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BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

MARY RIVER EXPLORATION CAMP
ABANDONMENT AND RESTORATION PLAN
(REF. NO. NB102-00181/4-2)

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0	Issued in Final	November 2, 2006	KDE
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SECTION 1.0 - INTRODUCTION

This abandonment and restoration plan (A&R Plan) is an update of an earlier A&R Plan prepared in 2004 by Baffinland Iron Mines Corporation (Baffinland) and approved by the Nunavut Water Board. The plan has been updated to reflect current conditions at the Mary River Project, including incremental expansion of the camp and operations since 2004.

1.1 BACKGROUND

The Mary River Project is a mineral exploration project located in the North Baffin region, approximately 160 km southwest of Pond Inlet (Figure 1.1).

The Project is wholly-owned by Baffinland, whose contact details are as follows:

Baffinland Iron Mines Corporation
Suite 1016, 120 Adelaide Street West
Toronto, Ontario M5H 1T1
Tel: (416) 364-8820
Fax: (416) 364-0193
Contact: Rodney (Rod) Cooper, P.Eng.
Vice President, Operations

Project coordinates are as follows:

Latitude ~ 71° 18' 30" North
Longitude ~ 79° 23' 30" West

Baffinland has been carrying out exploration drilling of a large iron ore deposit since 2004 and will continue this work for several years more. The iron ore being explored would be used to produce steel. Baffinland is also studying if it is feasible to build a mine and ship ore to steel mills. The feasibility study will evaluate how much ore is available to mine as well as different ways to mine and transport the ore.

1.2 PROJECT HISTORY

Mineral exploration at the Mary River Project was first undertaken in the 1960s by Baffinland Iron Mines Limited, the historic owner of the project. A camp was established at the lake closest to the main iron ore deposits, and three airstrips were established. One building from the original camp

remains, and is currently utilized by the Mittimatilik Hunters and Trappers Organization from Pond Inlet. The three gravel airstrips are now used by Baffinland for its current exploration activities.

Materials and equipment remnant of 1960s exploration activities remain at both Mary River and Milne Inlet. Since Baffinland began exploration in 2004, efforts have been made to collect and consolidate these materials for eventual disposal on or off-site.

1.3 EXISTING PERMITS

Exploration is focused on Federal Mineral Leases that were established in the 1960s before the Nunavut Land Claims Agreement. The mineral leases with the iron ore deposits are surrounded by Inuit Owned Land that is administered by the Qikiqtani Inuit Association (QIA).

The current exploration activities, and any future abandonment and reclamation activities that may be undertaken, are subject to the terms and conditions of the following authorizations issued to Baffinland:

Authorizing Agency	Approval	Permit/License #	Expiry Date
Nunavut Water Board	Type B Water License	2BE-MRY0708	December 31, 2008
Qikiqtani Inuit Association	Inuit Land Use License	Q05L2C14	December 31, 2008
Indian and Northern Affairs	Land Use Permit	N2006C0036	April 3, 2009

▲R1

1.4 APPLICABLE GUIDELINES

Every mining proponent is required to prepare plans for the eventual abandonment and restoration of its property and facilities, as a condition of its water license. In the development of this abandonment and reclamation plan, reference was made to the following guidance document(s) for guidance:

- *Guidelines for Abandonment and Restoration Planning for Mines in the Northwest Territories*, by the Northwest Territories Water Board, September 1990.

- *Mine Reclamation in the Northwest Territories and Yukon*, Prepared by Steffen, Robertson and Kirsten (B.C.) Inc. for the Northern Affairs Program of the Department of Indian Affairs and Northern Development, April 1992.

The Department of Indian and Northern Affairs Canada (INAC) published a Mine Site Reclamation Policy for Nunavut in 2002. Page 4 of this document, however, indicates that the policy applies only to developed mines and not to exploration activities in the exploration or advanced exploration stages of development of a mineral property (INAC, 2002).

