TETRA TECH

APPENDIX H

EMERGENCY RESPONSE PLAN

EMERGENCY RESPONSE MANUAL

TANTALUM MINING CORPORATION OF CANADA LIMITED
A CABOT CORPORATION COMPANY

DISTRIBUTION:

MAIN OFFICE
MINE ENGINEERING OFFICE
CESIUM PLANT CONTROL ROOM
MAINTENANCE TRAILERS
MILL/ ASSAY LAB OFFICES
MINE SHIFT OFFICE
REFUGE STATION 1ST LEVEL
EMERGENCY SERVICES BUILDING
SECURITY OFFICE
TANCO AT BRFD
BIRD RIVER FIRE DEPARTMENT
RM ALEXANDER EMO

MARCH 2011

FIRE PULL STATIONS

M1 - NE Corner of Mill
M2 - SE Grinding Plant
M3 - NE Grinding Plant
M4 - E Mill Office
M5 - Mill Office entrance
M6 - Mill Office inside
M7 – Mine Shaft

S1 – Main Office Server Room
S2 - Elect. Shop – outside entrance
S3 - North Machine Shop man door
S4 - North Mech. Quonset
S5 - East corner of Storage Garage

CP1 - Boiler House inside man door
CP2 - Chem. Plant outside Boiler House
CP3 - Chem. Plant Mech. Shop man door
CP4 - Chem. Plant bulk storage man door
CP5 - Chem. Plant acid storage man door
CP6 - Chem. Plant man door – main door
CP7 - Chem. Plant ore off-load man door
CP8 - Chem. Plant outside exit – control room
CP9 - Chem. Plant outside control room
CP10 - Chem. Plant inside lunch room
CP11 - Chem. Plant outside lunch room
CP12 - Chem. Plant inside main MCC

Polishing Pond

PILE
PILE
PILE
PILE

Hydro Pole

Open Storage
Feldspar Storage
Open Storage
Overhead power line
Exploration Trailer
Mine Rescue Training Room
Main Office Building
First Aid Kit
Assembly Point
Assembly Point
Security Office
First Aid Kit
Emergency Services Bldg.
Chemical Plant Offices
GRAVEL ROAD
ESCAPE ROUTE
Overhead fibre optic line
Used Oil Storage
Ramp Portal
Storage
Covered Storage
Warehouse Storage Yard
Loading Dock
Maintenance Trailers
Mine Portal
Quonset
Propane Fill Station
NITROGEN
GAS
GAS
Propane UN10
Vaporizer
Emergency shutoff under tank
Dam
North Pump House
Compliance Point
003
UN1202
UN1203
Fuel Tanks
Mechanic's Quonset
Garage
ESCAPE ROUTE
Acid Unloading (approximate location)
UN1830
Sulphuric Acid
Ammonium Sulphate
Formic Acid
UN1779
Caustic Soda
UN2187
Lime
015
022
020
UN1760
Chemical Plant Dry Storage (approximate location)
019
018
014
021
016
Cesium Plant
(Inside man door main floor)
Inside Control Room
Inside Lunch Room
First Aid Kit
Inside MCC
023
(Outside Control Room)
(Outside Lunch Room)
013
012
011
017
Boiler (approximate location)
010
006
Maintenance Shop
Diesel Shop
Steam Bay
Warehouse
Welding Shop
005
Compressor
Compressor Room
Ore Transfer Line
Transformer (approximate location)
Storage
Assembly Point
009
Mine Dry
007
Hoist Room (manual switch)
First Aid Room
008
Shifter's Office
Sample Storage
Core logging Sample prep
002
Mill Offices
024
First Aid Kit
Shaft
Carpenter's Shop
Core Storage
Core Shack
Core Storage
Core Storage
Spodumene Storage
Loading Dock
Tantalum and Spodumene Mill
001
Loading Dock
Concentrate Storage
Acid Tank (DECOMMISSIONED)
Pollucite Storage
Grinding Plant (Cs)
Transformer Station
Main Power Line Disconnect
BERM
BERM
ESCAPE ROUTE
Ventilation Raise (Jack Nutt Shaft)
Main Power Supply Line
GRAVEL ROAD
Dock
West Pump House (Fire Pumps)
004
ESCAPE ROUTE
Vaporizer
Propane UN1075
Power to East Ventilation Raise
To East Ventilation Raise
Cell Pipeline Roadway

Bernic Lake

TANCO
BERNIC LAKE MANITOBA

TITLE: SITE EMERGENCY RESPONCE
Map

DRAW.: PGREEN	SCALE: 1"=50'
DATE: 2011/01/28	NO: 1
FILE: F:\TANCO Surface Map\Mine Site Location Map (Emergency Respor	

EMERGENCY RESPONSE PLAN - EVENTS INDEX

Click on the line to navigate to that entry

EXTERNAL THREATS	
Bomb Threat Checklist	Suspicious Powders
Site Isolation	Tornado
Transportation Emergency	

EVENT

Propane Leak

SAFETY ISSUES

- Propane gas is highly flammable and explosive (Explosive range 2.4% – 9.5%)
- Propane liquid can cause severe freeze burn if contacted by skin.
- Propane is an asphyxiant - it will cause oxygen depletion

PPE REQUIREMENTS

- SCBA

EQUIPMENT REQUIREMENTS

ENVIRONMENTAL ISSUES

REMEDIAL MEASURES

ACTION	RESPONSIBILITY
• See attached response sheet • Stop the leak at the source, if this can be done without risk • If unable to stop the leak, request Security to call 9-1-1 • Evacuate spill or leak area immediately, upwind and out of the vapour for at least 100 m in all directions, 800 m if the spill or leak is large • Do not touch or walk through spilled liquids • Eliminate all possible sources of ignition, including those that do not normally pose a risk. (Propane may travel long distances along the ground and flashback to the source, it will accumulate in low lying areas)	

INTERNAL REPORTING REQUIREMENTS

- Any uncontrolled release of an explosive gas is considered a process safety event and is reportable to Corporate.
  Link to PSE Definition

EXTERNAL REPORTING REQUIREMENTS

- Release of >100L propane is reportable to Manitoba Conservation.
- A sustained release of > 10 minutes during the unloading process is reportable to Manitoba Conservation (TDG)

Criteria	Response
LEVEL 0 • Small propane gas or liquid leak can be isolated by closing block valves • Injury potential is very low • Fire potential is very low	• Note the wind direction and force • Close the storage tank isolation valves located under the tanks, if necessary and if safe to do so • Close other system valves as necessary to reduce or stop the gas release • Ensure that all sources of ignition are eliminated • Isolate the area immediately surrounding the leak for at least 100 meters, until gas is dispersed. Downwind gas concentration should be <10% LEL • Ventilate buildings as necessary • Call Site Supervisor
LEVEL 1 • Significant propane gas or liquid leak can be isolated by closing block valves • Injury potential is low, but possible • Fire potential is low, but possible	• Sound the emergency evacuation alarm • Note the wind direction and force • Close the storage tank isolation valves located under the tanks, if safe to do so • Close other system valves as necessary to reduce or stop the gas release • Isolate the area immediately surrounding the leak for at least 100 meters • Ensure that all sources of ignition are eliminated • Ventilate buildings as necessary • Call Superior Propane (204-488-4499 or 877-873-7467)
LEVEL 2 • Significant propane gas or liquid leak can be isolated by closing block valves • Injury potential is significant • There is a fire or the fire potential is high	• Sound emergency evacuation alarm • Note the wind direction and force • Close the storage tank isolation valves located under the tanks, if safe to do so • Close other system valves as necessary to reduce gas release • Isolate the area immediately surrounding the leak for at least 100 meters • Ensure that all sources of ignition are eliminated for at least 100 meters • Evacuate downwind at least 800 meters • Set up fire hose systems to control small fires if safe to do so (do not use Wajax pumps as they are a potential source of ignition) • Ventilate buildings as necessary • Call Bird River Fire Department (9-1-1) • Call Superior Propane (877-873-7467 or 204-488-4499). Request activation of the LPGERC response team if required

LEVEL 3
• Propane gas or liquid leak cannot be isolated by closing block valves
• There is damage to the storage tank
• Injury potential is significant
• There is a fire or the fire potential is high
	• Sound emergency evacuation alarm
	• Note the wind direction and force
	• (Pull the emergency cords to close the tank isolation valves)
	• Close other system valves as necessary to reduce gas release if safe to do so
	• Isolate the area immediately surrounding the tanks
	• Evacuate the area as follows:
	  • 800 meters downwind for a large spill
	  • 1600 meters in all directions for a tank involved in a fire
	• Ensure that all sources of ignition are eliminated
	• Set up fire hose systems to control small fires if safe to do so (do not use Wajax pumps as they are a potential source of ignition)
	• Ventilate buildings as necessary
	• Call Bird River Fire Department (9-1-1)
	• Call Superior Propane (877-873-7467 or 204-488-4499). Request activation of the LPGERC response team.

EVENT

Acetic Acid Spill

SAFETY ISSUES

- 80% Acetic Acid is a very strong acid. It gives off strong pungent acidic vapours
- It will cause severe burns on the skin and eyes. Avoid all contact
- Neutralizing an acid with soda ash gives off large quantities of carbon dioxide – ensure adequate ventilation or use SCBA or SABA

PPE REQUIREMENTS

- Raingear
- Rubber boots
- Respirator (SCBA preferred)
- Ansell Chemi-pro Gloves
- Goggles
- Faceshield
- Hard hat

EQUIPMENT REQUIREMENTS

- Shovel
- Absorball
- Soda Ash

ENVIRONMENTAL ISSUES

REMEDIAL MEASURES

ACTION	RESPONSIBILITY
• Barricade off area to ensure no inadvertent access is allowed to the area. • If possible, stop the leak at the source. • Contain the spilled liquid if possible to prevent the spill from spreading. Dike with sand or Absorball • Neutralize the spilled liquid using a surplus of soda ash. • Scoop the neutralized residue and any contaminated gravel into an open topped steel drum. Be sure to collect all the contaminated material • Put the lid on the drum securely and place a label on the drum indicating its contents, and the date filled • Wash the area down to dilute any residues.	

INTERNAL REPORTING REQUIREMENTS

EXTERNAL REPORTING REQUIREMENTS

- Spills to ground of > 5 L are reportable to Manitoba Conservation
- Spills from the shipping container of >5 L are reportable to Manitoba Conservation, even if the spill is contained, in the plant area for example (TDG Regs)

EVENT

Barium Carbonate Solid Spill (Major)

SAFETY ISSUES

- Barium Carbonate dust causes respiratory tract irritation.

PPE REQUIREMENTS

- Hard hat
- Tyvek Coveralls
- Rubber boots
- Gauntlet style rubber gloves
- Safety glasses
- Respirator with P100 dust cartridges

EQUIPMENT REQUIREMENTS

- Shovel
- Broom
- New, open top bulk bag

ENVIRONMENTAL ISSUES

-

REMEDIAL MEASURES

ACTION	RESPONSIBILITY
• Shovel or sweep all spilled solids into a new, open top bulk bag, taking care to minimize any additional debris. • Ensure the new bag is marked with the relevant product information. • Wash down the residual solids in the affected area into the central sump for transfer to T-9. • Add the contents of the bag(s) to the barium carbonate hopper next time barium is mixed. • Barium carbonate contaminated with gravel and other debris may be disposed of in the containment cell.	

INTERNAL REPORTING REQUIREMENTS

EXTERNAL REPORTING REQUIREMENTS

- Spills to ground of > 5 kg are reportable to Manitoba Conservation.

EVENT

Carbon Dioxide Release From Bulk Tank

SAFETY ISSUES

- Carbon Dioxide is an asphyxiant which could lead to an oxygen deprived environment.
- Metal parts may become extremely cold at the point of release due to the expanding gas
- Noise from escaping gas will be above the occupational limit

PPE REQUIREMENTS

- SCBA
- Leather gloves
- Hearing protection

EQUIPMENT REQUIREMENTS

- Barricade tape
- Gas detector

ENVIRONMENTAL ISSUES

- No environmental issues related to a CO2 spill.

REMEDIAL MEASURES

ACTION	RESPONSIBILITY
• Area immediately around and down wind of the leak are to be barricaded off (watch the wind sock) • If leak is severe, area around and down wind of leak are to be evacuated. • If possible, stop the leak at the source by closing discharge valve. Test air quality prior to approaching the valve area to ensure atmosphere has adequate oxygen content. If inadequate air quality, an SCBA must be donned prior to approaching tank. • Once leak is stopped, allow ½ hour for ventilation then test area around and down wind of the leak. When oxygen levels return to normal, barricades can be removed. • If unable to stop leak, contact Praxair to arrange for their service technician to control the leak Praxair Emergency Number: 800-363-0042	

INTERNAL REPORTING REQUIREMENTS

- A spill of >5kg is a process safety event and must be reported to Corporate.

EXTERNAL REPORTING REQUIREMENTS

- A release of >100L or a sustained release of >10 minutes is reportable to Manitoba Conservation, and others.

EVENT

Cesium Hydroxide Bulk Spill (Internal to plant)

SAFETY ISSUES

- Cesium Hydroxide is extremely corrosive and can cause severe skin burns.

PPE REQUIREMENTS

- Hard-hat
- Rain gear
- Rubber boots
- Gauntlet style rubber gloves
- Safety goggles
- Face Shield

EQUIPMENT REQUIREMENTS

- Double diaphragm pump
- Suction/discharge Fabchem hose
- Empty totes
- Water hose
- Red barricade tape.

ENVIRONMENTAL ISSUES

REMEDIAL MEASURES

ACTION	RESPONSIBILITY
• Barricade off area to ensure no inadvertent access is allowed to the area. • If possible, stop the leak at the source. • If leak is due to a breached tank and you are able to transfer the contents of the leaking tank safely to another storage tank, proceed immediately with this action. • If unable to transfer to another tank, set up the air pump to draw the spilled cesium hydroxide from the containment sump. • Pump spilled product into tote(s). • When sump is empty, wash down spillage area with water, pumping the washings to T9 using the area sump pump. • Properly identify the totes containing recovered cesium hydroxide for reprocessing at a later time.	

INTERNAL REPORTING REQUIREMENTS

- Depending on circumstances, a spill of >5L may be a process safety event and must be reported to Corporate.
  PSE Definition Link

EXTERNAL REPORTING REQUIREMENTS

- Spills to ground and spills from shipping containers of > 5 kg are reportable to Manitoba Conservation.
- Contained spills from process are not reportable to Manitoba Conservation.

EVENT

Gasoline/Diesel Spill (No Fire)

SAFETY ISSUES

- Vapour explosion may occur on ignition; vapours form an explosive mixture with air
- Vapors may cause dizziness or suffocation.
- May be irritating to the eyes, nose, throat, and lungs.

PPE REQUIREMENTS

- SCBA or SABA
-
-

EQUIPMENT REQUIREMENTS

- Shovels
- Absorball, sand or dry earth
- Empty open topped drums

ENVIRONMENTAL ISSUES

REMEDIAL MEASURES

ACTION	RESPONSIBILITY
• As an immediate precautionary measure, isolate spill or leak area for at least 50 meters in all directions. • ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). • All equipment used when handling the product must be grounded. • Do not touch or walk through spilled material. • Stop leak if you can do it without risk. • Prevent entry into waterways, sewers, basements or confined areas. • A vapor suppressing foam may be used to reduce vapors. • Absorb or cover with dry earth, sand or other non-combustible material • Transfer to containers; Use clean non-sparking tools to collect absorbed material.	

INTERNAL REPORTING REQUIREMENTS

EXTERNAL REPORTING REQUIREMENTS

- A spill >100 litres from the storage tanks are reportable to is reportable to Manitoba Conservation, and others.

Emergency Event Response Plan

EVENT

Formic Acid Spill at Truck Loading

SAFETY ISSUES

- 85% formic acid is extremely corrosive and will cause serious burns.
- Inhalation of mist or vapor will cause burns to the respiratory tract.

PPE REQUIREMENTS

- Hard hat
- Raingear
- Rubber boots
- Ansell Chemi-pro Gloves
- SCBA

EQUIPMENT REQUIREMENTS

- Wash down hose (Warm condensate)

ENVIRONMENTAL ISSUES

- Formic acid releases pungent acid vapours to the air

REMEDIAL MEASURES

ACTION	RESPONSIBILITY
• Depending upon the severity of the release, consider site evacuation, including U/G • If possible, stop the leak at source (release tank air pressure, close valves) • Wash down residual spillage with warm water, including all truck parts. • Minor spills to be pumped to T-9. (Neutralize as required with lime slurry or soda ash.) • Major spills to be pumped into clean empty totes (1 full truckload = 17 totes) • Correct cause of leak before continuing to off load.	

INTERNAL REPORTING REQUIREMENTS

- A spill of > 5 liters may be process safety event and must be reported to corporate. PSE Definition Link

EXTERNAL REPORTING REQUIREMENTS

- Spills to ground or during truck offloading of > 5 kg are reportable to Manitoba Conservation. Contained spills are not reportable.

