

Safety Management Plan

DRAFT

Mine Permit number: G – 1 - 77



Policy
Quarry Safety Management Plan

DOCUMENT MANAGEMENT

Mine permit number : G - 1 – 77

Policy Title:		Quarry Safety Management Plan	
Classification:		Company Policy	
First Adopted:		April 13. 2015	
Reviewed:		Every year as required	
Applicable Legislation		H&S Reclamation Code for Mines in BC OH&S Rail Act WCB Mining Act	
Revision History			
Version	Date	Comments	Signature
1	April 2015	On file	
Draft	2016/2017	DRAFT revision and formatting	
Rev 1		Draft review	



Mine/Operation Information

A Mine is a place as defined under the *Mines Act* (RSBC 1996).

The following list identifies basic information regarding the Kalum Quarry Mine:

Mine Name & Contact :

Kalum Quarry
c/o Kalum Quarry Limited Partnership
14303 Highway 16 West
Terrace, B.C.
V18G 0C8

Tel: (250) 635-5000
Fax: (250) 635-1813

Chief Executive Officer
Mr. Colum O'Donnell
(250) 635-5000 ext 102
codonnell@kitsumkalum.bc.ca

Mine Manager
Mr. Wayne Hansen
(250)641-1852 c
c/o lwesley@kitsumkalum.bc.ca

Safety Coordinator
TBD
(250) 000-0000 c
c/o lwesley@kitsumkalum.bc.ca

Mine number : **0101327**

Mine permit number : **G - 1 - 77**

Type of operation: **Rock drill, blast, crush**

Location of the property: **Within the District of Terrace**

Latitude : 54° 32'10.04"N
Longitude : 128°39'55.98"W

Number of employees on site, including management and contractors :

This number varies with operations. Under a single shift at steady utilization, there may be 15 to 20 employees and contractors on site.

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1 HEALTH AND SAFETY POLICY

At Kalum Quarry we believe in visible leadership and personal accountability for Health and Safety at all levels. Health and Safety takes precedence over all other considerations.

Workers at every level, including management, are responsible and accountable for the company's overall safety initiatives. Complete and active participation by everyone, every day, in every job is necessary for the safety excellence the company expects. The management supports the cooperation of all workers and contractors concerning safety on the jobsite.

Our Commitment

- ✓ To identify and eliminate hazardous conditions
- ✓ To provided safety-related education material to all personnel
- ✓ To provide a safe, healthy work environment for all personnel
- ✓ To prevent and reduce accidents and incidents and to prevent resulting losses
- ✓ To incorporate awareness, compliance, inspection, investigations and education by providing programs delivered to employees
- ✓ To prevent damage and injury to non-company property and personnel resulting from our operations
- ✓ Comply with all applicable health & safety laws and regulation
- ✓ To all worker, regardless of the their role on the nob site, have the right and obligation to refuse unsafe work
- ✓ We will monitor our health and safety program and share our results on a regular basis. This policy will be reviewed annually
- ✓ Kalum Quarry is committed to compliance with any and all governmental agencies, regulations, and industry best practices and will use audits to measure and improve our health and safety programs

Individual Commitment

- ✓ Practice Safe work procedures, instruction and rules
- ✓ Make safety suggestions
- ✓ Report any unsafe conditions and equipment report all accidents and near miss incidents
- ✓ Wear protective clothing relevant to work place
- ✓ Ensure that no action or inaction will cause harm

Pit Manager

Date

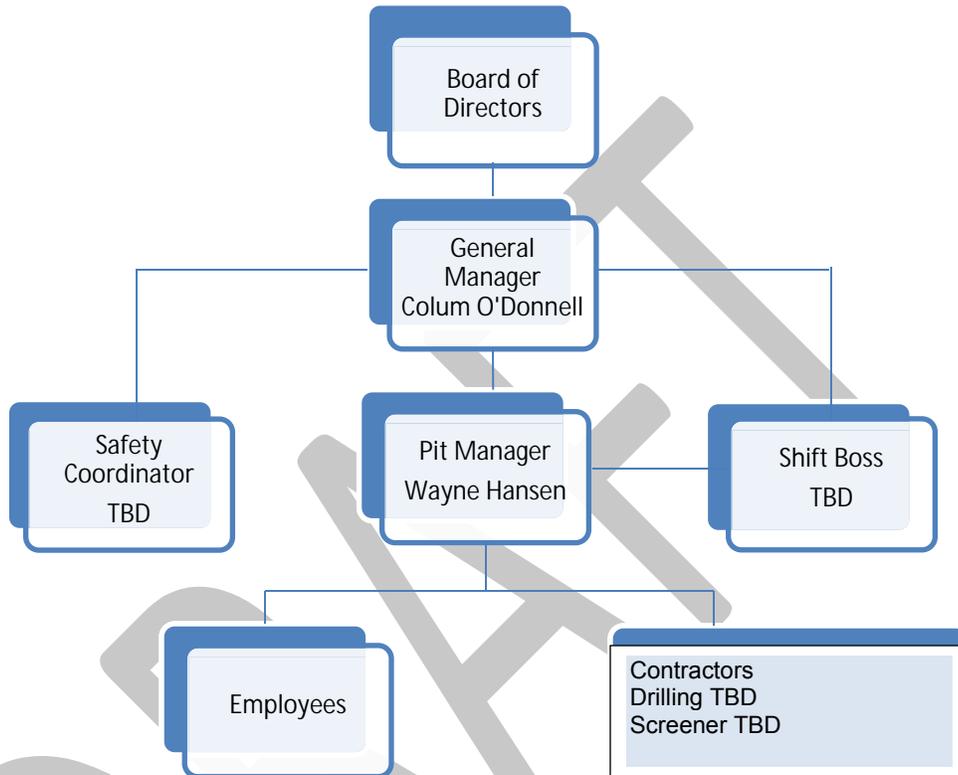
CEO

Date



RESPONSIBILITIES

Organizational Structure



- **Management:** Those people who have some level of authority, responsibility, and accountability within the firm. This includes managers, board of directors, owners, executives, and supervisors.
- **Manager:** The most senior individual in the organization. This may be the owner, president, or general manager. This is the individual who must accept ultimate responsibility for the organization's safety program.
- **Supervisors:** Those individuals who direct the day-to-day work. This includes foremen, supervisors, and, in some firms, superintendents
- **Mine Shift Boss:** A mine shift boss supervises and co-ordinates the activities of mine workers engaged in underground and surface mining operations.



2 Responsibilities

2.1 Management Responsibilities for Health & Safety

- Establish a Health and Safety (H&S) Program
- Implement, maintain and update safety program annually.
- Show support and commitment (Leadership)
- Provide a healthy and safe workplace
- Ensure the health and safety of all employees and subcontractors
- Maintain the H&S Program and enforce the health and safety policies
- Ensure employees are properly trained
- Ensure required personal protective equipment (PPE) is available and used
- Ensure that employees are properly trained in the use and maintenance of personal protective equipment.
- Ensure regular inspections of worksites are conducted and documented
- Ensure investigations are conducted as required
- Review hazard assessments, inspections and investigations
- Take corrective action to fix any workplace conditions that are hazardous to the health and safety of all workers
- Coordinate H&S activities between multiple employers regarding health & safety issues that occur on the work site
- Ensure compliance with legislation
- Report accidents and injuries to WorkSafeBC / Mines Inspector
- Management will review and sign all hazard assessments, inspection and investigation reports.
- Ensure that visitors to job sites are properly instructed as to safety requirements and their responsibilities.
- Ensure that first aid equipment, supplies and treatment are available.
- Receive regular reports on progress, performance and implementation of safety and health plans
- Informed of all matters in relation to safety and health especially major incidents and changes in legislation
- Set a good example



2.2 Shift Boss Responsibilities for Health & Safety

A mine shift boss supervises and co-ordinates the activities of mine workers engaged in underground and surface mining operations. A mine shift boss will perform some or all of the following duties:

- Supervise, co-ordinate and schedule the activities of mine workers
- Train workers in job duties, safety procedures and company policies
- Establish methods to meet work schedules and confer with managerial and technical personnel, other departments and contractors to resolve problems and co-ordinate activities
- Oversee the safety of the mining or quarrying operations
- Resolve work problems and recommend measures to improve productivity

2.3 Supervisor`s Responsibilities for Health & Safety

- Promote health and safety awareness
- Conduct hazard assessments on sites
- Establish a safe work plan
- Instructing workers to follow safe work practices.
- Enforcing health and safety regulations.
- Correcting unsafe acts and unsafe conditions.
- Ensuring that only authorized, adequately trained workers operate equipment.
- Reporting and investigating all accidents/incidents.
- Inspecting own area and taking corrective action to minimize or eliminate hazards.
- Ensuring equipment is properly maintained.
- Promoting safety awareness in workers
- Set a good example

2.4 Safety Coordinators Responsibilities for Health & Safety

- Advising all employees on health and safety matters.
- Collecting and analyzing health and safety statistics.
- Provide health and safety training.

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- Ensure all and new Employee receives Safety Orientation and WHMIS training.
- Ensure that all workers are aware of health or safety hazards.
- Ensure that regular inspections are conducted at the quarry.
- Ensure location has a qualified first aid attendant, as required by regulations.
- Ensure that safety audits and accident investigations are conducted.
- Ensures that the safety program and its operation comply with regulatory requirements.
- Ensures that all training requirements have been met.
- Ensure safety records, including employee training records, are up to date.
- Record safety meetings.
- Updating the safety program manual and other document changes brought forward.
- Compiling the Annual Safety Summary worksheet for management review.
- Check MSDS as required

2.5 Worker`s Responsibilities for Health & Safety

All workers on site, regardless of their role(s), have the following responsibilities:

- Knowing and understanding the Safety Management Plan (SMP), KQLP's safety and health policies and site rules, and making sure applicable safety and health Laws and Regulations are implemented within their areas of responsibility and are followed.
- Reporting all work related accidents, incidents, near misses, injuries and illnesses.
- Ensuring safety procedures, work procedures, maintenance plans, material safety data sheets (MSDS's), and permits are reviewed and understood prior to starting work activities.
- Knowing and understanding the emergency response (ERP) plan for their specific work site.
- Actively participating in all health and safety activities on site (meetings, inspections, training, investigations, hazard identification & control, etc).
- Refusing to work unsafely.
- Using the required PPE at all times.
- Inspect the workplace and machinery or systems of work so as to be satisfied that it is safe
- Stop work when there is an imminent danger to life and/or the possibility exist for a loss/damage to equipment and/or other facilities



2.6 Operators

Operators of equipment and tools must ensure;

- that equipment is in safe working condition prior to work commencing
- that operation and maintenance are carried out in accordance with manufacturer's recommendations
- to service equipment on a regular basis
- to report all deficiencies and damage to the supervisor onsite
- the Pre Use Inspection book is filled out each day and to explain the details of the service performed when service time is claimed.
- All damage is reported to the Supervisor

2.7 Mechanics

Preventive maintenance of vehicles and other mechanical, electrical and hydraulic equipment allows the mechanic to spot and correct weaknesses before they become problems. Through preventive maintenance, accidents and costly breakdowns can be prevented and equipment life can be extended.

The Mechanic is responsible for ensuring:

- That maintenance schedules for all equipment are developed, and maintenance occurs.
- When problems arise outside of normal maintenance, repairs are done immediately or prior to using the equipment.
- Any accidentally damage to any piece of equipment is reported to management and an investigation is done prior to any repair work.
- That all operators know the maintenance schedule, complete their checklists and that all accidental damage must be reported.
- All maintenance is recorded and records are kept on file.

2.8 Responsibilities of Contractor

Contractors must:

- Have their own safety plan and are ensuring compliance with it
- Or
- Comply with the existing safety plan for the site
- Ensure they have training and qualifications for all assigned tasks
- Valid Workers Compensation coverage
- Identify who is responsible for health and safety on the work site



3 EMERGENCY CONTACT LIST

KALUM QUARRY LIMITED PARTNERSHIP

Location of Office: 14303 Highway 16 West

Location of the property: Within the District of Terrace

Latitude : 54° 32'10.04"N

Longitude : 128°39'55.98"W

Pit Manager	Wayne Hansen	250-641-1852
Safety Coordinator	Ernie Gerow	250-641-5254
KQLP CEO	Colum O'Donnell	250-615-1813
KQLP Admin	Lisa Wesley	250-635-5000 ext 122
KDLP Admin	Caitlin Wesley	250-635-5000 ext 108
(Crushing) <i>(TBD)</i>	Head Office	
(Blasting) <i>(TBD)</i>	Head Office	
Trucking Companies	<i>On site file with Safety Manager</i>	
Stakeholders:		
Kitsumkalum Band Office	Steven Roberts	250-635-6177 ext.
Kitsumkalum Chief Council	Don Roberts	250-635-5000
Communications Officer/Kitsumkalum Community	Heather Bohn	250-635-6172
Kitsumkalum Maintenance	Richard Inkster	250-635-7819



Emergency Numbers

	EMERGENCY	Non-Emergency
Police	9-1-1	250-638-7400
Fire	9-1-1	250-638-4734
Ambulance	9-1-1	250-638-1102
Mills Memorial Hospital	250-635-2211	250-635-2211
WorkSafe BC		250-615-6600 (or after hours) 1-866-922-4357
BC Coroner (Northern Region)	initial reports of new deaths only: call 1-855-207-0637	
CN Rail	(CN Police)1-800-465-9239	1-800-465-9239
Ministry of Energy and Mines	Doug Flynn Sr. Inspector	1-250-877-9747 (c) 1-250-847-7386 (o)

Erosion Event/Avalanche Contact

	EMERGENCY	Non-Emergency
North Coast District Kalum District-FLNR #200 - 5220 Keith Avenue Terrace, BC V8G 1L1	Report Wild Fire 1-800-663-5555 Or Cell *5555	(250) 638-5100
Ministry of Transportation and Highways- Terrace 4825 Keith Ave, V8G 1K7		250-638-6440 or 1-800-665-5051
Department of Fisheries and Oceans (Terrace) 5235 A Keith Avenue Terrace, BC V8G 1L2		250-615-5350

Spill Contact

Provincial Emergency Program Ministry of Public Safety and Solicitor General	1-800-663-3456
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Dangerous Goods and Spills	1-800-663-3456
Ministry of Environment- Smithers	250-847-7260
Ministry of Environment DFO	250-315-5350
Northwest Spill Response Ray Hollenberg - Smithers	1-250-847-4556
Northwest Fuels Limited Terrace	250-635-2066
West Coast Spill Supplies	1-800-548-3800
Helicopters	
Quantum Helicopters	250-615-0168
Canadian Helicopters	250-615-2430
White River Helicopters	250-638-1414
Lakelse Air	250-635-3245
Terrace Search & Rescue	250-635-4669



Policy

4 LEGISLATIVE COMPLIANCE POLICY

Safety legislation is designed to protect workers, the public and the environment. Compliance with legislation helps prevent personal injuries, fines and legal action.

Kalum Quarry shall comply with regulatory requirements as a minimum standard for our safety program. Regulatory requirements include all acts, regulations, policies, practices and procedures administered by all levels of government and their agencies.

Legislation:

- Ministry of Energy, Mines and Petroleum Resources Mining and Minerals Division; Health, Safety and Reclamation Code for Mines in British Columbia
- Occupational Health and Safety Regulations (Work Safe BC)
- Workers Compensation Act
- Legislative Change:- Changes to the Workers Compensation Act
- Mines Act
- Railway Act
- Explosives Act
- Transport Canada

Kalum Quarry Limited Partnership has the above Legislation books readily available for all employees to access.



5 SAFETY MEETING OVERVIEW

A Safety program has been developed to assist in ensuring that all parties at the site are actively involved in achieving occupational health and safety goals. By promoting an open line of communication KQLP will ensure that everyone is aware of their responsibilities and has the chance to participate in the development and implementation of the Safety Management Plan (SMP).

5.1 Procedure

The safety program will allow all people involved in the Kalum Quarry mining activities to openly discuss safety related matters and will be based around KQLP safety meeting. All personnel are required to attend the meeting. Contactors will also be encouraged to attend.

The safety meeting will be held using the "Safety Meeting Record" (form KQSMP 1). This form outlines the topics that will be discussed during the meeting and will act as minutes for the meeting.

The safety meeting will be held on Monday mornings. If the meeting cannot be held at this time it will be held on the next working day, after the meeting date.

A safety meeting may also be held if one of the following events occurs:

- reporting of hazards,
- where an incident/accident occurs,
- a change in work procedure,

6 DOCUMENT CONTROL

A copy of the minutes will be posted on the "test shack notice board" for a period of two (2) weeks. A copy will be kept filed in the Economic Development & Resources Office.

All records will also be scanned and kept electronically on the company intranet and a hard copy in a secured filing area.

Due diligence requires the maintenance of complete training records for all personnel.



7 RECORDS AND STATISTICS POLICY

Safety program management ensures that the whole system remains on track to effectively reduce the risk of injury and illness at the worksite. Maintenance of accurate records plays a critical part in monitoring the effectiveness of the program and will assist our company in demonstrating our “Due Diligence” and meeting regulatory requirements. The records we are required to maintain are:

- Safety orientation & training forms (in each employee file).
- Minutes of safety meetings.
- Reports of formal inspections (tours).
- Incident investigation reports (filed by date) (regulatory requirement).
- First Aid treatment reports (filed by date) (regulatory requirement).
- Days lost
- Man hours
- Record of Drill/Blasts (regulatory requirement).
- Annual Statistic Reports.
- Subcontractor pre-qualification documents
- Safety Rule Violations.
- Track Safety – CN Rail Spur Inspection
- Equipment logbooks, and maintenance records
- Maintenance Records.
 - ❖ Pre-Start
 - ❖ Scheduled Maintenance- All scheduled maintenance will be recorded in the a database maintained by the office administration
 - ❖ Breakdown Maintenance- All unexpected breakdown maintenance will be recorded in a database
 - ❖ External Service Provider-All documentation during the course of completing major service work by external service providers will be recorded in a database
- Hazard Assessments.

All forms or reports will be neat and readable, completely filled out and signed/dated by the appropriate employee and/or management.

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All records will also be scanned and kept electronically on the company intranet and a hard copy in a secured filing area.

8 SAFETY RULES

The following safety rules are provided to help everyone do their job correctly and safely. Compliance with these common sense rules is necessary to prevent injury to you or fellow workers.

- Comply with Health, Safety and Reclamation Code for Mines in British Columbia
- Comply with WCB Occupational Health and Safety Regulations.
- Comply with Railway Association of Canada & Safety Authority
- Report to work physically and mentally fit to perform your jobs.
- Wear the required personal protective equipment provided by the company
- Workplace impairment is not permitted or tolerated.
- Operate all equipment as instructed. If in doubt, ask the supervisor.
- Warning signs alert you to special hazards. Always obey them; they are for your protection.
- Never assume an equipment operator sees you. Stand clear of moving or working equipment. **Do not approach until the equipment operator grants you permission.**
- Correct and report unsafe condition to a supervisor immediately.
- Report all accidents and near misses and fill out an "Incident Report."
- Report all injuries as soon as possible to the first aid attendant and your supervisor.
- Know what is in your spill kits and first aid kits.
- Housekeeping is everyone's responsibility. Keep your immediate work area **clean**.
- Replace all equipment guards; report all missing guards immediately to your supervisor.
- Comply with posted speed limits at all times.
- Watch for the safety of others. Don't hesitate to stop operating if fellow workers are in danger of getting hurt.
- Always question any signal not clearly understood. Never assume or guess a signal; treat all unclear signals as STOP.
- If in doubt about any aspect of your job, ask your supervisor or your fellow workers.
- Know the members of your safety committee and give them your co-operation.
- Do not attempt to lift heavy or bulky objects beyond your capacity and follow proper lifting procedures. Get help, including mechanical aid when needed.
- Know all emergency evacuation procedures at your jobsite.
- Park vehicles facing exit from area at all times.
- Absolutely no iPods, or electronic devices players obstructing your hearing while at work.
- Practice Due Diligence.

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9 VISITOR/VENDORS

Listed below are specific safety rules that must be followed in order to ensure your safety and that of our employees.

These rules must be read upon your arrival, followed by your signature in the visitors' register, acknowledging your understanding of these rules and verification of your presence in the area.

“Visitor” is defined as follows:

- 1) Any person who is visiting the facility or job site for a short duration and who will not perform work at the site or
- 2) Any Contract employee who does not normally perform extended work at the site such as a delivery driver.

Visitors are encouraged to make appointments in advance of their arrival. If an escort is not available due to workload or an emergency, the visitor may be required to reschedule the appointment.

Visitors may be asked to leave the site for not abiding by safety rules, in case of an emergency or because of other demands upon the escort.

SITE SPECIFIC SAFETY RULES FOR VISITORS

- No visitors are allowed beyond the main office without an assigned escort.
- The following personal protective equipment may be required prior to entering the facility or job site:
 - a) Hard Hat
 - b) Hearing Protection
 - c) Safety Glasses
 - d) Safety Shoes (Recommended)
- No open flames or smoking is permitted except in designated areas.
- The Company representative will explain the emergency signal (when applicable) to you upon completion of this orientation. In the event you hear an emergency signal, proceed with your escort to the assembly area and wait for instructions.
- Should you detect a hazardous situation during the course of your visit, alert your escort immediately and exit the facility or job site by taking an evacuation route to the Safe Area / Meeting Location if applicable.
- If you suffer any injury, no matter how slight, promptly inform your escort..
- Alcohol, illegal drugs, firearms are prohibited.
- No private vehicles are allowed past the parking area or off the job site without permission or escort.
- Visitors will abide by all facility rules.

(Please return any personal protective equipment provided to you)

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10 DRUG AND ALCOHOL CONSUMPTION

10.1 Policy

Kalum Quarry will provide a safe, healthy and efficient work environment. In order to ensure this happens, all employees are strictly prohibited from: possessing or using any illegal drug(s).

Workers are not permitted to consume Illicit drugs and alcohol while on any work site under the control of KQLP. All workers are required to adhere to this policy at all times. Fitness for duty is the primary objective of this policy. Under no circumstances will it be permissible for any worker to be under the influence of illicit drugs or alcohol or the after affects of these substances while on shift.

The same applies to prescription or over the counter drugs which could have an intoxicating or depressive affect. In the case of prescription or over the counter drugs workers are advised to inform their supervisor they are taking them and that they could affect their performance.

Consuming alcohol while on a worksite is prohibited and operating a company vehicle, or on company time except in connection with company by a doctor, or working on company time, while under the "influence" of drugs or alcohol is also prohibited.

"Under the influence" will be defined as being unable to perform ones work in a safe productive manner; being in a physical or mental condition that creates or might create a risk to the safety or wellbeing of themselves or others; or having any detectable odor or amount of a controlled substance or alcohol in the body.

PROCEDURE

Disciplinary Action

1. Once it has been established that someone has entered a worksite while under the influence a full investigation will be launched by the manager and the safety coordinator.
2. If it is found that the employee or contractor was in contravention of Kalum Quarry drug and alcohol abuse policy termination of employment will commence immediately.

Contractor investigation process

Where contractors have their own process for addressing this type of behavior, KQLP will defer the above policy with the expectation that the worker will be treated appropriately and the situation will be resolved in a manner appropriate with the violation and acceptable to KQLP Management



11 DISCIPLINARY ACTION

11.1 Policy

In order for Kalum Quarry to have an effective safety program we have to implement standards and rules for everyone to abide by. Managers, supervisors, contractors and employees must adhere to Kalum Quarry's safety program and if it cannot be done then there has to be some kind of disciplinary action taken to fix the issues so it does not happen again.

PROCEDURES

The following procedures will be followed when employees are found to be in contravention of WorkSafeBC regulations, safe work practices, or personal protective equipment regulations.

FIRST OFFENCE

- Management will determine the reason for noncompliance.
- Steps will be taken to resolve the problem.
- Where the reason for noncompliance is found to be carelessness or violation of rule, the reasons for requiring compliance shall be discussed with the employee and a verbal warning issued.

SECOND OFFENCE

- Management will discuss the reason for noncompliance and issue a written reprimand outlining the action to be taken if further offences should occur.
- A copy of the reprimand will be placed in the worker's file.

THIRD OFFENCE

- Management will investigate the reason for noncompliance.
- Dependent upon the severity of the noncompliance, the worker may receive either a suspension from work without pay for a period to be determined by management, or termination.

FOURTH OFFENCE

- Immediate dismissal.

***THERE WILL BE ZERO TOLERANCE FOR SUBSTANCE ABUSE**

11.2 Records of Disciplinary Actions

Copies of all documents pertaining to disciplinary actions shall be filed in the employee's personnel file.

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12 INJURY MANAGEMENT

12.1 Policy

It is in the best interest of Kalum Quarry to take every measurable care to ensure the health and safety of our employees so they may get home in one piece every night. In case there happens to be an injury or a sick leave, then Kalum Quarry must be prepared in how to deal with this. This process has been simplified for all that may be involved in this procedure.

PROCEDURE

The injured person must:

1. Contact the onsite first aid attendant and give them your full cooperation.
2. Seek medical aid on the advice of the first aid attendant. Provide a description of work duties, light duty opportunities and suitable work to the medical professional.
3. Follow medical advice from your doctor.
4. Phone Kalum Quarry's office and inform them of injuries, doctor's recommendations, how many days off and provide management with any other information that maybe needed.
5. Perform light duties as a useful therapy.
6. If on disability and you are off for a substantial amount of time then give management a call once per week to check in on your progress.
7. Promptly notify Kalum Quarry and the medical professional if the recovery plan isn't working correctly for you.

* All injuries will be treated with discretion and confidentiality.

Management and supervisors must:

1. Accommodate the doctor's restrictions up to the point of undue hardship.
2. Prepare job information for the medical professionals to evaluate.
3. Find and allow meaningful light, partial or alternate duties if the injuries permit it.
4. The safety coordinator shall speak with the injured worker no less than once per week.
5. Provide a timeline for communications with workers, doctors and WorkSafeBC.

* All injuries will be treated with the upmost discretion and confidentiality.



13 REFUSAL OF UNSAFE WORK

13.1 Policy

WorkSafeBC Regulation 3.12.; Ministry of Energy and Mines 1.10.1

Kalum Quarry strives to prevent all accidents, injuries and occupational illness through active participation of every employee. Kalum Quarry is committed to continuous efforts to identify and eliminate any safety hazards associated with any job task performed. However, if in the event that an employee feels the need to refuse work because he/she believes that one or more of the following are true they may do so:

- Any machine, equipment or tool that the employee is using is told to use is likely to endanger himself/herself or another worker.
- The physical condition of the workplace or work stations is likely to endanger the employee or contractor.
- Any machine, equipment or tool that the worker is using or; the physical condition of the workplace contravenes any Act or Regulation and is likely to endanger himself/herself or another worker.

PROCEDURE

Kalum Quarry has implemented an unsafe work refusal procedure to investigate any unsafe acts. This procedure is to provide an orderly process to investigate any unsafe work refusals.

1. The worker or contractor must immediately tell the supervisor of the job site that the work is being refused and explain why.
2. The supervisor must investigate the situation immediately, in the presence of the worker and if there is; a site health and safety representative. They will identify any hazards, risks and/or corrective actions that need to be addressed without delay.
3. The worker must fill out an incident report explaining all the details leading up to the supervisor's investigation.



14 HAZARDS

14.1 Policy

It is the responsibility of all employees and contractors who work for Kalum Quarry to be on the lookout for potential hazards but also to think clearly and think through potentially hazardous circumstances that may arise. Hazard is defined as a practice, behavior, condition or combination that can cause injury or illness in people or damage to property. To keep up with the hazards that may come up on the Kalum Quarry worksite we need to put in some necessary controls in place. Supervisors will be doing monthly site inspections. Workers will do daily inspections on their personal protective equipment, the heavy equipment they operate and a daily pre trip on the truck that they drive.

Here are some possible hazards out there including but not limited to:

- Changes in worksite conditions
- Significant rapid changes in conditions due to weather/temperature
- Slips, trips and falls
- Overhead hazards (falling rocks, trees)
- Steep slopes
- Broken ground
- Working in or around heavy equipment
- Missing or faulty emergency equipment/no emergency evacuation plans
- Improper or missing signage
- Blocked access routes
- Spillage of hazardous materials
- Fires, earthquakes, slides, heat
- Energy hazard like falls, struck by equipment, kinetic (energy in motion) released energy
- Traffic
- Working alone
- Hitting obstructions or other workers
- Coming in contact with hazardous/toxic materials

Here are some potentially hazardous work practices:

- Inadequate or missing PPE
- Inappropriate certification/qualification for different work tasks
- Improper use of tools or equipment
- Not following or understanding the safe work procedures that have been implemented for the task at hand
- No understanding of the emergency response procedures for spills, fires, first aid, fatalities, earthquakes and slides



14.1.1 Controlling Hazards

Controlling hazards means eliminating the hazard, or preventing it from harming workers. Control methods can be applied at three possible points with respect to the hazard. There are 3 types of controls; Engineering, Administrative and PPE.

Engineering Controls (at the source of the hazard)

- Machine guards, interlocks, lockouts, warning devices
- Isolation/enclosure
- Automation/material handling devices
- Communication devices

Administration Controls (policy and procedures)

- Policy and procedures
- Training
- Organizing and planning work (pre work)
- Emergency response plan
- Purchasing of tools and equipment
- Substitution of less harmful products

Personal Protective Equipment Controls (worker/contractors)

- Hard hat
- Steel toed boots
- Face shields
- Safety glasses
- Gloves
- Hearing protection

Risk Assessment

The risk management process will consistently identify hazards at KQLP's rock quarry. This is done by way of the following:

- Regular Workplace Inspections -
- Reporting hazards immediately as found - Staff Diaries/Incident Report Form
- Agenda item at safety meeting
- Reviewing hazards with contractors during inductions



15 CLOSE CALL AND NEAR MISS

15.1 Policy

Kalum Quarry expects all employees and contractors to report any close call, near miss or incident immediately to the supervisor or management. The objective is to help eliminate the problem from happening again by investigating it and making changes, or corrective procedures.

When an employee comes in contact with any accident, incident or near miss, no matter how slight the injury or damage, it must be reported to the supervisor immediately.

The supervisor is responsible for taking the necessary follow up action, including but not limited to getting medical attention for the injured, completing an investigation report and/or completing the Corrective Action Log (CAL). Form KQSMP3

PROCEDURE

For a minor problem:

1. Notify your site supervisor
2. Correct the hazard if it can be done safely and/or if you are qualified to handle the situation.
3. If you are not qualified or it can not immediately be corrected, a warning of the hazard must be given to the other employees.
4. Wait for further instruction from your supervisor
5. Fill out an Incident Report Form. Form KQSMP3

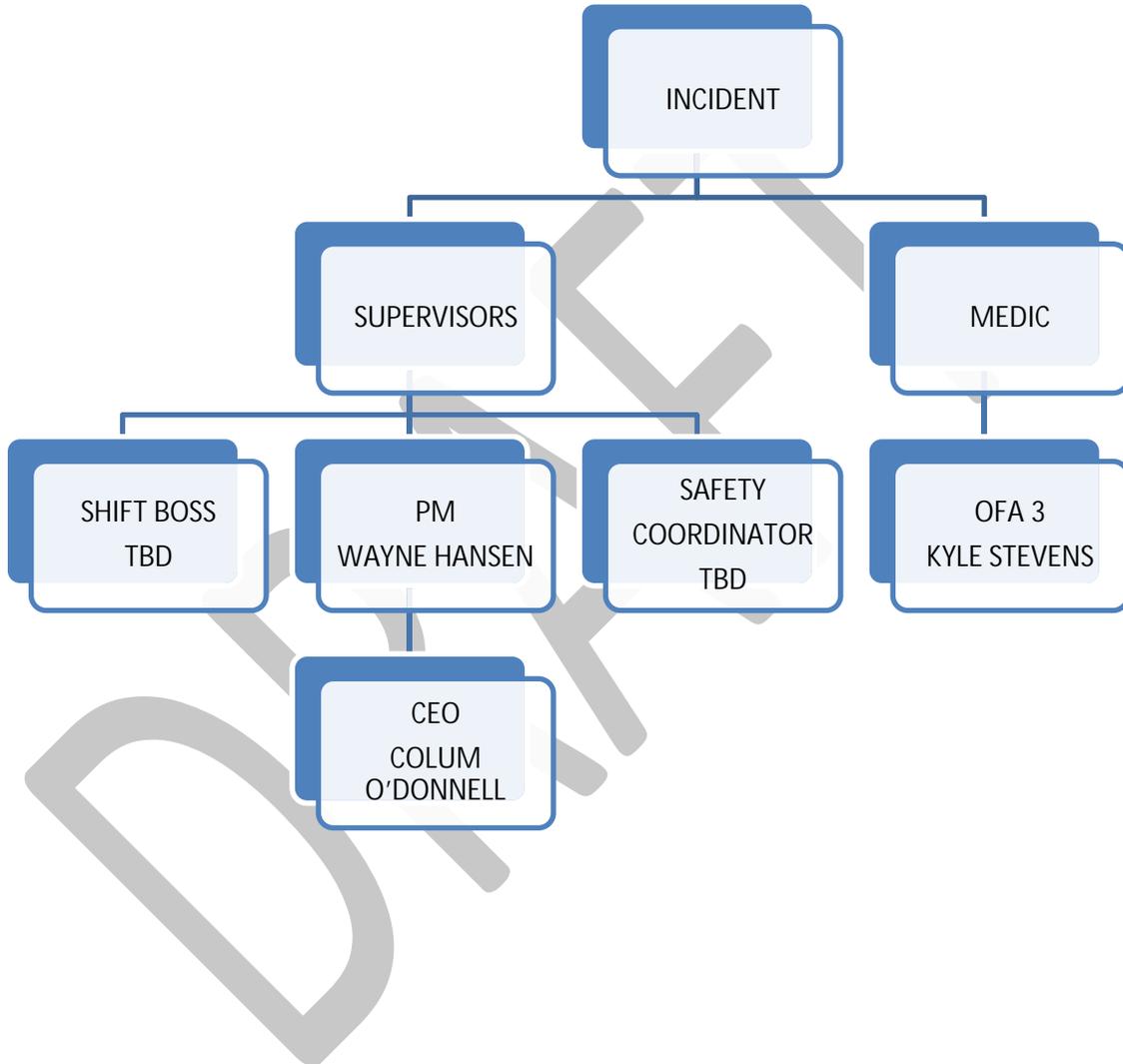
IF you think the problem requires immediate attention:

1. Notify your site supervisor and have someone stand guard so other workers don't become exposed to the danger or situation.
2. Call the office 250-635-5000 (Kalum Quarry)
3. Wait for further instruction from your supervisor.
4. Fill out an Incident Report Form



15.2 COMMUNICATION CALL DOWN

KALUM QUARRY LIMITED PARTNERSHIP Incident Communication Call Down





16 INVESTIGATIONS

16.1 Policy

Kalum Quarry Limited Partnerships' safety manager will investigate every incident that results in an injury to a worker requiring medical treatment or that had the potential for causing injury or financial damage to equipment.

The purpose of an investigation is to determine the cause or cause of the incident; to identify any unsafe conditions, acts, or procedures that contributed to the incident and to recommend corrective action to prevent similar incidents.

PROCEDURE:

The investigation must be completed by persons who are knowledgeable about the type of work involved. If reasonably available a supervisor and worker representative should also participate.

It should include:

- The place, date and time of incident
- The names and job titles of persons injured in the incident
- The names of witnesses
- Brief description of the incident
- Statement of events that led up to the incident
- Identification of any unsafe conditions, acts or procedures that contributed to the incident
- They should include root causes, system corrective actions and site corrective actions
- The names of persons who investigated the incident

Following an investigation we must without undue delay undertake any correct action required to prevent recurrence of similar incidents. We will accomplish this by reviewing our safety alerts during safety meetings and also by posting the alert in the office and Test Shack.

Investigations of close calls and near misses provide a learning and improvement opportunity to help prevent someone from being injured.



16.2 Guide To Reporting Incidents

Type of Incident	Reporting within the company	Reporting to Worksafe BC/ Mines Inspector
Resulted in serious injury or death of a worker.	✓	▲ ○ □
Major structural failure or collapse of any type of construction or excavation	✓	▲ ○
Situations that required the use of the company's ERP.	✓	▲ ○
Major release of a hazardous substance.	✓	▲ ○
Close calls (near miss)	✓	▲ □
Injuries Or occupational illnesses that prevent a worker from performing assigned tasks.	✓	
Any event such as a motor vehicle accident or spill	✓	
Injuries that were treated on site.	✓	

- ✓ Means: the company must complete an incident reporting form. Company management and supervisors can then take the necessary follow up action
- ▲ Must be reported immediately to WorkSafeBC / Mines Inspector
- Must be investigated by the company, with a report submitted to WorkSafeBC / Mines Inspector (if required)
- Requires the company to complete and submit to WorkSafeBC the following forms within 3 days.

*Form 7 (Employer's report of injury or occupational disease)



17 SAFETY MEETINGS

17.1 Policy

Experience shows the best way to get information across to people is through a combination of face-to-face communications. Kalum Quarry will accomplish this by having safety meetings. Safety meetings allow workers and supervisors to:

- Share new information and reinforce safety lessons learned
- Discuss conditions, hazards and risks on the work site
- Review any incidents or near misses to avoid repeats
- Take stock of the site conditions, worker's preparedness and equipment status and generally make sure things are going well

Supervisors must hold safety meetings at these times:

- Before work begins on any new site
- At least once per month afterwards
- When there is any significant change in conditions or potential hazards
- When a worker reports a close call or serious incident

Safety meetings can include but is not limited to:

- Location and site details
- Number and location of workers
- Man check system
- Communication procedures
- Radio check in/check-out procedures
- Emergency Response Plan; including first aid coverage and location
- Access and egress trails
- Personal Protective Equipment
- Current site map listings any restrictions
- Weather conditions
- Hazards noted
- Site specific safety concerns
- Special Procedures
- Falling methods (*as required*)
- Harvesting methods to be employed (*as required*)
- Environmental management system
- Traffic control
- Fire hazard information

*** See Safety Meeting Form/Record KQSMP 1**



18 SITE INSPECTION & EQUIPMENT

18.1 Policy

Every day on site, workers are legally obligated to make sure they can carry out their work tasks safely which means checking their personal protective equipment, heavy equipment they may be operating, crew vehicles and the environment they are working in.

Supervisors must conduct monthly site inspections in order to ensure adequate controls are in place to reduce the possibility of incidents from occurring. Every day supervisors must look out for worker alertness/fitness, proper condition of PPE, safe work procedures, changes in site conditions and applicability of the ERP. They should keep notes of their daily observations and actions.

PROCEDURE

18.1.1 Supervisors will inspect:

- Site and operational conditions
- Hazards
- Corrective actions
- Mobile equipment and facilities
- First Aid Requirements

18.1.2 Workers will inspect:

- Personal Protective Equipment
- Communication equipment
- Required first aid equipment including compact kits for crew
- Spill kits
- Mobile equipment
- Changes in weather conditions
- Any barriers to communication with others
- Changes to the work area
- Evacuation routes
- Any hazardous materials

18.1.3 Truck drivers will inspect:

- Personal protective equipment
- Communication equipment
- Changes in weather conditions
- Changes in road conditions
- Defects on the trucks
- Brakes
- Any hazardous materials
- Cargo and loads

*** See site inspection and equipment inspection forms QQSMP 8**

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18.1.4 Fire Extinguisher Inspection

Fire extinguisher inspection requirements are as follows:

The owner of the equipment is required as a minimum to conduct inspections on a monthly basis and maintain a record of these inspections. This inspection is a “quick check” that the extinguisher is available for immediate use and will likely operate correctly.

