

**RECEIVED**

By Richard Dwyer at 5:22 pm, Mar 31, 2011

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XREF FILE(S): IMAGE FILE(S): NORTH BAFFINLAND



**LEGEND:**

-  WATER
-  CAMP LOCATION
-  COMMUNITY

SCALE (APPROX.)  km

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

PROJECT LOCATION MAP

**Knight Piésold**  
CONSULTING

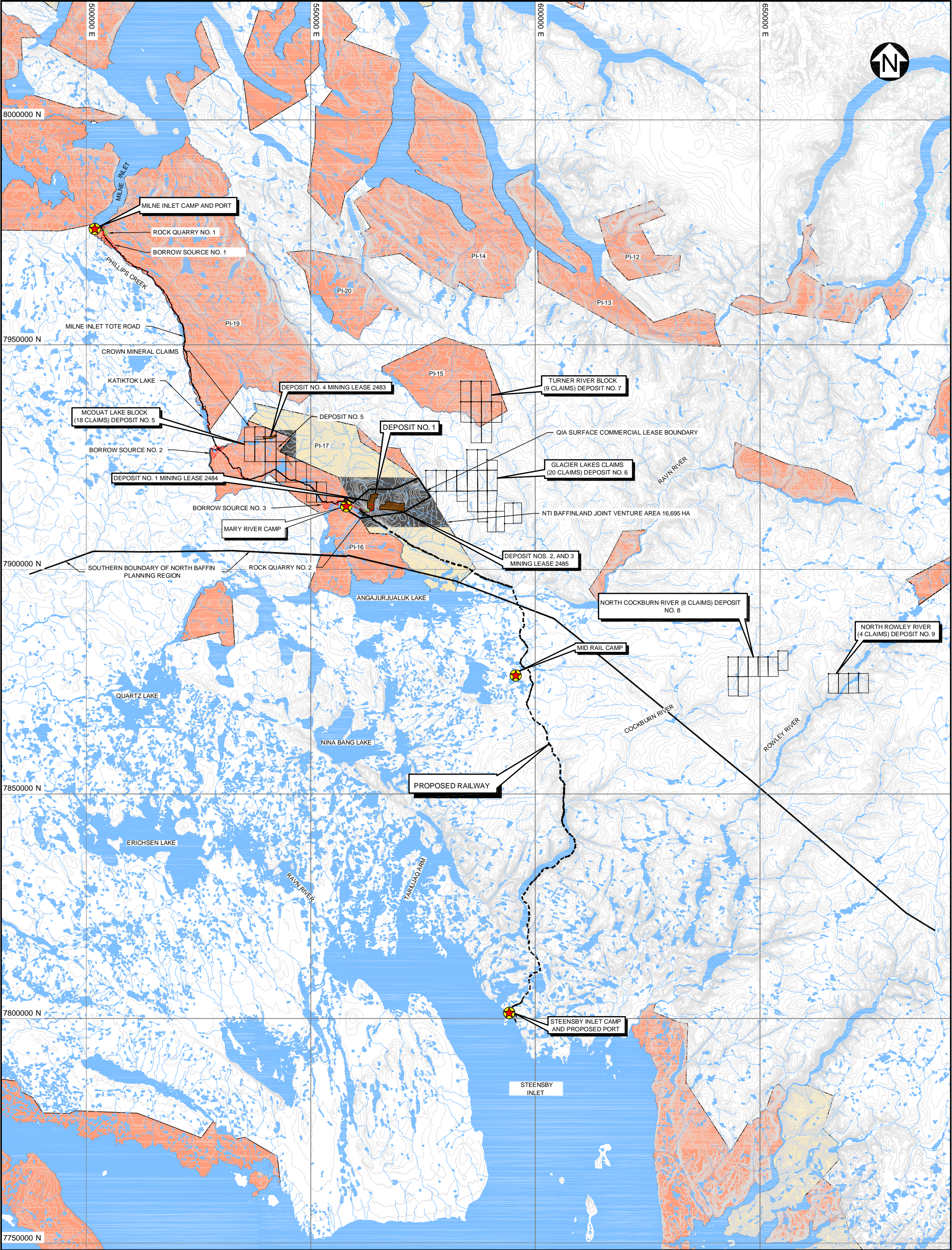
P/A NO.  
NB102-181/29

REF NO.  
1

FIGURE 1.1

REV  
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LEGEND:

- WATER
- INUIT OWNED LAND - SURFACE ONLY EXCLUDING MINERALS
- INUIT OWNED LAND - SURFACE AND SUBSURFACE INCLUDING MINERALS
- MINERAL LEASE BOUNDARY
- CROWN LAND
- EXISTING BORROW AREA (IOL COMMERCIAL LEASE)
- EXISTING ROCK QUARRY (IOL COMMERCIAL LEASE)
- NTI EXPLORATION AREA
- CROWN MINERAL CLAIMS

- MILNE INLET TOTE ROAD
- PROPOSED RAIL ALIGNMENT
- RIVER/STREAM/DRAINAGE
- CONTOUR

NOTES:

- BASE MAP: © HER MAJESTY THE QUEEN IN RIGHTS OF CANADA, DEPARTMENT OF NATURAL RESOURCES (2004). ALL RIGHTS RESERVED.
- COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METRES.
- CONTOURS ARE IN METRES. CONTOUR INTERVAL VARIES.
- PROPOSED RAIL ALIGNMENT PROVIDED BY CANARAIL CONSULTANTS INC.

SCALE 8 4 0 10 20 30 40 km

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

LOCATION OF PROJECT  
ACTIVITIES

**Knight Piésold**  
CONSULTING

P/A NO.  
NB102-181/29

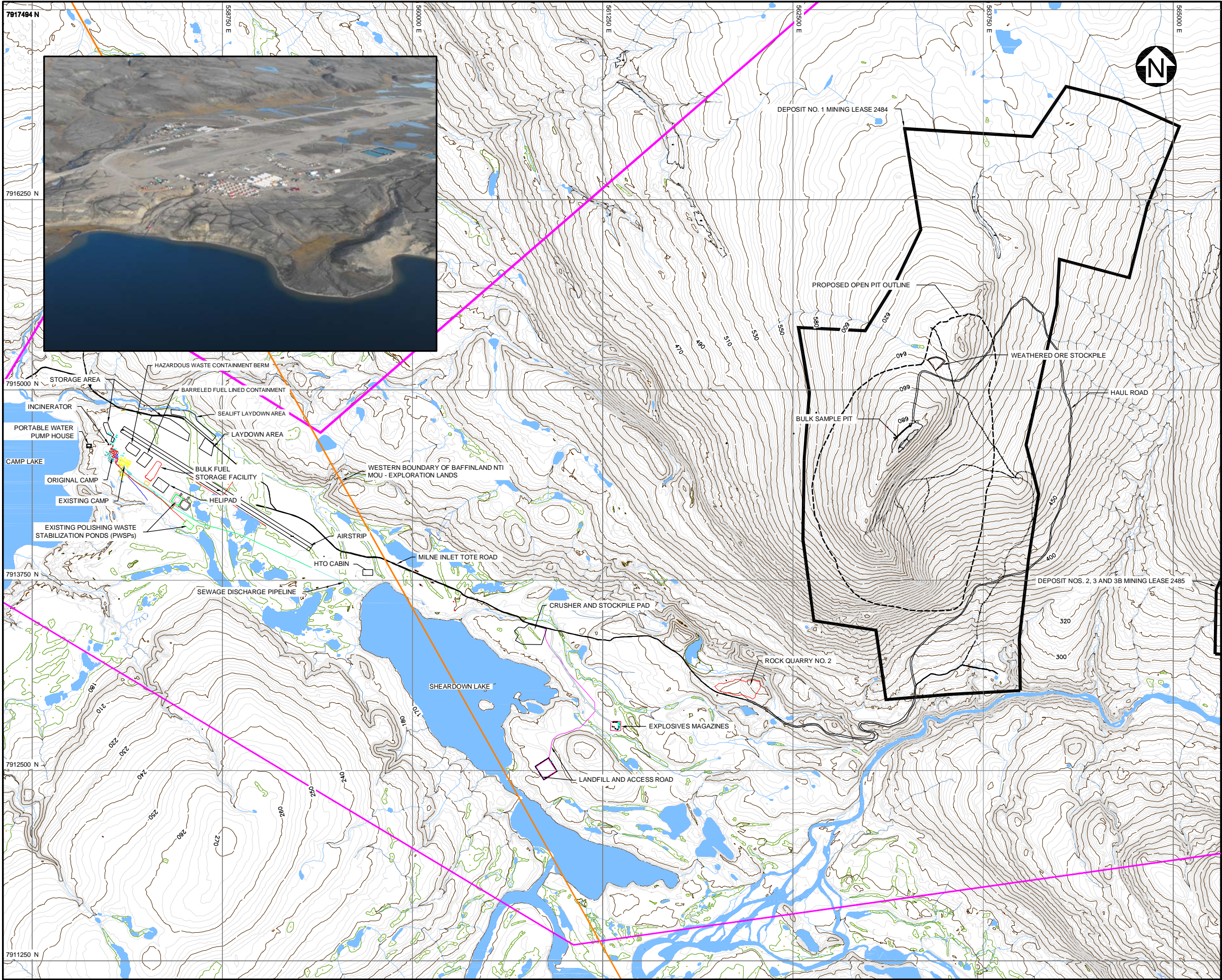
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FIGURE 2.1