Emergency Event Response Plan

Major Formic Acid Spill From Storage

EVENT

Major Formic Acid Spill From Storage

SAFETY ISSUES

- 85% formic acid is extremely corrosive and will cause serious burns.
- Inhalation of mist or vapor will cause burns to the respiratory tract.
- Neutralisation of acid with soda ash releases carbon dioxide

PPE REQUIREMENTS

- Hard hat
- Raingear
- Rubber boots
- Ansell Chemi-pro Gloves
- SCBA or airline respirator

EQUIPMENT REQUIREMENTS

- Double diaphragm pump
- Suction/discharge Fabchem hose
- Wash down hose (Warm condensate)
- Bags soda ash

ENVIRONMENTAL ISSUES

- Formic acid releases pungent acid vapours to the air

REMEDIAL MEASURES

ACTION	RESPONSIBILITY
• Depending upon the severity of the release, consider site evacuation, including U/G • If possible, stop the leak at source. • Secure the area around the release, pay particular attention to the area downwind • Set up an air pump to draw spilled acid from the containment sump. • Set up the pump discharge line to an empty tote. • Pump accumulated acid to the tote. • Spread soda ash over the remaining residual acid. Mix. • Set up air pump discharge line to discharge into the plant sump. • Wash down residual spill with warm water. • Pump diluted washdown liquor to plant sump. • Transfer accumulated liquor in plant sump to T-9 for transfer to containment cell. (Neutralize further with soda ash as required)	

INTERNAL REPORTING REQUIREMENTS

- A spill of > 5 liters may be process safety event and must be reported to corporate. PSE Definition Link

EXTERNAL REPORTING REQUIREMENTS

- Spills to ground of > 5 kg are reportable to Manitoba Conservation. Contained spills are not reportable.

Major Formic Acid Spill From Storage

EVENT

Formic Acid Storage Tank Failure

SAFETY ISSUES

- 85% formic acid is extremely corrosive and will cause serious burns.
- Inhalation of mist or vapor will cause burns to the respiratory tract.

PPE REQUIREMENTS

- Hard hat
- Raingear
- Rubber boots
- Ansell Chemi-pro Gloves
- SCBA or airline respirator

EQUIPMENT REQUIREMENTS

- Double diaphragm pump
- Suction/discharge Fabchem hose
- Empty tank trucks (Trimac Trucking)
- Water hose

ENVIRONMENTAL ISSUES

- Spills to ground of > 5 kg are reportable to Manitoba Conservation.

REMEDIAL MEASURES

ACTION	RESPONSIBILITY
• Evacuate any personnel located down wind of spill. • Contact Trimac Trucking at the depot in Winnipeg and request immediate delivery of 2 stainless steel tank trucks for formic acid service. • Set up the 2" diaphragm pump, with the suction in the containment collection sump located on the northwest side of the tank, to discharge into the tank truck. • Pump the accumulated 85% acid to the tank truck. • Wash down the residual spillage with warm water. • Set up the 2" air diaphragm pump to discharge into the central plant sump. • Pump the accumulated diluted acid to the central plant sump while continuing to wash down the spill area with warm water. • Pump the accumulated acid in the plant sump to T-9, neutralizing as necessary with lime slurry.	

INTERNAL REPORTING REQUIREMENTS

- A spill of > 5 L is a process safety event, and must be reported to Corporate.

EXTERNAL REPORTING REQUIREMENTS

- Spills to ground of > 5 kg (3 L) are reportable to Manitoba Conservation. Contained spills are not reportable.

EVENT

Hydrogen Peroxide Spill (35% & 50%)

SAFETY ISSUES

- Hydrogen Peroxide decomposes into water and oxygen, sometimes rapidly, leading to oxygen enrichment of the air. Open flames and smoking are prohibited.
- Contamination of hydrogen peroxide, particularly with calcium or iron, increases the decomposition rate significantly.
- Spilled hydrogen peroxide on clothing and other combustible materials may ignite spontaneously in time, often hours later. Remove any residual peroxide with lots of water.
- Never enclose hydrogen peroxide that is potentially contaminated in a sealed container. Pressure build up will cause the container to rupture. Never return peroxide to its original container.

PPE REQUIREMENTS

- Raingear
- Rubber boots
- Ansell Chemi-pro Gloves
- Goggles
- Faceshield
- Hard hat

EQUIPMENT REQUIREMENTS

- Shovel
- Absorball

ENVIRONMENTAL ISSUES

REMEDIAL MEASURES

ACTION	RESPONSIBILITY
• Barricade off area to ensure no inadvertent access is allowed to the area. • If possible, stop the leak at the source. • Contain the spilled peroxide if possible to prevent the spill from spreading • Ensure that organic materials (wood pallets for example) are kept away from the spill, and decontaminated with water if necessary. • Allow the spilled peroxide to decompose naturally. • Establish a “fire watch” armed with water to monitor the spill, until the spilled material is completely decomposed.	

INTERNAL REPORTING REQUIREMENTS

EXTERNAL REPORTING REQUIREMENTS

- Spills to ground of > 1 L are reportable to Manitoba Conservation
- Contained spills of 1 – 50 L are not reportable to Manitoba Conservation
- Spills from the shipping container of >50 L are reportable to Manitoba Conservation, even if the spill is contained, in the plant area for example (TDG Regs)

EVENT
Lime Slurry Spill

SAFETY ISSUES
• Lime Slurry is extremely corrosive and can cause severe skin burns.

PPE REQUIREMENTS		
• Hard-hat	• Ansell Chemi-pro Gloves	• Face Shield
• Rain gear	• Safety goggles	
• Rubber boots		

EQUIPMENT REQUIREMENTS
• Water hose

ENVIRONMENTAL ISSUES

REMEDIAL MEASURES	
ACTION	**RESPONSIBILITY**
• Where possible, identify the source of the leak and if safe to do so, immediately stop the leak by any means available. (shut off pump, close valves, etc.) • Secure the area around the release to restrict access • Wash down the residual spillage with water into the central plant sump. • Pump the accumulated lime slurry in the plant sump to T-9 for transfer to the containment cell. (some pH adjustment may be required)	

INTERNAL REPORTING REQUIREMENTS
• A spill of > 5 liters may be process safety event and must be reported to corporate. PSE Definition Link

EXTERNAL REPORTING REQUIREMENTS
• Contained spills are not reportable to Manitoba Conservation.

EVENT

Phosphoric Acid Spill

SAFETY ISSUES

- 75% Phosphoric Acid is a very strong acid
- It will cause severe burns on the skin and eyes. Avoid all contact
- Neutralizing an acid with soda ash gives off large quantities of carbon dioxide – ensure adequate ventilation or use SCBA or SABA

PPE REQUIREMENTS

- Raingear
- Rubber boots
- Ansell Chemi-pro Gloves
- Goggles
- Faceshield
- Hard hat

EQUIPMENT REQUIREMENTS

- Shovel
- Absorball
- Soda Ash

ENVIRONMENTAL ISSUES

REMEDIAL MEASURES

ACTION	RESPONSIBILITY
• Barricade off area to ensure no inadvertent access is allowed to the area. • If possible, stop the leak at the source. • Contain the spilled liquid if possible to prevent the spill from spreading. Dike with sand or Absorball • Neutralize the spilled liquid using a surplus of soda ash. • Scoop the neutralized residue and any contaminated gravel into an open topped steel drum. Be sure to collect all the contaminated material • Put the lid on the drum securely and place a label on the drum indicating its contents, and the date filled • Wash the area down to dilute any residues.	

INTERNAL REPORTING REQUIREMENTS

EXTERNAL REPORTING REQUIREMENTS

- Spills to ground of > 5 L are reportable to Manitoba Conservation
- Spills from the shipping container of >5 L are reportable to Manitoba Conservation, even if the spill is contained, in the plant area for example (TDG Regs)

EVENT

Potassium Hydroxide Spill (aka Caustic Potash, KOH)

Sodium Hydroxide Spill (aka Caustic Soda, Optisperse ADJ 5050)

SAFETY ISSUES

- 45% Potassium Hydroxide is a very strong alkali (caustic).
- It will cause severe burns on the skin and eyes. Avoid all contact

PPE REQUIREMENTS

- Raingear
- Rubber boots
- Ansell Chemi-pro Gloves
- Goggles
- Faceshield
- Hard hat

EQUIPMENT REQUIREMENTS

- Shovel
- Absorball
- Soda Ash

ENVIRONMENTAL ISSUES

REMEDIAL MEASURES

ACTION	RESPONSIBILITY
• Barricade off area to ensure no inadvertent access is allowed to the area. • If possible, stop the leak at the source. • Contain the spilled liquid if possible to prevent the spill from spreading • Absorb the spilled liquid using Absorball or soda ash. • Scoop the absorbent and any contaminated gravel into an open topped steel drum. Be sure to collect all the contaminated material • Put the lid on the drum securely and place a label on the drum indicating its contents, and the date filled • Wash the area down to dilute any residues.	

INTERNAL REPORTING REQUIREMENTS

EXTERNAL REPORTING REQUIREMENTS

- Spills to ground of > 5 L are reportable to Manitoba Conservation
- Spills from the shipping container of >5 L are reportable to Manitoba Conservation, even if the spill is contained, in the plant area for example (TDG Regs)

EVENT

Sulfuric Acid Storage Tank Failure

SAFETY ISSUES

- 93% sulfuric acid is extremely corrosive and will cause serious burns.
- Dilution of strong acid with water releases lots of heat – spattering will occur.
- Neutralization of acid with any carbonate (e.g. soda ash) will release carbon dioxide gas, which will locally deplete oxygen levels in the air – SCBA required

PPE REQUIREMENTS

- Hard-hat
- Raingear
- Rubber Boots
- Gauntlet Style Rubber Gloves
- Goggles
- Face Shield

EQUIPMENT REQUIREMENTS

- Double diaphragm pump
- Suction/discharge Fabchem hose
- Empty tank trucks (Border Chemical)
- Bags soda ash (as required)
- Water hose

ENVIRONMENTAL ISSUES

- Spills to ground of > 5 kg are reportable to Manitoba Conservation

REMEDIAL MEASURES

ACTION	RESPONSIBILITY
• Contact Border Chemicals in Winnipeg to request delivery of two empty tank trucks. • Set up 2” diaphragm pump with suction hose in the containment collection sump and discharge into the tank truck. • Pump accumulated acid to the tank truck. • When area is drained, stop pump and wash down area with water. **NOTE:** Dilution of sulfuric acid with water releases heat and some liquid spattering will occur. • Move the 2” diaphragm discharge line to pump to the plant sump. • Pump down wash down liquid to plant sump. (Continue to wash down spill area with warm water.) • Pump diluted acid/water mixture to T9. • Monitor pH and dilute as required with lime slurry.	

INTERNAL REPORTING REQUIREMENTS

- A spill of > 5 L is a process safety event, and must be reported to Corporate

EXTERNAL REPORTING REQUIREMENTS

- Spills to ground of > 5 kg (3 L) are reportable to Manitoba Conservation. Contained spills are not reportable

EVENT

Sulfuric Acid Spill To Ground

SAFETY ISSUES

- 93% sulfuric acid is extremely corrosive and will cause serious burns.
- Dilution of strong acid with water releases lots of heat – spattering will occur.
- Neutralization of acid with any carbonate (e.g. soda ash) will release carbon dioxide gas, which will locally deplete oxygen levels in the air – SCBA required

PPE REQUIREMENTS

- Hard hat
- Raingear
- Rubber boots
- Rubber gloves
- Goggles
- Face shield

EQUIPMENT REQUIREMENTS

- Double diaphragm pump
- Suction/discharge Fabchem hose
- Empty container(s)
- Bags soda ash (as required)
- Shovel

ENVIRONMENTAL ISSUES

- Spills to ground of > 5 kg are reportable to Manitoba Conservation

REMEDIAL MEASURES

ACTION	RESPONSIBILITY
• Identify and stop source of leak where possible. (Shut off pump, close valves etc) • Contain spill using any means possible. (soil, sand, dam, Earthen Dam, etc.) • Set up 2" double diaphragm pump to pump from the collection area to an appropriate container or location. • Neutralize residual acid with liberal quantities of soda ash. • Shovel up contaminated ground until pH of the remaining soil in the area is between pH 2.5 to 10.5. • Dispose of contaminated soil to the active chemical plant cell.	

INTERNAL REPORTING REQUIREMENTS

- A spill of > 5 L is a process safety event, and must be reported to Corporate

EXTERNAL REPORTING REQUIREMENTS

- Spills to ground of > 5 kg (3 L) are reportable to Manitoba Conservation. Contained spills are not reportable

Emergency Event Response Plan

EVENT

Sulphuric Acid Spill at Truck Unloading

SAFETY ISSUES

- 93% sulphuric acid is extremely corrosive and will cause serious burns.
- Dilution of strong acid with water releases lots of heat – spattering will occur.
- Neutralisation of acid with any carbonate (e.g. soda ash) will release carbon dioxide gas, which will locally deplete oxygen levels in the air – SCBA required

PPE REQUIREMENTS

- Hard hat
- Raingear
- Rubber boots
- Rubber gloves
- Goggles
- Face shield
- SCBA (as required)

EQUIPMENT REQUIREMENTS

- Double diaphragm pump
- Suction/discharge Fabchem hose
- Empty tank trucks (Border Chemical)
- Bags soda ash (as required)
- Water hose

ENVIRONMENTAL ISSUES

- Spills to ground of > 5 kg are reportable to Manitoba Conservation

REMEDIAL MEASURES

ACTION	RESPONSIBILITY
• If possible stop the leak at source • Call Border Chemical to activate their emergency response team and arrange for a supply of tank trucks (use totes for smaller leaks) • Set up the air pump to draw spilled acid from the containment sump • Place empty tank truck in the truck unloading station • Pump the spilled acid into the truck • When sump is empty, place the pump discharge hose to the plant sump • Wash down the acid containment area with water, pumping the washings to the plant sump, then to T-9 • Test the washings with litmus paper, to ensure that all acid is removed • Tank trucks containing the recovered acid may be disposed of by (Border??)	Shift Supervisor

INTERNAL REPORTING REQUIREMENTS

- A spill of > 5 L is a process safety event, and must be reported to Corporate

EXTERNAL REPORTING REQUIREMENTS

- Spills to ground of > 5 kg (3 L) are reportable to Manitoba Conservation. Contained spills are not reportable

Large Sulphuric Acid Spill at Truck Unloading

EVENT
Building Fire (Main Office, Security, Warehouse, Dry, Maintenance Shops)

SAFETY ISSUES

- Burns
- Smoke inhalation

PPE REQUIREMENTS

EQUIPMENT REQUIREMENTS

- Fire extinguishers, water hose, nozzles

ENVIRONMENTAL ISSUES

REMEDIAL MEASURES

ACTION	RESPONSIBILITY
Assess the fire situation – if the fire is still in its incipient stage, attempt to extinguish using available extinguishers. Call 9-1-1 (Bird River Fire Department) Alert the Emergency Response Team through Security (259) Evacuate surrounding area, set up a control perimeter around the building Set up fire hose from a hydrant if safe to do so, aim to control the fire from a distance and prevent it from spreading Do NOT enter any burning building Direct/assist the Fire Department when they arrive.	

INTERNAL REPORTING REQUIREMENTS

- Corporate

EXTERNAL REPORTING REQUIREMENTS

- Mines Inspector

EVENT
Forest Fire

SAFETY ISSUES
• Smoke inhalation • Burns

PPE REQUIREMENTS
None

EQUIPMENT REQUIREMENTS
Vehicles for personnel

ENVIRONMENTAL ISSUES
None

REMEDIAL MEASURES

ACTION	RESPONSIBILITY
If a forest fire is known to be close to the minesite, or threatens to close PTH 313 or 315, maintain communication with Manitoba Conservation regarding voluntary and mandatory evacuation orders. Shut down and secure as much of the operation as possible – boiler; reduce steam pressure. Consider dumping R-1 (digester) contents, depending on the status and condition of T-4 Isolate storage tanks – propane, sulphuric acid, formic acid, alum, carbon dioxide If smoke is being drawn into the mine ventilation system, evacuate the mine and shut down the vent fans If the forest fire is tracking towards the minesite, evacuate all employees as instructed by Manitoba Conservation. **NOTE:** The mine ramp may be used as a temporary shelter, with the vent fans off to prevent smoke entering the mine. **Note:** Do not leave the evacuation order too long – forest fire may move rapidly depending on wind speed and direction, or sever the road link.	Shift Supervisor

INTERNAL REPORTING REQUIREMENTS
Corporate

EXTERNAL REPORTING REQUIREMENTS

EVENT
Propane Vapouriser Fire
SAFETY ISSUES
• Burns from burning gas
PPE REQUIREMENTS
EQUIPMENT REQUIREMENTS
ENVIRONMENTAL ISSUES

REMEDIAL MEASURES	
ACTION	**RESPONSIBILITY**
The aim of any response to a propane fire is to cut off the fuel supply. Extinguishing the flame will cause a greater problem if the released gas explosively reignites Pull the emergency shut off pull-cord to close the valve at the outlet from the propane storage tank(s) Close the tank bottom outlet valves Close other system isolation valves as necessary	

INTERNAL REPORTING REQUIREMENTS
• Corporate
EXTERNAL REPORTING REQUIREMENTS
• Mines Inspector

EVENT

Server Room Fire

SAFETY ISSUES

Novec 1230 Fire suppression fluid does not support life. SCBA must be worn when entering the server room after the fire suppression system has been activated, or if there is a suspected release of gas

PPE REQUIREMENTS

SCBA

EQUIPMENT REQUIREMENTS

None

ENVIRONMENTAL ISSUES

None – Novec 1230 is claimed to be environmentally friendly

REMEDIAL MEASURES

ACTION	RESPONSIBILITY
Note: A fire pull station is located just inside the door None: the fire suppression system in the server room will activate automatically when smoke is detected in the room. A light and audible alarm outside the room will indicate system activation Call 9-1-1 to ensure assistance in the event that the fire suppression system is not 100% successful	

INTERNAL REPORTING REQUIREMENTS

- Corporate

EXTERNAL REPORTING REQUIREMENTS

- Mines Inspector

EVENT

Transfer Station (Garbage Dump) Fire

SAFETY ISSUES

- Heat and smoke from burning materials – remain upwind

PPE REQUIREMENTS

- Turn out gear, boots, gloves
- SCBA

EQUIPMENT REQUIREMENTS

- Wajax Pump
- Fire Hoses & nozzles
- Totes full with water
- Berms or booms to contain run-off water

ENVIRONMENTAL ISSUES

- Fire water run off may contain harmful organics

REMEDIAL MEASURES

ACTION	RESPONSIBILITY
• Activate the ER Team (Dial 259 - Security) • Request Security to call the Fire Department (9-1-1)	Security
• ER Team to assemble • Fill totes with water (unless local water supply is available) • Set up Wajax pumps and fire hoses • Deliver water from totes to the burning materials • Brief Fire Department on arrival	ER Team
• Ensure fire does not spread to the surrounding trees	

INTERNAL REPORTING REQUIREMENTS

- Corporate

EXTERNAL REPORTING REQUIREMENTS

- Mines Inspector

EVENT

Transformer Fire

SAFETY ISSUES

- Burns from burning transformer oil
- Smoke Inhalation

PPE REQUIREMENTS

EQUIPMENT REQUIREMENTS

- CO_2 fire extinguisher
- Berms and/or booms to control run off water

ENVIRONMENTAL ISSUES

- Run off fire water will contain transformer oil and foaming agent. This run off must not enter Bernic Lake

REMEDIAL MEASURES

ACTION	RESPONSIBILITY
1. Call Fire Department (9-1-1)	Security (259)
2. Ensure employees are at a safe distance	Tanco
3. Isolate transformer from the incoming electricity supply	
4. Isolate transformer from downstream electrical feeds	
5. Attempt to extinguish fire ONLY if the fire is very small, and can be put out using a CO_2 fire extinguisher	
6. Use foam to extinguish oil fire	Fire Department
7. Contain fire water run off for collection and treatment	Tanco

INTERNAL REPORTING REQUIREMENTS

- Corporate

EXTERNAL REPORTING REQUIREMENTS

- Mines Inspector

FIRST AID

ALL EMPLOYEE RESPONSE:

- Assess the extent of the injuries and provide initial first aid.