Inspections shall ensure the following;

The extinguisher is in its designed location

Access to, and visibility of the extinguisher is not being obstructed. The operating instructions on the extinguisher nameplate are legible and face outward

Any seals, tamper indicators, or inspections tags that are broken or missing are replaced after a check is made that the unit is operable

Note any obvious physical damage, corrosion, leakage or clogged nozzles

Observe pressure gauge readings when noting the operating range

On wheel units, make sure the wheels are properly lubed and spin freely

Use an **inspection log**, which contains the following information:

- Location of, or extinguisher number
- Serial Number on extinguisher
- Extinguishers requiring corrective action
- Date of the inspection
- Initials of the person performing the inspection, and
- Missing extinguishers that cannot be located by the person conducting the inspection



19 NEW / YOUNG WORKERS

19.1 Policy

There is quite alarming amount of new and young workers killed or injured in British Columbia each year, the outcome of many of these incidents is from not enough training for the work that they are employed for; or not given enough time to finish a task properly. Kalum Quarry strives for a safe record and in doing so has an extensive training program.

PROCEDURE

1. All possible candidates will go through a lengthy screening starting with reviewing their resume. An interview will be conducted once a selection has been made. After the interview has been done references will be checked, once references has been conducted certifications will be verified.
2. Once the worker has been hired the employee will go through an orientation which will be conducted by the safety coordinator or safety supervisor. They will be orientated to Kalum Quarry safety program and depending on their job description they may watch a WorkSafeBC video on safety.
3. The new/young worker will be assigned a supervisor who will monitor the workers work habits.
4. The supervisor will evaluate and complete a New/Young Worker Assessment every two weeks, for a three month period. This will be reviewed by the safety coordinator each time.
5. After the three month period is the manager and the safety coordinator will then evaluate and sign off that the worker is competent to perform his work tasks.

*** See New/Young/ Worker Assessment**

*** See New /Young / Worker Assessment Sign Off**

Step 1: Orientation

Step 2: Training

Step 3: Supervision



20 WORKER ASSESSMENTS

20.1 Policy

Kalum Quarry must ensure that all employees and contractors are performing in a safe and productive matter. Kalum Quarry will follow through with this by assessing and instructing their workers by doing worker assessments.

PROCEDURES

Long time workers:

- Supervisors will assess the employees and contractors.
- The assessments will be done at minimum one per month.
- Management will fill out individual worker assessment forms which will be kept in the employee and contractors file.

These assessments will be reviewed by the manager and the safety coordinator every three months as to see where the worker or contractor stands. Examples of this would be “has the worker progressed or regressed. This will ensure if a worker is having difficulty with their job task then management and supervisors will be able to provide more training and supervision in the workers weakest areas, this is also done so that supervisors can see who has improved.

See *Worker Assessments Form KQSMP 5*



21 PERSONAL PROTECTIVE EQUIPMENT

21.1 Policy

Personal Protective Equipment is vital to the safety of all company workers on every work site; it is the last line of defence against workplace hazards. It is not only a KQLP's policy to wear (PPE) at all times on the work site but it is mandatory through WorkSafeBC. Accordingly to the Occupational Health and Safety Regulation, workers and employers are responsible for providing the following (PPE) though High Risk may accommodate employees depending on the circumstances with safety headgear and safety footwear.

Workers are responsible for providing:

- Clothing needed for protection against the natural elements
- Safety footwear
- Safety headgear

Employers are responsible for providing:

- Any additional protective clothing, such as safety vests and high visibility clothing
- Eye and face protection
- Hearing protection
- Hand protection
- Fall protection

PROCEDURES

All workers must wear their personal protective equipment while working on work sites this also includes KQLP Test Shack and yard area. All employees must inspect their (PPE) on a daily basis and note any deficiencies.



PERSONAL PROTECTIVE EQUIPMENT (PPE)

Job Duties	Hard Hat	Glasses	Screen	Hearing Protection	Hi-Vis Vest/ Clothing	Footwear
Truck Driver	Required when out of cab	Required when working out of cab and in windy conditions	N/A	Required when near close proximity to machinery	Required when out of machine	Work boots required when out of cab
Loader	Required When out Of cab	Required When working out of cab		Required when operating machine	Required when out of cab	Work boots required
Excavator	Required When out Of cab	Required When working out of cab		Required when operating machine	Required when out of cab	Work boots required
Dozer	Required When out Of cab	Required When working out of cab		Required when operating machine	Required when out of cab	Work boots required

- Anyone that travels in company vehicles or operates machinery **must wear seatbelts**.
- Operators required to stand to move machinery are exempt from wearing seatbelts at that time.
- Gloves are required for all.
- Footwear must be appropriate for the job with adequate construction for support and traction.
- If noise levels are below WCB acceptable levels, hearing protection is not required.
- Safety glasses must be on your person at all times.



PERSONAL PROTECTIVE & EQUIPMENT

21.2 Personal Protective Requirements

HEARING PROTECTION: WCB REGULATION 7.13; MEM REGULATION 1.8.7

If it is not practicable to reduce the noise levels to or below the exposure limits (85 dBA Lex daily exposure, and 135 dBA peak sound level), the employer must reduce noise exposure to at least a practicable level, provide and maintain hearing protection to affected workers, and ensure that it is worn effectively.

PERSONAL CLOTHING: WCB REGULATION 8.10

Must be of a type and in a condition which will not expose the worker to unnecessary or avoidable hazards.

SAFETY HEADGEAR: WCB REGULATION 8.11; MEM REGULATION 1.8.7

Must be worn by a worker in any work area where there is a danger of head injury from falling, flying or thrown objects, or other harmful contacts. It must meet the requirements set out in the WCB Occupational Health and Safety Regulation book. Damaged or modified headgear must be removed from service.

EYE PROTECTION: WCB REGULATION 8.14; MEM REGULATION 1.8.5

A worker must wear properly fitting safety eyewear appropriate to the conditions of the workplace if handling or exposed to materials which are likely to injure or irritate the eyes.

LIMB AND BODY PROTECTIONS: WCB REGULATON 8.19

The employer must provide appropriate skins, hand, foot or body protection if a worker is exposed to a substance or condition which is likely to puncture, abrade or otherwise adversely affect the skin, or be absorbed through it.

FOOT WEAR: WCB REGULATION 8.22; MEM REGULATION 1.8.4

Must be of a design, construction, and material appropriate to the protection required. This is determined by such factors as slipping, uneven terrain, ankle protection and foot support, temperature extremes, etc. Footwear that has been determined to require toe protection must meet the requirements set out in the WCB Occupational Health and Safety Regulation Book.

HIGH VISIBILITY AND DISTINGUISHING APPAREL: WCB REGULATION 8.24; MEM REGULATION 1.8.1

A worker whose duties on the work site result in exposure to the hazards of mobile equipment must wear high visibility apparel meeting at least the Type 3 criteria of *WCB Standard Personal Protective Equipment Standard 2-1997, High Visibility Garment*. **Type 3 Criteria:** A harness type garment worn on the torso, fabricated from parallel strips of contrasting colors. The harness has fluorescent and retro-reflective properties. For more detailed information Worksafefbc.



**OBLIGATION TO USE FALL PROTECTION: WCB REGULATON 11.2 ;
MEM REGULATION 4.4.1**

An employer must ensure that a fall protection system is used when work is being done at a place from which a fall of 3 m (10 ft) or more may occur, or where a fall from a lesser height involves an unusual risk or injury.

SEAT BELTS: WCB REGULATION 16.33; MEM REGULATION 4.9.4(2b)

If mobile equipment has seat belts required by law, the operator and passengers must use the belts whenever the equipment is in motion, or engaged in an operation which could cause the equipment to become unstable.

Other personal safety equipment which may be required

Coveralls, Rain Gear, Whistle, Pressure Bandage

21.3 Emergency Equipment

All workers should know the location of the following:

- First Aid Kit
- Fire Extinguisher
- Fire Tools
- Spill Kit
- Communications

I have read the PPE Policy of my company and accept the policy as outlined. By signing this form, I agree to use the appropriate PPE in the situations described above, and report any deficiencies in my PPE to my supervisor.

Employee Name (Print)

Supervisor Name (Print)

Signature

Signature

Date

Date



22 ENVIRONMENTAL MANAGEMENT SYSTEMS

22.1 Policy

Being prepared for spills is important for Kalum Quarry. Not only do we have an environmental obligation. This is a job that needs to start at management and be worked down the chain of command to employees and contractors.

PROCEDURE

All spills must be reported to the Kalum Quarry supervisor immediately. All heavy equipment and crew trucks with tidy tanks shall have a spill kit.

Evaluate the Hazards – identify and evaluate any potential problems that may be encountered during the control, containment and cleanup of spills. Identify the type and volume of the spill. Refer to the Material Safety Data Sheet (MSDS). Have fire extinguishers available if there is a risk of fire.

Take control – Stop operations and shut off equipment and remove any sources of sparks or flames. Ensure fellow workers are notified, and if possible, stop the source of the spill.

Take action – take action within your ability using resources at hand to minimize the spread and the impact of the spill until additional resources and expertise arrive. Utilize heavy equipment where suitable. Use your spill response equipment to initiate containment.

Follow-up – report the spill to agencies as required. All information and details must be & for follow-up using the incident report form. Complete clean-up and required mitigation actions.

Spills must be reported You must fill out a **Incident Report Form**



23 FATALITIES

23.1 Policy

Kalum Quarry will take every measurable care to prevent injuries and fatalities but should the time arrive that we have an unfortunate fatality we need to be prepared to respond to the scene and seal off the area. In a fatality there will be inquiries from certain organizations such as the RCMP, WorkSafeBC, Coroner and possibly the media. We need to be prepared as a company for this. All workers and their families will be treated with the upmost compassion and respect while dealing with a fatality.

PROCEDURE

These procedures are very important and are to be followed by everyone employed by Kalum Quarry.

1. Activate the emergency response plan and notify the first attendant.
2. If reported by the first aid attendant that there is a fatality seal off the area, and do not disturb the scene. All equipment must not be moved.
3. Cover the body.
4. Call without delay the RCMP, Coroner and WorkSafeBC from a land line if possible. If not possible then do not use any names over an unsecured channel.
5. Do not mention the name of the person on any radios.
6. Contact Wayne Hansen (Manager) or Ernie Gerow (Safety Coordinator) as soon as possible.

Remember that WorkSafeBC/MEM Mines Inspector will be investigating all that were involved so take pictures if you have a camera and make notes so that you can remember all that had taken place. You must give your full cooperation to WorkSafeBC, RCMP, Kalum Quarry and the Coroner who is assigned to the case.



24 FIRST AID

24.1 Policy

Kalum Quarry makes safety a priority and in doing so it has taken the necessary steps to help workers deal with an injured person. First aid requirements on all work sites will include at least the following:

- An assessment of work site circumstances that includes information such as the number of workers potentially requiring first aid at any given time, types of injuries and any barriers to providing first aid.
- Occupational first aid attendants with the appropriate level of training and availability at all times.
- Facilities such as first aid rooms or dressing stations in close proximity.
- First aid kits with the appropriate types and quantity.
- Record keeping system.
- Clear access for emergency responders
- Appropriate plans for transporting an injured worker to medical aid.
- Effective means of communication between first aid attendants and workers who may need their help.
- Ensure workers know how to call for assistance.
- Written procedures for providing first aid (accident procedure card/emergency response plan)
- Review the requirements every year and update as needed.

It is the supervisor's job to fill out the ERP and inform all employees and contractor's on site where it is posted and how to use it.

All sites will be assessed by the first aid attendant or supervisor during the pre-work. A first aid assessment form will be filled out at this time. This will include:

- A list of hazards
- Number of workers who may require first aid
- Types of injuries that may occur
- Barriers to first aid
- Calculation of time to get to injured worker and to a medical facility
- What type of first aid attendant will be on site

This assessment must be reviewed annually or when there has been a significant change to the worksite. All first aid injuries must be reported to the onsite first aid attendant immediately regardless of type. All injuries must be documented and followed up by the attendant if he feels that follow up is in order.



25 Working Alone

25.1 Policy

Kalum Quarry Limited Partnership has a legal obligation to ensure that all isolated work sites or employees working alone are checking in timely intervals. This is for the safety of all employees working for KQLP. Workers requiring using these procedures will be trained in doing so.

Working alone means to work in a circumstance where assistance would not be readily available to the worker:

- In case of an emergency
- In case the worker is in ill health

25.2 PROCEDURES

1. A designated person must be determined before the alone person goes to the work site.
2. The designated person must establish contact with the alone person at predetermined intervals and the results must be recorded by the said person.
3. The predetermined check in intervals will be no less than (1) hour apart and may be changed depending on the hazardous work.
4. The alone person will check in at the end of the shift and let the designated person know when they have arrived back to the office area.
5. If the alone person will be out of the machine or truck at the predetermined interval he will call the designated person to inform them of his position before he leaves the truck or equipment.
6. If for some unknown reason there is no response when a predetermined interval has been done then the designated person will keep phoning the alone person every 10 minutes up to a period of 30 minutes. If they cannot contact the alone person then a call must be made to the manager or supervisor to inform them of the situation. The pit manager or safety manager will head to the work site while the designated person continues manning the phone.

* *Know your limitations and do not exceed them. There will be an annual review of this policy and procedure or more frequently if there is a change in work arrangements that could adversely affect the workers well-being or a report that the system is not working effectively.*



26 FOREST FIRES

26.1 Policy

It is far easier to prevent a fire than to make one. All workers must have their S-100 Fire Suppression ticket. This must be renewed annually. If a fire occurs on your site there are some procedures that Kalum Quarry has implemented for everyone's safety.

26.2 Procedures

1. Stop operations and notify the rest of the crew.
2. The reporting person shall remain available to communicate details of the fire suppression activity taken and what may be required.
3. The remaining crew shall begin immediate action on the fire to their level of safety and competence.
4. The person in charge of the crew during suppression operations will continue to supervise the efforts until relieved by the fire department or forest service personnel.

If Alone:

1. DO NOT take action on an intense fire yourself. If the fire is beyond your ability, notify the forest service immediately and follow their instructions.
2. Take immediate action on the fire if you believe you can control it yourself. Notify the supervisor and forest service as soon as you feel that the fire can be left alone without spreading out of control.

26.3 Wildfire Act

It is every person's legal obligation, under the BC Wildfire Act, to immediately report an open fire that is burning on or within 1 km of forest land or grass land and appears to be burning unattended or uncontrolled. If you see or suspect a forest fire while you're in the field, call BC MoF fire hotline at 1-800-663-5555.

Certain types of field activities (use of saws and ATVs) are restricted when fire hazard ratings are high. Be sure to monitor provincial government issued ratings at:

http://bcwildfire.ca/Weather/Maps/danger_rating.htm

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Provincial forest fire risk categories are as follows:

Low	Low fire danger.
Moderate	Carry out any forest activities with caution.
High	Fire hazard is serious. Extreme caution must be used in any forest activities. Burning permits and industrial activities may be restricted.
Extreme	Extremely high fire hazard. General forest activities may be restricted, including burning permits, industrial activities and campfires.

For information on fire conditions and burning restrictions: 1-888-336-7378,

<http://bcwildfire.ca>

26.4 Communicate

When reporting a fire, communicate the following information:

- Exact location and size of the fire;
- Colour, density and volume of smoke;
- Wind speed and direction;
- Type of trees and ground vegetation and how they are spaced;
- The terrain in the area (is the fire on a slope or an open area);
- Values at risk (communities, buildings, powerlines);
- Access to the area (road, boat, helicopter);
- Fire fighting resources currently in use suppressing the fire;

You must fill out ***Incident Report Form***.



26.5 Venting Index

The Ministry of Environment has set up a central, toll-free number for all parts of the province: 1-888-281-2992. It provides the Venting Index forecast and an air quality report for each region. It also explains whether or not it is safe to burn, and where you need to go for burning approvals.

The Ventilation Index is a term used in air pollution meteorology. (It is also known as the Venting Index.) The index is a numerical value related to the potential of the atmosphere to disperse airborne pollutants, such as smoke from a prescribed fire. It is based on both the current wind speed in the mixed layer and the mixing height. The mixed layer is the surface layer of air that is turbulent and well mixed. The mixing height is the thickness (sometimes zero) of this mixed layer.

Forecast venting indices (usually from a computer model) are available for 26 different areas of the province. Stronger wind speeds and thicker mixed layers will produce higher venting indices. For convenience, the Ventilation Index is converted to a scale of 0 to 100. On this scale, the capacity of the atmosphere to disperse pollutants is related to the following Ventilation Index values:

Ventilation Category

0 – 33	POOR ventilation
34 – 54	FAIR ventilation
55 – 100	GOOD ventilation

Floods/ Erosion Landslide/Severe Weather Conditions

27 NATURAL DISASTERS

27.1 Policy

Unfortunately some things are out of our control like natural disasters. They can occur without warning so pre planning is necessary to prevent people from getting injured.

An urgent need for rapid decisions, shortage of time, lack of resources and trained personnel can lead to chaos during an emergency. The stress of the emergency can lead to poor judgment resulting in severe losses. Kalum Quarry's objective is to reduce the possible consequences of the emergency by implementing natural disaster procedures.

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27.2 Procedures

Steps to deal with floods on roads or work sites:

- Assess the area/location see if there is anyone needing assistance.
- Move all equipment or vehicles out of the area if safe to do so.
- Put up triangles or block site with logs so other people do not enter.
- Communicate to others in the area via radio and explain the circumstances.
- Phone Pit manager and safety manager to explain the situation.
- Call the Provincial Emergency Program if needed at 1-800-663-3456

In the event of a significant landslide or similar event

- Assess the area/location at a safe distance.
- If on the highway call Skeena (Terrace) Nechako Northcoast construction 250 638-1881 (ext. 0) or 1 800 665-5051
- Ministry contact: Skeena District Office - 250 615-3970

If you have reason to believe that someone has been swept into an avalanche/landslide phone the Provincial Emergency Program (PEP) 1-800-665-5051 or Terrace Fire Department for highway rescue at 250-638-8121

When requesting assistance provide the following:

- Name, exact location & how to contact you;
- Nature of the Incident and numbers involved; and
- Level of response required.

Do not approach the avalanche/landslide for any reason.

Steps to deal with severe weather conditions:

1. According to the season climate all workers shall prepare themselves for severe weather conditions ex: rain gear, winter boots, a second set of clothing, blankets, food, water, batteries and candles.
2. If you are stuck on the work site then radio for help.
3. Phone the Pit Manager and the Safety Manager



28 SAFE WORKING PROCEDURES

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:

SAFE WORK PROCEDURES

1. The original date it was produced and latest revision date to be identified
2. Identify the specific hazards that may be encountered while performing the task/job
3. Identify PPE or other safety devices required to perform the task/job
4. Identify any special equipment or controls that are required (ie. Emergency stops, lock out procedures)
5. Describe the step by step procedures to perform the task/job safely
6. Describe or refer to the steps to follow in an emergency or during an equipment malfunction
7. Refer to guidance documents, standards or legislation that applies to the specific task.

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure
REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Health, Safety and Reclamation Code for Mines in British Columbia Worksafe BC/Occupational Health & Safety	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
	Reviewed By Worker Rep/Safety Manager: Date:



SAFE WORK PROCEDURE

28.1 Cold Start Equipment

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Equipment Failure	Steel toed Boots	Fire Extinguisher Training

SAFE WORK PROCEDURES

1. Check all appropriate fluid levels and record in pre-trip log book
2. Visually inspect for leaks and worn belts
3. Do a walk around to ensure it is safe to start machine
4. Proceed to start engine using the three point contact to enter machine
5. Let machine idle and do another overall check for leaks
6. Once machine is warm, proceed to task

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Worksafe BC/Occupational Health & Safety General Work Place Requirements	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
	Reviewed By Worker Rep/Safety Manager:
	Date:



Safe Work Procedure

28.2 Equipment Daily Maintenance

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Equipment Failure Collision Pinch Points	Steel toed Boots Hand hat Eye Protection	

SAFE WORK PROCEDURES

1. Walk around machine to check for tire damage, vandalism, any loose parts, or any other damage
2. Check engine for:
 - A. Any frayed or damaged belts
 - B. Any damaged or leaking hoses
 - C. Engine mounting bolts are in place, tight and not damaged
3. Check all fluid levels (some fluids may require engine to be on, check manufacturer recommendations)
4. Get into vehicle using 3 point contact method. Check for fire extinguisher and turn on engine
5. Check all gauges. Ensure that:
 - A. Oil pressure is normal
 - B. Temperature is normal
 - C. Hydraulic pressure is normal (if gauge is applicable)
6. Put machine in reverse to ensure back up alarm is working
7. Do another walk around to check all lights
8. Check brakes are working when pulling away to drive
9. Proceed to job

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Worksafe BC/Occupational Health & Safety Health, Safety and Reclamation Code for Mines in British Columbia Personal Protective Equipment Mobile Equipment	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
	Reviewed By Worker Rep/Safety Manager: Date:



Safe Work Procedure

28.3 Equipment Lockout

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Electrocution Fall Injury Pinch Points	Steel toed Eye protection Hand protection	

SAFE WORK PROCEDURES

Before any maintenance is performed on your equipment ensure proper lockout

1. Inspect the piece of mobile equipment needing repair to determine what repair is needed
2. Turn the machine ignition off and remove key, or if machine has push start button remove the battery ground cable
3. Close and lock console if it has a cover and place the key in your pocket
4. Place a lock out tag on the door handle or ignition
5. If more than one person is working on the equipment, both people must place a lock out on the machine
6. If it a mobile piece of equipment, use the chocks to ensure non movement by others
7. Repair the machine
8. After repair unlock the cover and replace the key
9. If you require the machine running to test the repair, stand clear of any hazard locations. Do not approach any moving part while machine is running
10. **Always review manufacture's lockout procedures**

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure
REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Health, Safety and Reclamation Code for Mines in British Columbia Worksafe BC / Occupational Health & Safety Personal Protective Equipment Fall Protection	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
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SAFE WORK PROCEDURE

28.4 Emergency Response

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Serious Injury Potential Fatality Fire/Explosion Burns Rock slide Slumping	Steel toed Boots Hard hat Reflective vest Hard hat Eye Protection	Fire Extinguisher Training

SAFE WORK PROCEDURES

1. Notify supervisor/office
2. Supervisor will:
 - A. Coordinate control
 - B. Shut down operations if necessary
 - C. Alert all workers
 - D. Contact emergency workers or designate someone to do so
3. Perform First Aid on persons who may require it
4. Follow evacuation procedure if necessary
5. Stay calm and follow supervisor direction
6. Following emergency, cooperate with any investigation questions and fill out a report

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Health, Safety and Reclamation Code for mines in British Columbia Worksafe BC/Occupational Health & Safety General Workplace Requirements First Aid Reviewed Personal Protective Equipment Fire and Explosive Hazards Workplace Hazardous Materials Information Chemical and Biological Substances	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
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SAFE WORK PROCEDURE

28.5 Evacuation

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Inhalation of smoke First Aid Inhalation of chemicals / toxins Potential death	Steel toed Boots	First Aid

SAFE WORK PROCEDURES

1. Sound alarm and notify all persons in the area of the emergency
2. Appoint someone to call 911 and/or appropriate responders
3. Evacuate by the nearest safe exit
4. Ensure any and all injured persons and visitors are escorted to the muster area or off site
5. Check wind direction and proceed to the evacuation station upwind of the hazard.
6. A head count and roll call will be conducted by designated person
7. Stay at the evacuation muster area until all clear has been given

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Health, Safety and Reclamation Code for mines in BC Worksafe BC/Occupational Health & Safety	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
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Safe Work Procedure

28.6 Excavator

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Other workers and equipment Pinch points Slip/Trip Operator Vehicle damage/malfunction	Steel toed Eye protection Hand protection Hard hat	Operator Trainer

SAFE WORK PROCEDURES

1. Inspect work area for sufficient swing room and any hazards that may be present
2. Do pre-trip inspection an machine and start using Cold Start Procedure
3. Ensure bucket and boom are working properly
4. Follow through with task carefully. Always be aware of surroundings
5. Park on level ground with bucket to the ground
6. Allow for enough cool down time before shutting off machine
7. Close and lock doors and install window guards
8. Dismount machine using 3 point contact method

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Worksafe BC/Occupational Health & Safety Health, Safety and Reclamation Code for Mines in British Columbia Personal Protective Equipment Pedestrian and Equipment Traffic Mobile equipment Tools Machine & Equipment Fire Extinguisher	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
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SAFE WORK PROCEDURE

28.7 Fire Extinguisher

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Inhalation of smoke Inhalation of chemicals / toxins Inhalation of carbon monoxide Burns	Steel toed Boots Eye protection Hand protection Hard hat Respiratory protection	Fire Extinguisher Training

SAFE WORK PROCEDURES

1. Remove applicable extinguisher from hanger
2. Carry extinguisher in upright position to fire
3. Pull pin of extinguisher, hold hose or horn in one hand
4. Pull the trigger, aiming at base of fire, squeeze the handle and sweeping motion
5. Report use of extinguisher
6. Take extinguisher out of service and have it re-charged

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Health, Safety and Reclamation Code for Mines in British Columbia Worksafe BC/Occupational Health & Safety Personal Protective Equipment Fire and Explosive Hazards	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
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SAFE WORK PROCEDURE

28.8 Fire Fighting

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Inhalation of smoke Inhalation of chemicals / toxins Inhalation of carbon monoxide Burns	Steel toed Boots Eye protection Hand protection Hard hat Respiratory protection	Fire Extinguisher Training

SAFE WORK PROCEDURES

1. Follow the Emergency Procedures practiced during fire drills
2. Approach the fire upwind if hazardous goods could be burning
3. If required use Self Contained Breathing Apparatus
4. Fire Fighting Equipment:

Shovels

- A. Smother fire flame at source
- B. Use earthen material void of flammable matter
- C. Dampen area with water or neutralizing agent

Fire Extinguishers

- A. Ensure previously that the extinguisher is rated to extinguish all manner of fires
- B. Hold extinguisher upright
- C. Pull security pin handle
- D. Aim nozzle at base of fire
- E. Squeeze or press the handle
- F. Sweep the nozzle from side to side until the fire goes out
- G. Ensure chemical does not blow into anyone's face

Water Tanks

- A. Hand pump tanks; apply water at source of flame
- B. Large Tanks: Ensure motor ignition will not ignite fugitive emissions
- C. Position tank to enable easy access and removal from fire site
- D. When fire is under control, dampen immediate area to suppress the potential of flare up

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Worksafe BC/Occupational Health & Safety Personal Protective Equipment	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
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SAFE WORK PROCEDURE

28.9 Fire on the Work Site

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Inhalation of smoke Inhalation of chemicals / toxins Inhalation of carbon monoxide Burns	Steel toed Boots Eye protection Hand protection Hard hat Respiratory protection	Fire Extinguisher Training

SAFE WORK PROCEDURES

1. Clear the area of unauthorized personnel
2. Determine size of fire
 - A. **SMALL:** Attempt to extinguish small fire only if no back up support and you are knowledgeable in fire fighting
 - B. **LARGE:** Company teams should not attempt to put out large fire
3. Notify supervisor, who will notify the head of fire response team to attempt to put out fire
4. Remove one or more of the four elements of fire (oxygen, fuel, heat and chemical chain reaction) to extinguish
5. Determine class of fire so that proper extinguisher is selected
 - Class A: occur in combustible materials (paper, wood, straw, cloth)
 - Class B: Occur over the surface of flammable liquids (gasoline, oil, grease)
 - Class C: occur in electrical equipment
6. Use short bursts on fire
7. If attempt is successful, all procedures may be ended. If unsuccessful, provide the following information:
 - A. Exact location of fire
 - B. Type of fire
 - C. Whether medical assistance is needed

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Worksafe BC/Occupational Health & Safety Personal Protective Equipment Health, Safety and Reclamation Code for Mines in British Columbia	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
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SAFE WORK PROCEDURE

28.10 First Aid Injuries

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Infection Soreness	Steel toed Boots Eye protection Gloves	First Aid Eye Wash Station

SAFE WORK PROCEDURES

1. In the event of a minor injury, report the accident to your supervisor and obtain First Aid from qualified personnel
2. Record injury in the First Air Record book
3. Fill out WCB forms
4. Report any further discomfort following the injury

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Worksafe BC/Occupational Health & Safety Personal Protective Equipment Health, Safety and Reclamation Code for Mines in British Columbia	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
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SAFE WORK PROCEDURE

28.11 Flag Person

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Slip/Trip Vehicle Traffic Airborne Particle Muscle Strain	Steel toe Boots Eye protection Gloves Reflective Clothing Communication Device	Flag Person Training Traffic Control Procedures

SAFE WORK PROCEDURES

1. Stand at a location approximately 20m from where construction begins on the shoulder or passenger side of vehicle
2. Hold the sign with the arm closest to the lane of oncoming traffic
3. Plan your escape route, do not stand between vehicles or other obstructions which may block you if you need to get out of the path of danger
4. Pay attention to all oncoming traffic, as well as what is going on behind
5. Be assertive and ensure that you are visible at all times
6. If an incident does arise, make sure that ALL workers are warned

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Worksafe BC/Occupational Health & Safety Personal Protective Equipment Traffic Control	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
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SAFE WORK PROCEDURE

28.12 Fueling Vehicle

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Eye injury Fire/Explosion Burns	Steel toed boot Eye protections Hand protection	Certification

SAFE WORK PROCEDURES

1. Bring vehicle to pump
2. Shut off ignition, extinguish any smoking material, leave cell phone in vehicle
3. Remove fill cap
4. Insert nozzle in to tank and flip lever to on position
5. Fill until click is heard or to desired amount then turn lever to off position
6. Place nozzle back on holder and replace the fill cap

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Worksafe BC/Occupational Health & Safety Personal Protective Equipment Fire and Explosive Hazards Workplace Hazardous Materials Information	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
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SAFE WORK PROCEDURE

28.13 Function of Management

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
	Steel toe Boots Eye protection Hard Hat Reflective Clothing Any other safety equipment as per job site / task performed	

SAFE WORK PROCEDURES

1. Use all required PPE
2. Employee orientations every year
3. Train all workers through offered programs
4. Provide all safety devices
5. Encourage and participate in safety inspections
6. Support company safety committee
7. Provide safety education through weekly toolbox meetings and documentation of these
8. Investigate accidents, near misses and incidents and implement corrective measures
9. Provide a safe work environment for all
10. Do not allow employees to work unsafely to save time or money
11. Do not allow employees to opt out of toolbox meetings
12. Not to ignore any employee concerns regarding safety

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Health, Safety and Reclamation /code for Mines in British Columbia Worksafe BC/Occupational Health & Safety Duties of Employers Duties of Owners	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
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SAFE WORK PROCEDURE

28.14 Handling Diesel Fuel

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Toxic Vapours Flammable	Steel toed boot Hand protection	

SAFE WORK PROCEDURES

1. Fill tanks in well vented area outside
2. Store all decanted diesel outdoors
3. Label all decanted containers as per WHMIS
4. Extinguish all flames, sparks and cigarettes while using it
5. Turn off engine before filling equipment or slip tanks
6. Use genuine spill proof gas containers if necessary to transport fuel to a site
7. Wash hands thoroughly after handling
8. Avoid inhaling fumes
9. Clean up spills immediately using spill kit
10. Berm around bulk storage facilities

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Worksafe BC/Occupational Health & Safety General Workplace Requirements First Aid Reviewed Personal Protective Equipment W.H.M.I.S - Requirement, Labelling, MSDS Chemical & Biological Substances	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
	Reviewed By Worker Rep/Safety Manager: Date:



SAFE WORK PROCEDURE

28.15 Handling Gasoline

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Toxic Vapours Flammable	Steel toe boot Hand protection	Fire Extinguisher Training WHMIS First Aid

SAFE WORK PROCEDURES

1. Fill tanks in well vented area or outside
2. Store all decanted gasoline outdoors
3. Label all decanted containers as per WHMIS
4. Extinguish all flames, sparks and cigarettes while using it
5. Turn off engine before filling equipment or slip tanks
6. Use genuine spill proof gas containers if necessary to transport fuel to a site
7. Wash hands thoroughly after handling
8. Avoid inhaling fumes
9. Clean up spills immediately using spill kit
10. Berm around bulk storage facilities

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Worksafe BC/Occupational Health & Safety General Workplace Requirements First Aid Reviewed Personal Protective Equipment W.H.M.I.S - Requirement, Labelling, MSDS Chemical & Biological Substances	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
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SAFE WORK PROCEDURE

28.16 Hauling Gravel

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Vehicle Damage Vehicle Malfunction Other workers and Equipment Airborne Particles	Steel Toe Boots Eye Protection Hand Protection	

SAFE WORK PROCEDURES

1. Pull up to loading location. Avoid backing in if possible
2. Put truck in park
3. Stay in truck while loader is loading, keep an eye on load in rearview
4. Wait for signal from loader before moving from loading area
5. Ensure truck is not overloaded
6. Drive carefully with load to dump site

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Health, Safety and Reclamation Code for Mines in British Columbia Worksafe BC/Occupational Health & Safety Personal Protective Equipment Mobile Equipment	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
	Reviewed By Worker Rep/Safety Manager: Date:



SAFE WORK PROCEDURE

28.17 Heavy Equipment Operators

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Vehicle Damage Other workers and Equipment Slip/Trip Pinch points	Steel Toe Boots Eye Protection Hand Protection Hard hat	Operator training

SAFE WORK PROCEDURES

7. Do pre-trip inspection on machine and start using Cold Start Procedure
8. Check all gauges and ensure back up alarm are working properly
9. When proceeding to the work location, check the brakes
10. Turn on beacon light
11. While traveling, allow faster traffic to pass if safe to do so
12. At job site, inspect area for any hazards
13. Always be aware of other workers and equipment in work area
14. When parking, park out of way and rest buckets/blades on ground where applicable

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Worksafe BC/Occupational Health & Safety Personal Protective Equipment Mobile Equipment	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
	Reviewed By Worker Rep/Safety Manager:
	Date:



SAFE WORK PROCEDURE

28.18 Hot Engine Stopping

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Engine Failure Vehicle or Property damage Serious Injury	Steel toe boots Eye protection	

SAFE WORK PROCEDURES

1. Park the machine on stable level ground
2. Place machine in neutral or park and set parking brake
3. Slow motor to idle
4. Dismount machine using three point contact method
5. Do walk around inspection to check for leaks and repairs
6. Do not idle for longer than 15 minutes
7. Mount machine using 3 point contact and turn engine off
8. Dismount using point contact and perform post trip inspection and record in daily log

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Health, Safety and Reclamation Code for Mines in British Columbia Worksafe BC / Occupational Health & Safety Personal Protective Equipment Mobile equipment	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
	Reviewed By Worker Rep/Safety Manager: Date:



SAFE WORK PROCEDURE

28.19 House Keeping

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Slip/Trip Chemical exposure Muscle strain	Steel toed boot Hand protection Eye Protection	

SAFE WORK PROCEDURES

1. Work areas should be cleaned before, after, and during a task
2. Make sure all cords and hoses are properly wound and out of walking path
3. Pick up all hand tools when finished using them
4. Clean any spills immediately
5. Dispose of any unused oil, cleaning supply, or any other chemical properly
6. Ask for help for lifting any object that is too heavy for one person

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Worksafe BC/Occupational Health & Safety General Workplace Requirements Personal Protective Equipment Musculoskeletal Injuries Workplace Hazardous Materials Information	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
	Reviewed By Worker Rep/Safety Manager: Date:



SAFE WORK PROCEDURE

28.20 Incident / Accident Response

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Potential Death Potential Injury	Steel toed boot Hand protection Eye Protection Reflective Vest Hard Hat	First Aid

SAFE WORK PROCEDURES

1. Stop everything.
2. Call safety rep/supervisor or foreman
3. Safety rep, supervisor or foreman to initiate response procedure and call 911
4. Ensure that equipment involved is not moved and incident/accident scene is not disturbed
5. In case of an injury, allow personnel trained in First Aid to take care of casualty victim as soon as possible
6. Ensure the casualty is not moved unless a greater and imminent danger will arise by leaving them in original position and location
7. If the site is remote or hard to locate, have someone go out to the street or roadway to flag in the ambulance
8. Upon ambulance arrival, inform and assist medical personnel as required Upon ambulance arrival, inform and assist medical personnel as required
9. After assessment and statements have been taken, follow instructions from your supervisor
10. All dangerous occurrences, even those that do not involve injury or property damage must be reported to the Workplace Safety and Health

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Health, Safety and Reclamation code for Mines in British Columbia Worksafe BC/Occupational Health & Safety Personal Protective Equipment First Aid	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
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SAFE WORK PROCEDURE

28.21 Investigating on the Job Accident

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
	Steel toed boot	

Safe Work Procedure

1. Take control of the scene
2. Ensure that injured persons are cared for and that no further injury or damage occur
3. Report all injuries or damages immediately
4. Examine equipment or materials involved, and collect and safeguard any physical evidence
5. Take pictures of the scene
6. Interview people involved and obtain written statements
7. Analyze all available information to determine causes
8. Look for causes where the system failed the worker and not where the worker failed the system
9. Determine what corrective action will prevent recurrence
10. Complete an incident report

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Health, Safety and Reclamation Code for Mines in British Columbia Worksafe BC/Occupational Health & Safety Personal Protective Equipment First Aid	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
	Reviewed By Worker Rep/Safety Manager: Date:



SAFE WORK PROCEDURE

28.22 Labours

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Slip/trip Muscle strain Heavy machinery Pinch points Working alone	Steel toed boots Safety glasses Safety gloves Hard hat Reflective vest Ear protection	

SAFE WORK PROCEDURES

1. Do an inspection of work area before starting any task
2. Make eye contact with all equipment operators to ensure they see you
3. Stay alert and periodically look at surroundings to ensure safety
4. Request assistance to move all heavy or awkward objects
5. Practice good housekeeping

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure
REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Worksafe BC / Occupational Health & Safety General Workplace Requirements Personal Protective Equipment Musculoskeletal Injuries Hearing Conservation and Noise Control	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
	Reviewed By Worker Rep/Safety Manager: Date:



SAFE WORK PROCEDURE

28.23 Loader Operator

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Other workers and equipment Vehicle Damage Slip/trip Pinch Point	Steel toed boots Safety glasses Safety gloves Hard hat Reflective vest ROPS	Operator Training

1. Ensure operator has received company orientation and trained in the safe operation of the equipment
2. Do pre-trip inspection and record in pre-trip book on machine
3. Enter and exit the cab by grasping the handhold or handrail and step or stairs provided. Maintain 3 point contact
4. Use extra caution whenever entering or exiting the cab on sloped ground or in windy conditions. The door is heavy. Serious injury may result if gravity or wind causes door to slam shut and pinch hand or arm
5. Prior to starting the engine, adjust seat and fasten seatbelt, adjust mirrors and ensure good visibility for operation
6. Start using cold start procedure, observe all gauges and warning lights for normal operation
7. Conduct operational checks, testing the functions associated with pedals, levers and switches
8. Secure the door in either the open or closed position, ensuring the latch is fastened
9. Move to work area ensuring to carry the bucket low and tilted slightly back
10. While traveling, allow faster traffic to pass if safe to do so
11. Operation on sloped or inclined surfaces increase tipping and rollover hazard.
12. Never allow anyone to remain downhill of the loader on a sloped surface
13. Park on level ground with the bucket resting on the ground and apply the brake

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Health, Safety and Reclamation Code for Mines in British Columbia Worksafe BC / Occupational Health & Safety Mobile Equipment Personal Protective Equipment	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
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SAFE WORK PROCEDURE

28.24 Loading Excavator

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Pinch points Slip/Trip Fall Injury Vehicle damage	Steel toe boots Eye protection Hand protection Hard Hat	Operator Trainer

SAFE WORK PROCEDURES

1. Enter excavator using the 3 point contact method
2. Drive up to back of trailer, making sure you are straight and properly aligned.
3. Set bucket on trailer to lift front of tracks. Creep the excavator up the beaver tail.
4. Before the excavator counter balances, turn it around and use the boom to raise the back end on to the trailer
5. Crawl to front of trailer and fold up excavator to its lowest position
6. Make sure safety switch is engaged and exit machine using 3 point contact method
7. Secure excavator with two chains using 4 point contact
8. Ensure all buckets etc. are securely fastened to deck
9. Proceed to job

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Health, Safety and Reclamation Code for Mines in British Columbia Worksafe BC / Occupational Health & Safety Personal Protective Equipment Pedestrian and Equipment Traffic Mobile equipment	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
	Reviewed By Worker Rep/Safety Manager: Date:



SAFE WORK PROCEDURE

28.25 Loading Loader

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Pinch points Slip/Trip Fall Injury Vehicle damage	Steel toe boots Eye protection Hand protection Hard Hat	Operator Trainer

SAFE WORK PROCEDURES

1. Enter loader using 3 point contact method
2. Drive up to back of trailer, making sure you are straight and properly aligned.
3. Using the bucket, gently push down on back of trailer until it is low enough to drive the front wheels on
4. Proceed to drive on to trailer until bucket is at front of trailer. Keep bucket no more than 6" from deck
5. Lower bucket and set parking brake
6. Exit loader using 3 point contact method
7. Dismount trailer by sitting on deck and pushing off. Jumping off trailer is prohibited
8. Secure loader with two chains using 4 point contact
9. Inspect load and proceed to job

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Health, Safety and Reclamation Code for Mines in British Columbia Worksafe BC / Occupational Health & Safety Personal Protective Equipment Pedestrian and Equipment Traffic Mobile equipment	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
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SAFE WORK PROCEDURE

28.26 Manual Lifting

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Muscle strain Pinch points Slip / Trip	Hand protection Steel toe boots	

SAFE WORK PROCEDURES

1. Check to see if object is too heavy by tipping it slightly. Never attempt to lift alone if it is too heavy or awkward
2. Take a good stance with feet planted firmly, legs shoulder width apart. Ensure you are on level ground
3. Get a firm grip with your hands rather than just fingers
4. Keep back straight, almost vertical. Bend at the hips
5. Hold load close to your body, keeping weight of your body over your feet for good balance
6. Use large leg muscles to lift. Push up with the foot positioned in the rear as you start to lift
7. Lift steadily and smoothly, avoid quick, jerky movements
8. Avoid twisting motions, turn the forward foot and point it in the direction of the eventual movement
9. Never try to lift more than you are accustomed to
10. Always get help when lifting bulky loads

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure
REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: WorkSafe BC/Occupational Health & Safety	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
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SAFE WORK PROCEDURE

28.27 Mount - Dismount Heavy Equipment

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Pinch points Slip/Trip Operator	Gloves Hearing Protection Hard Hat Safety Glasses CSA Approved Steel toe boots High Visibility Apparel	Certification

SAFE WORK PROCEDURES

1. Ensure that the machine is equipped with side grab rails and steps.
2. Clean mud off boots before climbing onto the machine.
3. Face the machine and step onto the first step.
4. Maintain 3-point contact at all times. (2 hands and 1 foot or 2 feet and 1 hand.)
5. Climb into cab or other areas provided with non-slip surfaces.
6. To get off the machine, make sure the machine is parked and further movement prevented. Shut off the machine if necessary.
7. Step out of the cab onto the ladder and while facing the machine descend using 3-point-method.

