



Pine Point Pilot Project

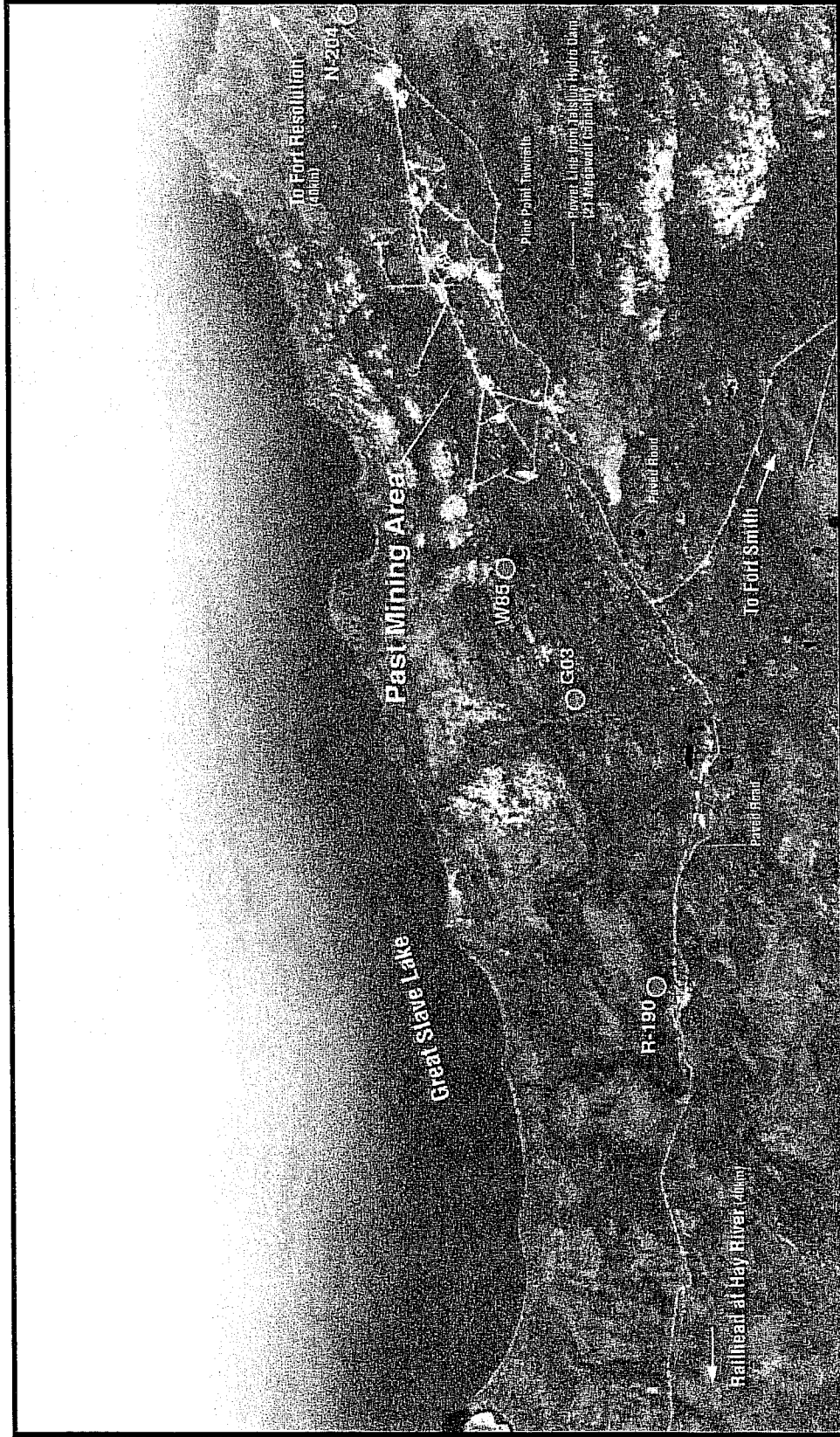
Stakeholder Presentation of Technical Concerns



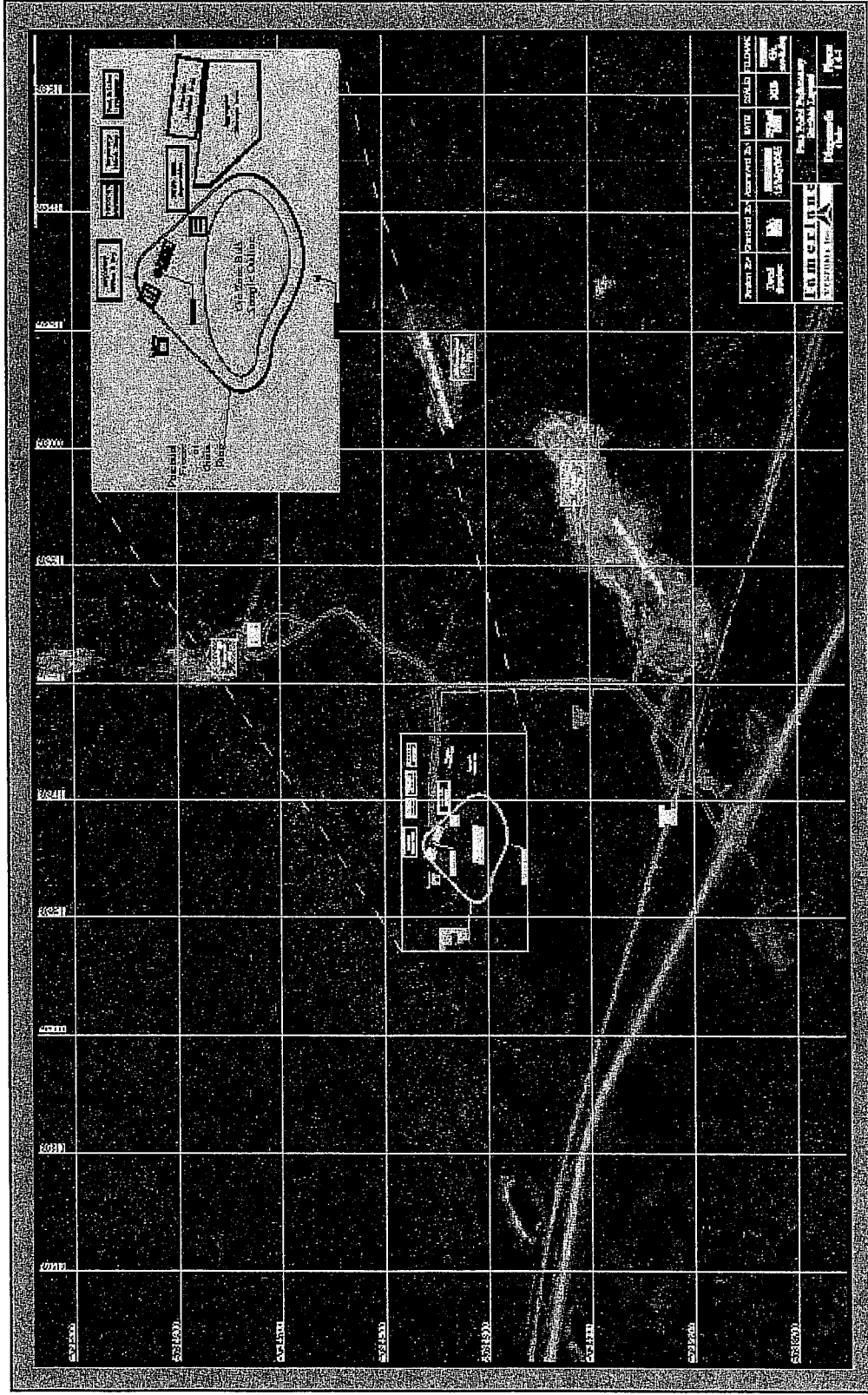
Introduction

- Tamerlane Ventures Inc. (TAM) is a publicly traded mining company engaged in exploration and development in North America and Internationally.
 - Ross Burns – President & CEO
 - David Swisher – Senior Project Manager
 - Dan Brost – Resource Geologist
 - Jerry DeMarco – Public Relations

Introduction



General Arrangement



Parcel #	Parcel 2	Parcel 3	Acres	Area	Volume	Value	Notes
114100	114100	114100	114100	114100	114100	114100	114100
114200	114200	114200	114200	114200	114200	114200	114200
114300	114300	114300	114300	114300	114300	114300	114300
114400	114400	114400	114400	114400	114400	114400	114400
114500	114500	114500	114500	114500	114500	114500	114500
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114800	114800	114800	114800	114800	114800	114800	114800
114900	114900	114900	114900	114900	114900	114900	114900
115000	115000	115000	115000	115000	115000	115000	115000
115100	115100	115100	115100	115100	115100	115100	115100
115200	115200	115200	115200	115200	115200	115200	115200

Objective

- Tamerlane wishes to address and resolve all concerns by Environment Canada
 - I. Freeze Wall Technology
 - II. Water Inflow Contingency Plan
 - III. Potential Groundwater Contamination
 - IV. Details on Hazardous Waste & Disposal
 - V. Backfill & DMS waste
 - VI. Disposal of Waste from Workforce
 - VII. Effects on the Environment and Wildlife

Freeze Wall Technology

- **Concern**
 - I. Is freezing a proven technology?

- **Response**
 - I. Layne Christianson Company has 16 proven freeze projects throughout North America
 - Groundwater barrier, Aquarius project – Timmins, ON
 - Crown pillar freezing – Rouyn-Noranda, QC

 - II. Thyssen Mining has sunk ~ 80 shafts
 - Orebody – Northern Saskatchewan

Review Website www.groundfreezing.com

Freeze Wall Technology

- Concern
 - I. New Approach in Northwest Territories.

- Response
 - I. Successfully used at Pine Point in 1985 by Thyssen Mining at the Y-65N deposit to raisebore a ventilation shaft

Please see Attachment 1 "Thyssen experience at Pine Point"

Freeze Wall Technology

- **Concern**
 - I. No groundwater measurements have been done.

- **Response**
 - I. Hydrogeology Report of R-190 Completed by Stevenson International Groundwater Consultants LTD. November, 1983
 - II. Report outlines
 - Aquifer hydraulics
 - Dewatering R-190
 - Grouting potential and effects

Please see Attachment 2a "geosection", 2b "deposit section", 2c "sectional hydrology"

Freeze Wall Technology

- **Concern**
 - I. Potential for blasting to disrupt the frozen perimeter wall.

- **Response**
 - I. The purpose of this advance exploration project is to test the effects of large scale open stope blasting to validate future U/G mining of lower grade deposits.
 - Perimeter pillar of no less than 50'
 - Blasting techniques to minimize fracturing
 - Rock mechanics monitoring

Freeze Wall Technology

- **Concern**
 - I. How will the frozen perimeter wall be decommissioned?

- **Response**
 - I. All mechanical equipment removed
 - II. All brine removed from circuit
 - III. All external lines reclaimed
 - IV. All freeze holes filled and plugged

Please see Attachment 3 "Environmental Impact of Ground Freezing"

Water Inflow Contingency Plans

- **Concern**
 - I. If there is considerable seepage through the freeze ring, how will inflows be disposed of?

- **Response**
 - I. In conjunction with FKC Lakeshore, a pumping system is being designed in the shaft bottom (lowest point in the mine) to control any major inflows.
 - II. Contingency plan- Source additional pumps to add to system to control all inflows. – i.e. Lisheen Mine

Please see Attachment 4 “TAM dewatering plan”

Potential Groundwater Contamination

- **Concern**
 - I. ARD

- **Response**
 - I. No known historical Acid Rock Drainage issues.
 - II. Limestone and dolomite-dominated geology mitigates potential ARD issues.
 - III. Have hired independent contractor to evaluate.

Potential Groundwater Contamination

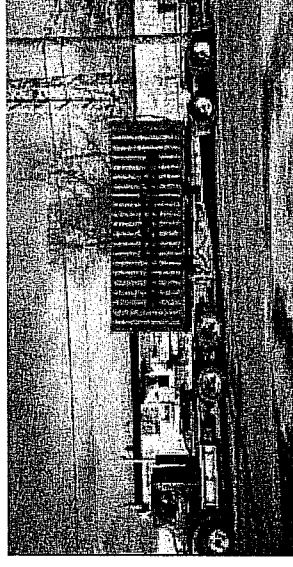
- **Concern**
 - I. Waste water quality effects from backfilling and blasting residues.

- **Response**
 - I. All underground water will be monitored at the infiltration basin during the life of the project.
 - II. Existing groundwater quality strongly influenced by local geological conditions including sulfurous springs and salts-enriched hard water.

Potential Groundwater Contamination

- **Concern**
 - I. Sewage constituents

- **Response**
 - I. Considering utilizing self contained sewage treatment facility designed by Biodisk Corporation.
 - II. Successfully used throughout Canada
 - Snap Lake, Travco, NWT
 - Diamond Mine, BHP, NWT
 - CNR, Alberta
 - Yellowknife, Barrick, NWT



Please see Attachment 5 "Biodisk Portable Plants"

Potential Groundwater Contamination

- **Concern**
 - I. Mill Additives

- **Response**
 - I. With the current Dense Media Separation Circuit, the only additive is Ferrosilicon. As outlined on the MSDS sheets for potential environmental effects, Ferrosilicon is derived from natural ores and no adverse environmental affects are known.

 - II. Ferrosilicon is recycled through the DMS circuit.

Please see Attachment 6 "Ferrosilicon MSDS"

Potential Groundwater Contamination

- **Concern**
 - I. Hydrocarbon spills

- **Response**
 - I. The current plan is to contain all stored fuels & lubrications in separate catchments.
 - II. Transfers by quick connect couplings.
 - III. Piped underground for use.
 - IV. Any small spills will be contained and cleaned up in accordance with our Hazardous Materials Spill Contingency Plan outlined in Appendix D, Project Description Report.

Please see Attachment 7 “TAM spill contingency plan”

Potential Groundwater Contamination

- **Concern**
 - I. Groundwater Monitoring.

- **Response**
 - I. Tamerlane Ventures Inc. will continue with groundwater monitoring until INAC and EC are satisfied.

Details on Hazardous Waste & Disposal

- **Concern**
 - I. What are the types of hazardous wastes which may be on site and their disposal methods.