- **Call for assistance:**
  Call Security at '259' or by radio on channel 1

- If possible, assist the injured person to the first aid room.
- If the injured person is not able to be moved, support the person with available resources until help arrives

SECURITY

- On receiving the emergency call, take all pertinent details, including the exact location of the injured person.
- Page the First Aid Co-ordinator, Monday – Friday, 08:00-16:00.
  At all other times, contact the Site Shift Supervisor (Ext. 234 or radio channel 3)
- Transmit the necessary details of the injuries.

FIRST AID CO-ORDINATOR

- On hearing the pager, immediately call Security (259) to gather the pertinent details

FIRST RESPONDER:

- Provide necessary first aid to support the injured person, moving the injured person to a safe location if required.
- If the nature and seriousness of the injuries dictate, make arrangements for the injured person to be transported to hospital, by private vehicle, ambulance or air ambulance Ensure that the hospital is properly notified, and that appropriate forms are transmitted with the patient.
- Ensure that details of the injuries are entered in the first aid book
- For serious injuries ensure that proper notifications are made.

- For a fatality, do not touch or move objects; **immediately** secure the site of an accident pending investigation
  Note: First Aid attendants must ensure their own safety, and may move a potentially fatally injured person to a safe location if there is any possibility that the injured person may be successfully treated.

INJURY REPORTING

ALL injuries (no matter how minor) shall be immediately reported to a Supervisor or Lead Hand and entered into the first aid book. In addition the Workers Compensation Board "Notice of Injury" form shall be completed and sent to the Department Superintendent.

Notification of any serious bodily injury shall be made immediately (within one hour) to:

- The relevant Department Superintendent, and
- The Chemical Plant Manager (for cesium plant personnel), and
- The General Manager
- The Safety/Environmental Manager

The senior manager notified above shall report immediately to:

- The Mines Inspector
- The Workplace Health & Safety Committee

If the senior manager above cannot be contacted, the Mill Shift Supervisor shall make this call.

Serious body injury is defined as:

- A fracture of the skull, spine, pelvis, femur (upper leg), humerus (upper arm), fibula or tibia (lower leg), radius or ulna (lower arm)
- Amputation of the major part of a hand or foot
- The loss of sight in an eye
- A serious internal hemorrhage
- An injury caused directly or indirectly by explosives
- Extensive second or third degree burns
- Any other injury likely to endanger life or cause permanent disability

CORPORATE INJURY REPORTING

Serious injuries as defined above must be reported immediately to:

- Corporate V.P. SH&E (Boston)

Fatalities or occupational injuries requiring hospitalisation of one or more employees, contractors or third parties must be reported as soon as possible, and within 24 hours of occurrence to:

- Executive V.P Global Manufacturing (Boston)

Incidents: Shall be defined as any situation that has caused or has the potential to cause risk to people or property involving any nuclear device located on the property.

Response:

- The person discovering damage to a nuclear device shall immediately contact the Operations Shift Supervisor
- The area shall be evacuated immediately
- A safe zone of 5 meters (16 feet) shall be established in ALL directions of the affected device, including the vertical direction, using flagging tape or other suitable material.
- The Operations Shift Supervisor shall identify all workers who may have been exposed to radiation.
- The Operations Shift Supervisor shall contact the Radiation Safety Officer (RSO) and Surface Operations Superintendent.
- The RSO shall confirm if identified workers have been exposed by scanning them for radiation. Any person with greater than the allowed level of radiation *(Brent: what is the trigger point?)* shall be taken to CancerCare Manitoba for assessment and treatment *(Brent: need location and contact information)*
- The RSO shall notify Senior Management.
- The RSO shall contact the Stuart Hunt & Associates to arrange for decontamination and disposal services.
- The RSO shall report the incident to the Canadian Nuclear Safety Commission (CNSC)
- The RSO shall control the area until Stuart Hunt & Associates has completed a full inspection of the affected area or authorization has been received from the CNSC to remove the affected gauge.
- The RSO shall record the sequence of events and prepare a detailed report of the incident for submission to CNSC within 30 days..

Radiation Safety Officer: **Brent Pemberton** **Extension 223**
Home 204-753-2710

Surface Operations Superintendent: **Rick Lussier** **Extension 282**

Home 204-345-2098

Manufacturer: Thermo MeasureTech **905-888-8808**

Canadian Nuclear Safety Commission: **24 hour # 1-613-995-1479**

EVENT

Nuclear Density Device Damage

SAFETY ISSUES

- A damaged device has the potential to leak radiation into the surrounding area.

PPE REQUIREMENTS

- None

EQUIPMENT REQUIREMENTS

- Flagging tape (red)
- Barricade tags

ENVIRONMENTAL ISSUES

- None

REMEDIAL MEASURES

ACTION	RESPONSIBILITY
• Person discovering damaged device will evacuate area and post a guard. • A safe zone of 5 meters in all directions must be established using flagging tape, marked with barricade tags. • All persons affected must be identified. • Contact site shift supervisor who in turn contacts the radiation safety officer. • RSO to contact Canadian Nuclear Safety Commission to arrange for cleanup and/or inspection. • Control the area until a licensed removal company has given the green light.	

INTERNAL REPORTING REQUIREMENTS

- Any loss of radiation containment must be reported to Corporate.

EXTERNAL REPORTING REQUIREMENTS

- Canadian Nuclear Safety Commission 24 hr 1-613-995-1479

EVENT
Waste Solids Line Failure

SAFETY ISSUES
• Potential of high or low pH material leaking from line could cause minor skin or eye irritation.

PPE REQUIREMENTS
• Standard PPE

EQUIPMENT REQUIREMENTS
• front end loader • shovels • truck, with dumping capabilities

ENVIRONMENTAL ISSUES
• Cesium content of waste stream may elevate levels in the tailings management area.

REMEDIAL MEASURES	
ACTION	**RESPONSIBILITY**
• Have operations shut off the waste solids pump. • Collect spilled waste material using front end loader and shovels as necessary. (Larger spills will require a truck to minimize number of trips with the loader. • Dispose of contaminated material in active waste cell.	

INTERNAL REPORTING REQUIREMENTS
• A spill of > 5 kg is a process safety event and must be reported to Corporate.

EXTERNAL REPORTING REQUIREMENTS
•

Canadian Bomb Data Centre
Centre canadien de données sur les bombes

When a bomb threat is received:	**Si vous recevez un appel à la bombe :**
1 Listen.	1 Écoutez.
2 Be calm and courteous.	2 Soyez calme et courtois.
3 Do not interrupt the caller.	3 N'interrompez pas l'appelant.
4 Obtain as much information as possible.	4 Tâchez d'obtenir le plus de renseignements possible.
5 Initiate call trace action (if available) while the call is ongoing.	5 Prenez des mesures de dépistage de l'appel si cela est possible.
6 Using a pre-arranged signal, notify your supervisor while the call is still ongoing. Your supervisor should contact the local police service.	6 Avisez l'autorité responsable au moyen d'un signal fixé à l'avance pendant que l'appelant est à l'appareil.
7 Complete the form provided below and give it to your supervisor.	7 Remplissez ce formulaire et remettez-le à votre superviseur.

Telephone trace number:
Pour dépister l'appel, appelez :

Details to be recorded:		**Renseignements à consigner :**
Date	Time - Heure A.M. ☐ P.M. ☐	Duration of call - Durée de l'appel

Exact wording of the threat: **Termes exacts de l'appel :**

ROYAL CANADIAN MOUNTED POLICE

Bomb Threat Telephone Procedures
Appels à la bombe

Canada

Questions to ask:	**Questions à poser :**
What time will the bomb explode? À quelle heure la bombe doit-elle éclater?	
Where is it? Où est-elle?	
What does it look like? À quoi ressemble-t-elle?	
Where are you calling from? De quel endroit appelez-vous?	
Why did you place the bomb? Pourquoi a-t-on placé cette bombe?	
What is your name? Quel est votre nom?	

Identifying characteristics:				**Identification de l'appel :**
Sex **Sexe**	☐ Male Homme	☐ Female Femme	☐ Not sure Incertain	Estimated age: Âge approximatif :
Accent	☐ English Anglais	☐ French Français	☐ Other Autre	
Voice **Voix**	☐ Loud Forte	☐ Soft Douce	☐ Other Autre	
Speech **Débit**	☐ Fast Rapide	☐ Slow Lent	☐ Other Autre	
Diction **Prononc-iation**	☐ Good Bonne	☐ Nasal Nasillarde	☐ Lisp Zézayée	Other - Autre
Manner **Manières**	☐ Emotional Nerveuses	☐ Calm Calmes	☐ Vulgar Vulgaires	Other - Autre

Background noises - Bruits de fond

Voice was familiar (specify)
La voix est familière (préciser)

Caller was familiar with the area (specify)
L'appelant semple connaître les lieux (préciser)

GENDARMERIE ROYALE DU CANADA

EVENT
Bomb Threat

SAFETY ISSUES
Potential damage from explosives

PPE REQUIREMENTS
None

EQUIPMENT REQUIREMENTS
None

ENVIRONMENTAL ISSUES
Potential damage from explosives

REMEDIAL MEASURES

ACTION	RESPONSIBILITY
Record all details of the telephone call on the linked document	Employee
Immediately inform the Incident Commander (FGM or Shift Supervisor) of the threat	Employee
Initiate plant shutdown and site evacuation procedures	Incident Commander
Call the RCMP (9-1-1)	Incident Commander
Initiate bomb search procedures	RCMP

INTERNAL REPORTING REQUIREMENTS
Corporate – Senior Managers

EXTERNAL REPORTING REQUIREMENTS

EVENT
Site Isolation (due to road loss, flood, snowfall, forest fire)
SAFETY ISSUES
Undefined - depends on circumstances
PPE REQUIREMENTS
EQUIPMENT REQUIREMENTS
ENVIRONMENTAL ISSUES

REMEDIAL MEASURES

ACTION	RESPONSIBILITY
Note: Hydro service unaffected, road access not available. Shut down and secure operations as much as possible – empty tanks in the CP, especially digester and T-4 Set up helicopter shuttle service for shift crew relief between the site and: (a) Bird River Airport (Tall Timbers) TC ID: CJP7 (b) Trappers (c) Lac du Bonnet Airport ICAO: CYAX In snowfall situation, consider snowmobiles Establish skeleton crew. Prepare to evacuate on short notice if circumstances change	

INTERNAL REPORTING REQUIREMENTS
Corporate
EXTERNAL REPORTING REQUIREMENTS

GUIDELINES FOR HANDLING SUSPICIOUS POWDER(S)

In an event that a suspicious package/powder(s) is received:

- Do not open it
- Leave it and evacuate the room
- Keep others from entering
- Notify your supervisor

For packages that are opened and which contain suspicious material:

- Do not panic
- Close off the room and do not let anyone enter
- Notify your supervisor
- Do not clean powder up
- Do not touch your eyes, nose or other part of your body
- If possible, wash your hands with soap and water
- If clothing is contaminated, do not brush vigorously
- If possible, close down the building's heating or ventilation system
- Make a list of all people who had actual contact with the powder for investigating authorities

Notification of any suspicious powder(s) must be made to:

- The relevant Department Head
- The Environmental/Safety Manager
- The site General Manager
- Manitoba Conservation – Environment Division

EVENT
Tornado

SAFETY ISSUES
Potential for severe injury due to flying debris

PPE REQUIREMENTS
None

EQUIPMENT REQUIREMENTS
Vehicles for personnel

ENVIRONMENTAL ISSUES
Potential Spillage of chemical products and raw materials

REMEDIAL MEASURES

ACTION	RESPONSIBILITY
Tornado season in Manitoba is from May to September. They usually occur in the afternoon or early evening, but have been known to occur at night. If a tornado is known or suspected to be in the neighborhood, detail a lookout (Security) to track its movements. Shut down as much of the operation as possible – boiler; reduce steam pressure. Isolate storage tanks – propane, sulphuric acid, formic acid, alum, carbon dioxide If the tornado is set to pass directly through the minesite, evacuate all employees to the mine ramp, and shelter in place until the tornado has passed. Alternative secure locations are under the R-1 digester, and in the 2/4 basement **Note:** Do not leave the evacuation order too long – tornados may change direction very quickly, and without warning	Shift Supervisor

INTERNAL REPORTING REQUIREMENTS
Corporate

EXTERNAL REPORTING REQUIREMENTS

EVENT

Transportation Emergency (Cesium Products)

SAFETY ISSUES

- Exposure to cesium product – hydroxide, carbonate, sulphate, formate

PPE REQUIREMENTS

- Hard hat
- Goggles
- Face shield
- Raingear
- Ansell Chemi-pro gloves
- Rubber boots

EQUIPMENT REQUIREMENTS

- Drum pump with transfer hose
- Portable generator & gas
- Empty totes &/or drums
- Absorball
- Shovels
- Empty open top drums

ENVIRONMENTAL ISSUES

- Local environmental damage in the immediate area surrounding a spill.

REMEDIAL MEASURES

ACTION	RESPONSIBILITY
Stabilize any containers that are not secured Stop any further actual or potential leakage of product Contain any spilled product, using Absorball or any other available material Shovel any contaminated materials into the open top drums, secure and label Transfer any product remaining in the damaged container(s) into new containers using the drum pump	

INTERNAL REPORTING REQUIREMENTS

EXTERNAL REPORTING REQUIREMENTS

Carrier must report any incident involving cesium hydroxide to Manitoba Environment (TDG)

Underground Emergency Response

Person who discovers Emergency

Call Security
(Ext. 259 or Radio Channel 1)

If it is an injury or another Emergency

Call Underground Operations Superintendent
Ext. 207: Cell 340-5997: Home 753-8255

If Required
Operations Shift Supervisor Ext. 234
Activate Mine Stench

Mine Shift Supervisor Ext. 253 / 350
Initiate First Response &
Contact WorkCare TM @ 888-449-7787

If minor injury
provide first aid
complete all documentation

If minor mine problem
assess problem, plan and
implement response

In the event of a serious
bodily injury, medical condition
or Fatality

In the event of a serious mine
emergency. Begin mine
evacuation without haste.
Ensure all underground personnel
are accounted for.

Underground Operations Superintendent
Will Call
Ambulance (911)
ERT, if required (Pager)
Mine Rescue
Pinawa Hospital, if required (753-2334)

If it is a Mine Fire

Call Underground Operations Superintendent
Ext. 207: Cell 340-5997: Home 753-8255

Mine Shift Supervisor Ext. 253 / 350
Locates Miners and does head count

Operations Shift Supervisor Ext. 234
Activate Stench Gas

Activate Mine Rescue Team

Contact Mine Engineering
Have them ready to provide
Engineering Assistance as
required.