REV  
0



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- LEGEND:**
- WATER
  - RIVER/STREAM/DRAINAGE
  - BAFFINLAND'S COMMERCIAL LEASE ON INUIT OWNED LAND
  - MINING LEASE BOUNDARY
  - WESTERN BOUNDARY OF BAFFINLAND NTI MOU - EXPLORATION LANDS

- NOTES:**
- COORDINATE GRID IS UTM (NAD83) ZONE 17 AND IS IN METRES.
  - CONTOUR INTERVAL IS 10 METRES.
  - TOPOGRAPHY PROVIDED BY EAGLE MAPPING (2005).
  - MINE SITE INFORMATION PROVIDED BY GENIVAR DECEMBER 9, 2008.

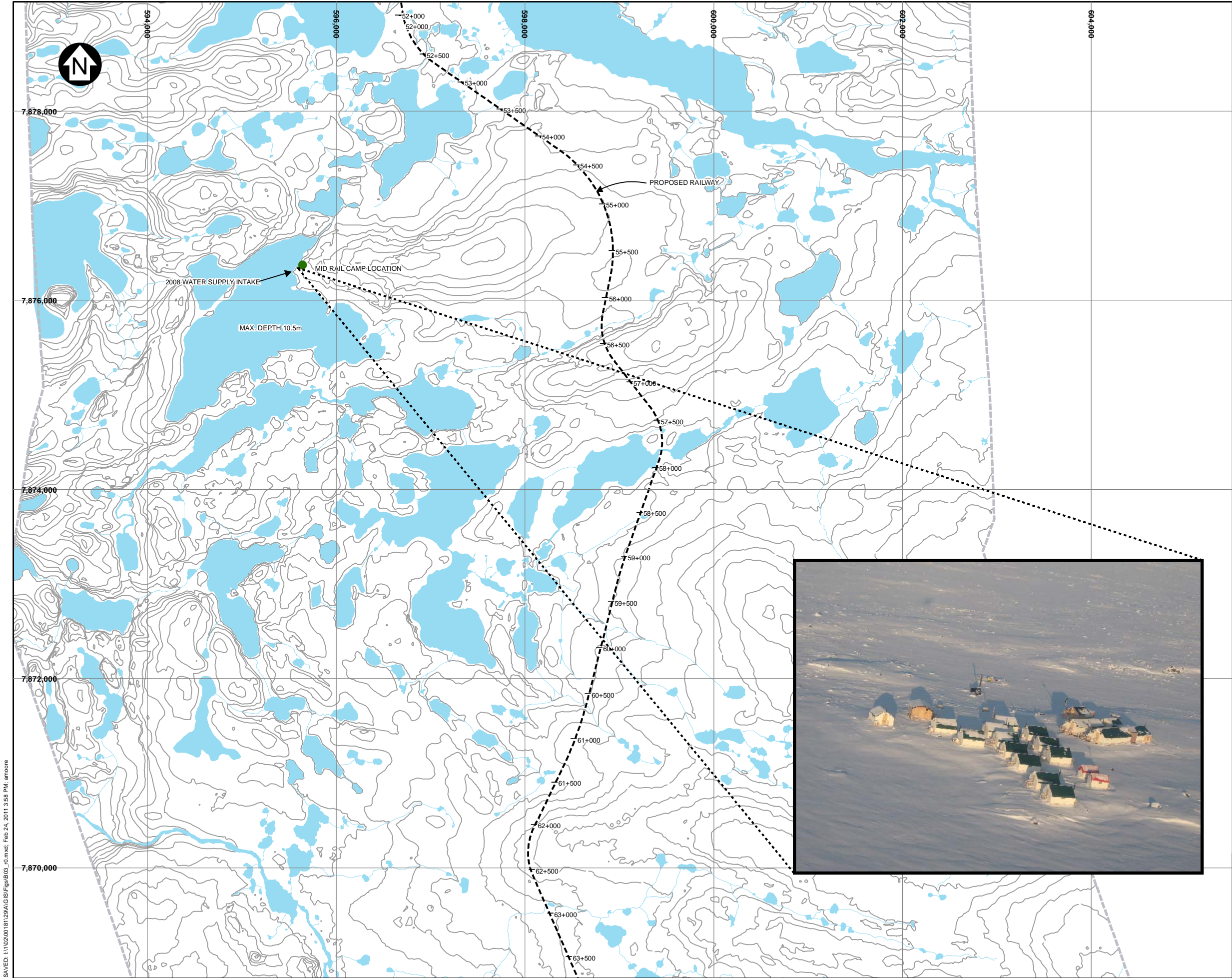
SCALE 250 125 0 250 500 750 1000 1250 m

BAFFINLAND IRON MINES CORPORATION		
MARY RIVER PROJECT		
EXISTING SITE LAYOUT AT MARY RIVER		
<b>Knight Piesold</b> CONSULTING	P/A NO. NB102-181/29	REF NO. 1
	FIGURE 2.2	
		REV 0









**LEGEND:**

- WATER
- RIVER/STREAM/DRAINAGE
- PROPOSED RAILWAY
- EXISTING CAMP (CAMP NOT OCCUPIED DURING 2010)

SCALE 500 250 0 500 1,000 1,500 2,000 m

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

EXISTING SITE LAYOUT AT MID RAIL CAMP

<b>Knight Piésold</b> CONSULTING	P/A NO. NB102-181/29	REF NO. 1	REV 0
	<b>FIGURE 2.4</b>		





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REF: PLEIS, STEENSBY FOR AREA 01 APRIL 22 2008, 11:00 AM: 10:28:41 AM: 028A:AsaofIGS1806\_0\_2/24/2011 3:14:41 PM: AMOORE



**LEGEND:**

- WATER
- RIVER/STREAM/DRAINAGE
- WETLAND

**NOTES:**

- COORDINATE GRID IS UTM (NAD83) ZONE 17 AND IS IN METRES.
- CONTOUR INTERVAL IS 5 METRES.
- TOPOGRAPHY PROVIDED BY EAGLE MAPPING (2005).
- PROPOSED RAIL ALIGNMENT PROVIDED BY CANARAIL CONSULTANTS INC. OCTOBER 7, 2008.
- STEENSBY INLET INFRASTRUCTURE PROVIDED BY GENIVAR. DECEMBER 9, 2008.