1.5 ABANDONMENT AND RESTORATION OBJECTIVES

The objectives of this A&R Plan, consistent with the above guidelines, include the following:

- Protect public health and safety by ensuring conditions of physical and chemical stability
- Allow for productive use of the land where exploration activities have been undertaken
- Ensure that facilities and wastes are abandoned in such a manner that the requirement for long-term maintenance and monitoring is minimized

SECTION 2.0 - PROJECT FACILITIES

The project-related facilities, including the existing airstrips and tote road, the Mary River camp and the temporary drill camps, are shown on Figure 2.1. The main activities at Mary River and the surrounding area, both current and planned, include the following:

1. Operation of a 100-person tent camp on a seasonal basis
2. Drilling at the iron ore deposits to determine how much ore would be available for mining
3. Drilling to study ground conditions at various locations, including potential port sites and transportation routes
4. Installation of a small test wind tower to study the potential to use wind power
5. Placement of small (8-12 person) drill camps at Milne Inlet, Steensby Inlet and Deposit No. 4 to support drilling activities

The Mary River camp and satellite drill camps operate under the approximate seasonal schedule:

- November to March - seasonal shutdown
- March and April - partial camp operation to support remote geotechnical drilling and environmental studies
- May to October - full camp operation to include exploration activities (drilling)

The following sections describe the project-related facilities.

2.1 MARY RIVER SITE

The layout of the Mary River camp is shown on Figure 2.2 and representative photographs are presented in Figure 2.3. The camp facility consists of the following:

- Up to 30 Weatherhaven tents (24 sleeper tents plus tents for kitchen, washing, offices and storage)
- 4 ATCO-style trailers
- Numerous small wooden outbuildings (latrines, core logging shed, soils lab)
- 2 steel quanset warehouses (storage/workshop and core cutting room)
- 2-3 generators (25-100 kva)
- 1 incinerator
- Water supply system
- 1 outhouse
- Up to 1,500 tonnes (t) of calcium chloride salt
- Fuel storage berms and up to 2,000 drums of fuel (diesel and Jet-A1)

The fuel storage area consists of 5 bermed areas, 4 of which can hold in the order of 300 to 400 -200 L capacity drums and the fifth which can contain up to 80 drums of oils and lubricants.

The equipment at site includes the following:

- 2 skid-steers
- 14 all-terrain vehicles
- 2 dozers (D4 and D5)
- CAT 320 excavator
- Zoom boom
- 30 ft flat deck truck
- 2 flatbed pick-up trucks

In addition, drilling contractor Boart Longyear operates up to 7 drills and supporting equipment at Mary River. The Qikiqtaaluk Corporation (QC) has equipment at Milne Inlet that includes two haul trucks and an excavator.

2.2 DRILL CAMPS

The drill camp at Milne Inlet will consist of a 2-3 Weatherhaven tents and/or ATCO-style trailers, a generator, and an outbuilding equipped with incinerating toilets. Fuel storage will consist of a lined earthen berm with a capacity of 50-200 L drums. The drill camp at Steensby Inlet will be nearly identical to that proposed for Milne Inlet. Boart Longyear will operate one drill at each location.

Eventually, a similar drill camp will be established at Deposit No. 4.

2.3 MILNE INLET TOTE ROAD AND AIRSTRIPS

The alignment of the Milne Inlet Tote Road, and the location of the existing airstrips, is shown on Figure 2.1. The road consists of a roughly bull-dozed track with a number of culverts in various states of repair. Example photos of the road condition are shown on Figure 2.4.

SECTION 3.0 - SEASONAL SHUTDOWN

The Mary River camp and associated temporary drill camps will operate on a seasonal basis, from approximately March to October. Each October, the following steps will be taken to shutdown and secure the camp for the approaching winter:

Structures

- All tents and camp facilities (i.e., kitchens, showers, eating areas, etc.) will be thoroughly cleaned and all wastes and open food will be incinerated. All remaining foodstuffs will be contained in sealed in secure containers to ensure wildlife attractants are not left over winter.
- Any overflow tents (prospector or dome-style) will be taken down and packed up.
- Oil stoves and propane systems will be shut off, and supply oil drums and propane cylinders closed.
- All doors and window will be secured shut to prevent animals and snow from entering the structures.