Call As Required
Ambulance (911)
ERT, if required
Pinawa Hospital, if required 753-2334

Contact San Gold for Assistance
Contact Numbers:
(204) 277-5411
Security - Ext 217
Hoistroom - Ext 201

Contact Barrie Simoneau
Direct of Risk Management
Manitoba Mining Association
Office: 989-1890
Cell: 299-9409
Home: 254-4724

Contact Provincial Mine Rescue Stations

Contact	Work Phone (ext.)	Cell Phone	Home Phone	Pager # or Other #
HBMS - Flin Flon				
Ian Cooper - H&S Supt.	204-687-2259	204-687-0433	204-687-7236	
Olaf Hettrick - MR Instructor	204-687-2145	306-688-0072	306-362-2113	204-687-2272 #810
Don Peake - MR Instructor	204-687-2111	204-680-9669	204-687-3800	204-687-2272 #909
HBMS - Snow Lake				
Tony Scheres - Chisel N. Supt.	204-358-5210			
Tony Butt – H.S.& E	204-358-5222	204-358-0052	204-358-9098	
Dave Kendall - MR Instructor	204-358-5213	204-358-0048	204-358-2265	204-358-5234
VALE Manitoba Division				
John M'Nevin - Emerg Super	204-778-2582	204-307-0788	204-677-2557	
Mike M'Donald - Fire/Res Sup	204-778-2202	204-679-6651	204-677-1105	
Kirk Regular - Manager	204-778-2729	204-307-0781	204-778-7496	
Crowflight Minerals Inc.				
Joe Dobbin (General Foreman)	204-669-2972 (1022)	204-679-7204	204-778-6603	
Trevor Chamberlain (Gen. For.)	204-669-2972 (1022)	204-679-6427		
AECL (URL)				
Paul Thompson - Mgr. URL	204-345-8625 (2201)	204-340-6069	204-753-8248	
Glen Karklin - MR Instructor	204-345-8625 (2204)	204-345-4380	204-345-9990	
TANCO				
Patrick Green – U/G Ops. Supt.	204-884-2400 (207)	204-340-5997		
Colleen Bugslag – S.H.E. Mgr.	204-884-2400 (242)	204-340-5998	204-753-2271	
San Gold Corporation				
John Lockhart - Supt.	204-277-5411 (206)	204-612-0298	204-661-0177	
Mines Inspectors				
Bill Comaskey - Director	204-945-0948			
Glen Otto - Inspector	204-687-1617	204-687-0782	204-358-2408	011-8816-414-99966
Dennis Fontaine - Inspector	204-677-6821	204-679-5406		
Larry Poleschuk - Inspector	204-945-8063	204-232-6224		
Lorne Uruski – Elec. Inspector	204-945-1239	204-792-6495		

Safety, Health and Environment Manager
Ext. 242 Cell 340-5998 Home 753-2271

WorkCare TM
As Required

Cabot Director
SH&E

Mines Inspector
As Required

RCMP
As Required

Facility General Manager
Ext. 201 Cell 345-3899 Home 753-2199

Cabot vice-president
SH&E

Cabot vice-president, & General Manager,
Specialty Fluids Segment

Cabot
CEO

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Click on the line to navigate to that entry

1. TANCO	HOME	CELLULAR	EXT.	RADIO CHANNEL #
GENERAL:				
Tanco	884-2400		0	
Tanco Fax	884-2211			
General Manager:				
Safety, Health & Environment Manager:				
UNDERGROUND OPERATIONS:				
Underground Operations Superintendent:				
Mine Shift Supervisor:				
SURFACE OPERATIONS				
Surface Operations Superintendent:				
Senior Operations Shift Supervisor:				
Operations Shift Supervisors:				
CHEMICAL PLANT				
Chemical Plant:				

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MAINTENANCE:	**HOME**	**CELLULAR**	**EXT.**	**RADIO CHANNEL #**
Maintenance Planner:				
Mill/Chemical Plant Mechanical Supervisor:				

OTHERS				
IT Specialist:				
Lab/Quality Manager/Radiation Safety Officer:				
Senior Accountant:				

MINE RESCUE TEAM				

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ER TEAM:	HOME	CELLULAR	EXT.	RADIO CHANNEL #

Operations Shift Supervisors:

Lead Hands – Chemical Plant

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FIRST AID	HOME	CELLULAR	EXT.	RADIO CHANNEL #

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2. CABOT SPECIALTY FLUIDS

		BUSINESS	CELLULAR	HOME
Houston Office	Waterway Plaza Two 10001 Woodloch Forest Drive, Suite 275 The Woodlands, TX 77380	281-298-9955 Fax: 281-298-6190		
Aberdeen Office	Cabot House, Hareness Circle Taylor's Business Park Altens Industrial Estate Aberdeen AB12 3LY	011 44-1224-897229		
President				
Director of Technology				
C.P. Manager				

3. CABOT SUPERMETALS

		BUSINESS	CELLULAR	HOME
Boyertown, PA	Plant	610-367-1500		

4. CABOT CORPORATION

		BUSINESS	CELLULAR	HOME
Boston Office	Two Seaport Lane Suite 1300 Boston, MA 02210-2019	617-345-0100		
President & CEO				
Vice President and General Manager EMEA				
Regional Manufacturing Director EMEA				
Director, NA SH&E				

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5. LOCAL EMERGENCY SERVICES

R.C.M.P.	9-1-1	345-8685
FIRE – Bird River	9-1-1	
AMBULANCE	9-1-1	753-8888
FOREST FIRE (Manitoba Conservation)	345-1418	
HEALTH CENTRE – Lac du Bonnet	345-8647	
HOSPITAL – Pinawa	753-2334	
HOSPITAL – Pine Falls	204-367-4441	

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6. REGULATORY AGENCIES	BUSINESS	HOME
ENERGY & MINES		
Ernie Armitt, Director	204-945-6505	
Doina Priscu, Chief Mine Engineer	204-945-6517	
WORKPLACE HEALTH & SAFETY- Mines Safety Branch		
Don Hurst, Assistant Deputy Minister	204-945-3605	
Dennis Fontaine, Acting Director	204-677-6821	
Ted Hewitt, Chief Mining Engineer	204-687-1621	Cell–204-271-1212 Home – 204-687-7450
Ted Hewitt, (General Office)	204-687-1618	
Larry Poleschuk, Provincial Mines Inspector	204-945-8083 Fax–204-948-2209	Cell–204-232-6224
Lorne Uruski – Provincial Electrical Inspector	204-945-1233	
Workplace Health & Safety (Switchboard)	204-945-3446	
General FAX – W.S.&H.	204-948-2209	
W.S.H. Inspector's – Confidential Fax	204-945-4556	
Workplace Safety Emergency (24 hr)	**204-945-0581**	
MANITOBA CONSERVATION – Environment Division		
Environmental Accident (24 hrs)	**204-945-4888** FAX: 945-1211	
Tracey Braun, Director	204-945-7071	
Kris Innes, Environment Officer	345-1428	
Ryan Coulter, Environmental Engineer	204-945-7023	
Scott Davies, Provincial TDG	204-945-6223	

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ENVIRONMENT CANADA

Marc Boiteau, Enforcement Officer	204-983-7788
Paula Siwik, Regional EEM Coordinator	780-951-8824

FISHERIES & OCEANS (DFO)

Todd Schwartz, Fish Habitat Biologist	204-983-4231

CANADIAN NUCLEAR SAFETY COMMISSION

24 Hours 613-995-1479

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7. MINE RESCUE BACKUP

	BUSINESS	
A.E.C.L. – U.R.L.		
Administration (Mon-Fri. 8:00 am – 4:30 pm)	345-8625	Off Hours 204-345-8625
SAN GOLD CORPORATION	204-277-5411	Security – Ext. 217 Hoistroom – Ext.201
DIRECTOR OF RISK MANAGEMENT MANITOBA MINING ASSOCIATION Barrie Simoneau	204-989-1890	Home – 204-254-4724 Cell – 204-299-9409
HUDSON BAY MINING & SMELTING	204-687-2291	
INCO Surface First Aid	204-778-2276	

8. AIR TRANSPORTATION

PROVINCIAL HELICOPTERS LTD.	345-8332
MANITOBA GOVERNMENT AIR SERVICE	1-800-661-5631
WHITESHELL AIR SERVICE	345-8339 OR 345-6092

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9. CONTRACTORS, SUPPLIERS & OTHER

WORKCARE (MEDICAL ADVICE 24/7)	1-888-449-7787
MANITOBA HYDRO - WINNIPEG CONTROL CENTRE: LAC DU BONNET DISTRICT:	204-474-2715 345-2392
MANITOBA HYDRO - POINTE DU BOIS POWERHOUSE	884-2203
DON SIKORA CONTRACTING	
GREWINSKI TRUCKING JOHN GREWINSKI RESIDENCE:	345-2202 345-8747
CLEAN HARBORS (24 HR) ALFIO CORVINO, GENERAL MANAGER	204-231-9448 1-800-645-8265
MILLER ENVIRONMENTAL CORPORATION	204-925-9600
BASF	1-800-794-1019 (08:00 – 17:00 hrs EST) 1-800-832-4357 (24 hr Emergency)
Border Chemical Ltd	204-222-3276
SUPERIOR PROPANE (Propane Emergencies)	204-488-4499 877-873-7467
PRAXAIR (CARBON DIOXIDE)	800-363-0042
JADE TRANSPORT (WINNIPEG)	204-233-3566 Dispatch: 800-665-5143
TRIMAC TRANSPORTATION SYSTEM (WINNIPEG)	204-233-8945 Dispatch: 204-233-7158
STUART HUNT & ASSOCIATES (NUCLEAR DEVICES)	780-458-0291 800-661-4591
THERMO MEASURETECH (MILL NUCLEAR DEVICES)	905-888-8808

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10. DANGEROUS GOODS EMERGENCY ASSISTANCE

CANUTEC (Canada)	613-996-6666
Website:	http://www.tc.gc.ca/CANUTEC
Emergency Response Guidebook:	http://www.tc.gc.ca/canutec/en/guide/ergo/Eng%20complete.pdf
CHEMTREC (USA)	1-800424-9300
Website:	http://www.chemtrec.org
Emergency Response Guidebook:	http://hazmat.dot.gov/pubs/erg/gydebook.htm

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SITE EVACUATION PROCEDURE

INDEX

Sounding the Alarm

SITE EMERGENCY ALARM:

The **site emergency alarm** only may be activated by:

- the switch at the hoistman's booth
- operating the firepulls at:
  - the wall of the storage building across from the shipping/receiving building
  - outside the maintenance shop south mandoor
  - outside the maintenance shops north mandoor.

Note: The site emergency alarm is also activated when:

- the smoke detector at the miners' lamp storage area is triggered
- the emergency alarms in the Mill or Cesium Plant are activated.

When the site alarm is activated horns will sound in the following locations:

- above the maintenance shops,
- in the welding shop
- on the west wall of the Cesium Plant,
- inside the Cesium Plant,
- inside the Mill

An indicating light on the fire alarm panel located outside the Mill lunchroom will indicate that the site emergency alarm/Cesium Plant emergency alarm has been activated. Pressing the silence button on the fire alarm panel will silence the site emergency horns, but the indicating light will remain on until the activating firepull is reset

MILL EMERGENCY ALARM*:*

The **Mill emergency alarm <u>and</u> the site emergency alarm** may be activated by operating the firepulls at:

- South and east exits of the dry grinding plant
- East exit of the headframe
- East exit next to the Mill lunch room
- East exit by the main Mill entrance
- West door of MCC 5 & 6
- Centre of the Assay Lab area

When the internal Mill emergency alarm is activated, the following alarms will sound:

- The site emergency alarm horns listed above
- The emergency alarm buzzers and strobe lights inside the Mill

An indicating light on the emergency alarm panel located outside the Mill lunchroom will indicate the location of the firepull station used. Pressing the silence button on the fire alarm panel will silence the emergency horns and buzzers, but the strobe lights in the Mill will remain flashing until the activating firepull is reset.

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CESIUM PLANT EMERGENCY ALARM*:*

The **Cesium Plant emergency alarm <u>and</u> the site emergency alarm** is activated by operating the firepulls in the Cesium Plant at the following locations:

- each entrance to the Cesium Plant and Boiler room (7 locations)
- MCC mandoor – south
- Outside control room west door
- Inside control room east door
- Outside lunch room west door
- Inside smoke room east door

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When the internal Cesium Plant alarm is activated, the following alarms will sound:

- The site emergency alarm horns listed above
- The emergency alarm buzzers and strobe lights inside the Cesium Plant

When the Cesium Plant fire alarm panel in the control room is silenced, the Cesium Plant emergency alarm buzzers will silence, but not the site emergency horns

An indicating light on the fire alarm panel located outside the Mill lunchroom will indicate that the site emergency alarm/Cesium Plant emergency alarm has been activated. Pressing the silence button on the fire alarm panel will silence the site emergency horns, but the indicating light will remain on until the firepull is reset

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ALL CLEAR SIGNAL

The all clear signal shall be a five second sounding of the site emergency alarm, followed by five seconds of silence followed by another five second sounding of the alarm. This will be initiated from the hoistman's booth.

Instruction to sound the all clear signal may only be initiated by the Incident Commander, directly by telephone to the hoistman, or through the Surface Superintendent if the hoistman is not available.

ASSEMBLY AREAS*:*

On Site:

GROUP	PRIMARY ASSEMBLY AREA	ALTERNATE ASSEMBLY AREA
Staff	Main Office	Mine Dry
Mine, Operations & Maintenance	Mine Dry	Main Office (MRTR)
Contractors & Visitors	Security	Main Office (MRTR)
ER Team	ER Building	Main Office (MRTR)

MRTR = Mine Rescue Training Room

Off-site: In the event that the site must be evacuated, the off site assembly area is the Community Hall located behind the Bird River Fire Hall.
Employees leaving site must immediately proceed to this location for roll call.

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EMPLOYEE RESPONSE TO EMERGENCY ALARMS

SITE EMERGENCY ALARM

INDEX

On hearing the **site emergency alarm**, employees will respond as follows:

- All employees carrying portable radios shall turn their radios to **Channel 1**
- Members of the Emergency Response Team will immediately report to the Emergency Services Building, to prepare to respond to the emergency.
- Members of the First Aid Team will immediately report to the First Aid Room
- All other Surface Department employees will immediately assemble in the Mine Dry
- All Superintendents will immediately proceed to the Mine Dry.
- Any Mine workers on surface will proceed to the Mine Shift Office
- All main office staff will immediately proceed to the Main Office
- Warehouse personnel will proceed to the Mine Dry
- Security personnel will immediately return to their office at the main gate
- Any non-employees (contractors, salesmen, truckers and other visitors) will immediately proceed to the Security Building.
  NOTE: Tanco employees shall assist all non-employees to report safely to the Security Building.
- Cesium Plant, Mill and Assay Lab employees will immediately proceed to the Mine Dry.
- Outside the period 08:00 – 16:30 hrs Monday through Friday, staff employees will report to Security.

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MILL EMERGENCY ALARM:

On hearing the **internal Mill emergency alarm,** Mill and Assay Lab employees will respond as follows

- All employees will immediately evacuate the Mill, and assemble in the mine dry for head count
- **Every** undesignated surface/maintenance employee will assemble in the mine dry for head count
- Mill Superintendent will immediately proceed to the mine dry

CESIUM PLANT ALARM:

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On hearing the **internal Cesium Plant emergency alarm**, Cesium Plant employees will respond as follows:

- All employees will immediately evacuate the Cesium Plant, and assemble in the mine dry for head count
- **Every** undesignated surface/maintenance employee will assemble in the mine dry for head count
- Site Surface Superintendent will immediately proceed to the mine dry.

ROLL CALL GUIDELINES

- Employees shall make all reasonable efforts to get to the assembly point for roll call. If unable to do so then employees must attempt to contact the Shift Supervisor by any means available.
- Employees shall not leave the assembly point until released.
- Employees responsible for taking roll call must transmit this information within five to ten minutes to the Incident Commander via the switchboard operator (08:00 – 16:30 hrs). Updates on the progress of the roll call must then be provided at timely intervals.

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EMERGENCY RESPONSE TEAM ACTIVATION

- The Emergency Response Team may be activated 08:00 – 16:00 hrs Monday – Friday (without activating a general plant evacuation) by calling Security on Extension 259 and providing the following information:
    - The name of the person calling
    - The local telephone number or radio channel on which the person calling may be reached
    - The location and nature of the emergency
- Security will:
    - Record the details of the emergency.
    - Activate the pagers to assemble the Emergency Response Team
    - Brief the team by providing the information gathered above
- On hearing their pager, Emergency Response Team members shall report immediately to the Emergency Services building

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UNDERGROUND EVACUATION

STENCH GAS (ALARM)

Workers underground are notified of an emergency by the injection of stench gas into the ventilation and compressed air systems under the following circumstances:

- Underground fire
- Surface conditions that threaten underground air quality:
    - Fire
    - Spill of volatile material (formic acid for example)

Only trained employees will initiate the stench gas:

- Mine Supervision, Lead Hands or other trained employee
- Mine Engineering staff
- Mill Shift Supervisor

EMPLOYEE RESPONSE TO STENCH GAS

On smelling the stench gas in the mine, all employees underground shall respond as follows:

- Proceed to the **nearest** refuge station. Notify other workers along the way.
- Personnel in the shaft or on Second Level should proceed to surface via the shaft, If the shaft is contaminated with smoke or gases, they should proceed to the nearest refuge station.
- **Do not** proceed up the main ramp to surface. This is the Mine exhaust and gases will be concentrated here. Anyone already travelling up in the ramp when stench is smelled may continue to travel to surface.

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REFUGE STATION PROCEDURE

- REMAIN CALM
- NO SMOKING IS PERMITTED IN THE REFUGE STATION UNDER ANY CIRCUMSTANCES. This is important to preserve air quality.
- The first person to arrive at the station takes charge of the station.
- Turn on the siren and flashing lights.

- On the emergency checklist, record the names of all personnel arriving at the refuge station. Note the time they arrived and when they smelled the stench gas, if applicable.
- Open the small ventilation hole on the refuge station door and then turn on the compressed air in the station to allow fresh air to enter the station. If compressed air pressure is lost, close the small ventilation hole on the refuge station door and the fresh air valve to prevent contaminated air or smoke from entering the station. The air line may have become breached by fire or collapsed.
- If needed, use the fire clay in the pails to seal around the refuge station door. If someone enters after the door has been sealed, then reseal it.
- Conserve energy. Remain seated. Once an hour, have one person walk around the room to "stir" the air.
- Turn off cap lamps to preserve battery life.
- Ration food and water supplies. You do not know how long you may need to remain in the refuge station.
- Do not, under any circumstances, leave the refuge station until instructed to do so. You may be contacted with information or asked to provide information from time to time during the emergency
- DO NOT USE THE PHONE! THE PHONE MUST BE KEPT AVAILABLE AT ALL TIMES DURING THE EMERGENCY.
- YOU WILL BE CONTACTED FROM THE EMERGENCY CONTROL CENTER. THE PERSON IN CHARGE OF THE REFUGE STATION SHOULD ANSWER THE PHONE. HAVE THE COMPLETED CHECKLIST READY SO THAT THE NAMES OF PERSONNEL CAN BE COMMUNICATED TO THE EMERGENCY CONTROL CENTER.