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure
REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Worksafe BC/Occupational Health & Safety	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
	Reviewed By Worker Rep/Safety Manager:
	Date:



SAFE WORK PROCEDURE

28.28 PPE - Eye Protection

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
	Safety Glasses	Care of Use of

SAFE WORK PROCEDURES

1. Management will supply a clean, up to date, proper fitting and effective eye protection
2. Management will ensure adequate training for the maintenance, use and care
3. All employees are required to wear the approved eye protection when working or walking through any worksite. The only exception is operators while seated in the cab of the equipment & office staff
4. All employees are responsible for ensuring that it is appropriate for the hazards, worn properly and in good condition and not to be altered in any way
5. All workers are responsible for ensuring that the safety glasses are with them all day each day.
6. It is the responsibility of the worker to turn in old and worn out glasses for new ones as needed
7. Full face shields or goggles will be used when the work at hand requires maximum eye protection
8. Workers engaged in welding are required to use a full welder's face shield
9. Workers who are cutting or burning metals are required to wear goggles with the appropriate darkened lens

***If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure
REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR***

Guidance Documents/Standards: Health, Safety and Reclamation Code for Mines in British Columbia WorkSafe BC/Occupational Health & Safety	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
	Reviewed By Worker Rep/Safety Manager:
	Date:



SAFE WORK PROCEDURE

28.29 PPE - Foot Protection

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Foot injury Ankle injury Corrosive chemicals	Steel toed work boots	Care of Use of

SAFE WORK PROCEDURES

1. It is the responsibility of the employee to supply steel toed work boots that cover the ankle bone and gives support to the ankle as per CSA Standards
2. It is the responsibility of the employee to wear these steel toed boots each and every day
3. All footwear is to be kept tied as to not pose a tripping hazard
4. A requirement for specialized footwear as dictated by the hazards will be supplied by the employer

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure
REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Health, Safety and Reclamation Code for Mines in British Columbia WorkSafe BC/Occupational Health & Safety	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
	Reviewed By Worker Rep/Safety Manager: Date:



SAFE WORK PROCEDURE

28.30 PPE - Head Protection

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
	Hard Hat	Care of Use of

SAFE WORK PROCEDURES

1. Management will supply a clean, up to date, proper fitting and effective hard hat
2. Management will ensure adequate training for the maintenance, use and care
3. All employees are required to wear the approved head protection when working or walking through any work site. The only exception is operators while seated in the cab of the equipment & office staff
4. All employees are responsible for ensuring that it is appropriate for the hazards, worn properly and in good condition and not to be altered in any way
5. All workers are responsible for ensuring that the hard hat is with them all day each day.
6. It is the responsibility of the worker to return the hard hat at the end of their employment with this company so as not to be charged the cost of a replacement hard hat

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure
REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: WorkSafe BC/Occupational Health & Safety	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
	Reviewed By Worker Rep/Safety Manager: Date:



SAFE WORK PROCEDURE

28.31 PPE – Hearing Protection

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Risk of Hearing Loss	Ear Plugs Ear Muffs	Care of Use of

SAFE WORK PROCEDURES

1. Management will supply a clean, up to date, proper fitting and effective hearing protection
2. Management will ensure adequate training for the maintenance, use and care
3. All employees are required to wear the approved hearing protection when working or walking through any work site. The only exception is the office staff
4. All employees are responsible for ensuring that it is appropriate for the hazards, worn properly and in good condition and not to be altered in any way
5. All workers are responsible for ensuring that the hearing protection are with them all day each day.
6. It is the responsibility of the worker to ensure that they have daily supply of ear plugs with them
7. Ear muffs will be used when the work at hand requires maximum hearing protection
8. All workers are required to use approved hearing protection when working in or traveling through any work site that is designated as a "High Noise Area" or has a noise level above 85 dBA

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure
REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Health, Safety and Reclamation Code for Mines in British Columbia WorkSafe BC/Occupational Health & Safety	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
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28.32 PPE - High Visibility Vest

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Low visibility Traffic hazards Lighting conditions	Visibility Vest Steel Toe Boots	Care of Use of

SAFE WORK PROCEDURES

1. Supervisor/Management will supply a clean, up to date, proper fitting and effective high visibility vest
2. Supervisor/ Management will ensure adequate training for the maintenance, use and care
3. All employees are required to wear the safety vest when working or walking through any work site.
4. All employees are responsible for ensuring that it is appropriate for the hazards, worn properly and in good condition and not to be altered in any way
5. All workers are responsible for ensuring that the high visibility vest is with them all day every day.

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure
REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Health, Safety and Reclamation Code for Mines in British Columbia WorkSafe BC/Occupational Health & Safety	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
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SAFE WORK PROCEDURE

28.33 PPE – Protective Clothing

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Radiant heat sharp objects jagged objects punctures graze the skin	Steel toed boots Protective clothing	Care of Use of

SAFE WORK PROCEDURES

1. Supervisor will supply personal protective equipment that is appropriate for the risk of injury to a worker skin
2. Management /Supervisor will ensure adequate training for the maintenance, use and care
3. If a process creates a risk to the safety or health of a worker the employer will provide the worker with:
 - ❖ clothing that is appropriate for the risk
 - ❖ as needed launder or dispose of the protective clothing

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure
REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Health, Safety and Reclamation Code for Mines in British Columbia WorkSafe BC/Occupational Health & Safety	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
	Reviewed By Worker Rep/Safety Manager: Date:



SAFE WORK PROCEDURE

28.34 PPE – Respiratory Protection

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Poisonous gases/ Chemicals Lack of Oxygen Dust	Respirators	Care of Use of Selection of

SAFE WORK PROCEDURES

1. All employees are required to use approved respirators when working in or traveling through a work site that contains airborne contaminants or when handling products that may become airborne contaminants
2. Ensure that respiratory equipment is provided to a worker is
 - ❖ Is appropriate for the risk to which the worker is or may be exposed
 - ❖ Is selected, used and maintained in accordance with CSA standards
 - ❖ Proper size and makes an effective seal to the facial skin of the worker where a tight fit is essential to proper functioning
 - ❖ Kept in a convenient and sanitary location when not in use
 - ❖ Not shared by workers unless it is cleaned before different workers use it
3. Ensure that a worker using the respiratory equipment is adequately trained by a competent person in the proper fit, testing, maintaining, use and cleaning of the equipment

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Health Safety and Reclamation Code for Mines in British Columbia WorkSafe BC/Occupational Health & Safety	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
	Reviewed By Worker Rep/Safety Manager: Date:



SAFE WORK PROCEDURE

28.35 Rock Truck Operator

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Pinch points Slip/Trip Operator Vehicle damage/malfunction	Steel toed Eye protection Hand protection Hard hat	Certification

SAFE WORK PROCEDURES

1. Perform pre trip inspection on rock truck
2. Inspect work area for any potential hazards
3. Pull up as close as possible to loading area, if backing up use a spotter
4. Wait for signal that truck is full then proceed to dump area
5. Dump slowly and cautiously

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure
REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Worksafe BC/Occupational Health & Safety	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
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SAFE WORK PROCEDURE

28.36 Safeguards

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Lacerations Amputation Pinching	Eye Protection Hand Protection Hard Hat	Manufacturer's specifications

SAFE WORK PROCEDURES

1. They should prevent contact: the safeguard must prevent hands, arms or any other part of a worker's body from making contact with dangerous moving parts.
2. A guard should not only prevent accidental contact but should prevent workers from intentionally going around or bypassing the guard
3. They should be secure: If the guard is easily removable, this means it will be ineffective. The guard should be of durable material and should be bolted or screwed on so that they require tools for removal
4. They should create no new hazard: the guard itself should not create a new hazard. The guards should be affixed in manner that eliminates sharp edges
5. They should create no interference: A good guard should allow the employee to work comfortably and effectively -- since otherwise it may be removed
6. They should allow safe maintenance: If possible, guards should be designed so as to allow minor maintenance on the machines without either removing the safeguards or being exposed to the hazard. If the guard must be removed or deactivated, then lock out procedures should be followed before any maintenance is performed

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Health, Safety and Reclamation Code for Mines in British Columbia Worksafe BC/Occupational Health & Safety	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
	Reviewed By Worker Rep/Safety Manager: Date:



SAFE WORK PROCEDURE

28.37 Securing Equipment on Trailer for Transportation

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Slip/Trip Pinch points Vehicle damage	Eye Protection Steel Toe Boots Hand Protection	

SAFE WORK PROCEDURES

1. Ensure that machine (load) is on trailer properly and that brake is set
2. Secure machine starting at front
3. Front chains will be pulled forward, rear will be pulled towards back
4. Use two chains and secure them at 4 separate contact points
5. Once chains are tightened, do an inspection to ensure none came undone
6. Check load over
7. When pulling load, periodically check it in rear view

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Health, Safety and Reclamation Code for Mines in British Columbia Worksafe BC/Occupational Health & Safety Personal Protective Equipment Machinery and Equipment	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
	Reviewed By Worker Rep/Safety Manager: Date:



SAFE WORK PROCEDURE

28.38 Serious Injury

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Potential death Loss of limb Infection	Eye Protection Steel Toe Boots	First Aid

SAFE WORK PROCEDURES

1. Shut down all machinery in area of injured person
2. Ensure that further hazards are controlled. This may require reference to Fire or Spill procedures by Fire or Spill teams
3. Call in the First Aid team to provide aid to the injured person. (Do not move the patient if there is suspected spinal injury unless the persons' life is in danger due to an imminent hazard)
4. Notify supervisory staff who will call for outside medical help
5. Send a member of the first aid team to hospital to determine victim's condition and/or provide information for the hospital
6. When it is possible to do so, the patient will obtain a doctor report form to be filled out by doctor and be returned to employer within 3 working days
7. Once able to, the injured person will check in with supervisor regularly by telephone in case information is needed regarding the accident

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Health, Safety and Reclamation Code for Mines in British Columbia Worksafe BC/Occupational Health & Safety Personal Protective Equipment Machinery and Equipment	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
	Reviewed By Worker Rep/Safety Manager: Date:



SAFE WORK PROCEDURE

28.39 Setting the Brake

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Vehicle/property damage Serious injury Pinch points Chocks/Blocks	Eye Protection Steel Toe Boots Hand Protection	

SAFE WORK PROCEDURES

1. Block/chock vehicle
2. Release maxi brakes
3. Grasp the end of the slack adjuster where it is attached to the pushrod and pull back
4. The pushrod will only move so far then the brake shoes will contact the drum internally
5. Allowable travel is normally 1 -1 1/2 inches
6. Place 9/16 wrench on adjusting screw and push toward slack adjuster to free locking collar
7. Adjust screw until the shoes are tight to the drum, then back off a half turn
8. Ensure the locking collar comes up when done
9. Tap the drum with the wrench, if a dull thud then the shoes are still in contact with the drum. If a ring the shoes are clear
10. When finished have co-worker apply brakes and make sure the slack adjuster is at no more than 90 degrees to the brake chamber
11. Remove chocks and blocks

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Health, Safety and Reclamation Code for Mines in British Columbia Worksafe BC/Occupational Health & Safety Personal Protective Equipment Machinery and Equipment	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
	Reviewed By Worker Rep/Safety Manager: Date:



SAFE WORK PROCEDURE

28.40 Site Inspections

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Slips/Trips/Falls Serious injury Traffic	Eye Protection Steel Toe Boots Hand Protection Hearing Protection High visibility vest	

SAFE WORK PROCEDURES

1. Wear all applicable PPE
2. Review previous inspection reports to ensure previous deficiencies have been corrected
3. To be completed at a minimum as per the Site Inspection policy states or more often as required
4. Ensure you record and date your findings in the inspection book (pictures are excellent resource)
5. Record all staff (subcontractors also) at the location
6. Check that all pertinent permits and documents are in place
7. Record and identify all deficiencies copy of the inspection report to be discussed with the staff and supervisor on site
8. Copy of inspection to be submitted to WSH Committee/Worker Representative and Management

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Health, Safety and Reclamation Code for Mines in British Columbia Worksafe BC/Occupational Health & Safety Personal Protective Equipment Machinery and Equipment	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
	Reviewed By Worker Rep/Safety Manager: Date:



SAFE WORK PROCEDURE

28.41 Spill Containment

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Chemical Inhalation Serious injury Chemical Burns	Eye Protection Steel Toe Boots Hand Protection Hearing Protection High visibility vest Respirator Chemical Resistant suit Spill Kit	Spill Containment Training WHMIS

SAFE WORK PROCEDURES

1. Stop the spill at the source if possible
2. Cover drains and other escape routes if possible
3. Using patch kit, valve plug, or whatever is needed to patch the hole(s)
4. Contain the spill using the best method
 - A. Build Dyke
 - B. Replace or repair leak proof container
 - C. Channel spill to a contained area or container
 - D. Place an empty container under the leak
 - E. Shift or rotate the leaking container to stop the leak
5. Using absorbent materials (soaker pads) to soak up the spill or solidify it
6. Push absorbent liquid mixture into approved container for proper disposal
7. Decontaminate any tools etc that came into contact with the spill (clothing, brooms, shovels)
8. Report and record the spill

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Health, Safety and Reclamation Code for Mines in British Columbia Worksafe BC/Occupational Health & Safety Personal Protective Equipment	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
	Reviewed By Worker Rep/Safety Manager: Date:



SAFE WORK PROCEDURE

28.42 Sun Protection

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Long sleeves Sun burn Skin cancer Inflammation - cornea cataracts Blindness	Eye Protection Steel Toe Boots Hand Protection Hard Hat SPF	

SAFE WORK PROCEDURES

1. Be aware of UV warnings
2. Wear long sleeved loose fitting clothing to ensure no exposed skin
3. Apply sunscreen with minimum SPF 15 liberally to all exposed skin at least 15 minutes before sun exposure
4. Wear proper sunglasses that allow less than 1% UVB radiation
5. Drink plenty of liquids (not alcohol)
6. If sun burn occurs, make sure it is covered as to not get burned further
7. Seek shelter from the sun if possible

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Health, Safety and Reclamation Code for Mines in British Columbia Worksafe BC/Occupational Health & Safety Personal Protective Equipment	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
	Reviewed By Worker Rep/Safety Manager:
	Date:



SAFE WORK PROCEDURE

28.43 Time Management

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
MSI injuries Repetitive Motions	Steel toed boots	Fire Extinguisher Training Company Safety Rules/Policies

SAFE WORK PROCEDURES

1. Hurrying to make a deadline and taking short cuts can lead to accidents.
2. Be responsible for safety. When you see a hazard stop and eliminate it on the spot.
3. Report any hazards that cannot be easily fixed to your supervisor
4. Use the right tool for the job and use whatever safeguards are available
5. Know where emergency equipment is stored and how to use it.

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Health, Safety and Reclamation Code for Mines in British Columbia Worksafe BC/Occupational Health & Safety	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
	Reviewed By Worker Rep/Safety Manager:
	Date:



SAFE WORK PROCEDURE

28.44 Unloading Excavator

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Vehicle or property damage Slip/Trip Hazards Pinch points	Steel toed boots Eye protection Hand protection Hard Hat ROPS	Equipment training/certification

SAFE WORK PROCEDURES

1. Park truck and trailer on level ground and set parking brakes.
2. Exit vehicle using three point contact
3. Set ramps
4. Remove chains/binders from machine and unplug exhaust
5. Mount trailer using caution and enter machine using 3 point contact method
6. Disengage safety switch
7. With excavator arm at rear of trailer slowly back up
8. Set arm on the ground and continue backing off the trailer until the tracks reach the ground
9. Swing the arm to the front of the machine to lower the deck and use the pressure to raise the front of the tracks and slowly creep down
10. Park on level ground.

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Health, Safety and Reclamation Code for Mines in British Columbia Worksafe BC/Occupational Health & Safety Personal Protective equipment Mobile Equipment	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
	Reviewed By Worker Rep/Safety Manager:
	Date:



SAFE WORK PROCEDURE

28.45 Unloading Granular

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Vehicle or property damage Slip/Trip Hazards Pinch points	Steel toed boots Eye protection Hand protection Hard Hat ROPS	Equipment training/certification

SAFE WORK PROCEDURES

1. Back up to the dumping location with the use of a spotter
2. Park and ensure brake is applied
3. Exit cab using three point contact and inspect the ground to ensure it is level and firm
4. Roll up tarp
5. Enter cab using three point contact
6. Engage PTO(Power take-off) and pump
7. When hoist is lifting, trip the end gate
8. Hoist box to the final stage
9. When load is dumped slowly drive ahead a few feet and lower hoist
10. Disengage pump and PTO and close end gate.

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Health, Safety and Reclamation Code for Mines in British Columbia Worksafe BC/Occupational Health & Safety Personal Protective equipment Mobile Equipment	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
	Reviewed By Worker Rep/Safety Manager: Date:



SAFE WORK PROCEDURE

28.46 Unloading Loader

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Vehicle or property damage Slip/Trip Hazards Pinch points	Steel toed boots Eye protection Hand protection Hard Hat ROPS	Equipment training/certification

SAFE WORK PROCEDURES

1. Park truck and trailer on level ground and set brake
2. Exit cab using three point contact
3. Remove chains from load
4. Set up ramps
5. Mount trailer using three point contact
6. Mount cab of loader using three point contact
7. Release brake and raise bucket or attachment 6" above the deck
8. Back up slowly and cautiously until loader is on the ground

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Health, Safety and Reclamation Code for Mines in British Columbia Worksafe BC/Occupational Health & Safety Personal Protective equipment Mobile Equipment	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
	Reviewed By Worker Rep/Safety Manager:
	Date:



Safe Work Procedure

28.47 Working Alone

Facility:	Written By:	Approved By:	Date Created	Date of Last Revision
KQLP			October 2016	

Hazards Present:	PPE or Devices Required:	Additional Training Required:
Serious Injury Slip/Trip Hazards Pinch points	Steel toed boots Eye protection Hand protection Hard Hat Communication Device	First Aid Equipment Training/Certification

SAFE WORK PROCEDURES

1. Get clear instruction of the task and the scope of work to be done
2. Ensure all required PPE and emergency contact information is available
3. Set up a check in schedule with your supervisor/management
4. Analyze the work site before starting and perform a Pre Job Hazard Assessment
5. Entering any trench or confined space is prohibited while working alone
6. Notify supervisor/management of any risks or hazards that cannot be controlled

If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure

REPORT ANY HAZARDOUS SITUATIONS TO YOUR SUPERVISOR

Guidance Documents/Standards: Health, Safety and Reclamation Code for Mines in British Columbia Worksafe BC/Occupational Health & Safety Personal Protective equipment Working Alone	This Safe Work Procedure will be reviewed any time the task, equipment or materials change and at a minimum of every three years
	Reviewed By Worker Rep/Safety Manager: Date:



29 SAFE OPERATING PROCEDURES

29.1 Personal Protective Equipment

Hardhat and high-visibility clothing to be worn when not inside the cab.

Safety boots in good condition, properly laced, must be worn at all times. Worn-out soles and heels could lead to slips and falls.

Eye protection will be worn where there is danger of falling or flying debris from equipment or loads, especially in windy conditions.

Hand protection will be worn when handling cable or any other material where there is danger of cuts or puncture injury.

Hearing protection will be worn when exposed to noise levels exceeding 85dBA.

1. **Mounting and dismounting** – three-point contact will be used to mount and dismount equipment.
2. **Inspection and repairs** – machine or equipment will be inspected prior to use to ensure good mechanical condition. Special attention will be given to implements and their components.

When working around equipment for inspections or repairs, the equipment must be locked and tagged out, and immobilized and secured against inadvertent movement.

3. **Housekeeping** – cabs, steps, windshields, windows and mirrors must be kept **clean at all times**. All debris should be removed from around the equipment.
4. **Parking** – the machine or equipment must be parked on level ground, clear of hazards, to allow ease of access.
5. **Travelling** – operators must ensure that all connections to a towing vehicle are secured and attached properly.

Place all implements in the travel position.

Select a speed appropriate to ground conditions while maintaining control of machine.

Travelling on hills should be conducted in the direction of the slope, avoiding side hill travel.

Approach landing or roadway with caution taking into consideration limited visibility and blind spots.

Equipment should be cleaned prior to traveling roadways or being floated anywhere.

Keep right while traveling on enroute to and from work site, while maintaining radio communication.

6. **Danger zone** – danger zone is defined as the area around operating machines or working personnel, in which there is potential for being struck by moving equipment or objects. The

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danger zone may vary according to the machine or work being performed. Operators must make sure that all persons, vehicles and equipment are clear of the danger zone before the vehicle or its components are moved.

7. **Lockout** – lockout procedures must be followed during mechanical service, repairs or inspection for the protection of employees and equipment.

Refer to company and manufacturer's procedures on lockout.

Communications while assisting in mechanical repairs – When operators are assisting mechanics to repair machines, clear communications must be established prior to starting the tasks. The operator and the mechanic must each know who will be responsible for:

- a) Starting or moving a machine
- b) Ensuring that anyone involved is in a clear and safe position
- c) Directing the movement of the machine
- d) Ensuring that it is safe to resume working and that all guards are in place.

The operator must have a clear understanding of what is to be done and follow the specific lockout instructions and instructions given by the mechanic responsible for performing the job.

8. **Fueling** – shut off the engine of the towing vehicle while it's being fueled. No smoking. Be aware of slip and trip hazards.

Beware of spills and splash-back. Return hose to its proper storage position when fueling completed.

9. **Hazardous materials** – read WHMIS label. If there is no label, contact the supervisor. Refer to MSDS if further information is needed.

Use protective equipment and follow safe handling instructions as outlined on WHMIS label. If an incident occurs, follow first aid instructions. Use proper storage procedures.

10. Operating equipment

Prior to starting heavy equipment, the operator shall ensure that all personnel are out of the danger zone and the transmission is in neutral.

Maintain a safe operating distance between neighbouring equipment.

Understand the load limitation of the machine according to ground conditions. Apply the manufacturer's standards for machine capacity and limitations. The operator should always know the maximum lifting capacity of the equipment before lifting a load.

Maintain communications between equipment.

Seat belts, if available, must be worn.

No unauthorized personnel will be allowed on the machine during operation.

In the event of leak of fuel or oil, switch the machine off immediately.

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If warning lights show or gauges register outside normal limits, switch off engine.

Never lift, move or swing any attachments or load over any person or other equipment/vehicles.

Be aware of overhead clearance. Watch for overhead power lines.

By signing below, both parties agree that all of the above items have been discussed and understood

Employee: _____ Supervisor: _____ Date: _____

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29.2 Walking Guidelines

PROCEDURE

- When walking always use caution. Know where you are putting your feet with each step.
- Use extreme caution and trying your footing first when negotiating rock bluffs or steep slopes.
- When walking on steep hillsides carry tools in the downhill hand, enabling you to more easily cast the tool away from yourself should you fall.
- Keep your boots tightly laced and in good, sharp condition.
- Always walk off the roadway to the high side when a loaded truck passes by you.

DRAFT



29.3 Mechanical Lifting

PROCEDURES

These procedures are intended to guide employees on lifting heavy objects with mobile equipment. To minimize the risk of injury to our crews these safe work procedures must be followed.

1. Stay in the view of the mobile equipment operator at all times.
2. Disconnect the attachment as per equipment's safe work procedures (manufacturers' procedures.)
3. Inspect all straps and cables before using ensure you are using the right type for the task.
4. Lift the object or attachment a few inches off the ground and verify that the straps will hold and it's balanced properly.
5. Stay **CLEAR** of attachment in the air, use tag lines in order to control movement of load while suspended in the air.
6. Do not at any time get between the load and any solid object.
7. Load and unload attachment in safe location with lots of room to maneuver.
8. Properly chain up attachment prior to moving or low bedding.



29.4 USING A FIRE EXTINGUISHER

- While accessing a fire extinguisher CALL for help.
- Always approach a fire from the upwind direction (with wind at your back).
- Stand 2 – 3 meters from a fire when attempting to extinguish it (3-4 meters if dealing with flammable liquids).
- Locate an escape route before attempting to extinguish fire.
- Keep your back to your escape route.
- Hold the fire extinguisher in an upright position.
- Remove pin.
- Stay as low as you can when approaching the fire.
- Squeeze lever together with carrying handle.
- Direct discharge at the base of flames.
- Sweep flames off burning surface, moving discharge nozzle from side to side and from the leading edge of the flames to the rear.
- Stop applying the extinguishing agent when the flames go out. You'll need the residual powder to extinguish the fire again if the fuel re-ignites off a hot surface. Slowly back away. Never turn your back on an extinguished fire, it may re-ignite



29.5 Manual Lifting

PROCEDURES

Many activities we perform at work can result in tired or sore muscles, which in turn may lead to serious injury. At KQLP the physical demands of some jobs include frequent lifting of heavy items and being in awkward positions. The chance of sprains and strains increases with the effort and frequency of lifts and with awkwardness of postures required to access and move these materials or handling of equipment.

These are some guidelines that can go a long way to reduce the risk of strains and/or sprains.

When pulling, pushing, lifting or carrying use these techniques:

1. Place feet apart for good balance.
2. Bend knees
3. Use smooth gradual motions.
4. Avoid reaching objects that are above shoulder height (keep objects and loads between your shoulders and mid-thigh level.)
5. Exercise regularly.
6. Warm up muscles used in work activities prior to shift.
7. Report any physical discomforts to your supervisor or first aid attendant before it's too late.
8. Ask for help and give help when needed.
9. Stretch between busy periods and after breaks.
10. Work with your management team and your Health and Safety Committee members to prevent strains and sprains.



29.5.1 Principles for preventing injuries from lifting

Follow these safety principles when moving heavy or awkward objects:

1. Where possible use a helper.
2. Where possible, avoid lifting and carrying heavy or awkward objects. Instead; use mechanical devices and use proper mechanical procedures.
3. Lift small loads by planning and adjusting weight distribution ahead of time.
4. Hold the object or load close to your body.
5. Avoid awkward postures such as bending, reaching, and twisting. Try to keep load between knees and shoulders, without twisting your body. Pivot with your feet instead of twisting your back.
6. Bend at your knees, not at the waist. This will help you keep your centre of balance and let the strong muscles in your legs do the lifting.
7. Lifting smoothly and slowly.
8. Get a good grip. Use your hands not just your fingers to grip the load. Wear gloves to protect your hands if necessary.
9. Avoid doing physically demanding lifting tasks for a long period. If possible vary task with other activities.



30 Forms

- 30.1 Safety Meeting Record KQSMP 01
- 30.2 Weekly or Monthly Performance Report KQSMP 02
- 30.3 Incident/ Near Miss Investigation Form KQSMP 03
- 30.4 Orientation Checklist KQSMP 04
- 30.5 Worker Safety Observation Form – Competency Evaluation Record KQSMP 05
- 30.6 First Aid Kit – List KQSMP 06
- 30.7 First Aid Record KQSMP 07
- 30.8 Employers' Report of Injury or Occupational Disease KQSMP 08
- 30.9 Equipment Operator's Daily Checklist KQSMP 09
- 30.10 Record of Disciplinary Action KQSMP 10
- 30.11 Visitor Logbook form KQSMP 11
- 30.12 Blasting Incident Report KQSMP 12
- 30.13 Employee Emergency Contact KQSMP 13
- 30.14 Inspection Hazard Checklist KQSMP 14
- 30.15 Machinery Checklist KQSMP 15
- 30.16 Monthly Safety Summary
- 30.17 Year End Safety Summary



30.1 Safety Meeting Record

DATE:	MONTH:
LOCATION:	TIME:

PRESENT: (tick box present) ✓

Kalum Quarry	✓	Drilling TBD	✓	Crushing TBD	✓
Cooley, Don					
Collins, Chris					
Gerow, Ernie					
Helin, Justin					
Horner, Dwayne					
Parker, Danny					
Parker, Dustin					
Stephens, Kyle					
Hansen, Wayne					

MEETING PROCEEDINGS

- Record of previous meeting read by all and confirmed as a true record.

Confirmed: Yes No

- Matters arising from the Record of the previous meeting.

- Review hazards.

- Review any incidents or near misses.



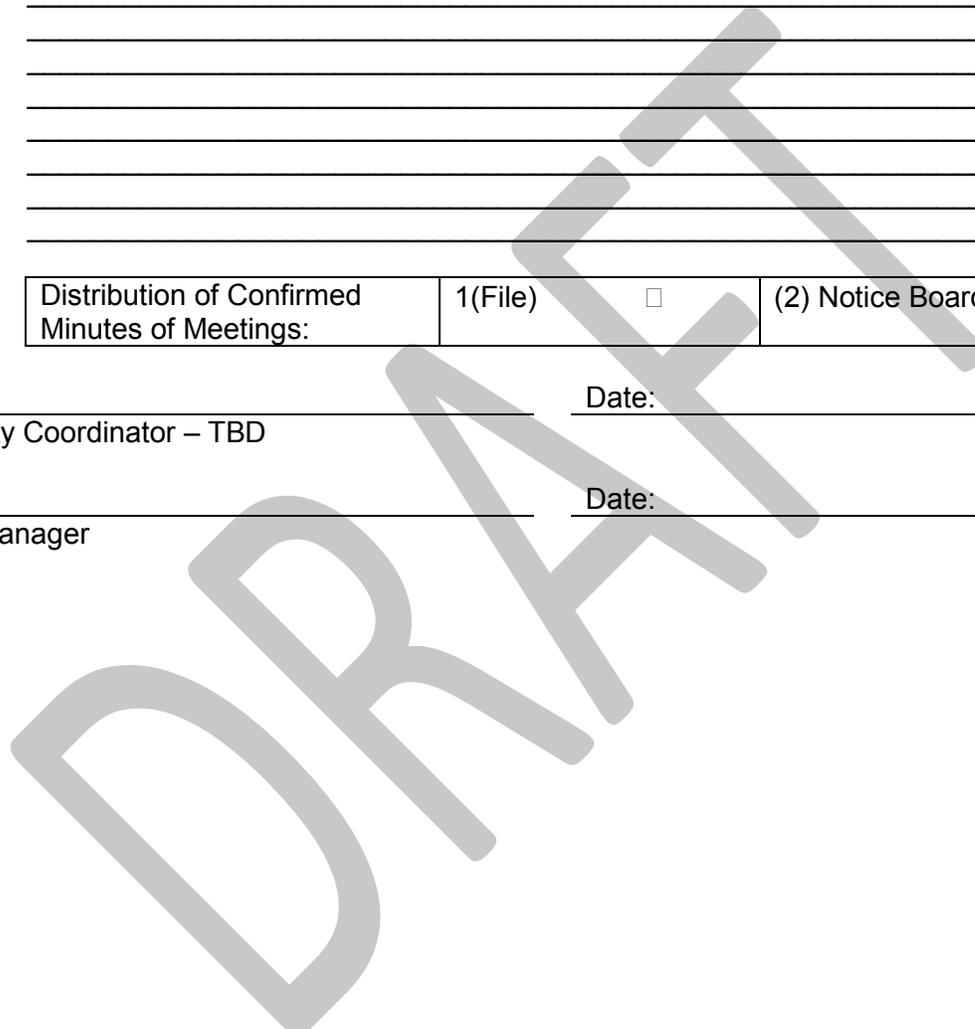
5. Review any safety alerts.

6. Review new/other matters.

Distribution of Confirmed Minutes of Meetings:	1(File) <input type="checkbox"/>	(2) Notice Board <input type="checkbox"/>
--	----------------------------------	---

_____ Date: _____
 Safety Coordinator – TBD

_____ Date: _____
 Pit Manager





30.2 Weekly or Monthly Performance Report

Date: (M/D/Y) _____

Hours worked	
Man Power	
Vehicles	
Motor Vehicle Accident	
Injury / Illness Incident Classifications	
First Aid Cases	
Medical Treatment Cases	
Modified Work Cases (light duty/limited duty)	
Lost Time	



30.3 Incident/Near miss investigation form

The reason for investigating an incident or near miss is to determine: the cause or causes of the incident; to identify any risks, hazards, systems or procedures that contributed to the incident; and to recommend corrective action to prevent similar incidents.

Incidents should be investigated by people knowledgeable about the type of work involved at the time of the incident. Relevant workers should also be involved in the investigation.

An incident /near miss investigation report should answer the WHO, WHERE, WHEN, WHAT, WHY and HOW questions with regard to an incident.

Details of the incident/near miss:	
Date of incident:	Time of incident:
Short description of incident / near miss:	
Area where incident / near miss occurred:	

Details of the incident/near miss investigation			
Name of injured person (if relevant):		Injury sustained(if relevant):	
Name of person who reported incident:		Date of report:	
Name of person completing this form:			
Telephone number:		Date report completed:	
Witness details			
Name/s	Job title (if relevant)		Contact number
Name of person/s conducting investigation		Job title (if relevant)	
Contact number			
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Immediate causes / Contributing Causes that may have been a factor to the accident/incident

What preventative action could have been taken? Why was this action not taken?	
How much experience did the employee have in the task/s that was being performed when the accident / incident occurred? What training has been provided?	
What is the chance of the accident / incident occurring again?	

Full description of events.

Who was involved: Worker Visitor Contractor

Briefly describe what happened including the sequence of events, investigate scene of incident or near miss; conditions present at time of incident; what was involved, what activity (if any) was taking place prior and at time of incident. What hazards was the worker exposed to? What hazards may have contributed to the incident occurring? (Attach photos if available)

INVESTIGATION RECOMMENDATIONS Outline recommended **corrective action/s** (i.e. solution/s) to prevent the recurrence of the incident eg. new equipment, re-engineer, re-design work area, re-design work practices, review training standards, etc

Investigators Recommendation	Person to Action	Completion date

IMPLEMENTATION DETAILS



Date implemented	Action taken	Responsible person	Review Date

Investigators Name: _____

Date: _____

Manager _____

Date: _____

Attachments: e.g. photos, instructions, SWP etc.

List attachments:

DRAFT



30.4 Orientation Checklist

Employee Name:			
Position (tasks):			
Date hired:		Date of Orientation:	
Person providing orientation (name and position)			
Company Name			

Topic	Initials (trainer)	Initials (worker)	Comments
1. Supervisor name: _____ Telephone #: _____			
2. Rights & Responsibilities (a) General duties of employers, workers, and supervisor			
(b) Workers right to refuse unsafe work and procedure for doing so			
3. Workplace health and safety rules (a) _____ (b) _____ (c) _____ (d) _____			
4. Known hazards and how to deal with them (a) _____ (b) _____ (c) _____ (d) _____			
5. Safe work procedures for carrying out tasks (a) _____ (b) _____ (c) _____ (d) _____			
6. Procedures for working alone or in isolation			



Topic	Initials (trainer)	Initials (worker)	Comments
7. Measures to reduce the risk of violence in the workplace and procedures for dealing with violent situations			
8. Personal protective equipment (PPE) – what to use, when to use it, and where to find it (a) _____ (b) _____ (c) _____ (d) _____			
9. First aid (a) First aid attendant name and contact information			
10. Emergency exits and meeting points (a) Locations of emergency exits and meeting points			
(b) Locations of fire extinguishers and fire alarms			
(c) How to use a fire extinguishers			
(d) What to do in an emergency situation			
(11) Where applicable, basic contents of the occupational health and safety program			
(12) Hazardous material and WHM IS (a) What hazardous materials are in the workplace			
(b) Purpose and significance of hazard information on product labels			
(c) Location, purpose and significance of material safety data sheets ((M)SDSs)			
(d) How to handle, use, store, and dispose of hazardous materials safely			
(e) Procedures for an emergency involving hazardous materials, including clean-up of spills			
13. Where applicable, contact information for the occupational health and safety committee or the worker health and safety representative			



30.5 Worker Safety Observation Form – Competency Evaluation Record

Worker's name:				
Work Location:				
Supervisor:				
Observer:			Date:	
Description	Yes	No	Not observed	Comments
Wears required personal protective equipment				
Follows safe work procedures and policies				
Ask questions when does not know how to do a task safely				
Practices good housekeeping				
Demonstrates a safe attitude every day				

General comments and observations:



30.6 First Aid Kit

These items must be kept clean and dry and must be ready to take to the scene of an accident. A weatherproof container is recommended for all items except the blankets. Blankets should be readily available to the first aid attendant.