Water Supply

- The water supply system (tank and lines) will be drained.
- The water pump, intake and water lines will be stored away

Fuel

- Drums of fuel will be left within the containment berms
- All drums and cylinders will be inspected and securely sealed
- Empty fuel drums and cylinders will be returned to Pond Inlet

Chemicals

- Calcium chloride is contained in 20-kg plastic bags within large fibreglass sacks on pallets, and is stored in a dedicated area next to the airstrip. Any calcium chloride at the drill sites will be returned to the calcium chloride storage area at Mary River. The calcium chloride storage area will be inspected to ensure there are no broken bags requiring containment.
- All other chemicals, such as lubricants and cleaning supplies, will be stored in sealed buildings

Generator

- The diesel camp generator will be shut-down and winterized according to manufacturer's procedures. All fuel hoses will be drained and stored away, and storage tanks will be sealed and inspected for leaks

Wastes

- All combustible wastes (including human waste) will be incinerated. Bulky wastes will be either moved to the bone yard or will be taken off-site.
- The greywater sump is buried and will not be disturbed. Kitchen and shower water holding tanks will be drained

SECTION 4.0 - FINAL ABANDONMENT

If a decision is made to cease exploration activities completely, the camp and equipment will be removed from site and the area restored. Planned closure activities will involve dismantling of the camp, transport of materials and equipment overland to Milne Inlet by cat train during the late winter period. Prior arrangements will be made with the community sealift contractor to collect materials and equipment at Milne Inlet during Pond Inlet's scheduled sealift in August of any year.

Much of the equipment and materials located at Mary River will have residual value for either re-sale or relocation to another exploration site. If the camp were to be relocated to another exploration site, it is possible that some or all of the equipment could be airlifted from Mary River directly to the new site. Some materials or equipment could be donated to the local community of Pond Inlet.

Some equipment at the project site is the property of others, most notably drill rigs owned and operated by Boart Longyear or heavy equipment owned by Qikiqtaaluk Corporation. This equipment will be removed from site in the same sealift by Baffinland. ▲R1

The following summarizes the final abandonment activities with respect to the various components:

Buildings and Camp Infrastructure

- All tents and camp facilities (i.e., Quonsets, kitchens, showers, eating areas, etc.) will be dismantled and removed from site
- Most materials related to camp facilities will have residual value for either re-sale or relocation to another exploration site. If not relocated to another exploration site, tent facilities will be transported overland to Milne Inlet.
- Wood structures like the dining hall, outhouse, dry, tent wood floors, bunk beds and table will be dismantled and wherever possible the wood will be salvaged for re-use; otherwise it will be incinerated on site
- Fuel storage, hoses and filters associated with the diesel generator will be drained and managed as hazardous waste. The generator will be prepared for travel, transported to Milne Inlet, and removed from site.
- The water supply system (tank and lines) will be drained, and the water pump, intake and water lines will be removed from site

Equipment

- Equipment such as the skid-steers and boom zoom will be used in abandonment activities and will be sent to Milne Inlet and taken off-site

Fuel

- Drums of fuel will be consolidated, inspected and securely sealed

- Any open drums of diesel, off-specification fuel as well as waste oil will be used in the camp incinerator
- Sealed fuel containers will likely be sold or provided to other users in the region, such as Pond Inlet. Drums and cylinders will be transported overland to Milne Inlet, and loaded onto sealift for delivery to other users.
- Empty fuel drums and cylinders will be transported by sealift to Montreal and returned to the vendor or disposed of at licensed disposal facilities

Fuel Storage Facilities and Contaminated Soils

- Fuel storage facilities consist of lined containment areas. The bedding inside the liner will be tested for petroleum hydrocarbons before being removed. Liners will be removed from site with other non-hazardous wastes. Soil beneath the lined areas will be tested for petroleum hydrocarbons.
- Any contaminated soils will be excavated using the skid steers and will be loaded into fibreglass ore sacks and removed off-site for disposal at a licensed facility in Montreal

Chemicals

- Any remaining calcium chloride is contained in 20-kg plastic bags within large fibreglass sacks next to the airstrip. Any calcium chloride at the drill sites will be returned to the calcium chloride storage area at Mary River. The calcium chloride could be transported to other users in the region, or failing this, will be transported to Milne Inlet and placed on the sealift for delivery to Montreal for salvage or disposal.
- All other chemicals, such as lubricants and cleaning supplies, will be placed in a sea container and will be transported off-site for either re-use of disposal

