E.GRUBEN'S TRANSPORT LTD.

Clifton Point PIN-B DEW Line Cleanup

Nunavut Settlement Area

SITE SPECIFIC HEALTH AND SAFETY PLAN

May 1, 2009

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EMERGENCY AND REGULATORY CONTACTS

Medical Evacuation contact Air Tindi (Yellowknife)	**TEL: 867-669-8200**
Alternate Medical Evacuation via Kugluktuk Health Center	**TEL: 867-982-4531**
Adlair Aviation	**TEL: 867-983-2569**
Kugluktuk RCMP	**TEL: 867-982-0123**
Workers' Safety & Compensation Commission	**TEL: 800-661-0792** **FAX: 866-277-3677**
Northwest Territories/Nunavut Spill Line	**TEL: 867-920-8130**
Environment Canada	**TEL: 867-979-3660**
Government of Nunavut – Environmental Protection	**TEL: 867-975-5907**
I.N.A.C. – Water Resources (Melissa Joy)	**TEL: 867-982-4308**
I.N.A.C. – Land Administration (Spencer Doer)	**TEL: 867-975-4280**
Department of Fisheries and Oceans	**TEL: 867-975-8000**
Defense Construction Canada	
Environmental Officer – Douglas Craig	**TEL: 613-998-7288**
Project Manager – LCol. David Eagles	**TEL: 613-998-9523**

EMERGENCY CONTACT LIST - EGT MANAGEMENT & STAFF

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Superintendent of Operations Doug Saunders	**TEL: 867-977-7017** **CEL: 867-678-0045**
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Safety/Loss Control Randy G. Hein	**TEL: 867-977-7014**
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Chief Executive Officer Russell Newmark	**TEL: 867-977-7008** **CEL: 867-678-0040**
EGT Inuvik Office	**TEL: 867-777-4975** **FAX: 867-777-4374**

OTHER EMERGENCY RESPONSE CONTACT LIST – OUTSIDE AGENCIES

Paulatuk Health Centre	**TEL: 867-982-4531**
Paulatuk RCMP	**TEL: 867-580-1111**
Kugluktuk RCMP	**TEL: 867-982-0123**
Nunavut Manager of Health and Social Services (Donna Rand)	**TEL: 867-983-4552**
Yellowknife Stanton Territorial Hospital	**TEL: 867-669-4111**
Canadian Coast Guard	**TEL: 867-874-5559**
Inuvik Renewable Resources	**TEL: 867-777-7308** **CEL: 867-777-1185**
Inuvik Hospital	**TEL: 867-777-8000**
Inuvik RCMP	**TEL: 867-777-1111**
Aklak Air Ltd.	**TEL: 867-777-3555**
Canadian Helicopters	**TEL: 867-777-2424**

1.0 INTRODUCTION

1.1 Site Specific Nature of Project

The Clifton Point PIN-B DEW Line Site is located in the western Canadian Arctic, on the mainland shore of Amundsen Gulf along Dolphin and Union Strait between the communities of Paulatuk, NT and Kugluktuk, NU. The Site was constructed in 1957 by the United States and the Canadian Defense Departments as part of the construction of the North American Distant Early Warning (DEW) Line system; however it was abandoned in 1963.

The objectives of the project are to cost effectively and safely clean up and restore the Clifton Point PIN-B site while minimizing disturbance to its sensitive ecosystem.

Clifton Point PIN-B is located within the Nunavut Territory approximately 220 km from Kugluktuk, NU and about 220 km from Paulatuk, NT and all activities associated with the site, and this project, are subject to the terms of the Nunavut Comprehensive Land Claim Agreement (CLCA).

Because of the remote location and of limited transportation options to and from the site, special provisions are required for emergency situations, including medical emergencies, fire response procedures and oil/fuel spill response procedures.

The arctic eco-system is also particularly sensitive to disturbance. Special provisions must be made to protect the environment on and around the site and to minimize the disturbance made by work related activities.

The Clifton Point PIN-B area is also an area frequented by varieties of larger wildlife including caribou, wolves, musk-ox as well as smaller mammals such as foxes.. It is an area of grizzly bear activity, potential polar bear visitations. Both the safety of site personnel and the safety and preservation of local wildlife particular to the area must be considered.

Due to the particular features of geography, climate and wildlife sensitivity associated with the Clifton Point PIN-B area, we have created this Clifton Point PIN-B Site Specific Health and Safety Plan as a supplement to E. Gruben's Transport Ltd. Health, Safety and Environment (HSE) Manual, which applies to all EGT operations. The procedures and policies described within the general EGT Health, Safety and Environment (HSE) Manual will continue to apply if not particularly addressed or modified in this Clifton Point PIN-B Site Specific Health and Safety Plan.

The types of work and the nature of the materials to be dealt with at Clifton Point PIN-B are considered unusual to most EGT day-to-day operations. The particular hazards associated with them require special attention in this Clifton Point PIN-B Site Specific Health and Safety Plan.

A portion of the principal infrastructure of the original Clifton Point PIN-B facilities remains on site, but have deteriorated considerably. The runway will require repairs, upgrading and some excavation, a variety of buildings will need to be demolished and removed including the fallen

radar tower and some fuel, oil, and lubricant storage tanks will need to be dismantled and removed. Several areas of hydrocarbon contaminated soils as well as barrels and both hazardous and non-hazardous debris will be encountered throughout the site.

Construction practices at the time of the initial construction of the site included the use of such materials such as asbestos in insulation, PCB and lead paints, PCBs in transformers and ballasts, and mercury in thermostats, which are materials and practices no longer considered acceptable. Asbestos and the use of PCB paints at Clifton Point PIN-B were used as well as lead-based paints and primers, which means some high levels of lead and leachable lead will encountered.

[A complete list we will encounter of known and suspected hazardous materials on site can be found in Appendix A: Hazardous Material Audit.]

These materials and the precautions and procedures required for safe handling, processing, shipping and disposal which are specific to the work at this site will also be addressed in this Clifton Point PIN-B Site Specific Health and Safety Plan.

1.2 EGT Policy and Leadership Philosophy

E. Gruben's Transport Ltd. believes that safety, productivity and quality of services are inextricably linked. To be successful high standards must be achieved in all of these areas.

The key to providing a viable, high quality work environment is to encourage employees to embrace the concept of Accident and Incident Prevention.

We will achieve continued improvement in all aspects of our Safety Program by the following key principles:

- Provide strong commitment from management;
- Provide leadership and complimentary management;
- Provide training and skills upgrading for new and present personnel;
- Set and implement performance standards, which involves everyone;
- Measure our safety, productivity and performance;
- Reward superior performance through the presentation of Safety Awards;
- Emphasize sound recruiting procedures;

Education and awareness of safe work procedures and policies and the implementation and enforcement of these procedures and policies in the control of identified job hazards will enable achievement of the Accident and Incident Prevention goal.

1.3 EGT Policy and Leadership Guiding Principles

E. Gruben's Transport Ltd. will integrate the following principles into all aspects of operations:

- All occupational injuries and illnesses are preventable;
- All work shall be conducted in compliance with applicable laws and regulations;
- Safe work performance and protection of the environment in which we work are fundamental values integrated into our business;
- Operations in the Amundsen Gulf area shall be conducted with emphasis on actively protecting the health and safety of our people and the environment;
- Systems and resources are in place to ensure work is conducted safely;
- All personnel, throughout the company, have a personal responsibility to perform their work safely and to protect the environment;
- Everyone has the obligation to stop work when an unsafe act or condition is identified. Corrective action shall be taken to ensure conditions are safe before resuming plans;
- E. Gruben's Transport Ltd. will participate with industry to develop and implement effective emergency response plans;
- E. Gruben's Transport Ltd. will identify and implement improvement opportunities for the health, safety and environment (HSE) program.

The Guiding Principles will be reviewed as part of employer & contractor orientations, training programs and at regular safety meetings.

A safe and healthy work environment for all our personnel is the first priority on every job and task we undertake. E. Gruben's Transport Ltd. will endeavour to protect the health and safety of all individuals who work on or are affected by our activities while maintaining the highest standards of environmental performance.

E. Gruben's Transport Ltd. is committed to providing active leadership and participating in safety, occupational health, and environmental protection and loss control programs. This commitment will be demonstrated by operating in a manner that avoids or mitigates adverse health, safety and environmental impacts.

E. Gruben's Transport Ltd. will ensure that:

- Our operations will meet or exceed the requirements of relevant occupational health and safety legislation, environmental protection legislation, industry standards and corporate policy.
- All our personnel and others employed on our behalf are informed of the requirements to protect themselves and their fellow workers from injury and occupational illness, to protect the environment, and to protect the reputation and assets of the company and its clients; and that they receive the necessary information, training and equipment, and management support to do so.
- We will determine and evaluate risk factors and mitigate the hazardous conditions and environmental impacts of our operations during planning, implementation and operational phases of our projects.

- All levels of our organization will maintain a rigorous commitment to health, safety and the environment and our operations will be subject to ongoing occupational health and safety evaluations to ensure compliance with this policy.
- E. Gruben's Transport Ltd. will continue improvement practices with the goal of "Zero Accident" performance.

2.0 HAZARD IDENTIFICATION & RISK CONTROL

Hazard identification comes from four basic sources:

- Workers' identification of workplace hazards ("Hazard I.D.'s").
- Observation of worker behaviour at the worksite.
- Observation of work site physical conditions.
- Inspections

2.1 Hazard Identification Reports ("Hazard ID's")

Hazard Identification reports are used to alert site supervisors to any hazardous conditions or unsafe work procedures found by workers and others on the site. The value of observation and involvement of workers in the field cannot be over-emphasized in the identification of hazards. Placing some of the onus for hazard identification on the workers most closely involved helps give participants a sense of ownership and buy-in to the entire HSE program.

Hazard Identification reports fill in the gaps between regular company inspections and help enable supervisors and workers to provide a safer worksite. Hazard I.D's allow greater participation of the workers in their own safety as well as enabling them to easily bring to the attention of supervisors unsafe conditions or practices which have been overlooked through the inspection process.

Employees, contractors & subcontractors are to notify the appropriate supervisor of any hazard observed on the company worksite. Hazard I.D. Reports can be given verbally or in writing. EGT has developed simple Hazard/Near Miss Reports for this purpose.

After assessing the hazards, every effort should be taken to eliminate the hazard. In the event the hazard cannot be eliminated, all potentially affected personnel must be informed of the hazard and the hazard must be immediately marked with any of the following hazard indicators, which is appropriate under the circumstances:

- Danger Sign
- Flags
- Lights
- Alarms
- Barricades
- Fences
- Labels
- Placards

Identified hazards are documented on an "Action Plan to Correct an Identified Hazard" form.

The form outlines the following:

- Date & location of identified hazard (s).
- Description of the hazard (s).
- Name of hazard reporter.
- Corrective action taken and by whom.
- Date to be completed and/or completion date.
- Signed off by: Supervisor, Safety Supervisor and/or Senior Administration.

When a hazard is identified:

- Specify who is responsible to correct the identified hazard.
- Set a deadline date for the hazard correction.
- Complete the E. Gruben's Transport Ltd. form, "Action Plan to Correct an Identified Hazard" and forward to appropriate supervisor.

2.2 Observation of Worker Behaviour

The observation of worker behaviour is a significant aspect of the responsibility of all supervisors (see section 2.4.2 below for a more detailed discussion of supervisor's observation of workers). Peer observation and mentoring are also useful and beneficial means of monitoring the behaviour of workers, especially of workers new to a job or a task.

2.3 Observation of Work Site Physical Conditions

Management, supervisors and all field personnel are expected to observe the work site for hazards which may exist or which may appear. The different perspectives which individual personnel will have of a work site are valuable in the identification of hazards. In particular, they are the clear responsibility of all work site supervisors.

2.4 Inspections

Management is responsible for taking regular tours and inspections of company worksites and reviewing all general health, safety and environmental company responsibilities. Upon completion of regular tours and inspections, management will construct a list of specific health, safety and environmental improvements to enhance our goal of excellence in health, safety and environmental performance.

Planned health, safety and environmental inspections are a key management tool that significantly contributes to preventing loss producing incidents. They also provide an opportunity for employees to participate in inspecting their own work area. There are many examples of possible inspection formats, and each of them has a specific purpose. The intent of any inspection is to identify and correct actual or potential hazards and ensure continued compliance with regulations and company health and safety standards.

Inspections can include:

- Determining if there are deficiencies in tools, equipment, and process controls (for example, dikes, spill containment, storage tank alarms etc.);
- Monitoring the progress of previously identified recommendations;
- Monitoring and correcting unsafe and environmentally damaging conditions;
- Monitoring and correcting unsafe actions of people;
- Determining actual or potential hazards arising from installing or modifying a facility and associated equipment;
- Demonstrating management's commitment to the community's safety and welfare, and to the protection of the environment;
- Identifying health hazards and industrial hygiene concerns; and
- Taking the opportunity to recognize and reinforce positive behaviours.

Inspections enable personnel to help ensure that company safety standards & regulatory requirements are being followed. Inspections enable personnel to identify hazards before they become a problem. The end result of regular inspections will be a list of hazards, potential hazards and corrective measures for these hazards.

Hazard corrections will be documented and will include:

- Corrective measures taken.
- Name of person assigned to correct hazard.
- Deadline date for correction.
- Date correction was completed.
-

Types of Company Inspections

- Management and Supervisor worksite/jobsite tours.
- Worker observation (At-risk behaviour inspection).
- Work site (Physical conditions inspection).
- Equipment and vehicle inspections.
- Engineering safety inspections involving Engineering Controls:
- Eliminating hazards/enclosing hazards.
- Isolating workers from hazards.
- Reducing transmission of hazards to workers.

2.4.1 General Worksite Inspections

These will include all field and office work sites, yards, mechanical shops, work camps and company recreation areas such as lounges and dining halls.

The frequency of inspections will be scheduled in relation to the category of hazards at the sites and the potential danger of the work and worksite environment.

Work site inspections should assess the following:

- Physical layout and conditions of the site (including location, terrain, season and weather).

- Hazards of materials handled.
- Conditions of equipment and tools used.
- Work practices and behaviour of people at the site. (Including employees, contractors, sub-contractors, visitors and clients).
- The level and quality of supervision given to workers.

Examples of physical hazards, including worksite equipment and materials, which are to be inspected include:

- Slipping and tripping hazards
- Presence of dangerous gases
- Faulty or missing emergency equipment
- Improper or missing signs
- Faulty machinery, cables, tie-downs etc.
- Poor housekeeping
- Confined spaces
- Inadequate or missing PPE
- Blocked exits
- Overhead hazards
- Electrical hazards
- Difficult terrain for vehicular or personal movement
- Flammable, corrosive or explosive materials
- Missing material safety data sheets (MSDS)

2.4.2 Work Practices - Worker Knowledge & Behaviour to Inspect

Employees will be observed and questioned where applicable to ensure that they:

- Know and follow safe work procedures;
- Properly use tools and equipment;
- Correctly use PPE and other safety equipment;
- Are adequately trained to perform their work properly;
- Know emergency response procedures;
- Are competent to supervise and direct workers under their care;

In the event that unsafe work practices and unsafe work sites are encountered, work should be stopped immediately until the problems can be rectified, whether through further instruction, better procedures, or improved engineering controls. Work will be stopped:

- For unsafe behaviour.
- For unsafe work practices.
- For unsafe worksite conditions.

Individual personnel and work groups should also be rewarded by management for safe worker and worksite practices.

2.4.3 Equipment & Vehicle "Walk-Around" – Pre-Trip Inspections

- Daily pre-trip equipment and vehicle walk-around inspections are to be done prior to commencing daily work duties to monitor any wear and tear.
- If there is more than one operator, one will be assigned who will be responsible for equipment and vehicle walk-around inspection.
- Critical checks would include fluid levels, belts, hoses and electrical connections.
- Required emergency survival gear will be checked

2.4.4 Company Inspection Checklist

- Standard checklist will ensure nothing is missed.
- Checklists provide a detailed record of the inspection findings.
- Checklists provide a detailed record of corrective measures needed.
- Include monthly inspections of shop and yard.
- On-going inspections of work practices and work site conditions.

2.4.5 Government Inspections

- Inspect to ensure company meets Regulatory Requirements.
- These inspections may assess records, plans, policies, equipment and/or work procedures.
- The inspectors may interview anyone on the work site.
- They have the right to remove any item from the work site they need to inspect further.
- Anyone on site at the time of the inspection must co-operate with the inspector.
- Stop work orders can be given if Life-Threatening conditions are discovered.
- Lesser violations will attract orders to correct the violations or deficiencies.

2.4.6 Inspection and Maintenance of Mobile Equipment

The majority of work that E. Gruben's Transport Ltd. performs involves the use of heavy mobile equipment. It is therefore extremely important that specific attention is paid to the inspection and maintenance of this equipment. The quality and performance of mobile equipment is directly proportionate to the soundness and sustainability of the Shop Preventative Maintenance Program.

E. Gruben's Transport Ltd. management has made improved inspection and maintenance of heavy and mobile equipment a company priority. Modern maintenance facilities, experienced personnel and appropriate equipment for the job are available. In order for the shop to provide quality, timely support to the equipment fleet, E. Gruben's Transport Ltd. shops are open for business 12 hours/day, 7 day/week in the summer and 24 hour/day, 7 days/week during winter operations.