The level 3 first aid kit is the same as the level 2 kit except that, in addition, one portable suction unit is recommended.

line	List of Required Items	Required	On Hand	#ordered
1	blankets	3		
2	14 cm x 19 cm wound cleaning towelettes, individually packaged	24		
3	sterile adhesive dressings, assorted sizes, individually packaged	150		
4	10 cm x 10 cm sterile gauze dressings, individually packaged	12		
5	10 cm x 16.5 cm sterile pressure dressings with crepe ties	4		
6	20 cm x 25 cm sterile abdominal dressings, individually packaged	10		
7	cotton triangular bandages, minimum length of base 1.25 m	12		
8	2.5 cm x 4.5 m rolls of adhesive tape	2		
9	5 cm x 4.5 m rolls of adhesive tape	2		
10	7.5 cm x 4.5 m crepe roller bandages	6		
11	500 ml sterile 0.9% sodium chloride solution (saline) in unbreakable container	1		
12	60 ml of liquid antibacterial soap in unbreakable container	1		
13	universal scissors	1		
14	11.5 cm stainless steel sliver forceps	1		
15	penlight or flashlight with batteries	1		
16	7.5 cm x 4.5 m esmarch gum rubber bandage	1		
17	pairs of medical gloves (preferably non-latex)	6		



18	portable oxygen therapy unit consisting of a cylinder (or cylinders) containing compressed oxygen, a pressure regulator, a pressure gauge, a flow meter and a non-rebreathing mask (may be kept in a separate container from the other supplies)	1		
19	oropharyngeal airway kit (may accompany the portable oxygen therapy unit)	1		
20	manually operated self-inflating bag-valve mask unit with an oxygen reservoir (may accompany the portable oxygen therapy unit)	1		
21	patient assessment charts	6		
22	first aid records and pen			
23	pocket mask with a one-way valve and oxygen inlet	1		



30.7 First Aid Record [insert]

Click to open document in WorkSafe BC website

First Aid Record

This record must be kept by the employer for three (3) years. This form must be kept at the employer's workplace. Do NOT submit to WorkSafeBC.

	Sequence number
Name	Occupation
Date of injury or illness (yyyy-mm-dd)	Time of injury or illness (yyyy-mm-dd) <input type="checkbox"/> a.m. <input type="checkbox"/> p.m.
Initial reporting date and time (yyyy-mm-dd) (yyyy-mm-dd) <input type="checkbox"/> a.m. <input type="checkbox"/> p.m.	Follow-up report date and time (yyyy-mm-dd) (yyyy-mm-dd) <input type="checkbox"/> a.m. <input type="checkbox"/> p.m.
Initial report sequence number	Subsequent report sequence number(s)

Description of how the injury, exposure, or illness occurred (what happened?)

Description of the nature of the injury, exposure, or illness (What you see – signs and symptoms)

Description of the treatment given (what did you do?)

Name of witnesses

1.	2.
----	----

Arrangement made relating to the worker (return to work/medical aid/ambulance/follow-up)

Provided worker handbook <input type="checkbox"/> Yes <input type="checkbox"/> No	A form to assist in return to work and follow-up was sent with the worker to medical aid <input type="checkbox"/> Yes <input type="checkbox"/> No
Alternate duty options were discussed <input type="checkbox"/> Yes <input type="checkbox"/> No	
First aid attendant's name (yyyy-mm-dd)	First aid attendant's signature
Patient's signature	

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30.8 Employer's Report of Injury or Occupational Disease [insert]

Click to open document in WorkSafe BC website

Employer's Report of Injury or Occupational Disease

As an employer, the Workers Compensation Act requires you to submit this report within three days of an injury to one of your workers, even if you disagree with the claim. By submitting your report promptly, you avoid penalties and delays in the adjudication of the claim. Please report using one of the following options:

1. **Online - The online and mobile options:** The online screen application contains questions to the worker's injury. You can save your report and return it later with case information. Once submitted, you can follow the status of the claim online. Go to worksafebc.com and select "Report injury or illness."
2. **Fillable PDF form:** Type in your details online, print the form, and submit it by fax or mail. Go to worksafebc.com and select "Report injury or illness."
3. **Paper form:** Clearly print details, sign the form, and submit it by fax or mail.

Fax: 604.255.8777 in Greater Vancouver or toll-free within BC at 1.800.453.8887
Mail: WorkSafeBC, 400 West 41st Street, Vancouver BC V6B 6L1

Employer information			
Employer's name (as appears on business)			WorkSafeBC claim number (optional)
WorkSafeBC account number	Classification and number	Type of business	
Employer address line 1 (street)	Employer contact last name	Operating location number	
Employer address line 2 (suite)	Employer contact telephone and fax (ext)	Extension	Employer contact fax (ext) (ext) (ext)
City	Province/territory	Employer postal contact last name	First name
Country (if overseas)	Postal code (if)	Employer postal contact telephone (ext) (ext) (ext)	Extension
Employer postal contact fax (ext) (ext) (ext)		Employer postal contact fax (ext) (ext) (ext)	

Worker information			
Worker last name	First name	Mobile phone	Gender <input type="checkbox"/> M <input type="checkbox"/> F
Employer identification number	Home phone number (if not on file)	Social insurance number	
Address line 1		Address line 2	
City	Province/territory	Country (if overseas)	Postal code (if)

1. What is the worker's occupation?	2. Has the worker been employed by this firm for less than 12 months? <input type="checkbox"/> Yes <input type="checkbox"/> No	3. If yes, what date commenced?
4. At the time of injury, was the worker (check all that apply):		
<input type="checkbox"/> Recruitment	<input type="checkbox"/> Apprentice	<input type="checkbox"/> Self-employed
<input type="checkbox"/> Temporary	<input type="checkbox"/> Volunteer	<input type="checkbox"/> Reciprocal partner or relative of applicant
<input type="checkbox"/> Full-time	<input type="checkbox"/> Student	<input type="checkbox"/> Part-time
<input type="checkbox"/> Part-time	<input type="checkbox"/> New entrant to workforce	<input type="checkbox"/> Head or a control head
5. Cause: <input type="checkbox"/> Casual <input type="checkbox"/> Other (specify)		

Incident information	
1. Date of incident (month/year)	2. Period of exposure resulting in occupational disease (month/year)
3. Did another health report of exposure to applicant? <input type="checkbox"/> Yes <input type="checkbox"/> No	4. The injury or disease was first reported to employer on (month/year)
5. Name of person reported to:	6. How was the claim reported? <input type="checkbox"/> First aid <input type="checkbox"/> Supervisor <input type="checkbox"/> Office <input type="checkbox"/> Other (specify)
7. Describe how the incident occurred	8. Describe the injury in detail (specify if disease, describe)
9. Site of body injured <input type="checkbox"/> Left <input type="checkbox"/> Right <input type="checkbox"/> Both <input type="checkbox"/> Not applicable	
10. Describe the work incident location (address, city, province) and where incident occurred (e.g. near fire, outdoors, among etc)	
11. Did the injury/illness or exposure result from a specific incident? <input type="checkbox"/> Yes <input type="checkbox"/> No	

30.9 Equipment Operator's Daily Check

Machine: _____

Name: _____ For week starting (Monday): _____

Circle days worked.

FORM KQSMP 09

Check deficiencies.

Pre-Work Inspection	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Comments and Corrective Action	Date Completed	Initials
Oil level	<input type="checkbox"/>									
Oil pressure	<input type="checkbox"/>									
Water level	<input type="checkbox"/>									
Fuel tank or tanks	<input type="checkbox"/>									
Brakes	<input type="checkbox"/>									
Engine warm-up	<input type="checkbox"/>									
Tires	<input type="checkbox"/>									
Extras	<input type="checkbox"/>									
Operational Inspection										
Engine	<input type="checkbox"/>									
Clutch	<input type="checkbox"/>									
Steering	<input type="checkbox"/>									
Transmission	<input type="checkbox"/>									
Rear axle or final drive	<input type="checkbox"/>									
Tracks	<input type="checkbox"/>									
Idle Time Inspection										
Leaks	<input type="checkbox"/>									
Loose bolts	<input type="checkbox"/>									
Broken (bolts, braces, glass, etc)	<input type="checkbox"/>									
Secure (wiring, oil/air/water lines)	<input type="checkbox"/>									
Tires	<input type="checkbox"/>									
Lubrication	<input type="checkbox"/>									
Fire ext. and tools	<input type="checkbox"/>									
Spill kit	<input type="checkbox"/>									
First Aid kit	<input type="checkbox"/>									
Pre-work completed	<input type="checkbox"/>									
Man-check arranged	<input type="checkbox"/>									
PPE	<input type="checkbox"/>									
No issues noted	<input type="checkbox"/>									

30.10 Record of Disciplinary Action

Employee Name _____

Date _____

Reason for discipline:

<input type="checkbox"/> Health, Safety and Reclamation Code for Mines in British Columbia /WCB regulation	<input type="checkbox"/> Company regulation violation	<input type="checkbox"/> Failure to use standard operating procedure
<input type="checkbox"/> PPE	<input type="checkbox"/> Unscheduled absence from the workplace	<input type="checkbox"/> Verbal or physical abuse
<input type="checkbox"/> Horseplay	<input type="checkbox"/> Drug or alcohol use on the job	<input type="checkbox"/> Unsatisfactory performance
<input type="checkbox"/> Other		

Action Taken by Supervisor

<input type="checkbox"/> Verbal Warning	<input type="checkbox"/> Written warning
<input type="checkbox"/> Suspension of employee	<input type="checkbox"/> Dismissal of employee

The employee is hereby advised that this document will remain on your permanent company record for a period of one year. During this time if there is a repeat offence, you may be terminated from employment.

Supervisor comments:

Employee Signature

Date

Supervisor Signature

Date

FORM KQSMP 11



30.12 Blasting Incident Report

(1) If a blasting accident occurs which causes personal injury, or if there is any other dangerous incident involving explosives, whether or not there is personal injury, the employer must

- (a) report the incident immediately to the Board, and
- (b) forward a written report of the incident to the Board without undue delay.

(2) The written report of the incident must contain

(a) date, time and location of the incident,
(b) names and certificate numbers of all blasters involved,
(c) names and occupations of any person(s) injured,
(d) types of explosives, detonators, and blasting machine used,
(e) a factual account of events including the blaster's log records
(f) action taken by the employer.



Investigators Name: _____

Date: _____

Attachments: e.g. photos, instructions, SWP etc.

Documentation and records will be maintained and kept on file.

Document Control:
1 copy to file H/C & S/C
WCB

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30.13 Employee Emergency Contact Sheet

- Each crew member must inform the supervisor of any changes to their contact information.
- The completed form will retain it in his/her files and use the information only in the event of an emergency requiring notification of a relative or significant other.

Employee Name:

Home Address:

Home Phone Number:

Emergency Contact Person:
(Name and Phone Numbers)

Alternate Contact:
(Name and Phone Numbers)

Physician Name

Physician Phone Number

Medication(s) list

Blood Type:

Health Issues

Allergies:

If yes, do you have on your persons
a EPIPEN/Benedryl

****The information on this sheet is confidential and will be stored in a secure location; access to the information will be limited to those with a need to know during an emergency.***



[\[click on document to open-object entry\]](#)



INSPECTION HAZARD CHECKLIST

Safety Coordinator _____

Pit Manager _____

Visit dates: _____
 A checklist to support the ongoing management and control of hazards at quarry sites.

HAZARD CHECK	N/A	IDENTIFIED RISK	PREVENTION CONTROL
1 ACCESS/EGRESS			
1 Clear access/egress to and from buildings/structures and car parks		eg entrance to building obstructed with cables and tools	eg housekeeping procedures/practices to be implemented
2 Site road traffic management plan in place			
3 Operational areas clearly separated from areas open to the public by signage and barriers			
4 Vehicle access to operational areas is restricted			
5 Creeks/culvert crossings clearly defined along road roads			
7 Vehicles free of overhead obstructions			
8 Overhead electrical power line clearance above travel routes in accordance with requirements			
9 No visible road dump or unstable road edges			
10 Signage on roads clearly indicates designated areas and traffic direction			
11 Signage clear along roadways			
12 Fenced security and fencing around the site			
13 Google map and materials loading area			
14 Site intelligence / systems register			
15 QUARRY EXCAVATIONS / PITS			
14 Quarry pit has appropriate benches of suitable width for material being extracted or rehabilitated in accordance with geotechnical advice in compliance with Work Plan and Reclamation Plan			



30.14 Inspection Hazard Checklist

Safety Coordinator _____

Pit Manager _____

Visit dates...../...../...../...../...../.....

A checklist to support the ongoing management and control of hazards at quarry sites.

	HAZARD CHECK	N/A	IDENTIFIED RISK	PREVENTION CONTROL
1	ACCESS/EGRESS			
2	Clear access/egress to and from buildings/structures and car parks		<i>* eg entrance to building obstructed with cables and tools</i>	<i>* eg housekeeping procedures/practises to be implemented</i>
3	Site road traffic management plan in place			
4	Operational areas clearly separated from areas open to the public by signage and barriers			
5	Vehicle access to operational areas is restricted			
6	Creek/culvert crossings clearly defined along haul roads			
7	Vehicles free of overhead obstructions			
8	Overhead electrical power line clearance above travel routes in accordance with BCH requirements			
9	No visible road dust or unstable road edges			
10	Signage on roads clearly indicates designated areas and traffic direction			

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11	Signage clear along roadways			
12	Keyed security and fencing around the site			
13	Stockpile map and materials loading area			
14	Site induction / visitors register			
15	QUARRY EXCAVATIONS / PITS			
16	Quarry pit has appropriate benches of suitable width for material being extracted or rehabilitated in accordance with geotechnical advice in compliance with Work Plan and Reclamation Plan			
17	Pit walls scaled to prevent fall of overhanging/loose material onto plant or personnel			
18	Pit sumps and dewatering systems effective for rainfall/storm/runoff			
19	Protection provided for benches and other potential fall areas			
20	Sign posting and security fences/barriers provided along quarry pit perimeter			
21	Daily excavation inspections completed and recorded with hazards identified and associated controls implemented			
22	No gas/diesel or gas plant generating units operating within low-lying pit areas or within enclosed excavations			
23	Face and haul road design and access compliance with Work Authority, Work Plan and Rehabilitation Plan			



24	Overburden and top soil stockpile position, stability and safety for carrying out work			
25	EXPLOSIVES/BLASTING (TBD)			
26	Magazine inventory records up to date			
27	Magazine(s) licensed			
28	Earth straps fitted to metallic structures and equipment			
29	Locked doors have tamper proof latches			
30	Magazines at safe distance from work areas			
31	Magazine area tidy and clean, including any vegetation removed			
32	Magazine appropriately constructed, bunded and maintained			
33	Explosives stored correctly with detonators and explosives segregated in accordance with Explosive Act and Regulations			
34	Ignition sources separated adequately from magazine, including any smoking or spark generating activity			
35	Security fencing and yard installed and maintained			
36	Appropriate placard signage provided			
37	Blast Management Plan in place and sign off / authorisation processes followed			
38	Shot records / Blast Folios sighted			



39	Fly rock clearance methodology and associated personnel/public security measures identified			
40	FIRE			
41	Fire Management Plan in place			
42	Ignition sources segregated from fuels and combustible materials			
43	Suitable fire extinguishers provided			
44	Extinguishers mounted appropriately and labelled			
45	Extinguishers serviced every six months and records kept			
46	Unimpeded access provided throughout site			
47	EMERGENCY RESPONSE			
48	Emergency response plan (ERP) in place, displayed and training provided			
49	Command structure organisation chart and contact details included within ERP			
50	Emergency response hazards known for quarry site and surrounding area			
51	Warning systems in place			
52	Evacuation Plan in place Escape routes mapped and communicated			
53	Assembly points determined and designated on plan and signposted on site			
54	Drills conducted with employees, contractors and emergency services and records kept			
55	Designated fire wardens nominated on notice boards and trained			



56	Communication systems (eg radio systems) provided and maintained			
57	External emergency service agencies consulted (drills, evacuations, incident response, fire protection systems and equipment)			
58	Emergency Response Folder available at site entrance			
59	FIRST AID			
60	Facilities provided and appropriate for typical injuries indicated by previous injury assessments			
61	Injury register in place and maintained			
62	Contents of first aid kit checked every six months – locations identified			
63	Trained first aiders identified and available for all shifts			
64	FLOORS, STAIRS, LADDERS, PLATFORMS AND ROOFS			
65	Even, drained, non-slip surfaces in place with no uncovered openings			
66	Personnel pathways clear of obstructions/debris			
67	Clearly defined storage/work areas			
68	Unobstructed emergency exits			
69	Fragile roof lights and translucent roof sheeting protected with roof mesh or similar impact resistant materials			
70	WORK ENVIRONMENT			
71	Hand tools and working at height equipment maintained and appropriate for the task			



72	Enclosed areas adequately ventilated			
73	Noise levels not above 85dBA at 1m from source (noise survey results available)			
74	Where noise levels exceed 85dBA and cannot be attenuated or engineered below 85dBA, these areas are signposted and personal protective equipment (PPE) (eg hearing protection) is provided and employees instructed on its use			
75	Safe work method statement and/or hazard identification process in place for operation of plant and any plant maintenance			
76	Dust levels from process plant monitored and controlled			
77	Employee heat exposure procedures developed and implemented			
78	Employee UV exposure procedures developed and implemented			
79	HAZARDOUS SUBSTANCES AND DANGEROUS GOODS			
80	Hazardous substances and dangerous goods register available to employees and up to date			
81	Material safety data sheets (MSDSs) current – (less than five years old) and include emergency contacts, and are available to employees			
82	Emergency eye wash station and dump shower provided (in small workplaces eye wash modules can be provided but copious clean water supply is preferred)			



83	All containers clearly labelled and made from material appropriate for contents			
84	Bunds provided for spill containment for tanks and containers			
85	Flammable goods stored in ventilated and secured access cabinets/units			
86	Spill kits in place			
87	MOBILE PLANT (Screener)			
88	Tires, brakes, flashing lights, reversing alarms, fire suppressants all maintained and pre-start checks recorded			
89	Rollover and fall protection structures provided and maintained			
90	Seatbelts installed and operable. Seatbelt condition and use audited			
91	Operator competencies developed and recorded			
92	Fall from height risks controlled for accessing plant			
93	All guards fitted, and hazardous areas of plant (eg moving parts) labelled			
94	All operating levers, controls and instruments suitably labelled to indicate function and/or operating instructions			
95	MANUAL HANDLING			
96	Manual handling tasks assessed for potential musculoskeletal disorder injuries (consider incident register), and where necessary, risk controls implemented			
97	PERSONAL PROTECTION EQUIPMENT (PPE)			



98	Adequate PPE is provided and maintained, including: <ul style="list-style-type: none"> • hard hats and safety boots • eye protection • hearing protection • respirators • sunscreen • broad brim hats • gloves • all weather protection (overalls, coats etc) 			
99	AMENITIES			
100	On-site washroom facilities provided, consistent with the number of personnel on site			
101	Clean on site mess room facility including drinking water provided, appropriate to the number of personnel on site			
102	HEALTH MONITORING			
103	Employee audiometric (hearing) tests conducted and recorded on an ongoing basis			
104	Dust exposure monitored and recorded on an ongoing basis			
105	PROVISION OF INFORMATION, INSTRUCTION AND TRAINING			
106	Training matrix in place			
107	Competency assessments documented			
108	Original Equipment Manufacturer (OEM) documentation available			
109	CONSULTATION REPORTING			
110	Weekly OHS Meetings meetings recorded			
111	Safety Issue Reporting Register / Action Items list			



112	Community Consultation Plan in place			
113	CN Rail			
114	Loading Cars			
115	Rail Inspections			
116				
117	HEAVY EQUIPMENT			

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30.15 Machinery Checklist

FORM KQSMP 15

Safe use of machinery checklist

	Check	Present status	Recommendations
1	Guarding requirements		
2	Do guards stop workers touching dangerous moving parts?	Yes/No	
3	Are guards firmly secured and not easily removable?	Yes/No	
4	Do guards stop objects falling into the moving parts or from exploding out of the machine?	Yes/No	
5	Do guards allow safe, comfortable and easy use of the machine?	Yes/No	
6	Can the machine be maintained without removing the guard?	Yes/No	
7	Can the existing guards be improved?	Yes/No	
8	Are there safe procedures in place and a way to shut down the machine if something out of the ordinary happens, like a blockage?	Yes/No	
9	Mechanical hazards: point of operation		
10	Is a guard on the machine at every point of operation where there is a hazard?	Yes/No	
11	Does the guard keep the operator's hands, fingers and body out of the danger area?	Yes/No	
12	Have the guards been tampered with or removed?	Yes/No	
13	Is there a more practical or better guard?	Yes/No	
14	How can point of operation hazards be removed?	Yes/No	
15	Are the tools used for placing and removing material the right length, type and size to keep an operator's hands out of the machine?	Yes/No	



16	Operator controls		
17	Are start and stop controls in easy reach of the operator?	Yes/No	
18	If there is more than one operator station, are separate controls placed where operators can see the entire operation?	Yes/No	
19	Are controls, including foot controls, guarded against being turned on accidentally?	Yes/No	
20	Are controls labelled clearly with their function?	Yes/No	
21	Are controls similar in type and arrangement to other similar machines in the plant?	Yes/No	
22	Are emergency stop controls easily reached and clearly identified?	Yes/No	
23	Is the machine wired so it must be manually re-started if power is cut and then put on again?	Yes/No	
24	Mechanical hazards: Power transmission		
25	Are gears, sprockets, pulleys or flywheels guarded?	Yes/No	
26	Are there any exposed belts or chain drives?	Yes/No	
27	Are there any exposed sets, key ways, collars, etc?	Yes/No	
28	Are all hazardous moving parts guarded, including auxiliary parts?	Yes/No	
29	Are start and stop controls in easy reach of the operator?	Yes/No	
30	If there is more than one operator, are there separate controls?	Yes/No	
31	Other hazards		
32	Are other hazards like noise, fumes and vibrations identified and managed?	Yes/No	
33	Have special guards, enclosures, or personal protective equipment been provided to protect workers from exposure to hazardous substances?	Yes/No	
34	Have hazards associated with layout, repetitive movements and workload been identified and managed?	Yes/No	



35	Electrical hazards		
36	Is the machine regularly tagged and tested? If so, how often?	Yes/No	
37	Are there loose conduit fittings?	Yes/No	
38	Is the power supply correctly fused and protected?	Yes/No	
39	Do workers occasionally get minor shocks while using any of the machines?	Yes/No	
40	Training and supervision		
41	Are operators and skilled workers trained and competent to use the guards?	Yes/No	
42	Are production workers trained in:	Yes/No	
43	where the guards are		
44	how they give protection		
45	what hazards they protect against?		
46	Are operators supervised by competent staff?	Yes/No	
47	Have workers been trained in what to do if they notice guards that are damaged, missing or inadequate?	Yes/No	
48	Protective equipment and clothing		
49	Is protective equipment and clothing needed?	Yes/No	
50	Is it right for the job, in good condition, kept clean and stored when not in use?	Yes/No	
51	Is the operator dressed safely for the job (no loose-fitting clothing or jewellery)?	Yes/No	
52	Machinery maintenance, repair and cleaning		
53	Do technicians, engineers or operators have up-to-date instructions on the machines they service or clean?	Yes/No	



54	Do staff or contractors lock-out machines from all energy sources before starting repairs or cleaning?	Yes/No	
55	Is the maintenance equipment properly guarded?	Yes/No	
56	Where several maintenance staff are working on the same machine, are multiple lock-out devices used?	Yes/No	
57	Is the machinery properly maintained and kept clean?	Yes/No	
58	Machinery set-up		
59	Is all machinery securely placed and anchored to prevent tipping or other movement?	Yes/No	
60	Is the machine laid out so it does not create hazards to operators or others in the workplace?	Yes/No	

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30.16 Monthly Safety Summary

Safe Plan Worksheet

1 Total Number Workers Hired

Total Number Completed Orientations

2 Number Area Team Meetings Scheduled

Number Conducted

Percentage Attendance

3 Number Formal Inspections Scheduled

Number Completed

Total Unsafe Acts/Conditions Identified

Number Corrected

Number Outstanding

4 Number of Accidents/Incidents/Illnesses

Damage Only

Injury Only

Injury and Damage

Near Miss

5 Number of Investigations Completed

Outstanding

Number of Recommendations Made

Complete

Outstanding

Safety Coordinator

Date



30.17 Year End Safety Summary

Safe Plan Worksheet

1 Total Number Workers Hired

Total Number Completed Orientations

2 Total Number Area Team Meetings

Total Number of Safety Meetings

Total Number of Safety Management Meetings

3 Total Number Monthly Inspections Completed

Total Unsafe Acts/Conditions Identified

Total Number Corrected

4 Total Number of Accidents/Incidents/Illnesses

Damage Only

Injury Only

Injury and Damage

Lost Time Injury

Days Lost

Medical Referrals

Near Miss

5 Total Number of investigations Completed

Outstanding

Total Number of Recommendations Made

Outstanding

Safety Coordinator

Date



31 MSDS

31.1.1 DieselBio-diesel-Distillate pc2181-20150430

ATTACHED

31.1.2 D-MO Gold pc2882-20151120

ATTACHED

31.1.3 D-MO GOLD 8L pc3021-20150312

ATTACHED

31.1.4 D-MO pc189-20151120

ATTACHED

31.1.5 Gasoline-Ethanol Blended pc2738-20150825

ATTACHED

31.1.6 Industrial hydraulic oil pc184-20150520

ATTACHED

31.1.7 Sonic Blue Guard pc1696-20110919

ATTACHED

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31.1.1 Diesel/Bio-diesel-Distillate pc2181-20150430

ATTACHED



Diesel/Bio-diesel-Distillate pc2181-20150430

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MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product Identifier Diesel/Bio-diesel/Distillate
Version # 01
Issue date 30-April-2015
Revision date -
Supersedes date -
CAS # Mixture
Product code 2101
Product use Fuel
Synonym(s) Premium Diesel, EP 3000, Railroad Diesel, Seasonal Diesel, Mine Diesel, Summer Diesel, Winter Diesel, Dyed (Purple) Diesel, Export Diesel, Electric Generating Diesel, #2 Fuel Oil, No #1 Diesel, Type A Diesel, Type #1 Fuel Oil, Type B Diesel

Manufacturer information

Manufacturer Consumers' Co-operative Refineries Limited
Address P.O. Box 260; 9th Avenue North
Regina, SK S4P 3A1 Canada
Telephone (306) 721-5353 -or- (306) 719-4353
Supplier Federated Co-operatives Limited
Address P.O. Box 1050, 401 - 22nd Street East
Saskatoon SK S7K 3M9 Canada
Telephone (306) 244-3447
24 Hour Emergency Telephone (613) 996-6666 - Canutec
Supplier Federated Co-operatives Ltd.
P.O. Box 1050
401 - 22nd Street East
Saskatoon S7K 3M9 CA
Telephone Number: (306) 244-3447
Emergency telephone (613) 996-6666

2. Hazards Identification

Emergency overview WARNING!
 Combustible liquid and vapor. Harmful if inhaled. Prolonged or repeated skin contact may cause drying, cracking, or irritation. Suspected of causing cancer. May cause damage to organs (blood, liver, thymus) through prolonged or repeated exposure. Aspiration hazard. Harmful if swallowed - may enter lungs if swallowed or vomited. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Potential health effects
Routes of exposure Inhalation, Skin contact, Ingestion.
Eyes Direct contact with eyes may cause temporary irritation.
Skin Prolonged or repeated contact may dry skin and cause irritation.
Inhalation Harmful if inhaled. Vapors may cause headache, fatigue, dizziness and nausea.
Ingestion Ingestion may result in vomiting; aspiration (breathing) of vomitus into lungs must be avoided as even small quantities may result in aspiration pneumonia.

Potential environmental effects Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Fuels, diesel	68334-30-5	95 - 100
Canola Oil - Fatty Acid Methyl Ester	123028-10-0	0 - 5

Components	CAS #	Percent
Rapeseed Oil - Fatty Acid Methyl Ester	73891-99-3	0 - 5
Soy Methyl Esters from Vegetable Oil	67784-80-9	0 - 5

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First Aid Measures

First aid procedures

Inhalation Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately!

Skin contact Remove contaminated clothing. Rinse skin with water/shower. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

Eye contact Flush thoroughly with water. If irritation occurs, get medical assistance.

Ingestion Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. DO NOT induce vomiting because of danger of aspirating liquid into lungs. Call a physician or poison control center. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Never give anything by mouth to an unconscious person.

Notes to physician Treat symptomatically. The effects might be delayed.

General advice If you feel unwell, seek medical advice (show the label where possible).

5. Fire Fighting Measures

Flammable properties Combustible liquid and vapor. Material will float and may ignite on surface of water. Containers may explode when heated. Vapors are heavier than air and may travel along the ground to some distant source of ignition and flash back.

Extinguishing media

Suitable extinguishing media Carbon dioxide (CO₂). Foam. Dry chemical. Water fog.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Protection of firefighters

Specific hazards arising from the chemical During fire, gases hazardous to health may be formed.

Protective equipment for firefighters Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions Use standard firefighting procedures and consider the hazards of other involved materials.

Specific methods Move container from fire area if it can be done without risk. Cool containers exposed to heat with water spray and remove container, if no risk is involved.

Explosion data

Sensitivity to static discharge Not sensitive.

Sensitivity to mechanical impact Not sensitive.

Hazardous combustion products Carbon oxides.

General fire hazards Combustible liquid and vapor.

6. Accidental Release Measures

Personal precautions Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. In case of spills, beware of slippery floors and surfaces. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid inhalation of vapors and contact with skin and eyes. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the MSDS.

Environmental precautions	Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Do not contaminate water.
Methods for containment	Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Prevent entry into waterways, sewer, basements or confined areas.
Methods for cleaning up	Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Extinguish all flames in the vicinity. Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil, etc.) away from spilled material. Should not be released into the environment. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the MSDS.
Other information	Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not handle, store or open near an open flame or sources of ignition. Protect material from direct sunlight. Keep away from heat, spark, open flames and other sources of ignition. When using do not smoke. Explosion-proof general and local exhaust ventilation should be used. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Use only with adequate ventilation. Avoid contact with skin and clothing. Avoid inhalation of vapors. Do not taste or swallow. Wash thoroughly after handling. Observe good industrial hygiene practices.
Storage	Keep away from heat, spark, open flames and other sources of ignition. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Keep container tightly closed and in a well-ventilated place. Store in closed original container at room temperature. Keep in an area equipped with sprinklers. Store away from incompatible materials (See Section 10).

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Fuels, diesel (CAS 68334-30-5)	TWA	100 mg/m ³	Inhalable fraction and vapor.

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Fuels, diesel (CAS 68334-30-5)	TWA	100 mg/m ³

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value	Form
Fuels, diesel (CAS 68334-30-5)	TWA	100 mg/m ³	Vapor and aerosol.

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value	Form
Fuels, diesel (CAS 68334-30-5)	TWA	100 mg/m ³	Inhalable fraction and vapor.

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value	Form
Fuels, diesel (CAS 68334-30-5)	TWA	100 mg/m ³	Inhalable fraction and vapor.

Exposure guidelines

Canada - British Columbia OELs: Skin designation

Fuels, diesel (CAS 68334-30-5) Can be absorbed through the skin.

Canada - Manitoba OELs: Skin designation

Fuels, diesel (CAS 68334-30-5) Can be absorbed through the skin.

Canada - Ontario OELs: Skin designation

Fuels, diesel (CAS 68334-30-5) Can be absorbed through the skin.

Canada - Saskatchewan OELs: Skin designation

Fuels, diesel (CAS 68334-30-5) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Fuels, diesel (CAS 68334-30-5) Can be absorbed through the skin.

Engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal protective equipment

Eye / face protection

Use approved safety goggles or face shield.

Skin protection

Wear appropriate chemical resistant clothing to prevent any possibility of skin contact.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Use a NIOSH/MSHA approved air purifying respirator as needed to control exposure. Consult with respirator manufacturer to determine respirator selection, use, and limitations. Use positive pressure, air-supplied respirator for uncontrolled releases or when air purifying respirator limitations may be exceeded. Follow respirator protection program requirements (OSHA 1910.134 and ANSI Z88.2) for all respirator use.

9. Physical & Chemical Properties

Appearance

Physical state

Liquid.

Form

Liquid.

Color

Straw.

Odor

Hydrocarbon-like.

Odor threshold

Not available.

pH

Not available.

Vapor pressure

< 2 psia

Vapor density

Not available.

Boiling point

300.2 - 752 °F (149 - 400 °C)

Melting point/Freezing point

Not applicable.

Solubility (water)

Insoluble in water.

Specific gravity

0.84 - 0.89 @ 15.6 °C

Flash point

> 104.0 °F (> 40.0 °C) Pensky-Martens Closed Cup

Flammability limits in air, upper, % by volume

7.6 %

Flammability limits in air, lower, % by volume

0.6 %

Auto-ignition temperature

Not available.

Evaporation rate

Not available.

Viscosity

1 - 10 cSt @ 40 °C

Partition coefficient (n-octanol/water)

Not available.

10. Chemical Stability & Reactivity Information

Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

Chemical stability

Stable under normal storage and handling conditions.

Conditions to avoid	Heat, sparks, flames, elevated temperatures. Contact with incompatible materials. Do not pressurize, cut, weld, braze, solder, drill, grind or expose empty containers to heat, flame, sparks, static electricity, or other sources of ignition; they may explode and cause injury or death.
Incompatible materials	Strong acids. Strong oxidizing agents.
Hazardous decomposition products	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.

11. Toxicological Information

Acute effects	Swallowing or vomiting of the liquid may result in aspiration into the lungs. Harmful if inhaled. Breathing of high concentrations may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness. Causes skin irritation.
Sensitization	Not a skin or respiratory sensitizer.
Chronic effects	Prolonged or repeated contact with skin may cause redness, itching, irritation and eczema/chapping. Prolonged inhalation may be harmful. May cause damage to organs (blood, liver, thymus) through prolonged or repeated exposure.
Carcinogenicity	Suspected of causing cancer.
ACGIH Carcinogens	
Fuels, diesel (CAS 68334-30-5)	A3 Confirmed animal carcinogen with unknown relevance to humans.
Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/irritation	Direct contact with eyes may cause temporary irritation.
Mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Reproductive effects	This product is not expected to cause reproductive or developmental effects.
Teratogenicity	This product is not expected to cause teratogenic effects.
Symptoms and target organs	Harmful if inhaled. Causes skin irritation. May cause redness and pain. Prolonged contact may cause dryness of the skin. Direct contact with eyes may cause temporary irritation. May cause damage to organs (blood, liver, thymus) through prolonged or repeated exposure. Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.
Synergistic materials	None known.

12. Ecological Information

Ecotoxicological data	No ecotoxicity data noted for the ingredient(s).
Ecotoxicity	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Oil spills are generally hazardous to the environment.
Environmental effects	The product contains volatile organic compounds which have a photochemical ozone creation potential.
Aquatic toxicity	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Persistence and degradability	The degradability of the product has not been stated.
Bioaccumulation / accumulation	No data available on bioaccumulation.
Mobility in environmental media	The product is insoluble in water. It will spread on the water surface while some of the components will eventually sediment in water systems. The volatile components of the product will spread in the atmosphere.

13. Disposal Considerations

Disposal instructions	Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container.
Waste from residues / unused products	Dispose of waste and residues in accordance with local authority requirements.
Contaminated packaging	Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport Information

TDG

UN number UN1202
UN proper shipping name Diesel Fuel
Transport hazard class(es)
Class 3
Subsidiary risk -
Packing group III
Environmental hazards Yes
Special precautions for user Read safety instructions, MSDS and emergency procedures before handling.

IATA

UN number UN1202
UN proper shipping name Diesel Fuel
Transport hazard class(es)
Class 3
Subsidiary risk -
Label(s) 3
Packing group III
Environmental hazards Yes
ERG Code 3L
Special precautions for user Read safety instructions, MSDS and emergency procedures before handling.

IMDG

UN number UN1202
UN proper shipping name Diesel Fuel
Transport hazard class(es)
Class 3
Subsidiary risk -
Label(s) 3
Packing group III
Environmental hazards
Marine pollutant Yes
EmS F-E, S-E
Special precautions for user Read safety instructions, MSDS and emergency procedures before handling.

15. Regulatory Information

Canadian regulations This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS status Controlled

WHMIS classification B3 - Combustible Liquids
D2A - Other Toxic Effects-VERY TOXIC
D2B - Other Toxic Effects-TOXIC

WHMIS labeling



International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other Information

Further information	The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.
NFPA ratings	Health: 2 Flammability: 2 Instability: 0
Disclaimer	To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.
Prepared by	Not available.



31.1.2 D-MO Gold pc2882-20151120

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D-MO Gold
pc2882-20151120.pdf

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SAFETY DATA SHEET

1. Identification

Product identifier	D-MO GOLD
Other means of identification	
Product code	2882
Synonyms	SAE 10W30; 15W40; Sonix D-MO Gold; SAE 10W-30; 15W-40
Recommended use	Lubrication oil.
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Manufacturer	Consumers' Co-operative Refineries Limited
Address	P.O. Box 260, 6th Avenue North Regina, SK S4P 3A1 Canada
Telephone	(306) 719-4353
Supplier	Federated Co-operatives Limited
Address	P.O. Box 1050, 401 - 22nd Street East Saskatoon SK S7K 3M0 Canada
Telephone	(306) 244-3447
24-hour emergency telephone	(513) 698-6006 - Canutel

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Not classified.
Environmental hazards	Not classified.
Label elements	
Hazard symbol	None.
Signal word	None.
Hazard statement	The mixture does not meet the criteria for classification.
Precautionary statements	
Prevention	Observe good industrial hygiene practices.
Response	Wash hands after handling.
Storage	Store away from other materials.
Disposal	Dispose of waste and residues in accordance with local authority requirements.
Other hazards	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

The components are not hazardous or are below required disclosure limits.

4. First-aid measures

Inhalation	If fumes or combustion products are inhaled move victim to fresh air. Get medical attention if any discomfort occurs.
Skin contact	Remove contaminated clothing. Wash with soap and water. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse.
Eye contact	Flush eyes with water as a precaution. Remove contact lenses, if present and easy to do. Get medical attention if symptoms occur.
Ingestion	Rinse mouth thoroughly with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if any discomfort occurs.

Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation. Prolonged skin contact may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	Treat symptomatically. Symptoms may be delayed.
General information	If you feel unwell, seek medical advice (show the label where possible). First aid personnel must be aware of own risk during rescue.
5. Fire-fighting measures	
Suitable extinguishing media	Extinguish with foam, carbon dioxide or dry powder.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	By heating and fire, toxic vapours/gases may be formed.
Special protective equipment and precautions for firefighters	Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Use standard firefighting procedures and consider the hazards of other involved materials.
Specific methods	Move container from fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out.
General fire hazards	Material will burn in a fire.
6. Accidental release measures	
Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. In case of spills, beware of slippery floors and surfaces. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid inhalation of vapours and contact with skin and eyes. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8.
Methods and materials for containment and cleaning up	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Clean contaminated area with oil-removing material. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.
Environmental precautions	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases.
7. Handling and storage	
Precautions for safe handling	Avoid direct contact with eyes and prolonged skin exposure. Observe good industrial hygiene practices. Use appropriate Personal Protective Equipment.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Keep in a cool, well-ventilated place. Store away from incompatible materials (See Section 10).
8. Exposure controls/personal protection	
Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Exposure guidelines	No exposure standards allocated.
Appropriate engineering controls	Provide adequate ventilation and minimise the risk of inhalation of vapours and oil mist. Provide access to washing facilities including soap, skin cleanser and fatty cream.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear approved safety goggles.
Skin protection	
Hand protection	Wear protective gloves. Suitable gloves can be recommended by the glove supplier.
Other	Wear appropriate clothing to prevent repeated or prolonged skin contact.