UNDERGROUND EMPLOYEES ON SURFACE

- Underground employees that are on surface when they become aware of any site emergency must immediately report to the Mine Shift Office, and remain there pending further instructions.

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SECTION INDEX

MTS Telephone System **SECTION INDEX**

This is the normal everyday telephone system utilized throughout the minesite. Eight external lines are available. Dial 9 for an outside line. An access code is required for long distance calls.

Underground Phone

This system extends the normal telephone system underground to individual employees underground.

UHF Radios

Radios are used for everyday inter-employee communications on site. Five channels are programmed, and designated as follows:

Channel	Designated Use
1	Emergency
2	Surface Operations
3	-
4	Maintenance
5	-

A base station of about 25 watts is located in the main office entrance area. This is fitted with a telephone interconnect to allow activation of the site pagers.

FAX Machines **SECTION INDEX**

The following FAX machines are fitted with a handset that may be used for outgoing voice communications:

- Maintenance Trailers (884-2230)

Fleetnet Radios

These two way radios may be used anywhere in Manitoba, based on the location of the transmission towers. Coverage is reported to be more extensive and reliable than that for cellular telephones. The following transmission towers are included in Tanco's "toll free" zone:

- Belair
- Bissett
- Lac du Bonnet
- Manigotagan
- Nopiming

Roaming charges apply to communications outside these zones, in Winnipeg or Brandon for example.

Operational Note: Fleetnet radios do not work within metal clad buildings. The cladding shields the signal.

SECTION INDEX

Telephone calls can be made using the radio keypad. These calls are restricted to 5 minutes during the day (06:00 – 20:00 hrs), and 8 minutes at night (20:00 – 06:00 hrs). These restrictions may be less during periods of high call volumes.

Calls may be made to the radios from a regular telephone (instructions below)

There are four Fleetnet radios on site found at the following locations:

- Shift Supervisors Office – Radio ID# 714639
- Security - Radio ID# 714638
- Front Office - Radio ID# 714640, 714642

Instructions for Fleetnet radio use are appended.

Cellular Telephones

A number of staff carry cellular phones provided by Tanco: **SECTION INDEX**

User
IT Specialist
SH&E Manager
HR Manager
Underground Operations Superintendent
Surface Operations Coordinator
Surface Operations Superintendent
Laboratory/Quality Manager
Chief Geologist
Facility General Manager

The warehouse truck is also fitted with a cellular phone: 204-345-3129

SECTION INDEX

FEMCO Phone

The Femco phone is a completely self-contained battery-powered mine communication unit that provides loudspeaker paging and a handset party line conversation.

Phone sets are installed at the following locations:

- Security
- Hoistroom
- First level Refuge Station
- West Refuge Station
- 8-M
- Second Level S-1 Chute
- Transfer Raise Breaker Booth (Disconnected)

Instructions for Femco phone use are appended.

Pagers

Motorola Minitor V pagers are used to page the ER Team and the First Aid Co-ordinator. Call 259 (Security) to activate in case of emergency

APPENDIX

SECTION **INDEX**

How to use the Motorola Fleetnet LTS 2000 Radio

Step	Instruction	Notes
1	Turn the radio on	
2	Select Channel 1	
3	Check the display reads 2-A	Use the up and down arrows on the keypad to change the display as required
4	Press the push to talk button on the left hand side of the radio, release to listen	
	To make a telephone call FROM the radio:	Short calls only (<5 min)
1	Press the phone button on the bottom right of the keypad	Dial tone will sound
2	Key in the telephone number	Calls are routed through Winnipeg – 1-204 should precede the number
3	Press the push to talk button on the left hand side of the radio, release to listen	Only one person may speak at a time. The conversation will be heard by all radio users in the group.
4	Press the phone button on the bottom right of the keypad to disconnect	
	To make a telephone call TO the radio:	Short calls only (<5 min)
1	Dial 1-204-783-0903	
2	At the tone, key in the radio ID number	Radio ID numbers are: • 714638 - Security • 714639 – Shift Supervisor • 714640 – Front Office • 714642 – Front Office
3	The radio user must press the phone button on the bottom right of the keypad to receive the call	Only one person may speak at a time. The conversation will be heard by all radio users in the group.
4	The radio user must press the phone button on the bottom right of the keypad to disconnect	

FEMCO Phone Operation

Step	Instruction	Notes
1	Pick up the hand set and press the button. Keep the button pressed.	This connects the phone to the system
2	Lift the switch on the base and speak to page the intended recipient – the Hoistman for example.	This page will be heard at all the phone stations
3	When the page is answered, speak as with a normal phone, but keep the handset button pressed	
4	When finished talking, replace the handset in the cradle	

SECTION INDEX

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FIRE FIGHTING EQUIPMENT

INDEX

Fire hydrants, hoses and equipment are located in the following locations:

1. Main Pump House (on Lake Shore)
2. Mill - Near Vent House
3. Mill – North wall facing Feldspar Disposal area
4. Mine Dry - at First Aid room door
5. Hoist Room - at West Door
6. Welding Shop - South Door facing Sub Station
7. Machine Shop - North Door
8. Warehouse - near office
9. Back of Dry - North End
10. Mill Office - Downstairs
11. Chemical Plant – each exterior wall of plant

NOTE: FIRE FIGHTING EQUIPMENT IS STORED IN THE EMERGENCY SERVICES (SECURITY) BUILDING.

NOTE: FIRE EXTINGUISHERS ARE LOCATED THROUGHOUT ALL SITE BUILDINGS.

EMERGENCY RESPONSE VEHICLE

INDEX

The Emergency Response Vehicle is normally located in Emergency Services building. The following equipment is contained in the emergency vehicle:

QTY	ITEM	QTY	ITEM
1	Flash Light	12	Suction Bags
	Flares and Tools		Garbage Plastic Bags
1	Back Board and Straps		Foam Cups
2	Stretchers	12	Triangular Bandages
1	Bowl	2	Cervical Collars
1	IV Rack	7	Pressure Dressings
0	Splints	6	Dressings 4 x 4
1	Paramedic Kit	6	Dressings 3 x 3
1	Bed Pan and Bottle	13	Dressings 2 x 2
2	Oxygen Mask Nasal	2	Pillows
3	Oxygen Mask Face	2	Pillow Cases
1	Thermox Change Water	2	Sheets
1	Suction Hose	3	Blankets
2	16” Tracheal Suction Catheter	2	Towel
2	Bandage 1" x 2" x 4"	1	Face Cloth
1	Cervical Extrication Collar	1	Manual Resuscitator
1	Life Saver Kit #1173	2	½” Tape
2	1” Tape	2	2” Tape
4	4” Gauze	2	2” Gauze
2	1” Gauze	6	Stretcher straps

In the event of a serious accident (or illness) in parallel with all other steps that must be taken, arrangements must be made to have the emergency vehicle manned and moved to the most suitable location in preparation for loading.

EMERGENCY RESPONSE BUILDING

INDEX

The following equipment is contained in the Emergency Response Building:

QTY	ITEM	QTY	ITEM
	Breathing Apparatus		
4	Scott Air Pak	2	Regulator to belt holders
10	Scott Air Pak cylinders	3	SKA-Paks (Scott) with Air Cylinders
10	Scott Air Pak Masks	4	SKA-Pak cylinders
2	Air pressure regulators with air line adapters	2	Breathing Air bottles
1	Bottle 'O'rings (6pcs.)	4	50 ft air hose
		3	Pressure gauge 0-600PSI
	Fire Fighting		
2	Wajax Mark 3 Pumps	1	Cam lock to Wajax adaptor
1	Toolbox of Wajax pump parts	9	1 ½" Fire Hoses
2	Wajax Pump intake hose	2	2" Fire Hoses
8	Spanner Wrenches	5	1 ½" Quick disconnects
4	Hose Coupling Keys	1	1 ½" coupling
11	Hose Gaskets (2")	5	1 ½" bushings
7	Water Back Packs	4	1 ½" Leader Line Wye (splitter valves)
2	Pike Poles	17	1 ½" Assorted nozzles
2	Shovels	4	Axes
1	30" Paratech Hooligan tool	2	Fire axes

QTY	ITEM	QTY	ITEM
		1	22 ½ Ton hydraulic jack
		3 set	Turnout Gear (not complete)

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QTY	ITEM	QTY	ITEM
	Rope Rescue		
	High Angle Rescue Tub		**First Man Up Tub**
1	540 Rescue Belay	2	Beam chokers (large)
11	Prussic cords(long)	2	Beam chokers (small)
10	Prussic cords(short)	4	Scaffold choker
1	Fisk Descender	6	Positioning Lanyard
5	Re-directs (3 Blue, 2 stainless)	1	Anchor sling
1	Beam clamp (adjustable)		
1	Braker bar		
1	Snap hook		**First Man Up Bags**
11	Carabiners		2 bags each contains:
3	All terrain edge protectors	1	D-Ring extension
4	Mantle rope guards	1	Snap hook tool
1	Edge guard (linatex)	1	Snap hook
3	Webbing strips	1	Tie off adaptor tool
		1	Tie off adaptor (large)
1	Webbing Spool	1	Tie off adaptor (small)
3	Rope bags 200’ each	1	Reel kit
		1	Pole extension
		1	Folding bar

QTY	ITEM	QTY	ITEM
	Confined Space Entry Equipment		
1	Reeves sleeve c/w backboard	1	Rescue Tripod
4	Flashlights	2	Rescue winch
1	Confined Space signs	1	Ventilator Fan
1	6” ventilation hose	1	8” ventilation hose
3	12” ventilation hose	1	Air horn
1	4 plug GFI outlet	4	Rescue Ropes
1	Spreader Bar	2	Air horn refill cans
	Water Safety		
2	Survival Dry Suits	7	Life Jackets
1	16’ Canoe	2	Mercury Outboard Motor
1	16’ Aluminum Boat	12	Paddles
3	Mustang floater suits		
	Oil Spill		
2	Spill containment boom	1	Pkg oil absorbent squares (200)
	Miscellaneous		
9	Safety Harnesses w/Lanyards	1	Chainsaw
3	Folding Camp Cots	1	110/220v adaptor
3	Sleeping Bags	2	Back Board
1	6’ Step Ladders	1	Masonry cutting saw

QTY	ITEM	QTY	ITEM
2	10’ Step Ladders	1	Portable Generator
1	16’ Extension Ladder	4	Reflective traffic cones

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QTY	ITEM	QTY	ITEM
	Rope Rescue		
	High Angle Rescue Tub		**First Man Up Tub**
1	540 Rescue Belay	2	Beam chokers (large)
11	Prussic cords(long)	2	Beam chokers (small)
10	Prussic cords(short)	4	Scaffold choker
1	Fisk Descender	6	Positioning Lanyard
5	Re-directs (3 Blue, 2 stainless)	1	Anchor sling
1	Beam clamp (adjustable)		
1	Braker bar		
1	Snap hook		**First Man Up Bags**
11	Carabiners		2 bags each contains:
3	All terrain edge protectors	1	D-Ring extension
4	Mantle rope guards	1	Snap hook tool
1	Edge guard (linatex)	1	Snap hook
3	Webbing strips	1	Tie off adaptor tool
		1	Tie off adaptor (large)
1	Webbing Spool	1	Tie off adaptor (small)
4	Rope bags 200’ each	1	Reel kit
		1	Pole extension
		1	Folding bar

QTY	ITEM	QTY	ITEM
	Minor Spill Kit (CP Dome)		
1	Shovel		
2	Bags Soda Ash		
2	Bags Absorball		

MINE RESCUE EQUIPMENT

INDEX

The following equipment is located in the Mine Rescue Training Room:

QTY	ITEM	QTY	ITEM
	Breathing Apparatus		
11	Dräger BG-4 Units	1	Dräger BG-4 Dryer
1	Dräger BG-4 Tech Testing Kit	54 kg	Drägersorb 400
8	Dräger BG-4 Oxygen Bottle	50	Dräger Dust Filters
2	Ocenco SCBA Unit (1 trainer)	1	Oxygen Bottle Clamp
5	Soda Lime Canister Holders	5	Klar-Pilot Anti Fog (100 ml)
15 L	Airkem A-3 BA Cleaner	1	Dräger RZ-25 Tester
	Medicinal Oxygen Bottles	1	Haskel Pump
	Gas Testing Equipment		
3	Dräger Multi Gas Tester		Dräger Gas detector Tubes
1	Dräger Flame Safety Lamp		
1	Multi-pro Biosystems Gas Tester		

QTY	ITEM	QTY	ITEM
	First Aid Equipment		
1	Trauma Oxygen Bag	1	Stretcher
1	Scoop Backboard c/w Harness	2	Manual Breathing Pump
1	First Aid Kit		Assorted Splints
16	Wool Blankets		Disposable Gloves
			Triangular Bandages
	Fire Fighting Equipment		
1	ProPak Portable Foam System	1	Turbo Jet Foam Nozzle Style 1720
250 ft	1.5” 400 psi Fire Hose	1	Akron Foam Siphon Style 3060
1	1.5” Fire Nozzle	1	Quick Attach Nozzle Style 766
1	1” Water Nozzle	5 gal	Angus Tridol 3% Foam Concn.
10 gal	Angus High Combat A Foam		
	Miscellaneous		
1	Smoke Generator	12 L	Smoke Fluid
10	Northern Lights Miners Lamp	13	Safety Glasses
8	Brattice Cloths (8x8)		Disposable Razors
	Shaving Cream		Wood Wedges

QTY	ITEM	QTY	ITEM
	Tools		
2	Crescent Wrench	4	Screwdrivers
2	Pliers	1	Wire Cutters
1	19-32mm Combination Wrench	2	Utility Knives
2	Scissors	1	Oxygen Gauge
1	Nippers	2	Brass Brush
1	Gas Bottle Installation Tool	1	Screw/Bit Set
1	Pick Set	1	6 ft Scaling Bar (Aluminum)
1	6 ft Scaling Bar (Steel)	1	36” Swede Saw & Guard
4	Shovels	1	Axe (with cover)
1	Hatchet (with cover)	1	4 lb Sledge Hammer
4	16 oz Claw Hammer	1	Tool Bag
2	Staplers (with staples)	2	12” Miners Crescent Wrench
3	Victaulic Clamp Speed Wrenches	2	26 ft Measuring Tape
2	Punch Lock Machine	1	16 ft Measuring Tape
	Punch Lock Clamps	1	Proto Torque Wrench
1	18” Pipe Wrench	2	Captain Sticks c/w Horns
4	Horns	2	Maxiforce lifting Bags
2 Roll	Flagging Tape		Maxiforce Controller, Regulator & Hoses

QTY	ITEM	QTY	ITEM
	Assorted Nails		

DON SIKORA CONTRACTING

INDEX

Equipment Available (10 May 2010):

- 3 graders
- 5 ton lowbed
- 20 ton lowbed
- 50 ton lowbed
- 3 Rubber Tire Loader, 3.5 yards
- 3 Dump Boxes, semis
- 2 Tandems
- 4 Rock Trucks
- 4 Excavators
- 1 Rubber Tire Backhoe
- 1 D6H Crawler Bulldozer
- Various water pumps
- Small gen sets

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CLEAN HARBORS

Winnipeg, Manitoba Service Center

45 Terracon Place	**24 Hr. #**	**(204) 231-9448**
Winnipeg, MB R2J 4B3	**24 Hr. #**	**(800) 645-8265**
Alfio Corvino, General Manager	**Fax #**	**(204) 233-4177**

Personnel Authorized to release equipment / materials / manpower, etc:

Alfio Corvino

Ron Lounsbury

40-Hour OSHA Trained Personnel:

Supervisor	1
Foreman	2
Equipment Operator	4
Field Technician	2

Equipment List **Item Description**	**Location**	**Capacity / Size / Model**	**# of Units**
(1) Motor Vehicles			
Vacuum Straight Truck	Winnipeg	10,000L	1
Vacuum Straight Truck w/pup	Winnipeg	20,000	1
High Powered Vacuum	Winnipeg	Cusco – 8,000L	1
Pick-Up Trucks	Winnipeg	Ford	5
Steamers	Winnipeg	3,500 PSI Heated	3
Wet/Dry Vac	Winnipeg	5700 CFM	2

Equipment List Item Description	Location	Capacity / Size / Model	# of Units
Emergency Response Trailer	Winnipeg	22'	1
High Pressure Waterblaster	Winnipeg	15,000 PSI	1
Tractor with Van Trailer	Winnipeg	Portable Forklift, Secondary Containment	1
(2) Pumps and Pressure Equipment			
Diaphragm Pump (Chemical and Flammable)	Winnipeg	2"	2
Diaphragm Pump	Winnipeg	3"	2
(3) Environmental Monitoring Equipment			
5 Gas PID	Winnipeg	MSA Sirius	2
4 Gas	Winnipeg		1
Gastech Meter	Winnipeg	Gastech (numerous tube varieties)	2
(4) Recovery Equipment			
Open top drums	Winnipeg	205L (Steel and Poly)	20
Closed top Drums	Winnipeg	205L (Steel and Poly)	20
Absorbtion Pads	Winnipeg	Bundles (oil select and universal)	40
Absorbent Booms	Winnipeg	2" to 4" diameter	40
(5) Generators / Compressors / Light Towers			
5KW Generator		Wacker	1
(6) Health and Safety Equipment			
Rogliss Tripod	Winnipe	DBI	1

Equipment List Item Description	Location	Capacity / Size / Model	# of Units
	g		
SCBA	Winnipeg	MSA Airhawk	4
SAR	Winnipeg	MSA Hipair	4
Chemical Suit	Winnipeg	Various	300

Emergency Response Subcontractors

Ken Palson Trucking
2315 Dugald Road
Winnipeg, MB R2C 5L4
(204) 663-9008
(204) 663-8061 (Fax)

Contact: Ken Palson

Services Provided:
Backhoes, Loaders, Trucks

MEP Environmental
68 Paramount Road
Winnipeg, MB R2X 2W3
(204) 632-4118
(204) 632-5809 (Fax)

Contact: Chris Guenther

Services Provided:
24 Hour Emergency Response Supplies
Boom, Pads, Etc.