- **Response**
 - I. Known hazardous wastes may include diesel fuel, diesel additives, motor oils, hydraulic oils, and used batteries.
 - II. Fuels will be consumed.
 - III. Used oils will be reused in oil heaters.
 - IV. Used batteries will be disposed of at the Hay River hazardous waste disposal area.

Backfill & DMS Waste

<u>Waste Generation</u>	<u>Estimated Tonnage</u>
Shaft Sinking	16,300
Development	32,430
Raisebore	2,000
<i>SUBTOTAL</i>	<i>50,730</i>
Bulk Sample Extracted	1,000,000
DMS Recovery @ 60%	600,000
DMS Gangue Reject @ 40%	400,000
<i>SUBTOTAL</i>	<i>400,000</i>
TOTAL	<i>450,730</i>
Assume 100% swell factor	450,730
Total Waste Returned U/G	901,460
Total Waste Required for fill	1,000,000
Δ	(98,540)

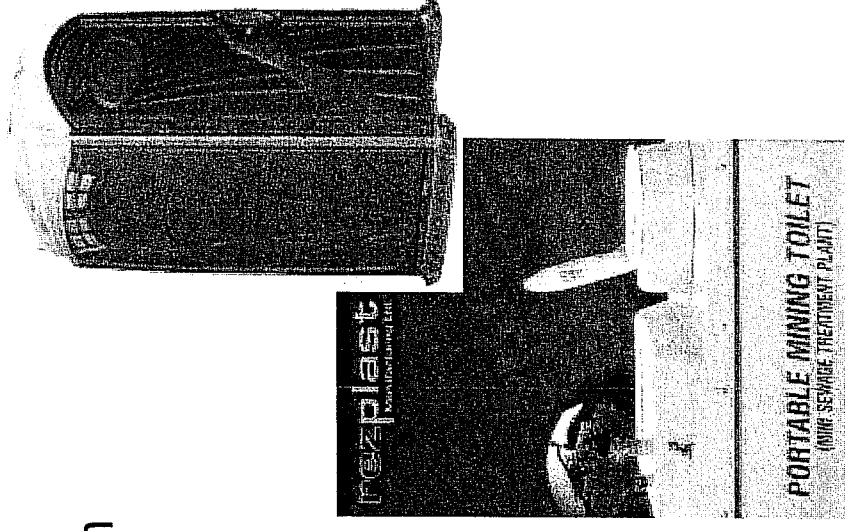
- **Concern**
 - I. What waste volumes will be generated and can we reasonably expect all volumes be returned U/G?

- **Response**
 - I. See chart of estimated volumes.
 - II. Outside rock sources will be required to complete backfilling for all stopes.

Disposal of Waste from Workforce

- **Concern**
 - I. Uncertain of the disposal of waste from workforce, noting that there will be close to 150 people employed.

- **Response**
 - I. Surface - May utilize self contained sewage treatment facility designed by Biodisk Corporation.
 - II. Underground – May utilize self contained mini-sewage treatment toilets.
 - III. Due to scope of project, may contract out the use of port-a-potties.



Please see Attachment 8 "Rezplast portable mining toilet"

Environmental Baseline Work

- EBA Baseline Studies
 - I. Wildlife
 - Conducted, September 2005
 - II. Stream Assessment & Water Quality
 - Conducted, September 2005
 - III. Vegetation
 - Conducted, September 2005



Environmental Baseline Work

- EBA R-190 Follow-up Studies
 - I. Owl Survey
 - Conducted, April 2006
 - II. Amphibian Survey
 - Conducted, May & June 2006
 - III. Breeding Bird Survey
 - Target Date, Ongoing July 2006
 - IV. Rare Plant Survey
 - Target Date, Late June/July & Early/Mid-August, 2006
 - V. Water Quality Survey
 - Target Date, May & August, 2006

Effects on the Environment and Wildlife

- **Concern**

- I. What mitigating and monitoring measures will be put in place on the surrounding wildlife species?

- **Response**

- I. The general area has experienced major exploration and mining activities for more than 100 years.
- II. The R-190 area is located immediately adjacent to an existing highway and power line infrastructure.
- III. The R-190 area has already & continues to be exposed to mining and crushing of quarries.
- IV. The Pilot Project will not disturb more area than has already been disturbed by the nearby quarries.
- V. No significant effects on wildlife, including SARA-listed species are expected to occur.

Please see Attachment 9 "Key wildlife in Pine Point area"

Mitigation Measures

- Application of Least Intrusive Method for Stabilizing Wet Ground
 - I. Freeze curtain
 - II. Primarily underground operation
- Project Footprint Minimization
 - I. Installation of project infrastructure on previously altered terrain
- No Streams or Lakes in Immediate Project Area
 - I. No potential to affect streams or lakes, fisheries resources
- Compliance with Water License Criteria
 - I. Waste water recycling, treatment (if necessary) and discharge to ground/groundwater

Mitigation Measures

- Airborne Noise Minimization
 - I. Minimal airborne noise due to primarily underground operation
- Access Road Dust Suppression
- Access Road Traffic Controls
 - I. Wildlife will have the Right-of-way
- Effective Waste Management and Spill Prevention/Response

Cumulative Impacts

- **No Significant Cumulative Impacts Expected to Occur**
 - I. Pine Point 1965-1987
 - II. Limited scope & scale
 - III. Smaller than current operating quarries
 - IV. Underground
 - V. Minimal intervention – freeze curtain
 - VI. Remote location
 - VII. No nearby waterways

Summary

- Adhere to a high level of environmental & safety standards
- Confirm viability & economics of advanced exploration project
- Enhance local communities
- Improve local economy
- Create jobs

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Attachment 3

From: Rene Scheepers [mailto:RScheepers@thyssenmining.com]
Sent: Thursday, July 06, 2006 1:18 PM
To: David Swisher
Cc: Andrew Goode
Subject: RE: freeze drilling experience

David,

According to our records, Thyssen used ground freezing to stabilize the collar of a ventilation shaft at Pine Point in 1985. It appears that the ground was frozen to a depth of 23m and the shaft then raisebored to a total depth of approximately 58m. I'm not sure how accurate these figures are but I'll try and find out a little more. The project was completed successfully and it was a world first to raisebore through frozen ground. We don't know of any shafts since that were raisebored like this either.

Regards,

Rene

Attachment 2a

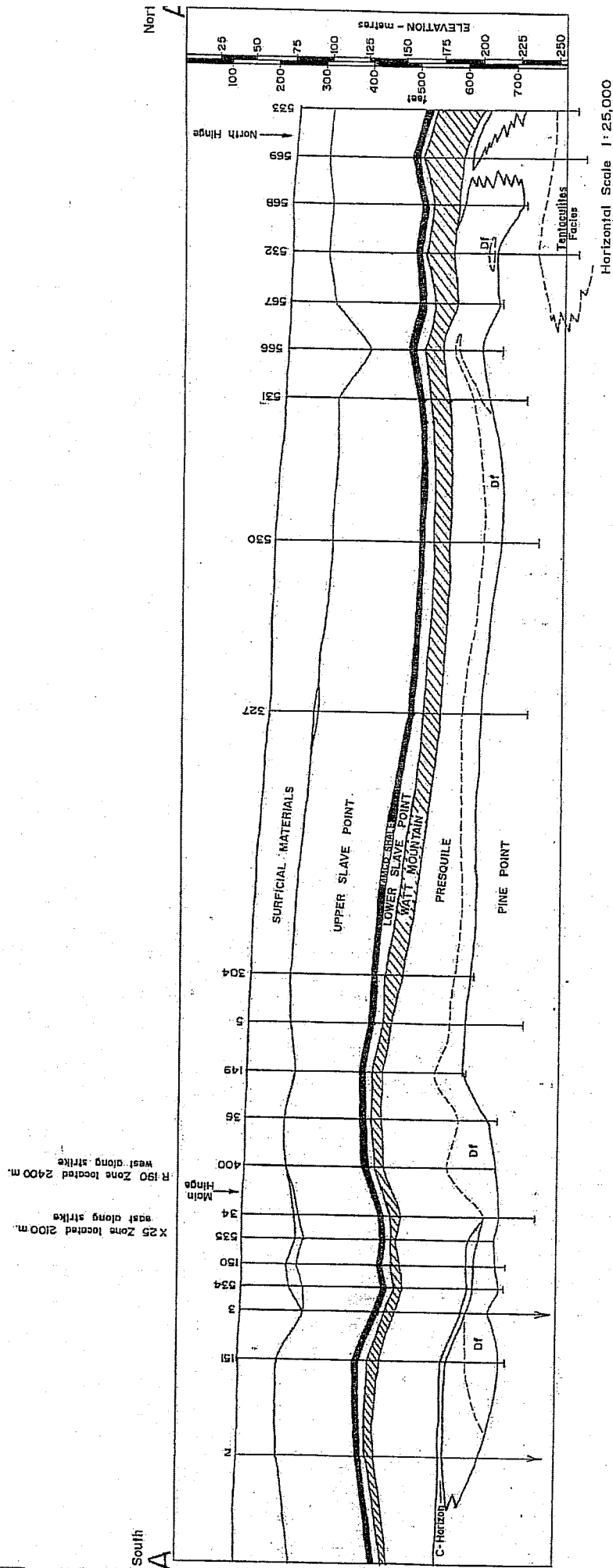
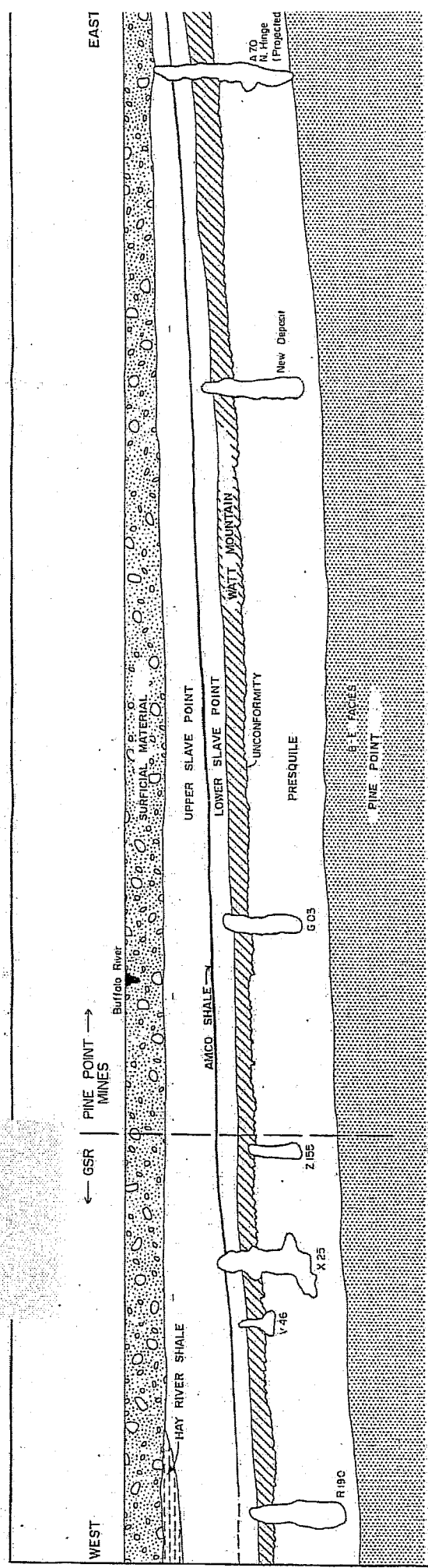


FIGURE 2. NORTH - SOUTH STRATIGRAPHIC SECTION THROUGH THE GREAT SLAVE REEF PROJECT AREA (after Westmin Resources Limited cross section, Feb. 1982)

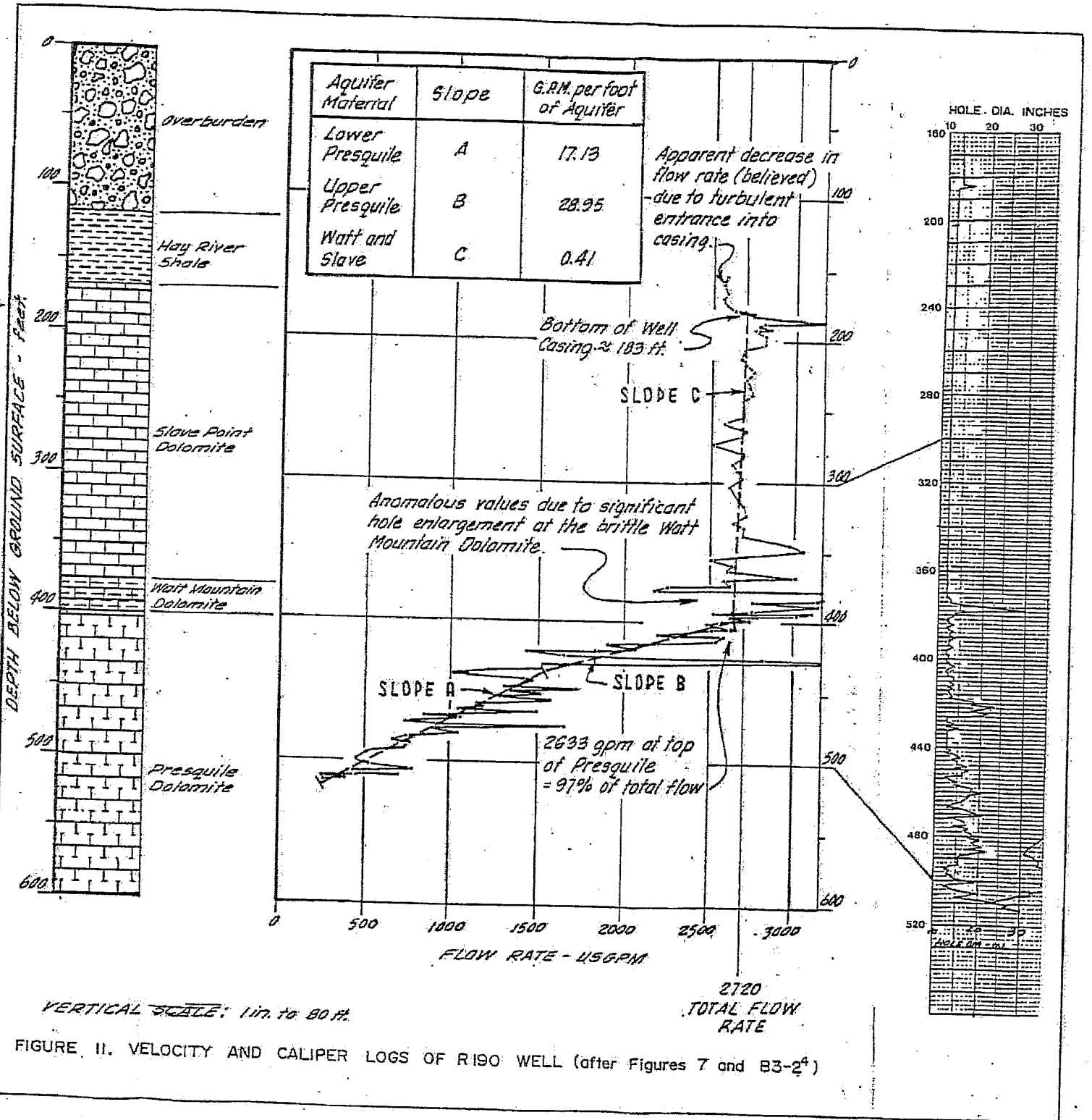
Attachment 7b



Horizontal Scale 1" = 75,000
Vertical Scale 1" = 2500

FIGURE 3. EAST-WEST STRATIGRAPHIC SECTION THROUGH THE CENTRAL PARTS OF GREAT SLAVE REEF AND PINE POINT MINES PROJECT AREAS, WITH ADJACENT MINERALIZED ZONES PROJECTED INTO THE SECTION PLANE. (after Westmin Resources Limited Diagramatic Long Section Parallel Main Hinge)