Wastes

- The grey water sump will be abandoned in-place
- All combustible wastes (including human waste) will be incinerated
- Both the existing bulky wastes from the 1960s, as well as what is generated during current operations, will be inspected. Any hazardous components (i.e., batteries) will be removed, and oil pans and fuel tanks will be drained.
- Hazardous wastes will be removed from site for disposal at an approved facility. ▲R1
- All remaining wastes, including the existing bulky wastes from the 1960s, will be removed from site overland and by sealift for salvage or disposal at a licensed facility in Montreal ▲R1

Airstrip and Roads

- The airstrip will be left for potential future use
- The access road to Deposit No. 1, as well as the Milne Inlet Tote Road, will be inspected to ensure these areas are physically stable. Areas of significant erosion will be re-graded to improve long-term stability.

- Historic culverts will be left in-place, as generally these crossings have demonstrated they have functioned well over the very long-term (since the 1960s) and their removal would result in more disturbances. Or alternatively, the natural drainage around the old culverts has been restored since they were installed more than 40 years ago.

Restoration of Other Disturbed Areas

- Campsite and drill site areas will be inspected for signs of fuel spills or any physically unstable surfaces
- Contaminated soils will be excavated and treated as described above
- Any physically unstable areas will be re-graded

Inspection

- All development areas will be subjected to a closure inspection by a company representative or contractor, and final conditions photographed
- A brief A&R report or site visit by community or land owner representatives can be arranged if desired

Monitoring

- A one-time follow-up inspection will be carried out the year following final abandonment, to ensure that conditions have not changed and remain stable