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EMERGENCY ORGANIZATION CHART

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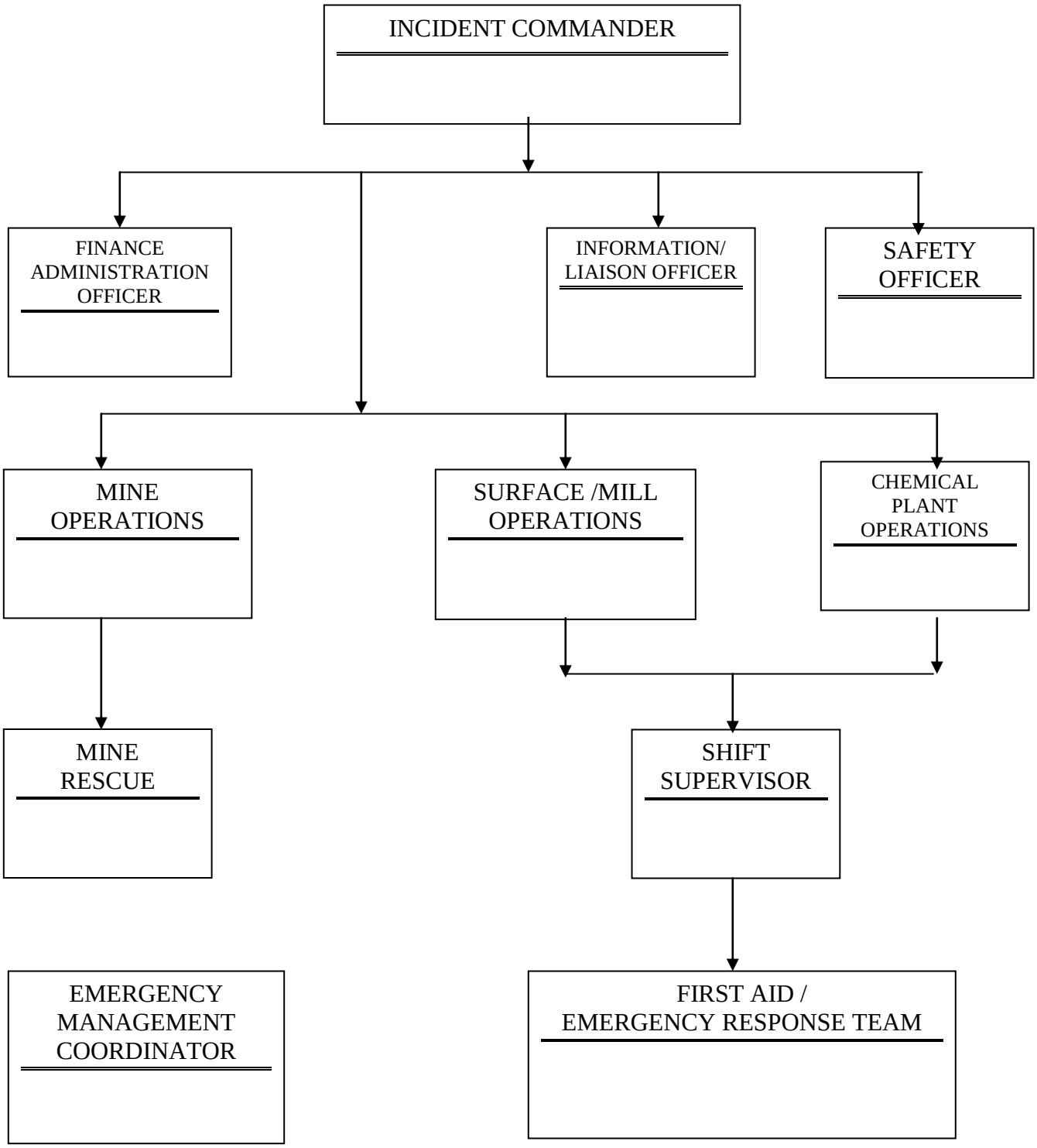

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EMERGENCY DURING NON OFFICE HOURS:

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SHIFT SUPERVISOR RESPONSIBILITIES (ALTERNATE: CHEMICAL PLANT LEAD HAND)

The Shift Supervisor shall be initially responsible for **all** site emergency operations as acting Incident Commander.
Note: In the event that the Shift Supervisor is incapacitated, the Chemical Plant Lead hand must be immediately informed.

The Shift Supervisor shall take the following steps (these steps may be delegated to other employees as necessary).

- Initiates evacuation procedures if necessary (Mine or all Surface operations)
- Account for all employees known to be on site.
  Note: The roll call document will be printed out at the Mine Office printer by Security when the evacuation alarm is sounded.
- Initiate a search for any missing employees.
- Ensure that any injured employees receive first aid and/or off site medical aid as required.
- Take all reasonable steps to control the emergency using any resources available: contain a fire situation if safe to do so, contain or control a spill for example
- Call in any employees that may be potentially required to control or remediate the emergency:
    - Operators
    - Maintenance
    - ER Team
    - First aid
    - Mine Rescue
- Call in any off site First Responders that may be required (9-1-1):
    - Bird River Fire Department
    - Ambulance Services
    - RCMP

- Contact the following staff as appropriate to inform them of the situation and any remedial measures that have been initiated:
    - Underground Operations Superintendent
    - Surface Operations Superintendent
    - General Manager
    - SH&E Manager
- Inform Security of the emergency condition, and provide appropriate instructions regarding entry and direction of employees called in, and direction of First Responders.
- Provide an escort for first responders if available.
- Upon arrival of a senior manager, carries out a briefing of that manager, and continues to function in a front line role until relieved.
- **DO NOT** issue statements of any kind to the families of employees or to the media, no matter how insistent they may be regarding deadlines. Take names and a contact number and pass this information on to the senior manager present.

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GENERAL EMERGENCY RESPONSE:

SECURITY PERSONNEL RESPONSIBILITIES

INDEX

- During the routine sign in process, ensure that every site visitor is instructed to return to the Security Building when the site emergency alarm sounds.
- On hearing the site emergency alarm, return immediately to the Security Building.
- Ensure the portable radio is switched to Channel 1
- Print out roll call documents as follows:
  - Monday – Friday, 08:00 – 16:00

Document Title	Printout Location	Printer Selection
Roll Call ER Team	Security	Manitoba01\Security
Roll Call Main Office	Main Office	Manitoba01\Main Office
Roll Call Mine Dry Chem Plant	Mine Office	Manitoba01\Mine Dry
Roll Call Mine Dry Mill	Mine Office	Manitoba01\Mine Dry
Roll Call Mine Dry Mine	Mine Office	Manitoba01\Mine Dry
Roll Call Mine Dry Maintenance	Mine Office	Manitoba01\Mine Dry

  - All other times:

Document Title	Printout Location	Printer Selection
Roll Call Mine Dry All Employees	Mine Office	Manitoba01\Mine Dry

- Ensure that the gateway is kept clear at all times to allow entry and exit of emergency vehicles

- During a site evacuation, carry out a roll call of all non-TANCO persons known to be on site – contractors, truck drivers, salesmen and any other visitors. Use the sign in log.
  Report unaccounted persons to the Main Office (08:00 to 16:00 hrs) by phone (Ext 203) or radio (Channel 1) or to the Shift Supervisor (at all other times)

  During inclement weather, non-TANCO persons may be directed to the Mine Rescue Training Room, after roll call is complete.
- Control incoming/outgoing traffic and employees. Only allow authorized persons to enter or leave the site – this includes site employees at shift change for example. Direction will be provided by the Shift Supervisor or the senior manager on site
- Provide direction to First Responders as instructed by the Shift Supervisor or the senior manager on site
- Maintain a time log of all activity.
- Do not leave the site until the Incident Commander grants permission.
- Test the ER Team and First Aid pagers for proper operation every night shift

INDEX

SHIFT SUPERVISOR RESPONSIBILITIES

INDEX

- During emergencies from 08:00 – 16:30 hrs, conduct a roll call of assembled employees in the Mine Dry. Transmit this information to the Surface Operations Superintendent or alternate.
- Work with the Surface Operations Superintendent and/or Underground Operations Superintendent as necessary to execute the response plan

INCIDENT COMMANDER RESPONSIBILITIES

INDEX

***Overview of Responsibilities**:*

- Responsible for implementation and co-ordination of the Tanco Emergency Response Plan in the event of an emergency.
- Controls all Operations, Maintenance, Security and Safety, including contractors or outside personnel performing operational, maintenance, repair, or security tasks on site.
- Plans, approves and directs necessary response actions (Incident Action Plan).
- Acquires any additional resources that are necessary to resolve the emergency.
- Manages staffing and manpower, including shift rotations and additional manpower needs.
- Makes final decision regarding the termination of the emergency and the beginning of "recovery". This must be done in conjunction with any governmental agencies that have authority/jurisdiction over the emergency.
- Co-ordinates and controls all external communications.
- Co-ordinates and controls contacts with the regulatory authorities
- Coordinates with Legal Counsel.

***Actions Required**:*

- Ensure with the caller that initial emergency procedures are in motion (stench warning, fire alarms, etc.)
- If the call did not come from the manager of the department involved, immediately contact this person and delegate him to take charge of the emergency response activities in the field.
- If initial information indicates the possibility of serious casualties, requests dispatch of medical assistance to the Mine from either Pinawa or Lac du Bonnet.

- Ensure that any off site First Responders that may be required are called in (9-1-1):
    - Bird River Fire Department
    - Ambulance Services
    - RCMP
- Arrange back-up for the Mine Rescue Team if initial information indicates that this is necessary.
- Arrange/authorize any other external resources that may be required to control the emergency – contractors, technical, medical and legal resources, air services for example
- Ensure that all regulatory reporting is carried out in a timely manner:
    - Energy and Mines
    - Workplace Health & Safety – Inspection Branch
    - Manitoba Conservation – Environment Division
    - RCMP
- Ensure that all Divisional and Corporate reporting is carried out:
    - Cabot Specialty Fluids (?)
    - Cabot Corporation - Boston
- If not already at the Mine, proceed at first opportunity to the Mine to provide direction and support in the ongoing response to the emergency
- Approves any communications with the media. Co-ordinate with Corporate media relations as required.
- Assume sole responsibility for communications with regulatory agencies.
- Assume sole responsibility for communications with the families of employees that may be affected by the emergency. Co-ordinate with site Human Resources and Corporate Human Relations as required
- Ensure that relevant information is conveyed to personnel in the field (in the Mine Dry for example)
- Maintains an incident log, with times.

INDEX

SAFETY/ENVIRONMENT OFFICER:

***Overview of Responsibilities**:* **INDEX**

- Participation in response planning to ensure that all safety and environmental risks are identified and considered.
- Monitors conditions, activities and operations in the field to identify potential or developing hazards,
- Suggests ways to reduce risks.
- Ensures injured employees receive appropriate medical attention.

***Actions Required**:*

- Participates in the development of the incident action plan (written or oral)
- Suggests alternative approaches to reduce safety and environmental risks
- Monitor activities in the field to ensure that risks are minimized
- Ensures that appropriate PPE is available and used, for both employees and external responders
- Investigates incidents that occur as a result of the incident response.
- Initiates as required first aid response for possible multiple casualties,
- Advises the Incident Commander regarding external reporting requirements
- Maintain an incident log with times

INFORMATION/LIAISON OFFICER:

***Overview of Responsibilities**:* **INDEX**

- Development and release of information to the news media, incident personnel, and to other appropriate agencies and organizations
- Act as the contact for the personnel assigned to the incident by assisting or co-operating agencies

Actions Required

- Develops material for use in media briefings for approval by the Incident Commander
- Inform the media, conduct media briefings
- Maintain current information summaries on the incident
- Participates in incident action plan development

- Maintain an incident log with times
- Maintains and updates contact with assisting or co-operating agencies

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SURFACE OPERATIONS EMERGENCY RESPONSE

INDEX

RESPONSE OVERVIEW:

- If Mill employees are evacuated, they assemble in the Mine Dry for roll call. They remain in the Mine Dry until released.
- If Chemical Plant employees are evacuated, they assemble in the Mine Dry for roll call. They remain in the Mine Dry until released.
- Evacuated Maintenance employees assemble in the Mine Dry for roll call. They remain in the Mine Dry until released.
- The Surface Operations Superintendent (or alternate) is responsible for all field activities during a Surface emergency – maintenance and operations
- The Emergency Response Team, supported by the operators, and guided by the Shift Supervisor will respond to the emergency conditions
- The General Manager (or alternate) assumes the role of Incident Commander

SURFACE OPERATIONS SUPERINTENDENT (ALTERNATE: SITE SUPERVISOR)

Overview of Responsibilities: INDEX

- Co-ordinate first line response during a Surface emergency.
- Maintain control and isolation of operational areas affected by the emergency.
- Oversee rescue and response operations.
- Maintain flow of information to the Incident Commander

Actions Required:

- If an evacuation has been initiated, proceed immediately to the Mine Dry to conduct roll call for Surface and Maintenance employees (this can be done by the Site Supervisor)
  Note: The roll call document will be printed out at the Mine Office printer by Security when the evacuation alarm is sounded.
- Initiate search for any missing employees, based on the roll call
- Ensure that First Aid is rendered to any injured employees
- Carry out an initial situational assessment to determine the nature and extent of the emergency

- Plan the initial response to the emergency in consultation with the Incident Commander, and initiate the necessary actions
- Assemble mechanical and electrical support crews as required by the initial response plan.
- Advise the Underground Operations Superintendent and/or the Mine Supervisor of any potential hazard to headframe or mine crews working underground
- Report to the Incident Commander on the emergency and inform him of actions that have been initiated, and request additional resources as necessary
- With the Shift Supervisor, direct and control emergency response activities in the field, continually assessing the situation.

EMERGENCY RESPONSE TEAM

***Overview of Responsibilities**:* **INDEX**

The primary objectives of the Emergency Response Team are:

- Incipient stage fire response
- First aid response for injured employees
- Rope rescue for suspended employees and from elevated locations
- Confined Space Rescue
- Response to hazardous materials incidents

Regular training shall be conducted to achieve competence in these activities.

The Emergency Response team shall not conduct any activities underground.

MINE EMERGENCY RESPONSE

INDEX

GUIDING PRINCIPALS

The guiding principles during any mine rescue shall be:

- Safety of the mine rescue team,
- Rescue and care of casualties,
- Extinguish or control fires,
- Restoration of the mine to normal operation.

RESPONSE OVERVIEW:

- The General Manager (or alternate) assumes the role of Incident Commander
- The Underground Operations Superintendent (or alternate) is responsible for all field activities during the mine emergency
- The Surface Operations Superintendent (or alternate) is responsible for providing emergency maintenance services
- All available employees underground are evacuated, and assemble in the Mine Dry for roll call, or are accounted for in the mine refuge stations. Those in the Mine Dry remain there until released.
  Note: The roll call document will be printed out at the Mine Office printer by Security when the evacuation alarm is sounded.
- Essential mine services such as ventilation air, compressed air, fresh water supply or electrical power must not be altered or shut down.
  Note: Restoration of power is permissible.
- A Fire control centre will be established in Mine Engineering office, if required.
- The Mine rescue Training room is the assembly area for the Mine Rescue team
- The Mine Rescue Co-ordinator ensures that the rescue Team is prepared and equipped to go underground
- The Mine Rescue Team is briefed/debriefed by the Underground Operations Superintendent
- First team is to begin field test as soon as possible.
- The Mine Dry will be used for standby and reserve team members.

UNDERGROUND OPERATIONS SUPERINTENDENT (ALTERNATE: MINE SUPERVISOR)

Overview of Responsibilities: **INDEX**

- Co-ordinate first line response during an underground emergency.
- Conduct briefing/debriefing of Mine Rescue Team members.
- Oversee rescue operations.
- Maintain flow of information to the Incident Commander

Actions Required*:*

- Gather all relevant information about the situation that the individual reporting the emergency is aware of. This would include:
    - Name of individual reporting;
    - Location and phone number of individual reporting;
    - Location of the emergency;
    - Number of injuries (if any), and details;
    - Location of crews (if caller has this information).
- Initiate stench warning system to evacuate the mine if required
- Contact the hoistman to instruct the skiptender to come to surface after he has checked to assure the shaft is clear of any smoke and fumes, and it is determined that he can exit safely.
- Initiate the assembly of the Mine Rescue Team
- Contact the General Manager and report on the emergency and inform him of whatever actions have already been initiated.
- Request the Surface Operations Superintendent to assemble mechanical and electrical support crews as required
- Advise the Surface Operations Superintendent and Chemical Plant Manager and Superintendent of any potential hazard – smoke up the shaft for example.
- Obtain names and information from those who witnessed the emergency.