A. Hachma
R



VERTICAL SCALE: 1 in. to 80 ft.
2720 TOTAL FLOW RATE
FIGURE II. VELOCITY AND CALIPER LOGS OF R190 WELL (after Figures 7 and B3-2^d)

**TMCC****THYSSEN MINING**2409 Albert St. N.
P.O. Box 1997
Regina, SK
S4P 3E1Ph: (306) 949-6606
Fax: (306) 543-5844
Email: info@thyssenmining.com
Web: www.thyssenmining.com*"Keep safety in mind as your constant companion..."*July 6th, 2006Mr. David Swisher
Tamerlane Ventures Inc
441 Peace Portal Drive
Blaine WA 98230
USA

Dear David,

Re: Application of ground freezing technique in mining

The Thyssen group of companies has used ground freezing as a safe and effective method of stabilizing wet, unconsolidated ground during shaft sinking operations since 1903. The technique was first used to sink shafts for the German coal mines and was brought to North America by Thyssen in the nineteen sixties, to sink numerous shafts for the potash mines in Saskatchewan. Thyssen has completed about 80 shafts using this technique and still uses the method at one or two projects each year. The method is used occasionally at a larger scale to create a "freeze curtain" or even freeze a complete ore body, as is the case in two of the uranium mines in Northern Saskatchewan.

The freezing technique is arguably the least intrusive method of stabilizing wet, unconsolidated ground, compared with alternatives such as grouting and dewatering. The system uses brine in a closed circuit of interconnected pipes and freezes the water-bearing ground temporarily, until the required excavation (shaft, tunnel or chamber) has been excavated and permanent ground support has been installed. The brine typically has a temperature of around -15 degrees Celsius, and is cooled in a freeze plant which uses ammonia as a refrigerant. After completion of the excavation, the freeze plants are turned off, the brine is removed from the system and the freeze pipes are filled with grout. The frozen ground will thaw and return to its normal state within a period of weeks or months, depending on the scale of the freeze operation.

The most obvious risk from an environmental point of view is leakage of brine. Each freeze pipe is pressure tested before being used to minimize this risk. The network of surface lines connecting the vertical freeze pipes and the freeze plants is usually placed in concrete trenches that enable early detection, containment and repair of any leaks. A leak occurring in one of the vertical freeze pipes can occur if blasting takes place in close proximity. For this reason, each freeze hole is surveyed prior to it being used to ensure that it does not deviate towards the future excavation. Any leakage is noticed straight away due to a drop in the amount of return brine and the pipe is easily isolated from the rest of the system. Any leaked brine usually ends up in the shaft where it can be contained and removed. Due to the presence of ground water



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"Keep safety in mind as your constant companion..."

around the freeze circle, any brine that leaks into the ground will be diluted to the extent that it is very unlikely to have any measurable or noticeable impact on the environment.

If you have any further questions regarding this matter, please do not hesitate to contact me.

Sincerely,

Rene Scheepers
President – Thyssen Mining Construction of Canada Ltd



Pine Point Pilot Project Mine Dewatering Overview

The main components of the system are:

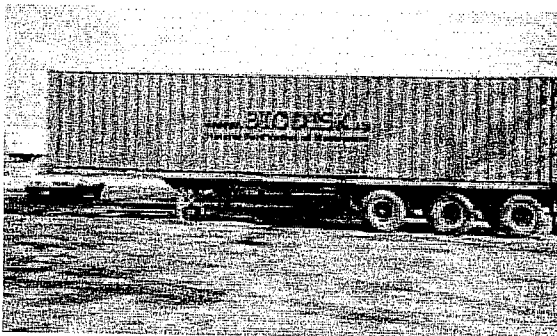
- All mine run-off water and any seepage water will be channelled into a series of sumps on the 550 foot level (174 meter) which will then be pumped to the main sump near the main shaft.
- All underground drifts will be mined at an incline of 1:100 so that any water can be controlled. The Main shaft will be the lowest point on any level.
- The main mine level will be at 550 feet (168 meter).
- The top of the main sump will be at 550 feet (168 meters) and the bottom at 570 feet (174 meter) which will enable a positive suction head for the pumps at the main pumping station.
- The main pumping station will be on the 570 foot level (174 meter).
- The main pumping station will consist of four 2,500 gallon per minute (9.5 m³ per min or 160 l/s) multistage electric pumps running in parallel. Each pump can be run independently. The total capacity of the mine dewatering system is 10,000 gallons per minute (38 m³ per minute) which is the maximum inflow rate calculated by the hydrogeological consultants.
- The riser pipes to the surface will be two 10 inch (250 mm) diameter steel pipes installed in the main shaft. Each riser will have non-return valves fitted downstream of each pump.
- The discharge water will be used in the DMS circuit and any overflow water will be discharged into the infiltration basin.

Attachment 2

Portable Plants

BIG "JOHN" AND LITTLE "JOHN"

To facilitate the application of our proven BIODISK wastewater treatment technology in remote applications, we have developed two unique new packages, which we call Big John and Little John. These two applications are used for the treatment of sanitary wastes from up to 333 and 166 persons respectively at construction sites and permanent installations....usually at remote locations.



Big John in a 40 foot shipping container ready for delivery.

The Big John and Little John packages combine two proven technologies....the BIODISK and the ISO shipping container. The package makes use of our Rotating Biological Contactor (RBC) process and houses it in 40 and 20 foot long shipping containers. On site, the shipping containers become an integral part of the sanitary wastewater treatment facilities.

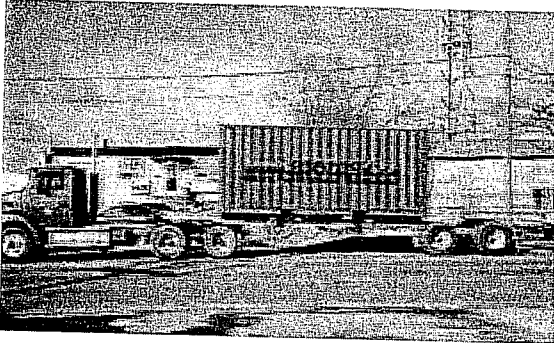
Combining our BIODISK RBC wastewater treatment process with ISO

shipping containers, has proven to have many advantages and benefits over conventional approaches to wastewater treatment:

- Ease of shipping and greater accessibility to remote locations
- Easy, quick set-up requires very little assembly and takes advantage of unskilled or low skilled labour....can be ready for operation in as little as a day after delivery
- Shipping and set-up costs are considerably less than for conventional wastewater treatment facilities
- Operating costs are considerably lower than for other treatment systems
- Power consumption is low
- Low operator skill requirements - operator involvement is limited to preventative maintenance and periodic biosolids withdrawal
- Long term sludge storage
- Totally enclosed systems
- Low odour
- Low noise
- Built-in multi-stage process takes advantage of naturally occurring microbes
- Safe....no open ponds or exposed tanks
- A unique and self regulating process

Big John and Little John provide the "full package" including secondary treatment and effluent disinfection. They also include all controls and necessary

housing....truly a "Turn Key" design for a sewage treatment facility in a box.



Little John in a 20 foot shipping container ready for delivery.

BIODISK Corporation

BIODISK Corp., is an industrial leader specializing in the design, manufacture, installation and operation of wastewater treatment facilities making use of RBCs. The corporation has vast global experience with the successful installation of over two thousand treatment facilities at sites in Canada, USA, South America and the Far East.

BIODISK Corp., will listen to your needs and will work in partnership with you during the complete process of facility design, construction, operation and after care servicing.

- We will facilitate the entire process and will get the job done quickly and efficiently. We will handle all necessary details including drawings and design information required for the works approval by environmental authorities

- The facility construction phase will be simplified by our proven tank design
- We will be there to support you with our after care service which includes:
 - System Start-up
 - Process Evaluation
 - Spare Parts
 - Trouble Shooting if Required

Process

Our systems use a natural process for the treatment of wastewater utilizing RBCs. The process meets or exceeds effluent requirements as specified by regulatory agencies. The process has many inherent operational characteristics that make it ideally suited for the treatment of domestic wastewater.

Our systems discharge to:

- Sub-surface and surface absorption components
- Surface waters
- Intermittent streams
- Storm water management facilities

Self Regulating

The treatment process easily accommodates flows ranging from 0 to 100 percent of design. The biomass on the RBC media is directly proportional to the organic material received. The process is self-regulating without supervision.



**75% Ferrosilicon
Material Safety Data Sheet**

A Hadman 6

Alloy & Metal Processors, Inc
623 33rd Place North
Birmingham, Alabama 35222

Emergency Phone Numbers
AMP Safety Dept: (205) 322-2344
CHEMTREC (24 HRS): (800)424-9300
Revision Date: 12-21-2004

SECTION 1: PRODUCT INFORMATION

PRODUCT NAME: 75% Ferrosilicon

SYNONYMS: Ferrosilicon, Ferro Silicon Alloys, FeSi, Fe₂Si₃, 75% Si

DESCRIPTION: Additive to metal in steel plants and iron foundries for production of steel, other metals, and foundry products. Silvery gray to metallic surface consisting of fine powders to granules and lumps/briquettes up to several inches in size. Normally odorless. Garlic like smell may occur on contact with water or humidity.

CAS NUMBER: 37322-17-1 (8049-17-0) For ingredient CAS numbers, see Section 3 - Composition and Information on ingredients)

SECTION 2 - Hazardous Material Identification System (HMIS)									
HEALTH					1				
FLAMMABILITY					1				
REACTIVITY					1				
PERSONAL PROTECTION					E				
SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS									
COMPONENT	TRADE NAMES AND SYNONYMS				CAS #	% BY WEIGHT			
Silicon (Si)	Silicon Alloy, Elemental Silicon, Amorphous Powder				7440-21-3	70-80			
Iron (Fe)	Ferric Oxide, Iron Oxide				7439-89-6	20-30			
Chromium (Cr)	Chromium Compounds II & III				7440-47-3	<0.5			
Nickel (Ni)	Nickel Catalyst				7440-02-0	<0.5			
Aluminum (Al)	Aluminum Metal, Aluminum Powder, Elemental Aluminum				7429-90-5	0.1 - 2.0			
Calcium (Ca)					7440-70-2	<2.0			
Trace Elements: As, C, Cu, Mg, Mo, Pb, P, S, Sb, V, Zn, Zr						<0.1			
SECTION 4: HAZARDS IDENTIFICATION									
							LISTED CARCINOGEN		
COMPONENT	CAS#	% BY WEIGHT	OSHA PEL (mg/m ³)	OSHA CEILING (mg/m ³)	ACGIH TVL (mg/m ³)	ACGIH STEL (mg/m ³)	NTP	IARC	OSHA
Silicon (Si)	7440-21-3	70-80	15T/5R	NA	10T	NA	No	No	No
Iron (Fe)	7439-89-6	20-30	None	NA	None	NA	No	Yes	No
Chromium (Cr)	7440-47-3	<0.5	0.1T	NA	0.5T	NA	Yes	No	Yes
Nickel (Ni)	7440-02-0	<0.5	1T	NA	10T/5R	NA	Yes	Yes	Yes
Aluminum (Al)	7429-90-5	0.1 - 2.0	15T/5R	NA	10T	NA	No	Yes	No
Calcium (Ca)	7440-70-2	<2.0	None	NA	None	NA	No	No	No

NOTE(S): T = Total dust; R = Respirable Dust; F = Fume

Exposure limits listed for each ingredient is for exposure to dust that may be generated during product transfer and handling.