Respiratory protection No personal respiratory protective equipment normally required. If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	Yellowish liquid.
Physical state	Liquid.
Form	Liquid.
Colour	Yellowish.
Odour	Hydrocarbon.
Odour threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	220.0 °C (428.0 °F) Open cup
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit – upper (%)	Not available.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	0.9 (H2O=1)
Relative density temperature	15.5 °C (59.9 °F)
Solubility(ies)	
Solubility (water)	Insoluble in cold and hot water.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Heat. Contact with incompatible materials.
Incompatible materials	Oxidising materials. Acids.
Hazardous decomposition products	Thermal decomposition of this product can generate carbon monoxide and carbon dioxide.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged or excessive inhalation may cause respiratory tract irritation.
Skin contact	Prolonged skin contact may cause temporary irritation.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.

Symptoms related to the physical, chemical and toxicological characteristics Direct contact with eyes may cause temporary irritation. Prolonged skin contact may cause temporary irritation.

Information on toxicological effects

Acute toxicity	Not expected to be acutely toxic.
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory or skin sensitisation	
Respiratory sensitisation	Not a respiratory sensitiser.
Skin sensitisation	This product is not expected to cause skin sensitisation.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Chronic effects are not expected when this product is used as intended.
Further information	This product has no known adverse effect on human health.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Oil spills are generally hazardous to the environment.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available on bioaccumulation.
Mobility in soil	The product is insoluble in water and has a low mobility in the environment.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Dispose in accordance with applicable federal, state, and local regulations. Do not incinerate sealed containers. Do not allow this material to drain into sewers/water supplies.
Hazardous waste code	Waste codes should be assigned by the user based on the application for which the product was used.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty packaging should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

TDG

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

Canadian regulations This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.

Controlled Drugs and Substances Act

Not regulated.

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Precursor Control Regulations

Not regulated.

International regulations**Stockholm Convention**

Not applicable.

Rotterdam Convention

Not applicable.

Kyoto protocol

Not applicable.

Montreal Protocol

Not applicable.

Basel Convention

Not applicable.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

Issue date 20-November-2015

Revision date -

Version No. 01

Further information The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

Disclaimer

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



31.1.3 D-MO GOLD SL pc3021-20150312

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D-MO GOLD SL
pc3021-20150312.pdf

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MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material name	D-MO GOLD SL
Version #	04
Issue date	22-October-2012
Revision date	12-March-2015
Supersedes date	15-November-2012
CAS #	Mixture
Product code	3021
Product use	Lubrication oil
Synonym(s)	(SAE) 0W-40; SAE 5W-30; SAE 5W-40; Sonic D-MO Gold SL; Sonic D-MO Gold SB 5W-30; Sonic M/M C-M SL 5W-40
Manufacturer information	
Manufacturer	Consumer' Co-operative Refineries Limited
Address	P.O. Box 260; 9th Avenue North Regina, SK S4P 3A1 Canada
Telephone	(306) 721-5353 -or- (306) 719-4353
Supplier	Federated Co-operatives Limited
Address	P.O. Box 1050; 401 - 22nd Street East Saskatoon SK S7K 3M9 Canada
Telephone	(306) 244-3447
24 Hour Emergency Telephone	(513) 996-6666 - Canuto

2. Hazards Identification

Physical state	Liquid
Appearance	Brown liquid
Emergency overview	Low hazard for usual industrial or commercial handling by trained personnel.
OSHA regulatory status	This product is not hazardous according to OSHA 29CFR 1910.1200.
Potential health effects	
Routes of exposure	Eye contact, Skin contact, Ingestion, Inhalation.
Eyes	Direct contact with eyes may cause temporary irritation.
Skin	Prolonged skin contact may cause temporary irritation.
Inhalation	May cause respiratory tract irritation.
Ingestion	Under normal conditions of intended use, this material does not pose a risk to health.
Chronic effects	No data available.
Potential environmental effects	No special environmental precautions required.

3. Composition / Information on Ingredients

The manufacturer lists no ingredients as hazardous according to OSHA 29 CFR 1910.1200.

4. First Aid Measures

First aid procedures	
Inhalation	If fumes or combustion products are inhaled move victim to fresh air. Get medical attention if any discomfort occurs.
Skin contact	In case of contact, flush skin with plenty of water for at least 20 minutes, while removing contaminated shoes and clothes. Wash contaminated skin with soap and water. Wash contaminated clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if irritation develops and persists.
Eye contact	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 20 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.

Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if any discomfort occurs.
Notes to physician	Treat symptomatically.
General advice	If you feel unwell, seek medical advice (show the label where possible).

5. Fire Fighting Measures

Extinguishing media	
Suitable extinguishing media	Extinguish with water spray, carbon dioxide, dry chemical or material appropriate for the surrounding fire.
Unsuitable extinguishing media	None.
Protection of firefighters	
Specific hazards arising from the chemical	By heating and fire, toxic vapors/gases may be formed.
Fire fighting equipment/instructions	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
Hazardous combustion products	Incomplete combustion may produce: Carbon oxides.

6. Accidental Release Measures

Personal precautions	In case of spills, beware of slippery floors and surfaces. Wear suitable protective clothing and gloves. For personal protection, see Section 8 of the MSDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground. Prevent spreading over a wide area (e.g. by containment or oil barriers).
Methods for containment	Collect and dispose of spillage as indicated in Section 13 of the MSDS.
Methods for cleaning up	Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
Other information	Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling	Observe good industrial hygiene practices. Use appropriate Personal Protective Equipment.
Storage	Store in original tightly closed container. Keep in a cool, well-ventilated place. Store away from incompatible materials. Store away from incompatible materials (see Section 10 of the MSDS).

8. Exposure Controls / Personal Protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Engineering controls	General ventilation is normally adequate.
Personal protective equipment	
Eye / face protection	Wear approved safety glasses or goggles.
Skin protection	Wear appropriate clothing to prevent repeated or prolonged skin contact.
Respiratory protection	No personal respiratory protective equipment normally required.
Hand protection	Wash hands after handling. Wear protective gloves. Chemical resistant gloves are recommended.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practices.

9. Physical & Chemical Properties

Appearance	Brown liquid.
Physical state	Liquid.
Form	Liquid.
Color	Brown.
Odor	Hydrocarbon.
Odor threshold	Not available.
pH	Not available.
Vapor pressure	Not available.
Vapor density	Not available.

Boiling point	Not available.
Melting point/Freezing point	Not available.
Solubility (water)	Insoluble in cold and hot water.
Specific gravity	0.90 at 15.5°C
Flash point	428.0 °F (220.0 °C) Open Cup
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Auto-ignition temperature	Not available.

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Conditions to avoid	Heat or contact with oxidizing materials will greatly increase fire and explosion hazards.
Incompatible materials	Reactive or incompatible with the following materials: Oxidizing materials. Acids.
Hazardous decomposition products	None expected under normal conditions of use.
Possibility of hazardous reactions	Will not occur.

11. Toxicological Information

Sensitization	Not classified.
Acute effects	Not expected to be acutely toxic.
Local effects	None known.
Chronic effects	Chronic effects are not expected when this product is used as intended.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Mutagenicity	Not expected to be mutagenic.
Reproductive effects	Contains no ingredient listed as toxic to reproduction.
Teratogenicity	Not classified.

12. Ecological Information

Ecotoxicity	No data on possible environmental effects have been found.
Environmental effects	The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulation / accumulation	Not available.
Mobility in environmental media	The product is insoluble in water.

13. Disposal Considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose in accordance with all applicable regulations.
Waste from residues / unused products	Dispose of waste and residues in accordance with local authority requirements.
Contaminated packaging	Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport Information

DOT	Not regulated as a hazardous material by DOT.
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IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

TDG

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations

This product is not hazardous according to OSHA 29CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

CERCLA (Superfund) reportable quantity (lbs) (40 CFR 302.4)

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

No

Drug Enforcement Administration (DEA) (21 CFR 1308.11-15)

Not controlled

WHMIS status

Non-controlled

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

State regulations

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

US. Massachusetts RTK - Substance List

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

16. Other Information

Further information

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

HFFA ratings



Disclaimer

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Prepared by

Not available.



11.1.4 D-MO pc109-20151120

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D-MO
pc109-20151120.pdf

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SAFETY DATA SHEET

1. Identification

Product identifier	D-MO
Other means of identification	
Product code	189
Synonyms	SAE 10W, 20W-20, 30, 40, 50, Sonic D-MO
Recommended use	Lubrication oil.
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor Information	
Manufacturer	Consumers' Co-operative Refineries Limited
Address	P.O. Box 260, 9th Avenue North Regina, SK S4P 3A1 Canada (306) 719-4353
Telephone	
Supplier	Federated Co-operatives Limited
Address	P.O. Box 1060, 401 - 22nd Street East Saskatoon SK S7K 3M0 Canada (306) 244-3447
Telephone	(306) 244-3447
24-Hour emergency telephone	(813) 900-8666 - Canutec

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Serious eye damage/eye irritation	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 3
	Hazardous to the aquatic environment, long-term hazard	Category 3

Label elements



Signal word	Danger
Hazard statement	Causes serious eye damage. Harmful to aquatic life with long lasting effects.
Precautionary statements	
Prevention	Avoid release to the environment. Wear eye protection/face protection.
Response	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
Storage	Store away from incompatible materials.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Other hazards	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Zinc AlkylDithiophosphate	68049-42-3	1-5

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
Components not listed are either non-hazardous or are below reportable limits.

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact In case of contact, flush skin with plenty of water for at least 20 minutes, while removing contaminated shoes and clothes. Get medical attention if irritation develops and persists.

Eye contact Immediately flush eyes with plenty of water for at least 20 minutes, occasionally lifting the upper and lower eyelids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

Ingestion Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Direct contact with eyes may cause temporary irritation. Prolonged skin contact may cause temporary irritation.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions Move containers from fire area if you can do so without risk.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. In case of spills, beware of slippery floors and surfaces. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8.

Methods and materials for containment and cleaning up Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Prevent product from entering drains. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases.

7. Handling and storage

Precautions for safe handling Provide adequate ventilation. Do not get this material in contact with eyes. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities Store in original tightly closed container. Store away from incompatible materials (see section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits No exposure limits noted for ingredient(s).

Biological limit values	No biological exposure limits noted for the ingredient(s).
Exposure guidelines	No exposure standards allocated.
Appropriate engineering controls	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. General ventilation normally adequate. Provide easy access to water supply and eye wash facilities.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Chemical goggles are recommended. Wear face shield if there is risk of splashes.
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves. Neoprene or nitrile gloves are recommended.
Other	Wear suitable protective clothing.
Respiratory protection	No personal respiratory protective equipment normally required. If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	Oily liquid.
Physical state	Liquid.
Form	Liquid.
Colour	Brown.
Odour	Mild.
Odour threshold	Not available.
pH	Not available.
Melting point/freezing point	-20 °C (-4 °F)
Initial boiling point and boiling range	Not available.
Flash point	> 147.0 °C (> 296.6 °F) Open cup
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit – upper (%)	Not available.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	0.88 - 0.89 (H20=1)
Solubility(ies)	
Solubility (water)	Slightly soluble in water.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	413 °C (775.4 °F)
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidising agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged or excessive inhalation may cause respiratory tract irritation.
Skin contact	Prolonged skin contact may cause temporary irritation.
Eye contact	Causes serious eye damage.
Ingestion	May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.

Symptoms related to the physical, chemical and toxicological characteristics Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Prolonged skin contact may cause temporary irritation.

Information on toxicological effects

Acute toxicity	Not expected to be acutely toxic.
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Causes serious eye damage.

Respiratory or skin sensitisation

Respiratory sensitisation	Not a respiratory sensitiser.
Skin sensitisation	This product is not expected to cause skin sensitisation.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Not classifiable as to carcinogenicity to humans.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

Chronic effects Prolonged inhalation may be harmful.

Further information No other specific acute or chronic health impact noted.

12. Ecological information

Ecotoxicity	Harmful to aquatic life with long lasting effects.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available on bioaccumulation.
Mobility in soil	This product is slightly water soluble and may disperse in soil.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.

Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

TDG

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

Canadian regulations This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.

Controlled Drugs and Substances Act

Not regulated.

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Precursor Control Regulations

Not regulated.

International regulations

Stockholm Convention

Not applicable.

Rotterdam Convention

Not applicable.

Kyoto protocol

Not applicable.

Montreal Protocol

Not applicable.

Basel Convention

Not applicable.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
 A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other Information

Issue date	20 November 2015
Revision date	
Version No.	01
Further information	The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.
Disclaimer	To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



31.1.5 Gasoline-Ethanol Blended pc2738-20150825

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Gasoline-Ethanol
Blended pc2738-2015

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SAFETY DATA SHEET

1. Identification

Product identifier	GASOLINE
Other means of identification	
Product code	2738
Synonyms	Ethanol Blended Gasoline * Non-Ethanol Blended Gasoline * Unleaded Gasoline * Gasoline * Regular Gasoline * Premium Gasoline * Premium Unleaded Gasoline * Mid Grade Gasoline * Gasoline (Export) * Petroleum Naphtha
Recommended use	Motor fuels.
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor Information	
Manufacturer	Consumers' Co-operative Refineries Limited
Address	P.O. Box 260, 98th Avenue North Regina, SK S4P 3A1 Canada
Telephone	(306) 721-5353 -or- (306) 719-4353
Supplier	Federated Co-operatives Limited
Address	P.O. Box 1050, 401 - 22nd Street East Saskatoon SK S7K 3M9 Canada
Telephone	(306) 244-3447
24 Hour Emergency Telephone	(813) 999-6666 - Canutox

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 2
Health hazards	Skin corrosion/irritation	Category 2
	Germ cell mutagenicity	Category 1B
	Carcinogenicity	Category 1B
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Specific target organ toxicity, repeated exposure	Category 1 (hematopoietic system)
	Aspiration hazard	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 2
	Hazardous to the aquatic environment, long-term hazard	Category 2

Label elements



Signal word Danger

Hazard statement Highly flammable liquid and vapor. Causes skin irritation. May cause genetic defects. May cause cancer. May cause drowsiness or dizziness. Causes damage to organs (hematopoietic system) through prolonged or repeated exposure. May be fatal if swallowed and enters airways. Toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Do not breathe mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response

IF SWALLOWED: Immediately call a POISON CENTER/doctor. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. IF exposed or concerned: Get medical advice/attention. In case of fire: Use alcohol resistant foam, water fog, carbon dioxide, dry chemical powder for extinction. Collect spillage.

Storage

Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards

Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

Supplemental information

None.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Gasoline	86290-81-5	60-100
Ethanol	64-17-5	0-10
Benzene	71-43-2	<1.5

Composition comments

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact

In case of contact, flush skin with plenty of water for at least 20 minutes, while removing contaminated shoes and clothes. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Eye contact

Immediately flush eyes with plenty of water for at least 20 minutes. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists.

Ingestion

Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Most important symptoms/effects, acute and delayed

Skin irritation. May cause redness and pain. Direct contact with eyes may cause temporary irritation. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Causes damage to organs (hematopoietic system) through prolonged or repeated exposure. Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia. Prolonged exposure may cause chronic effects.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information

Take off all contaminated clothing immediately. IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media

Alcohol resistant foam. Water fog. Dry chemical powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static electricity accumulation may be significantly increased by the presence of small quantities of water or other contaminants. Material will float and may ignite on surface of water. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Highly flammable liquid and vapor.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Use appropriate containment to avoid environmental contamination. Transfer by mechanical means such as vacuum truck to a salvage tank or other suitable container for recovery or safe disposal. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil, etc.) away from spilled material. Prevent entry into waterways, sewer, basements or confined areas.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases. Use appropriate containment to avoid environmental contamination.

7. Handling and storage

Precautions for safe handling Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Explosion-proof general and local exhaust ventilation. Minimize fire risks from flammable and combustible materials (including combustible dust and static accumulating liquids) or dangerous reactions with incompatible materials. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Do not breathe mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. When using, do not eat, drink or smoke. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

For additional information on equipment bonding and grounding, refer to the Canadian Electrical Code in Canada, (CSA C22.1), or the American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising out of Static, Lightning, and Stray Currents" or National Fire Protection Association (NFPA) 77, "Recommended Practice on Static Electricity" or National Fire Protection Association (NFPA) 70, "National Electrical Code".

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
Benzene (CAS 71-43-2)	STEL	2.5 ppm
	TWA	0.5 ppm
Ethanol (CAS 64-17-5)	STEL	1000 ppm
Gasoline (CAS 86290-81-5)	STEL	500 ppm
	TWA	300 ppm

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Benzene (CAS 71-43-2)	STEL	8 mg/m3
		2.5 ppm
	TWA	1.6 mg/m3
		0.5 ppm
Ethanol (CAS 64-17-5)	TWA	1880 mg/m3
		1000 ppm
Gasoline (CAS 86290-81-5)	STEL	500 ppm
	TWA	300 ppm

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value
Benzene (CAS 71-43-2)	STEL	2.5 ppm
	TWA	0.5 ppm
Ethanol (CAS 64-17-5)	STEL	1000 ppm
Gasoline (CAS 86290-81-5)	STEL	500 ppm
	TWA	300 ppm

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value
Benzene (CAS 71-43-2)	STEL	2.5 ppm
	TWA	0.5 ppm
Ethanol (CAS 64-17-5)	STEL	1000 ppm
Gasoline (CAS 86290-81-5)	STEL	500 ppm
	TWA	300 ppm

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value
Benzene (CAS 71-43-2)	STEL	2.5 ppm
	TWA	0.5 ppm
Ethanol (CAS 64-17-5)	STEL	1000 ppm
Gasoline (CAS 86290-81-5)	STEL	500 ppm
	TWA	300 ppm

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value
Benzene (CAS 71-43-2)	STEL	15.5 mg/m3
		5 ppm
	TWA	3 mg/m3
		1 ppm

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value
Ethanol (CAS 64-17-5)	TWA	1880 mg/m ³ 1000 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Benzene (CAS 71-43-2)	25 µg/g	S-Phenylmercap- turic acid	Creatinine in urine	*

* - For sampling details, please see the source document.

Exposure guidelines

Canada - Alberta OELs: Skin designation

Benzene (CAS 71-43-2) Can be absorbed through the skin.

Canada - British Columbia OELs: Skin designation

Benzene (CAS 71-43-2) Can be absorbed through the skin.

Canada - Manitoba OELs: Skin designation

Benzene (CAS 71-43-2) Can be absorbed through the skin.

Canada - Ontario OELs: Skin designation

Benzene (CAS 71-43-2) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Benzene (CAS 71-43-2) Can be absorbed through the skin.

Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles). Wear face shield if there is risk of splashes.

Skin protection

Hand protection Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

Other Wear appropriate chemical resistant clothing. Full body suit and boots are recommended when handling large volumes or in emergency situations. Flame retardant protective clothing is recommended where the potential of flash fire exists.

Respiratory protection In case of inadequate ventilation or risk of inhalation of vapors, use suitable respiratory equipment. Wear a NIOSH-approved (or equivalent) full-facepiece airline respirator in the positive pressure mode with emergency escape provisions.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	Amber liquid.
Physical state	Liquid.
Form	Liquid.
Color	Amber.
Odor	Gasoline-like.
Odor threshold	< 0.25 ppm
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	> 95 °F (> 35 °C)
Flash point	< -40.0 °F (< -40.0 °C) Closed Cup
Evaporation rate	4 (Butyl acetate = 1)

Flammability (solid, gas) Flammable gas. Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) 1.2 %

Flammability limit - upper (%) 7.1 %

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure > 1 (Air=1)

Vapor density 3 - 4 (Air=1)

Relative density Not available.

Solubility(ies)

Solubility (water) Insoluble in water.

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature 842 °F (450 °C)

Decomposition temperature Not available.

Viscosity Not available.

Other information

Explosive properties Not explosive.

Oxidizing properties Not oxidizing.

Specific gravity 0.69 - 0.75

VOC (Weight %) 100 %

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous reactions No dangerous reaction known under conditions of normal use.

Conditions to avoid Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials. Do not pressurize, cut, weld, braze, solder, drill, grind or expose empty containers to heat, flame, sparks, static electricity, or other sources of ignition; they may explode and cause injury or death.

Incompatible materials Strong oxidizing agents.

Hazardous decomposition products Thermal decomposition of this product can generate carbon monoxide and carbon dioxide. Sulfur oxides. Hydrocarbons.

11. Toxicological information

Information on likely routes of exposure

Inhalation May cause damage to organs through prolonged or repeated exposure by inhalation. May cause drowsiness and dizziness. Headache. Nausea, vomiting.

Skin contact Causes skin irritation. Benzene can be absorbed through skin.

Eye contact Direct contact with eyes may cause temporary irritation.

Ingestion Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.

Symptoms related to the physical, chemical and toxicological characteristics Skin irritation. May cause redness and pain. Direct contact with eyes may cause temporary irritation. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia. Causes damage to organs (hematopoietic system) through prolonged or repeated exposure. Prolonged exposure may cause chronic effects.

Information on toxicological effects

Acute toxicity Not expected to be acutely toxic.

Components	Species	Test Results
Ethanol (CAS 64-17-5)		
Acute		
<i>Inhalation</i>		
LC50	Rat	20000 ppm, 10 Hours
<i>Oral</i>		
LD50	Rat	6.2 g/kg
Skin corrosion/irritation	Causes skin irritation.	
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.	
Respiratory or skin sensitization		
Respiratory sensitization	Not a respiratory sensitizer.	
Skin sensitization	This product is not expected to cause skin sensitization.	
Germ cell mutagenicity	May cause genetic defects.	
Carcinogenicity	May cause cancer.	
ACGIH Carcinogens		
Benzene (CAS 71-43-2)	A1 Confirmed human carcinogen.	
Gasoline (CAS 86290-81-5)	A3 Confirmed animal carcinogen with unknown relevance to humans.	
Canada - Alberta OELs: Carcinogen category		
Benzene (CAS 71-43-2)	Confirmed human carcinogen.	
Canada - Manitoba OELs: carcinogenicity		
BENZENE (CAS 71-43-2)	Confirmed human carcinogen.	
ETHANOL (CAS 64-17-5)	Confirmed animal carcinogen with unknown relevance to humans.	
GASOLINE (CAS 86290-81-5)	Confirmed animal carcinogen with unknown relevance to humans.	
Canada - Quebec OELs: Carcinogen category		
Benzene (CAS 71-43-2)	Detected carcinogenic effect in humans.	
IARC Monographs. Overall Evaluation of Carcinogenicity		
Benzene (CAS 71-43-2)	1 Carcinogenic to humans.	
Gasoline (CAS 86290-81-5)	2B Possibly carcinogenic to humans.	
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.	
Specific target organ toxicity - single exposure	May cause drowsiness and dizziness.	
Specific target organ toxicity - repeated exposure	Causes damage to organs (hematopoietic system) through prolonged or repeated exposure.	
Aspiration hazard	May be fatal if swallowed and enters airways.	
Chronic effects	Causes damage to organs through prolonged or repeated exposure. Prolonged exposure may cause chronic effects.	

12. Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects.

Components	Species	Test Results
Ethanol (CAS 64-17-5)		
Aquatic		
Crustacea	EC50 Water flea (<i>Daphnia obtusa</i>)	10100 - 11200 mg/l, 48 hours
Fish	LC50 Fathead minnow (<i>Pimephales promelas</i>)	13480 mg/l, 96 hours

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

Benzene (CAS 71-43-2)	2.13
Ethanol (CAS 64-17-5)	-0.31

Mobility in soil The product is insoluble in water.

Other adverse effects The product contains a substance which has a photochemical ozone creation potential.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	D001: Waste Flammable material with a flash point <140 F D018: Waste Benzene The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

TDG

UN number	UN1203
UN proper shipping name	PETROL
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number	UN1203
UN proper shipping name	Gasoline
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	II
Environmental hazards	Yes
ERG Code	3H
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1203
UN proper shipping name	Gasoline
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	II
Environmental hazards	
Marine pollutant	Yes
EmS	F-E, S-E
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

Canadian regulations

Controlled Drugs and Substances Act

Not regulated.

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Precursor Control Regulations

Not regulated.

International regulations**Stockholm Convention**

Not applicable.

Rotterdam Convention

Not applicable.

Kyoto protocol

Not applicable.

Montreal Protocol

Not applicable.

Basel Convention

Not applicable.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other Information

Issue date	25-August-2015
Revision date	25-August-2015
Version #	02
Further information	The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.
Disclaimer	To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



31.1.6 Industrial hydraulic oil pc104-20150520

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Industrial hydraulic oil
pc104-20150520.pdf

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MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product Identifier	INDUSTRIAL HYDRAULIC OIL
Version #	01
Issue date	20-May-2015
Revision date	-
Supersedes date	-
CAS #	Mixture
Product code	154
Product use	Hydraulic oil
Synonym(s)	SONIC INDUSTRIAL HYDRAULIC * ISO GRADES 22, 32, 46, 68, 100, 150, MV22, HVI 30
Manufacturer information	
Manufacturer	Consumers' Co-operative Refineries Limited
Address	P.O. Box 260; 9th Avenue North Regina, SK S4P 3A1 Canada (306) 721-5353 -or- (306) 719-4353
Telephone	
Supplier	Federated Co-operatives Limited
Address	P.O. Box 1050, 401 - 22nd Street East Saskatoon SK S7K 3M9 Canada (306) 244-3447
Telephone	
24 Hour Emergency Telephone	(613) 996-6666 - Carutec

2. Hazards Identification

Emergency overview	Low hazard for usual industrial or commercial handling by trained personnel.
Potential health effects	
Routes of exposure	
Eyes	Direct contact with eyes may cause temporary irritation.
Skin	Prolonged skin contact may cause temporary irritation.
Inhalation	Prolonged or excessive inhalation may cause respiratory tract irritation.
Ingestion	Under normal conditions of intended use, this material does not pose a risk to health. However, accidental ingestion of the content may cause discomfort.
Chronic effects	Chronic effects are not expected when this product is used as intended.
Potential environmental effects	No special environmental precautions required.

3. Composition / Information on Ingredients

The components are not hazardous or are below required disclosure limits.

4. First Aid Measures

First aid procedures	
Inhalation	If fumes or combustion products are inhaled move victim to fresh air. Get medical attention if any discomfort occurs.
Skin contact	Remove contaminated clothing. Wash with soap and water. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse.
Eye contact	Flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention if symptoms occur.
Ingestion	Rinse mouth thoroughly with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if any discomfort occurs.
Notes to physician	Treat symptomatically. Symptoms may be delayed.
General advice	First aid personnel must be aware of own risk during rescue.

5. Fire Fighting Measures

Flammable properties	Material will burn in a fire.
Extinguishing media	
Suitable extinguishing media	Extinguish with foam, carbon dioxide or dry powder.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Protection of firefighters	
Specific hazards arising from the chemical	By heating and fire, toxic vapors/gases may be formed.
Protective equipment for firefighters	Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Use standard firefighting procedures and consider the hazards of other involved materials.
Specific methods	Move container from fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out.
Explosion data	
Sensitivity to static discharge	Not sensitive.
Sensitivity to mechanical impact	Not sensitive.
Hazardous combustion products	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

6. Accidental Release Measures

Personal precautions	Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. In case of spills, beware of slippery floors and surfaces. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid inhalation of vapors and contact with skin and eyes. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the MSDS.
Environmental precautions	Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Do not contaminate water.
Methods for cleaning up	Should not be released into the environment. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Clean contaminated area with oil-removing material. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the MSDS.
Other information	Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling	Avoid direct contact with eyes and prolonged skin exposure. Observe good industrial hygiene practices. Use appropriate Personal Protective Equipment.
Storage	Store in original tightly closed container. Keep in a cool, well-ventilated place. Store away from incompatible materials (See Section 10).

8. Exposure Controls / Personal Protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Engineering controls	ACGIH Threshold Limit Values for mineral oil mist: The 8-Hour Exposure Limit (TLV-TWA) is 5 mg/m ³ . The 15-minute STEL is 10 mg/m ³ . Provide adequate ventilation and minimize the risk of inhalation of vapors and oil mist. Provide access to washing facilities including soap, skin cleanser and fatty cream.

Personal protective equipment

Eye / face protection	Wear approved safety goggles.
Skin protection	Wear protective gloves. Neoprene or nitrile gloves are recommended. Wear appropriate clothing to prevent repeated or prolonged skin contact.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Use a NIOSH/MSHA approved air purifying respirator as needed to control exposure. Consult with respirator manufacturer to determine respirator selection, use, and limitations. Use positive pressure, air-supplied respirator for uncontrolled releases or when air purifying respirator limitations may be exceeded. Follow respirator protection program requirements (OSHA 1910.134 and ANSI Z88.2) for all respirator use.

9. Physical & Chemical Properties

Appearance	Oily liquid.
Physical state	Solid.
Form	Liquid.
Color	Brown.
Odor	Mild.
Odor threshold	Not available.
pH	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Boiling point	Not available.
Melting point/Freezing point	14 °F (-10 °C)
Solubility (water)	Partially soluble in cold and hot water.
Specific gravity	0.86
Flash point	> 296.6 °F (> 147.0 °C) Open Cup
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Auto-ignition temperature	775.4 °F (413 °C)
Evaporation rate	Not available.
Partition coefficient (n-octanol/water)	Not available.

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Thermal decomposition of this product can generate carbon monoxide and carbon dioxide.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.

11. Toxicological Information

Acute effects	May cause temporary irritation of skin, eyes, or respiratory system. Ingestion may cause irritation and malaise. The harmful effects may increase when exposed to used grease.
Sensitization	Not a skin or respiratory sensitizer.
Chronic effects	Chronic effects are not expected when this product is used as intended.
Carcinogenicity	Not classifiable as to carcinogenicity to humans.
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/irritation	Direct contact with eyes may cause temporary irritation.

Mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Reproductive effects	This product is not expected to cause reproductive or developmental effects.
Teratogenicity	This product is not expected to cause teratogenic effects.
Symptoms and target organs	Direct contact with eyes may cause temporary irritation. Prolonged skin contact may cause temporary irritation.
Synergistic materials	None known.

12. Ecological Information

Ecotoxicological data	No ecotoxicity data noted for the ingredient(s).
Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Oil spills are generally hazardous to the environment.
Environmental effects	Not classified as an environmental hazard.
Aquatic toxicity	Not classified.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulation / accumulation	No data available on bioaccumulation.
Mobility in environmental media	The product is slightly soluble in water.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal Considerations

Disposal instructions	Dispose in accordance with applicable federal, state, and local regulations. Do not incinerate sealed containers. Do not allow this material to drain into sewers/water supplies.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty packaging should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport Information

TDG	Not regulated as dangerous goods.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.

15. Regulatory Information

Canadian regulations	This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.
WHMIS status	Non-controlled

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other Information

Further information	The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.
NFPA ratings	Health: 1 Flammability: 1 Instability: 0
Disclaimer	To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.
Prepared by	Not available.



31.1.7 Sonic Blue Guard pc1696-20110919

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Sonic Blue Guard
pc1696-20110919.pdf

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MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material name	SONIC BLUE GUARD
Version #	02
Issue date	19-September-2011
Revision date	20-May-2014
Supersedes date	19-September-2011
CAS #	Mixture
Product code	1606
Product use	Multi-purpose grease
Synonym(s)	GREASE, MULTIPURPOSE
Manufacturer information	
Manufacturer	CHS Inc.
Address	P.O. Box 64000, Mail station 525 St. Paul, MN 55164-0000
Telephone	(651) 355-8438
Supplier	Federated Co-operatives Limited
Address	P.O. Box 1050, 401 - 22nd Street East Saskatoon SK S7K 5M0 Canada
Telephone	(306) 244-3447
24 Hour Emergency Telephone	(813) 990-0000 - Carulco

2. Hazards Identification

Physical state	Solid.
Appearance	Get-like solid.
Emergency overview	Low hazard for usual industrial or commercial handling by trained personnel.
OSHA regulatory status	This product is hazardous according to OSHA 29 CFR 1910.1200.
Potential health effects	
Routes of exposure	Eye contact, Skin contact.
Eyes	Direct contact with eyes may cause temporary irritation.
Skin	Prolonged skin contact may cause temporary irritation.
Inhalation	May cause respiratory tract irritation.
Ingestion	Under normal conditions of intended use, this material does not pose a risk to health.
Chronic effects	No data available.
Potential environmental effects	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

3. Composition / information on ingredients

Components	CAS #	Percent
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	60-100

Composition comments * All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First Aid Measures

First aid procedures	
Eye contact	Immediately rinse with water for several minutes.
Skin contact	Wash area with soap and water. Get medical attention if irritation develops or persists.
Inhalation	If fumes or combustion products are inhaled move victim to fresh air. Get medical attention if any discomfort occurs.

Ingestion Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if any discomfort occurs.

Notes to physician Treat symptomatically.

General advice If you feel unwell, seek medical advice (show the label where possible).

5. Fire Fighting Measures

Extinguishing media

Suitable extinguishing media Extinguish with water spray, carbon dioxide, dry chemical or material appropriate for the surrounding fire.

Unsuitable extinguishing media None.

Protection of firefighters

Specific hazards arising from the chemical By heating and fire, toxic vapors/gases may be formed.

Fire fighting equipment/instructions Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

Hazardous combustion products No data available.

6. Accidental Release Measures

Personal precautions In case of spills, beware of slippery floors and surfaces. Wear suitable protective clothing and gloves.

Environmental precautions Avoid discharge into drains, water courses or onto the ground. Prevent spreading over a wide area (e.g. by containment or oil barriers).

Methods for containment Collect and dispose of spillage as indicated in Section 13 of the MSDS.

Methods for cleaning up Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

Other information Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling Observe good industrial hygiene practices. Use appropriate Personal Protective Equipment.

Storage Store in original tightly closed container. Keep in a cool, well-ventilated place.

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5)	TWA	5 mg/m ³	Inhalable fraction.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5)	PEL	5 mg/m ³	Mist.
		2000 mg/m ³	
		500 ppm	

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value	Form
Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5)	STEL	10 mg/m ³	Mist.
	TWA	5 mg/m ³	Mist.

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value	Form
Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5)	TWA	5 mg/m ³	Inhalable fraction.

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value	Form
Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5)	STEL	10 mg/m ³	Mist.
	TWA	5 mg/m ³	Mist.

Mexico. Occupational Exposure Limit Values

Components	Type	Value	Form
Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5)	STEL	10 mg/m ³	Mist.
	TWA	5 mg/m ³	Mist.

Engineering controls General ventilation is normally adequate.

Personal protective equipment

- Eye / face protection** Wear approved safety glasses or goggles.
- Skin protection** Wear appropriate clothing to prevent repeated or prolonged skin contact. Wear protective gloves.
- Respiratory protection** No personal respiratory protective equipment normally required.
- General hygiene considerations** Handle in accordance with good industrial hygiene and safety practices.

9. Physical & Chemical Properties

Appearance	Gel-like solid.
Physical state	Solid.
Form	Gel.
Color	Blue.
Odor	Slight petroleum odor.
Odor threshold	Not available.
pH	Not available.
Vapor pressure	< 0.13 kPa (< 1mm Hg)
Vapor density	> 1 (Air = 1)
Boiling point	> 600.8 °F (> 316 °C)
Melting point/Freezing point	> 500 °F (> 260 °C)
Solubility (water)	Partially soluble in cold and hot water.
Specific gravity	0.91
Flash point	> 399.2 °F (> 204.0 °C) Pensky-Martens Closed Cup
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Auto-ignition temperature	Not available.
Evaporation rate	< 1 (Ether = 1.0)

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Conditions to avoid	Prolonged excessive heat may cause product decomposition.

Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	None expected under normal conditions of use.
Possibility of hazardous reactions	Will not occur.

11. Toxicological Information

Sensitization	Not a skin or respiratory sensitizer.
Acute effects	May be harmful if swallowed.
Local effects	None known.
Chronic effects	Chronic effects are not expected when this product is used as intended.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

ACGIH Carcinogens

Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5) A4 Not classifiable as a human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5) 3 Not classifiable as to carcinogenicity to humans.

Mutagenicity	Not expected to be mutagenic.
Neurological effects	No data available.
Reproductive effects	Not classified.
Teratogenicity	Not classified.

12. Ecological Information

Ecotoxicity	No data on possible environmental effects have been found.
Environmental effects	The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulation / Accumulation	Not available.

13. Disposal Considerations

Waste codes	Not regulated.
Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose in accordance with all applicable regulations.
Waste from residues / unused products	Dispose of waste and residues in accordance with local authority requirements.
Contaminated packaging	Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport Information

DOT	Not regulated as a hazardous material by DOT.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.
TDG	Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations	This product is hazardous according to OSHA 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.
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TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

CERCLA (Superfund) reportable quantity (lbs) (40 CFR 302.4)

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

Drug Enforcement Administration (DEA) (21 CFR 1308.11-15) Not controlled

WHMIS status Non-controlled

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

State regulations This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - California Hazardous Substances (Director's): Listed substance

Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5) Listed.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

US. Massachusetts RTK - Substance List

Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5) Listed.

US. New Jersey Worker and Community Right-to-Know Act

Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

16. Other Information

Further information The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

NFPA Ratings



Disclaimer

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



32 Key Legislation and References

Key Legislation & Regulation for Mining Exploration and Mining

- Mines Act
- Health & Safety and Reclamation Code for mines in BC
- Worker Compensation Act (WCA)
- Occupational Health & Safety (OHS)
- Railway Act
- Explosives Act
- Ministry of Energy, Mines and Petroleum Resources
- Ministry Of Transport

References

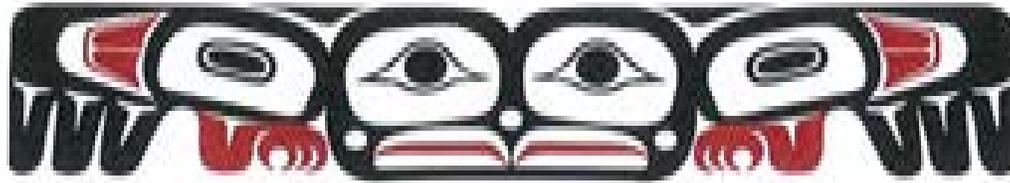
- The Railway Association of Canada
 - Canadian Rail Operating Rules
- Rules Respecting Track Safety (TC E-54) – Transport Canada November 25, 2011 Effective - May 25, 2012
- CN Customer Safety Handbook
- CN Industry Track Inspection
- Transport policy Guidelines & Regulation
- Health & Safety BC Ministry of Mines
 - A Practical Guide to aggregate operations
- BC Safety Authority
 - Railway Safety Program – Safety Handbook
- WorkSafe BC
 - How to Implement a formal occupational Health & Safety Program
- Ministry of Energy, mines and Petroleum Resources Mining and Minerals Division
 - Guidance Document
 - Aggregate Operators Best Management Practices for BC
- Changes to the Workers Compensation Act
 - Legislative Change a primer on employer-incident-investigations
 - Legislative Change a Primer on Injunctions and Due Diligence
- Aggregate Operators Best Management Practices Handbook for British Columbia



33 Kalum Quarry Operational Blasting Procedures

ATTACHED

DRAFT



Kalum Quarry Limited Partnership Operational Blasting Procedures

Prepared For: Kalum Quarry Ltd
Prepared By: Allnorth Consultants Ltd

Date Created: 15 December 2015
Date Revised:



REVISION HISTORY

Rev.#	Date of Issue	Reviewed By	Approved By	Description
0	2015/12/15	WH	WH	Initial release



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1 INTRODUCTION

1.1 Project Summary

Kalum Quarry is owned and operated by Kalum Quarry Limited Partnership (Kalum Quarry Ltd). It is anticipated that the quarry will produce approximately 240,000 tonnes of quarried product per year. Onsite drilling and blasting operations will be essential in this production process.