A senior Shop/Field Supervisor is responsible for selecting proper equipment for projects when ordering new equipment. The senior Shop/Field Supervisor works in concert with the Superintendent of Operations and the C.E.O. of E. Gruben's Transport Ltd. when purchasing new equipment. The right equipment for the job is of paramount importance in attaining continual improvement in performance at the worksite.

Driver Inspections: Drivers are required to do a "Walk-Around" inspection of their vehicles prior to commencing their daily operations. If repairs are required at any time the driver will complete a "Cry Sheet" which lists the problems and repair requirements. Drivers are requested to report deficiencies immediately to the Shop Foreman to prevent serious and time-consuming repairs, which could have safety implications. Well documented and timely "Cry Sheets" make projects more cost effective and inefficient.

2.5 First Time Purchasing Of Hazardous Products

The following steps will be taken:

- Supervisor will contact the safety supervisor and request a MSDS evaluation of new product;
- Safety Supervisor will obtain a MSDS Sheet for the new product;
- A Hazard Assessment will be performed for the new product using the MSDS Sheet and other applicable information;
- A decision will be made to purchase or not purchase the product.

3.0 RULES AND SAFE WORK PROCEDURES

3.1 Process for Developing Standard Work Procedures

1. List all jobs on all the work sites.
2. Create a list of critical jobs.
3. Assess the jobs and list in order of risk.
4. Break high-risk jobs into steps.
5. Determine hazard controls for each step.
6. Describe regulatory requirements.
7. Test procedures in the field.
8. Finalize the written procedures.
9. Train workers to follow the procedures.

1. List all jobs at the worksites.

2. Create a list of critical jobs in which any of the following might occur:

- Serious injuries
- Frequent injuries
- Severe property damage
- Significant interruptions to production
- Public liability
- Government intervention

3. List the jobs in order by the degree of hazards they present and the frequency with which they are performed.

4. Break high risk jobs into steps.

Analyze each job by observing and interviewing workers. Record the following information:

- Job name and location
- Each step of the job and its hazards
- Roles of each worker involved
- Special equipment required
- Applicable regulatory requirements

5. Determine measures needed to control job hazards, such as:

- Engineering controls to eliminate hazards
- Workers training
- Personal protective and safety equipment
- Hazard markings
- Safety meetings

If engineering controls or worker training can be used to permanently or reduce the impact of hazards, implement them.

Prepare the standard health, safety and environmental work procedure by listing the steps of the job, in the order in which they will occur, and the control measures required for each step (excluding one-time measures such as engineering controls and training).

Also describe:

- Regulatory requirements
- Special equipment required
- Specific training requirements for workers (e.g., BOP Level I or journeyman electrician)

6. Test the health, safety and environmental procedure in the field to ensure it:

Is accurate

- Meets regulatory requirements
- Is understandable to workers

7. Finalize the written health, safety end environmental procedures and place it at appropriate worksites.

8. Train workers to follow the health, safety and environmental procedures.

3.2 Enforcement

E. Gruben's Transport Ltd. will hold employees accountable for adherence to all rules, practices and procedures. Supervisors will promote and enforce rules and safe work practices.

Employees must be aware of penalties and the increasing consequences for their actions.

At E. Gruben's Transport Ltd. a progressive discipline system is in place for general disciplinary cases and may be used in the following format in regard to disciplinary action:

First Offence: A verbal warning that is accompanied by a dialogue between the employee and the supervisor shall be given. The supervisor will explain the reason for the warning and how the employee must act or perform in the future. The warning will be recorded so that a record of it exists in the employee's personnel file.

Second Offence: A written warning shall be given. The supervisor will review the facts with the employee as well as the previous warning. They will agree on a resolution to the problem before the employee returns back to work. The supervisor will follow up with a memo to the employee and a submission to his/her file.

Third Offence: A suspension of the employee (with or without pay) shall be given. The supervisor will be firm in asking the employee about their wishes for further employment in the

company. The time off will give the employee a chance to consider their actions as well as their intentions for the future.

Fourth Offence: No further warnings – immediate dismissal.

E. Gruben's Transport Ltd. reserves the right to depart from all or a portion of this format in the event that E. Gruben's Transport Ltd. deems it necessary, due to unique circumstances involved in the disciplinary case. Particularly flagrant offences may be dealt with more severely.

3.3 General Safety Rules

Safety rules are established to communicate clear expectations for proper workplace behaviours. Safety rules are written to protect all employees and visitors from known hazards and to ensure E. Gruben's Transport Ltd. meets regulatory requirements.

To comply with regulatory requirements E. Gruben's Transport Ltd. safety rules must meet or exceed Legislated Standards that apply to all work undertaken by E. Gruben's Transport Ltd.

3.3.1 Communicating Safety Rules

To ensure everyone on the work site knows and understands the safety rules, they must be communicated in a variety of methods and in an on-going fashion.

Ways to Communicate:

- Provide all new and returning employees with worker orientations
- Make copies of EGT Health, Safety & Environmental Safety Manual available and easily accessible for employee reference.
- Post the safety rules in areas of where staff use frequently.
- Review safety rules at regular safety meetings, management meetings and orientations.
- Distribute copies of the safety rules.
- Discuss safety rules during on-the-job training programs.
- Refer to appropriate safety rules at pre-job meetings.

3.3.2 Reinforcing Safety Rules:

- Workers at-risk behaviour observation will be conducted by supervisors and peers through inspections at worksites. Immediate correction and documentation of the at-risk behaviour correction is vital.

3.4 Legislative Compliance

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

E. Gruben's Transport Ltd. will comply with regulatory requirements as a minimum standard for our safety program. Regulatory requirements include all Acts, Regulations, Policies, Practices and Procedures administered by Government and their Agencies.

Relevant Legislation:

A large range of regulatory agencies cover work undertaken by E. Gruben's Transport Ltd. The following list of regulatory agencies represents some of the more prominent legislation whose regulations govern our work:

NWT/NU Environmental Protection Act
Explosives Act
NWT/NU Mines Safety Act
NWT/NU Occupational Health & Safety Act
NWT/NU Workers Compensation Act
Transportation of Dangerous Goods Act
WHMIS Legislation
National Energy Board
Canada Labor Code
Building Code of Canada
Canadian Electrical Code
National Fire Code of Canada

E. Gruben's Transport Ltd., by reason of its geographical location, falls under the statutes of the Northwest Territories/Nunavut Workers Compensation Board, Canada Labor Code Part 2, Oil & Gas Occupational Safety & Health Regulations. The Canada Labor Code, Oil and Gas Occupational Safety & Health Regulations utilize the National Energy Board as its enforcement arm.

The Northwest Territories Workers' Compensation Board Safety Act exercises jurisdiction on Safety Regulations which do not fall under the Canada Labor Code.

3.4.1 Canada Labour Code Regulations

Regulations Respecting Occupational Safety & Health Made Under Part II of the Canada Labour Code

A summary of some specific duties of employers as they relate to E. Gruben's Transport Ltd

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125 (d) post the Canada Labour Code – Part II – June 1998, at a place accessible to every employee and at every place directed by a Safety Officer.
(i) a copy of this Part,
(ii) a statement of the employer's general policy concerning the safety and health at work of employee's
(e) Keep and maintain in prescribed form and manner, prescribed safety and health records;
(i) ensure that the vehicle and mobile equipment used by the employees in the course of their employment meet prescribed safety standards

(j) provide every person granted access to the work place by the employer with such safety materials, equipment, devices and clothing as are prescribed;
(o) comply with such standards as are prescribed relating to the fire safety and emergency measures;
(p) ensure, in the manner prescribed that employees have safe entry to, exit from and occupancy of the work place;
(q) provide, in the prescribed manner, each employee with the information, instruction, training and supervision necessary to ensure the safety and health at work of that employee;
(s) ensure that each employee is made aware of every known or foreseeable safety or health hazard in the area where that employee works;
(t) ensure that the machinery, equipment and tools used by the employees in the course of their employment meet prescribed safety standards and are safe under all conditions of their intended use;
(u) adopt and implement prescribed safety codes and safety standards
(v) ensure that every person granted access to the work place by the employer is familiar with and uses in the prescribed circumstances and manner, all prescribed safety materials, equipment, devices and clothing; and
(w) comply with every oral or written direction given to the employer by a Safety Officer concerning the safety and health of employees.

125.1 (e) subject to the Hazardous Material Information Review Act, make available, in the manner prescribed, to each of the employees, a material safety data sheet with respect to each controlled product in the work place

126.1 While at Work, every employee shall:
(a) use each safety material, equipment, devices and clothing as are intended for the employee's protection and furnished to the employee by the employer or as prescribed;
(b) follow prescribed procedures with respect to the safety and health of employees;
(c) take all reasonable and necessary precautions to ensure the safety and health of the employee, the other employees and any person likely to be affected by the employee's act or omissions;
(d) comply with all instructions from the employer concerning the safety and health of employees;
(e) cooperate with any person exercising a duty imposed by the Part or any regulations made there under;
(f) cooperate with safety and health committee established for the work place where the employee is employed or, if there is not such committee, with the health and safety representative, if any, appointed for that work place;
(g) report to the employer any thing or circumstance in work place that is likely to be hazardous to the safety or health of the employee, the other employees or other person granted access to the work place by the employer;
(h) report in the manner prescribed every accident or other occurrence arising in the course of or in connection with the employee's work that has caused injury to the employee or to any other person; and
(i) comply with every oral or written direction of a Safety Officer concerning the safety and health of employees.

127.1 Subject to Subsection (2), where an employee is killed or seriously injured in a work place, no person shall, unless authorized to do so by a Safety Officer, remove or in any way interfere with or disturb any wreckage, article or thing related to the incident except to the extent necessary to;

(a) save a life, prevent injury or relieve human suffering in the vicinity;
(b) maintain an essential public service; or
(c) prevent unnecessary damage to or loss of property.

REFUSAL TO WORK IF DANGER

128.1 Subject to this section, where an employee while at work has reasonable cause to believe that:

(a) the use or operation of a machine or thing constitutes a danger to the employee or to another employee; or
(b) a condition exists in any place that constitutes a danger to the employee, the employee may refuse to use or operate the machine or thing or to work in that place

For other questions not covered specifically in the above Employer's Duties, please refer to the document Canada Labour Code – Part II – June 1998

3.5 General Safety Rules

The safety rules listed below are applicable to all personnel. Compliance with these basic rules are mandatory and in the best interest of all personnel:

- Adhere to maximum allowable work hours and rest period as per legislated requirements. Exemptions to requirements must have prior regulatory approval, through obtaining extended hour work permits.
- Use or being under the influence of alcohol or illegal drugs, while on the job, is strictly prohibited.
- Workers taking prescribed medication, which may impair their ability to work, shall not engage in any work activity that may endanger the health and/or safety of themselves or other co-workers and employee's.
- Workers shall advise their immediate supervisor when using prescription medication.
- Smoking is prohibited in all workplaces, except in designated smoking areas. Matches, lighters, cell phones and pagers are prohibited in some work areas.
- Beards or excess facial hair are not permitted on any workers who may be required to wear respiratory equipment, which requires a seal to the face.
- Workers shall not work around moving machinery if they are wearing loose clothing or jewellery, or have long hair, which is not contained.
- Workers shall not engage in practical jokes, horseplay, boisterous conduct, and/or un-necessary running in a work area.
- Firearms are prohibited on company premises except for authorized wildlife monitors. All existing gun laws must be followed.
- Flammable and combustible materials must be stored appropriately and at safe distances from sources of ignition.
- All inside door handles for the entrance of cooler and freezer doors shall be free of defects and open freely.
- Gas lines from propane tanks shall be protected to prevent damage from vehicles or equipment driving over the lines.
- Electrical cords from light plants or cords used for plugging in vehicles and equipment must be protected to prevent damage to the lines.

- Personnel shall be provided with appropriate means of communication as determined by risk assessment.
- Stairs with more than three steps must be provided with handrails.
- Catering service providers shall have printed procedures for safe food handling. Kitchen staff shall familiarize themselves with all employee health and safety procedures that immediately effective them on a day-to-day basis.
- Smoking in the workplace is prohibited by law. Certain exemptions exist for remote work camps. See section 3.11, Smoking in the Workplace, for further details.

3.6 Personal Protective Equipment (PPE)

All employees will have access to PPE and E. Gruben's Transport Ltd. will comply with the Northwest Territories Safety Act S.N.W.T. 1996, c.9 4 (b); wherein, "Every employer shall take all reasonable techniques and procedures to ensure the Health and Safety of every person in his or her establishment".

In addition E. Gruben's Transport Ltd. will, as a condition of employment, require every worker employed with or in connection with E. Gruben's Transport Ltd. to abide by the Northwest Territories Safety Act S.N.W.T. 1996, c.9 5 9b) which states, "every worker employed on or in connection with an establishment shall, in the course of his or her employment, as the circumstances require, use devices and articles of clothing or equipment that are intended for his or her protection and provided to the worker by his or her employer, or required pursuant to the Regulations to be used or worn by the worker."

Workers have the shared responsibility of protecting themselves, and wearing the necessary PPE for the work they are doing.

3.6.1 General PPE Rules

Engineering, work practice and administration controls are the preferred means of reducing or controlling hazards which may endanger the health and safety of workers. Residual risks require the use of PPE following the rules listed below:

- Workers shall be responsible for the proper care, maintenance, cleaning and use of PPE that is assigned or loaned to them;
- Supervisors are responsible for ensuring that workers are adequately trained in the proper use of, and responsibilities for the PPE;
- Workers shall not use PPE that is defective or unsafe;
- Such articles shall be taken out of service and reported to the supervisor and replaced immediately.
- Visitors to operating areas of work sites will be required to wear all applicable PPE that is required for the work site.

3.6.2 Head Protection

CSA approved hard hats shall be worn by all personnel while engaged in activities where a risk of injury to the head may exist. In addition:

- A hard hat shall never be worn without a properly adjusted suspension;
- Metal hard hats are not permitted due to electrical conductivity and inferior impact resistance to sharp objects; and,
- Off-road helmets must be worn when operating quads and snowmobiles.

Workers have the shared responsibility of protecting themselves, and wearing the necessary PPE for the work they are doing.

3.6.3 Foot Protection

CSA approved safety-toed boots shall be worn by all workers while engaged in activities where a risk of injury to the feet exists. Also note:

- There may be additional requirements for wet, slippery and winter conditions; and,
- Running shoe style safety footwear is not acceptable.

3.6.4 Eye & Face Protection

All employees while engaged in activities where a risk of injury to the eyes or face may exist shall wear CSA approved eye and face protection. Eye and face protection also means:

- Face shields shall be worn in addition to eye protection while using grinding, buffing or striking tools.
- Face shields shall be made available whenever they may be required;
- Goggles shall be worn when handling liquid or powder chemicals where there is a risk of splash hazard;
- In some situations, a face shield shall be used in conjunction with the goggles for additional eye and face protection; and,
- Face shields and goggles shall be provided as required.

3.6.5 Hearing Protection

All work areas where noise levels exceed 85dBA shall be identified by the display of appropriate signs indicating the high noise area and ***"Hearing Protection required".*** Additional hearing protection includes:

- All workers entering or working in areas that are marked as high noise areas shall wear CSA approved hearing protection devices;
- Supplied hearing protection devices may be either of the plug or muff design and shall be supplied.

3.6.6 Limb & Body Protection

All workers shall wear suitable clothing for the existing conditions and the work being performed. This means:

- Where a potential fire and explosion hazard exists, Fire Retardant Clothing (FRC) shall be worn;

- Approved cold weather clothing shall be worn by all personnel working in the Amundsen Gulf or while being transported via air transport;
- A luminous vest or reflective tape on front or back of outer garments shall be worn; and,
- Workers shall wear appropriate gloves or mitts to protect their hands from workplace hazards.

3.6.7 Respiratory Protection

All workers working in hazardous environments will be provided with adequate and appropriate respiratory protection for the types of hazards they may encounter at Clifton Point PIN-B. These workers will be trained in the use and maintenance of and will be fit-tested. This will include the following.

- Supplied air respirators for internal tank cleaning crews
- Half-mask, full-face mask and powered full-face respirators with HEPA, HEPA/OV and HEPA/general industrial filters for asbestos abatement work as is appropriate for the level of abatement.
- Half-mask respirators with OV filters for boxing of hydrocarbon soils, as deemed required by conditions
- Half-mask respirators for PAP packaging

Further details training and use of respirators can be found in task specific sections below.

3.7 Harassment Policy

Harassment

E. Gruben's Transport Ltd. commitment to providing a safe workplace also includes a commitment to provide a safe and respectful atmosphere where harassment or threats of violence are not tolerated. Disciplinary action may result for anyone who harasses another person, or for any personnel who fail to act properly to end harassment.

No person, whether a manager, supervisor, employee, contractor, or a member of the public, shall tolerate harassment for any reason, at any time. Likewise, no person has the right to harass anyone else at work or in any situation related to employment.

"Harassment" may be defined as any repetitive or occasional conduct, comment, gesture or contact that is directed toward an individual or group that is insulting, intimidating, humiliating, malicious, degrading or offensive, or is of a nature that, on reasonable grounds, could be perceived as placing a condition of a sexual or other nature on employment or on any opportunity for training or promotion.