EMERGENCY OVERVIEW: Not a fire or spill hazard. Low toxicity; dry dust is a nuisance particulate. Generally, health effects are provided for exposure to dust that may be generated during product transfer and handling.
POTENTIAL HEALTH EFFECTS:
Primary Route of Exposure: Inhalation
Relevant Route(s) of Exposure
<ul style="list-style-type: none"> • Eye Contact: Contact with particulate may cause slight to moderate eye irritation. Abrasive action of dust particulate can damage eye. Rinse eyes with water/saline solution. Seek medical attention for persistent feeling of discomfort. • Skin Contact: Prolonged or repeated contact may cause slight to moderate skin irritation. Wash skin with water and/or a mild detergent. • Inhalation: Overexposure by inhalation of airborne particulate, dust, or fumes is irritating to the nose, throat, and respiratory tract. Inhalation of excessive levels of dust or fumes may be harmful. Potential for phosphine/arsine intoxication. Seek medical attention • Ingestion: Ingestion is an unlikely route of exposure; no hazard in normal industrial use. Small amounts (<tablespoon) swallowed during normal handling operations are not likely to cause injury, however, swallowing larger amounts may cause injury. If ingested in sufficient quantity, may cause gastrointestinal disturbances. Symptoms include irritation, nausea, vomiting, abdominal pain, and diarrhea.
Target Organs: Respiratory system and eyes
Acute Effects of Exposure: Excessive, short-term exposure to airborne mineral dusts and particulate may cause upper respiratory and eye irritation.
Chronic Effects of Exposure: Excessive, long-term inhalation of airborne mineral dusts and particulate may contribute to the development of bronchitis, reduced breathing capacity, and may lead to the increased susceptibility to lung disease.
Signs and Symptoms of Exposure: (Dust) Tearing of eyes, burning sensation in the throat, cough, and chest discomfort.
Medical Conditions Generally Known to be Aggravated by Exposure: The excessive inhalation of mineral dust may aggravate pre-existing lung conditions such as, but not limited to, bronchitis, emphysema, and asthma.
<ul style="list-style-type: none"> • Reproductive Hazards: No known reproductive hazards
POTENTIAL ENVIRONMENTAL EFFECTS: Derived from natural ores; no adverse environmental effects known. However, prevent spilled product from entering streams, water bodies, and waste water systems. This material is used as an agricultural product.
SECTION 5: FIRST AID MEASURES

FIRST AID PROCEDURES:

- **EYE CONTACT:** Remove material by immediately flushing with clean, flowing, lukewarm water (low Pressure) for at least 15 minutes. Get medical attention if pain or irritation persists.
- **SKIN CONTACT:** Immediately wash affected area with mild soap and water to remove any dust adhering to the skin. Get medical attention if irritation develops or persists.
- **INHALATION:** If exposed to excessive levels of dusts or fumes. Remove to fresh air and get medical attention if cough or other symptoms develop. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek medical attention.

- **INGESTION:** Ingestion is an unlikely route of exposure. If ingested in sufficient quantity and victim is conscious give 1-2 glasses of water. Never give anything by mouth to an unconscious person. Leave decision to induce vomiting to qualified medical personnel, since particles may be aspirated into the lungs. Seek immediate medical attention.
- **NOTE(S) TO PHYSICIANS:** None

SECTION 6: FIRE FIGHTING MEASURES

- **FLAMMABLE PROPERTIES:** This product does not represent a hazard to health, safety, or environment when handled and stored as advised. Flammable and noxious gases may be formed in contact with moisture, acids, or bases. Ferrosilicon dust suspended in air may under certain conditions cause dust explosions.
- **EXTINGUISHING MEDIA:** Dry sand, CO₂, or dry powder. Dry ferrosilicon in the form of granules is not combustible. Ferrosilicon dust suspended in air may under certain conditions cause dust explosions. Use extinguishing media appropriate to combustibles in the surrounding area.
- **PROTECTION FOR FIREFIGHTERS:** Wet material should be kept out of eyes and off skin. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSEH (approved and equivalent) and full protective gear.

SECTION 7: ACCIDENTAL RELEASE MEASURES

- **CONTAINMENT:** Product is dry solid (granular or powder) and not readily soluble in water. However, prevent spilled product from entering streams, water bodies, and waste water systems.
- **CLEANUP:** Vacuum or sweep up dry material and place in a container for reuse. Avoid creating excessive airborne dust. Cleanup personnel need to wear approved respiratory protection (air-purifying or air supply), gloves, long sleeved clothing and goggles to prevent irritation from contact and inhalation.
- **COLLECTION:** If possible collect and reuse spilled product.
- **REPORTING:** SEE SECTION 16: REGULATORY INFORMATION
- **EVACUATION:** Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

SECTION 8: HANDLING AND STORAGE

- **HANDLING:** Minimize dust generation and accumulation. Avoid breathing dust. Avoid contact with skin and eyes.
- **AVOID IGNITION SOURCES:** Avoid generating sparks and other ignition sources (e.g., welding) in areas with high dust concentrations. Ferrosilicon particles suspended in air at concentrations above 100-300 g/m³ can cause dust explosions. For a given particle size, the ignition sensitivity and the violence of the explosion decrease with decreasing Si/Fe ratio. Addition of wet material to molten metal may cause explosions.

- **STORAGE:** Ferrosilicon must be kept in a dry and well ventilated place, and away from acids and bases. Keep container closed when not in use.

SECTION 9: EXPOSURE CONTROLS/PERSONAL PROTECTION EQUIPMENT

ENGINEERING CONTROLS: If user operations generate dust, fume, or mist, use ventilation to keep exposure to airborne contaminants below the exposure limits listed in Section 4.

PERSONAL PROTECTIVE EQUIPMENT:

- **Eye and Face Protection:** Corrosive to eyes. Wear protective safety glasses when dust generation is likely.
- **Skin Protection:** Wear clothing sufficient to cover skin, safety shoes, and split leather palm gloves for hand protection against dry materials.
- **Respiratory Protection:** Use NIOSH/MSHA approved respiratory protection (air purifying or air supplying) when concentrations are above exposure limit value. A respiratory protection program that meets OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant the use of a respirator.
- **General Hygiene Considerations:** Wash thoroughly after using product. Wash contaminated clothing. Wash hands before eating, drinking or smoking.

EXPOSURE GUIDELINES: SEE SECTION 4

SECTION 10: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Silvery gray to metallic surface consisting of fine powders to granules and lumps up to several inches in size.

ODOR: Odorless

PHYSICAL/CHEMICAL PROPERTIES:

Density: Approximately 4.5	Freeze Point: Solid	% Volatile by Volume: NA
Water Solubility: Slightly Soluble	Melting Point: 1100°C	Vapor Density: NA
PH: NA	Boiling Point: NA	Vapor Pressure: NA

SECTION 11: STABILITY AND REACTIVITY

STABILITY: Stable under normal conditions of storage.

CONDITIONS TO AVOID: Wet or areas with excessive humidity.

MATERIALS TO AVOID: Water/excessive humidity, acids and bases. Garlic like smell may occur on contact with water or humidity.

SECTION 11: STABILITY AND REACTIVITY

HAZARDOUS DECOMPOSITION PRODUCTS:

- Highly flammable hydrogen gas (H_2) and highly flammable and toxic gases of phosphine and arsine (garlic-like smell), both heavier than air, may be formed if Ferrosilicon comes in contact with moisture, acids, or bases.
- A reaction with hydrofluoric acid (HF) or nitric acid (HNO_3) can lead to the formation of toxic gases such as silicon tetra fluoride (SiF_4) or nitrous gases (NO_x).
- Wet product will form highly flammable hydrogen gas if added to molten metal, due to decomposition of water.

SECTION 12: ECOLOGICAL INFORMATION

Derived from mineral ores. No data available on any adverse effects of this material on the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

- **RCRA:** This product, as manufactured, is not a RCRA listed hazardous waste and does not exhibit any characteristics of a hazardous waste, including toxicity by EPA TCLP method.
- **Disposal Method:** This product is generally suitable for landfill disposal. Follow all applicable Federal, State, and local laws, rules, and regulations regarding the safe disposal of this material. If this product has been altered or contaminated with other hazardous materials, appropriate waste analysis may be necessary to determine proper method for disposal. A qualified environmental professional should determine waste characterization, disposal, and treatment methods for this material in accordance with applicable Federal, State, and local regulations and requirements.

SECTION 14: TRANSPORTATION INFORMATION

USDOT INFORMATION: This product is not regulated by USDOT as a hazardous material (49 CFR 172.101). No UN code assigned. No placard required for transportation.

LABEL INFORMATION:

CAUTION:

Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling and use. Keep in a closed container in a well ventilated area.

FIRST AID MEASURES

- **EYE CONTACT:** Remove material by immediately flushing with clean, flowing, lukewarm water (low Pressure) for at least 15 minutes. Get medical attention if pain or irritation persists.
- **SKIN CONTACT:** Immediately wash affected area with mild soap and water to remove any dust adhering to the skin. Get medical attention if irritation develops or persists.
- **INHALATION:** If exposed to excessive levels of dusts or fumes. Remove to fresh air and get medical attention if cough or other symptoms develop. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek medical attention.

- **INGESTION:** Ingestion is an unlikely route of exposure. If ingested in sufficient quantity and victim is conscious give 1-2 glasses of water. Never give anything by mouth to an unconscious person. Leave decision to induce vomiting to qualified medical personnel, since particles may be aspirated into the lungs. Seek immediate medical attention.

SECTION 15: REGULATORY INFORMATION

COMPONENTS LISTED IN FEDERAL REGULATIONS AND STATE "RIGHT-TO-KNOW" LAWS:						
FEDERAL AGENCIES						
Product	CAS #	RCRA	CERCLA	SARA III	EHS	TSCA
75% Ferrosilicon	37322-17-1	NO	NO	YES	NO	YES

SECTION 16: OTHER INFORMATION**HAZARDOUS MATERIAL IDENTIFICATION SYSTEM**

HEALTH	REACTIVITY
0 - No hazard: Exposure to this substance offers no significant risk to health.	0 - Stable: substances which will remain stable when exposed to heat, pressure, or water.
1 - Slight Hazard: Irritation or minor injury would result from exposure to this substance. Protective measures are indicated.	1 - Normally Stable: Substances may become unstable at elevated temperatures and pressures or when mixed with water. Approach with caution.
2 - Dangerous: Exposure to this substance would be hazardous to health. Protective measures are indicated.	2 - Unstable: Violent chemical changes are possible at normal or elevated temperatures and pressures. Potentially violent or explosive reaction may occur when mixed with water. Monitor from a safe distance.
3 - Extreme Danger: Serious injury would result from exposure to this substance. Do not expose any body surface to these materials. Full protective measures should be taken.	3 - Explosive: Substances that are readily capable of detonation or explosion by a strong initiating source, such as heat, shock, or water. Monitor from behind explosion resistant barriers.
4 - Deadly: Even the slightest exposure to this substance would be life threatening. Only specialized protective clothing, for these materials, should be worn.	4 - May Detonate: Substances are readily capable of detonation and/or explosion at normal temperatures and pressures. Evacuate area if exposed to heat or fire.

FLAMMABILITY	PERSONAL PROTECTIVE EQUIPMENT- PPE
0 - Will not burn: Substances that will not burn.	A - Safety Glasses
1 - Flash point above 200° F: This substance must be overheated to ignite. Most combustible solids would be in this category.	B - Safety Glasses + Gloves
2 - Flash Point below 200° F: Moderately heated conditions may ignite this substance. Caution procedures should be employed when handling.	C - Safety Glasses + Gloves + Synthetic Apron
3 - Flash point below 100° F: Flammable, volatile or explosive under almost all normal temperature conditions. Exercise great caution in storage or handling of these materials.	D - Face Shield + Gloves + Synthetic Apron
4 - Flash point below 73° F: This substance is very flammable, volatile or explosive depending on its state. Extreme caution should be used in handling or storing these materials.	E - Safety Glasses + Gloves + Dust Respirator
	F - Safety Glasses + Gloves + Synthetic Apron + Dust & Vapor Respirator
	G - Safety Glasses + Gloves + Dust & Vapor Respirator
	H - Splash Goggles + Gloves + Synthetic Apron + Vapor Respirator
	I - Safety Glasses + Gloves + Dust and Vapor Respirator
	J - Splash Goggles + Gloves + Synthetic Apron + Dust And Vapor Respirator
	K - Air line Hood or Mask + Glove + Full Suit + Boots
	X - Ask Supervisor or Safety Coordinator for Guidance and handling instructions.

SECTION 17: ACRONYMS AND ABBREVIATIONS USED IN THIS MSDS	
ACGIH	American Conference of Governmental Industrial Hygienists
ANSI	American National Standards Institute
CAA	Clean Air Act; 40 CFR Subchapter C - Air Programs (Parts 50-99)
CAS	Chemical Abstract Service
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act, 40 CFR 302.4; Designation, Reportable Quantities, and Notification (Table 302.4)
CWA	Clean Water Act; 40 CFR Subchapter D - Water Programs (Parts 100-149)
EPA	United States Environmental Protection Agency
HMIS	Hazardous Materials Identification System of the National Paint & Coating Association
IARC	International Agency for Research on Cancer
Mg/m ³	Milligrams per cubic meter
MSHA	Mine Safety and Health Administration
N/A	Not Applicable
NFPA	National Fire Protection Association
NIOSH	Nation Institute of Occupational Safety and Health
NTP	United States National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit (OSHA)
RCRA	Resource Conservation and Recovery Act (EPA), 40 CFR 261 - Identification and Listing of Hazardous Waste.
REL	Recommended Exposure Level (NIOSH)
RQ	Reportable Quantity
RTECS	Registry of Toxic Effects of Chemical Substances. This database contains toxic effects data on some 140,000 chemicals. Researched and maintained by NIOSH
SARA	Superfund Amendments and Reauthorization Act, 40 CFR 372.65 - Toxic Chemical Release
SARA-EHS	SARA Extremely Hazardous Substances, 40 CFR 355 - Emergency Planning and Notification (Appendices A & B)
STEL	Short Term Exposure Limit (ACGIH)
STP	Standard temperature and Pressure (T = -70 Deg F, P = 1 atm)
TCLP	Toxicity Characteristics Leaching Procedure (EPA Method 1311)
TLV	Threshold Limit Value (ACGIH)
TSCA	Toxic Substance Control Act, 40 CFR 716.120 - Health and Safety Data Reporting
TWA	Time Weighted Average based on 8 Hour Exposure
USDOT	United States Department of Transportation.

SECTION 18: DISCLAIMER

This Material Safety Data Sheet (MSDS) is to be used only for this product in its present form. If this product is altered or used as a component in another material, the information on this MSDS may not be applicable. This document is generated for the purposes of distributing health, safety, and environmental data. This MSDS is not specification document sheet, nor should any data be constructed as a specification. Some of the information and conclusions are not based on direct test data of the product, but from information obtained from agencies and programs such as OSHA, EPA, NIOSH, NTP, NFPA and ACGIH. The user of this product has sole responsibility to determine the suitability of this product for any use and manner of use intended, and for determining the regulations applicable to such use in the relevant jurisdiction. This MSDS is updated on a periodic basis in accordance with applicable health and safety standards.

Attachment 7

**Hazardous Materials Spill Contingency Plan
Response Procedures for Site Personnel**



Pine Point Pilot Project

May 2006

1.0 INTRODUCTION

1.1 Plan Purpose

The purpose of the Spill Contingency Plan is to provide a strategic action plan for hazardous materials spills that may occur at the Pine Point Pilot Project (PPPP) site. The plan clearly defines the responsibility of key personnel and outlines procedures to effectively and efficiently contain and recover hazardous materials spills.