SCALE 250 12.5 0 250 500 750 1000 1250 m

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

EXISTING SITE LAYOUT AT STEENSBY INLET

**Knight Piésold**  
CONSULTING

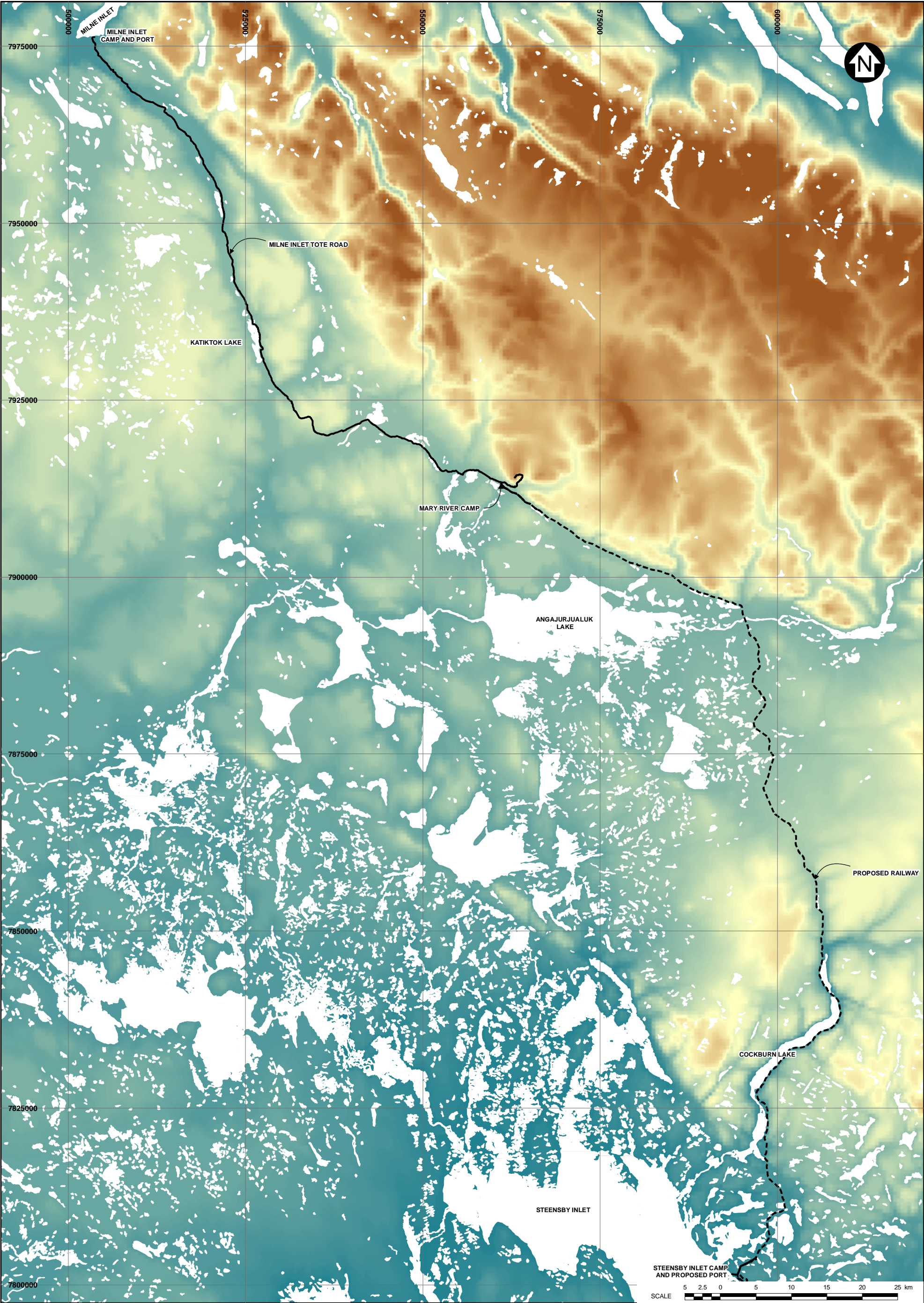
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NB102-181/29