Harassment is against the law. The *Canadian Human Rights Ac*t and the *Canadian Labor Code* protect workers from harassment. The *Criminal Code* protects workers from physical and sexual assault. All workers have the right to live and work without being harassed.

Filing a Complaint

Every employee of E. Gruben's Transport Ltd. is entitled to employment free of harassment, and we will make every reasonable effort to ensure that no employee is subjected to it. An employee who feels that he/she is a victim of harassment should take the following actions:

- Report the complaint to his/her immediate supervisor. If circumstances do not permit this, the complaint may be brought to the next level of administration;
- Maintain a written record of all relevant details including
    - The name of the harasser;
    - Date(s), time(s) and location(s) of harassment incidents(s);
    - Description of harassing behavior; and
    - The physical, social and/or emotional effects caused by the harassing behavior.

Under the *Fair Practices Act* (NWT and Nunavut), an employer cannot fire or otherwise penalize an employee for filing a complaint about harassment or discrimination at work. Employees are also entitled to make a complaint under the *Human Rights Act*.

Addressing a Complaint

Upon receipt of a harassment complaint, E. Gruben's Transport Ltd. will:

- Conduct an investigation by questioning the:
    - complainant,
    - named aggressor(s), and
    - witnesses;
- Maintain confidentiality with respect to the complainant and the circumstances related to the complaint except where disclosure is necessary for the purposes of investigating the complaint or taking disciplinary action;
- Treat all complaints of harassment seriously, whether they are made formally or informally, and act on all complaints quickly, confidentially and fairly;
- Take disciplinary action against any person under the organization's direction who subjects any employee to harassment, up to and including dismissal; and
- Discipline any personnel who knowingly allows harassment of a co-worker to persist.

Workplace Violence

All workers have the right to work in an environment that is protected from violence or the threat of violence, from workers or non-workers. Violent behavior, fighting and/or disregard for other persons and their property will result in permanent removal of involved workers.

"Violence" is the attempted, threatened or actual exercise by a person of any physical force so as to cause injury to a worker, and includes any threatening statement or behavior which gives a worker reasonable cause to believe that the worker is at risk of personal injury.

Threats of violence will be handled in the same manner as any other workplace harassment. Criminal proceedings may be used if it is felt that the risk to any worker warrants it.

3.8 Camp Rules

The consumption and/or possession of alcohol or non-prescription drugs are strictly forbidden in the camp or on E. Gruben's Transport Ltd. property. A zero tolerance policy is in effect regarding these items and failure to comply may result in immediate removal from the camp.

All personnel should familiarize themselves with the camp layout and the facilities available, and familiarize themselves with the emergency exits. Camp Fire Procedures and Exit Routes are posted in each room. A Muster Area will be designated for emergency situations.

Do not tamper with the fire/smoke alarms and do not use the fire exits except in the case of an emergency. Exits and fire extinguishers at exits should not be cluttered or covered.

Smoking is permitted only in the "smoking shelter" adjacent to the main camp building. Otherwise, smoking is strictly prohibited in the rest of the camp. Candles or any other devices that generate open flame are prohibited within the camp.

Tap water in this camp is NOT considered potable until confirmed by lab testing. Bottled potable water is found in the kitchen and recreation rooms. Try to minimize water use.

E. Gruben's Transport Ltd. is not responsible for personal belongings. Please take time to ensure that your personal items are secure. Insuring personal belongings is the responsibility of each individual.

Coveralls, hard hats, work boots and other work clothing are to be left in the mudroom. Hats may not be worn in the dining room. Bare feet are not permitted outside of the bedrooms and bathrooms.

Please use courtesy and common sense in regards to levels of activity and noise in the camp at all times. Some personnel may work different shift hours than others.

Please do laundry after shift or after confirming camp personnel do not need use of the machines.

Keep rooms and camp tidy. Return plates and cutlery to the kitchen. The camp staff is here to clean the facilities not to tidy peoples' messes.

Prepared snacks and drinks are available in the kitchen in the evenings. Except for catering staff, cooking is prohibited.

No hunting or fishing is allowed at this site. No-one except wildlife officers, the site superintendent or their designate may possess firearms.

There is no recreational use of ATVs.

3.9 Small Vehicle Policy

E. Gruben's Transport will provide safe, fully-functioning small vehicles of the best quality that can reasonably be purchased. These vehicles will be used to carry out the company's business and to enhance the public and customer image of the company.

Vehicles will be equipped with the following:

- Two-way radio with, at minimum, company local repeater channels.
- First Aid Kit
- Fire-extinguisher
- Reflective triangles/flare kit
- Rotating beacon
- Spare tire, jack and wheel wrench

E. Gruben's Transport Ltd. small vehicles will be operated in the following fashion:

- All personnel will have the appropriate license required to operate the vehicles.
- Vehicles will be operated in accordance with the Territorial or Provincial Highway Traffic Act.
- All occupants of EGT small vehicles must wear seatbelts at all times.
- EGT vehicles will not be driven in excess of posted speed limits. Road and traffic conditions may dictate lower maximum allowable speeds.
- EGT vehicles must be maintained in clean condition.
- All personnel are responsible for conducting maintenance checks of fuel, all fluids and tire pressure, and for ensuring that required safety/emergency equipment is present prior to departure.
- All operators are to conduct a thorough walk-around of vehicles prior to departure. Windows and mirrors are to be kept clean and free of obstruction.

3.10 ATV Policy

ATV use will be limited to contract specific work at Clifton Point PIN-B. There will be no after-hours or recreational use of ATVs.

CSA approved helmets must be used at all times when operating ATVs.

No passengers will be allowed to ride on ATVs unless the ATV is designed for passengers. No passengers will be allowed to ride in ATV trailers.

ATVs must be operated slowly and carefully at all times.

3.11 Smoking in the Workplace

Legislation prohibits the smoking of tobacco in the workplace. The *Environmental Tobacco Smoke Worksite Regulation* now deals with controlling the smoking of tobacco products in the workplace.

Smoking is prohibited in the workplace. This includes our offices, shops and warehouses, and most of our camp residences.

Smoking is prohibited within 30 meters of any fuel storage or fuel transfer facilities.
Smoking can only take place outside of contained work areas, and must take place more than 3 meters (10 feet) from any entrance.

Companies can be fined $5,000 dollars for violating this law and individuals can be fined $500.

We will be providing one "smoking shelter" in a separate building adjacent to the main camp complex for our workers at Clifton Point PIN-B.

When in doubt, don't smoke!

3.12 Emergency Response - General Practices

Maintain a Disciplined Approach To An Emergency Situation.
The way in which an emergency is handled can have a great effect on the outcome. When an emergency is encountered, confusion can be your worst enemy. All emergencies must be dealt with in a disciplined manner.

A disciplined approach to an emergency situation includes the following steps:

Protect yourself by retreating to a safe area.
The most important point to remember when responding to an emergency situation is ensuring your own personal safety first. If you are hurt or incapacitated while responding to an emergency, you are not only escalating the problem but you will no longer be able to take corrective action to address the emergency.

Depending on the nature of the emergency, you may need to evacuate the area, put on personal protective equipment or seek any other appropriate means of self-preservation.

Sound the alarm and call for help.

Ensure that other personnel have a clear picture of the emergency:

What happened?
Where;
When;
Known injuries; and,
Present status.

Always be sure that the information that you have provided has been understood.
Ask for the information to be repeated to ensure it is accurate.

Isolate the emergency area.

Establish who is in command.
If you are not alone, someone must take command of the emergency. The most senior person on site or the most experienced worker is usually the best person to assume command. Be clear and communicate who is in charge. Decisions must be calculated and concise. Orders must be clear and understood.

Assess the situation for hazards.
In an emergency, there can be many variables that pose a threat to safety. An assessment of the situation must be undertaken to identify further potential hazards to personnel and to the public.

Establish a plan of attack, including a determination of people and requirements.
The plan should include consideration for the following:

- Capabilities of responders;
- Safety of responders/rescuers;
- Safety of the public;
- Access of the public;
- Hazards involved and how to eliminate or deal with them;
- Timelines (i.e. consequences of waiting vs. not);
- Availability of resources;
- Personal protective equipment;
- First aid and other medical emergency equipment;
- Fire fighting equipment;
- Vehicles for transportation or response to the incident;
- Roadblock kits, barricades and appropriate signage; and,
- Communication equipment including ground-to-air frequencies.

Contain or control the threat.
Implement the plan of attack plan to contain or control the threat. Worker response actions will default to their training.

Decontaminate, clean up and dispose of waste properly.
Before subjecting personnel to hazardous materials consider decontamination and cleanup requirements, including:

- Personal protective equipment for decontamination crew;
- Availability of showers;
- Eye wash stations;
- First aid and medical requirements; and
- Absorbents.

All personnel have the responsibility to dispose of materials and chemicals that can adversely impact the environment or human health in the proper manner in compliance with regulations, policies, procedures and Material Safety Data Sheets.

Consider waste impacts in all decisions.

Document the incident.
Records are to include:

- Plans, actions taken;
- Diagrams;
- Incidents date, time, location;
- Responder's names;
- Observations;
- Materials involved; and
- Diagrams, photos, and/or videos.

Emergency Scenarios for Possible Consideration
E. Gruben's Transport Ltd. operations could potentially involve a variety of possible emergency scenarios, which should be taken into consideration. These could include, but are not limited to:

- Injury or fatality;
- Worker or equipment through ice.
- Vehicle accident;
- Fire or explosion;
- Spill to environment of raw products (oil, salt water) or refined products (diesel, gasoline,);
- Aircraft incident;
- Release of toxic gases;
- Natural disasters;
- Transportation of Dangerous Goods incident;
- Elevated or confined space rescue;

3.12.1 Personal Injury Emergency Responses

Due to the remoteness of the Clifton Point PIN-B site, EGT is required to maintain sufficient levels of medical care to address basic wellness in addition to emergency care.

For serious injuries a system must be in place to:

- Provide primary care for the injured worker;
- Consult a physician via radio or phone; and
- Prepare and care for the injured during transport and transferring of the injured to the care of medical professionals.

FOR COMPLETE DETAILS OF THE SITE SPECIFIC MEDICAL RESPONSE PLAN PLEASE REFER TO ATTACHED APPENDIX C.

3.12.2 Fire Emergency Response:

Each work area shall have a fire emergency procedure and all workers shall be made familiar with this procedure.

Regular exercises of fire drills shall be conducted to ensure optimum fire fighting and evacuation preparedness.

FOR COMPLETE DETAILS OF THE SITE SPECIFIC FIRE SAFETY PLAN PLEASE REFER TO ATTACHED APPENDIX B.

3.12.3 Spill Response Plan

E. Gruben's Transport Ltd. will clean up spills and reports spills to the appropriate authorities.

Many small spills are from leaks in parked vehicles and from broken hydraulic lines in cold weather. Other common sources of spills are from the process of re-fuelling equipment and from loosened fuel-filters. Workers are to report any drips or spills to your supervisor and the mechanic immediately. By addressing small leaks before they become major leaks, we can lessen our environmental impact and the effort required to clean up spills. Our supervisors and equipment operators should all carry oil-absorbent rags, bags and shovels in their vehicles. All fuel sloops, fuel trucks and supervisors vehicles also carry fuel spill kits.

Parked vehicles at work sites should be parked over drip-trays. Vehicle walk-around inspections should be conducted daily and after breaks.

Safe fuelling procedures must be followed at all times. No fuel nozzle or open sloop or tank can be left unattended when fuel is being transferred. Designated and competent individuals will refill equipment at many sites. Fuel caps, sloop valves, truck valves and nozzles must be checked to make sure they are closed/off after refuelling. Spill clean-up materials must be available at any refuelling situation.

1. **Assess Situation –** Make sure area is safe for yourself and others.

2. **Minimize –** Use any emergency shut down device.

3. **Contain –** Use available resources such as shovels, absorbents or heavy equipment.

4. **Secure –** Place appropriate barriers and warning devices.

5. **Report –** Notify your supervisor who will direct the cleanup and report to the NWT Spill Line.

The 24-hour spill line number is (867) 920-8130, fax (867) 873-6924. The Site Superintendent maintains spill report forms in his office.

REFER TO THE DETAILED SITE SPECIFIC SPILL CONTINGENCY PLAN ATTACHED AS APPENDIX E.

3.13 Environmental

Environmental guidelines related to the use of the land, waste discharge, fuel handling and storage, surface disturbance and other conditions of site use are primarily addressed in the LAND USE PERMIT and WATER LICENCE. These form part of the Site Specific Health and Safety Plan when available.

Hunting and Fishing

There will be no hunting and fishing by personnel employed at this site.

Other Wildlife

A Wildlife Response Plan is attached as Appendix D.

Camp water

Camp water supplied from Unnamed River will be considered non-potable until treatment and sampling proves it to be potable. Water in main camp building will be filtered and treated with UV light. Water in well-site units and labs will not be treated and will continue to be considered non-potable. Notices will be posted in bathrooms and kitchen indicating that tap water is non-potable. Bottled water will be supplied to provide for potable water requirements until water proves potable.

Camp-generated garbage

Camp garbage will be incinerated in a new two-chamber Westland Environmental CY-2050-FA "D" diesel-fired incinerator. This incinerator will be supplied with a larger than normal 770,000 BTU primary incinerator to achieve temperatures of 1000 degrees C. The secondary chamber should also achieve temperatures in the 850 to 1000 degree C range to satisfy the requirements of Canada Wide Emissions Standards.

Camp garbage will be incinerated throughout the day. A metal covered garbage container will be used to store garbage by the incinerator while it awaits incineration. All garbage will be incinerated daily. Camp garbage consists primarily of cardboard, food waste and paper. Only trained competent incinerator operators will be allowed to operate the incinerator.

We will separate from general camp garbage containers which can be recycled under the GNWT Recycling Program. Recyclables used in camp operations generally include plastic water bottles, aluminum pop cans and UHT containers. These items will be collected and donated to the Kugluktuk community or other worthy cause. Battery drop-off locations will be designated in the camp and the EGT Site office to keep "disposable" batteries out of the general waste stream. These will be containerized according to TDG regulations and shipped off site to a licensed disposal facility.

The minimal residual ash from the incinerator will be collected in a lined sea-can container and will be sampled and tested prior to final disposal. All ash will be removed from the site and will be handled according to test results. If testing determines that the ash is a hazardous waste it will be disposed of at a licensed hazardous waste disposal facility and will be shipped subject to Transportation of Dangerous Goods regulations.

Grey water

Grey water will be passed through a macerator pump, settling tank and will be stored in shallow, bermed, lined, open-air sumps. Grey water will be sampled in the lined sumps prior to discharge to ensure it meets Water License discharge criteria. We will construct a number of holding sumps so that we can separate the in-use grey water storage sump from grey water that is settling and waiting for sample results. A description and schematic of the grey water system can be made available upon request.

Black water.

"Black water" from Pacto toilets will also be incinerated in the same new two-chamber Westland Environmental CY-2050-FA "D" diesel-fired incinerator as is used for camp-generated garbage. This incinerator will be supplied with a larger than normal 770,000 BTU primary incinerator to achieve temperatures of 1000 degrees C. The secondary chamber should also achieve temperatures in the 850 to 1000 degree C range to satisfy the requirements of Canada Wide Emissions Standards.

Pacto toilets are commonly used in Alaska in remote camp locations and are also used in the Sahtu region of the Northwest Territories in the oil and gas exploration industry. Pacto toilet waste is incinerated in Alaska using the CY-2050-FA "D" incinerator. We have also had success in incinerating Pacto waste in a slightly larger camp during Atkinson Point and Johnson Point cleanup operations in 2007and 2008 , with no spills or incidents.

Pacto Toilet Waste Handling Procedures

Handling of the waste contained in the double-bagged Pacto system requires certain defined procedures. However, handled correctly there is almost no risk of spill. Toilets also remain cleaner for multiple users than a standard water-toilet because the toilet "bowl" is replaced with each use as the "sausage" tubes drop down. Risks of contamination of other parts of the bathroom facilities from the toilets are also lessened because the general camp cleaning staff does not have to handle or clean toilets at all.

The Pacto toilet maintenance personnel/cleaner will also be the incinerator operator. In this way only one member of staff handles all camp and black-water waste.

The Pacto handling for containment of waste is as follows:

1. The inner Pacto polythene foil "sausage" bag drops with each use into the reinforced podium bag contained in the podium tray. The "sausage" bags are clearly marked with a warning that the end of the roll is approaching with more than ten remaining uses.
2. The maintainer lifts the pedestal from the podium and triple-ties the inner bag. The maintainer then ties and tapes the outer reinforced bag.
3. The tied-off double-bagged waste is then transferred from the podium tray to a Rubber-Maid tray placed adjacent to the podium.
4. The Rubber-Maid tray is then carried out of the camp and placed in a wheel-barrow for transport to the incinerator. [Note: at this point the Pacto waste has 4 layers of containment.]
5. The Pacto bag is transferred from the tray to the incinerator, one bag at a time and mixed with the most easily combustible of the camp-generated garbage.
6. The secondary reinforced Pacto bags are designed to contain over 40 individual toilet uses. We replace the main-camp and high-use bags daily so that, on average, less than 20 uses have occurred. In this way the weight that must be carried in each bag is greatly lessened. As there is no flush water involved in these toilets the weight is relatively light.