Petroleum products and hazardous materials considered in the PPPP Spill Contingency Plan include:

- Diesel Fuel and/or Biodiesel
- Hydraulic Oil
- Motor Oil
- Gasoline
- Antifreeze
- Propane
- Greywater Sewage

1.2 Tamerlane Ventures Inc. Environmental Policy

Tamerlane Ventures Inc.'s policy is to comply with all existing laws and regulations to help ensure protection of the environment. Tamerlane Ventures Inc. cooperates with other groups committed to protecting the environment and ensures that employees, government and the public are informed of the procedures to follow to help protect the environment.

2.0 SITE DESCRIPTION

2.1 General Site Description

The proposed PPPP site is located approximately 48 kilometers east of Hay River. The access road to the site from Hay River is paved with the exception of the last kilometer, which is dirt/gravel. The project area is planned to include an isolated fuel and lube storage area enclosed in a catch basin.

2.2 Petroleum Storage and Transport

Surface fuel storage will be less than 80,000 liters (20,000 gallons). The storage will include individual totes with capacities of less than 4,000 liters (1,000 gallons). The fuel storage area will allow the totes to be easily accessed and removed in the isolated area with low permeability. The fuel supply will be contracted with local area businesses and transported to the site via Provincial Highway 5.

2.3 Graywater Sewage

Tamerlane Ventures Inc. anticipates that all graywater and sewage will be treated by a portable sewage treatment plant. Disinfected effluent will be mixed into the DMS circuit and discharged into the proposed primary infiltration basin.

3.0 SPILL RESPONSE ORGANIZATION

In the event of a hazardous materials spill on the PPPP site, all personnel will follow a defined response and notification procedure led by the On-Site Coordinator and supported by the Environmental Advisor (EBA) and site employees. This group will form the PPPP Spill Response Team and will be responsible for specific tasks during a hazardous materials spill.

3.1 On-Site Coordinator

The On-Site Coordinator has the following responsibilities:

- Assume complete authority over the spill area and coordinate the actions of site personnel.
- Evaluate the spill and develop an overall response plan.
- Mobilize personnel and equipment to the site of the spill.
- Report the spill immediately to the Northwest Territory (NWT) Spill Line and Environmental Advisor.
- Obtain additional manpower, equipment and materials if they are not available on-site.
- Provide regulatory agencies and Tamerlane Ventures Inc. with information regarding the status of clean-up activities.
- Prepare and submit a report on the spill incident to regulatory agencies within 30 days of the event.

3.2 Environmental Advisor

The Environmental Advisor has the following responsibilities:

- Provide technical advice regarding probable environmental effects from the spill.
- Provide advice to the On-Site Coordinator for spill response procedures.
- Assist in developing any sampling, testing or monitoring of soil or water directly affected by the spill.

3.3 Site Employees

The PPPP will employ an estimated 170 personnel. Approximately 33 personnel will work on the surface. These employees will be available to assist and mitigate spills response situations. Spills Response training for surface employees is discussed in Section 9.0.

4.0 INITIAL SPILL RESPONSE

Specific actions and communications are in place to ensure an expedient response to a hazardous materials spill (Figure 4.0-1). Initial Spill Response measures include the following steps:

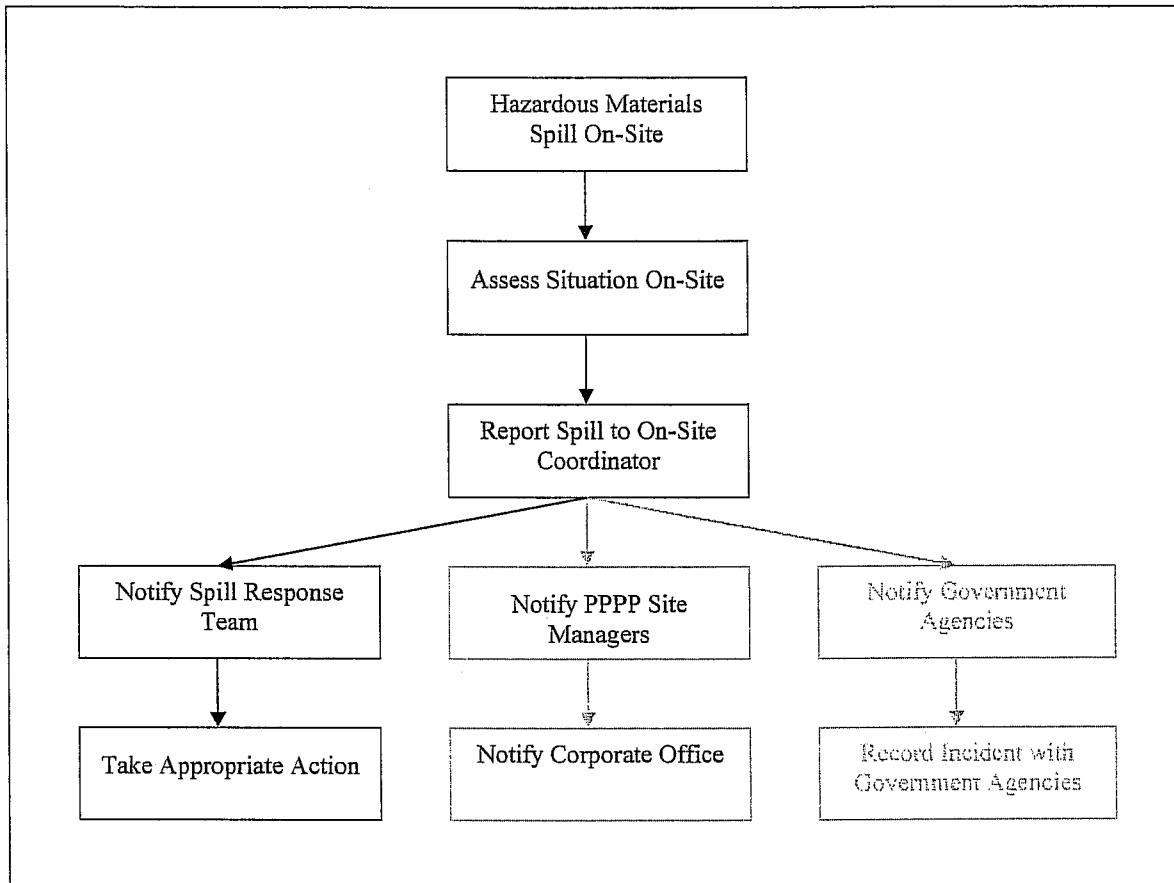
4.1 First Person at the Site

- Identify the material that has been spilled.
- Assess any potential hazard to people in the vicinity of the spill.
- Control the danger to human life if it is possible to do so without additional assistance.
- Assess if the spill can be stopped or brought under control.
- Stop the flow of material if it can be done safely.
- Immediately report the spill to the On-Site Coordinator.
- Call the 24 hr NWT Spill Line ((867) 920-8130) **IF** the On-Site Coordinator cannot be contacted.
- Resume effective action to contain, mitigate, or terminate the flow of spilled material.

4.2 On-Site Coordinator

- Call the NWT 24 hr Spill Line at (867) 920-8130 as soon as possible to report the spill and provide initial incident details.
- Complete and fax a NWT Spill Report Form to (867) 873-6924.
- Gather relevant information and submit a detailed spill report to the applicable regulatory agencies no later than 30 days after the spill event.

**Figure 4.0-1
PPPP Response and Notification Process**



5.0 SPILL RESPONSE CONTACTS

5.1 Internal Contacts

On-Site Coordinator	TBD	office: TBD cell: TBD
Environmental Advisor (EBA)	Rick Hoos	office: (604) 685-0275 cell: (604) 813-4952
Site Manager	TBD	office: TBD cell: TBD
Project Manager	David Swisher	office: (360) 332-4653 cell: (360) 927-6103
Senior Geologist	Chuck Watts	office: (360) 332-4653 cell: (360) 220-7261
President and CEO	Ross Burns	office: (360) 332-4653 cell: (360) 303-3429

5.2 External Contacts

Additional assistance may be obtained from the following organizations:

Emergency Services

Ambulance	(867) 874-9333
Fire	(867) 874-2222
Police	(867) 874-1111
Medical Emergency	(867) 874-7100
Poison Control	(867) 874-7100
Oil and Chemical Spills	(867) 920-8130

Charter Companies

Great Slave Helicopters	(867) 873-2081
Carter Air Service	(867) 874-2281
Denendeh Helicopters Ltd.	(867) 874-3399
Landa Aviation	(867) 874-3500
Remote Helicopters Ltd.	(867) 874-6999

Government

WCB Mine Accident Reporting Line	1-800-661-0792
INAC Contaminants	(867) 669-2756
INAC Contaminants Hot Line	1-800-661-0827
INAC Hay River Sub-District Office	(867) 874-6994

6.0 SPILL RESPONSE ACTION PLAN

6.1 Diesel Fuel, Hydraulic Oil and Lubricating Oil

Stop the spill flow if it is possible and safety permits. No smoking is permitted when responding to a diesel fuel, hydraulic oil or lubricating oil spill.

On Land

- Do not flush into ditches or drainage systems.
- Build barrier with soil to block entry into waterways.
- Remove the spill by using sorbent pads or digging out the soil.

On Water

- Use a containment boom to concentrate the spill for recovery.
- Use sorbent pads to remove small spills.
- Use a skimmer to remove larger spills.

On Ice and Snow

- Block entry into waterways by building a barrier with snow to contain the spill.
- Remove the spill using sorbent pads and shovel contaminated ice and snow into plastic buckets with lids and/or polypropylene bags.

Storage and Transfer

- Store all contaminated water, snow/ice, soils, clean-up supplies, and absorbent materials in closed, labeled containers.
- Store containers in ventilated areas away from incompatible materials.

Disposal

- Consult with Federal and Territorial Environmental Authorities before disposing contaminated material.
- See Section 8.0

6.2 Gasoline

Stop the spill flow if it is possible and safety permits. Eliminate ignition sources. Gasoline forms vapors that can ignite and explode. No smoking is permitted when responding to a gasoline spill.

On Land

- Build barrier with soil to block entry into waterways.
- Do not attempt to contain the spill if ignition potential exists.
- Use particulate sorbent material to soak up the spill.

On Water

- Contain and remove spills only after vapors have dissipated.
- Use containment booms to concentrate spills.
- Use a skimmer on a contained slick.

On Ice and Snow

- Block entry into waterways by building a barrier with snow to contain the spill.
- Remove the spill by using particulate sorbent and shovel contaminated ice and snow into plastic buckets with lids and/or polypropylene bags.

Storage and Transfer

- Store all contaminated water, snow/ice, soils, clean-up supplies, and absorbent materials in closed, labeled containers.
- Store containers in ventilated areas away from incompatible materials.
- Electrically ground all containers and transporting equipment.

Disposal

- Consult with Federal and Territorial Environmental Authorities before disposing contaminated material.
- See Section 8.0

6.3 Antifreeze

Stop the spill flow if it is possible and safety permits.

On Land

- Do not flush into ditches or drainage systems.
- Build barrier with soil to block entry into waterways.
- Remove spill using sorbent pads or digging out soil.

On Water

- Be aware that antifreeze sinks and mixes with water.
- Confine and isolate the spill by damming or diverting the spill.
- Pump contaminated water into containers.

On Ice and Snow

- Block entry into waterways by building a barrier with snow to contain the spill.
- Remove the spill by using particulate sorbent and shovel contaminated ice and snow into plastic buckets with lids and/or polypropylene bags.

Storage and Transfer

- Store all contaminated water, snow/ice, soils, clean-up supplies, and absorbent materials in closed, labeled containers.
- Store containers in ventilated areas away from incompatible materials.

Disposal

- Consult with Federal and Territorial Environmental Authorities before disposing contaminated material.
- See Section 8.0

6.4 Propane

Stop the spill flow if it is possible and safety permits. Eliminate ignition sources. No smoking is permitted when responding to a propane spill.

On Land

- Do not attempt to contain or remove the spill.

On Ice and Snow

- Do not attempt to contain or remove the spill.

Storage and Transfer

- It is not possible to collect and/or contain propane once it is released.

Disposal

- No disposal is required.

7.0 SPILL RESPONSE EQUIPMENT

7.1 General Equipment

Hand tools will be kept on site to aid in the mitigation of hazardous materials spills. A rubber tire loader will also be available for emergency use and to respond to spill incidents.

7.2 Spill Kits

Tamerlane Ventures Inc. will maintain spill kits on-site. One spill kit will be located in the temporary Maintenance Shop and another spill kit will be located in the Fuel and Lube Storage Area. Spill kit inventories will contain the following items:

- (1) 16 Gauge Open-Top Drum with Bolting Ring and Gasket (205 litre)
- (1) Pkg. of 10 Disposable Polyethylene Bags (5 mil)
- (1) Shovel (spark proof)
- (4) 5" x 10' Absorbent Booms
- (1) 10 lb. Bag of Absorbent Particulate
- (1) Bail of 17' x 19' x d = Sorbent Sheets (100 sheets)
- (2) PVC Oil Resistant Gloves
- (2) Respirators
- (2) Pairs Splash Protective Goggles

8.0 DISPOSAL METHODS

In the event of a spill, the On-Site Coordinator will seek government approval and advice for proper disposal. The selected disposal method will require approval from the PPPP Project Manager. The following disposal options are considered appropriate and are expected to meet government approval.