1.2 Scope and Objectives

The operational blasting procedures contained in this document have been developed in accordance with the Health, Safety and Reclamation Code for Mines in British Columbia (HSRC) and the requirements Part 21 of the Worksafe BC Occupational Health and Safety Regulations (OH&S Regulation). The operational blasting procedures apply to all blasting operations carried out at Kalum Quarry.

The objective of the procedures is to provide employees and contractors with clear and concise instructions regarding safety processes, procedures and responsibilities during blasting operations.

2 DEFINITIONS

Blaster – A person who is certified under HSRC to conduct blasting operations.

Blast Guard – A competent person who is authorised by the supervisor and blaster in charge to ensure controls are in place to prevent personnel entering into a blast zone.

Drill and Blast Supervisor – The person responsible for overseeing all on-site drilling and blasting operations.

Blast Danger Zone – An area in which there may be a danger to any person or property from flying material, or any other hazardous condition resulting from a blast.

Misfire – A charge or part of a charge which, upon initiation, failed to completely detonate.

3 RESPONSIBILITIES

3.1 All Employees and Contractors

- All employees and contractors associated with blasting operations shall comply with the requirements of the operational blasting procedures.
- Follow instructions given by the Blaster, Drill and Blast Supervisor and Mine Manager.
- Report to the Drill and Blast Supervisor or Mine Manager any unsafe or potentially unsafe conditions.

3.2 Blaster

- Hold a blasting certificate issued under the HSRC.



- Ensure all blasting operations onsite comply with the requirements of the HSRC.
- Ensure blasting procedures comply with the operational procedures.
- Co-ordination of workers involved in blasting operations.

3.3 Blast Guard

- Follow instruction issued by the Drill and Blast Supervisor and Mine Manager.
- Ensure all personnel and equipment are clear of the blast danger zone.
- Ensure all entrances to the blast danger zone are guarded to prevent access during blast operations.

3.4 Drill and Blast Supervisor

- Ensure that the Blaster is licenced under the HSRC and is competent to manage the blasting operations.
- Ensure all drilling and blasting operations comply with the HSRC.
- Ensure all blasting operations comply with the operational procedures.
- Assign competent blast guards and ensure they are meeting their responsibilities.
- Coordinate the Blaster and Blast Guards to ensure blasting operations run safely and efficiently.
- Act as the main point of contact for the Mine Manager.
- Accept and act on feedback from workers relating potential safety issues.

3.5 Mine Manager

- Ensure that the Blaster is licenced under the HSRC and is competent to manage the blasting operations.
- Ensure blasting contractors have all permits required under the HSRC in place.
- Assign competent blast guards and ensure they are meeting their responsibilities.
- Ensure Blast guards are properly trained and qualified to perform tasks.
- Ensure all blasting operations onsite comply with the requirements of the HSRC.
- Review and updating of the operational blasting procedures as and when required.
- Ultimate approval and implementation of the operational blasting procedures.
- Enforcement of the operational blasting procedures to ensure all employees and contractors are in compliance.
- Accept and act on feedback from workers relating potential safety issues.

4 PPE REQUIREMENTS

The following PPE shall be worn during all blasting operations onsite:

- High visibility vest
- CSA approved footwear
- Hard hat
- Safety glasses
- Gloves
- Hearing protection when necessary
- Long sleeve shirts



5 BLAST GUARDING PROCEDURE

5.1 General Protocol

- All blasting operations will be compliant with the HSRC and WorksafeBC OH&S Regulation.
- All records of blasting shall be kept by Kalum Quarry Ltd.
- The Drill and Blast Supervisor, in conjunction with the Mine Manager will assign competent guards to all access routes to blasting danger zone.
- All radios shall be tested before blast time to ensure they send and receive.

5.2 Procedure

1. The Blaster, in conjunction with the Drill and Blast Supervisor and the Mine Manager, will determine the scheduled blast time, blast danger zone and guarding areas.
2. The Mine Manager will notify all workers of the scheduled blast at the prestart meeting at the beginning of the shift.
3. The Drill and Blast Supervisor will announce the 2 hour, 1 hour and 10 minute warning over the radio. All blasting announcements and signals will be as per the Blast Initiation Procedure.
4. The Mine Manager will instruct all workers and equipment to evacuate the blast danger zone at the appropriate time.
5. The Blast Guards will proceed to their guard areas and follow any instructions from the Drill and Blast supervisor. The guard areas for blasting operations at Kalum Quarry are shown on the map in section 5.3. Exact locations will vary depending on the determined blast danger zone.
6. The Blast Guards will notify the Drill and Blast Supervisor when they have arrived at their guarding stations and when the area is clear of personnel and equipment.
7. The Blast Guards will remain at their guarding positions and not allow personnel into the blast danger zone until instructed by the Drill and Blast Supervisor that the blast area is 'All Clear'.
8. Before the 10 minute warning, the Drill and Blast Supervisor will do a final confirmation with the Blast Guards to ensure that they are in place and that the blast danger zone is secure.
9. If for some reason the blast danger zone has not been cleared and posted guards are not in place, the 10 minute warning will not be issued until so.
10. After the 10 minute warning, the Mine Manager will conduct a drive through of all roads and work areas in the blast danger area to ensure all personnel are clear. Once this is complete he will notify the drill and blast supervisor. Once this is complete the Blaster will give the 2 minute warning.
11. The blast will be fired in accordance with the Blast Initiation Procedure.
12. Once the blast is complete and the Drill and Blast Supervisor has given the 'All Clear' message, all Blast Guards can be removed, all crews can return to the blast danger zone and radio communication can recommence.

5.3 Blast Guarding Map



Figure 5.1 – Example Blast Guarding Map



6 BLAST INITIATION PROCEDURE

6.1 General Protocol

- All blasting operations will be compliant with the HSRC and WorksafeBC OH&S Regulation.
- All records of blasting shall be kept by Kalum Quarry Ltd.
- The Drill and Blast Supervisor, in conjunction with the Mine Manager will assign competent guards to all access routes to blasting danger zone.
- All radios shall be tested before blast time to ensure they send and receive.
- Blast guarding will be implemented as per the Blast Guarding Procedure.
- The Blaster will if possible initiate the blast from a point where he/she can view the blasting area to allow any wildlife that enters the area to be identified.

6.2 Procedure

1. The Blaster and the Drill and Blast Supervisor will complete a pre-blast hazard identification and risk assessment and record this in their log book.
2. The Drill and Blast Supervisor in conjunction with the Blaster will ensure that the loading and wiring of the blast has been completed and all risks and hazards identified in the have been mitigated.
3. The Drill and Blast Supervisor, Blaster and Mine Manager will determine an exact blast time.
4. The Mine Manager will ensure that any scheduled blasts for the day are posted at the office at the beginning of the shift. Office personnel will notify the residents on the IR.
5. The Drill and Blast Supervisor and Mine Manager will notify all workers of the scheduled blast at the prestart meeting at the beginning of the shift. All hazards and mitigation measures identified in the hazard and risk assessments will be communicated.
6. The Blaster and the Drill and Blast Supervisor will determine the blast danger zone.
7. The perimeter of the pattern will be adequately guarded while the surface delays are being connected.
8. All drilling will be complete and equipment moved off the pattern before loading of explosives. All explosive loading will be complete before tying in of any blast holes begins.
9. The Drill and Blast Supervisor will announce the 2 hour, 1 hour and 10 minute warning over the radio. The wording of all radio announcements will be as per section 6.3.
10. The Drill and Blast Supervisor will issue guarding instructions to the Blast Guards. Guarding will be as per the Blast Guarding Procedure.
11. The blast report is to be completed by the Blaster, reviewed and signed off by the Mine Manager.
12. The Blaster will notify the Drill and Blast Supervisor that he/she is ready to lay out the firing line.
13. Once the Blast Guards give confirmation that they are in position and the blast danger zone is clear, the Drill and Blast Supervisor will announce the 10 minute warning as per section 6.3.
14. If for some reason the blast danger zone has not been cleared and posted guards are not in place, the 10 minute warning will not be issued until so.
15. The Blaster will notify the Drill and Blast Supervisor that the blast is ready to be initiated.



16. With confirmation from the Drill and Blast Supervisor that all guards are still in place and the blast danger zone is clear, the Blaster will announce the 2 minute warning along with 12 whistle blows as per section 6.3.
17. Radio silence will be in place from the 2 minute warning until the 'all clear' announcement except in the case of an emergency.
18. At the completion of the 2 minutes the Blaster will give a 10 second countdown and then initiate the blast.
19. After the blast, the Blaster will inspect the blast site and inform the drill and blast supervisor that the blast area is clear of blasting and explosive hazards.
20. The blaster will announce over the radio that the blast danger zone is all clear and blow a 10 second whistle as per section 6.3.
21. The Drill and Blast Supervisor will instruct all blast guards to release any traffic.
22. All crews can return to their work activities and normal radio communication can recommence.

6.3 Radio Blasting Announcements

- Attention all personnel, this is a 2 hour warning to blast. I repeat this is a 2 hour warning to blast.
- Attention all personnel, this is a 1 hour warning to blast. I repeat this is a 1 hour warning to blast.
- Attention all personnel, this is a 10 minute warning to blast. I repeat this is a 10 minute warning to blast.
- Attention all personnel, this is a 2 minute warning to blast. Radio silence will be in effect until the all clear has been sounded; however, in the case of an emergency, radio silence can be broken to stop the blast. **12 whistle blows will be sounded.**
- Attention all personnel, the blast area is all clear. **A 10 whistle blow will be sounded.**

6.4 Uninitiated Blast

If for some reason a blast cannot be initiated due to unsafe conditions (e.g. weather), it shall be treated as a loaded pattern with the detonators unattached in a safe manner as to ensure no initiation. Delineators and signs will be set up to mark the pattern. The Mine Manager shall be informed of the loaded pattern and he will inform all crews of the location and any hazards associated with the pattern.



7 BLAST MISFIRE AND PRODUCT RECOVERY PROCEDURE

7.1 Procedure

1. After firing, a thorough examination of the blast site is required to determine that there are no unexploded charges remaining. This will include inspection of dead ends and detonator wires to ensure the blast occurred as planned.
2. If there is evidence or suspicion of misfired charges or undetonated explosives, the Blaster must inform the Blast Supervisor and Mine Manager of the situation.
3. The Drill and Blast Supervisor will inform the Blast Guards of the situation and direct them to remain in place and hold traffic until further notice.
4. All loose (surface) unfired explosives must be collected and destroyed in a safe manner.
5. The Blaster will direct the hand removal of as much broken material as possible before metallic tools or equipment are used. Metallic equipment shall only be used if the Blaster directs the use of the equipment; the area is adequately illuminated; and everyone except the blaster and equipment operator is removed from the area.
6. Removal of loose material must be done cautiously, with regard for possible undetonated explosive materials or misfired holes. Loose rock must be scaled from faces in the work area and the area stabilized before other work resumes.
7. Each misfired charge shall be clearly marked off for a distance of 8 m around the collar of the hole. Access to this area must be granted in advance by the Blaster. Any drilling in this area must conform to section 8.7.1 of the HSRC.
8. Each misfire situation is unique, and must be dealt with individually. An experienced Blaster familiar with the initiation systems and explosives used, as well as the proper techniques to handle, neutralize and render safe the explosive materials should make an assessment of the situation and a decision on the course of action.
9. All personnel must remain outside the blast danger zone until the Misfire has been dealt with and the area deemed safe by the Blaster.
10. If there is access to the hole and the stemming can be safely removed without excessive force under direct supervision of the Blaster, extraction may be possible or alternatively re-priming and re-firing.
11. It is prohibited to extract, or attempt to extract, a primer or explosive of the nitroglycerine type from a loaded hole. Only if the hole does not contain a detonator may a blaster or person authorized by the blaster remove ammonium nitrate, water gel or emulsion type explosives from a blast hole, and the removal procedure must be carried out with caution, using moderate air or water pressure or a combination thereof, with a blowpipe made of non-metallic construction.
12. If the Blaster decides that re-priming and re-firing is the best solution:
 - a. Then the misfired holes shall be re-primed and re-stemmed by the Blaster or under his/her direct supervision.
 - b. Once the area is safely prepared for the re-fire, the initiation plan should be followed before re-firing.



13. If it is deemed that extraction is the best solution:
 - a. An attempt should be made to remove the stemming and explosive material either by hand or non-metallic specialised tools.
 - b. If the material cannot be removed by hand, the hole may be able to be cleared through flushing. The Blaster will need to determine a safe method of flushing depending on the situation and types of explosives involved - using moderate air or water pressure or a combination thereof, with a blowpipe made of non-metallic construction.
 - c. The Blaster will inspect the hole after retrieval to determine if it is clear to the maximum depth of drilling. Holes that cannot be cleared to their full depth will be clearly marked, cordoned off and surveyed. Relief drilling may be necessary to expose any un-cleared misfired charges.
 - d. The blaster will maintain an inventory of the material that has been recovered including the date, approximate quantity by weight and its condition, and will report this to the Mine Manager.
 - e. Removal and disposal of all recovered explosives will be as per section 9.9 of the HSRC. All explosive material that is collected that cannot be destroyed on the same day will be logged into a certified explosives magazine until it can be safely destroyed or disposed of.
14. If relief drilling is required:
 - a. All drilling operations within the 8m radius of the hole will be carried out as per sections 8.7.1&2 in the HSRC.
 - b. Any relief holes being drilled must be at least 60 cm (2 ft) from any part of the misfired charge.
 - c. The blaster will accurately determine the angle and depth of the misfired hole to avoid intersecting the explosives column.
 - d. The Blaster will direct the angle and depth of relief hole and supervise the drilling.
 - e. The location of the misfired holes along with the relief holes will be surveyed in case further relief drilling is required.
 - f. Relief holes will be loaded as directed by the Blaster, to ensure only enough explosives are used to break the rock into manageable pieces for removal. The initiation procedure should be followed before firing relief holes.
 - g. The Blaster will direct the removal of the broken material and undetonated explosive material, and have it disposed of as per step 13e of this procedure.
15. Once it is determined the area has been cleared and is now safe, the Drill and Blast Supervisor can give the 'all clear' and order the Blast Guards to release traffic and allow personnel to return to work.
16. The Drill and Blast Supervisor will ensure an investigation into the misfire is undertaken and an incident report is filed to The Mine Manager. If the Drill and Blast Supervisor along with the Mine Manger determines that the misfire constitutes a dangerous incident, it will be managed as per section 1.7 of the HSRC and reported to Worksafe BC in accordance with section 21.3 of the OH&S Regulation.

8 PROPOSED SHOT LAYOUT

All drilling and blasting activities will conform to the requirements of the HSRC and Worksafe BC Regulations. Shot layout and column loading will be dependent on the specifics of the blast requirements. Figure 8.1 shows some typical blast patterns used at Kalum Quarry and figure 8.2 shows typical column loading.

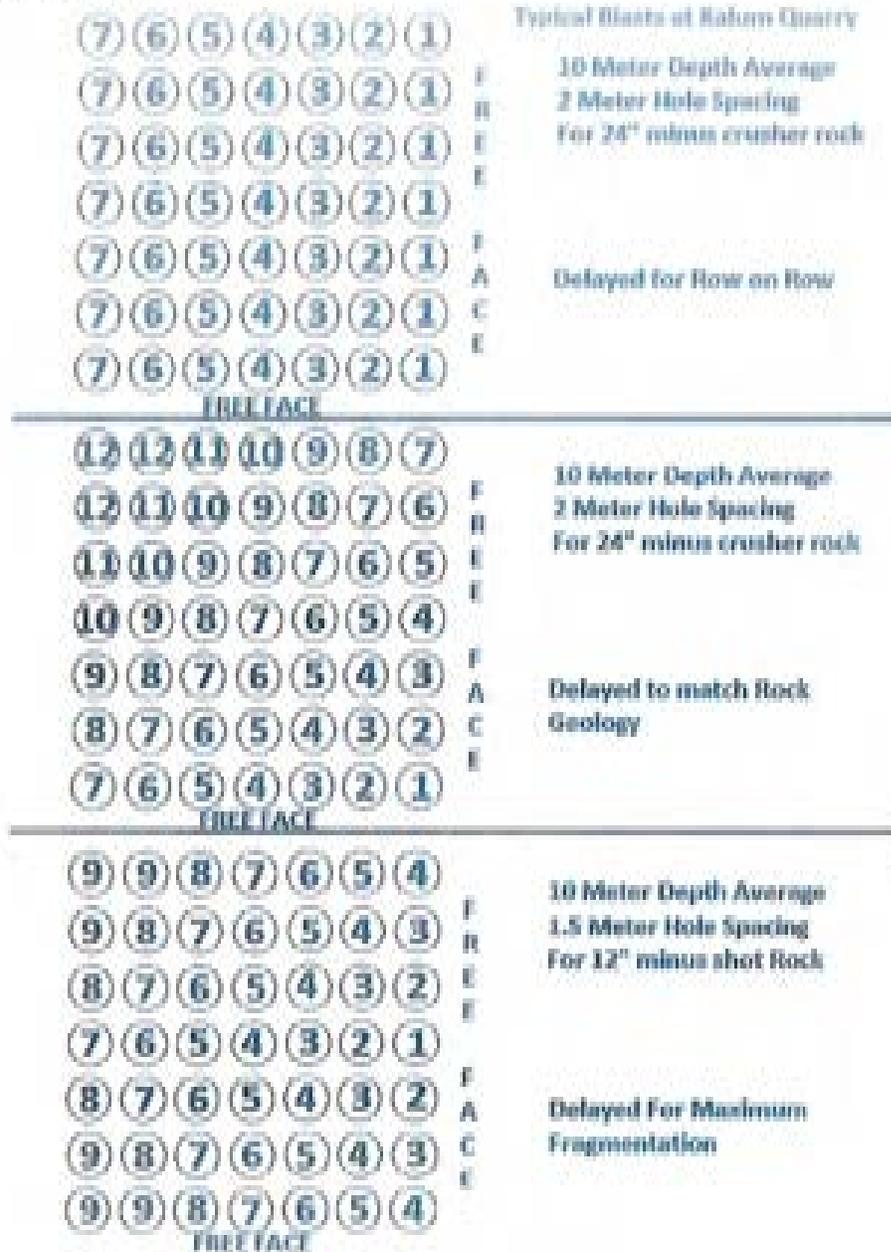


Figure 8.1 – Typical Blast Patterns

Typical Column Load for 2nd Diameter Drill Holes

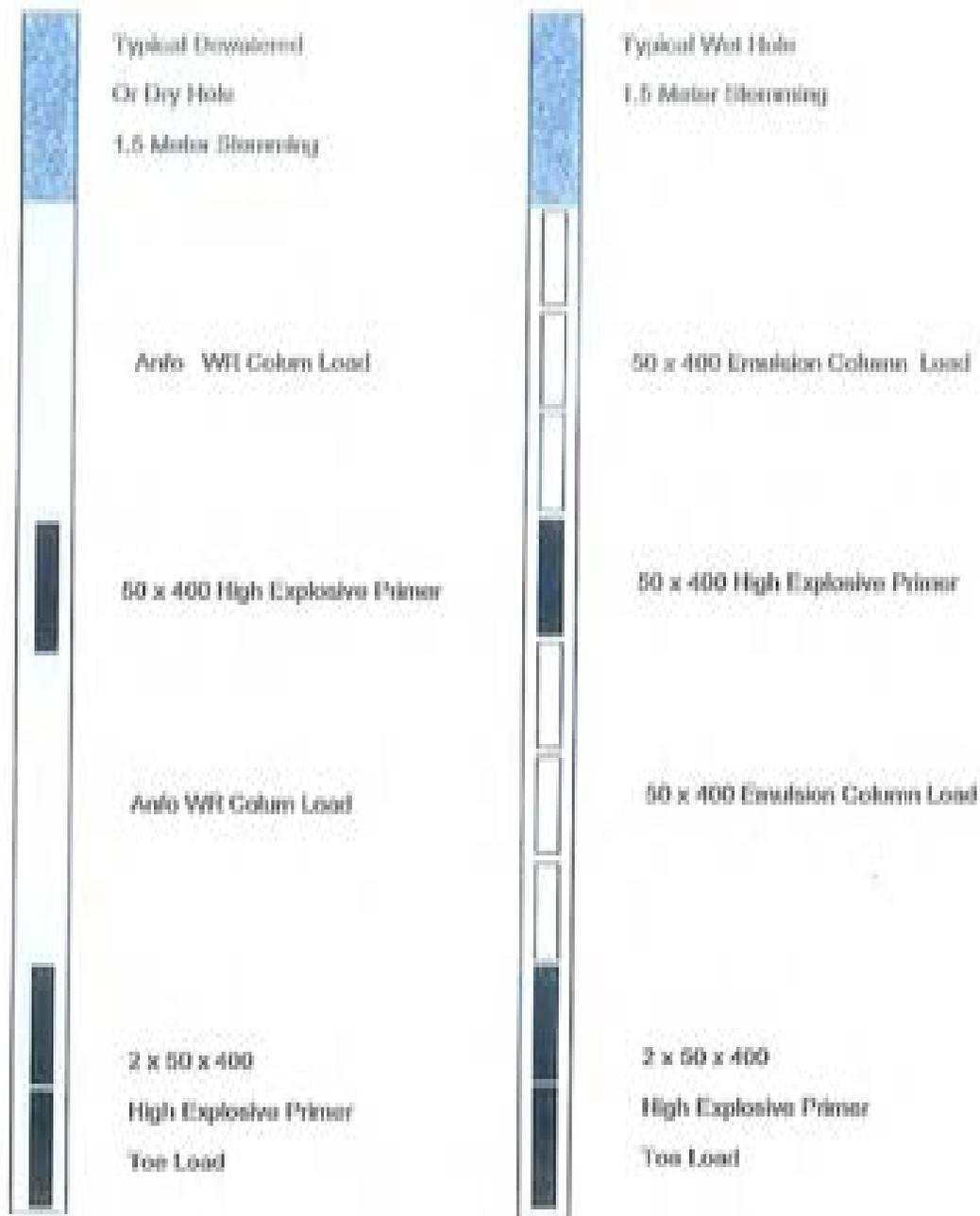


Figure 8.2 – Typical Column Loading



9 EXPLOSIVE HANDLING PROCEDURE AND INVENTORY MANAGEMENT

All drilling and blasting activities will be carried out by a drilling and blasting contractor. The drilling and blasting contract is awarded on a yearly basis. The supply, storage, handling and inventory management will be the responsibility of the blasting contractor.

The blasting contractor will be certified under the HSRC and any magazines will be licenced under the HSRC. There will be no explosives stored on site. Blasting and Magazine licence numbers will be provided to MEM each year before the commencement of the blasting contract.

It will be a requirement of the contract that the drilling and blasting contractor submit an explosive handling procedure and an inventory management plan before commencing work onsite. These documents will be provided to MEM before any drilling or blasting commences onsite.

10 REFERENCES

- Kalum Quarry Safety Plan
- British Columbia Ministry of Energy Mines and Petroleum Resources. 2008. Health Safety and Reclamation Code for Mines in British Columbia. Available at: http://www2.gov.bc.ca/assets/gov/farming_natural_resources_and_industry/mineral_exploration_mining/documents/health-and-safety/health_safety_and_reclamation_code_2008.pdf
- Worksafe BC. 2015. Occupational Health and Safety Regulations. Available at: <https://www2.worksafebc.com/Publications/OHSRegulation/home.asp>



34 Kalum Quarry Traffic Management Plan

ATTACHED:

DRAFT



Kalum Quarry Limited Partnership

Traffic Management Plan

Prepared For: Kalum Quarry Ltd.

Prepared By: Allnorth Consultants Ltd.

Date Created: 10 November 2015

REVISION HISTORY

Rev.#	Date of Issue	Reviewed By	Approved By	Description

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1 INTRODUCTION

1.1 Project Summary

Kalum Quarry is owned and operated by Kalum Quarry Limited Partnership (Kalum Quarry Ltd). It is located on the Kitsumkalum IR1 in Terrace, BC, with access to the quarry via Gyik Rd and West Kalum Forest Service Road (WKFSR). It is anticipated that the quarry will produce approximately 240,000 tonnes of quarried product per year.

1.2 Scope and Objectives

The development and implementation of this traffic management plan (TMP) is a requirement under clause 6.8.3 of the Health, Safety and Reclamation Code for Mines in British Columbia (HSRC). The objective of this TMP is to outline traffic management procedures and responsibilities in line with the requirements of the HSRC, to be implemented by Kalum Quarry Ltd to ensure safe access and operation of all vehicles and equipment on site.

2 RESPONSIBILITIES

2.1 Vehicle and Equipment Operators

Vehicle and equipment operators have the following responsibilities under this TMP:

- Safe operation of vehicles and equipment as per clause 6.19.1 of the HSRC.
- Comply with this TMP.
- Comply with the Safety management plan and fully understand the emergency response plan and procedures.
- Report to the safety officer or mine manager any unsafe or potentially unsafe conditions.

2.2 Health and Safety Officer

The Health and Safety Officer has the following responsibilities under this TMP.

- Provide input and expertise into the development of this plan.
- Review and Update the TMP as required.
- Coordinate and train all employees and contractors with regards to their responsibilities under this TMP.
- Accept and act on feedback from employees and contractors regarding traffic safety and any other safety concerns.

2.3 Mine Manager

The mine manager has the following responsibilities under this TMP.

- Review and update this TMP as required.
- Ultimate approval of the information processes and procedure outlined in this plan.

- Enforcement of this TMP to ensure all employees and contractors are in compliance.
- Ensuring all necessary control measures are in place to ensure compliance with the Mines Act, and the associated regulation and codes.
- Accept and act on feedback from employees and contractors regarding traffic safety and any other safety concerns.

3 SITE ACCESS

3.1 Road Access

There are 2 main accesses to the quarry. One access is via the Gyiik Rd in the Kitsumkalum IR. This road is a low volume residential street. Small vehicles and employees, private vehicles primarily use this access.

The other access is via the WKFSR, which is a low volume gravel road maintained by the Ministry of Forests, Lands and Natural Resource Operations. This access is located at approximately km 1.5 on the WKFSR and is primarily used by heavy vehicles for hauling offsite. Industrial traffic volumes increase on this road when active logging is underway in the area. All vehicles on this road will follow radio protocol for travel on BC forest service roads. WKFSR is channel RR-7, frequency 150.260. All traffic will call vehicle type, kilometre and direction of travel.

Both accesses are gated and are locked after hours to prevent unauthorised access.

3.2 RAIL ACCESS

There is rail access to the quarry to allow rail haulage of product to service Canadian National Railway (CN). The access line branches off the CN mainline and follows the WKFSR along the eastern boundary of the quarry until its terminus. When the Access line is in use, the following traffic control measures will be implemented:

- No equipment work within 15 meters of track.
- Overhead conveyors will be shut down while train activity continues.

4 TRAFFIC CONTROL

4.1 Right of Way

The following list shows in order of priority from highest to lowest, the vehicle types and their right of way priority while on site, unless otherwise indicated by signage.

1. Emergency vehicles
2. Trains
3. Trucks carrying dangerous equipment (explosives, fuel etc.)
4. Haul trucks
5. Heavy Equipment

6. Light vehicles

4.2 Road Widths

All permanent access roads and haul roads on site are dual lane roads and will have a minimum road width of 9m. All travel is on the right side of the roadway. Any temporary roads constructed that are not dual lane will be signed as such. Must call signs will be placed at all accesses to single lane roads.

4.3 Speed Limits

The maximum speed limit onsite is 30km/h unless posted otherwise. Drivers and operators should always drive to the conditions of the road and reduce around tight corners and whenever weather conditions warrant.

4.4 Communication

Radio communication will be used on site. The channel used on site is Logger 3, frequency 160,080. When travelling on site, the correct calling procedure is to call vehicle type, and destination. For example, "pickup, crusher to office".

All vehicles operating outside of the parking lot next to the onsite office must have a radio with the Logger 3 frequency pre-programmed. Chatter is to be kept to a minimum to ensure radio calls are heard.

4.5 Signage

All traffic signage on site must be obeyed. The following signage is in place on site:

- Authorised access only- at access gates.
- 30km/h speed limit on site- at access gates.
- Stop signs and/or do not enter signs will be erected around work areas.
- Men working signs will be erected around work areas.
- Danger and no access signs will be installed in any areas not safely accessible.
- Blasting signage as per the blasting plan will be in place during blasting operations.

4.6 Parking

The main parking area for the site is located adjacent to the site office. Any vehicles not working on site must be parked in the main car park. Drivers and operators working on site are responsible for ensuring any work vehicles and equipment that are not parked on the main car park are parked in a safe area, well out of the way of hauling and crushing operations so as to not cause a hazard. All rubber tired equipment over

7000kg must carry a minimum of two wheel chocks to be used when necessary as per clause 4.9.4 of the HSRC.

5 ACCIDENT PREVENTION

5.1 Employee and Contractor Training

New employees and contractors are required to read and fully understand this traffic management plan, as well as the safety management plan and emergency response plan. All employees and contractors are required to review these plans after any changes are made to them.

All employees and contractors will be licenced trained, and must show they are competent operators before operating any vehicle or equipment on site.

5.2 Vehicle and Equipment Inspections

All vehicles and equipment on site will be compliant with the mobile equipment requirements outlined in clause 4.9 of the HSRC. All vehicles and equipment will be maintained in safe working order. All vehicles and equipment will be regularly serviced in line with Kalum Quarry Ltd.'s equipment maintenance policy.

To further ensure the safe working condition of vehicles and equipment, all operators will carry out a daily vehicle inspection before operating on site.

All records of maintenance and inspections for equipment over 7000kg will be recorded in a log book system as required by clauses 6.19.2 to 6.19.4.

6 VISITORS

All visitors must report to the main office. Any visitor operating a vehicle on site must read and fully understand this traffic management plan. Alternatively a visitor may be escorted around site by an employee.



35 Emergency Response Plan

ATTACHED:

DRAFT



Emergency Response Plan

Mine permit number : G - 1 - 77



DOCUMENT MANAGEMENT

Mine permit number : G - 1 – 77

Policy Title:		Quarry Emergency Response Procedures	
Classification:		Company Policy	
First Adopted:		April 13, 2015	
Reviewed:		Every 1 years as required	
Applicable Legislation		OH&S Rail Act WCB Mining Act Ministry of Energy, Mines and Natural Gas Mines and Mineral Resources Division (Guidelines for the Mining Industry) Health, Safety and Reclamation Code for Mines in BC	
Revision History			
Version	Date	Comments	Signature
1	April 2015	On file	
Draft	2018	DRAFT revision and formatting	
Rev 1		Final Plan	



Mine/Operation Information

A Mine is a place as defined under the *Mines Act* (RSBC 1996).

The following list identifies basic information regarding the Kalum Quarry Mine:

Mine Name & Contact :

Kalum Quarry
c/o Kalum Quarry Limited Partnership
14303 Highway 16 West
Terrace, B.C.
V1B 0C8

Tel: (250) 635-5000
Fax: (250) 635-1813

Chief Executive Officer
Mr. Colum O'Donnell
(250) 635-5000 ext 102
250-615-1813 c
codonnell@kitaumkalum.bc.ca

Mine Manager
Mr. Wayne Hansen
250-641-1852 c
c/o lwesley@kitaumkalum.bc.ca

Safety Coordinator (intern)
Mr. Ernie Gerow
250-641-5254 c
c/o lwesley@kitaumkalum.bc.ca

Mine number : 0101327

Mine permit number : G - 1 – 77

Type of operation: Rock drill, blast, crush

Location of the property: **Within the District of Terrace**

Latitude : 54° 32'10.04"N
Longitude : 128°39'55.98"W

Number of employees on site, including management and contractors :

This number varies with operations. Under a single shift at steady utilization, there may be 15 to 20 employees and contractors on site.



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1 Introduction

1.1 Emergency Response Policy

In any emergency, actions for safeguarding the health and safety of project personnel and the public will take priority over any other aspect of the project.

These Emergency Response Procedures are not intended to replace individual contractor's Emergency Response Procedures (ERP) in their Occupational Health and Safety Program. These Procedures are intended to supplement a contractor's ERP.

1.2 Purpose

This plan has been developed to serve as a guideline to ensure that responses to emergencies are safe, prompt, organized and effective.

1.3 Scope

This plan covers all aspects of the Project and shall be used when dealing with emergency situations including:

- Major accidents involving personal injuries;
- Emergencies involving acute chemical hazards;
- Natural emergencies including flooding, gale force winds, earthquake, mass slumping;
- Fire including wildfires and industrial or equipment fires; and
- Explosions, or serious workplace violence.

This Document is a live document and will be revised as necessary.

Reviewing, and updating Emergency and Evacuation Procedures:

- *On site supervisor*
- *All crew members*

1.4 Muster Locations:

Kalum Quarry by Pit Fuel Tanks

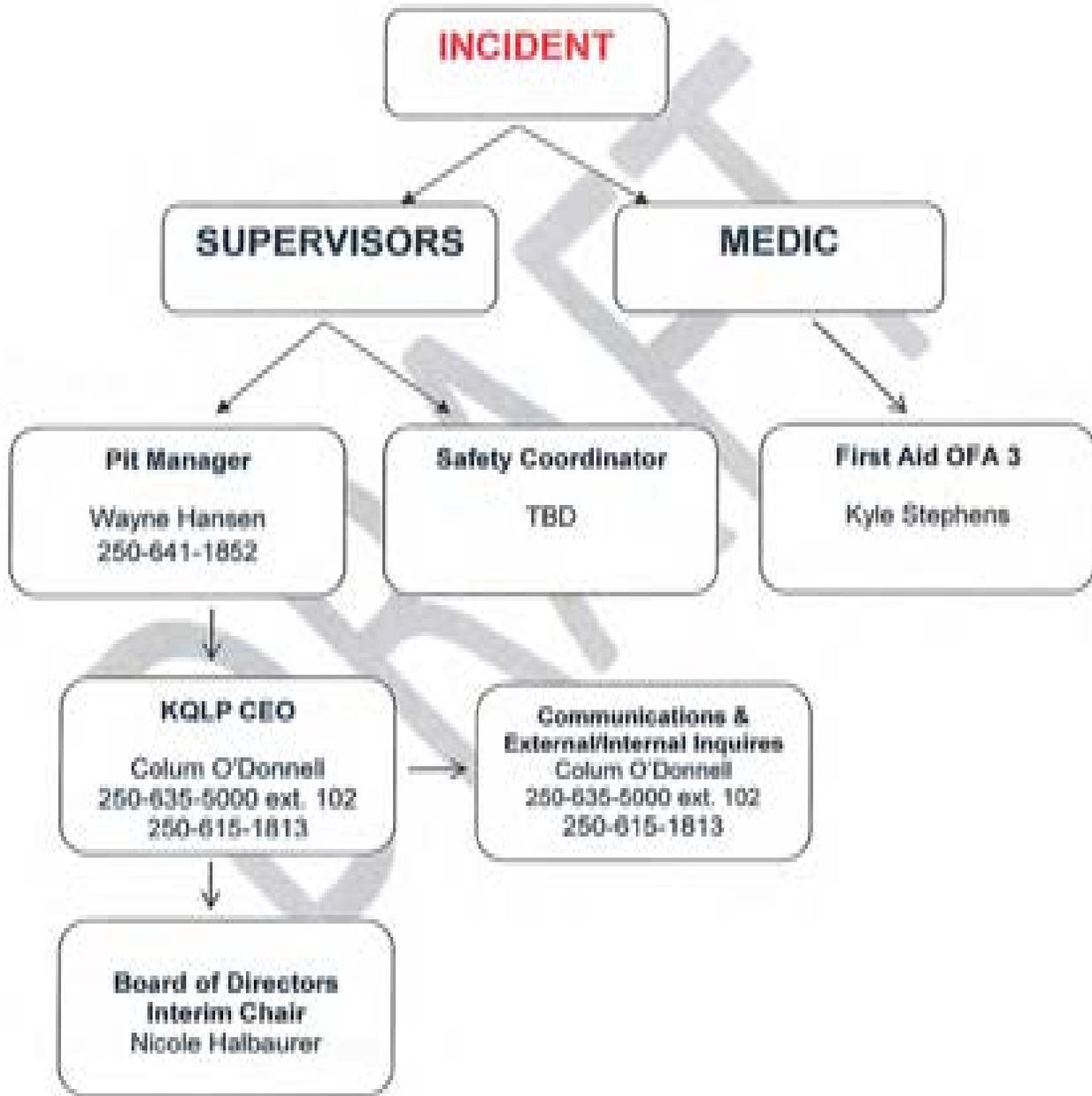
Lakelse Gravel Pit by Gate to Highway 16

Onion Lake Sand Pit by Gate into Sand Pit on Highway 37



1.5 COMMUNICATION CALL DOWN

KALUM QUARRY LIMITED PARTNERSHIP
Emergency Communication Call Down





1.6 Emergency Response Team

Role	Name
Emergency Response Coordinator	Wayne Hansen
Assistant Emergency Response Coordinator/ Communications Officer:	Colum O'Donnell Heather Bohn
Safety Coordinator	TBD
Area Warden:	TBD
Traffic Controller:	TBD
Roll Call Coordinator:	TBD
Entrance/Exit Block	TBD
First Aiders:	Kyle Stephens - OFA 3 Don Cooley Danny Parker Dwayne Horner Chris Collins Justin Hein Dustin Parker Herbert Spalding Lisa Wesley Caitlin Wesley -OF A 3
Office Coordination	Lisa Wesley / Caitlin Wesley
Spring Creek Contracting	
NBC Contracting	

1.6.1 First Responder

The First Responder has a critical role in reporting an emergency in a calm, clear and concise manner. If making a report over the radio, keep conversation brief and to the point to prevent any confusion to the Emergency Response Team

The first person on-scene will typically serve as the First Responder, until relieved by a more senior person. Responsibilities for the first person on-scene may include:

- Taking appropriate personal protective measures
- Notifying Supervisory Personnel and/or Incident Coordinator of the incident
- Activating the alarm for an emergency response
- Advising personnel in the area of any potential threat and/or initiate evacuation procedures
- Eliminate potential ignition sources
- Contact appropriate KQLP Management, contractor representatives, and the appropriate emergency response agencies.



1.6.2 Safety Manager Personnel

Responsibilities may include:

- Initiate initial response actions if they are the first person on the scene (see above)
- **Restrict access to the incident scene and surrounding area as the situation demands**
Take any other steps necessary to minimize any threat to health and safety
- Request medical assistance, if necessary
- Verify substance released and obtain Safety Data Sheets, as necessary
- Identify and isolate source to minimize product loss
- Coordinate further response actions with Incident Lead and local responder

Entrance/Exit Locations



1.6.3 Incident Coordinator

Responsibilities may include:

- Activate the Emergency Response team
- Activate additional response contractors and local resources
- Evaluate the Severity, Potential Impact, Safety Concerns, and Response Requirements based on the initial information provided by the First Person On-Scene
- Confirm safety aspects at site, including need for personal protective equipment, sources of ignition, and potential need for evacuation
- Communicate and provide incident briefings to company managers, as appropriate



- Coordinate/complete additional internal and external notifications
- Communicate with Emergency Response Team, as the situation demands
- Ensure that outside emergency services such as medical, police, regulatory or fire departments are called.
- Direct response and cleanup operations

The number of personnel required to staff the Emergency Response Team will depend on the size and complexity of the incident. The duties of each position may be performed by the Incident Lead directly or delegated as the situation demands.

