as possible. We will dispose of materials in the proper manner at disposal facilities in accordance with the Environmental Acts and Regulations.

We expect all Sutherland Excavating Ltd. employees and management to do their best to prevent harm to the environment. Our goals on the job can be met without risking harm to the environment.

Acknowledged By:

President

Date

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Section 16 - Summary Forms



Manual Revisions

Revision	Person Responsible	Reason for Change/Additions	Effective Date
1	Stacey	Addition to Company Safety Policy	November 27, 2006
2	Stacey	Additions to Management Responsibilities – Re: Management evaluations	November 27, 2006
3	Stacey	Addition Of Company rights to surpass discipline procedures	November 27, 2006
4	Stacey	Additions to Specialized PPE	November 27, 2006
5	Stacey	Changes to Employee Orientation Form	November 27, 2006
6	Dawn	Addition to Site hazard inspections	November 27, 2006
7	Stacey	Additions to Inspection Policy	November 28, 2006
8	Dawn	Changes to improve the Investigations policy	November 28, 2006
9	Stacey	Changes to Pre-Construction List	November 28, 2006
10	Stacey	Confined space 2 – Critical Task Inventory	December 15, 2006
11	Stacey/Blake	Confined Space Rescue Plan addition	December 15, 2006
12	United Rentals	Scissor Lift Procedure addition to procedures	December 28, 2006
13	Petro Canada	Petro Canada Safety Sheets Addition	July 5, 2007
14	Petro Canada & Stacey	Petro Canada Safety Manual	July 9, 2007
15	Stacey and Blake	Additions to Safe Work Practices	October 3, 2007
16	Dawn and Stacey	Revise Manual Revision sheet	October 4, 2007
17	Dawn and Stacey	Revise Table of Contents	October 4, 2007
18	Greg Pickard	New Stats record keeping	June 30, 2014
19	Greg Pickard	Manual revision updated inspection form and accident form	June 1, 2015
20	Greg Pickard	Manual revision and new formatting	June 16, 2016
21	Greg Pickard	Manual Revision and new formatting	March 18, 2017
22	Greg Pickard	Manual Revision and new formatting	January 8, 2018



WORKFORCE STATUS						
	CURRENT PERIOD 06/01/2014 - 06/30/2014			YEAR TO DATE 01/01/2014 - 06/30/2014		
	Sutherland	CONTRACTOR	TOTAL	Sutherland	CONTRACTOR	TOTAL
Number Of Employees *	0	0	0	///	///	///
Man Hours Worked *	0	0	0	0	0	0
Injury Free Days	0	0	0	0	0	0
Lost Time Injury Free Work Hours	0	0	0	0	0	0

HEALTH & SAFETY INCIDENT / INJURY CLASSIFICATION						
	CURRENT PERIOD 06/01/2014 - 06/30/2014			YEAR TO DATE 01/01/2014 - 06/30/2014		
	Sutherland	CONTRACTOR	TOTAL	Sutherland	CONTRACTOR	TOTAL
Corrective Actions: Identified	0	0	0	0	0	0
Corrective Actions: Closed Out	0	0	0	0	0	0
Property Damage Incidents	0	0	0	0	0	0
Near-Miss Incidents	0	0	0	0	0	0
Vehicle Incidents	0	0	0	0	0	0
Security Incidents	0	0	0	0	0	0
Fire Incidents	0	0	0	0	0	0
Other Incidents	0	0	0	0	0	0
First Aid Injury	0	0	0	0	0	0
Medical Aid Injury	0	0	0	0	0	0
Modified Work: Injury	0	0	0	0	0	0
Modified Work: Days	0	0	0	0	0	0
Lost Time: Injury	0	0	0	0	0	0
Lost Time: Days	0	0	0	0	0	0
Occupational Illness: Case	0	0	0	0	0	0
Occupational Illness: Days	0	0	0	0	0	0

INDUCTIONS / TRAINING / AWARENESS/MILEAGE IN KMS						
	CURRENT PERIOD 01/01/2014 - 01/31/2014			YEAR TO DATE 01/01/2014 - 01/31/2014		
	Sutherland	CONTRACTOR	TOTAL	Sutherland	CONTRACTOR	TOTAL
Inductions	0	0	0	0	0	0
Training: Site Specific	0	0	0	0	0	0
Training: First Aid / CPR	0	0	0	0	0	0
Training: Environmental ERT	0	0	0	0	0	0
Vehicle Mileage in Kms	0	0	0	0	0	0

Please note June 30/14 new stats began

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