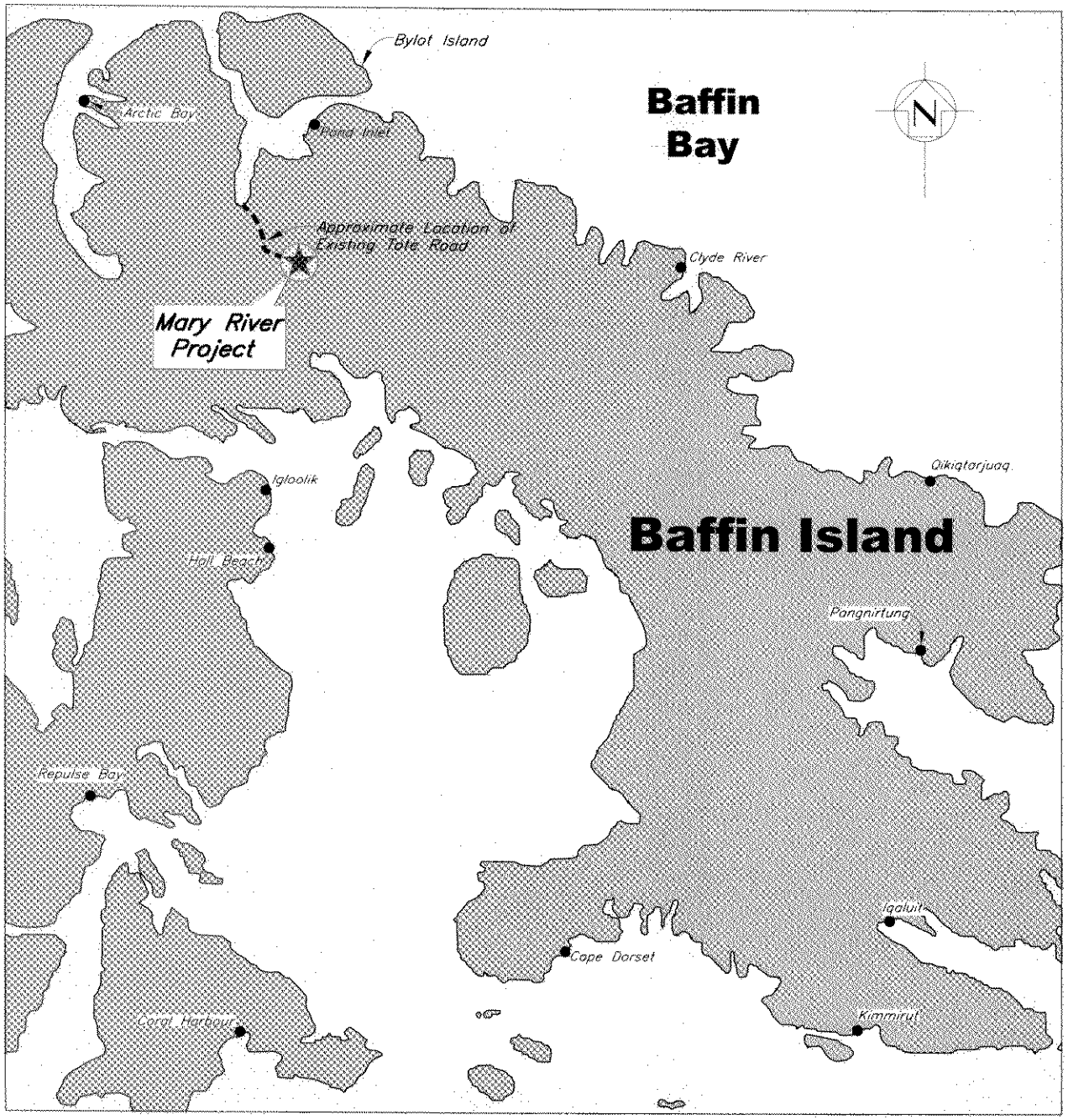
SECTION 5.0 - REFERENCES

1. Baffinland Iron Mines Corporation. Abandonment and Restoration Plan, Mary River Project, December 2004.

2. Indian and Northern Affairs Canada. Mine Site Reclamation Policy for Nunavut. Ottawa, 2002.

3. Northwest Territories Water Board. Guidelines for Abandonment and Restoration Planning for Mines in the Northwest Territories. September 1990.

4. Steffen, Robertson and Kirsten (B.C.) Inc. Mine Reclamation in Northwest Territories