- Off-Site Disposal (to a landfill that permits disposal of hazardous materials)
- Controlled Burning (contaminants)
- Incineration (liquid product)

9.0 SPILL RESPONSE TRAINING

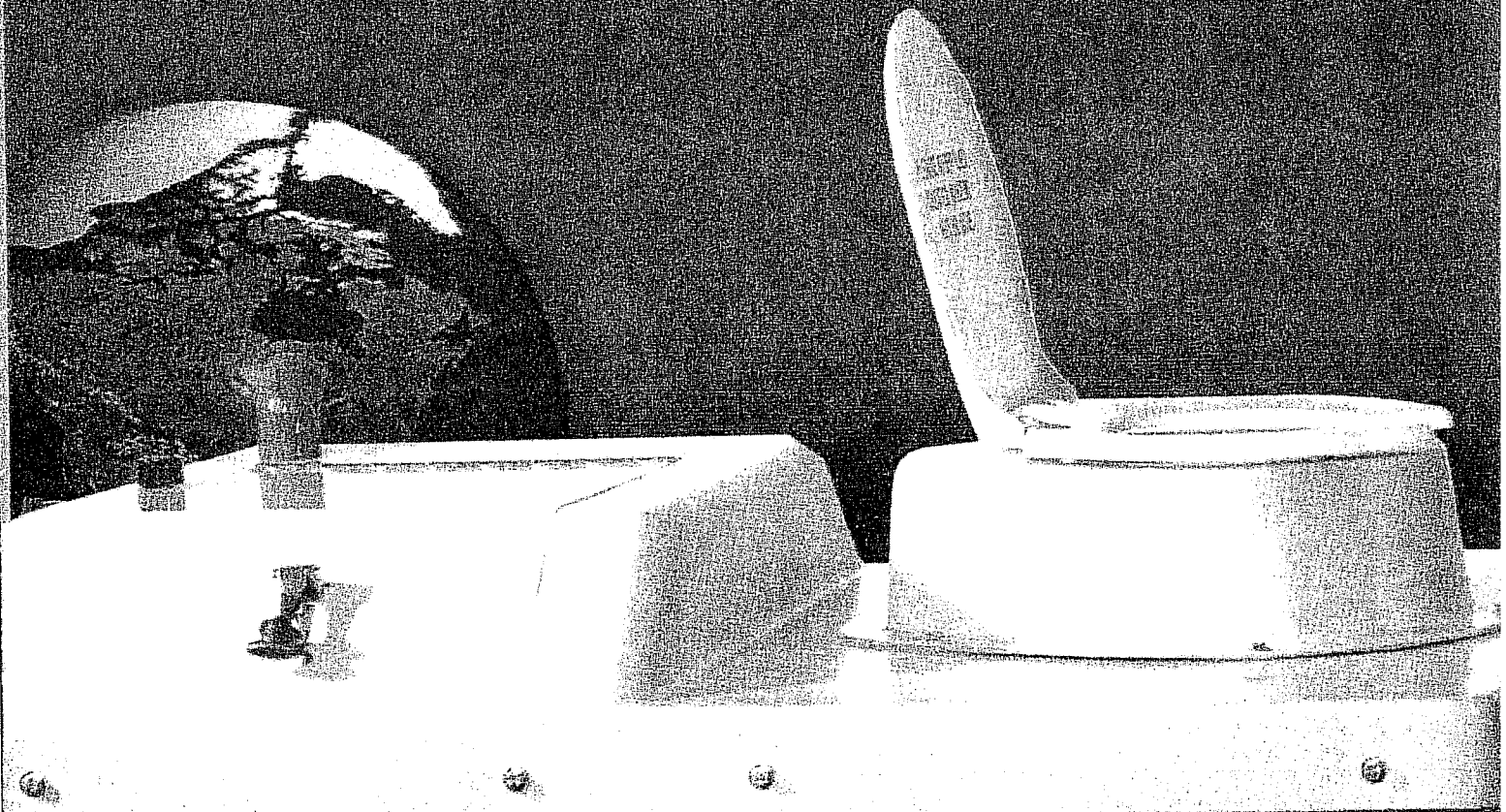
The On-Site Coordinator will conduct training for all surface personnel working on the PPPP. Surface personnel will be trained in the techniques and materials required to manage hazardous spill responses. Training will include the following instruction:

- The initial spill response procedure to use in the event of a spill.
- Location and use of emergency equipment to respond to spills.
- Safe operation of equipment and tools to minimize the potential for spills.
- Operational procedures to limit the potential and impact of spills.
- Monthly safety discussions to address work hazards.

10.0 REFERENCES

- Hope Bay Joint Venture. (2002). *Spill contingency plan: Hope Bay Project*. Retrieved March 22, 2006, from http://www.ainc-inac.gc.ca/nu/nuwork/pi/dng/eis/DPSSO_e.pdf
- Indian Affairs & Northern Development Contaminated Sites Office. (2007, January). *Frobisher sour gas wells: Contingency plan and emergency spill response manual*. Retrieved March 23, 2006 from <http://www.mvlwb.com/pdf/2006Land/MV2006X0004/app/appx/G-Spillcontingency-Jan06.pdf>
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- Seabridge Gold Inc. (2003). *Hazardous material spill contingency plan: Response procedures for site personnel*.

rezplast
Manufacturing Ltd.



PORTABLE MINING TOILET
(MINI SEWAGE TREATMENT PLANT)

rezplast

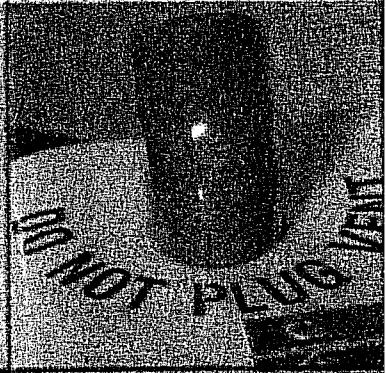
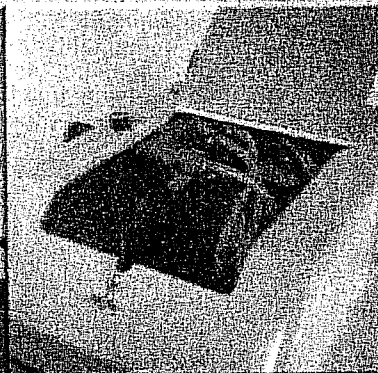
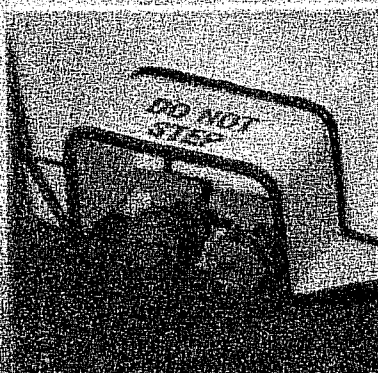
Manufacturing Ltd.

Portable Mining Toilets For Permanent or Portable Installation

The light weight "Mining Toilet" consists basically of latrine facilities mounted on top of a miniature biological treatment plant allowing waste matter to be deposited directly into the biological treatment process. **No chemicals** of any description are required. With the "Mining Toilet" there is minimal effluent odor with minimal cleaning required every 12-18 months. By manufacturing the "Mining Toilet" as a mini sewage plant, we eliminate the need of transferring night soil from latrines to a central disposal point normally associated with conventional sanitation systems and result in significant reduction in lost time and man power. The light weight design allows for single man installation and allows for easy transfer of the unit from one location to the next with minimal machinery and man power.

- All units can be **custom designed** to suit a specific location or drift size. The "Mining Toilet" meets all industry standards.
- Each unit has an impressive weight of only 150lbs, measuring only 52" long by 35" high by 36" wide.
- These units can hold a capacity of 40 men per day.
- Sold throughout North America by recognized mining supply centers.

All units are manufactured in Sudbury, ON, Canada by Rezplast.



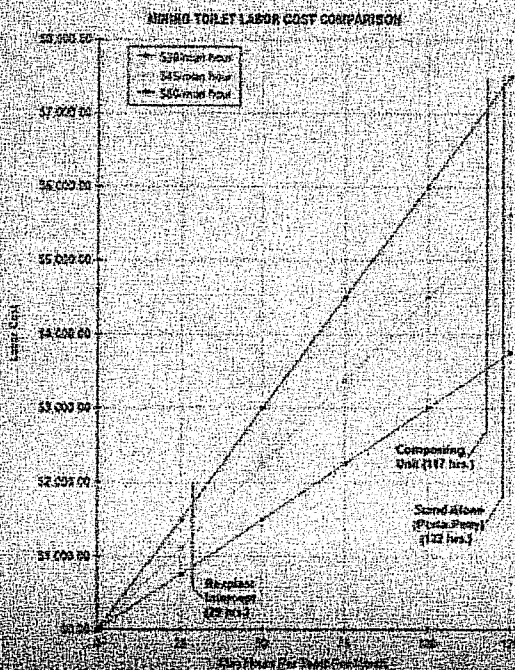
MINING TOILET OPERATING COST COMPARISON

The attached graphs demonstrate the results of a market study commissioned by Rezplast Mfg. To an independent marketing agency in the Sudbury, Ontario area.

The results are based on discussions with area mines and waste disposal management companies to determine the relative operating costs for latrine technologies currently in use in underground mines.

The study compared the following systems:
Portable Composting Latrines:

These systems utilize a holding tank to store and process the deposited waste material. Composting systems are labor intensive, requiring daily maintenance. The composting material must be "flipped" by a manually operated drum on a daily basis to maintain efficient bacterial breakdown of the enclosed fecal waste and must be checked daily to ensure that they do not overflow. Peat moss should be added regularly to enhance the biological breakdown. The system utilizes liquid human waste [urine] as part of the biological process so should not be diluted with water. Water in the tank dilutes the biological breakdown and adds weight to the waste carried to surface for disposal thus reducing the effectiveness of the biological breakdown as well as adding to the cost of disposal. Further, these systems are constructed with plastic material. Plastics develop micro-cracks on the surface which become repositories for waste matter. The toilets cannot be cleaned with disinfectants [destroys the biological process]. Due to the sensitivity of the system to water the toilets must be cleaned by manual scrubbing with appropriate cleaners in order to prevent bacterial infection of the users. This, again, is labor intensive.



Stand Alone Units:

Includes, for example, "Porta Potty" or "Johnny On the Spot" which are no more than portable outhouses. These systems hold about 30 - 40 gallons of waste and must be emptied frequently. Odor is a serious problem, particularly in the confines of the underground mine. Disposal costs are highest with this system due to the relative mass of waste which must be hauled to surface.

These systems are also constructed with plastic so the same problem exists regarding cleaning. The units cannot be hosed down. Water in the holding tank increases both the frequency and cost for the disposal process.

It's most common that both systems above are rented from a waste handling organization which is also contracted to deal with disposal of the waste and clearing of the units, but at significant cost.

Rezplast Mining Toilet:

The Rezplast Toilet should be checked daily to ensure that the airflow is on [8cfm] and no foreign material has entered the bowl [e.g. rags] which will impede the action of the airpump. During that inspection the water level is also checked. "Grey water" produced in this system evaporates at low odor level rather than to leak out into a field as with the conventional in-ground septic tank. But, this water must be replaced; a small maintenance requirement. It is important to emphasize though, that no waste water is released into the mine.

Since the Rezplast Toilet uses water in the biological breakdown of the fecal waste and is not constructed of plastic [uses high quality Fiberglass construction] it may be hosed off, as opposed to the scrubbing required by the other systems, for proper cleaning.

Combine this with the fact that the Rezplast unit effectively processes human waste from 40 persons per day and requires removal of the resulting sludge only once during a 12-18 month period. It becomes very obvious why the comparative study yielded average manpower requirements of 122 hrs/month, 117 hrs/month and 29 hours/month respectively for the Composting, Stand Alone and Rezplast systems featured in the study.



1150 Kelly Lake Road, Sudbury, ON P3E 5P4
 Tel: 705-673-3824 Fax: 705-673-2844
 Website: www.rezplastmfg.com



Commissioning:

1. Make sure that the unit stands level.
2. Close all valves underneath unit.
3. Close compressed air supply valve on unit.
4. Connect compressed air supply to unit.
Pressure supply to be between 65 - 100 lbs/sq. in.
5. Open manhole cover on top.
6. Remove starting floc from inside the tank.
7. Fill unit with clean water through manhole or through seat pot until water is 1 1/2" below the overflow level.
8. Open compressed air supply and ensure that air bubbles inside unit and that airlift pump discharges.
9. Pour 2.0 kgs starting floc through manhole into main tank.
10. Pour in bottle of antifoam - 500 ml.
11. Replace manhole cover.

N.B. THE UNIT IS NOW READY FOR USE AND SHOULD BE USED WITHIN 24 HOURS.

General Operation:

1. The pot lids should always be closed when not in use.
2. Proper toilet paper should be provided in order to prevent blockage of airlift pump.
3. The airlift pump should always discharge.
4. The water level in the unit should be regularly topped up to make up for the loss due to evaporation.
5. No disinfectants to be added.
6. Part of the contents can be removed once per year, or as required. It is not necessary to remove any of the contents regularly.

Maintenance:

(All items requiring attention are above water line and no direct contact need be made with organic mass).

Small:

This can be due to one of four items:

1. Air turned off.
2. No air entering unit (pressure reducing valve).
3. Airlift pump not operating (at manhole).
4. Overloading of unit.

1. AIR TURNED OFF:

- (a) Check air supply valve at air main and small gate valve and air strainer under platform at pot end.
- (b) Remove all air valve handles or handwheels (to prevent unauthorized personnel making adjustments).

2. NO AIR ENTERING UNIT:

- (a) The unit will be found to be very quiet and when removing the manhole cover no agitation or movement of liquid mass will be noticed. (Assuming that both air supply valves to the unit were checked for being open and that air is present in the air main).
- (b) Remove hose between pressure reducing valve and hose manifold. If air is not flowing replace pressure reducing valve. Adjust the new valve so that air is bubbling in each tank and causing a mushroom shape effect in tanks 1 and 3. Check that airlift pump is discharging.

3. AIRLIFT PUMP NOT OPERATING

After ensuring that air valves are open and air being admitted to the inside of the unit - that is agitation and movement of mass is noticed but no discharge from airlift pump when looking in at manhole. The airlift pump delivery is at manhole when the manhole is removed. The discharge or delivery from this pump must be choked or blocked, allowing the air that is admitted to the pump to blow back via the suction end of pump thus clearing the pump section. (This airlift pump has no moving parts and is a pipe with air being admitted at the bottom end).

Should the pump not be discharging, after repeated chokes, unscrew the discharge pipe by hand and insert water hose into pump pipe and flush with full water pressure.

NOTE: It must be stressed when discussing the Mining Toilet with the installer, that the air pump must be choked for a short while when they are cleaning the unit. This will ensure trouble free operation. With the airlift pump NOT in operation it would mean that only half the plant is in operation with one half overloaded and the other half with no organic matter.