Pacto PPE

The handling of Pacto waste bags and toilets is a cleaner operation than standard water toilet cleaning in that there is neither a bowl to clean nor toilet bowl brush to use. PPE required is therefore no greater than would be standard for water toilet cleaning in a camp or hotel. Rubber gloves should be used with optional latex inner gloves if it is found by the maintainer to be difficult to knot bags with rubber gloves on. Disposable "Tyvek" coveralls will be used inside the camp along with safety glasses or protective shields.

PPE required for outdoor work and operation of the incinerator will include standard PPE of fire-retardant coveralls, hard-hat, steel-toed work boots as well as a face-shield.

Pacto maintenance personnel will be required to have Hepatitis A and tetanus inoculations prior to working with Pacto toilets. These are available with prior arrangement at community Health Stations.

Potential Pacto Spills

The potential for Pacto spills are minimal. At most times the waste is triple-contained and there is at no-time exposed waste. Volumes being handled at any one time are minimal.

A spill inside the camp facility would require an immediate limiting of access to the area of the spill and a clean-up involving a wet-dry shop vacuum. Thorough decontamination of floors would have to be carried out using detergents and mops and rags as required. If a spill were to occur in one of the few carpeted areas of the camp a wet-dry shop vacuum would be initially used and the carpet section would then be cut out, removed and incinerated. Rubber gloves and rubber boots and disposable coveralls would also be required. Contaminated gloves, mops and rags would be incinerated.
A spill outside of the camp would involve shoveling of contaminated soil into the RubberMaid tray or the wheelbarrow. The waste could then be transferred to new double reinforced Pacto bags and incinerated along with the dirt.

Training

All Pacto maintenance personnel will be trained in the proper operation and use of the toilets, personal hygiene practices, the use of anti-bacterial soaps, protection of cuts and abrasions and other possible means of exposure including eating and smoking.

3.14 ACTIVITIES SPECIFIC TO CLIFTON POINT PIN-B

3.14.1 Collection, Containerization and Disposal of Hazardous and Lead-Painted Materials.

All material designated as hazardous will be handled, and documented according to Transportation of Dangerous Goods (TDG) Regulations.

Training Program
Certified HAZMAT Specialists shall instruct and direct all workers with respect to waste management and safety practices. Health, safety and waste management procedures will be covered in the employee orientation and project startup session. Hazardous materials training has previously been provided to most employees scheduled to be involved in the work of removing Leachable Lead and PCB contaminated materials, asbestos, metal and hydrocarbon contaminated soils and batteries. Daily safety meetings will be held on Site. Hazard Assessments and Job Safety Assessments (JSA) will be completed before the execution of critical tasks.
Safety instructions will be emphasized for the following work elements:

- personal protective equipment
- personal decontamination
- work procedures
- equipment decontamination
- emergency response procedures

Personal Protective Equipment (PPE) and On Site Procedures
The personal protection and decontamination procedures for the handling and containerization of hazardous materials will vary depending upon the work activities and the potential risk of exposure by workers' to Leachable Lead, PCBs and other hazardous materials.

Low Risk procedures will be used for the removal of non-hazardous materials and after all hazardous materials have been removed. Personal Protective Equipment (PPE) will include Tyvek coveralls over street clothes, CSA approved rubber boots, hard hats, Nitrile gloves, safety glasses and dust masks. Water buckets and soap will be provided for washing prior to coffee and lunch breaks. A wash station will be provided for complete cleansing of the hands, face, arms, neck and ears at the conclusion of each work day.

Moderate Risk procedures will be used to remove any Leachable Lead and PCB contaminated paint materials. Medium Risk PPE will be similar to Low Risk procedures except that secondary, cotton coveralls will be worn under the disposable Tyvek coveralls, half-face or full-face respirators with organic vapor, HEPA or combination filters, depending upon the hazardous materials being dealt with. All workers will shower at the conclusion of each work day. The cotton coveralls will be washed regularly on Site.

There should be no requirement for High Risk procedures for asbestos, PAP or leachable lead paint at Clifton Point PIN-B.

Workers will be provided on a daily basis with the type of respirator and filters required for the work activity. An irritant smoke will be used at the beginning of the project, when a new mask is issued, when a problem is identified or every two weeks at a minimum. Workers will perform a positive and negative fit test every time a mask is donned.

3.14.2 Leachable Lead Painted Materials and PCB painted materials.

Leachable Lead and PAP painted materials will be removed, handled, and packaged in the identical fashion and will be dealt with in the same section below. There are PCB amended painted material identified at Clifton Point PIN-B in Appendix A.

Leachable Lead and PAP painted materials will, however, be segregated from each other and labeled and shipped according to separate requirements of TDG regulations and Environment Canada regulations regarding PCB shipping and labeling. The owner will supply registered PCB labels as per the contract specifications.

Management of all hazardous materials will be supervised by a certified professional qualified in hazardous waste management.
Personal Protective Equipment required for Leachable Lead and PAP paint handling will follow Intermediate Risk PPE requirements as listed above.

Removal of Leachable Lead/PCB Contaminated Paint Materials
Prior to any demolition activity and the removal of PCB contaminated materials, all asbestos will be removed as per the Asbestos Abatement WMP. [See following Asbestos Abatement Methodology]. From demolition tables and hazardous materials inventory it is not believed that there is asbestos in any of the buildings also containing Leachable Lead or PCB paint. This will be confirmed on site prior to demolition.

All asbestos materials covered with paint containing Leachable Lead over 5 mg/l or PCB's at or over 50 ppm will be removed during asbestos abatement, double wrapped or bagged and stored in the Steel 8' X 8' X 20' Containers (Containers) as Leachable Lead or PCB Material.

Prior to the commencement of work visible loose or flaked paint will be carefully scraped, swept up and vacuumed using HEPA filtered vacuums. This paint will then be placed in double polyethylene bags and handled as Leachable Lead or PCB Material. The polyethylene bags will then be placed into the Containers.

During the course of the removal activities workers will take proper care and precaution to minimize the disturbance of painted surfaces and the amount of heat that is created near these surfaces. Throughout the course of different activities as loose or flaked paint is encountered it will also be carefully swept up double bagged and treated as either Leachable Lead or PCB Material. Loose or flaking Leachable Lead paint and PCB paint will be scraped off surfaces with scrapers and wire brushes.

Most Leachable Lead painted surfaces will be removed in their entirety from facilities and walls and minimal cutting will be done to fit sections into Leachable Lead or PAP containers.

Chainsaws, cut-off saws, skill-saws and reciprocating saws will be used to cut Leachable Lead and PAP wood to minimize space in PAP containers as long as work can be conducted without the release of saw-dust and paint chips to the environment. Proper eye protection including goggles and face-shields will be required along with respirators. Chainsaw use will require chainsaw pants and mask over respirator.

Cleanup and Decontamination

All rubber boots, gloves, tools and small equipment used for the work will be wiped off daily with moist disposable wipes. All wipes, used Tyvek coveralls and other contaminated materials generated as a result of coming into direct contact with hazardous materials will be disposed of and placed in double polyethylene bags. The bags will be treated as Hazardous Materials and stored in sea-cans. The sea-cans will be labeled and inventoried.

Leachable Lead/PAP Containerization

The methodology used for the containerization of Leachable Lead and PAP materials that will be used at Clifton Point PIN-B will be identical to that successfully performed by EGT at BAR-D in 2007 and PIN-1, PIN-M and BAR-4 in 2002. In 2001 Transport Canada changed the requirements for shipping PAP materials and DCC proposed new methodologies for PAP containerization, subject to final on-Site inspections and approvals by Transport Canada. EGT was the pioneer in this methodology working closely with DCC at the PIN-1 Site in 2002 and gaining on-Site approval by Transport Canada representatives. Later in the summer of 2002, EGT was awarded contracts by DCC to perform the same re-packaging of PAP containers stored by DCC at BAR-4 and PIN-M DEW-Line Sites. The current specification reflects this methodology developed at PIN-1 and Transport Canada's subsequent approval of this methodology.

EGT has estimated the number of ISO containers that will be required to containerize Leachable Lead/PAP based upon weights and volumes presented in specification tables. EGT will have a number of extra ISO containers on site for its own purposes which could be converted into Leachable Lead/PAP containers should this number prove insufficient. More ISO containers can also be mobilized to site if it appears that volumes are to be larger than those specified. Sufficient lumber, strapping and intermediate containers will be mobilized to site at initial mobilization to line potential extra containers.

Preparation of Containers

ISO shipping containers for Leachable Lead and PAP shipment will be in new condition and will maintain current Transport Canada certification.

1-1/4" steel strapping will be attached to the bottom fastening loops in the interior of the ISO shipping containers designated for Leachable Lead and PAP transport. The strapping will then be temporarily hung from the top loops of the containers. A layer of 6 mil poly sheeting will be spread over the floor and up the walls of the container at least 400 mm in height and will be glued in place. Sheets of 12.5 mm (1/2") plywood will be attached to the floor over the poly and 2"x4" framed walls will be constructed on back and side walls to full container height so that all lateral pressure will be supported by the structural frame of the ISO container.

For ISO containers which contain only intermediate Leachable Lead or PAP containers, plywood will not be attached to interior side walls of containers. For ISO containers which contain any materials not entirely contained in intermediate containers, 12.5 mm (1/2") plywood will be attached to the interior of the wooden wall-framing to a height of 400 mm. Plywood used on framed end walls will be 1.4 m in height.

Loading of Containers

At all times, similar materials (eg, painted wood, painted metal, painted concrete) will be segregated and packaged together.

Materials that will fit will be placed in intermediate (sea-can) containers, with necessary dunnage to prevent shifting within intermediate containers. These intermediate containers will be placed into the ISO containers with wooden bracing attached to the floor to prevent their movement. The 1-1/4" steel strapping initially installed in the ISO containers will be used to strap containers in place. Intermediate containers within ISO containers now require full TDG labeling on four sides.

Materials that cannot fit into intermediate Leachable Lead or PAP containers will be placed directly into ISO containers either beside or on top of intermediate containers, or on their own, depending on size and circumstances. Materials, where possible, will be bundled together with strapping. Materials will be placed to minimize voids among the materials and gaps between side and end walls, to balance weight loads evenly within the ISO container, and to keep the center of gravity below the half-height of the container. Materials will then be strapped down by the 1-1/4" steel banding initially installed and attached to the container bottom fastening loops.

Closure of Containers

A wooden frame, with 1.4 m height plywood and 6 mil poly liner will be constructed at the opening end of the ISO container to prevent any movement of Leachable Lead or PAP materials.

An inventory and photographic record of the contents of each container will be maintained and submitted to the DR.

Shipping

All ISO Leachable Lead and PAP containers will be clearly marked with contents as per TDG and CEPA regulations and will have the required contractor-supplied and Owner-supplied labels attached. Containers will be locked and placed in the Temporary Storage Area to await off-Site shipment. TDG and required Waste Manifests will also be completed for all regulated waste shipments from Site, including PAP materials. Copies of the Waste Manifests will be forwarded to the NWT authority, Pollution Control Division, Department of Energy and Natural Resource (ENR), Yellowknife, NT..

3.14.3 Tanks and Barrels

All tanks and barrels on Site will be tested, dismantled or crushed.

If on-Site inspection indicates tank cleaning is required:

The tank cleaning procedure is as follows:

- Tank condition and contents will be initially examined through covers on top of tanks.
- Tanks that are empty or near empty will have man-hole covers from sides of tanks removed to allow natural ventilation of fumes.
- Residual fuels/liquids will be drained from tanks for incineration as required.
- LEL/O2 meters will be used to assess air quality in tanks prior to any required cleaning, sludge processing or demolition.
- Tank entry is not expected to be necessary; however if Self Contained Breathing Apparatus entries become necessary depending upon air quality test results and tank conditions, a specific plan will be formulated and only confined-entry certified personnel will be permitted to enter any tank under strict protocols. Work will meet the standards set out in ANSI/API 2015 - 6th Edition August 2001 *Requirements for Safe Entry and Cleaning of Petroleum Storage Tanks*
- As required, tanks could be washed with steam/hot water, rinsed and wiped by trained and competent personnel; however it is not anticipated that these procedures will be necessary. In cases where it is necessary wash water will be collected and sampled to meet Waste Water Criteria prior to release.

Barrel Processing

Barrel sampling and processing, and the sampling of liquids from fuel storage tanks will follow the protocol outlined in the tender documents. We will have a steamer/sprayer available on Site as required, but do not expect to conduct significant barrel washing operations.

Inspections will be conducted by the DR and Contractor; barrels will be opened using non-sparking brass tools and/or remote opening methods if there is evidence of contents under pressure. LEL meters will be used around openings and holes. Barrels will be sampled by the DR. Consolidation, HAZMAT processing, incineration and cleaning options are dependent on sample results.

Barrels containing hazardous materials or consolidated like materials will be processed, packaged and labeled under TDG regulations. Packaging is typically the original drum placed into an overpack drum lined with absorbent rags with absorbent ("Floor-Dry") pored over and around original drum prior to sealing overpack drum.

Barrel cleaning is conducted using a three-level containment system. Barrels are inverted on a metal rack in a metal wash-berm and are steamed using a wand sprayer and detergent. The water in the wash berm drains through a barrel filter containing absorbent rags. This barrel then drains into a lower barrel filter also containing absorbent rags. Water from this lowest barrel filter is then pumped back to supply the steamer unit. In this way wash water is constantly being filtered and recycled through the system. Absorbent rags are removed throughout the process and will be sampled for potential on-Site incineration. If they cannot be incinerated they will be packaged and shipped off-Site according to TDG regulations. Minimal remaining wash water will be sampled according to Waste Water Discharge Criteria. In previous DEW-Line cleanups this method has always led to minimal water use and successfully meeting discharge criteria.

3.14.4 Other Identified Hazardous Materials

Prior to building demolition, other identified HAZMAT will be removed from buildings. Site HAZMAT will be identified and handled according to type as required.

Batteries, potential PCB containing transformers, light ballasts, PCB ballast in Nav-Aid, unidentified pails of liquids, and acid, which may be encountered will be treated as follows:

All lead-acid batteries will be wrapped with heavy duty poly and placed in a lined sea-can containing absorbent rags and absorbent fill material to cushion load and absorb spills. Containers will be labeled and shipped according to TDG regulations.

PCB light ballasts will be removed, double-wrapped in poly, and packaged for shipping in over pack drums lined with absorbent rags and Floor-Dry to absorb any possible leaks and to cushion load. If PCB-containing transformers are discovered on Site, these will be shipped intact as per ballasts above. All handling of PCBs and suspected PCB containing materials will be conducted using respirators with Organic Vapor filters, disposable coveralls, Nitrile gloves and goggles.

Mercury ballasts/thermostats will be handled, contained, packaged and shipped as per the methodology used for PCB ballasts, except that UN shipping number will change. PPE will be identical to that used for PCBs.

EGT has a great deal of experience in handling and packaging hazardous materials and satisfying TDG requirements for shipping from its many years of experience at DEW-Line cleanups. Almost all HAZMAT can be shipped in either double-lined sea-cans or overpack drums. EGT will have sufficient numbers of sea-cans and overpack drums at site to handle reasonable foreseeable extra unknown hazardous debris. Overpack drums are easily transported by aircraft to the site during the summer. Therefore, extra overpacks can be supplied should they be required.

3.14.5 Asbestos Abatement

There are a number of areas identified, that contain asbestos material in the Clifton Point PIN-B specification. The identified materials in the specifications are in the Module Train, Inuit House, Warehouse, Garage, Camp Building 2 units and appear to be incorporated in the insulation and building material of chimney, stoves, floor tiles, doors, furnace room wall panels, and wall sheeting.

Workers involved in asbestos removal at Clifton Point PIN-B have over ten years experience in asbestos removal and hazardous material work. As a minimum requirement, workers will wear ½-mask respirators with HEPA filters, Tyvek disposable coveralls and other normally required PPE including gloves, eye-protection, safety footwear and hardhats. Workers will spray-off and remove disposable coveralls, HEPA filters and gloves and dispose of these items in the same fashion as asbestos containing items.

Workers will comply with the requirements set out in the tender document for the removal of Type 1, Type 2 and Type 3 asbestos. Type 1 materials which are likely to be encountered are asbestos in wall panels, asbestos duct cloth, flue stack covering and vinyl asbestos floor tiles. Type 2 materials will likely be encountered when removing false ceilings, which will be lying on the surface of the false ceilings scheduled for demolition. Type 3 materials will likely be encountered in the demolition and removal of asbestos pipe and duct insulation and the Glove Bag Method will be employed.

Regulatory Notification

Prior to the commencement of asbestos abatement work, the Asbestos Abatement Methodology will be reviewed by teleconference with the Northwest Territories Workers' Compensation Board for review and approval. Minutes from the teleconference will be submitted to the DR. Once approved by the WCB, a copy of the written approval will be submitted to the DR as per the submittal schedule.