1.7 Emergency Contact List

KALUM QUARRY LIMITED PARTNERSHIP

Location of Office: 14303 Highway 16 West

Location of the property: Within the District of Terrace

Latitude : 54° 32'10.04"N

Longitude : 128°39'55.98"W

Pit Manager	Wayne Hansen	250-641-1852
Safety Coordinator (Rep)	TBD	
KQLP CEO	Colum O'Donnell	250-615-1813
Admin	Lisa Wesley	250-635-5000 ext 122
	Caitlin Wesley	250-635-5000 ext 108
TBD (Crushing) Contracting		
TBD (Drilling/Blasting) Contracting		
Trucking Companies	<i>On site file with Safety Manager</i>	

Stakeholders:

Kitsumkalum Band Office	Steven Roberts	250-635-6177 ext.
Kitsumkalum Chief Council	Don Roberts	250-635-5000
Communications Officer/Kitsumkalum Community	Heather Bohn	250-635-6177

KALUM QUARRY



**EMERGENCY
RESPONSE PROCEDURES**

Kitsumkalum Maintenance

Richard Inkster

250-635-7819

Emergency Numbers

	EMERGENCY	Non-Emergency
Police	9-1-1	250-638-7400
Fire	9-1-1	250-638-4734
Ambulance	9-1-1	250-638-1102
Mills Memorial Hospital	250-635-2211	250-635-2211
WorkSafe BC		250-615-8800 (or after hours) 1-866-922-4357
BC Coroner (Northern Region)	initial reports of new deaths only; call 1-855-207-0637	
CN Rail	(CN Police) 1-800-465-9239	1-800-465-9239
Ministry of Energy and Mines	Doug Flynn Sr. Inspector	1-250-847-7386 1-250-877-9747 (o)

Erosion Event/Avalanche Contact

	EMERGENCY	Non-Emergency
North Coast District Kalum District-FLNR #200 - 5220 Keith Avenue Terrace, BC V8G 1L1	Report Wild Fire 1-800-663-5555 Or Call *5555	(250) 638-5100
Ministry of Transportation and Highways- Terrace 4825 Keith Ave, V8G 1K7		250-638-6440 or 1-800-665-5051
Department of Fisheries and Oceans (Terrace) 5235 A Keith Avenue Terrace, BC V8G 1L2		250-615-5350



Spill Contact

Provincial Emergency Program Ministry of Public Safety and Solicitor General	1-800-883-3456
Dangerous Goods and Spills	1-800-883-3456
Ministry of Environment- Smithers	250-847-7260
Ministry of Environment DFO	250-315-5350
Northwest Spill Response Ray Hollenberg - Smithers	1-250-847-4556
Northwest Fuels Limited Terrace	250-635-2000
West Coast Spill Supplies	1-800-548-3800
Helicopters	
Quantum Helicopters	250-615-0168
Canadian Helicopters	250-615-2430
White River Helicopters	250-638-1414
Lakelse Air	250-635-3245
Terrace Search & Rescue	250-635-4669

1.8 Media Enquiries

1.8.1 Communications & Public Engagement

Colum O'Donnell – 250-635-5000 ext 102

Dealing with the news media at the time of an emergency situation can present a special challenge. Only one trained person be allowed to brief the media on behalf of the company. Media



representatives should not be given free access to the job site. They must be provided with PPE and escorted at all times for their own safety. Where possible, information for media distribution should be printed and distributed as a press release.

2 Responsibilities

Management will be accountable for the implementation of the ERP. As appropriate, the pit manager and safety manager will assume leadership, and contact appropriate KGLP Management, contractor representatives, and the appropriate emergency response agencies. The pit manager and safety manager will provide on-site emergency leadership to coordinate the response effort, direct the orderly shutdown of operations, secure the site, evacuate personnel, ensure that outside emergency services such as medical, police, regulatory or fire departments are called.

2.1 Regular Site Inspections

- Each crew member on site is responsible for reporting any potential hazards to the onsite supervisor.
- The supervisor would then be responsible to assess the situation and perform corrective action.

2.2 First Aid

- Each crew member on site is responsible for inspecting their Personal First Aid Kits that must be carried with them at all times.
- Site supervisor is responsible for ensuring trained personnel are on site.
- The crew member who is delegated to First Aid duties is responsible that on site First Aid kits and equipment are properly maintained.
- Site Supervisor responsible if no other First Aid person on site.

2.3 Emergency and Evacuation

- On site supervisor is responsible for Emergency and Evacuation training of all personnel.

2.4 Developing Reviewing, and updating Emergency and Evacuation Procedures

- On site supervisor
- All crew members.



2.5 Employee Emergency Contact Sheet

- Each crew member must inform the supervisor of any changes to their contact information.
- The completed form will retain it in his/her files and use the information only in the event of an emergency requiring notification of a relative or significant other.

Employee Name: _____

Home Address: _____

Home Phone Number: _____

Emergency Contact Person:
(Name and Phone Numbers) _____

Alternate Contact:
(Name and Phone Numbers) _____

Physician Name: _____

Physician Phone Number: _____

Medication(s) list _____

Health Issues _____

Blood Type: _____

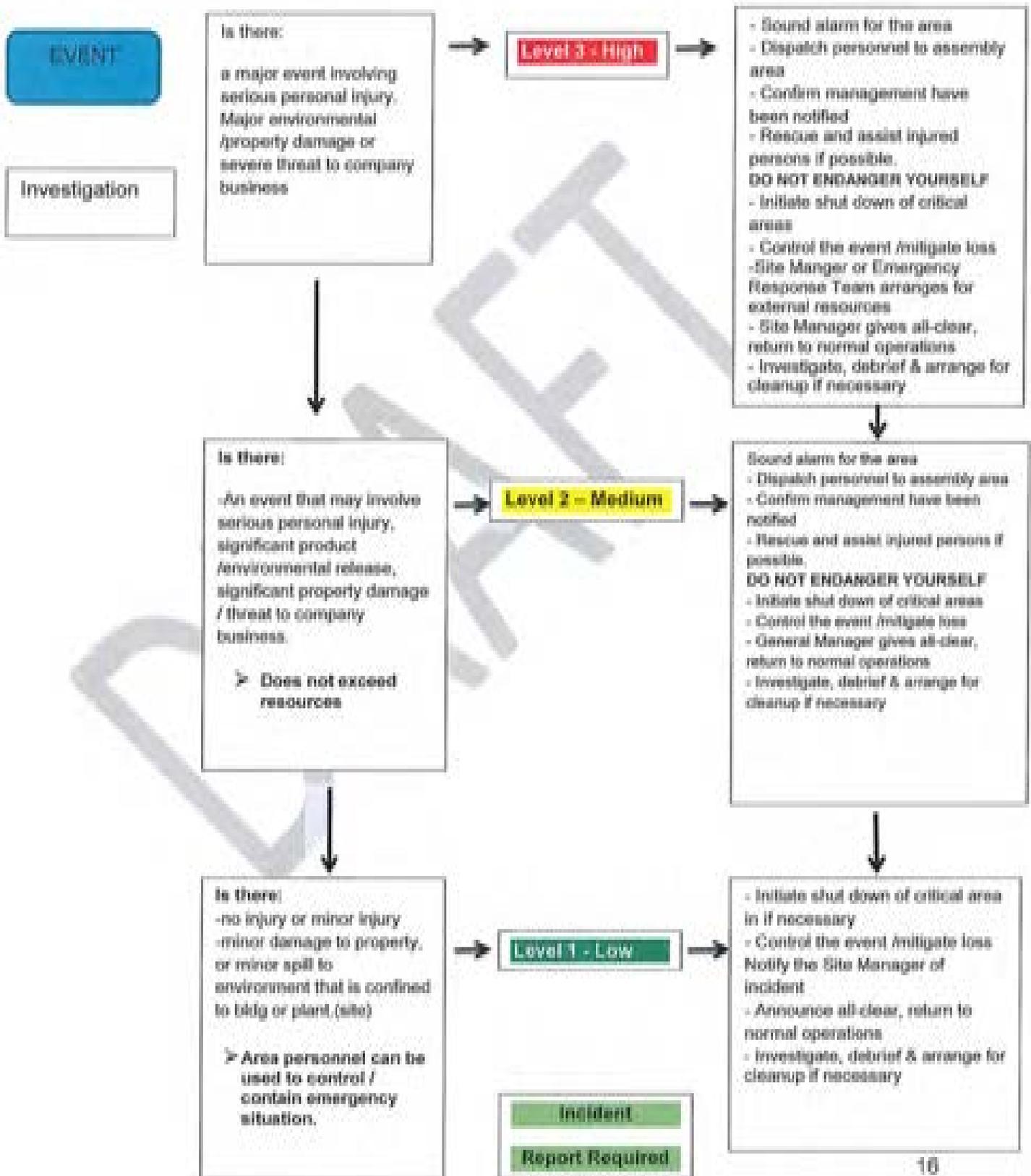
Allergies: _____

If yes, do you have on your
persons a EPIP (N/Benedryl) _____

**The information on this sheet is confidential and will be stored in a secure location; access to the information should be limited to those with a need to know during an emergency.*



2.6 Emergency Flowchart





2.7 Emergency Response Team Leader

- Shift Boss/Supervisor is Emergency Response Team Leader unless delegated to another crew member.

2.8 Contact External Agencies

- Emergency Response Team Leader
- Delegated crew member use contact sheet and call required numbers.
- Contact Kalum Quarry Limited Partnership Office
- Contact Contractors Office

2.9 Initiating Emergency Response Process (stop work order, site containment, search and rescue and First Aid procedures.

- Emergency Response Team Leader

2.10 External Communications (Communities, families, head office, media, etc.)

- The Emergency Response Team Leader will contact Kalum Quarry Limited Partnership Office
- Advise of the situation
- Wayne Hanson, Quarry Pit Manager/Shift Boss
- Colum O'Donnell, General Manager, Kalum Quarry Limited Partnership

3 Emergency Procedures

3.1 Medical Emergency Response

If a Medical Incident occurs where *First Aid* and/or *Rapid Transport* to a Hospital is required:

- Stay Calm
- Assess the scene to determine cause, number of injured/patients and if hazard is still present. Eliminate hazard or remove patient(s) to safe location prior to applying First Aid.
- Assess injury to determine need for immediate treatment.
- If immediate transport is required determine method of travel.
- Make contact with help and monitor communication link for further instructions.
- Once scene situation is stabilized contact Kalum Quarry Limited Partnership and WorkSafe BC



When responding to medical emergencies take steps to ensure the safety of all responders while providing emergency first aid to the injured. Make the best use of all qualified and trained first aiders at the site.

For a medical emergency where a medic is not available take the following steps as appropriate:

- Take charge or appoint a qualified first aider to take charge.
- Assess and control hazards to ensure the safety of yourself and others.
- Call for support or delegate someone to call for you. Call for emergency medical service if required.
- Contact the Supervisor and notify them of the incident. Details should include location, types of injuries, number injured, your name and contact number.
- Secure the area and keep others a safe distance away, as appropriate, and when safe
- Provide First Aid as appropriate, or until required help can arrive.
 - Wear proper PPE to protect yourself.
 - Determine the history – what happened?
 - Look for signs – indications of injury or illness.
 - Look for symptoms – how the casualty feels.
 - Check to ensure a clear airway.
 - Check to ensure effective breathing.
 - Check to ensure effective circulation.
 - Treat for injuries and shock.
- Provide support to and assist emergency medical services as required or directed.

For a medical emergency where a medic is available, take the following steps as appropriate:

- Contact the on-site medic to take charge via radio using "Medic, Medic, Medic". Tell the medic the location of the site you are at.
- When a "Medic, Medic, Medic" call has been made, all other work crews are to stand down until further notice.
- Assess and control hazards, and secure the site.
- Provide support for the medic as required.
- Contact the Supervisor and notify them of the incident. Details should include location, types of injuries, number injured, your name and contact number.
- After the initial assessment and treatment the medic may:
 - Return the worker to the job;
 - Send the worker to see a doctor or
 - Transport the patient(s) to a medical facility using appropriate means.
- Where transport is required the medic will arrange to transport the patient by the best method available (air transport may be required).
- If air medi-vac is required identify the nearest designated helicopter landing site, or select a suitable location near the scene (minimum 30 meters by 30 meters – no power lines, overhead obstructions or loose materials within the site perimeter) and assist with the evacuation as directed by the medic or Supervisor.



- When the helicopter has landed, wait for instructions from the pilot before approaching, never go behind a helicopter and always stay in view of the pilot.
- If ground transport is required, provide the medic with a competent driver and other assistance as directed by the medic or Supervisor.
- If an ambulance is dispatched to the scene a worker may be required to meet the ambulance at a designated location and direct them to the incident site.
- If emergency services personnel are not able to access the immediate incident site, workers may be required to assist with the evacuation under the direct supervision of the emergency services team.

Note: Helicopter landing areas will be designated at various locations ie: Onion Lake Sand Pit and Lakeise Gravel Pit. GPS coordinates for designated landing areas must be included in the tailboard ERP prior to the start of the work. (*Onion Lake / Lakeise Lake*) **task item**

3.2 Fire Emergency Response

Workers should only attempt to contain a fire after all hazards have been identified and it is safe to do so. When safe, take the following steps as appropriate:

3.2.1 Forest Fire:

- Notify the crew and stop all operations.
- Contact the Supervisor and notify them of the fire. Details should include location, size of fire, a description of what is burning, resources available, your name and contact number.
- Supervisor will immediately report the fire to the Forests Fire Control Centre and, KGLP management.
- Always approach a fire from the 'up-wind' side.
- Access hazards, locate safe areas and escape routes prior to approaching.
- Begin to suppress or contain the fire when safe to do so. Do not attempt to action the fire if the situation is beyond your level of training or the tools or equipment at hand.
- When using a portable fire extinguisher or water hose always direct the extinguishing powder or water towards the base of the fire, using a sweeping (side-to-side) motion.
- Be aware of your surroundings. Do NOT allow yourself to get 'boxed-in' or 'cornered' by fire. ALWAYS have an escape route and Do NOT put yourself at unnecessary risk.
- If working alone (e.g. driving to or from a site) take extra caution and action the fire only after appropriate reporting has been completed.
- As long as it is safe to do so, continue to action the fire until Forest Protection personnel arrive, and then follow their direction until they release you from the fire.
- If not safe, all workers must go directly to the muster point and remain there until further direction is provided by the supervisor.



3.2.2 Equipment or Industrial Type Fire:

- Sound alarms and notify co-workers.
- If safe and time allows, shutdown machinery, cut off fuel and high voltage power supplies, close doors and windows, remove flammable sources and evacuate.
- All workers must go directly to the muster point and remain there until further for direction provided by the Supervisor.
- Contact the supervisor and notify of the fire. Details should include location, size of fire, 'what' is burning, resources available, your name and contact number.
- Immediately report the fire to all appropriate agencies.
- Always approach a fire from the 'up-wind' side. NEVER breathe in smoke. Equipment and industrial fires produce smoke that can be toxic and hazardous to your health.
- Assess the fire and if safe to do so take action.
- Only attempt to extinguish a fire if you have been properly trained in the use and limitations of the equipment at hand.
- Use an appropriate method to fight the fire. This may include:
 - remove the fuel - isolate the area on fire,
 - remove oxygen - use chemical foam, dry powder or carbon dioxide extinguishers,
 - cool the fuel - use water to cool,
 - isolate the fire -- protect surrounding equipment and property while leaving the fire to burn itself out
- When using a portable fire extinguisher, always direct the extinguishing powder towards the base of the fire, using a sweeping (side-to-side) motion.
- Be aware of your surroundings. Do NOT allow yourself to get 'boxed-in' or 'cornered' by fire. ALWAYS have an escape route and Do NOT put yourself at unnecessary risk.

3.2.3 Reporting Fire

When reporting fires provide the following information:

- Date, time discovered, legal and / or GPS location.
- Fire Type: Ground, Surface, Crown Fire, Industrial or Equipment, etc.
- Approximate size & direction of spread
- Topography and is water readily available? How far?
- Any people or heavy equipment on site?
- License number of any vehicle in the area of the fire.



3.3 Hazardous Material And Spill Emergency Response

When responding to spills of hazardous materials in quantities that could affect worker health or safety, or the environment, attempt to contain the spill only after all hazards have been identified and controlled, and it is safe to do so. When safe, take the following steps as appropriate

3.3.1 If a spill occurs:

- Stop work and ensure all personnel are safe. Eliminate all avoidable sources of ignition and wear appropriate personal protective equipment.
- Secure Area - clear area of non-essential personnel.
- Assess Situation - record time, location, volume and type of product spilled.
- Contain spilled material with absorbent material or earth.
- Initiate notification and document key contacts/decisions.

Take action to stop spill at the source.

- Initiate cleanup with absorbent pads or other material and dispose of recovered material & absorbents in consultation with Ministry of Environment Notify the crew and stop operations if workers, the environment or infrastructure are endangered and move a safe distance away up-wind or crosswind.
- Contact the supervisor and notify them of the spill or hazardous material. Details should include location, type of material and volume, your name and contact number.
- Keep a safe distance and approach from up-wind. Look for WHMIS or TDG safety marks to identify the spilled or hazardous material, and assess the hazards.
- Refer to Product MSDS, and/or call CANUTEC for information about appropriate response.
- Supervisor reports the hazardous material or spill to the KQLP management.
- For releases or spills, if safe to approach and you have the required PPE, stop the product flow and / or secure the site. Act quickly. Shut off pumps, close valves, etc.
- Warn other people in immediate vicinity. Take precautionary measures such as enforcing "No Smoking" and extinguishing any flame or sources of ignition.
- Contain the spill. Block off drains, culverts, ditches. Surround product with dirt or clay, peat, straw, sand, or commercial absorbents to assist with containment.
- Be aware of your surroundings. Do NOT allow yourself to get 'overcome' by toxic fumes. ALWAYS have an escape route and Do NOT put yourself at unnecessary risk.
- Develop a remediation plan with regulatory approvals and commence recovery, clean-up and restorative action as appropriate.
- If not safe, all workers must go directly to the muster point and remain there for further direction provided by the Supervisor.

3.3.2 Reporting

Spills of Fuel/ Oil > 100 litres or any spill to water, or Antifreeze > 5 litres or any spill to water must also be reported to the Provincial Emergency Program and the Ministry of Environment.

Report any spill to Kalum Quarry Limited Partnership who will then notify applicable agencies and stakeholders.



Provide the following information:

- Name
- Telephone Number
- Radio Frequency or Cell phone number
- Time and Location of Spill
- Material spilled and approximate quantity involved
- Cause of spill if known
- Weather conditions
- Action taken so far
- Immediate serious threat (water courses, fire)

3.4 Erosion Event

An erosion event is a disturbance, natural or man-made, to the landbase that has caused or will likely cause a substantial environmental impact or is a threat to life or property.

All Erosion Events are to be reported to Kalum Quarry Limited Partnership.

Upon discovery of an erosion event:

- Ensure your own Safety
- Ensure the Safety of others in the Immediate Area
- Notify Applicable Agencies - be prepared to provide such information as location of event, type of event (landslide, washout etc. .), size of event, current impact, potential impact and equipment on site or nearest available equipment.

3.5 Environmental Emergency Response

When responding to natural emergencies including flooding, gale force winds, earthquake or mass slumping workers must assess all hazards prior to determining the appropriate course of action required to move to a safe location:

- Notify the crew and stop all operations.
- Contact the Supervisor and notify them of the natural emergency.
- Assess all hazards and determine what can be done to control or minimize the hazards.
- Identify all resources required and all resources available.
- Determine where the available safe escape routes and safe areas are.
- Do not attempt to travel if safe routes are not currently available and there is less risk by staying at the current location.
- Stay together and be aware of your surroundings.
- Do NOT allow yourself to get 'boxed-in' or 'cornered'. ALWAYS have an escape route and Do NOT put yourself at unnecessary risk.
- If safe, all workers must go directly to the muster point and remain there for further direction provided by the Supervisor .



3.6 Motor Vehicle Accident Emergency Response

When responding to a motor vehicle accident workers must use extreme caution and first implement traffic control for their safety, and then take the following steps as appropriate:

- Continue to control all potential traffic coming from all directions that could endanger first responders or the injured at the scene.
- Take additional steps to ensure it is safe to approach a motor vehicle accident. Look for hazardous materials, leaking or spilled fuel, electrical shorts and smoke or fire.
- Notify the Supervisor for the area. Details should include location, type of accident, numbers and severity of injured, your name and contact number.
- Notify local authorities immediately should additional assistance be required.
- If the vehicle is on its side, be aware of the potential for the vehicle to fall onto its roof or wheels and stay clear. If possible, stabilize the vehicle.
- Notify the on-site medic for additional assistance for personnel as appropriate.
- When safe, provide medical assistance to the injured, including provision of blankets or clothing (winter months) to keep them warm, or shade in hot weather.
- If flames are visible, fire responders should attempt to safely put out the fire. However, Do NOT place yourself at risk. Vehicle fires can be difficult to extinguish due to the materials contained in a motor vehicle (plastics, rubber, oils, and fuel).
- Extreme caution must be exercised when entering the inside of a vehicle involved in an accident as vehicle air bags may deploy even after the vehicle has come to a stop.

For accidents which occur within signed avalanche areas (i.e. AVALANCHE AREA – DO NOT STOP)

3.7 Emergency Response For Explosions Or Serious Workplace Violence

When responding to emergencies involving explosions, serious work place violence personal safety and the safety of co-workers and the public take priority over other factors. The following steps should be followed as appropriate:

- Notify the crew and stop all operations.
- Vacate the site and muster at a safe location, account for all workers.
- If safe, when leaving the site lock-up, eliminate all ignition sources, extinguish open flames & shut off all vehicles & equipment that will be left on site.
- If not safe, immediately vacate the site and move to a safe muster point.
- Contact your Supervisor and notify them of the emergency. Details should include location, type of emergency, your name and contact number.
- Immediately report the incident to the appropriate authorities including the RCMP, KQLP, client, contractors and others in the specific area.
- Act quickly to remove yourself and others from danger.



- Warn other people in the vicinity. Take further precautionary measures as appropriate such as restricting entry into the area.
- Wait for assistance from professional responders or local authorities; do not put yourself at further risk.
- Provide assistance to, or call for help for injured victims.
- All workers must remain at the muster point until the Supervisor provides further direction.

3.8 Emergency Scenes

The scene of a major incident must not be **disturbed** unless:

- You are permitted to do so by an OH&S officer, or a police officer,
- You have to attend to someone who has been injured,
- You have to prevent further injuries, or
- You have to protect property that is endangered as a result of the incident.

3.9 Other

3.9.1 Person Missing

- If an individual does not check-in and is reported missing.
- Complete a review of all information (last known location, expected time of arrival, time of last known contact, survival gear known to be with party) on the missing person(s).
- If last known location is remote or the missing person(s) are not located within 6 hours or the preliminary search does not yield results, contact the local RCMP² to coordinate a formal search.

Note: Search and Rescue will not initiate a search unless contacted by the RCMP²

3.9.2 Wildlife Encounter

DO NOT FEED THE WILDLIFE

DO NOT LEAVE GARBAGE BEHIND

Workers and supervisors may expect to encounter bears in any fieldwork situation. If you are in open country, scan the horizon to look for bears. In forest areas be sure to make lots of noise and keep a mental inventory of climbable trees (just in case). Remember BLACK BEARS are agile climbers, and grizzlies have also been known to climb short distances up trees. To be safe you should look for trees that will allow you to get at least 10m (33ft) above the ground. Don't forget that bears can charge at 50km/hr.

Situation 1 - Bear has not detected your presence and is more than 100 m away.

Don't announce your presence if the bear has not seen you. If possible, retreat slowly and give the bear plenty of space. If you have the opportunity, you should retreat and leave the trail to the bear. If you



must continue, back off a short distance, and give the bear time to leave the area. You should also do a wide detour quietly and quickly downwind to avoid problems.

Situation 2 - Bear has detected your presence, but is more than 100 m away.

Your goal here is to act in such a way to allow the bear to identify you, but to also let it know that you are no threat. Speak calmly so that it knows you are a human. They will often quickly give ground to you once they identify you as human. If the situation permits, back away slowly, keep a close eye on the bear. Otherwise, you may wish to detour around the bear, but in this case, detour upwind so the bear can get your scent. Keep talking calmly. Waving your arms may help it identify you as human.

Situation 3 - Bear has detected you and shows signs of aggression.

If you have followed the advice listed above, hopefully you have a bit of distance between the bear and yourself. You'll need to

- Assess the situation. Are you dealing with a black bear or grizzly? Are there cubs involved? Are there climbable trees nearby (and do you have sufficient time to climb them?)
- Do not run. You can't outrun a bear so don't even try. Despite rumors to the contrary, black and grizzly bears can outrun a human on ANY terrain, uphill or down. People will tell you that you should run downhill when chased by a grizzly. This is simply a myth. Don't try it.
- Try to retreat slowly. Back up slowly and try to put more space between you and the bear. Talk calmly so that it can identify you as human, and slowly back up. Keep your backpack on as it can provide protection if necessary. Don't make direct eye contact, but keep a close look at the bear as you back away.
- Climb a tree if available. If you have enough time and the bear continues to move closer, take advantage of a tall tree to climb. Remember black bears are strong climbers as well.
- Grizzlies have also climbed short distances up trees after people. You want to get at least 10 m high to reduce the chance of being pulled out of the tree. Even though some bears can come up the tree after you, the hope is that they will feel less threatened, and thus less likely to chase you up the tree.
- If the bear charges you. Bears will often bluff charge before attacking. This is designed to allow enemies to back down before the bear needs to actually make contact. It evolved as a way to prevent encounters with enemies and it may provide you with an opportunity to back away.
- Use your pepper spray. This is a last resort. Pepper spray is only good at very close range (5m). Wind will reduce this effective range even farther (and may blow the spray back into your face). If the bear approaches within this range, point the spray at its eyes and discharge the



contents. Hopefully, this will either disorient the bear to allow you to escape, or at the very least deter it from attacking. Once you have partially discharged a canister of bear spray it should be discarded. While the spray may deter attacks, the smell of pepper can act as an attractor.

- If a black bear (or any bear that is stalking you) makes contact. If the attack escalates and a black bear (or any bear that appears to have been stalking you) physically contacts you, fight back with anything that is available to you. Black bears tend to be more timid than grizzlies and fighting back may scare the bear off. In addition, if a bear is stalking you then you are in a predatory situation and fighting back is your only option. This also applies to any attack at night as these may also be considered predatory in nature.
- If a grizzly makes contact. As above, if you believe the bear to be stalking you, fight back with everything you have. In general though, playing dead in a daytime grizzly encounter tends to reduce the level of injury sustained by most attack victims. Many grizzly attacks are defensive in nature and playing dead may show the bear that you are not a threat. Keep your backpack on as it will provide added protection. The best position is to lie on your side in a fetal position. Bring your legs up to your chest and bury your head into your legs. Wrap your arms around your legs and hold on tight. You may also lie on your stomach, backpack on, and place your hands behind your neck to protect that vulnerable area. Do not play dead until the last moment. Staying on your feet may allow you to dodge, or divert an attack.
- After the attack. Once the attack has ended, remain patient. After a few minutes, try to determine if the bear is still in the area. If the bear has moved on, you should make your way towards assistance as quickly as possible.

The following list includes the worst-case scenarios for bear encounters.

- Bears that have become addicted to garbage and human food. Once bears become accustomed to human food and garbage, they become drawn to areas of human occupation. This may include backcountry campsites far from urban centers. A history of poor back country garbage management by backpackers can add back country campsites to a bears regular foraging.
- Bears that have first year cubs that go up a tree. In this situation, the female may not leave the area, but rather will defend the cubs. The sow may attack quickly if you are within its comfort zone. Be ready with your bear spray, and be prepared to climb a tree if possible.
- Bears with second year cubs that may participate in a bluff charge. Again, this can be a very dangerous situation as you are now dealing with multiple bears. While this is very rare, it would allow the family to protect a kill site more effectively.



- Bears defending a kill site. Bears are very aggressive when protecting a kill site. Learn to watch for signs of kill sites such as large accumulations of ravens and other scavenging birds or animals.
- Predatory encounters. While this is a rare situation, and generally refers to predatory attacks by black bears, this can be a very serious encounter. Since the bear is hunting you as prey, you must be prepared for an imminent attack. The bear may circle you, slowly moving in closer and closer until it decides whether to attack or not.

3.10 Personal Protective Equipment Required

Quarry Pit Operations

3.10.1 Labourers

- High Visibility Vest
- High Visibility Hard Hat
- Safety Boots
- Rain Gear
- Hearing Protection (when in noisy area)
- Work Gloves

3.10.2 Machine Operators

- Level 1 First Aid Kit
- Fire Extinguisher
- 2way radio with proper frequencies
- Hearing Protection (when out of Machine, in noisy area) High Visibility Vest (when out of Machine)
- Safety Boots
- Rain Gear
- High Visibility Hard Hat (when out of Machine) Work Gloves

3.10.3 Truck Equipment

- Level 1 First Aid Kit
- Wool Blankets
- Fire Extinguisher 201b
- 2 way radio with proper frequencies
- Spill Kit



3.10.4 Emergency Transport Vehicle (ETV) crew of 6 or more

- Level 3 First Aid Kit
- Fire Extinguisher
- 2 way radio with radio phone access
- set of hard cervical collars covering all adult sizes (or 2 adjustable hard cervical collars)
- spine board with handholds, no less than 44 cm x 1.8 m x 2 cm, acceptable to WorkSafeBC, and seven 1.8 m x 5 cm heavy velcro straps or equivalent to secure an injured worker
- stretcher (Whenever an injured worker may require transport over rough terrain a basket stretcher or other carrying device acceptable to WorkSafeBC must be used.
- The basket stretcher must have a spine board with handholds and retainer straps and a suitable mattress or padding)
- blankets (Three of these blankets may be the blankets needed with the Level 1, 2, or
- 3 kit at the workplace unless weather conditions at the workplace require more for the safe treatment or transport of injured workers, in which case suitable weather-resistant protection may also be needed)
- vomitus bags
- 4.5 kg sand bags

3.10.5 First Aid Supply Check List

Personal First Aid Kit

1	1	Pressure Dressing
6	6	Sterile adhesive dressings, assorted sizes, individually packaged
6	6	14 cm x 10 cm wound cleansing towelettes, individually packaged

Level 1 First Aid Kit

	3	Blanket
	24	14cm x 10cm wound cleaning towelettes, individually packaged
	60	hand cleansing towelettes, individually packaged
	100	sterile adhesive dressings, assorted sizes, individually packaged
	12	10cm x 10cm sterile gauze dressings, individually packaged
	4	10cm x 16.5cm sterile pressure dressings with crepe ties
	2	7.5cm x 4.5 m crepe roller bandages
	1	2.5cm x 4.5m adhesive tape
	4	20cm x 25cm sterile abdominal dressings, individually packaged
	6	cotton triangular bandages, minimum length of base 1.25m
	4	safety pins
	14	stainless steel bandage scissors or universal scissors
	1	11.5cm stainless steel silver forceps
	12	cotton tip applicators
	1	pocket mask with a one way valve and oxygen inlet
	6	pairs of medical gloves (preferably non latex) First Aid Record Book and pen



Level 2 First Aid Kit

3	Blankets
24	14cm x 19cm wound cleaning towelettes, individually packaged
150	sterile adhesive dressings, assorted sizes, individually packaged
12	10cm x 10cm sterile gauze dressings, individually packaged
4	10cm x 16.5cm sterile pressure dressings with crepe ties
10	20cm x 25cm sterile abdominal dressings, individually packaged
12	cotton triangular bandages, minimum length of base 1.25m
2	2.5cm x 4.5m adhesive tape
2	5cm x 4.5m adhesive tape
6	7.5cm x 4.5 m crepe roller bandages
1	500 ml sterile 0.9% sodium chloride solution (saline) in unbreakable container
1	60 ml of liquid antibacterial soap in unbreakable container
1	universal scissors
1	11.5 cm stainless steel sizer forceps
1	penlight or flashlight with batteries
6	pairs of medical gloves (preferably non latex)
1	portable oxygen therapy unit consisting of a cylinder(s) containing compressed oxygen with a pressure gauge a flow meter and a non-rebreathing mask (may be kept in a separate container from the other supplies) oropharyngeal airway kit (may accompany the portable oxygen therapy unit)
1	manually operated self-inflating bag-valve mask unit with an oxygen reservoir (may accompany portable Oxygen Unit)
6	Patient assessment charts
	First Aid Records and pen
1	pocket mask with one way valve and oxygen inlet

Level 3 First Aid Kit

- The Level 3 first Aid kit is the same as the level 2 kit except that, in addition , one portable suction unit is recommended.

Emergency Transport Vehicle (ETV)

1	set of hard cervical collars covering all adult sizes (or 2 adjustable hard cervical collars) spine board with handholds, no less than 44 cm x 1.8 m x 2 cm, acceptable to WorkSafeBC, and seven 1.8 m x 5 cm heavy velcro straps or equivalent to secure an injured worker
1	stretcher (Whenever an injured worker may require transport over rough terrain a basket stretcher or other carrying device acceptable to WorkSafeBC must be used. The basket stretcher must have a spine board with handholds and retainer straps and a suitable mattress or padding)
6	blankets (Three of these blankets may be the blankets needed with the



		Level 1, 2, or 3 kit at the treatment or transport of injured workers, in which case suitable weather-resistant protection may also be needed)
	2	4.5kg sand bags
	2	vomitus bags

3.11 Evacuation and Rescue

This plan will be used by the Supervisor or Delegated Safety Team member on site, to provide immediate evacuation actions.

3.12 Evacuation Procedures

If an emergency or hazardous situation on or near the worksite threatens the health or safety of site personnel, and cannot be safely managed with the resources at hand, a site evacuation should proceed as follows:

- Warn all workers in the vicinity of the potential hazard;
- Immediately notify the Supervisor that the site is being evacuated, the reason for evacuation and the location of the emergency muster area if different than the site designated muster area;
- Conduct the evacuation in an orderly fashion & conduct a head count to account for all workers;
- Provide first aid if required;
- Maintain radio/phone contact if possible; and wait for assistance and further instructions from the Supervisor.

3.13 First Aid and Emergency Response Team

The Initial Safety meeting for the worksite will identify First Aid personnel and/or the Emergency Response Team Leader.

When First Aid is required:

- Report to Nearest Machine Operator
- Supervisor
- First Aid Attendant

Person with Radio will maintain radio contact with First Aid personnel and supervisor.

Provide as much information as possible:

- Location of Incident
- How many people involved
- What happened
- Any danger- machinery, etc
- Equipment required

When an emergency is reported All other vehicle traffic and radio use must STOP!



3.14 Emergency Evacuation

First Aid person will decide on the evacuation method (if required)

- Is a Helicopter required?
- Ground Ambulance Required?
- If Helicopter is Required:
 - What is the weather like? (wind, rain, sunny, low cloud ceiling etc.)
 - What is the time?
 - How long til night fall?
 - Suitable area to land.

If there is no suitable area to land the injured person will have to be transported to one.

Radio Frequency will be monitored and contact will be made with helicopter pilot as soon as they enters the area.

Ground Ambulance may be required if:

- Weather conditions (wind)
- Amount of Daylight
- Terrain
- Any doubt a helicopter will make it to the site.

3.15 External Emergency Responders

Emergency Response Team leader will contact external agencies, and company representatives.

3.16 Briefing and Training

Before start up on a new job the Emergency Response Team Leader will:

Have a initial safety meeting

- Emergency Response plan
- PPE
- Potential Hazards

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



3.17 Shut down and Start up

- If a Catastrophic event happens on site the Emergency Response Team leader will STOP operations and;
- First Aid/Medivac of any injured personnel to an appropriate medical facility.
- Ensure all work in the area has stopped to control any further problems and, that all other employees affected by the event report to the site office when released for debriefing.
- Establish Site Security (to ensure that nothing is touched or moved until the clearance is given from various agencies and Worksafe BC)
- Senior management personnel have been notified
- Worksafe BC and RCMP have been notified (as applicable) in the event of a fatality
- Worksafe BC is notified when the following incidents may occur.
- A serious injury or death of a worker
- A major structural failure or collapse of a building, bridge, tower, crane, hoist, temporary construction support system, or evacuation system.
- A major release of a hazardous substance, or
- Any other incident required by regulation to be reported.

Once debriefing and all investigations (if applicable) are complete work may start up once the corrective actions have been addressed.

3.18 Vital Records

- Kalum Quarry Limited Partnership requires that any record of an incident be dropped off at the office for photo copying, and the original will be stored with the Internal Investigation team leader.
- Copy of the record will be returned to the individual crew member's record book.
Communications

3.19 Internal Onsite Communications

When an incident happens on-site the crew member who witnessed the incident will contact the Emergency Response Team Leader (ERTL) or On-site supervisor if ERTL has not been identified.

3.20 Training

- During the pre-work the ERTL or supervisor will ensure the crew is trained on contacting outside agencies as required.
- Location of Emergency Contact List
- Location of Radio instructions
- Workers are required to learn how to operate of communication equipment



3.21 Incident reporting

- General Manager of Kalum Quarry Limited Partnership will be responsible for contacting outside agencies.
- Once ERTL has briefed the General Manager and the General Manager understands and reviewed the information from the ERTL and other crew members the General Manager will notify any outside agencies as required.

3.21.1 Fatality Reporting

- When reporting an obvious fatality NEVER RELAY THE NAME OF THE SUBJECT OVER THE RADIO.
- If possible, sensitive information should be relayed by telephone, cell phone or any other secure link.
- In the case of a co-worker, the individual's identity will be relayed only to the Management and they will take the necessary steps to prevent unauthorized persons from being able to identify the subject.
- It is sufficient to report that an accident has occurred resulting in the death of a co-worker.
- In the case of a member of the general public, explain the situation simply without identifying the person(s) involved.
- In the event of a fatal accident the following specific tasks must be completed by Employees at the scene and at the office:
 - Notify the Office immediately and the receptionist will notify senior management.
 - Protect the scene, do not move the subject if it is apparent they are deceased.
 - Make notes as to your observations of the accident and sketch the scene before any disturbance takes place.
 - Do not leave the scene unless relieved or advised by the RCMP or, if staying at that location will place you at personal risk i.e., approaching fire and landslides.

3.21.2 Injury Requiring Medical Evacuation

- ERTL or designated crew member will contact the agency required for medical evacuation
- If Air Evacuation is required provide the following information:
 - Your name
 - Patient(s) requiring medical assistance
 - Telephone number, Radio Frequency or channel
 - Location and GPS
 - Weather Conditions
 - Daylight left in day
 - Terrain
 - What equipment may be required to safely transport the injured crew member(e.g. basket stretcher with spine board, splints, level 3 certification)
 - Kalum Quarry Limited Partnership General Manager



If Ground ambulance is required provide the following information:

- ✓ Your name
- ✓ Patient(s) requiring medical assistance
- ✓ Telephone number, Radio Frequency or channel
- ✓ Location and directions as per Emergency Evacuation Procedures
- ✓ Weather Conditions
- ✓ Daylight left in day
- ✓ Terrain
- ✓ What equipment may be required to safely transport the injured crew member
- ✓ Kalum Quarry Limited Partnership General Manager

3.21.3 Injury Requiring Transportation to Treatment Facility

- In the event of accident or injury where transport of an injured party is required to a treatment facility contact Kalum Quarry Limited Partnership Office while enroute or upon arrival.
- Contact Contractors office as required.