REF NO.  
1

FIGURE 2.5

REV  
0





**LEGEND:**

MILNE INLET TOTE ROAD

PROPOSED RAILWAY ALIGNMENT

**ELEVATION (m)**

High : 1600

Low : 0

**NOTES:**

1. COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METRES.

2. BODIES OF WATER ARE SHOWN IN WHITE.

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

RELIEF MAP OF THE NORTH BAFFIN REGION

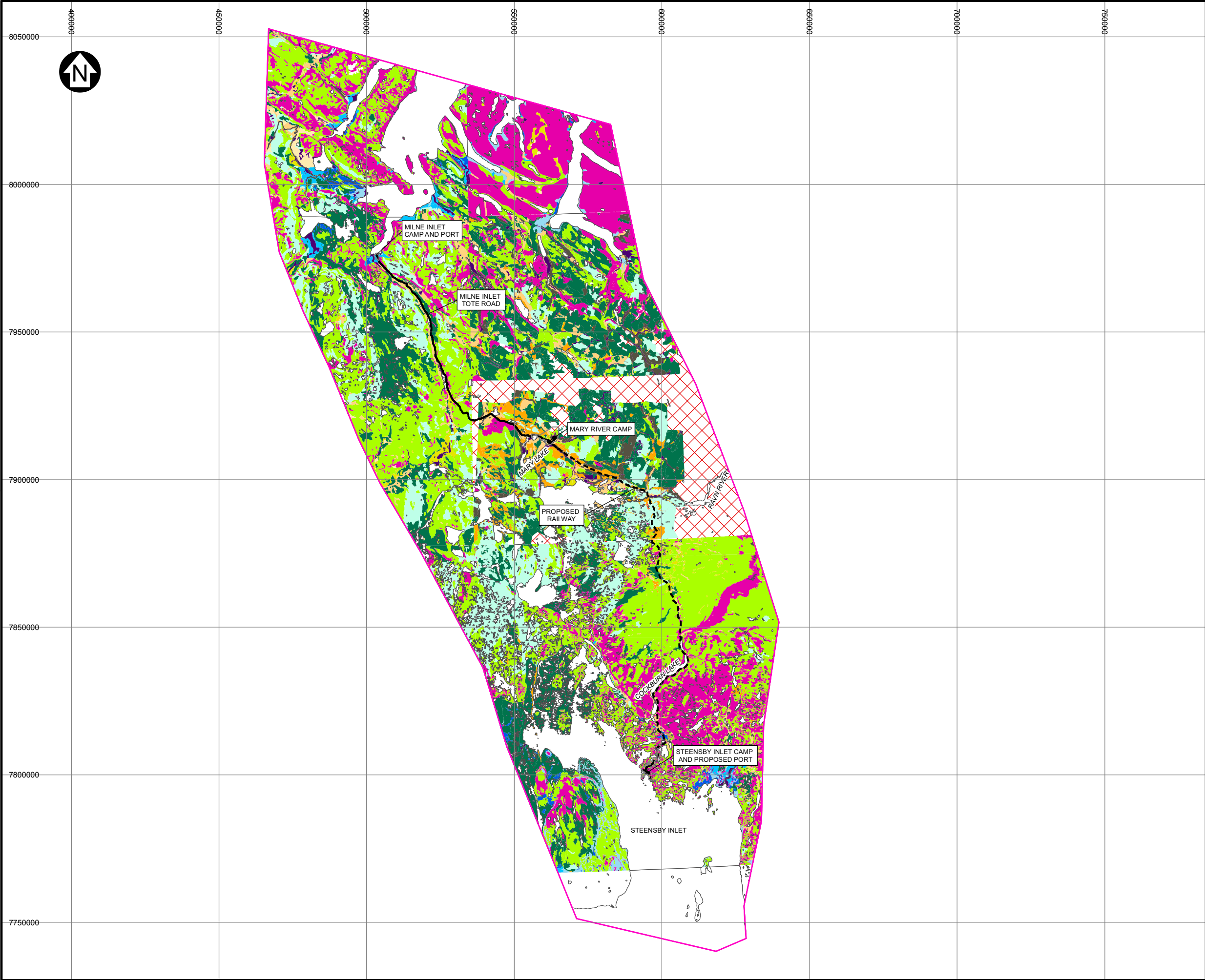
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**FIGURE 3.1**