and Yukon. Prepared under contract for the Northern Water Resource Studies Program, Water Resources Division, Natural Resources and Environment Branch, Department of Indian Affairs and Northern Development. April 1992.



LEGEND:

Water

Existing Community

Scale (Approx.) 65 32.5 0 65 130 195 260 325 Km

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MARY RIVER PROJECT

PROJECT LOCATION MAP

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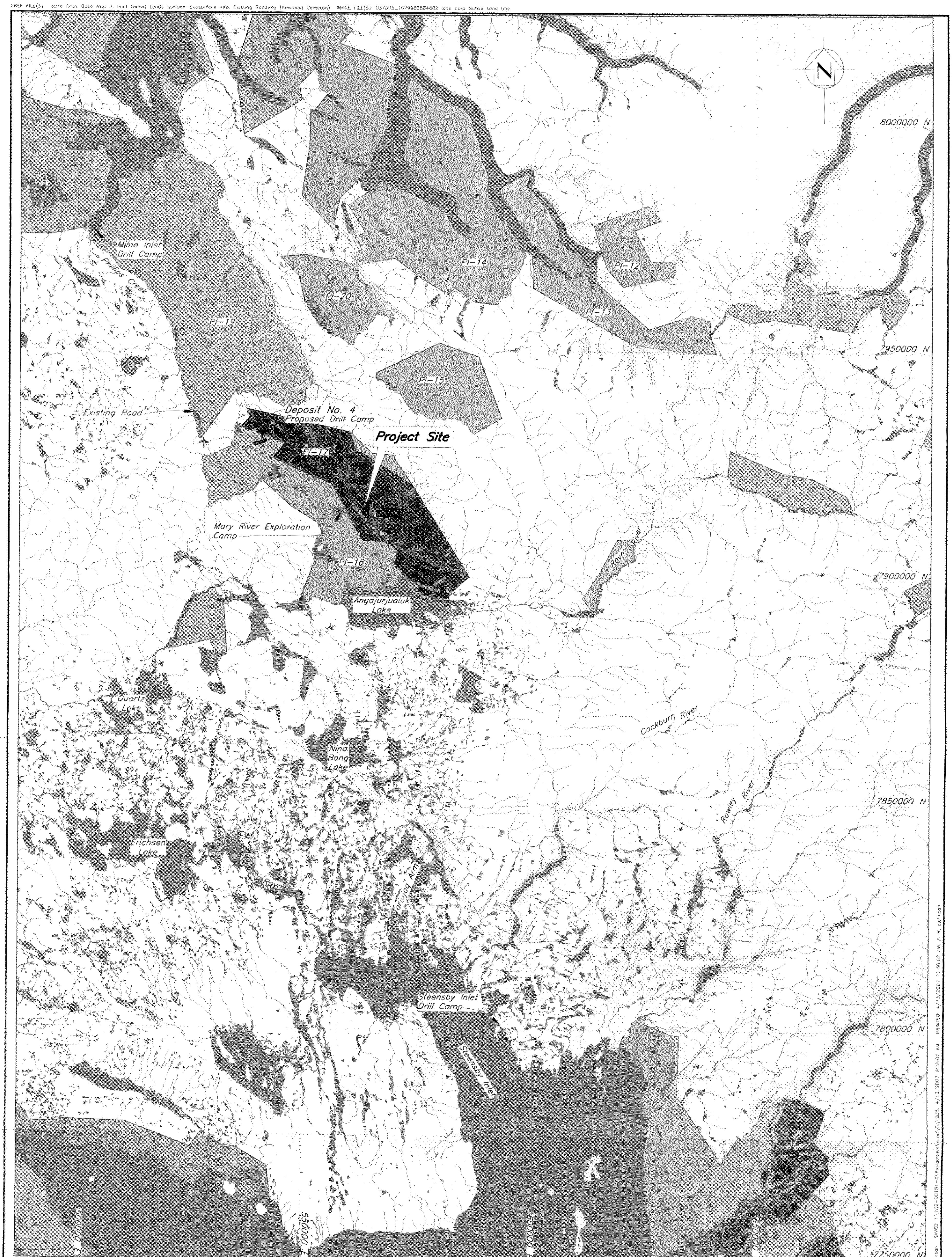
FIGURE 1.1