In addition, prior to the commencement of asbestos abatement work, copies of the Notice of Abatement Activities and the approved Methodology will be provided to:

Health Canada

Occupational & Environmental Health Services
Suite 845 – Canada Place
9700 Jasper Avenue
Edmonton, AB, T5J 4C3

Human Resources Development Canada
Labor Branch
302, 10109 106 Street
Edmonton, AB, T5J 3L7

Regulatory Requirements
All asbestos abatement activities will be governed by the regulatory requirements of:

- NU/NWT Safety Act – Asbestos Safety Regulations
- Canadian Environmental Protection Act
- NU/NWT Guidelines for Removal of Materials Containing Friable Asbestos
- Federal Transportation of Dangerous Goods Act (TDGA)
- NU/NWT Renewable Resources --- Guidelines for Asbestos Disposal
- NIOSH and OSHA Guidelines for Hazardous Waste Site Activities
- PWGSC practices as specified in tender documents
-

Safety and Training
Established industry protocols will be used by all workers during abatement activities. A certified asbestos abatement specialist will be at the job Site during abatement activities and will supervise abatement activities. All workers will have adequate training to ensure compliance with established regulatory requirements.

Supervision
The asbestos abatement specialist will have as minimum requirement of a 48 hour Asbestos Abatement Course and at least 2 years experience in Type 1, Type 2, Type 3 and Glove Bag Removal techniques and will be experienced in safety training. Local Inuvialuit crew leaders and asbestos laborers who have conducted asbestos abatement at previous DCC DEW-Line cleanups will be utilized as much as possible. Proof of Supervisors' training will be provided to the DR prior to the commencement of asbestos abatement work.

Safety Training
Prior to the commencement of work, the asbestos abatement specialist will provide refresher training to experienced asbestos workers and will train new workers. Instruction will include:

- Asbestos abatement methodology review
- Hazards of asbestos and health education information
- Proper use of respirators (including types, limitations, inspections, maintenance, decontamination and disposal, filter type and selection)
- respirator fitting and fit-testing
- other personal protective equipment requirements

- decontamination
- safe handling, labeling and containment requirements
- emergency response plans

For the protection of workers who may be working near asbestos abatement work areas, all personnel will receive an overview of the hazards associated with asbestos in the worker orientation seminar.

Documentation of asbestos training for workers will be provided to the DR prior to the commencement of asbestos abatement work.

Fit Testing

Asbestos crew personnel will be instructed and fitted with respiratory protection using qualitative fit testing methods. An irritant smoke test will be used at the beginning of the job, when a new mask is issued, when a problem is identified or every two weeks at a minimum. Workers will perform positive and negative fit test every time the mask is donned. Workers will be provided with non-powered, half-face respirators with HEPA cartridge filters for minimum and intermediate precaution work and with powered air respirators for work requiring greater levels of respiratory protection. All workers will be required to fill out a Respirator Fit Test Record. Documentation proving fitting and testing will be provided to the DR prior to the commencement of asbestos abatement work.

Other Submittals

In addition to the submittals listed in previous sections, prior to the commencement of asbestos abatement work, EGT will also provide to the DR proof of Contractor's Asbestos Liability Insurance, product documentation for encapsulates, amended water and slow-drying sealer, and necessary permits for the transportation and disposal of asbestos waste.

Equipment, Materials and Small Tools

Asbestos abatement work is extremely labor intensive and will be completed primarily with small non-powered hand-tools including screwdrivers, knives, scrapers, pliers, hacksaws, vice-grips, pry-bars, and garden and paint sprayers. Small power tools such as reciprocal saws and drills are also employed.

Special tools for dust suppression and control such as HEPA vacuums and Negative Air units will also be utilized.

Reinforced poly tarps, 6 mil poly sheeting, duct tape and spray glue are used extensively to provide isolation and containment of work areas, barriers in ISO containers during temporary storage and shipping, along with dedicated asbestos bags and, wrapping of asbestos waste.

A stand-alone generator will also be utilized to provide required power for lighting, power tools, vacuums, negative-air units and power for the decontamination facility.

A full decontamination facility could be mobilized to the Site by barge and fabricated on site. This Decontamination Facility (Decon) consists of an equipment (Dirty) Room, a Shower Stall

and a Clean Room. The three areas are completely sealed from each other with a 6-mil polyethylene airlock and with double curtained doorways. All movement from Equipment Room to the Clean Room will be through the Shower Stall. There will be one access to the Clean Room and one to the Equipment Room. No eating or smoking will be allowed in the Clean Room. The Decon will be cleaned and inspected daily. Wastes from the Decon, including used coveralls, respirator-filters and wipes, will be bagged and treated as asbestos waste. All shower water will be filtered through a 5-micrometer filter prior to discharge. At 5 previous DCC DEW-Line Cleanups requiring a decontamination facility, discharge criteria have always been met.

Site Preparation

Preparation of Permits and Equipment

No work will begin until all necessary preparatory steps have been taken, including:

- obtaining all permits, regulatory approvals or authorizations
- required equipment, tools and waste receptors are in place or available
- decontamination facilities are set up and ready for use
- asbestos abatement worker training has been completed
- a site inspection has been conducted with the DR to verify remediation limits, and
- the approved final draft of the Asbestos Abatement Methodology has been reviewed with the DR.

Building Preparation

Prior to commencement of the asbestos abatement program, all buildings will be prepared for the asbestos work crew. All non-hazardous furnishings, walls, doors, carpets, materials, which can be easily removed without disturbing asbestos-containing materials, will be removed from the building. Personnel will be provided with Tyvek coveralls and fitted half-face respirators with HEPA filters for these activities, where deemed necessary by the Asbestos Specialist. Any liquids remaining in tanks, piping which require asbestos removal will be drained and collected for proper disposal. Air handling and ventilation systems in buildings to be demolished will require being isolated/blocked.

Exclusion Zones and Signage

Appropriate Asbestos Warning signs will be conspicuously placed at work area access locations including the decontamination facility and material transfer stations. In addition, it may be necessary to establish exclusion zones and buffer zones through the use of white Asbestos Warning tape, red Do Not Enter tape and yellow Caution tape.

Air Monitoring

A sampling pump and phase contrast microscopy (PCM) analysis or a fibrous aerosol monitor (FAM) will be used to monitor air both inside and outside of asbestos work area enclosures. The air within the clean and dirty rooms of the Decon will be monitored daily. Levels in excess of

the NWT Safety Act and Regulations (0.05 fibre/cc) will be addressed immediately with appropriate action.

Negative Pressure System

A negative Pressure System will be used to extract air from the Work Area, filter it through a HEPA filtering system and discharge it to the exterior of the building. The system will maintain a differential of 5 Pa and will have a capacity capable of complete air exchange in the work area every 15 minutes.

Asbestos Removal

Building Occupation and Closure

No buildings which contain asbestos will be used as temporary accommodations during the cleanup. No buildings will be occupied by personnel other than the asbestos crew during removal activities (i.e. There will be no partially occupied buildings). All openings such as corridors, doorways, windows, ducts, grills, etc. will be sealed off with poly and sealed with tape or supported with wood framing as necessary.

Dusting

Dust on surfaces likely to be disturbed will be removed with a HEPA vacuum. The top of the ceiling systems, light fixtures, etc. in proximity of ceiling entry will also be vacuumed.

Duct Cloth, Flue Stack Coverings and Wall Panels

Duct cloth, flue stack coverings and asbestos wall panels will be removed intact. Screw holes and/or fasteners will be wetted prior to removal. If materials are accidentally broken, they will be wetted immediately and double bagged. Surrounding areas will be cleaned with the HEPA vacuum. Removed wall panels, if intact, will be wiped or vacuumed and wrapped in poly for transport and disposal. During asbestos removal operations, a continuous cleanup, wetting and disposal program must be in place to prevent any unnecessary accumulations of dust and materials. After work is completed, drop sheets and containment barriers must be wetted, folded to trap dust prior to removal, and be disposed of as ACM waste.

Friable Asbestos

Friable asbestos will be removed using amended water spray. Following removal, all surfaces will be vacuumed or wiped down, then double bagged. Where friable asbestos is removed in situ, small moderate risk containment will be constructed. The containment will be large enough for one man and will facilitate complete removal. A HEPA vacuum will be utilized to supply negative air pressure within the containment; it will be exhausted into the asbestos work area. A personal sampling pump and PCM analysis or FAM testing will be done during this type of removal, to ensure the respiratory protection used is adequate.

Piping and Tanks

Asbestos from piping, elbows and tanks will be removed using a technique as follows:

- Delineate into work areas.

- Seal each Work Area with an access/egress at one end and an equipment decontamination/bagging room at an exit at the other end.
- Locate the Decon near the access/egress of each Work Area. Demarcate the area between the Decon and the Work Area as an Asbestos Hazard Area.
- Perform background air quality monitoring prior to commencing work in each Phase. Perform the removal progressively in each work area starting from the furthest point away from the Decon.
- Using an "open glove bag" technique, one worker will cut the asbestos, slowly remove it and lower it into the bag while another mists the air and as it is exposed. After removal, the exposed ends of the pipe will be sealed with duct tape. Once the bag is half full it will be sealed.
- After removal the asbestos will be taken to the bagging room where it will be cleaned, double bagged and taken to the disposal transfer area.
- Periodic air quality monitoring will be done during removal.

Completion

After the complete removal and post cleaning of each phase, a final air quality clearance sampling event will be completed. Once an air clearance has been obtained the entire phase will be sealed with a post-removal sealer. A final air sample will be drawn using the FAM or sampling pump with PCM analysis. No building will be entered until air monitoring shows the area to be safe. If safe, asbestos signage will be removed and demolition procedures will continue. If unsafe, additional abatement will be undertaken by the asbestos crew.

Transport and Storage

Packaging

All asbestos material removed will be double-bagged in pre-labeled polyethylene bags or wrapped in polyethylene sheeting of a minimum 6-mil thickness. Friable asbestos will be sprayed with a wetting agent prior to bagging.

Containerization

All asbestos material, with the exception of PCB painted asbestos materials > 50 will be double-bagged and placed in wood or steel containers and transported to the Temporary Storage Area for off-Site shipment and disposal. Shipping containers will be marked according to TDGA regulations {Waste Asbestos White (Chrysotile) UN2590, Waste Asbestos Brown (AmoSite) UN 2212}, and are to be clearly labeled as known carcinogen and health hazard, and that asbestos fibers should not be inhaled. Asbestos materials painted with PCB >50 ppm will be double-wrapped in polyethylene, taped with duct tape and placed in wood or steel containers segregated from other asbestos waste and from other PAP materials before being transported to the Temporary Storage Area for off-Site shipment.

Record Keeping

A daily log will be kept of all asbestos abatement activities, particularly those related to workers, shifts, safety issues and breaches of safety protocols, air sampling results and confirmation of asbestos removal. A minimum of two photographs will be taken from two viewpoints for each

clean-up / construction operation. A daily record of enclosure inspections will be kept as well as a final record of volume estimates and storage information, including location, depth and description of specific demolition materials, including asbestos-containing materials.

3.14.6 Disposal

All hazardous materials covered under this Section will be disposed of as per contractual documentation.

Permits for transportation and disposal of Asbestos Containing Materials, and proof of Disposal will be provided to the DR upon completion of the project.

3.15 Collection and Disposal of Non-Hazardous Materials Including Non-Leachable Lead Painted Materials.

Management/Supervision of all non-hazardous waste will be conducted by the Site Superintendents and their Foremen. EGT Site Superintendents have both successfully completed the 40 hour (HAZWOPER) training course in compliance with OSHA 1910.120. EGT also has many experienced HAZMAT workers and supervisors who will be conducting much of this non-HAZMAT work. Unless otherwise specified, all waste in this section will be transported to the Contractor's Designated Non-Hazardous Waste Facility.

Personal Protective Equipment

Work conducted under the heading of Collection of Non-Hazardous Waste will vary according to the location and type of work. Basic required PPE for any Site work will include hard hats, CSA approved work boots, gloves, coveralls, and safety glasses. Any work involving grinding or chipping requires full-face shields. Chainsaw use is limited to experienced approved chainsaw operators and requires the use of chainsaw pants and a chainsaw face-shield. .
Any cutting work using oxygen/acetylene cutting torches will be conducted by certified and experienced cutters. Welding gloves, leather chaps, and a welding mask will be required. PCB-Amended painted materials or galvanized metal will not be heated or cut.
There are certain types of work, which will require the use of respirators. The use of cutting torches to cut or dismantle facilities containing painted materials is not permitted unless the paint has been removed from the areas to be cut. The use of heat to remove loose paint materials is not permitted. Landfill Excavation work will require CSA approved rubber boots, Nitrile gloves, disposable coveralls, head and eye protection and, potentially, respirators.
All work 3 meters and above will involve procedures for working at heights and fall protection. All working at heights will follow the Northwest Territories Safety Act and Regulations and all other applicable regulatory requirements.

POL Tanks and POL Piping

Tanks and piping at Clifton Point PIN-B will be inspected prior to demolition/removal to confirm contents and the extent of cleaning required. An LEL monitor will also be employed to ensure that tanks and piping do not contain explosive gases. Solids, sludge and liquids will be bulked in drums and stored as hazardous material for disposal. All tanks will be cut into sections or crushed and transported for disposal at the landfill site. The Workers' Compensation Board of the NWT/NU has indicated to EGT that cutting of tanks with lead paint by use of oxygen/acetylene torches is permissible if workers are adequately protected with respirators and if leachable lead levels are not above hazardous waste criteria. Mechanical means of demolition using shears may also be employed.

Utility Poles

All utility poles that cannot be pulled from the ground will be cut off below ground level and the holes filled with granular fill. Creosote-stained material dug from the holes around the poles and the cuttings from any creosote poles will be collected as Tier II soils. Poles will be moved to the landfill for disposal. The creosote poles will be wrapped in poly at the landfill prior to disposal.

Fallen Radio Tower

The fallen radio tower and communication components will be cut from their support structures with torches. The sections will be cut up into manageable sections, hauled to the landfill and buried.

Culverts and other Miscellaneous Materials

Culverts will be removed crushed and buried in the non-hazardous landfill. Other miscellaneous material including demolition materials, power and communication cables, beacon light and ancillary airstrip will be collected and either disposed of in the NHL, burned or containerized if they are suspected to contain PCB materials as per specifications or as directed by the DR.

4.0 TRAINING

E. Gruben's Transport Ltd. recognizes the value of establishing Training Programs in order to provide higher levels of safety in the workplace, higher levels of personnel competence and confidence, opportunities for personal advancement, greater levels of satisfaction amongst personnel in our employ, as well as to satisfy regulatory requirements. We also believe greater and broader training amongst all levels of our personnel will help us produce a higher quality of work for our clients and will result in greater opportunities for the company to gain new work and new clients.

E. Gruben's Transport Ltd. will provide and support both formal and informal training, on-the-job and classroom training, safety-specific and skill-specific training.

Training and skills-assessment will begin on hiring. New employees will receive basic orientation on safety standards and procedures which are standard procedures for company operations.

Basic Safety Program training, WHMIS, First Aid and TDG programs will be carried out periodically in house as required. As well, programs in Safety Program Supervision, Hazard Identification and Control and Incident Investigation will be provided to supervisory personnel at minimum, in order that such information and developed procedures can be passed down to all personnel through safety meetings.

Programs such as Oil Field Swamper, Oil Field Hauler, Light Duty Vehicle Operator, Heavy Equipment Training, Class 3 and Class 1 Driving Courses, Contaminated Soils and PCB Hauling, and Asbestos Abatement Courses have been and will be offered as operations require.

Many subjects related to new tasks and procedures, or to address newly identified hazards, will be addressed at safety meetings and daily tailgate meetings.

Much of the training which takes place falls under the general heading of On The Job Training.

4.1 On the Job Training (OJT)

The purpose of on-the-job training (OJT) is to address the development of on-going job skills. With a disciplined approach to OJT, the worker is provided with the practical knowledge and skills required to perform a job task in a safe, efficient manner that complies with company procedure.

<u>OJT Procedures</u>
OJT must be provided as a means of transferring task knowledge from competent workers to workers who do not have operational experience to conduct the task safely.

Personnel competent in work site and related job tasks must provide on-the-job training as prescribed in documented procedures.
Basic Steps for OJT include:

- Provide written procedures and demonstrate to the trainee how you want it done;
- Observe the trainee as he/she does the task;
- Correct any mistakes made by the trainee in a professional manner – be patient;
- Have the trainee repeat the task until he/she does it right – to your satisfaction; and,
- Have the trainee do it one more time for good measure to reinforce the memory of how to do it correctly.

OJT can also be an effective follow-up to reinforce classroom instruction.

OJT Record Keeping
A record of OJT must be signed by a supervisor and the worker to acknowledge task competency and is maintained on file within the company.

4.2 Mandatory Certification Training

Federal, Provincial and Territorial legislation stipulates mandatory certification training requirements for operations under their specific jurisdiction. The following outlines requirements for Transportation of Dangerous Goods (TDG) and Workplace Hazardous Materials Information System (WHMIS) training.

Other mandatory training specific to your operation may be required. Refer to the pertinent legislation that applies to your operation to ensure compliance to legislated training requirements.

4.2.1 Workplace Hazardous Materials Information System (WHMIS)
All personnel at Clifton Point PIN-B will have received WHMIS training.

4.2.2 Transportation of Dangerous Goods (TDG)
Personnel required to handle or package Dangerous Goods for shipping will be TDG certified. EGT can provide this training in the field as required.