- Make available the names of the following employees on shift:
    - Trained Mine Rescue personnel;
    - Electricians;
    - Miners;
    - Mechanics.
- If a mine evacuation has taken place ensure that a roll call for mine employees is carried out.
- Establish a Fire control centre in the Mine Engineering office, if required.
- Proceed to the Mine Rescue Training Room to prepare plans and written instructions for the mine rescue team, and to co-ordinate rescue efforts. If off site, proceed directly to the mine after ensuring the steps above have been completed

MINE RESCUE CO-ORDINATOR

Actions required: **INDEX**

- Report to the Underground Operations Superintendent or alternate for instructions.
- Contact Mine Rescue personnel as required and issue instructions to them to assemble at the Mine Rescue Training Room. Assure that appropriate back up mine rescue personnel is notified.
- Proceed to unlock mine rescue storage cabinets and start to organize mine rescue equipment.
- As mine rescue personnel report for duty, assign team positions and organize team equipment.
- Keep unauthorized individuals, or individuals not involved with the rescue operation, out of the Mine Rescue Training Room.

The nature and location of the fire or emergency will be explained to mine rescue personnel as soon as all the necessary details are known. Team members should be assembled and equipment should be field tested and ready for use as soon as possible so that rescue operations can commence quickly.

MINE ENGINEER

Actions required: **INDEX**

- Report to the Underground Operations Superintendent or alternate for instructions.
- Prepare engineering office for emergency operation. (clear work off tables, file unnecessary prints, and ensure office is in orderly state.)
- Stand by in engineering office for further instruction. Be prepared to make prints and/or layouts as required by the Mine Rescue crews, Mine Rescue Co-ordinator, Superintendents or General Manager.
- Consider that an "Emergency Control Centre" is to be set up in the Mine Engineering Office, locate the necessary supplies (flip charts, etc.), and co-ordinate set-up.

HOISTMAN

Actions required: **INDEX**

- Obtain all the important information about the situation that the individual reporting the emergency is aware of. This would include:
    - Name of individual reporting;
    - Location and phone number of caller;
    - Location of emergency;
    - Number of injuries (if any), and details;
    - Location of crews (if caller has this information).
- Activate the compressed air stench warning system. Assign the activation of the vent fan stench warning systems as soon as possible.
- Notify Shift Supervision. (All Mine and Mill Supervisors are trained in stench warning system activation)
- Phone Skiptender and bring him to shaft collar after checking to ensure shaft is clear of smoke and fumes, and confirming that it is safe to do so.

  Note: A trained skiptender may be provided with a self contained breathing apparatus and may begin hoisting men to surface if the shaft remains free of smoke and fumes.
- If a fire or life-threatening emergency exists on surface, activate the fire siren.
- Notify Mine Supervision as soon as possible.

MINE RESCUE TEAM

Overview of Responsibilities: **INDEX**

The three main objectives of the Mine Rescue Team are:

- Locate and rescue underground personnel that may be at risk.
- Locate and extinguish incipient or active fires or deal with other emergencies.
- Rehabilitate the mine as required.

Regular training shall be conducted to achieve competence in these activities

EMERGENCY MANAGEMENT COORDINATOR

Overview of Responsibilities: **INDEX**

- Responsible for the development, implementation and maintenance of this Emergency Response Plan.
- Conducts an annual review of the Plan
- Coordinates with first responders concerning their activities under the Plan
- Coordinates with external contractors concerning their activities under the Plan
- Conducts employee training
- Plans and conducts exercises to test the Plan

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PROPANE EMERGENCY RESPONSE SUMMARY

INDEX

Criteria	Response
LEVEL 0 • Small propane gas or liquid leak can be isolated by closing block valves • Injury potential is very low • Fire potential is very low	• Note the wind direction and force • Close the storage tank isolation valves located under the tanks, if necessary and if safe to do so • Close other system valves as necessary to reduce or stop the gas release • Ensure that all sources of ignition are eliminated • Isolate the area immediately surrounding the leak for at least 100 meters, until gas is dispersed. Downwind gas concentration should be <10% LEL • Ventilate buildings as necessary • Call Site Supervisor
LEVEL 1 • Significant propane gas or liquid leak can be isolated by closing block valves • Injury potential is low, but possible • Fire potential is low, but possible	• Sound the emergency evacuation alarm • Note the wind direction and force • Close the storage tank isolation valves located under the tanks, if safe to do so • Close other system valves as necessary to reduce or stop the gas release • Isolate the area immediately surrounding the leak for at least 100 meters • Ensure that all sources of ignition are eliminated • Ventilate buildings as necessary • Call Superior Propane (204-488-4499 or 877-873-7467)
LEVEL 2 • Significant propane gas or liquid leak can be isolated by closing block valves • Injury potential is significant • There is a fire or the fire potential is high	• Sound emergency evacuation alarm • Note the wind direction and force • Close the storage tank isolation valves located under the tanks, if safe to do so • Close other system valves as necessary to reduce gas release • Isolate the area immediately surrounding the leak for at least 100 meters • Ensure that all sources of ignition are eliminated for at least 100 meters • Evacuate downwind at least 800 meters • Set up fire hose systems to control small fires if safe to do so (do not use Wajax pumps as they are a potential source of ignition) • Ventilate buildings as necessary • Call Bird River Fire Department (9-1-1) • Call Superior Propane (877-873-7467 or 204-488-4499). Request activation of the LPGERC response team if required

LEVEL 3
• Propane gas or liquid leak cannot be isolated by closing block valves
• There is damage to the storage tank
• Injury potential is significant
• There is a fire or the fire potential is high
	• Sound emergency evacuation alarm
	• Note the wind direction and force
	• (Pull the emergency cords to close the tank isolation valves)
	• Close other system valves as necessary to reduce gas release if safe to do so
	• Isolate the area immediately surrounding the tanks
	• Evacuate the area as follows:
	  • 800 meters downwind for a large spill
	  • 1600 meters in all directions for a tank involved in a fire
	• Ensure that all sources of ignition are eliminated
	• Set up fire hose systems to control small fires if safe to do so (do not use Wajax pumps as they are a potential source of ignition)
	• Ventilate buildings as necessary
	• Call Bird River Fire Department (9-1-1)
	• Call Superior Propane (877-873-7467 or 204-488-4499). Request activation of the LPGERC response team.

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1.0 PURPOSE

This procedure will ensure that preventive measures, adequate preparedness and an appropriate response to and recovery from emergency situations involving the uncontrolled release of propane liquid or gas are in place, in compliance with the Environmental Emergency Regulations SOR/2003-307

2.0 SCOPE

This procedure applies to all propane installations on the TANCO mine site

3.0 REFERENCES

Environmental Emergency Regulations SOR/2003-307

Implementation Guidelines for Part 8 of the *Canadian Environmental Protection Act, 1999* – Environmental Emergency Plans

Superior Propane MSDS - Propane

CANUTEC - Emergency Response Guidebook 2008 Guide 115 – Gases - Flammable

CAN/CSA Z731-03 Emergency Preparedness and Response

CAN/CSA B149.1 Natural Gas & Propane Installation Code

CAN/CSA B149.2 Propane Storage & Handling Code

4.0 DEFINITIONS

BLEVE: boiling liquid expanding vapour explosion INDEX
LPG: liquefied petroleum gas
LPGERC: Liquefied Petroleum Gas Emergency Response Corporation; a wholly owned subsidiary of the Propane Gas Association of Canada

RMA: Remedial Measures Advisor – a first line responder from the LPGERC

LEL: Lower Explosive Limit

UEL: Upper Explosive Limit

Flash point: The flash point of a flammable liquid is the lowest temperature at which it can form an ignitable mixture in air. At this temperature the vapor may cease to burn when the source of ignition is removed.

5.0 PROPANE CHARACTERISTICS

Propane is a flammable gas with a boiling point of –42 º C, and a flash point of –103.4 º C. The LEL is 2.4%, the UEL 9.5%.

It is transported as a liquid with a density of 0.51 (water = 1), at a normal pressure of xx to xx psig

250 ml (1 cup) of liquid propane will generate 270 times its own volume of gas – 67.5 litres

With a vapour density of 1.52 (air = 1) it is heavier than air, and will flow downhill to low lying areas. A source of ignition (spark or flame) will cause a flashback to the source of the leak.

As a gas it is a simple asphyxiant, as it reduces oxygen concentration in air.

Propane gas itself is odourless. Ethyl mercaptan is added to propane to give it its characteristic "boiled cabbage" smell.

Refer to the MSDS For further information

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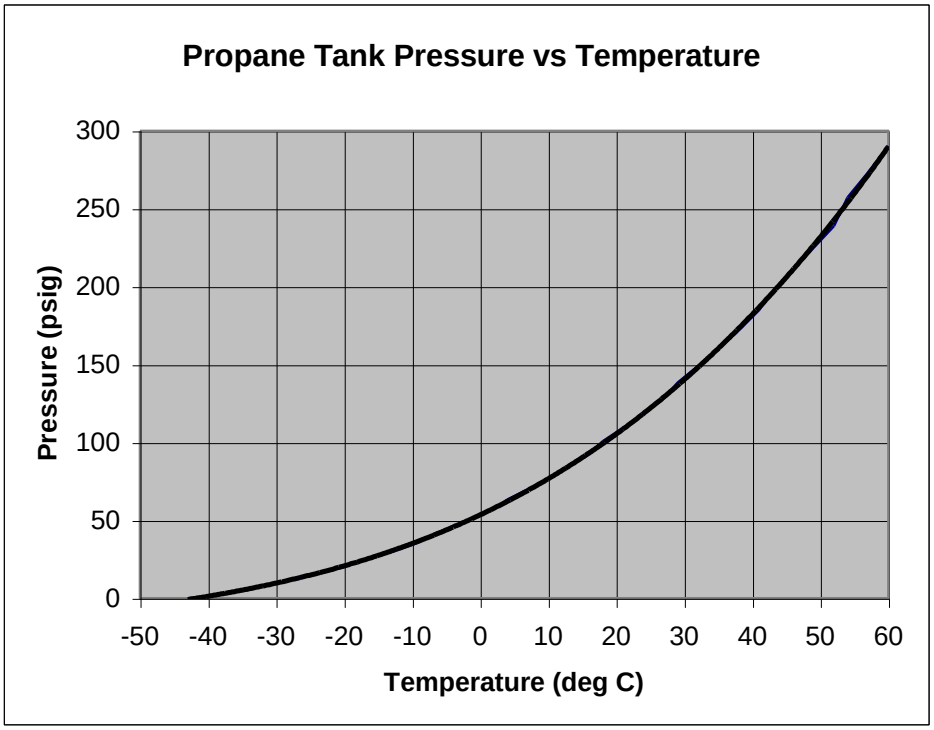

6.0 POTENTIAL HAZARDS (from ERP Guide 115):

FIRE OR EXPLOSION

- EXTREMELY FLAMMABLE. INDEX
- Will be easily ignited by heat, sparks or flames.
- Will form explosive mixtures with air.
- Vapors from liquefied gas are initially heavier than air and will spread along the ground.
- Vapors may travel to source of ignition and flash back.
- Cylinders exposed to fire may vent and release flammable gas through pressure relief devices.
- Storage tanks and containers may explode when heated.
- Ruptured cylinders may rocket.

HEALTH

- Vapors may cause dizziness or asphyxiation without warning. INDEX
- Some may be irritating if inhaled at high concentrations.
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- Fire may produce irritating and/or toxic gases.

7.0 SITE PROPANE STORAGE

INDEX

There are three site storage locations:

Location	**No of Tanks**	**Tank Capacity**	**Location Capacity**	**Location Propane Capacity**	**Maximum Location Capacity‡**
		USWG	**USWG**	**kg Propane**	**kg Propane**
Main Site	5	2,400	12,000	23,255	18,600
East Fan	4	2,460	9840	19,100	15,260
Chemical Plant*	1	30,000	30,000	58,138	46,500
Total					**80,360**

‡ Maximum fill capacity for propane storage is 80%

* Largest single storage tank

Insert site map showing location of propane storage

8.0 CREDIBLE RELEASE/EVENT SCENARIOS

INDEX

POTENTIAL CONSEQUENCES IN CASE OF ACCIDENT

INDEX

Inventory			Worst Probable Case Scenario	Alternate Case Scenario (More credible)	
			Distance to an overpressure of 1 psig (6.9 kPa)	Distance to a thermal radiation of 5 kW/m^2	Distance to an overpressure of 1 psig (6.9 kPa)
Tonnes	Litres	US Gallons	Instantaneous loss of containment	BLEVE	2" leak with wind 1.5 m/s and Stability F
4.5	8,876	2,345	285 m	265 m	165 m
6.0	11,834	3,127	310 m	290 m	165 m
7.5	14,793	3,908	335 m	310 m	165 m
9.0	17,751	4,690	355 m	330 m	165 m
34.6	68,138	18,000	555 m	495 m	165 m
46.5	**91,717**	**24,232**	**610 m**	**545 m**	**165 m**
57.6	113,563	30,000	660 m	595 m	165 m

Notes:
1. Thermal radiation of 5 kW/m^2 can cause second degree burns in 40 seconds
2. An overpressure of 1 psig (6.9 kPa) from an explosion can cause the collapse of the external walls of a house
3. A tank being exposed to a fire ruptured following a BLEVE. The fragments could theoretically reach 1600 m from the source.

9.0 PREVENTION

INDEX

Installation: All storage and piping is installed in compliance with CSA/CAN B149 Natural Gas and Propane Installation Code. All systems were audited against this code in April 2007.

Preventive Maintenance: A preventive maintenance inspection schedule is in place and is followed for all the propane storage tanks and associated piping and vaporizers.

Grounding: grounding protection on all tanks is tested annually.

Cathodic Protection: on all underground lines is tested annually.

Protection from Vehicles: All propane storage tanks and piping are protected from vehicles.

Fire Protection: there are no combustible materials or sources of ignition within 25 ft of storage tanks. A 75 ft fire break is maintained around the East Fan storage area.

Employee Training: all employees responsible for the filling of propane cylinders are trained and certified in those procedures.

Empty Propane cylinders: are disposed of according to procedure (define), or are hydrotested.

10.0 RESPONSE

GENERAL RESPONSE PRINCIPLES

Spill or Leak: INDEX

- Stop the leak if this can be done without risk
- Evacuate everyone upwind and out of the vapour
- Evacuate spill or leak area immediately, upwind and out of the vapour for at least 100 m in all directions, 800 m if the spill or leak is large
- Keep unauthorised people away
- Do not touch or walk through spilled material
- Keep out of low lying areas (propane is heavier than air and will spread along the ground and accumulate in low or confined areas)
- Eliminate all possible sources of ignition, including those that do not normally pose a risk. (Propane may travel long distances along the ground and flashback to the source)
- Ensure that the leak area is well ventilated to prevent air concentrations from reaching explosive levels
- Ventilate closed spaces before entering

Fire: INDEX

- DO NOT EXTINGUISH a leaking gas fire unless the leak can be stopped at source
- ALWAYS stay away from tanks engulfed in fire
- Evacuate everyone to a safe distance, 100 m minimum, 1600 m if the tank is exposed to flames or heat
- Stop the leak if this can be done without risk
- Fight the fire from maximum distance or use unmanned hose holders or monitor nozzles
- Cool containers with flooding quantities of water until well after the fire is out
- Do not direct water at the source of leak or safety devices; icing may occur
- Withdraw immediately in case of rising sound from venting safety devices

- For a massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw and let the fire burn

LEVEL 0 RESPONSE

May handle the event without escalating the response to the next level under the following circumstances: INDEX

- There is no damage to the storage tanks or cylinders or any other mechanical components
- The storage tank or cylinder is secure
- Zero to minimal release of product through mechanical fittings
- There is little or no risk of fire
- There is no danger to employees, contractors or visitors
- The propane can be safely managed using normal day to day processes

ACTIONS:

- Note the wind direction and force
- Close the storage tank isolation valves located under the tanks, if necessary and if safe to do so
- Close other system valves as necessary to reduce or stop the gas release
- Ensure that all sources of ignition are eliminated
- Isolate the area immediately surrounding the leak for at least 100 meters, until gas is dispersed. Downwind gas concentration should be <10% LEL
- Ventilate buildings as necessary
- Call Site Supervisor

LEVEL 1 RESPONSE

May handle the event without escalating the response to Level 2 under the following circumstances: INDEX

- There is no damage to the storage tanks or cylinders
- The storage tank or cylinder is secure with no release of propane
- Release of product through mechanical fittings may be controlled by closure of isolation valves
- There is some risk of injury to on site personnel.
- There is no fire, but the potential for fire exists.
- The cause of the release can be safely corrected using personnel from Superior Propane

ACTIONS:

- Sound the emergency evacuation alarm
- Note the wind direction and force
- Close the storage tank isolation valves located under the tanks, if safe to do so
- Close other system valves as necessary to reduce or stop the gas release
- Isolate the area immediately surrounding the leak for at least 100 meters
- Ensure that all sources of ignition are eliminated
- Ventilate buildings as necessary
- Call Superior Propane (204-488-4499 or 877-873-7467)

LEVEL 2 RESPONSE – EXTERNAL RESOURCES REQUIRED

May handle the event without escalating the response to Level 3 under the following circumstances: INDEX

- There is no damage to the storage tanks or cylinders
- The storage tank or cylinder is secure with no release of propane
- Release of product through mechanical fittings may be controlled by closure of valves
- There is a fire or a potential risk for fire to be started, including brush/forest fire
- There is significant potential risk of injury to on site personnel
- The propane can only be safely managed using personnel resources from Superior Propane and/or the Bird River Fire Department

ACTIONS:

- Sound emergency evacuation alarm
- Note the wind direction and force
- Close the storage tank isolation valves located under the tanks, if safe to do so
- Close other system valves as necessary to reduce gas release
- Isolate the area immediately surrounding the leak for at least 100 meters
- Ensure that all sources of ignition are eliminated for at least 100 meters
- Evacuate downwind at least 800 meters
- Set up fire hose systems to control small fires if safe to do so (do not use Wajax pumps as they are a potential source of ignition)
- Ventilate buildings as necessary
- Call Bird River Fire Department (345-1989 or 345-8685 (RCMP))
- Call Superior Propane (204-488-4499 or 877-873-7467)

LEVEL 3 RESPONSE – EXTERNAL RESOURCES REQUIRED

The situation presents a clear danger to on site personnel and requires significant external resources for control. Potentially a catastrophic event in the making.