LEGEND:

- River
- Transportation Route Alternatives
- **A, B.** South Route Alternatives
- Existing Road
- Contour
- Inuit Owned Land–Surface Only Excluding Minerals
- Inuit Owned Land–Surface and Subsurface including Minerals
- Mineral Leases
- Existing Airstrip

NOTES:

1. Base Map © Her Majesty the Queen in Rights of Canada, Department of Natural Resources, (2004). All rights reserved. (Government of Canada, 2006).
2. Coordinate grid is shown in UTM (NAD83) Zone 17 and is in metres.
3. Transportation Route Alternatives were provided by Canarail.

Scale 8 4 0 8 16 24 32 40 Kilometres

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MARY RIVER PROJECT

LOCATION OF EXPLORATION INFRASTRUCTURE

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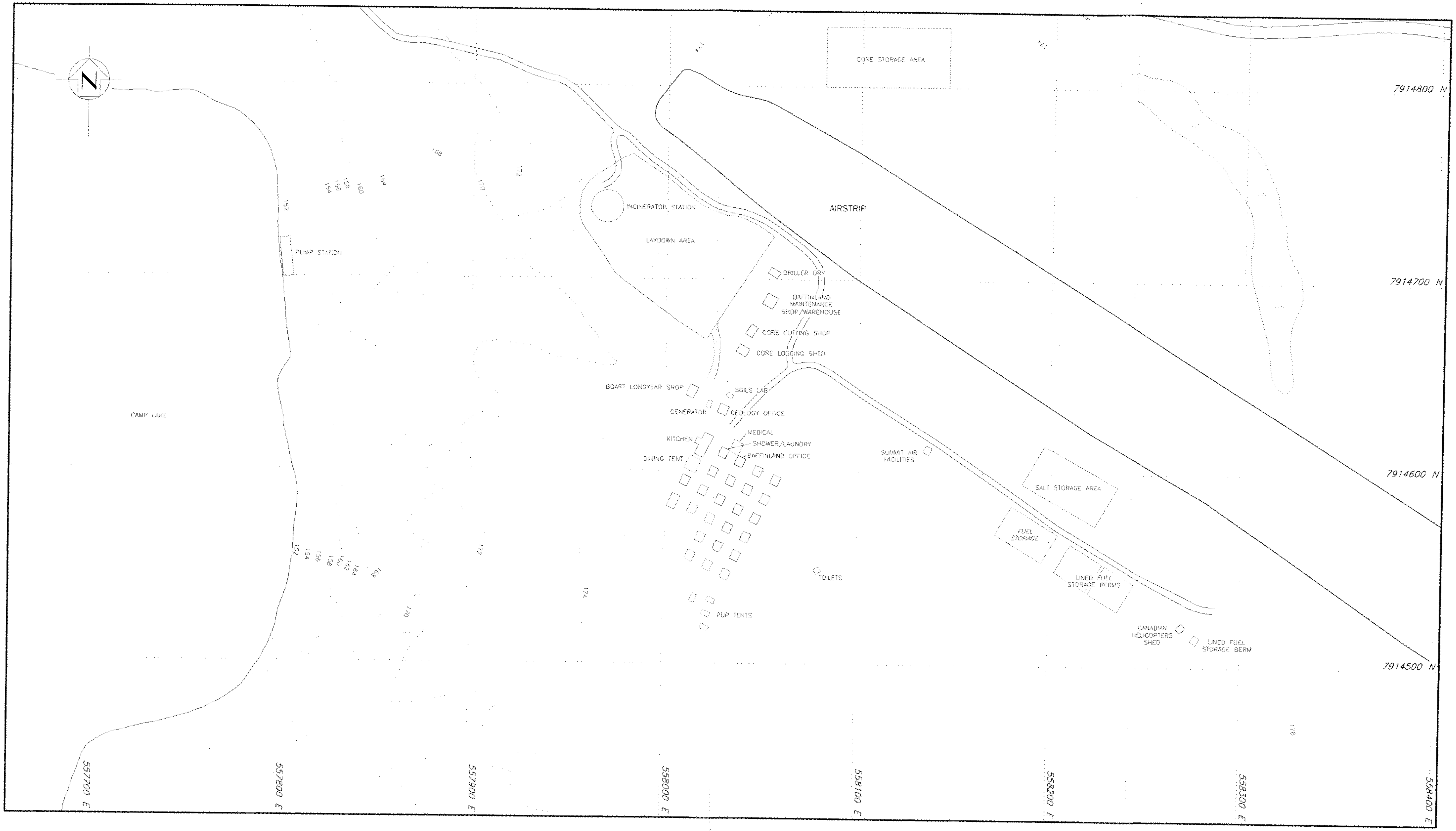
FIGURE 2.1



NOTES:

1. Coordinate grid is shown in UTM (NAD83) Zone 17 W and is in metres.
2. Configuration based on 2005 mapping provided by Eagle Mapping and air photo interpretation. All layouts are approximate.
3. Red lines represent approximate location and configuration of new features not present on air photos.

Scale 20 10 0 20 40 60 80 100 Metres

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MARY RIVER
CAMP LAYOUT

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FIGURE 2.2

Photo 1: Mary River Camp (summer 2006).

Photo 2: Skid Steers and buildings.

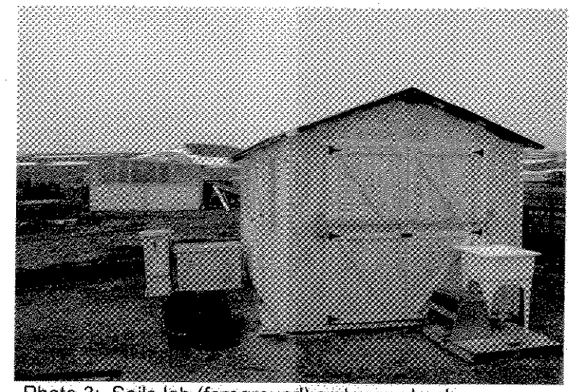

Photo 3: Soils lab (foreground) and core shack (background).