4.2.3 Training Specific to Clifton Point PIN-B

All personnel working at Clifton Point PIN-B will have received the Site Specific Worker Orientation, will have received WHMIS training and any training required for their particular tasks at the site. This may include:

- Confined Space Certification
- Asbestos Worker Training
- First Aid
- Working at Heights

Confined Space Certification

There should be no requirement for workers to enter confined spaces at Clifton Point PIN-B; however EGT do have competent workers trained and available to undertake these type operations as needed.

Asbestos Worker Training
This training is outlined in Section 3.14.5

First Aid
First Aid training for EGT employees to ensure that all regulatory requirements are met or surpassed will be provided as required.

5.0 COMMUNICATION

5.1 Role of Communication

The important role that communication plays in health, safety and environmental protection cannot be overemphasized.

Important messages need to be communicated numerous times in different ways to ensure that people listen and understand. To make communication effective the organizational climate must encourage people to listen actively. This means encouraging people to check their interpretations, ask when they do not understand, voice their opinions, and let people know they have been understood.

Being a good corporate citizen is supported by open and honest communication with your workforce, the local communities and your business partners.

This section emphasizes two critical communication areas:

1. Management communication; and,

2. Company Safety Meetings such as:
   - Regular weekly management meetings
   - Regular monthly management meetings
   - Daily health, safety and environment meetings
   - Daily tailgate meetings

The more employees and contractors know about the HSE program, the better able they will be to support it.

In initiating communications, management makes itself more accessible to others working within the company. This will ultimately result in greater participation of workers, contractors and subcontractors in the development and maintenance of HSE programs. It will also lead to higher morale and improved health, safety and environmental performance along with improved workplace productivity.

5.2 Communication Frequency

Regular communication with employees, contractors and subcontractors should include describing the company's commitment to HSE performance and explaining why health, safety and the environment are important and whom the affect.

These communication opportunities will be held when senior managers and the majority of employees, contractors and subcontractors are present.

It is important for management and supervisors to tour work sites, observe work practices and talk to workers about HSE issues. The frequency of tours will vary according to our type of operations and locations of our sites.

Conducting safety orientations, providing instruction and practice with experienced guidance and meeting mandatory training requirements are part of a good communication process.

Special programs like the new worker program, and specialized training and information sessions will demonstrate the commitment EGT has for their workers, the environment and the communities in which we work.

5.3 Management Communication

Management will communicate clearly and regularly the company's commitment to excellent HSE performance to all workers, contractors, subcontractors, suppliers, clients, and other stakeholders.

5.4 Communication of Expectations

Establishing expectations with people requires regular communication of the following topics:

- HSE program goals and performance expectations;
- Why HSE is important and who it affects;
- Hazardous conditions and corrective measures;
- Allocation of HSE responsibilities;
- Best practices;
- Incident and accident reporting procedures; and,
- Regulatory issues.

5.5 Types of Communication

To communicate company commitment to health safety and environmental excellence, management will do any or all of the following:

- Go to work sites to observe operations and engage workers in discussions of HSE matters;
- Send motivational letters or memos to employees;
- Participate in committees and meetings;
- Include HSE topics as regular agenda items in meetings;
- Highlight HSE accomplishments at company functions;
- Provide detailed job instruction for new, transferred or temporarily assigned personnel;
- Hold regular safety meetings for all staff;
- Recognize workers who work safely; and,
- Provide regular feedback to all employees on safety performance or concerns.

6.0 MEETINGS

To bring people together on a regular basis to hear and talk about the different HSE programs, procedures, and topics will help to set clear expectations and foster commitment to incorporate what workers learn into their day-to-day activities.

The communication guidelines contained below are not intended to be exhaustive, but are representative of HSE directives.

6.1 Regular or Start-Up Health, Safety & Environmental Meetings

All operator work groups engaged in northern operations shall participate in regularly scheduled safety meetings at least monthly or weekly for construction. Additional specific meetings are called as required (i.e. pre-job and tailgate meetings).

It is essential that site leadership attend and participate in as many safety meetings as possible.

Safety meetings are held to ensure that all personnel understand the operational steps and protective measures pertaining to the potential hazards of the job. The specific purposes of these meetings can include:

- Comprehensive identification of safety issues;
- Pre-job and/or task analysis for hazard prevention;
- Establishing protocols; and,
- Emergency response requirements at the beginning of a project or scope of work.
- Areas of concern and opportunities for improvement;
- Review of hazards and potential risks;
- Identify “next steps”;
- Set time and date for next meeting; and,
- Identify possible issues to be covered in the next meeting.

6.2 Pre-Shift Meetings

Pre-Shift Meetings shall be held before:

- Starting work each morning;
- Starting a new shift; and,
- Undertaking of non-routine jobs.

Additional meetings are also held when:

- There has been a significant change in the way work is being carried out; and
- The supervisor deems it appropriate.

The objectives of the pre-shift meetings are to:

- Keep all members of the work team informed of the day-to-day opportunities and challenges for working safe;
- Inform workers of the forecasted daily activities;
- Identify the unique hazards and required control measures to prevent injuries;
- Review basic safe work practices;
- Inform workers of the activities of the other workers and how their activities will interact; and
- Allow a shift supervisor to assess the emotional and physical capacity of crew and ensure all are prepared for work.

The pre-shift meeting allows the shift supervisor to:

- Ensure all on site personnel are appropriately trained to carry out their assigned duties;
- Ensure certifications and permits are valid and current;
- Identify possible human hazards such as:
    1. Physical and/or emotional fatigue;
    2. Use of medication;
    3. Stress;
    4. Emotional distress; and
    5. Effects of drugs or alcohol.;
- Identify interpersonal issues amongst team;
- Manage new or green workers in order to identify to the rest of the crew;
- Ensure that new workers have completed pre-job orientations and required safety training; and
- Identify and control work site visitors.

During the pre-shift meeting emergency response procedures are reviewed including:

- Current activities;
- Meeting area in case of an emergency;
- Procedures to account for all employees, visitors and contractors;
- Assigned roles of all personnel;
- Response protocol specific to the area of activity;
- Location of safety stations on site (firefighting equipment, first aid, eyewash, and communications)

- Emergency escape procedures and routes;
- Shut down procedures;
- Rescue and medical duties for assigned employees; and,
- Procedures for reporting an emergency.

6.3 Tailgate Meetings

Tailgate meetings occur as and when needed and are the responsibility of all workers.

Supervisors or workers can initiate tailgate meetings when the need arises in order to identify a safety issue or review the appropriate work or safety procedure associated with a work assignment. Tailgate meetings should be called whenever the conditions of the job change (for example, for changing weather, different available equipment, change in personnel) or whenever the task itself changes. They should be called when new potential hazards are identified. They should also be called whenever workers or supervisors feel that more complete communication and understanding of the task at hand is desirable.

6.4 Orientations

Pre-job and pre-employment orientations provide the opportunity to present an overall picture of the company's HSE program and commitment, the rights and responsibilities of both workers and management, the company's expectations and policy's, as well as details of particular contracts and client requirements. This also provides the opportunity for new employees to complete employment sign-up procedures and the gathering of required employee information for employee files.

The orientation, because of its in-depth approach, can set the overall tone for the entire term of a new employee's employment, as well as reinforce attitudes and policies for returning employees, and introduce new procedures and policies.

The orientation may be the first opportunity the company has to thoroughly indoctrinate and thoroughly warn an employee about the work situation he or she is entering.

It is critical that all new employees should receive an orientation and that all long-term employees should receive a new orientation at the beginning of every major work season.

7.0 ACCIDENT/INCIDENT INVESTIGATION & REPORTING

7.1 Introduction

Investigation and reporting are critical steps in preventing a similar incident or accident from recurring. The investigation is intended to determine the root cause or causes of an incident or accident as opposed to finding fault.

Incident and accident reporting is also useful because it helps identify:

- Training Needs;
- Problems with work procedures;
- Problems with work site conditions;
- Needs for Personal Protective Equipment PPE, Safety & Emergency Equipment;
- Failures in communication

It also helps collect information necessary for completing insurance reports, for complying with regulatory requirements and for gathering statistical information used to calculate statistics and identify incident trends so that the effectiveness of the HSE program can be measured.

The steps in developing an investigation analysis procedure should include:

- Implementing an incident reporting system;
- Preparing investigation procedures;
- Establishing a progress to ensure required corrective actions are completed; and
- Sharing the lessons learned from the incident investigations with workers to prevent a recurrence.

7.1.2 Types of events to investigate and report include

- Fatalities;
- Injuries or occupational illnesses that prevent a worker from performing regular tasks;
- Injuries that can be treated at the work site and injuries that require treatment by a medical professional;
- Any emergency or loss, such as a motor vehicle accident, fire, explosion, vandalism;
- Environmental damage or loss; and,
- Near misses;

Supervisors will manage the response to the event and notify the appropriate authorities where necessary.

7.1.3 When to prepare reports

Reports of an incident should be prepared immediately after the event has occurred and kept on file to ensure requirements for regulatory compliance have been met.

In the case of serious accidents and environmental incidents, the accident/incident scene should be preserved to ensure important evidence is not lost or disturbed and details are not forgotten. The law mandates this for a serious injury accident or fatality.

To ensure incident reporting is consistent, appropriate report forms should be available at all work sites as required by regulatory agencies and company policy.

7.1.4 Implementation

All E. Gruben's Transport Ltd. personnel must be encouraged to report all incidents and must be informed that this is part of their responsibilities as employees.

E. Gruben's Transport Ltd. has developed incident report forms and has provided training for senior management and job supervisors to complete investigations and complete the required paperwork.

7.1.5 Incident Investigation and Follow-Up

Incident investigation and follow-up assists in determining root causes of incidents and helps prevent incidents from recurring. This can only be done with proper investigation and analysis.

Job Supervisors are initially responsible for the investigation of all incidents, regardless of their severity. Depending on the actual or potential severity of the incident an alternate investigation leader may be appointed. The E. Gruben's Transport Ltd. Safety/Loss Control Officer will provide assistance as required, as will any members of the senior management team. Senior management will also review all Incident Investigations.

Findings from investigations may to the recommendation that changes be made to work procedures, methodologies, management systems and corporate policies.

7.1.6 Training

Superior quality can be delivered to an investigation if the investigation team leader has been trained in investigation techniques. Depending on the severity of the incident, insurance investigators or government authorities may also be required to conduct an investigation and/or may require information provided by in-house investigations.

There is a benefit in training work site supervisors in investigation techniques and providing them with a logical approach in determining the underlying or root causes of incidents. E. Gruben's Transport Ltd. has provided Incident Investigation training to all its senior management and job supervisors, and will continue to provide training as new supervisors come into the system. These skills are transferable and can be used to evaluate hazardous job site situations to prevent incidents.

7.1.7 Investigative Purpose

The purpose of investigations is to identify direct and underlying factors that contributed to an incident and the root causes behind those factors.

7.1.8 Investigative Procedure

After being notified of an incident, the on-site supervisor should survey the area to determine if the work must be stopped to prevent injuries and preserve evidence. The on-site supervisor notifies his management and an investigation leader is appointed. The following decisions must be made:

- Determine if government authorities and insurance investigators should be called; and
- Determine if legal advice is required;

The investigation leader directs the gathering of evidence, which is to include:

- Interviewing witnesses and the people involved;
- Photographing the site to record evidence and damage; and
- Creating scale drawings and diagrams.

If insurance investigators or government or other regulatory authorities are called in, the investigation leader will assist them as required.

Once evidence has been collected, then the investigator can complete the investigation process, which includes:

- Determining the immediate and root causes of the incident;
- Completing the investigation report;
- Developing recommendations to prevent a recurrence;
- Prioritizing a list of corrective actions identifying responsible parties and target dates for completion;
- Submitting completed reports and recommendations to management and, if required, to the insurance company and government;
- Discussing the report and recommendations with everyone who was working on the site at the time of the incident and with all other employees that are affected by the incident; and,

Consideration should also be given to circulating any learning and recommendations throughout industry.

Individuals who are assigned action items then carry out the investigator's recommendations and provide feedback to management on a monthly basis until all actions are completed and signed off. Once there is verification that all recommended corrective actions have been completed, the incident report will be closed out.

7.1.9 Incident Statistics

Incident statistics are compiled for use in the company's HSE performance assessment and for third party use.

Frequency of lost-time injury incidents (including fatalities) and severity of lost-time injury incidents are calculated quarterly.

Calculations are based on the following:

Lost Time Injury Frequency = Number of lost-time injuries x 200,000/Number of hours worked.

Recordable Injury Frequency = Number of lost-time injuries + Number of medical aid injuries Number of restricted work injuries x 200,000/Number of hours worked.

Injury severity = Number of lost days x 200,000/Number of hours worked.

Rates are a better measure than simply counting the number of incidents because they take into account the level of worker activity. Therefore, a comparison of performance between time periods is valid.

7.1.10 Incident Reporting & Investigation Summary

Proper incident reporting and investigation processes will ensure that E. Gruben's Transport Ltd. is:

- Accountable for any actual or potentially serious events;
- Better able to determine the root cause of the incident; and
- Enabled to make the changes necessary to avoid any re-occurrences.

This process also enables the company to demonstrate its responsibility to the workforce, their families, and the communities in which we work.

7.2 Accident/Incident Investigation Procedures

Accident/incident investigation is a vital part of E. Gruben's Transport Ltd. Health and Safety Program. No other activity produces quicker results than the prompt reporting and investigation of accidents and "near miss" incidents. Therefore, we provide the following written procedures and guidelines for use in the completion of Accident/Incident Investigations

Investigation of an incident or accident involves much more than filling out a report form. It is a process of gathering factual information and drawing conclusions; the report form is only the documentation and the summary of that process.

The purpose of an accident investigation is to determine the causes and put corrective measures in place to prevent a recurrence. It is not to find fault or fix blame. Serious accidents or incidents with a high potential for injury or damage will require an in-depth investigation but every incident is a signal of problems that need to be corrected.

7.2.1 Understanding Accidents

Many theories and models exist that explain how accidents happen. How an accident investigation is conducted will, in many cases, depend on the investigator's beliefs about the causes of accidents. A particular accident theory can strongly influence the organizations investigation process and can provide direction to its entire occupational health and safety management system. It is important therefore to explore our understanding of accident causation.

7.2.3 Incident

In order to better understand the investigation process, it is important to clarify our definition of the terms "accident" and "incident". These can include:

- Injury, illness or disease or fatality;
- Damaged tools, equipment or machinery; and
- Damaged material or property, including environmental damage.

This differs from dictionary definitions of "accident" which tend to emphasize factors such as "happening without observable cause" "arising from unknown causes" etc. This leaves the perception that accidents just happen and that they cannot be prevented.

In the HSE environment, the term "incident" is used in a broad sense to include accidents and other unplanned events which, under slightly different circumstances, could have resulted in harm to people or damage to equipment, machinery or property. These are often referred to as "near misses" or "close calls".

This then is the unplanned event that precedes the loss or close call. It is the exposure to the hazard or the contact that could result in harm or damage. Incidents are commonly classified as follows:

- Struck against (running or bumping into);
- Struck by (hit by a moving object);
- Fall to lower level (either the body falls or the object falls and hits the body);
- Fall on same level (slip and fall, top over);
- Caught in (pinch and nip points);
- Caught on (snagged, hung);
- Caught between (crushed or amputated);
- Contact with (electricity, heat, cold, radiation, caustics, toxics, noise); and
- Overstress/overexertion/overload

7.2.4 Immediate Causes

These are the hazards that existed immediately prior to the occurrence of an incident or accident. A hazard is defined as any unsafe practice or unsafe condition that has the potential to cause injury, illness, disease or damage to property, equipment and the environment. Immediate causes are usually easily identified and they are broken down into two types.

These are Unsafe Practices and Unsafe Conditions.

7.2.5 Unsafe Practices

These are the hazardous practices and behaviors that permit the occurrence of an incident, for example, failure to lock out equipment, failure to wear eye protection, overloading, poor driving practices, etc.

7.2.6 Unsafe Conditions

These are hazardous conditions that permit the occurrence of an incident, for example, inadequate guards or barriers, defective tools, poor housekeeping, weather conditions, etc.

Many investigators have a tendency to focus only on the immediate causes of an accident. But in order to prevent a repetition of what happened, you must dig deeper. It may be tempting to pin the accident on something a worker did or did not do and let it go at that. However, there is rarely, if ever, a single cause behind an incident or accident. Even the simplest incidents occur from a combination of causes.

Immediate causes are also called direct causes. They are the symptoms of deeper problems and the investigation must go beyond the immediate causes to identify the underlying causes.

7.2.7 Underlying Causes

These are real causes behind the symptoms; the reasons why the immediate causes existed. The underlying causes are not as apparent as the immediate causes. They are also referred to as root causes, basic or indirect causes.