3.21.4 Injury Reporting

- All employees are required to report any injury or close calls to the On-site supervisor regardless of severity.

3.22 Emergency Contact List

- Individual crew members are responsible for keeping their contact information current with the company.
- ERTL will maintain contact numbers for external agencies as required

3.23 Check in/Sign out

- Each crew member is required to sign out on the board with location and expected time of return.
- When crew returns home, one of the crew members will check in with the Safety Team Leader.
- If the crew expects to be late (e.g. flat tire etc) they will use the radio or phone to check in and advise of the situation.
- If there the crew does not check in after a reasonable amount of time with the Quarry Pit Manager, the Quarry Pit Manager will contact the crew members residence and confirm the crew has not returned home.
- The Quarry Pit Manager will initiate a search party and travel to work site.



4 Investigation

4.1 Quarry Pit Manager

- Quarry Pit Manager will be Internal Investigation Team Lead
- The Internal Investigation Team Leader will act as a liaison with police, Worksafe BC and other government agencies to assist in the full investigation of any incident.
- The Internal Investigation Team Leader will also assume overall control of the investigation team activities, from inception to completion.
- Reviewing the final report and making a presentation to senior management personnel on the investigators findings and recommendations.
- As applicable, meet with the family of any seriously injured worker(s) to discuss the incident and convey the company's sympathy regarding the incident.

5 Plan Verification

5.1 Site Visit

All work sites will be visited by the site supervisor and at least one member of the safety team.

- They will make sure the Emergency Response plan will work on each site, and adjust the plan to the sites logistics as required. Items included are:
- Communications- where in the site is there a danger of communication blackout? How far do workers have to go to get back into communications range.
- Emergency access- what is the fastest, safest route in for outside emergency responders
- Evacuation Procedures- identify the safest routes out of the work site in the event of an environmental emergency.

5.2 Records

- Records of emergency response drills, first aid treatments, emergency response reports, cleanup and remediation and follow-up including investigations and corrective actions will be maintained on file for a minimum of 3 years.

6 Emergency Muster Locations

Muster locations should be identified and clearly communicated for each work site. In the event that a designated muster location cannot be used for an emergency, workers will move to an emergency muster location upwind or crosswind from the worksite at a safe location up to 500 metres or more from the incident site.



7 Public Evacuation

If the emergency or hazardous situation has potential to impact the health or safety of the public, evacuation of the public from neighboring areas may be necessary. In that event, the KQLP supervisor must contact the KQLP office who will request assistance with a public evacuation from the Provincial Emergency Program (PEP) Coordination Centre.

8 Emergency Communications and Notification

8.1 Communication Methods

All vehicles will have a two-way radio that can contact Supervisor or on site medics, as well as other worker vehicles, in the event of an emergency.

Senior supervisors and on-site medics will have two-way radios and/or cell phones that can communicate with the emergency dispatch center or air ambulance.

Alarm systems, air horns, vehicle horns, cell phones and radios will be used at worksites sites to provide notification for emergencies.

8.2 Notification of Incidents

- All workers must report all hazards, near misses and incidents to their foreman or supervisor immediately.
- Foremen and supervisors are responsible to report all hazards, near misses and incidents to the Supervisor, and also to the onsite medic for all incidents involving injury.
- The Supervisor is responsible to report all incidents to the KQLP head office
- The KQLP supervisor will notify management and contractors of the incident, and maintain appropriate lines of communication.
- The responsible contractor will notify BC Workplace Health & Safety (OH&S) and WCB immediately for all reportable incidents as specified in the regulations.
- The responsible contractor will work with the safety manager to notify the RCMP and other regulatory agencies for all other reportable health, safety and environmental incidents as specified in the regulations.

8.3 Emergency Information Management

- Supervisors, or a designate, will maintain a written log of activities during the emergency (date, time, weather conditions, and actions taken). Each entry in the log should be initialed and the



information must be accurate and continuously updated until the emergency conditions have ceased.

- Workers are not to release any information to the media or public during an emergency (see below).

9 Post Emergency Procedures

9.1 Media Notification

After the Senior Management team has determined that the emergency situation has been controlled the media and other interested individuals will be notified as appropriate.

9.2 Incident Investigation

The Contractor(s) involved in the emergency response, along with KQLP will conduct an investigation in cooperation with all other relevant investigative bodies or regulatory officers, for the purpose of determining causes and steps that should be taken to prevent re-occurrence of similar incidents.

9.3 Cleanup

After an emergency, clean up the site, returning it as closely as possible to its original state. Cleanup procedures may include:

- Protection of evidence,
- Proper disposal of hazardous wastes,

Hiring of specialist cleanup services,

Documentation of cleanup activities, and

Restoration of the worksite and surrounding area (including vegetation).

9.4 Return to Work

- Crews should proceed with a systematic return to operations. This may include:
- Determination of the extent of damage,
- Isolation and / or repair of damaged equipment,
- Taking necessary steps to prevent further damage and control of hazards in damaged areas,
- Barricading damaged areas and erecting temporary shelters as necessary, and
- Recall of all appropriate personnel.



9.5 Records

It is vital to keep accurate records of all aspects of an emergency incident for purposes of insurance claims, liability, inventory control,

1. Centralized records should be kept of all events, decisions and actions taken, and all personnel involved.
2. A general damage assessment should be conducted as soon as possible after event.
3. A detailed condition assessment should be conducted, when conditions allow, of all affected area

Suggested supplies and equipment for record-keeping:

Note: If you have a database that is maintained or can be accessed off-site, you may be able to get printouts through the remote site in the event that you do not have access to the records.

- Blank inventory sheets
- Object priorities list (keep a hard copy off-site)
- Blank paper/notebook
- Camera (film, batteries, memory card, etc.)
- Video camera (use of cell phones)?
- Photographic log to fill-out as photos are taken
- Tape recorder
- Clipboards, pencils, permanent markers
- Laptop and battery back-up



EMERGENCY RESPONSE PLAN

(INCLUDING FUEL MANAGEMENT & SPILL CONTINGENCIES)

FOR THE

ONION LAKE PIT

Mine permit number : G - 1 – 56



DOCUMENT MANAGEMENT

Mine permit number : G - 1 – 56

Policy Title:		Emergency Response Procedures	
Classification:		Company Policy	
First Adopted:		November 24, 2014	
Reviewed:		Every 1 years as required	
Applicable Legislation		OHSS Rail Act WCB Mining Act Ministry of Energy, Mines and Natural Gas Mines and Mineral Resources Division (Guidelines for the Mining Industry) Health, Safety and Reclamation Code for Mines in BC	
Revision History			
Version	Date	Comments	Signature
1	April 2015	On file	
Draft Rev 1	2016-2017	DRAFT revision and formatting	
		Final Plan	



Mine/Operation Information

A Mine is a place as defined under the *Mines Act* (RSBC 1996).

The following list identifies basic information regarding the Orion Lake Pit:

Name & Contact :

Kalum Quarry
c/o Kalum Quarry Limited Partnership
14303 Highway 16 West
Terrace, B.C.
V1B6 0C8

Tel: (250) 636-5000
Fax: (250) 636-1813

Chief Executive Officer
Mr. Colum O'Donnell
(250) 636-5000 ext 102
250-615-1813 c
codonnell@kitsumkalum.bc.ca

Mine Manager
Mr. Wayne Hansen
250-641-1862 c
c/o lwesley@kitsumkalum.bc.ca

Safety Coordinator (intern)
TBD
250-000-0000
c/o lwesley@kitsumkalum.bc.ca

Mine number :

Mine permit number : G - 1 - 56

Type of operation: Pit Run & Sand

Location of the property: Within the District of Terrace

Latitude : 54° 20 min 13.15
Longitude : 128°33 min 14.16

Number of employees on site, including management and contractors :

This number varies with operations. Under a single shift at steady utilization, there may be 2-4 employees and contractors on site.



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DRAFT



1 Introduction and Purpose

The mine emergency plan is intended to fulfil the requirements of the *Health Safety and Reclamation Code for Mines in British Columbia, 2008* (HSRC). Under Part 1.7.1of the HSRC, the manager is required to report fatalities, accidents, and dangerous occurrences to the local mines inspector. The company will maintain a copy of the necessary reporting form for these incidences at the main office.

The Mine Emergency Response Plan (hereinafter called the "MERP") has been prepared to provide key officials, agencies, departments and employees within the mining operation with a "general" guideline to the initial response to an emergency and an overview of their responsibilities during an emergency. For this plan to be effective, it is important that all concerned be made aware of its provisions and that every official, agency, department and employee be prepared to carry out their assigned functions and responsibilities in an emergency.

2 Site and Operational

INFORMATION Mine Name: Onion Lake Pit – Pit Run & Sand

Site Map location(s): 54° 20, 13.5" N 128 ° 33' 14.16"W

Specific Directions to the Site: off Hwy 37 S south of Mount Layton Hot Springs

Site Phone No.: N/A

Manager: Wayne Hanson

Contact Phone No.: 250-641-1852

Email Address: c/o lwesley@kitsumkalum.bc.ca

Type of Operation: Sand Pit

Number of Employees on site: 2-4

Note: Each member working on-site will receive a copy of this document, and will be instructed in regards to emergency procedures.



3 Emergency Notification Chart

MEDICAL EMERGENCY CONTACTS	Phone Number
Hospital- Mills Memorial	250-635-2211
RCMP- Terrace	250-638-7400
BC Ambulance Service	1-800-461-0011
Poison Control	1-800-664-1727
General Emergency Number	911
MEM (Mines Inspector)- Doug Flynn	1-250-647-7386 1-250-877-9747
email	Doug.Flynn@gov.bc.ca
MEM (Mines Inspector)- R. Scott Parker	1-250-647-7453 (Work) 1-250-877-3303 (Cell)
Email	Scott.R.Parker@gov.bc.ca
Conservation Officer	1-250-638-6530
Worker's Compensation Board (WCB)	1-866-922-4357
PEP (Provincial Emergency Preparedness)	1-800-663-3456
TRANSPORTATION	
Lakelse Air Helicopters- Terrace	1-250-635-3245
SPILLS AND DISASTERS CONTACTS	
Forest Fire Reporting	1-800-663-5555
Provincial Emergency Program (Spills)	1-800-663-3456
Environment Canada (Emergency Reports)	1-800-663-3456
COMPANY CONTACTS	
Wayne Hansen (Manager)	250-641-1852 (cell)
Email	whansen@tsmkalum.bc.ca

4 Hazard Analysis of Operation

- Fire and Explosion
- Environmental
- Injury to Workers
- Equipment Failures-
- Fuel Spills

The above is only a limited list of potential hazards; therefore this document is designed to be a living document that will grow with the mining operation. Annual reviews of risk hazards must and will be completed by a trained and authorized company representative.



5 Emergency Equipment

There will be a specific location and certain equipment utilized at this mine site, such as:

- Level 1 Transport First Aid Equipment;
- Cell phones;
- Fire Equipment on-site for either a forest or on-site fire;
- Spill Contingency Equipment; and
- Fire Extinguishers on each piece of machinery.

All personnel on-site will receive basic firefighting training, and all employees and contractors will be required to have at a minimum Level 1 and Transportation First Aid Certification to work on the site.

The company or its contractors will supply the first aid equipment, supplies and facilities that must be kept clean, dry and ready for use, and be readily accessible at any time a worker works in the workplace. The company will comply with Part 33 of the Occupational Health and Safety Regulation, Work Safe BC as a means to meet Part 3.6.1 of the HSRG.

6 Procedures for Handling Medical Emergencies

The following assessment will be necessary during any medical emergency whether it is minor or life threatening that the first aider use the following simplified Priority Action Approach

1. **Scene Assessment-** Mechanism of Injury? Hazards? environment?/ # of injured

First	Observe for bleeding/deformities/eyes
Second	Observe the skin/level of conscious- moving/verbal
Third	Spinal Precautions
Fourth	Airways- With C-spine: Open/Clear- manually stabilize head Breathing- Rate and Quality Circulation- Radial/Carotid, skin- colour, temperature and condition
Fifth	Rapid Body Search (RBS)- Rapid/Through Life Threatening
Sixth	Warmth- Blankets/Reassurance/ Support Injuries
2. **Transport Decision-** Load and Go (Hospital and/or Call for an ambulance)/Stay and Play- Secondary Survey (Administer First Aid)
3. **Communicate to Emergency Services** (911) or call for help from other persons on-site
4. **Secondary Assessment** Vital, History, Head to Toe Evaluation
5. **Definitive Treatment** Ice, Dressings, Splinting, Wound Cleaning, etc.



Typical first aid scenarios that you might encounter during operations-so be prepared for this and know how to treat them

- Bleeding from cuts and abrasions;
- Slips and Falls- Injuries such strains, sprains and broken bones (fractures) or concussions;
- Burns; and Allergic Reactions

7 Procedures to Follow when Calling for a Provincial Ambulance

When instructed by the First Aid Attendant or the Direct Supervisor, follow these steps.

Call AMBULANCE: Phone 1- 800- 461-8011or 911

When asked "For what place?" answer "Hwy 37 S- Onion Lake Pit".

State that "We have life threatening injuries and request vehicle or helicopter evacuation.

There will be a number of questions that will be asked including:

"Your exact location?"

Location: off Hwy 37 S south of Mount Layton Hot Springs

Site Co-ordinates:

Latitude: 54 deg 20 min 13.15 secs

longitude: 128 deg 33 min 14.16 secs

- "Your telephone number?"
- "What is the nature of the problem?"
- "What is the number of patients?"
- "What is the age of the patient(s)?"
- "What is the level of consciousness of the patient(s)?"
- "What is the breathing status of the patient(s)?"
- Additional questions may follow:

If you are calling for an air ambulance then you must make ready a helicopter landing pad.

This area must be clearly marked and cleared of debris that will not damage any rotors and flying objects. A guard must be posted in this area and all traffic in the vicinity stopped.

The helicopter will be looking for this area and can be guided into the landing area.



8 Procedures For Handling Hydrocarbon Spill Emergencies- Onion lake Pit

Action Items for Initial Spill Identification, Notification and Assessment

- Identify spilled material;
- Safety of personnel;
- Determine and note initial spill description;
- Notify PEP 1-800-663-3456, if required;
- Description of spill into the receiving environment;
- Determine equipment needed for initial containment, recovery, in addition, clean-up;
- Initial Spill Response for Combustible Products with actions to be undertaken;

Initial Spill Response for Combustible Products with actions to be undertaken

- Act Fast & Think Safety;
- Containment & Recovery; and
- Disposal and Site Restoration

Spill Prevention and Response Strategies

The proposed spill prevention and response strategies constitute the following:

- Notify key personnel who have emergency response duties;
- Initial assessment of the spill to understand the nature and extent of the situation;
- Mobilization of resources needed to address the spill;
- Do not handle hazardous waste without sufficient protective gear;
- Evaluate method to control activities;
- Initiation & development of safety & environmental monitoring to identify potential effects of the spill;
- Reporting to management, regulatory agencies, personnel and the public; and
- Development of an action plan for clean up and remediation.

Spill Control Prevention Procedures

- The supervisor shall review any proposed activity out of the ordinary that could pose a potential for environmental contamination;
- Any worker who is aware of any potential or actual release of a pollutant to the environment must first attempt to prevent the release, then immediately contact their supervisor;
- All work shall be planned to limit the uncontrolled release of pollutant materials to the environment, so far as is practical;
- Approved containers shall be used for the transport and storage of potential pollutants. All such containers shall be labeled as to the contents and the potential hazard; and
- Personnel will receive appropriate training in the use of environmental cleanup equipment for their area of operations.



9 Fuel Management And Spill Contingency Plan (FMSCP)

This Fuel Management and Spill Contingency Plan (FMSCP) has been developed under the umbrella of "Best Management Practices", and provides emphasis on reducing risks of spills given that fuel will not be stored or transported on-site. Regarding spill contingency, the plan includes mechanisms for initiating and carrying out the required notifications, spill containment, clean-up and remedial actions.

In regards to the spill contingency plan, it was developed in accordance with the BC Guidelines for Industrial Emergency Response Contingency Plans (1992).

It is expected that all fueling will occur from a small tidy tank located inside the box of the company's and/or contractor's pick-up.

The following information provided below was acquired from the document "Fuel Tanks and Refueling Stations for Diesel and Gasoline, Rev 05/10/11, Fraser Lake Sawmills". It covers the level of fueling activities expected for the sand and gravel operations.

Mobile Equipment Refuelling:

- Only authorized personnel may operate the dispensers. (FC 4.6.8.4)

Mobile Fuelling Procedures: (FC 4.6.8.6)

- Ensure vehicle engine is shut off.
- Ensure no open sources of ignition or smoking within 7.5 m.
- Put fuel nozzle into the fuel tank fill tube.
- Turn on the power for the dispensing pump.
- Do not use any object or device that is not an integral part of the fuel nozzle to maintain the flow of fuel. Report any leaks.
- To the extent possible, observe the fuel piping, dispensing pump, and hose assembly during fuel transfer to determine if there are any leaks present.
- Operator must remain in attendance during fuel dispensing to vehicles.
- Do not overfill the fuel tank.
- When tank is full, shut off the power to the dispensing pump.
- Remove the dispensing nozzle and replace in the holder.

Emergency Response: (FC 4.1.8.3 & FC 4.6.9.2)

- All reasonable steps shall be taken to recover escaped liquid and to remove or treat contaminated soil. (FC 4.1.8.3)
- See above spill prevention and response strategies.

Emergency Procedures:

- Take action only if safe to do so.
- In the event of a spill shut off the fuel nozzle and pump.



- Contact the Thornhill fire department, if necessary.
- Use spill response equipment such as absorbent materials to control the spill and to collect the spilled fuel.
- Arrange for the collection and disposal of used absorbents.

The operator will immediately contain, and remediate any spill of hydrocarbon or other harmful substances. Any such occurrence will be reported to the District Inspector of MEM and to the Provincial Emergency Program in accordance with the Spill Reporting Regulation of the Environmental Management Act. Any contaminated materials will be disposed of in a manner acceptable to the Ministry of Environment.

It is expected that emergency spill containment kits will be maintained on-site by the company. A list of required emergency spill equipment is included below.

Suggested Spill Response Equipment for the Onion Lake Pit

Given that there will be no fuel stored on-site and that all fueling will occur using a pickup "Tidy" tank, it is expected that with proper training of personnel, and use of spill prevention and response strategies, and having necessary spill containment equipment on-site that the project environmental can be protected.

Onion Lake Pit – Spill Kit Guidelines	
<i>Recommended Location of Kit</i>	<i>Minimum Recommended Spill Kit Contents</i>
On all heavy equipment	<ul style="list-style-type: none"> • Round nose shovel or equivalent • 5- 18"X18" absorbent pads or equivalent • Heavy Duty plastic garbage bag or equivalent
<ul style="list-style-type: none"> • Round nose shovel or equivalent • 5- 18"X18" absorbent pads or equivalent • Heavy Duty plastic garbage bag or equivalent 	<ul style="list-style-type: none"> • Round nose shovel • 10- 18"X18" absorbent pads or equivalent • 2- 3"x48" absorbent socks • 1- small container of bio-remediation agent (i.e. Oil Gator) • 1- small container of stop leak putty or crystals (i.e. Plug N' Dyke) • Heavy Duty plastic garbage bag or equivalent • Personal Protective equipment (not part of kit)



EMERGENCY RESPONSE PLAN

(INCLUDING FUEL MANAGEMENT & SPILL CONTINGENCIES)

FOR THE

LAKELSE GRAVEL PIT

Mine permit number : G - 1 – 77



DOCUMENT MANAGEMENT

Mine permit number : G - 1 - 77

Policy Title:		Emergency Response Procedures	
Classification:		Company Policy	
First Adopted:		November 24, 2014	
Reviewed:		Every 1 years as required	
Applicable Legislation		OH&S Rail Act WCB Mining Act Ministry of Energy, Mines and Natural Gas Mines and Mineral Resources Division (Guidelines for the Mining Industry) Health, Safety and Reclamation Code for Mines in BC	
Revision History			
Version	Date	Comments	Signature
1	April 2015	On file	
Draft Rev 1	2016-2017	DRAFT revision and formatting	
		Final Plan	



Mine/Operation Information

A Mine is a place as defined under the *Mines Act* (RSBC 1996).

The following list identifies basic information regarding the Lakelse Gravel Pit:

Name & Contact :

Kalum Quarry
c/o Kalum Quarry Limited Partnership
14303 Highway 16 West
Terrace, B.C.
V1B0 0C8

Tel: (250) 635-5000
Fax: (250) 635-1813

Chief Executive Officer
Mr. Colum O'Donnell
(250) 635-6000 ext 102
250-615-1813 c
codonnell@kitsumkalum.bc.ca

Mine Manager
Mr. Wayne Hansen
250-641-1852 c
c/o lwesley@kitsumkalum.bc.ca

Safety Coordinator (interim)
TDD
250-000-0000
c/o lwesley@kitsumkalum.bc.ca

Mine number :

Mine permit number : G - 1 - 77

Type of operation: Gravel Pit

Location of the property: **Within the District of Terrace**

Latitude : 54° 22 min 38.07
Longitude : 128°31 min 18.56

Specific Directions to the Site: off Hwy 37 S near Lakelse Lake Park

Number of employees on site, including management and contractors :

This number varies with operations. Under a single shift at steady utilization, there may be 2-4 employees and contractors on site.



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4	Hazard Analysis of Operation.....	6
5	Emergency Equipment.....	7
6	Procedures for Handling Medical Emergencies.....	7
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1 Introduction and Purpose

The mine emergency plan is intended to fulfil the requirements of the *Health Safety and Reclamation Code for Mines in British Columbia, 2008* (HSRC). Under Part 1.7.1 of the HSRC, the manager is required to report fatalities, accidents, and dangerous occurrences to the local mines inspector. The company will maintain a copy of the necessary reporting form for these incidences at the main office.

The Mine Emergency Response Plan (hereinafter called the "MERP") has been prepared to provide key officials, agencies, departments and employees within the mining operation with a "general" guideline to the initial response to an emergency and an overview of their responsibilities during an emergency. For this plan to be effective, it is important that all concerned be made aware of its provisions and that every official, agency, department and employee be prepared to carry out their assigned functions and responsibilities in an emergency.

2 Site and Operational

INFORMATION Mine Name: Lakelse Gravel Pit

Latitude : 54° 22 min 38.07
Longitude : 128°31 min 18.56

Specific Directions to the Site: off Hwy 37 S near Lakelse Lake Park

Site Phone No.: N/A
Manager: Wayne Hansen
Contact Phone No.: 250-641-1852
Email Address: c/o lwesley@kitsum/kalum.bc.ca
Type of Operation: Gravel Pit
Number of Employees on site: 2-4

Note: Each member working on-site will receive a copy of this document, and will be instructed in regards to emergency procedures.



3 Emergency Notification Chart

MEDICAL EMERGENCY CONTACTS	
	Phone Number
Hospital- Mills Memorial	250-635-2211
RCMP- Terrace	250-638-7400
BC Ambulance Service	1-800-461-9911
Poison Control	1-800-564-1727
General Emergency Number	911
MEM (Mines Inspector)- Doug Flynn	1-250-647-7386
	1-250-877-9747
email	Doug.Flynn@gov.bc.ca
MEM (Mines Inspector)- R. Scott Parker	1-250-647-7453 (Work)
	1-250-877-3363 (Cell)
Email	Scott.R.Parker@gov.bc.ca
Conservation Officer	1-250-638-6530
Worker's Compensation Board (WCB)	1-866-922-4357
PEP (Provincial Emergency Preparedness)	1-800-663-3456
TRANSPORTATION	
Lakelse Air Helicopters- Terrace	1-250-636-3245
SPILLS AND DISASTERS CONTACTS	
Forest Fire Reporting	1-800-663-5555
Provincial Emergency Program (Spills)	1-800-663-3456
Environment Canada (Emergency Reports)	1-800-663-3456
COMPANY CONTACTS	
Wayne Hansen (Manager)	250-641-1852 (cell)
Email	c/o whansen@ktsuukalum.bc.ca

4 Hazard Analysis of Operation

- Fire and Explosion
- Environmental
- Injury to Workers
- Equipment Failures-
- Fuel Spills

The above is only a limited list of potential hazards; therefore this document is designed to be a living document that will grow with the mining operation. Annual reviews of risk hazards must and will be completed by a trained and authorized company representative.



5 Emergency Equipment

There will be a specific location and certain equipment utilized at this mine site, such as:

- Level 1 Transport First Aid Equipment;
- Cell phones;
- Fire Equipment on-site for either a forest or on-site fire;
- Spill Contingency Equipment; and
- Fire Extinguishers on each piece of machinery.

All personnel on-site will receive basic firefighting training, and all employees and contractors will be required to have at a minimum Level 1 and Transportation First Aid Certification to work on the site.

The company or its contractors will supply the first aid equipment, supplies and facilities that must be kept clean, dry and ready for use, and be readily accessible at any time a worker works in the workplace. The company will comply with Part 33 of the Occupational Health and Safety Regulation, Work Safe BC as a means to meet Part 3.6.1 of the HSRG.

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The following assessment will be necessary during any medical emergency whether it is minor or life threatening that the first aider use the following simplified Priority Action Approach

1. **Scene Assessment-** Mechanism of Injury? Hazards? environment?/ # of injured

First	Observe for bleeding/deformities/eyes
Second	Observe the skin/level of conscious- moving/verbal
Third	Spinal Precautions
Fourth	Airways- With C-spine: Open/Clean- manually stabilize head Breathing- Rate and Quality Circulation- Radial/Carotid, skin- colour, temperature and condition
Fifth	Rapid Body Search (RBS)- Rapid/Through Life Threatening
Sixth	Warmth- Blankets/Reassurance/ Support Injuries
2. **Transport Decision-** Load and Go (Hospital and/or Call for an ambulance)/Stay and Play-
Secondary Survey (Administer First Aid)
3. **Communicate to Emergency Services** (911) or call for help from other persons on-site
4. **Secondary Assessment** Vital, History, Head to Toe Evaluation
5. **Definitive Treatment** Ice, Dressings, Splinting, Wound Cleaning, etc.



Typical first aid scenarios that you might encounter during operations-so be prepared for this and know how to treat them

- Bleeding from cuts and abrasions;
- Slips and Falls- injuries such strains, sprains and broken bones (fractures) or concussions;
- Burns; and Allergic Reactions

7 Procedures to Follow when Calling for a Provincial Ambulance

When instructed by the First Aid Attendant or the Direct Supervisor, follow these steps.

Call AMBULANCE: Phone 1- 800- 461-8011or 911

When asked "For what place?" answer "Hwy 37 S- Lakelse Gravel Pit".

State that "We have life threatening injuries and request vehicle or helicopter evacuation.

There will be a number of questions that will be asked including:

"Your exact location?"

Location: off Hwy 37 S near Lakelse Lake Park

Site Co-ordinates:

Latitude: 54 deg 22 min 38.07 secs

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- "Your telephone number?"
- "What is the nature of the problem?"
- "What is the number of patients?"
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- Additional questions may follow:

If you are calling for an air ambulance then you must make ready a helicopter landing pad.

This area must be clearly marked and cleared of debris that will not damage any rotors and flying objects. A guard must be posted in this area and all traffic in the vicinity stopped.

The helicopter will be looking for this area and can be guided into the landing area.



8 Procedures For Handling Hydrocarbon Spill Emergencies- Lakelse Gravel Pit

Action Items for Initial Spill Identification, Notification and Assessment

- Identify spilled material;
- Safety of personnel;
- Determine and note initial spill description;
- Notify PEP 1-800-663-3466, if required;
- Description of spill into the receiving environment;
- Determine equipment needed for initial containment, recovery, in addition, clean-up;
- Initial Spill Response for Combustible Products with actions to be undertaken;

Initial Spill Response for Combustible Products with actions to be undertaken

- Act Fast & Think Safety;
- Containment & Recovery; and
- Disposal and Site Restoration

Spill Prevention and Response Strategies

The proposed spill prevention and response strategies constitute the following:

- Notify key personnel who have emergency response duties;
- Initial assessment of the spill to understand the nature and extent of the situation;
- Mobilization of resources needed to address the spill;
- Do not handle hazardous waste without sufficient protective gear;
- Evaluate method to control activities;
- Initiation & development of safety & environmental monitoring to identify potential effects of the spill;
- Reporting to management, regulatory agencies, personnel and the public; and
- Development of an action plan for clean up and remediation.

Spill Control Prevention Procedures

- The supervisor shall review any proposed activity out of the ordinary that could pose a potential for environmental contamination;
- Any worker who is aware of any potential or actual release of a pollutant to the environment must first attempt to prevent the release, then immediately contact their supervisor;
- All work shall be planned to limit the uncontrolled release of pollutant materials to the environment, so far as is practical;
- Approved containers shall be used for the transport and storage of potential pollutants. All such containers shall be labeled as to the contents and the potential hazard; and
- Personnel will receive appropriate training in the use of environmental cleanup equipment for their area of operations.



9 Fuel Management And Spill Contingency Plan (FMSCP)

This Fuel Management and Spill Contingency Plan (FMSCP) has been developed under the umbrella of "Best Management Practices", and provides emphasis on reducing risks of spills given that fuel will not be stored or transported on-site. Regarding spill contingency, the plan includes mechanisms for initiating and carrying out the required notifications, spill containment, clean-up and remedial actions.

In regards to the spill contingency plan, it was developed in accordance with the BC Guidelines for Industrial Emergency Response Contingency Plans (1992).

It is expected that all fueling will occur from a small tidy tank located inside the box of the company's and/or contractor's pick-up.

The following information provided below was acquired from the document "Fuel Tanks and Refueling Stations for Diesel and Gasoline, Rev 05/10/11, Fraser Lake Sawmills", it covers the level of fueling activities expected for the sand and gravel operations.

Mobile Equipment Refuelling:

- Only authorized personnel may operate the dispensers. (FC 4.6.8.4)

Mobile Fuelling Procedures: (FC 4.6.8.6)

- Ensure vehicle engine is shut off.
- Ensure no open sources of ignition or smoking within 7.5 m.
- Put fuel nozzle into the fuel tank fill tube.
- Turn on the power for the dispensing pump.
- Do not use any object or device that is not an integral part of the fuel nozzle to maintain the flow of fuel. Report any leaks.
- To the extent possible, observe the fuel piping, dispensing pump, and hose assembly during fuel transfer to determine if there are any leaks present.
- Operator must remain in attendance during fuel dispensing to vehicles.
- Do not overfill the fuel tank.
- When tank is full, shut off the power to the dispensing pump.
- Remove the dispensing nozzle and replace in the holder.

Emergency Response: (FC 4.1.6.3 & FC 4.6.9.2)

- All reasonable steps shall be taken to recover escaped liquid and to remove or treat contaminated soil. (FC 4.1.6.3)
- See above spill prevention and response strategies.

Emergency Procedures:

- Take action only if safe to do so.
- In the event of a spill shut off the fuel nozzle and pump.



- Contact the Thornhill fire department, if necessary.
- Use spill response equipment such as absorbent materials to control the spill and to collect the spilled fuel.
- Arrange for the collection and disposal of used absorbents.

The operator will immediately contain, and remediate any spill of hydrocarbon or other harmful substances. Any such occurrence will be reported to the District Inspector of MEM and to the Provincial Emergency Program in accordance with the Spill Reporting Regulation of the Environmental Management Act. Any contaminated materials will be disposed of in a manner acceptable to the Ministry of Environment.

It is expected that emergency spill containment kits will be maintained on-site by the company. A list of required emergency spill equipment is included below.

Suggested Spill Response Equipment for the Lakelse Gravel Pit

Given that there will be no fuel stored on-site and that all fueling will occur using a pickup "Tidy" tank, it is expected that with proper training of personnel, and use of spill prevention and response strategies, and having necessary spill containment equipment on-site that the project environmental can be protected.

Lakelse Gravel Pit – Spill Kit Guidelines	
<i>Recommended Location of Kit</i>	<i>Minimum Recommended Spill Kit Contents</i>
On all heavy equipment	<ul style="list-style-type: none"> • Round nose shovel or equivalent • 5- 18"X18" absorbent pads or equivalent • Heavy Duty plastic garbage bag or equivalent
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36 Archaeological Chance Find Procedures

Kalum Quarry

Onion Lake Pit

Lakelse Lake Pit

DRAFT



36.1 Kalum Quarry Archaeological Chance Find Procedure

There are more than 32,000 archaeological sites currently recorded in British Columbia with many more being added to the provincial inventory every year. For this reason, it is very likely that you will encounter an archaeological site during your lifetime either knowingly or unknowingly. This protocol has been established to increase awareness of this important resource and to assist in planning future developments.

The remnants of British Columbia's earliest cultures are represented in today's landscape by a wide variety of site types, most of which are related to art, habitations, resource gathering and production, tool making, and traditional ceremonial or ritual activities. Some sites that may be immediately visible to a non-archaeologist include:

- Rock art, including pictographs and petroglyphs.
- Tree art and Culturally Modified Trees (CMT's) such as bark stripping and planks.
- Surface features such as depressions created by former habitations, earthen fortifications, rock cairns, fish traps, clam gardens, burned rock and middens.
- Artifacts that have become visible on the land surface owing to erosion or recent land altering activity. These may be produced in a variety of materials such as stone, bone, antler, wood, or shell.
- Buried cultural remains that may be sighted in a cut-bank, excavation, eroded shoreline, or other exposed deposit.

If you discover what you suspect may be a possible archaeological site:

- Stop all work in the area to avoid damaging the site.
Do not disturb any archaeological remains that you may encounter.
- Report your discovery to your supervisor or if they are unavailable, Kalum Quarry Ltd. who will provide further instructions 250-636-6000 local 102.
- If you are unable to contact the Kalum Quarry Ltd representative, please contact the Archaeology Branch by telephone at (250) 953-3334

If you discover what you suspect may be a possible human remains:

- Stop all work in the area to avoid damaging the site.
Do not disturb any possible human remains that you may encounter.
- Report your discovery to your supervisor or if they are unavailable, Kalum Quarry Ltd who will provide further instructions.
- If you are unable to contact the Kalum Quarry Ltd representative, and the suspected human remains appear to be current, contact the RCMP at 250-636-7400.
- If you are unable to contact the Kalum Quarry Ltd representative, please contact the Archaeology Branch by telephone at (250) 953-3334

The following steps will generally be followed

- The Coroner's Office and local policing authority are notified and the Coroner's Office determines whether the matter is of contemporary forensic concern.
- If the remains are not of forensic concern, the branch will attempt to facilitate disposition of the remains.
- If a cultural affiliation for the remains can be determined, the branch will contact an organization representing that cultural group. If the remains are of aboriginal ancestry, the branch will attempt to contact the relevant First Nation(s).
- Generally, if remains are still buried and are under no immediate threat of further disturbance, they will not be excavated or removed. If the remains have been partially or completely removed, the branch will facilitate disposition.
- The branch may arrange for a qualified anthropologist or archaeologist to provide an assessment of the remains.

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36.2 Onion Lake Pit Archaeological Chance Find Procedure

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- Stop all work in the area to avoid damaging the site.
- **Do not disturb any possible human remains that you may encounter.**
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- If you are unable to contact the Kalum Quarry Ltd representative, and the suspected human remains appear to be current, contact the RCMP at 250-638-7400.
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- If the remains are not of forensic concern, the branch will attempt to facilitate disposition of the remains.
- If a cultural affiliation for the remains can be determined, the branch will contact an organization representing that cultural group. If the remains are of aboriginal ancestry, the branch will attempt to contact the relevant First Nation(s).
- Generally, if remains are still buried and are under no immediate threat of further disturbance, they will not be excavated or removed. If the remains have been partially or completely removed, the branch will facilitate disposition.
- The branch may arrange for a qualified anthropologist or archaeologist to provide an assessment of the remains.

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36.3 Lakelse Gravel Pit Archaeological Chance Find Procedure

There are more than 32,000 archaeological sites currently recorded in British Columbia with many more being added to the provincial inventory every year. For this reason, it is very likely that you will encounter an archaeological site during your lifetime either knowingly or unknowingly. This protocol has been established to increase awareness of this important resource and to assist in planning future developments.

The remnants of British Columbia's earliest cultures are represented in today's landscape by a wide variety of site types, most of which are related to art, habitations, resource gathering and production, tool making, and traditional ceremonial or ritual activities. Some sites that may be immediately visible to a non-archaeologist include:

- Rock art, including pictographs and petroglyphs.
- Tree art and Culturally Modified Trees (CMT'S) such as bark stripping and planks.
- Surface features such as depressions created by former habitations, earthen fortifications, rock cairns, fish traps, clam gardens, burned rock and middens.
- Artifacts that have become visible on the land surface owing to erosion or recent land altering activity. These may be produced in a variety of materials such as stone, bone, antler, wood, or shell.
- Buried cultural remains that may be sighted in a cut-bank, excavation, eroded shoreline, or other exposed deposit.

If you discover what you suspect may be a possible archaeological site:

- Stop all work in the area to avoid damaging the site.
Do not disturb any archaeological remains that you may encounter.
- Report your discovery to your supervisor or if they are unavailable, Kalum Quarry Ltd. who will provide further instructions 250-636-5000 local 102.
- If you are unable to contact the Kalum Quarry Ltd representative, please contact the Archaeology Branch by telephone at (250) 953-3334

If you discover what you suspect may be a possible human remains:

- Stop all work in the area to avoid damaging the site.
Do not disturb any possible human remains that you may encounter.
- Report your discovery to your supervisor or if they are unavailable, Kalum Quarry Ltd who will provide further instructions.
- If you are unable to contact the Kalum Quarry Ltd representative, and the suspected human remains appear to be current, contact the RCMP at 250-636-7400.
- If you are unable to contact the Kalum Quarry Ltd representative, please contact the Archaeology Branch by telephone at (250) 953-3334

The following steps will generally be followed

- The Coroner's Office and local policing authority are notified and the Coroner's Office determines whether the matter is of contemporary forensic concern.
- If the remains are not of forensic concern, the branch will attempt to facilitate disposition of the remains.
- If a cultural affiliation for the remains can be determined, the branch will contact an organization representing that cultural group. If the remains are of aboriginal ancestry, the branch will attempt to contact the relevant First Nation(s).
- Generally, if remains are still buried and are under no immediate threat of further disturbance, they will not be excavated or removed. If the remains have been partially or completely removed, the branch will facilitate disposition.
- The branch may arrange for a qualified anthropologist or archaeologist to provide an assessment of the remains.

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Kalum Quarry Limited Partnership (KQLP) Safety Plan

_____ acknowledges that they have been given, read and understand the Kalum Quarry Limited Partnership Safety Plan including the Health and Safety Policy Statement, the Personal Protective Equipment (PPE) Policy, the Summary of Roles & Responsibilities for Health & Safety, the Emergency Response Procedures, the Safe Work Procedures, the Mine Emergency Response Plans and the Archaeological Chance Find Procedures.

Employee Name

Employee Signature

Date



Kalum Quarry Limited Partnership (KQLP) Safety Plan

_____ acknowledges that they have been given, read and understand the Kalum Quarry Limited Partnership Safety Plan including the Health and Safety Policy Statement, the Personal Protective Equipment (PPE) Policy, the Summary of Roles & Responsibilities for Health & Safety, the Emergency Response Procedures, the Safe Work Procedures, the Mine Emergency Response Plans and the Archaeological Chance Find Procedures.

Board of Directors

Board Member

Date

Print Name

Signature