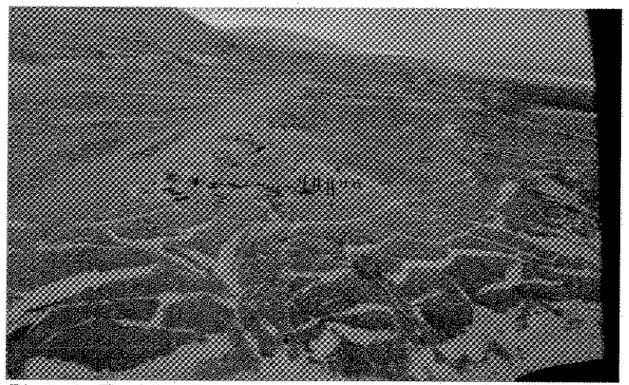

Photo 4: The Mary River camp and airstrip (October 2006).

Photo 5: Existing materials and equipment from 1960s exploration activities.

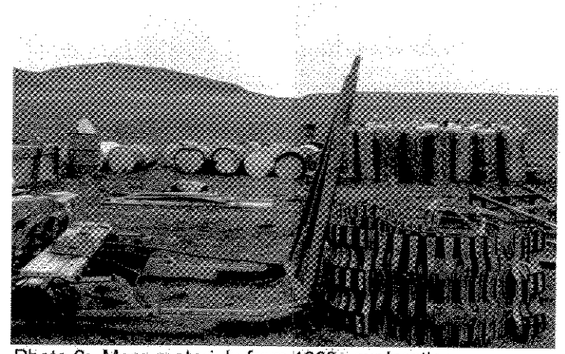

Photo 6: More materials from 1960s exploration activities.

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MARY RIVER CAMP PHOTOGRAPHS

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FIGURE 2.3

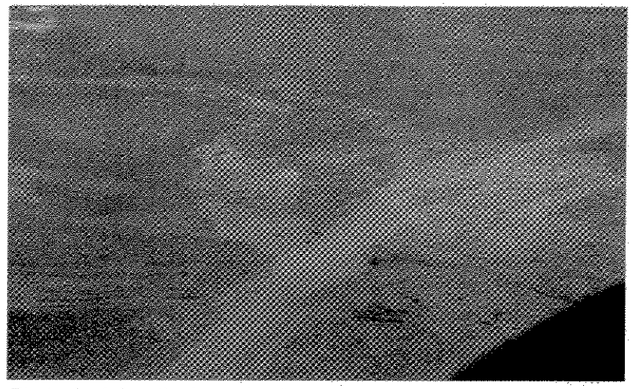

Photo 1: A functioning culvert crossing.

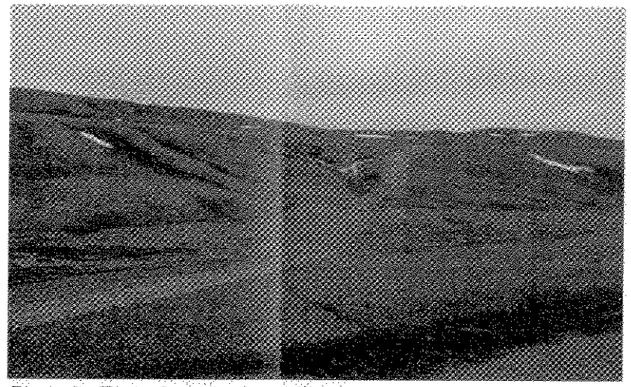

Photo 2: Typical roadbed conditions.

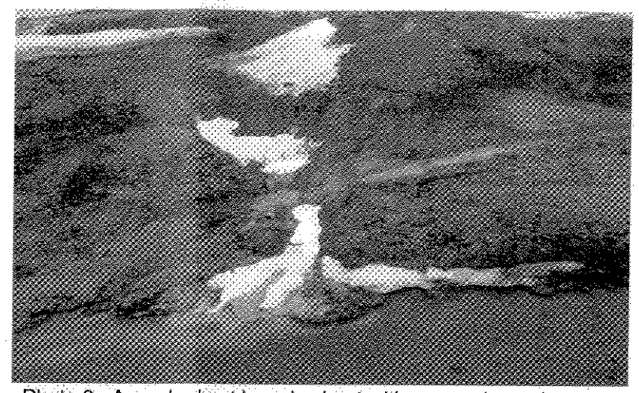

Photo 3: A washed out barrel culvert with a new channel.

Photo 4: A typical small crossing.

Photo 5: A typical medium sized crossing.

Photo 6: A major watercourse along the road.

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MILNE INLET TOTE ROAD

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FIGURE 2.4