Underlying causes can be identified by asking probing questions about the unsafe practices and unsafe conditions identified as the immediate causes. Here are some examples:

- Why was the equipment not locked out? Is there a lockout/tag-out procedure in place? Are workers aware of the procedure? Are workers trained in using the procedure?
- Why did the worker not wear eye protection? Is eye protection available? Is the wearing of eye protection enforced by the supervisor? Was the worker aware of the need for eye protection?
- Why did the worker remove the guard? Was there a lack of maintenance? Is the machine poorly designed? Was the worker aware of the hazard?
- Why was debris on the floor? Was this a rushed job? Is there any individual accountability for clean-up?
- Analysis of the answers to these probing questions will lead to the identification of underlying causal factors in two main categories – personal and work environment:

<u>Personal Factors:</u>

- Inadequate physical capability
- Inadequate mental capability
- Physical stress

- Mental stress
- Lack of knowledge
- Lack of skill
- Improper motivation

Work Environment Factors:

- Inadequate leadership/supervision
- Inadequate engineering
- Inadequate purchasing
- Inadequate maintenance
- Inadequate tools and equipment
- Inadequate work standards
- Wear and tear
- Abuse/misuse

Management System Defects:

Underlying causal factors can be linked to defects in the health and safety management system. There are three key areas to consider:

- System Components: The system may be lacking some important elements.
- System standards: The standards are not clear or specific enough. They may be inappropriate.
- Conformance with System Standards: People in the organization are not following or complying with the established standards.

7.3 Why Investigate?

Accidents are caused. They don't just happen. The causes of accidents can be determined through proper investigation; therefore injuries can be prevented if the causes of accidents are corrected. Unless the causes are corrected, the same thing could happen again and again.

The most important reason for investigation accidents is to prevent injury and illness to workers. There are other reasons to consider such as the costs of accidents and the legal requirements to investigate.

7.4 Legal Requirements

7.4.1 Occupational Health and Safety Act:

The Occupational Health and Safety Act apply whenever there is a serious injury on a worksite, or an incident that has the potential for causing serious injury to occur. If an injury or incident listed below occurs at a worksite, the employer responsible for the worksite must notify a Labor OH&S Director of Inspection as soon as possible. Examples include:

- An injury or accident that results in death;

- An injury or accident that results in a worker being admitted to an unplanned or uncontrolled explosion, fire or flood that causes a serious injury or that has the potential of causing a serious injury;
- The collapse or upset of a crane, derrick or hoist; or
- The collapse or failure of any component of a building or structure necessary for the structural integrity of the building or structure.

In addition, the employer is required to investigate any other serious injury or any other incident that has the potential for serious injury. Since these "other" serious injuries and incidents are not defined in the Act it is important that E. Gruben's Transport Ltd. investigation policy clearly identify them.

7.4.2 Workers' Compensation Act

While E. Gruben's Transport Ltd. will be dealing primarily with the Occupational Health and Safety Act, there are other obligations and responsibilities under the Workers' Compensation Act whenever a worker suffers personal injury on the worksite, or is entitled to medical aid as a result of an accident. If the accident is likely to disable the worker for more than the day of the incident, E. Gruben's Transport Ltd. is required to:

- Report the accident to the Worker's Compensation Board within 72 hours;
- Notify the Board within 24 hours of learning that the worker has returned to work or is able to do so;

The WC Act contains additional details about what E. Gruben's Transport Ltd. is required to do, and to make available in regard to accident investigations. E. Gruben's Transport Ltd. must be familiar with the WC Act and what is expected in case of an accident.

7.5 What Should Be Investigated?

It is obvious that accidents resulting in death or serious injury must be thoroughly investigated.

However, studies show that for every accident resulting in death or serious injury there were a large number of similar accidents and incidents (unplanned events) resulting in property damage, minor injuries with no injuries at all. Therefore, minor injury accidents, near-miss incidents and property damage accidents with the potential for serious injury should be investigated to identify and

7.6 Who Should Investigate?

The supervisor should investigate the accidents and incidents in his or her area of responsibility. As discussed earlier, E. Gruben's Transport Ltd. as an employer; has a legal requirement to investigate those incidents defined in legislation. A definition of employer in the Act is "any

person designed by an employer or his representative". This could be the foreman, the lead hand, the superintendent, etc.

A team approach is recommended and whenever possible the supervisor should be assisted in the investigation by a safety committee member or the municipal health and safety coordinator (if one exists). Safety is a line function, therefore the prime responsibility for accident/incident investigation lies with the supervisor.

7.7 Reporting of Accidents/Incidents

Prompt reporting of an accident/incident to the supervisor is essential. This enables the supervisor to carry out an investigation while the events are still fresh in the minds of those involved.

7.7.1 Failure to Report an Accident/Incident

Workers fail to report accidents or incidents for some or all of the following reasons:

- Fear of discipline;
- Concern for their own safety record;
- Concern for reputation;
- Fear of medical treatment and/or medical personnel;
- Desire to avoid work interruption;
- Desire to keep a clear record;
- Desire to avoid "red tape";
- Concern for the reaction of other workers (peer pressure); and
- Lack of understanding of the importance of reporting.

Supervisors can encourage reporting by:

- Reacting positively to the report;
- Training employees in reporting procedures and emphasizing its importance;
- Acting promptly on the report;
- Providing feedback; and
- Following up with corrective measures.

7.8 Investigation Preparation

Preparation for an investigation begins with the development of an investigation process described in E. Gruben's Transport Ltd. investigation policy. The policy outlines the intent of the investigation and the procedures E. Gruben's Transport Ltd. uses in reporting an accident or incident and proceeding with investigation. Areas that are included in the policy are:

- What types of incidents and accidents are to be investigated;
- Notification procedures and contact list (i.e. OH&S, Emergency Response, family members, etc.);
- People involved in the investigation team;
- What report form(s) are used for various investigations; and

- The review process after the investigation is complete.

Most supervisors do not conduct many investigations in their career, which makes the investigation procedures a seldom performed task within many organizations. A regular review of the municipal investigation policy and procedure will assist in prompt and correct response by front line supervisors at the worksite.

Before undertaking an investigation, the supervisor must have the necessary tools to do the job, including:

- Training in accident investigation techniques;
- Safety equipment clothing for the area(s) likely to be entered;
- Required permits and notification forms;
- An Investigation kit which should include the following
    1. Investigation Report Forms
    2. Investigation guide or checklist
    3. Writing material for notes, statements, sketches, etc.
    4. Pencils, pens
    5. Photographic or video equipment, if appropriate (cannot be used in an explosive atmosphere)
    6. Testing equipment
    7. Measuring tape
    8. DO NOT ENTER tape

APPENDIX A

Clifton Point PIN-B Hazardous Material Audit

The following materials have been identified as hazardous waste materials at the Clifton Point PIN-B Site. More detailed inventories may be found in Appendices A and B of the tender documents.

- Asbestos
- Batteries
- Solvents
- PCB Containing Oils
- Petroleum Distillates, including free product that may be recovered during contaminated soil excavation work
- Tank Sludge
- Soils and paint chips containing PCB's at concentrations in excess of 50 parts per million
- Material, including waste water, ground water and surface water, identified to be hazardous as a result of testing
- Electrical equipment including, but not necessarily limited to, capacitors, transformers and regulators which contain or are suspected to contain PCB's at concentrations in excess of 50 ppm.
- Miscellaneous Hazardous Materials defined as those materials not classified above, but are suspected to fall under the definition of Hazardous Wastes and Materials as stated in Clause 1.5.1 of Section 02090

Other hazardous materials that may be encountered on the site or in landfill excavations include:

Waste oil	Ocillators	Meters
Asbestos	PCB transformers	PCB Capacitors
Sewage	Copper wire	Transmission fluid
Lead-based paints	1-1-1-trichloroethane	PBX telephone equipment
Radioactive tubes	Mercury vapor rectifier tube	Paint thinner
Scrap metal	Batteries	Chlorinated hydrocarbons
Radar components	Corrosion inhibitors	Lye
Fuel drums	Corrosives	Paper
Lime	Plastics	Solvent
Antifreeze	Dynamite	RF interference filters
AVGAS (Aviation fuel)	Generators	Scopes
Sulfamic acid	Vehicles	Rubber fuel bladders
Cathode-ray tubes/screens	Filtron tubes	

EGT will bring the following products to Clifton Point PIN-B in order to carry out contract work.

EGT will provide and keep on-site MSDS for all of these products and any other WHMIS regulated products we bring to the site.

Diesel fuel
Gasoline
Grease
Lubricating oils
Transmission Fluid
Methyl Hydrate

Compressed oxygen and acetylene
Compressed propane
Compressed medical oxygen
Compressed helium
Antifreeze
Liquid bleach
Isobutylene (calibration gas)
Spray Paint
Spray Adhesive
Camp cleansers and disinfectants

APPENDIX B

CLIFTON POINT PIN-B FIRE SAFETY PLAN

Fire, especially a fire in our camp structure, is potentially the most catastrophic event which could occur on this project. Because of our inability to pump significant amounts of water Fire Prevention practices take on even greater significance and must be strictly adhered to.

Muster Station - A muster station will be designated at the site in order to gather all personnel and conduct a head-count should a camp evacuation be required. Personnel lists and bed–assignment lists will be updated daily/as-and-when site personnel change. The Medic, the Site Superintendent and a designated member of the camp staff will have copies of updated rosters and updated rosters will be posted in the muster station. The head count will be conducted by the member of the camp staff.

Smoke Detectors - Smoke detectors will be tested and in place in all bedrooms, recreation areas, kitchen and camp storage areas and office facilities.

Camp Alarm System - Because the camp complex will be comprised of a number of separated buildings, the alarm systems in the main camp buildings will not set off the alarm systems in the other. Instructions for the use of pull-stations will also require use of vocal warnings in combination with compressed-gas signal horns, which will be placed by camp exits. This will be reinforced in site orientations, safety meetings, fire drills and posted Camp Response Procedures.

Fire Extinguishers - Fire extinguishers will be inspected and placed at all camp entrances, in the kitchen, the generator building/shop and in all of the camp out-buildings as well as at fuel storage tanks. All pickups and heavy-equipment on site will also be equipped with ABC fire extinguishers. Containment areas will be required to have ABC extinguishers easily accessible within containment. Any use of gasoline powered tools, welders, cutting torches and sparking tools such as grinders will require that extinguishers be on hand.

Exit/Emergency Lighting - All exits will be marked with battery-backed "EXIT" lights. Emergency battery-backed flood lighting will be in place in all hall-ways and common areas.

Signage - All extinguishers and pull-stations will be clearly marked. Every bedroom and common room will have a camp-plan posted with marked primary and secondary evacuation routes. Every bedroom and common room will also have Camp Fire Response Procedures and Camp Rules posted.

Fire Response Team - A Fire Response team will be designated by the Site Superintendent and will be led by the Site Superintendent. The Fire Response team will be responsible for evacuation and systematic room and bed checks, fire isolation and suppression and muster-site head counts.

Camp Fire Response Procedures - Camp Response Procedures will be posted throughout the camp facilities. A copy of Camp Response Procedures is attached.

Smoking and Open Flame - Smoking will only be allowed in the designated "smoking shelter". This is a small building equipped with high-powered exhaust fans separated from the main camp building but part of the camp complex. Smoking will be prohibited in all other camp areas. No candles or other sources of open flame will be permitted in the camp complex. Smoking will also be prohibited within 30 meters of any fuel storage, re-fueling operations and gasoline powered tool storage and operation.

Cutting and Welding/Hot Work Permits - Cutting and welding anywhere outside of the shop area or by anyone other than the site mechanic will require daily task-specific "hot-work" permits. "Fire watch" personnel with extinguishers may be designated as part of the hot-work permitting process. All use of gasoline powered tools and sparking tools within containment areas will require daily permitting.

Orientation and Training

The Cape Young PIN-B Fire Safety Plan and Camp Fire Response Procedures will be addressed and reinforced during the Worker Orientation Seminar, at on-site orientations and at weekly safety and daily safety/tailgate meetings. Fire drills will be practiced once the camp is operational.

CAMP FIRE RESPONSE PROCEDURES

1. **If you notice a fire in the camp or if a smoke alarm activates, pull the nearest Alarm Pull Station. Call out "FIRE! FIRE! FIRE!"**

2. **Ensure your own safety. Begin to evacuate personnel from camp, beginning in rooms closest to fire and moving away from fire. Notify personnel in other camp buildings and trailers (well-site offices, labs and "smoke-shack") using a constant blast on compressed gas signal horn mounted at building exits and/or verbal warnings.**

3. **If the fire is small and isolated, attempt to extinguish using fire extinguisher. If the fire is beyond control attempt to isolate and evacuate immediately to the Muster Station for head count.**

4. **Personnel not directly involved in room-checks or fire suppression should move directly to the Muster Station.**

5. **The Site Superintendent or his designate will take control of fire suppression activities.**

We have a minimal ability to pump water to fight fires in this camp. We must **PREVENT FIRES**.

1. Observe camp prohibitions on smoking and open flames.

2. Become familiar with emergency exit routes.

3. Keep exits from being obstructed.

4. Keep fire extinguishers and emergency pull stations from being obstructed.

5. Do not tamper with, remove or disengage smoke detectors, alarm systems or fire suppression equipment.

6. Actively participate in safety meetings, training and fire drills.

APPENDIX C

MEDICAL EMERGENCY RESPONSE
Clifton Point PIN-B Cleanup

The Site Medic will take charge of all medical emergency situations. The Site Superintendent will provide and arrange for assistance, help arrange potential medical evacuations ("med-evacs") and will assume control of the situation at the direction of the Medic.

In the case of a medical emergency the alarm should be raised to the Medic and the general site population by calling on the radio, "MEDIC! MEDIC! MEDIC!" [Three blasts of a compressed gas horn will also be considered an emergency signal.]

All other radio communication must immediately cease. All other site work must immediately cease and personnel must stand-by for instruction. The Medic will respond to the radio call, will gather relevant information, and will direct the appropriate response. The Site Superintendent and other supervisory personnel will stand-by to assist.

First Aiders at the site of the incident/injury will provide First Aid until the Medic arrives on scene.

Emergency medical equipment on-site will include burn kits, Medic First Aid supplies, back-board/stretcher, individual/vehicle First Aid kits, medical oxygen, eye-wash stations.

All vehicles must carry First Aid kits.

In the event that a medical evacuation is required contact Air Tindi: **867-669-8200**

Alternate medical evacuation can be arranged through the Kugluktuk Health Center at: 867-982-4531 and/or Adlair Aviation: 867-983-2569

Yellowknife Stanton Territorial Hospital – 867-669-4111

Other Emergency Contact numbers	
Aklak Air Ltd.	867-777-3555
Canadian Helicopters	867-777-2424
E. Gruben's Transport Ltd. (TUK)	867-977-7000
EGT after hours	867-678-0045

See complete list of Emergency Contact Numbers in front of Site Specific Health and Safety Plan. Emergency Contact Number list will also be posted in EGT Site Office, Other Site Offices, Medic's Room and beside each outside phone line.

In the event of a serious accident the Workers' Safety and Compensation Commission must be contacted immediately. WSCC Accident/Incident Reporting line: 867-669-4439 or 1-800-661-0792. All minor incidents must also be reported to WSCC within 48 hours.

It will be the responsibility of the Site Superintendent, with the assistance of the Medic, to follow up on all accident/incident reporting. All medical emergency situations will be investigated according to Accident Investigation Procedures in EGT HSE manual.

APPENDIX D

Clifton Point PIN-B Wildlife Response Plan

The Clifton Point PIN-B site is a traveling and hunting ground for Grizzly bears and possibly polar bears, depending on season and proximity of sea ice. We would expect that grizzly bears may be encountered at any point during the work season.

Caribou, arctic fox, squirrels, lemmings and an assortment of water fowl are known to frequent the area around Clifton Point PIN-B. The caribou are typically gone from the area in October. Fishing and hunting is poor in the area and is not typically frequented by local hunters.

E. Gruben's Transport Ltd. plan is based primarily on avoidance and deterrence for the protection of both our personnel and wildlife. Our practices will be designed to not attract wildlife to the worksite, to avoid contact when possible, to deter contact when necessary, to report potential problems to the relevant authorities, and only as a last resort to destroy a particularly troublesome bear when human life is in danger.

Site Cleanliness/Garbage

Site cleanliness will be emphasized regularly at daily safety meetings and at orientations. Camp garbage will be incinerated daily at minimum and garbage awaiting incineration will be kept in a covered metal container or will remain within the camp complex until it can be incinerated.

Wildlife Monitors

Full-time Inuit Wildlife Monitors from the community of Kugluktuk will be on-site at all times. At most times there will be two Wildlife Monitors on site so that shifts can be staggered. One Wildlife Monitor will be required to do a site inspection every morning prior to shifts so that he can report at the morning safety meeting. Wildlife Monitors will accompany any workers working away from immediate vicinity of camp/construction areas.

Wildlife monitors will be experienced hunters and marksman with personal knowledge of the Clifton Point PIN-B area, NU Wildlife Regulations, INAC and other applicable Rules and Regulations. They will each possess a high caliber rifle and shells. EGT will supply pistols with "banger" and "screamer" bear-deterrent shells and Wildlife Monitors will receive training in their use. EGT will also supply Wildlife Monitors with handheld radios and ATVs. Wildlife monitors will possess valid firearm registrations and certifications. It is understood that the applicable certification for firearms is now a "Possession and Acquisitions License". Monitors will be rotated every 2-3 weeks. Wildlife Monitors and the Site Superintendent or their designate will be the only personnel allowed to possess firearms on site.