- Storage tanks or cylinders are damaged and releasing propane
- Propane gas is released from the tank relief valves INDEX
-
- Release of propane through mechanical fittings may not be controlled by closure of valves
- There is a fire or a high potential for fire to be started, local to the storage tanks or piping systems
- Risk of injury to on site personnel is high
- The propane can only be safely managed using personnel from Superior Propane, the Bird River Fire Department and the LPGERC

ACTIONS:

- Sound emergency evacuation alarm
- Note the wind direction and force
- (Pull the emergency cords to close the tank isolation valves)
- Close other system valves as necessary to reduce gas release if safe to do so
- Isolate the area immediately surrounding the tanks
- Evacuate the area as follows:
  - 800 meters downwind for a large spill
  - 1600 meters in all directions for a tank involved in a fire
- Ensure that all sources of ignition are eliminated
- Set up fire hose systems to control small fires if safe to do so (do not use Wajax pumps as they are a potential source of ignition)

- Ventilate buildings as necessary
- Call Bird River Fire Department (345-1989 or 345-8685 (RCMP))
- Call Superior Propane (877-873-7467 or 204-488-4499). Request activation of the LPGERC response team

11.0 SUPERIOR PROPANE/LPGERC RESPONSE

Superior Propane maintain a Technician on call 24/7 in Winnipeg. A call to Superior will bring a technician on site within three hours. INDEX

If the incident is obviously outside the capabilities of the Superior Propane technician and the Bird River Fire Department combined, then a request must be made to Superior Propane to activate the LPGERC response team immediately (only Superior Propane can activate this response capability).

The LPGERC will dispatch a Remedial Measures Advisor (RMA) from Winnipeg, who is also able to be on site within three hours. The RMA is authorized to activate the full LPGERC response capability.

The RMA and LPGERC Team will work under the direction of the Incident Commander.

Costs associated with the LPGERC response will be borne by TANCO

12.0 REPORTING

When an environmental emergency occurs in respect of propane, either a release or fire, the event shall be reported immediately to the Operations Branch of Manitoba Conservation at 945-4888 (24 hr)

Written reports shall be sent to the Director Environmental Protection, Prairie & Northern Region, Environment Canada.

13.0 RECOVERY

Due to the inherent physical characteristics of propane, recovery activities are limited to the removal of debris such as tanks or other equipment

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PROPANE EMERGENCY RESPONSE SUMMARY

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Criteria	Response
LEVEL 0 • Small propane gas or liquid leak can be isolated by closing block valves • Injury potential is very low • Fire potential is very low	• Note the wind direction and force • Close the storage tank isolation valves located under the tanks, if necessary and if safe to do so • Close other system valves as necessary to reduce or stop the gas release • Ensure that all sources of ignition are eliminated • Isolate the area immediately surrounding the leak for at least 100 meters, until gas is dispersed. Downwind gas concentration should be <10% LEL • Ventilate buildings as necessary • Call Site Supervisor
LEVEL 1 • Significant propane gas or liquid leak can be isolated by closing block valves • Injury potential is low, but possible • Fire potential is low, but possible	• Sound the emergency evacuation alarm • Note the wind direction and force • Close the storage tank isolation valves located under the tanks, if safe to do so • Close other system valves as necessary to reduce or stop the gas release • Isolate the area immediately surrounding the leak for at least 100 meters • Ensure that all sources of ignition are eliminated • Ventilate buildings as necessary • Call Superior Propane (204-488-4499 or 877-873-7467)
LEVEL 2 • Significant propane gas or liquid leak can be isolated by closing block valves • Injury potential is significant • There is a fire or the fire potential is high	• Sound emergency evacuation alarm • Note the wind direction and force • Close the storage tank isolation valves located under the tanks, if safe to do so • Close other system valves as necessary to reduce gas release • Isolate the area immediately surrounding the leak for at least 100 meters • Ensure that all sources of ignition are eliminated for at least 100 meters • Evacuate downwind at least 800 meters • Set up fire hose systems to control small fires if safe to do so (do not use Wajax pumps as they are a potential source of ignition) • Ventilate buildings as necessary • Call Bird River Fire Department (9-1-1) • Call Superior Propane (877-873-7467 or 204-488-4499). Request activation of the LPGERC response team if required

LEVEL 3
• Propane gas or liquid leak cannot be isolated by closing block valves
• There is damage to the storage tank
• Injury potential is significant
• There is a fire or the fire potential is high
	• Sound emergency evacuation alarm
	• Note the wind direction and force
	• (Pull the emergency cords to close the tank isolation valves)
	• Close other system valves as necessary to reduce gas release if safe to do so
	• Isolate the area immediately surrounding the tanks
	• Evacuate the area as follows:
	  • 800 meters downwind for a large spill
	  • 1600 meters in all directions for a tank involved in a fire
	• Ensure that all sources of ignition are eliminated
	• Set up fire hose systems to control small fires if safe to do so (do not use Wajax pumps as they are a potential source of ignition)
	• Ventilate buildings as necessary
	• Call Bird River Fire Department (9-1-1)
	• Call Superior Propane (877-873-7467 or 204-488-4499). Request activation of the LPGERC response team.

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LINK TO REPORTING CRITERIA SPREADSHEET

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SPILL RESPONSE – GENERAL COUNTERMEASURES

NOTE: In dealing with spills, the safety of personnel is the primary concern. Employees are **NOT** expected to take risks that could potentially result in personal injury, regardless of the severity of the spill.

In the event of a significant bulk spill the following measures are to be taken immediately:

- Ensure the safety of onlookers as necessary by stationing a person nearby or by flagging the spill area with yellow warning tape.
- Evacuate personnel upwind of the spill for formic acid or propane (link to propane spill response)
- Don the appropriate personal protective equipment for the nature of the spill:
    - Hard hat
    - Chemical Splash Goggles
    - Faceshield
    - Raingear
    - Rubber Boots
    - Gauntlet Style Rubber Gloves
    - SCBA or airline respirator for formic acid
- Attempt to stop, contain or divert the spill to a less sensitive area, if possible and if safe to do so.
- Collect as much as possible of the spilled material into one area to facilitate recovery or pumping of the liquid.
- Take a sample of the spilled material.
- Arrange for a suitable receptacle, and pump the spilled material into it.
- If an acid spill, neutralise remaining acid with soda ash or lime.
  WARNING: use of soda ash will cause oxygen depletion in an enclosed or unventilated space due to the release of carbon dioxide. This may cause workers to collapse from insufficient oxygen.

NOTE: A spill kit containing soda ash and Absorball is maintained in the CP Storage dome.

- Scoop up as much contaminated material as possible, and store in a secure, contained location for later disposal.

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CHEMICAL SPILL REPORTING

TANCO INTERNAL SPILL REPORTING:

Notification of any uncontained and/or significant spill must be made immediately to:

- The Shift Supervisor, and
- The relevant Department Superintendent, and
- The Facility General Manager (for all spills), and
- The Safety/Environmental Manager

REGULATORY REPORTABLE SPILLS: INDEX

Spills may require immediate reporting under three regulations

Manitoba Regulation 439/87 – Environmental Accident Reporting Regulation: this covers spills of materials classified as dangerous goods from any point in the process. This includes any spills of dangerous goods from the time they enter the site, and in the case of outgoing product, to the time they leave the site. Reports shall be made to:

- The Department of Conservation and Workplace Safety & Health at 204-945-4888, OR
- The RCMP or the Fire Department

Federal Regulation SOR/2001– 286 – Transportation of Dangerous Goods Regulation: this covers reporting of spills of dangerous goods from the point of product loading (e.g. cesium hydroxide drum filling) to leaving the site, and from arrival on site through to the point of entry into the process (e.g. potassium hydroxide drum unloading), but does not cover spills from the process itself. Reports shall be made to:

- The Department of Conservation at 204-945-4888 AND
- The RCMP or the Fire Department

NOTE: The reporting quantity criteria are not the same for the two regulations noted above.

Federal Regulation SOR/2003– 307 - Environmental Emergency Regulations: covers the reporting of any environmental emergency (release, spill or fire) related to a listed material. Propane is the sole material on this list. Reports shall be made to:

- The Department of Conservation at 204-945-4888

Written follow up investigation reports are required in all three cases.

Link to Reporting Criteria

CABOT PROCESS SAFETY EVENT SPILL DEFINITION

Spill or release events that meet the definition of a PSE: **INDEX**

- Overfilling of process equipment or storage tanks;
- **Major** leaks or releases from pump, fan and compressor seals, valve packings and flange gaskets that resulted in or could reasonably resulted in a **significant** fire, explosion, equipment damage;
- Rupture or **significant** failure of process equipment including process equipment internals such as heat exchanger tubes, boiler tubes, re-pressure fans, etc.
- Opening of an atmospheric pressure relieving device in hazardous chemical service due to a process upset such as relief valve lifting, explosion hatch opening, etc.

CORPORATE SPILL REPORTING

Reportable spills as defined above must be reported within 24 hours of occurrence to:

- Corporate V.P. SH&E (Boston)

Spills that are reportable to Manitoba Conservation where the cost of fines, remediation and/or emergency response has the potential to be greater than $100,000 US must be reported as soon as possible, and within 24 hours of occurrence to:

- Corporate V.P. SH&E (Boston)

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Spill Reportable Quantities - General

Class	Description	Spill Reportable Quantity M.R. 439/87	Spill Reportable Quantity TDG Regulations
1	Explosives	All	Any quantity that could pose a danger to public safety or 50 kg
2.1	Compressed Gas (Flammable)	100 L	Any quantity that could pose a danger to public safety or any sustained release of 10 minutes or more
2.2	Compressed Gas	100 L	
2.3	Compressed Gas (Toxic)	All	
2.4	Compressed Gas (Corrosive)	All	
3	Flammable Liquids	100 L	200 L
4	Flammable Solids	1 Kg	25 kg
5.1 Packing Group I & II	Oxidizer	1 Kg or 1 L	50 kg or 50 L
5.1 Packing Group III	Oxidizer	50 Kg or 50 L	
5.2	Organic Peroxide	1 Kg or 1 L	1 kg or 1 L
6.1 Packing Group I	Acute Toxic	1 Kg or 1 L	5 kg or 5 L
6.1 Packing Group II & III	Acute Toxic	5 Kg or 5 L	
6.2	Infectious	All	Any quantity that could pose a danger to public safety or 1 kg or 1 L
7	Radioactive	Any discharge	Any quantity that could pose a danger to public safety
8	Corrosive	5 Kg or 5 L	5 kg or 5 L
9.1	Miscellaneous (not PCB)	50 Kg	25 kg or 25 L
9.1	PCB Mixtures	500 grams	
9.2	Aquatic Toxic	1 Kg or 1 L	
9.3	Wastes (Chronic Toxic)	5 Kg or 5L	
	Required Spill Reporting:	The Department of Conservation and Workplace Safety & Health at 204-945-4888, **OR** The RCMP or the Fire Department	**IMMEDIATE REPORTING REQUIRED** The Department of Conservation at 204-945-4888 AND The RCMP OR the Fire Department

Chemical Plant
Maximum Inventory of Process Chemicals

Process Chemical	Container	Maximum Inventory	Units
Raw Materials:			
93% Sulphuric Acid	Tank T-1	73,200	L
Quicklime	Silo S-1	2,900	cu ft
Pollucite	Silo S-2	60	tonnes
85% Formic Acid	Tank T-2	46,200	L
Barium Carbonate	Bulk Bag	100	tonnes
Carbon Dioxide	Bulk Tank	14,500	kg
45% Potassium Hydroxide	Drum	3,000	kg
93% Sulphuric Acid	Drum	3,000	kg
85% Formic Acid	Drum	4,800	kg
Citric Acid	Bag	3	tonnes
50% Aluminium Sulphate	Tank 9015	29,500	L
Hydrated Lime	Bulk Bag	36	tonnes
Barium Hydroxide	Bulk Bag	40	tonnes
35% Hydrogen Peroxide	Drum	275	kg
50% Hydrogen Peroxide	IBC	12,000	kg
35% Hydrochloric Acid	Drum	4,800	kg
In Process			
5% Cesium Sulphate	Tank T-12, T-22	113,300	L
Slaked Lime	Tank T-3	35,300	L
Barium Formate	Tank T-16	25,500	L
Cesium Formate 2.05 SG	Tank T-30	40,000	L
Cesium Formate 2.15 SG	Tank T-8, T-7B	27,000	L
50% Cesium Sulphate	Tank 9285, T-15	24,700	L
50% Cesium Hydroxide	Tank 9270, 9275	49,400	L
50% Cesium Carbonate	Tank 9270, 9275	49,400	L
Product:			
Cesium Formate	IBC	50	IBC
Cesium Sulphate	IBC	16	IBC
Cesium Hydroxide	IBC	16	IBC
Cesium Carbonate	IBC	16	IBC
Cesium Chloride	IBC	16	IBC

Tantalum Mining
Maximum Inventory of Dangerous Goods

UN #	Chemical	Container	Location	Maximum Inventory	Units
1013	Carbon Dioxide	Bulk Tank	CP	14,500	kg
1075	Propane - CP	Bulk Tank (1)	Site	46,500	kg
1075	Propane - East Site	Bulk Tank (4)	Site	15,260	kg
1075	Propane - Main Site	Bulk Tank (5)	Site	18,600	kg
1202	Diesel	Tank	Site	9,901	L
1203	Gasoline	Tank	Site	4,519	L
1760	50% Aluminium Sulphate	Tank 9015	CP	29,500	L
1779	85% Formic Acid	Tank	CP	46,200	L
1789	35% Hydrochloric Acid	Drum	CP	4,800	kg
1814	45% Potassium Hydroxide	Drum	CP	3,000	kg
1830	93% Sulphuric Acid	Tank	CP	73,200	L
1830	93% Sulphuric Acid	Tank	Mill	25,000	L
2014	35% Hydrogen Peroxide	Drum	CP	275	kg
2681	50% Cesium Hydroxide	Tank 9270, 9275	CP	49,400	L
	Barium Carbonate	Bulk Bag	CP	100	tonnes
	Barium Hydroxide	Bulk Bag	CP	40	tonnes

Chemical Spill - Reportable Quantities

Common Name	Shipping Name	UN #	Class	Packing Group	Spill Reportable Quantity M.R. 439/87	Spill Reportable Quantity TDG Regulations
Acetic Acid (80%)	Acetic Acid Solution	2790	8	II	5 kg or 5 L	5 kg or 5 L
Caustic Soda (25%)	Sodium Hydroxide Solution	1824	8	II	5 kg or 5 L	5 kg or 5 L
Cesium Hydroxide (50%)	Caesium Hydroxide Solution	2681	8	II	5 kg or 5 L	5 kg or 5 L
Carbon Dioxide	Carbon Dioxide Refrigerated Liquid	2187	2.2		100 L	Any quantity that could pose a danger to public safety or any sustained release of 10 minutes or more
Aluminium Sulphate	Corrosive Liquid, N.O.S.	1760	8	III	5 kg or 5 L	5 kg or 5 L
Formic Acid	Formic Acid	1779	8	II	5 kg or 5 L	5 kg or 5 L
Diesel	Fuel Oil; Diesel Fuel	1202	3	III	100 L	200 L
Gasoline	Gasoline	1203	3	II	100 L	200 L
Hydrochloric Acid	Hydrochloric Acid Solution	1789	8	II	5 kg or 5 L	5 kg or 5 L
Hydrogen Peroxide (35%, 50%)	Hydrogen Peroxide, Aqueous Solution	2014	5.1(8)	II	1 kg or 1 L	50 kg or 50 L
Nitric Acid (68%)	Nitric Acid	2031	8	II	5 Kg or 5 L	5 kg or 5 L
Propane	Liquefied Petroleum Gases Petroleum Gases, Liquefied	1075	2.1		100 L	Any quantity that could pose a danger to public safety or any sustained release of 10 minutes or more
Phosphoric Acid	Phosphoric Acid, Liquid	1805	8	III	5 kg or 5 L	5 kg or 5 L
Caustic Potash	Potassium Hydroxide, Solution	1814	8	II	5 kg or 5 L	5 kg or 5 L
Sulphuric Acid	Sulphuric Acid Sulfuric Acid	1830	8	II	5 kg or 5 L	5 kg or 5 L
Barium solutions >100 mg/L Ba	Leachable Toxic Substance		9	III	5 kg or 5 L	

Chemical Spill - Reportable Quantities

Common Name	Shipping Name	UN #	Class	Packing Group	Spill Reportable Quantity M.R. 439/87	Spill Reportable Quantity TDG Regulations
WASTES:						
Used Lubricating Oil	Waste Environmentally Hazardous Substance, Liquid, N.O.S. (Lead)	3082	9	III	5 Kg or 5L	
Used oil filters (uncrushed)	Waste Environmentally Hazardous Substance, Solid, N.O.S. (Lead)	3077	9	III	5 Kg or 5L	
Lead-Acid Batteries	Waste Batteries, Wet, Filled with Acid	2794	8	III	5 kg or 5 L	5 kg or 5 L
Used Varsol solvent	Waste Petroleum Distillates N.O.S.	1268	3	III	100 L	200 L
Used Aerosol Cans	Waste AEROSOLS, flammable	1950	2.1	-	100 L	
Waste Oil based Paint	Waste Paint	1263	3	III	100 L	200 L
Asbestos Containing Waste	Waste Asbestos, White?	2590?	9	III		
NiCad, NiMH & alkaline Batteries	Waste Batteries, dry, containing potassium hydroxide solid	3028	8	III	5 kg or 5 L	5 kg or 5 L