4. OVERLOADING OF MINING TOILET:

The unit can be partly or grossly overloaded by serving too many users. (The units are designed to serve a working force in the vicinity of NOT more than - small single seater 10 per day; single seater 40 per day; double seater 80 per day - based on the assumption that one out of three will use the unit per day.) With smell persistent, in spite of all items working, such as:

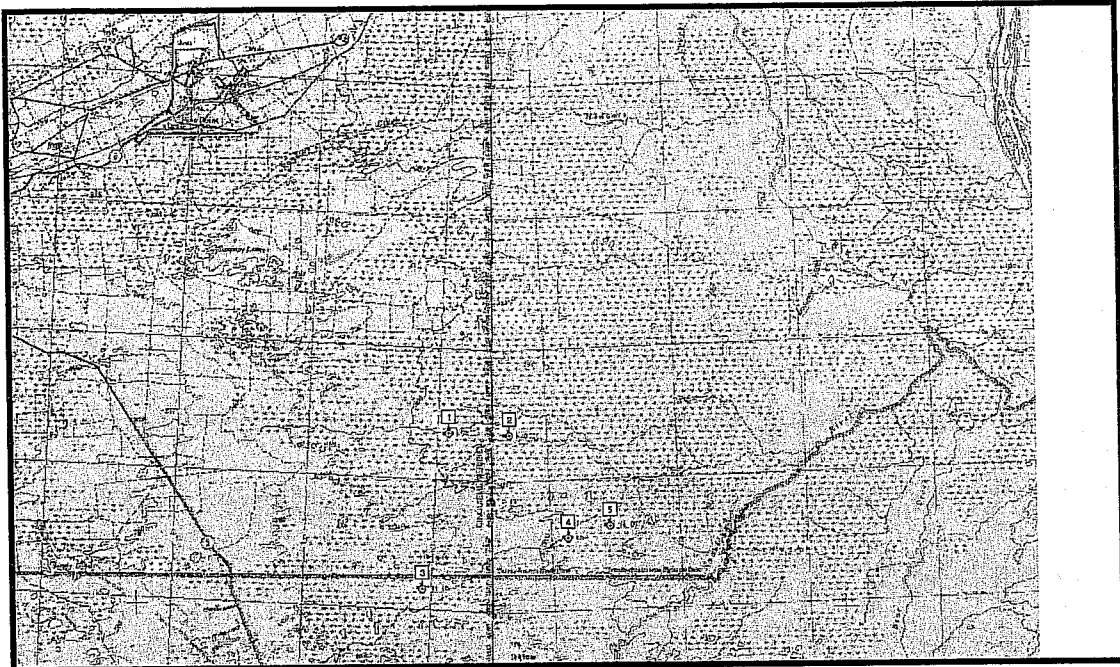
- (i) Air on.
- (ii) Air to inside of unit.
- (iii) Air pump working.
- (iv) Ensure that no chemicals were used.

By opening manhole cover the appearance of the mass being agitated will be very thick and heavy - so thick that airlift pump will barely manage to transfer the heavy organic mass - the plant is overloaded. Half the contents must be drained and the unit refilled with clean water. The number of men in that area must be checked and divided or additional units installed.

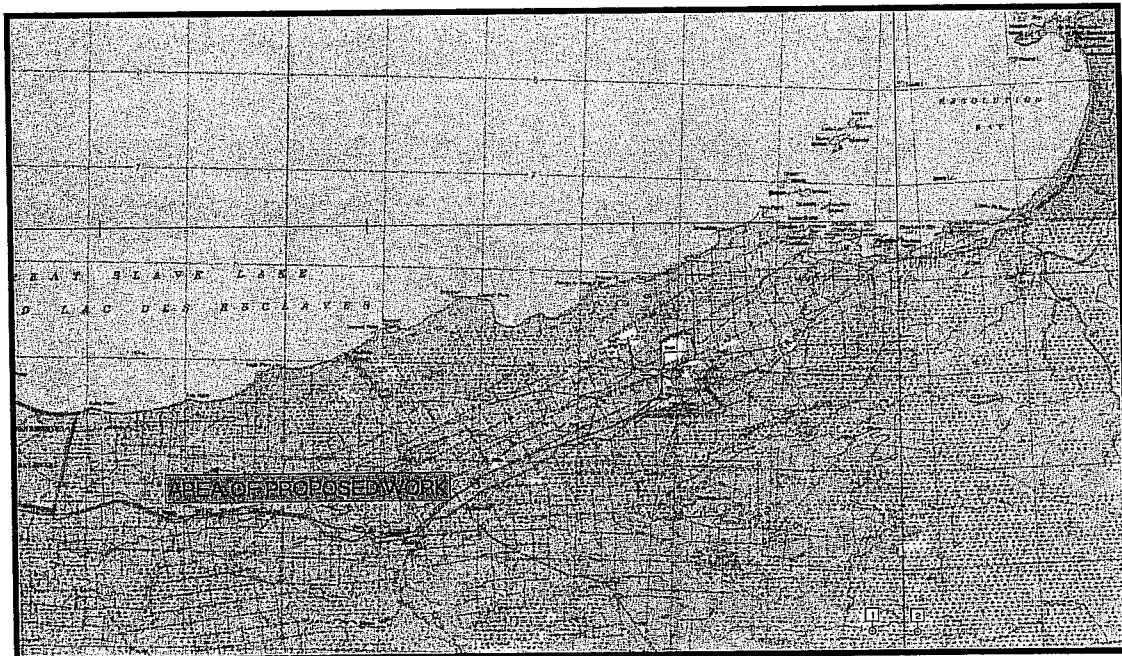
Do NOT use disinfectants:

This will kill all the micro-organisms in the unit. If any disinfectants have been added to the unit, the entire contents should be removed, and the unit recommissioned after flushing with clean water.

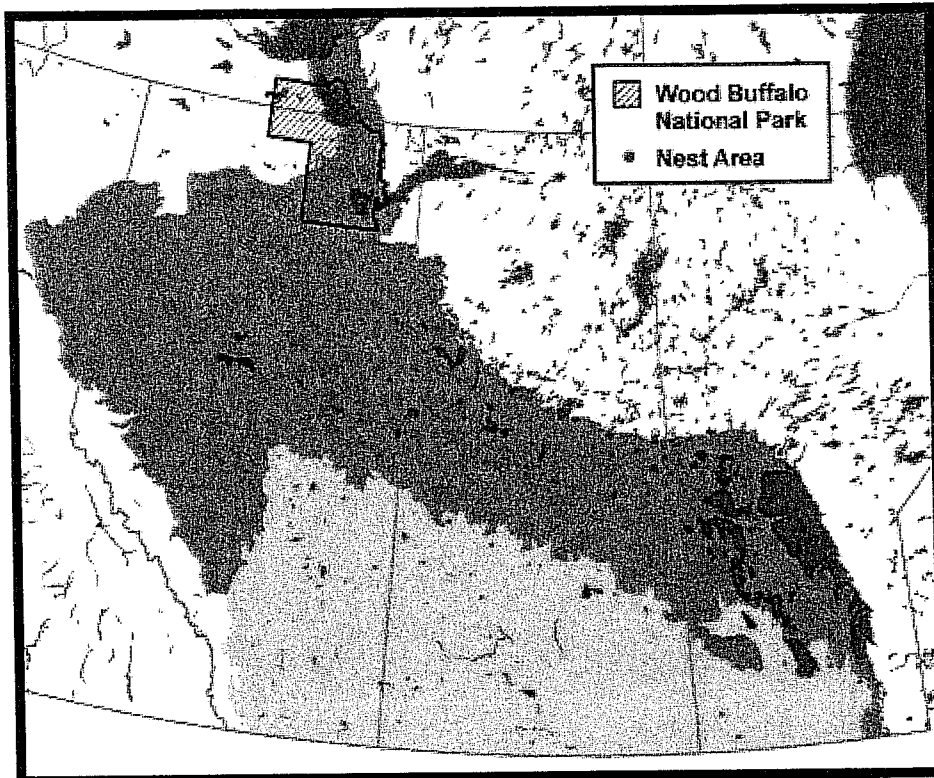
Your Local Representative:



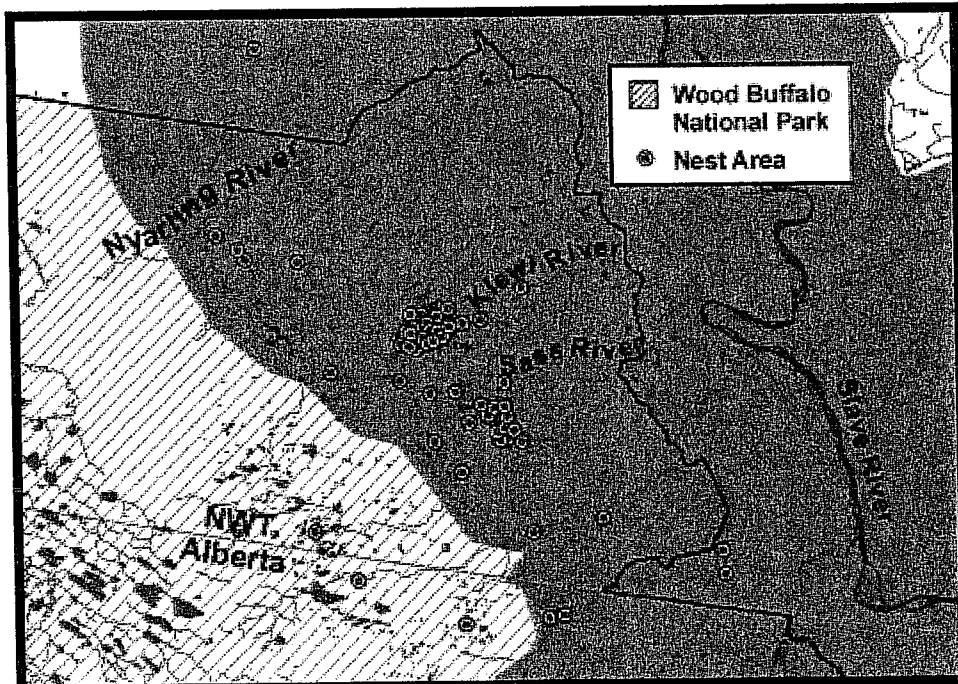
Location of Whooping Crane nesting activity outside Wood Buffalo National Park. Nearest nesting site to client's proposed work is approximately 60 km to the southeast.



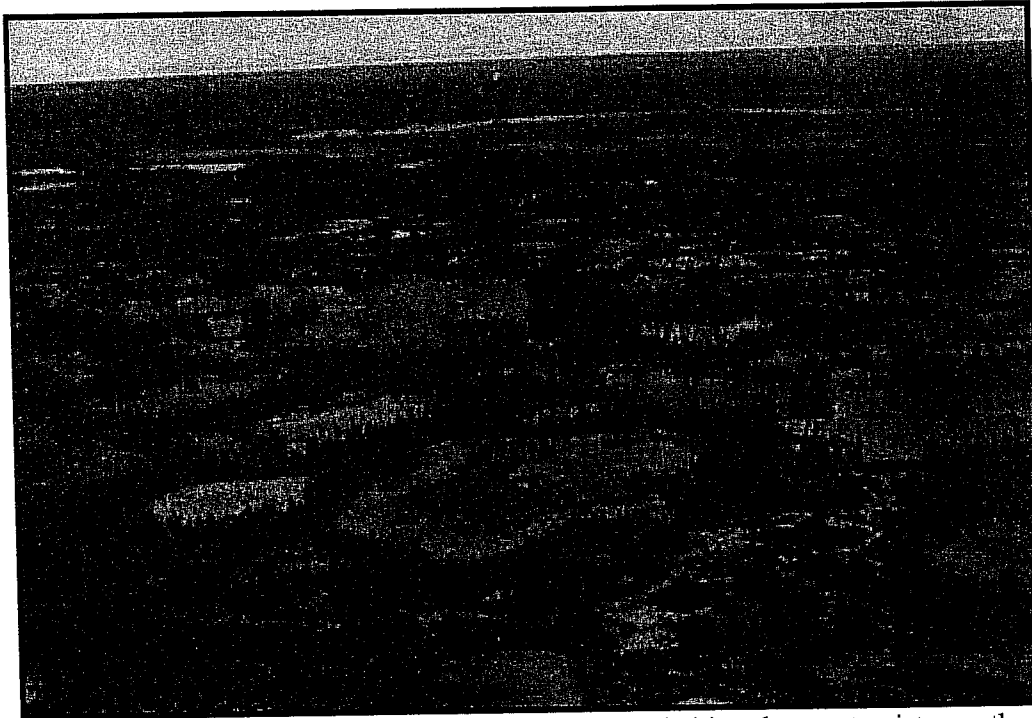
Location of proposed work in relation to the nearest Whooping Crane nests.



Known nesting area within Wood Buffalo National Park.



Locations of known crane nests within Wood Buffalo National Park.



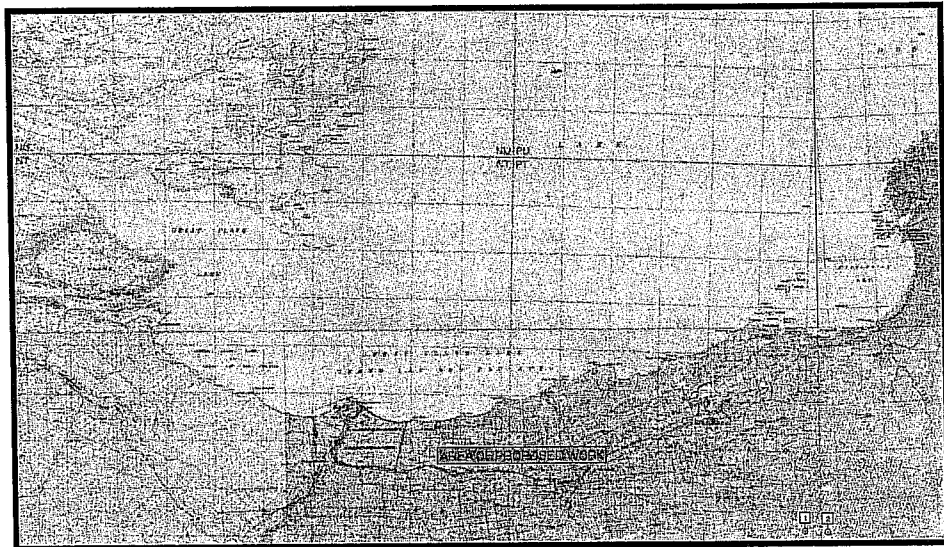
Nesting habitat for Whooping Cranes. This type of habitat does not exist near the client's proposed area of work.