Wildlife Monitors will keep a log of all significant wildlife sightings including bears, caribou, falcons and other significant wildlife and report any sightings to the Site Superintendent.

Perimeter Trip Wire Alarm Fence

A wildlife perimeter trip wire alarm system will be provided with the camp facility. This system is available to be setup during camp operations if it is felt that it is required. All site personnel will be trained in the use and risks of this system should it be activated.

Hunting

No hunting will be allowed by any personnel employed at the work-site. No personnel other than the Wildlife Monitors and the Site Superintendent or their designate will be allowed to possess firearms at the site.

Training

The Worker Orientation Seminar will include training on what to do if a bear is sighted, the role of the Wildlife Monitors, the hunting and firearms restrictions on site, wildlife harassment, the importance of site cleanliness and correct garbage handling, and the operation of the perimeter trip wire alarm. Some of the consequences of a shot bear will also be explained including that a bear shot is a bear that comes off quota for local or sports hunters and that no-one gets to keep the shot bear. The Worker Orientation Seminar will include the video, "Polar Bears: A Guide to Safety".

Training for Wildlife Monitors will include safe ATV use, safe storage and handling of firearms on ATV's and in the camp complex, bear response pre-planning, use of bear deterrent "screamers" and "bangers" and detailed field responsibilities when conducting general site inspections and when accompanying field workers.

Reporting

Wildlife Monitors will report all bear sightings to the Site Superintendent who will assist the Wildlife Monitors in completing the Bear Sighting Reports kept on file in the Site Superintendent's office. These files will be maintained so that a history of sightings/incidents can be developed in case a bear needs to be removed or, in the worst case, destroyed.

APPENDIX E

Site Specific Spill Contingency Plan
Clifton Point PIN-B Cleanup

Introduction

Clifton Point PIN-B is located in the western Canadian Arctic, on the mainland shore of Amundsen Gulf between Paulatuk, NT and Kugluktuk, NU. It is an abandoned North American Distant Early Warning (DEW) Line site. It is located within Nunavut Territory and subject to the terms of the Nunavut Comprehensive Land Claim Agreement (CLCA).

E. Gruben's Transport Ltd. (EGT) of Tuktoyaktuk is the prime contractor responsible for the cleanup of the Clifton Point PIN-B site, contracted to Public Works and Government Services Canada.

Work on the site will include contaminated soil treatment and containerization, facility demolition and containerization, debris cleanup and storage for off-site transport of hazardous and non-hazardous materials.

Mobilization to the site will take place via Northern Transportation Company Limited (NTCL) barge in late-July of 2009. Contract work will be conducted through the summer of 2009 and 2010. Demobilization from the site will take place in July or August of 2011.

Spill Prevention

EGT emphasizes the prevention of spills through training, refueling procedures and the provision of adequate and appropriate equipment.

Contractor's fuel storage tanks designated for the site are steel-bermed tanks with berm capacity of 110% of tank volume. None of the existing on site tanks will be used for EGT fuel storage. Fuel will be delivered to the site by NTCL barges and will be stored in NTCL barge tanks during transport. A suitable Fuel Truck owned and operated by EGT using an experienced TDG certified fuel handler will transfer fuel from the barge tanks to the EGT site storage tanks once the site storage tanks have been placed on site. Site storage tanks will be filled to 85% capacity to allow for expansion of fuel as it warms.

Contractor's fuel storage tanks will be located adjacent to the camp generator building. Fuel storage tanks will be located greater than 30 meters from the closest body of water.

Gasoline will be stored in a 500 gallon integrally-bermed fuel tank. All gasoline fueling will take place over drip trays, including use of day-use jerry-cans for gasoline powered tools (cut-off saws and chain-saws).

There will be no bulk storage of oils, lubes, antifreeze in containers larger than 45 gallon drums. All will be supplied to site in 45 gallon drums and 5 gallon (22.5 l) pails or smaller containers. All drums will be new.

Propane will be used onsite for the camp facilities and will be stored in 1000 lb propane tanks and 350 lb "pig" tanks. Propane for shop use will be supplied in 100 lb and 20 lb cylinders.

Tanks, drums and cylinders belonging to EGT will be clearly marked with spray paint and stencils to distinguish them from tanks, drums and cylinders belonging to others on site.

MSDS will be available for all consumable products on site and all EGT personnel will have received WHMIS training. All handling and transport of dangerous goods will be supervised by TDG certified personnel.

Vehicles will be parked over drip trays.

The Equipment Foreman will inspect all fuel storage tanks daily. Wildlife monitors will also be required to conduct daily checks of fuel storage facilities as part of their normal rounds of inspection.

See attached fueling and fuel transfer procedures.

Spill Response

All pick-ups and heavy equipment will carry small "equipment" spill kits. The foreman's truck, the generator shack, fuel storage tanks and refueling areas will have more substantial "drum" spill kits. All vehicles will carry a small quantity of oil absorbent rags. All mobile equipment will have company frequency "truck-to-truck" radios, as will the EGT site office and the Medic.

All spills will be reported and recorded for internal records. Minor spills will be reported to the Equipment Foreman by radio. The Equipment Foreman will assess the situation, including the potential risks to personnel, will decide on the most appropriate immediate response and will report to the Site Superintendent. This may simply involve applying sorbent pads or shoveling of granular materials into plastic bags for transfer to the PHC soils treatment area for on-site treatment or possibly boxing soils in 2.3 cu.m. sea-cans with hydro-carbon resistant liner.

A larger, more catastrophic spill would result in Emergency Response Procedures. The same emergency radio procedures will apply as for a medical emergency. The person who discovers the spill will use the radio call, "MEDIC! MEDIC! MEDIC!". This will signal all site personnel to cease any other radio use, cease other work and stand by for further direction. The Medic will take charge but in this case pass control of the situation to the Equipment Foreman and/or Site Superintendent as soon as the emergency situation has been identified as a fuel spill.

The response to a larger spill may involve allocating heavy equipment and/or allocating personnel to the task. Appropriate PPE for the task will be checked and a Job Safety Analysis will be conducted for cleanup effort.

Containment and Recovery

The safety of all personnel will be the first consideration in any containment and recovery operations.

Containment may be performed by hand or with the use of heavy equipment. Sand or soil berms can be constructed and booms can be deployed. Leaks can be plugged using patches, plugs and plugging compounds. Product can be pumped out or suctioned out of leaking containers

Recovery of spilled/leaked product could involve pumping, direct suction into vacuum tank on truck or pumping into suck-on tank mounted on the bed truck, shoveling of contaminated soil by hand or with heavy equipment, transfer to portable tanks or drums or to fixed tanks.

As well as a supply of heavy equipment (3 excavators, 2 loaders, 2 cats, 2 rock trucks, 1 body job dump truck, bed truck and pickup trucks) and a ready and plentiful supply of labor, we have at the site considerable other materials and equipment for the purposes of our contract work which could be used for spill containment and recovery. These include:

Drum Spill Kits: Polyethylene overpack drum containing 2 ea. 10' socks, 5 ea 4' socks, 1 lb. pre-mixed plugging compound, 50 pads, 5 pillows, 1 drain cover, 1 caution tape, 2 prs nitrile gloves, 2 ea safety goggles, 2 coveralls, 10 disposal bags.

Equipment Spill Kits: Nylon carry bag containing 1 ea 10' sock, 30 pads, 1 pillow, 1 lb pre-mixed plugging compound, 1 lb dry plugging compound, 1 pr nitrile gloves.

50 bundles (100 ea) sorbent pads,
10 polyethylene overpack drums
50 bags floor-dry sorbent
50 2.3 cu.m. wooden 2.3 sea-cans surplus to identified contract needs
50 hydrocarbon resistant sea-can liners surplus to identified contract needs
100 6 mil poly sea-can liners surplus to identified contract needs
steel garbage sloops
fuel transfer pumps
steel barrel wash tray
empty steel drums
sorbent booms, shovels, 6 mil poly bags, respirators

Training

Site personnel will be trained on refueling procedures and on spill response. Spill response training will include site layout and identification of storage areas, how to initiate the spill response system, safety concerns related to spills including fire and explosion, personal exposure risks to potentially hazardous materials and the PPE which may be required to handle spills, environmental risks to both ground and waterways, approaches and options to containment and cleanup utilizing the various materials and equipment available onsite, the deployment of booms and other absorbents, the use of spill kits and their contents including the use of plugs and plugging compounds, reporting requirements

Reporting

All fuel spills will be reported and recorded internally.

Spills greater than 100 liters on land and 20 liters on water will be reported to the **NWT/NU Spill Line at 867-920-8130** (NWT/NU Spill Line Fax 867-873-6924). NWT/NU Spill Report Forms will be kept in the Site Superintendent's office.

The Site Superintendent will be responsible for all reporting and incident investigation requirements.

Other useful contact numbers include:

GNU, Environmental Protection	867-975-6000
	(fax)867-975-6099
GNU, Water Board	867-360-6338
	(fax)867-360-6369
GNWT, Environmental Protection:	867-873-7654
	(fax) 867-873-0221
INAC, Yellowknife:	867-669-2500
	(fax) 867-669-2709
Environment Canada:	867-669-4700
	(fax) 867-873-8185

Grey Water/Black Water

The camp facilities will utilize Pacto waterless toilets. Black waste is captured in double bags, an inner polythene bag and outer polythene and foil bag, and is incinerated. Therefore there will be a grey-water system but no sewage storage or piping.

Grey water

Grey water will be passed through a macerator pump, settling tank and will be stored in shallow, bermed, lined, open-air sumps. Grey water will be sampled in the lined sumps prior to discharge to ensure it meets Water License discharge criteria. We will construct a number of holding sumps so that we can separate the in-use grey water storage sump from grey water that is settling and waiting for sample results. A description and schematic of the grey water system has been previously submitted.

Black water

"Black water" from Pacto toilets will also be incinerated in the same new two-chamber Westland Environmental CY-2050-FA "D" diesel-fired incinerator as is used for camp-generated garbage. [Incinerator specifications are included as Appendix I]. This incinerator will be supplied with a larger than normal 770,000 BTU primary incinerator to achieve temperatures of 1000 degrees C. The secondary chamber should also achieve temperatures in the 850 to 1000 degree C range to satisfy the requirements of Canada Wide Emissions Standards.

Pacto toilets are commonly used in Alaska in remote camp locations and are also used in the Sahtu region of the Northwest Territories in the oil and gas exploration industry. Pacto toilet waste is incinerated in Alaska using the CY-2050-FA "D" incinerator. We have also had success in incinerating Pacto waste in a slightly larger camp during Atkinson Point cleanup operations in 2007, with no spills or incidents.

Pacto Toilet Waste Handling Procedures

Handling of the waste contained in the double-bagged Pacto system requires certain defined procedures. However, handled correctly there is almost no risk of spill. Toilets also remain cleaner for multiple users than a standard water-toilet because the toilet "bowl" is replaced with each use as the "sausage" tubes drop down. Risks of contamination of other parts of the bathroom facilities from the toilets are also lessened because the general camp cleaning staff do not have to handle or clean toilets at all.

The Pacto toilet maintainer/cleaner will also be the incinerator operator. In this way only one member of staff handles all camp and black-water waste.

The Pacto handling for containment of waste is as follows:

7. The inner Pacto polythene foil "sausage" bag drops with each use into the reinforced podium bag contained in the podium tray. The "sausage" bags are clearly marked with a warning that the end of the roll is approaching with more than ten remaining uses.
8. The maintainer lifts the pedestal from the podium and triple-ties the inner bag. The maintainer then ties and tapes the outer reinforced bag.
9. The tied-off double-bagged waste is then transferred from the podium tray to a Rubber-Maid tray placed adjacent to the podium.
10. The Rubber-Maid tray is then carried out of the camp and placed in a wheel-barrow for transport to the incinerator. [Note: at this point the Pacto waste has 4 layers of containment.]
11. The Pacto bag is transferred from the tray to the incinerator, one bag at a time and mixed with the most easily combustible of the camp-generated garbage.
12. The secondary reinforced Pacto bags are designed to contain over 40 individual toilet uses. We replace the main-camp and high-use bags daily so that, on average, less than 20 uses have occurred. In this way the weight that must be carried in each bag is greatly lessened. As there is no flush water involved in these toilets the weight is relatively light.

Pacto PPE

The handling of Pacto waste bags and toilets is a cleaner operation than standard water toilet cleaning in that there is neither a bowl to clean nor toilet bowl brush to use. PPE required is therefore no greater than would be standard for water toilet cleaning in a camp or hotel. Rubber gloves should be used with optional latex inner gloves if it is found by the maintainer to be difficult to knot bags with rubber gloves on. Disposable "Tyvek" coveralls will be used inside the camp along with safety glasses or protective shields.

PPE required for outdoor work and operation of the incinerator will include standard PPE of fire-retardant coveralls, hard-hat, steel-toed work boots as well as a face-shield.

Pacto maintainers will be required to have Hepatitis A and tetanus inoculations prior to working with Pacto toilets. These are available with prior arrangement at community Health Stations.

Potential Pacto Spills

The potential for Pacto spills is minimal. At most times the waste is triple-contained and there is at no-time exposed waste. Volumes being handled at any one time are minimal.

A spill inside the camp facility would require an immediate limiting of access to the area of the spill and a clean-up involving a wet-dry shop vacuum. Thorough decontamination of floors would have to be carried out using detergents and mops and rags as required. If a spill were to occur in one of the few carpeted areas of the camp a wet-dry shop vac would be initially used and the carpet section would then be cut out, removed and incinerated. Rubber gloves and rubber boots and disposable coveralls would also be required. Contaminated gloves, mops and rags would be incinerated.

A spill outside of the camp would involve shoveling of contaminated soil into the RubberMaid tray or the wheelbarrow. The waste could then be transferred to new double reinforced Pacto bags and incinerated along with the dirt.

Training

All Pacto maintenance personnel will be trained in the proper operation and use of the toilets, personal hygiene practices, the use of anti-bacterial soaps, protection of cuts and abrasions and other possible means of exposure including eating and smoking.

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FUELING UP EQUIPMENT AND VEHICLES

When approaching fueling station you must first observe the area for any unusual appearances.

- **Fuel on the ground**
- **Hoses and nozzle on the ground**
- **Nozzle torn off hose**
- **Hose torn off pump or tank**

If you notice anything like that, immediately report it to your supervisor, before fueling up.

- **Before you begin fueling procedures shut off engine.**
- **Put drip pan into place.**
- **Clean around fill cap (dust, mud, snow, ice, etc.) .**
- **Open filler cap carefully, a vacuum might be present.**
- **If filler cap can't be reached from the ground and you must climb onto the equipment, use extreme caution, especially during adverse conditions (wet, mud, snow and ice. If no steps or platforms are available use an appropriate ladder.**
- **Avoid going up steps or ladder with hose**
- **Turn pump on if so equipped and / or open valve at tank.**
- **Begin fueling, don't leave nozzle unattended. NEVER rely on automatic shut off.**
- **Don't overfill tank leave room for expansion.**
- **When finished reverse procedure.**
- **Use three point contact when ascending or descending.**
- **In case of a spill protect yourself, fuels can cause severe eye and skin irritations, contain the spill if possible, report the spill.**

READ LABELS OR MSDS, in particular FIRST AID MEASURES

- **Make sure pump and / or valves are turned off and hose put back in proper place.**
- **Don't forget to put cap back on**

This Job procedure is to be utilized as a guide only. Worksite practices and/or worksite conditions may necessitate change to the content, or order, of task steps in order to complete the job safely & efficiently.
Common sense should prevail

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FLUID TRANSFER GUIDELINES

Many spills occur during routine fueling, pumping, and other fluid transfer operations. Most of these spills can be avoided by paying attention and taking simple precautions. EGT has developed field-wide fluid transfer guidelines, which are summarized below.

- **Do not operate equipment unless trained by a competent person.**
- **Check all vehicles and equipment. If a leak is apparent, or there are other obvious problems with the equipment, stop the job and have repairs done. Surface liners or drip pans may be used to contain leaks for a short time during critical operations; however, liners are not an acceptable substitute for maintenance.**
- **Park vehicles and equipment away from water bodies, tundra, and wildlife habitat. Do not park on the edges of the pad.**
- **Position equipment so that valves, piping, tanks, etc., are protected from damage by other vehicles or equipment.**
- **Verify that adequate surface liners and absorbents are on hand.**
- **Make sure all equipment is properly grounded.**
- **Inspect hoses, connections, valves, etc., before starting any fluid transfers. Be sure that valves are in proper position and each connection is tightened properly.**
- **Before starting, check all tank and container levels, valves, and vents to prevent overfilling or accidental releases.**
- **Surface liners or drip pans are required under all potential spill points.**
- **Maintain a constant line-of sight with critical components throughout fluid transfer procedure. Be prepared to stop the transfer immediately if you notice any leaks. Do not attempt to fix a leak while fluid is being transferred. Never leave fluid transfer operations unattended. After transfer is complete, continue to take precautions while breaking connections. When finished, check the area for spills. Report all spills immediately to your supervisor and the 24-hour Spill Report Line (867) 920-8130.**

This Job procedure is to be utilized as a guide only. Worksite practices and/or worksite conditions may necessitate change to the content, or order, of task steps in order to complete the job safely & efficiently.
Common sense should prevail.