Detail of nesting habitat.

Whooping Cranes

Whooping Cranes have a restricted range in the NWT limited to summer breeding grounds in the Sass River area of northern Wood Buffalo National Park (WBNP). WBNP is the only nesting area for Whooping Cranes in the NWT. Nesting is limited to the Sass River area of northern WBNP. Cranes have been documented as occurring in the Mackenzie Bison Sanctuary in the Dieppe Lake region and between WBNP to Hay River, however, these observations are infrequent. These individuals are known as non-breeders, young birds that have not reached sexual maturity.



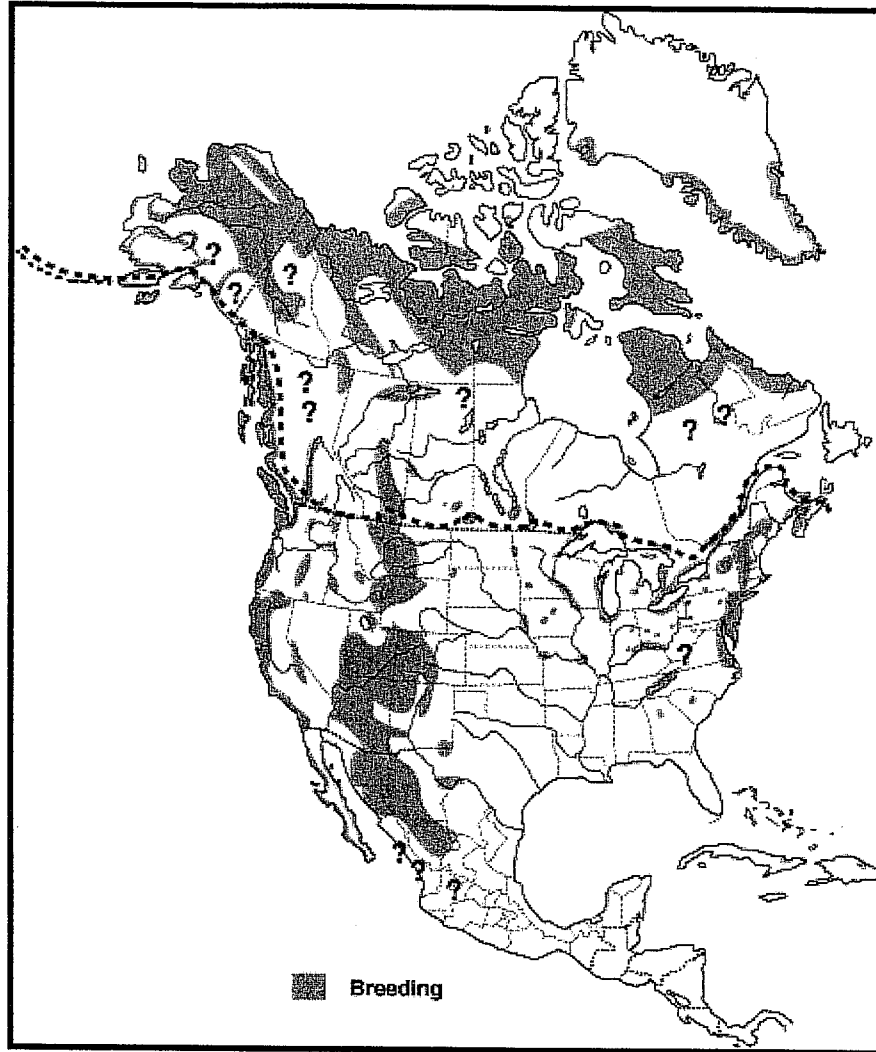
Approximate area of non-breeding Whooping Cranes.

Peregrine Falcon (Anatum)

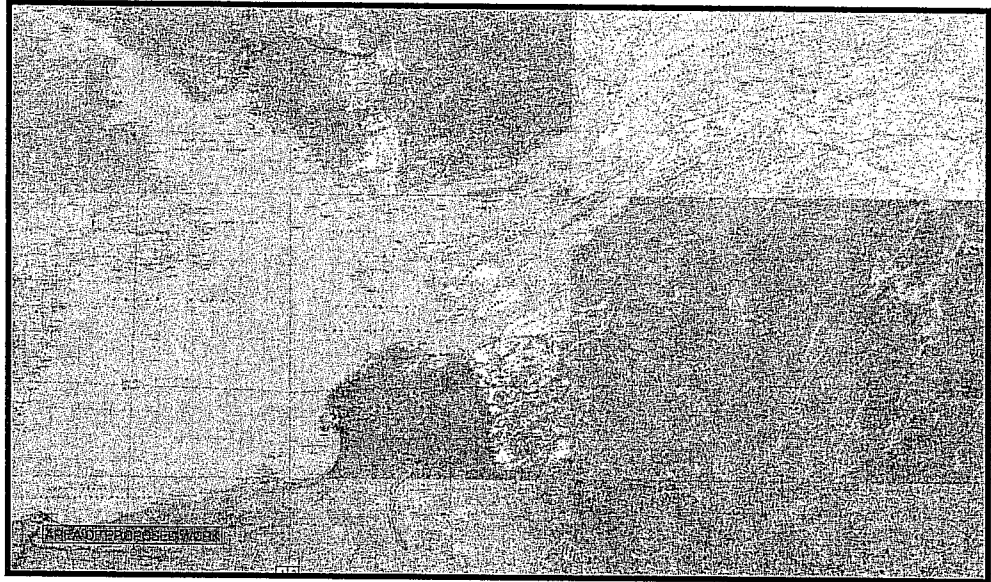
The NWT is home to two of the three subspecies of Peregrine Falcons found in Canada. The *Falco peregrinus anatum* subspecies are distributed generally throughout portions of the NWT below the treeline, with a large population located along the Mackenzie River Valley. Smaller populations can be found nesting in the east arm of Great Slave Lake (along the steep cliffs) and in Wood Buffalo National Park. The second subspecies, *F. p. tundrius*, generally breed widely in those areas above the treeline.

Peregrines have three main habitat requirements. They need proper nesting sites, usually on cliff ledges near water. They also need nesting ranges. These ranges are actively guarded and can extend up to 1 km from the nest. The third requirement is a home range. The birds do not defend this range but they do hunt within it. The home range overlaps the nesting range and can extend up to 27 km from the nest. Peregrines mainly hunt other birds in the air; so open tundra, grasslands, prairies and waterways are important habitats.

The area that Tamerlane proposes to work in does not meet the necessary habitat requirements for Peregrine Falcons. We believe that there are no nesting Peregrines within the area formerly known as Pine Point, NWT.



Distribution of the Peregrine Falcon in North and Middle America and the western West Indies. This species also breeds in South America and locally worldwide. American birds winter from the dashed line south throughout the U.S. (except the Great Basin, Great Plains and Appalachians), Middle America, the West Indies, and South America.



Approximate nesting range of Peregrine Falcons in context to Tamerlane's proposed work.

Wood Bison

The number of wood bison in the NWT is estimated between 2,500 to 2,850 individuals and is divided up amongst four different herds in four different locations. Two wood bison herds (Wood Buffalo National Park and Slave River Lowlands) contain diseased individuals, while the other two herds (Liard River and Mackenzie Bison Sanctuary) are believed to be disease free.

The Mackenzie Sanctuary population was established in 1963 and rapidly increased in numbers. By 1987 it had reached in excess of 1,700 wood bison. Population growth has slowed since then and has stabilized at about 2,000 head. A survey in March 1998 estimated the total population at 1908 wood bison. Flooding of some key habitat patches has reduced the amount of forage available to the wood bison and wolf predation has started to affect population growth. The herd occupies a wilderness area of approximately 10,000 km² north of the Mackenzie River near Fort Providence. The Mackenzie population is the largest of any free-roaming wood bison population found in northern Canada. As this herd expands in numbers, its distribution increases (Gates et al., 1991). In 1981 and 1983, approximately 10 and 84 animals, respectively, were documented east of Mink Lake. This represents a significant western expansion from the core population in the Sanctuary (Chowns and Graf, 1987; Graf et al., 1990). This herd continues to expand westerly, and recently individuals have been observed occupying range on top of the Horn Plateau during the summer and adjacent lowlands during the winter (Larter, pers. comm.).

A Bison Free Management Area (BFMA) was established in the south-western Northwest Territories in 1987 to reduce the risk of infection of the Mackenzie and Nahanni wood bison populations with bovine tuberculosis and brucellosis, diseases which are present in bison herds in the Slave River Lowlands, Wood Buffalo National Park and adjacent areas. Two methods were employed to determine the presence and distribution of bison in and around the BFMA: 1) aerial reconnaissance was carried out during January, February and March; 2) public participation was requested employing written brochures, notices and highway signs, production of a television advertisement and through radio interviews.

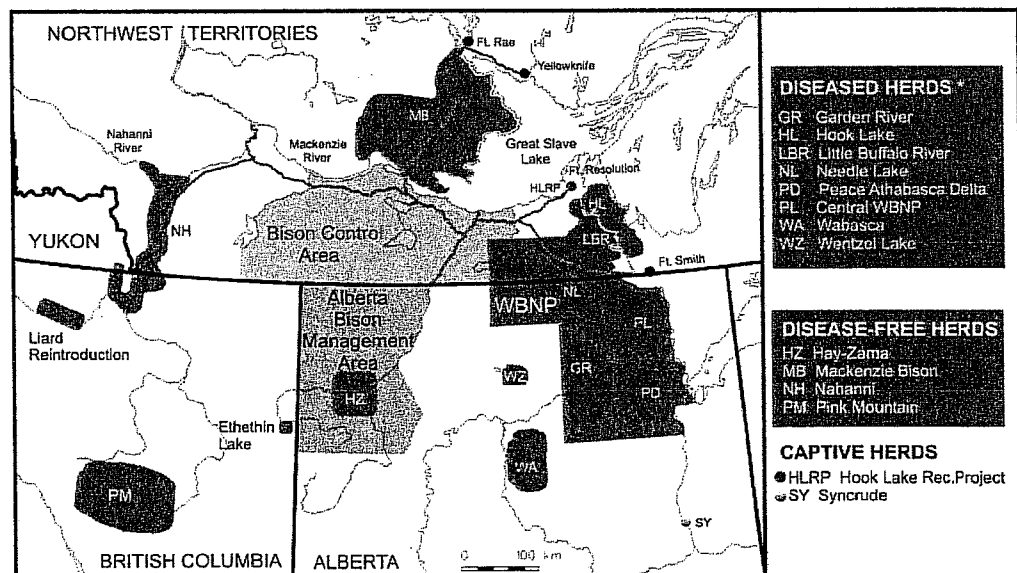
At least 44 bison were detected in the BFMA during the period January-June 1992. No bison were seen during winter surveillance flights, but the sign of one animal was reported by a member of the public in January. All other reports of bison were obtained during the snow-free period. Nine bison were killed and tested for tuberculosis and brucellosis. Disease test results were negative.

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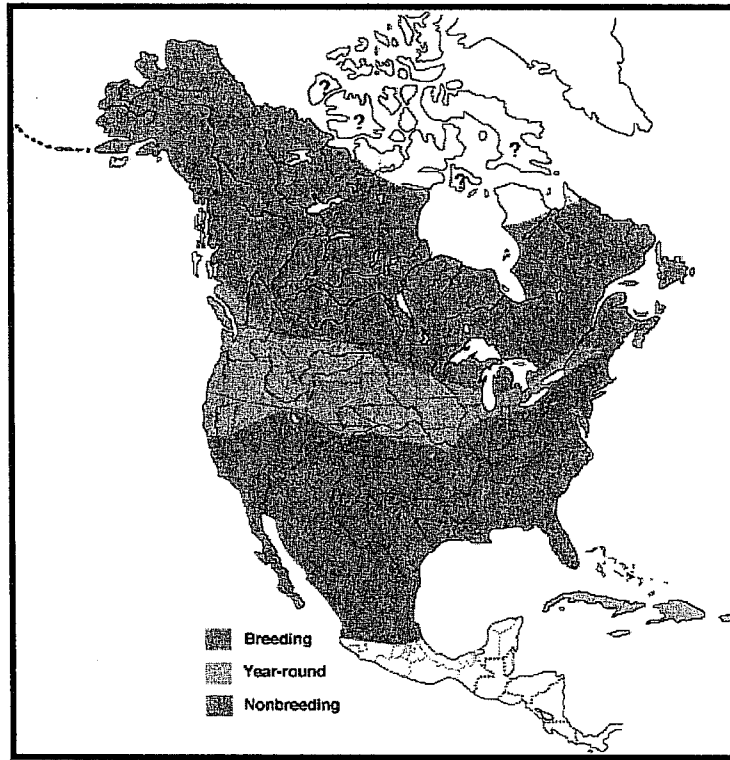
In 1987, a Bison Control Area was established from which bison are excluded by active management efforts. Initially, the Bison Control Area included lands south of the Mackenzie River and north of the Mackenzie Highway between Mills Lake and Hay River. In 1990, the Bison Control Area was expanded to include lands south of the Mackenzie River and north of the NWT/Alberta border, lying between the Trout River in the west and the Buffalo River and western boundary of Wood Buffalo National Park in the east. The objectives of the program are to remove any bison found within the Bison Control Area and prevent the establishment of bison herds or individuals in this area. These objectives serve the goal of lowering the risk of contact between the healthy herds and the diseased bison in Wood Buffalo National Park and the Slave River Lowlands.

Surveys of the Bison Control Area are carried out on a regular basis during the winter months when the likelihood of movement is greatest because of the freezing of the Mackenzie River and also because of the increased visibility of bison at this time. Aerial surveys are conducted from December through to April out and effort is concentrated in the area along the Mackenzie River from Mills Lake to Little Buffalo River because this is the area with the highest risk of bison movement. In addition to these surveys, public support of the program is very important. Any person seeing bison in the Bison Control Area is encouraged to report the sighting to the nearest ENR office. Any resident hunter seeing a bison in the control area may harvest it and keep the meat, as long as the kill is reported.



* Health status of bison to the SW of WBNP in Northern Alberta is poorly known relative to tuberculosis and brucellosis but limited testing indicates bovine brucellosis occurs

Short-eared Owl



Breeding and nonbreeding distribution of the Short-eared Owl in North America. Distribution is patchy within this range.