REV 0



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**SURFICIAL DEPOSITS**  
**QUATERNARY**  
**HOLOCENE**

**COLLUVIUM:** block and rubble accumulations, 1-50 m thick.

**Ca** Talus: active block and rubble accumulations as much as 50 m thick forming talus aprons and fans below cliffs resulting from rock falls and debris flows; commonly crossed by debris flow channels and levees.

**FLUVIAL SEDIMENTS:** alluvium; gravel and sand, 2-20 m thick.

**Ap** Alluvial deposits: gravel and sand; 2-20 m thick; active braided floodplains, terraces, and fans; includes active proglacial outwash.

**MARINE AND GLACIAL MARINE SEDIMENTS:** gravel, sand, silt, and clay, 1-20 m thick, deposited in deltaic and beach environments during regression of the postglacial sea.

**Mr** Beach sediments: gravel and sand, 1-5 m thick, forming ridges and swales.

**Mt** Deltaic sediments: clay, silt, sand, and gravel, 5-20 m thick, forming coarsening upward sequences under dissected terraces.

**Mv** Deepwater proglacial silt veneers: silt, clay silt, and fine sand with dropstones, 1-2 m thick.

**GLACIAL LACUSTRINE SEDIMENTS:** clay, silt, sand, and gravel deposited in glacier dammed lakes in deepwater, beach, and deltaic environments.

**Lt** Deltaic sediments: clay, silts, sand, and gravel, 5-20 m thick, forming coarsening upward sequences under dissected terraces.

**Lb** Deepwater proglacial silt: silt, clay silt, and fine sand with dropstones; veneers 1-2 m thick; blankets 2-5 m thick.

**GLACIOFLUVIAL SEDIMENTS:** gravel and sand, 1-10 m thick, deposited behind, at, and in front of the ice margin.

**Gl** Proglacial outwash: gravel and sand, 1-10 m thick, forming braided floodplains, terraces, and fans.

**Gh** Ice contact stratified drift: gravel and sand, 1-5 m thick, forming eskers, and kames.

**EARLY HOLOCENE AND WISCONSINAN**

**TILL:** nonsorted stony muds, 0.5-60 m thick, deposited in subglacial and ice marginal environments; lithic composition generally reflects underlying bedrock.

**Tm** End moraine: 5-60 m high, composed of or mantled by till, extensively kettled in places; large features mainly cored by debris-rich relict glacier ice.

**Tv** Till veneer: 0.5-2 m thick and discontinuous; some surfaces armoured by stones due to washing by subglacial meltwater.

**Tb** Till blanket: 2-10 m thick forming an undulating blanket with drumlins and ribbed (Rogen) moraines in places.

**BEDROCK**  
**PRE-QUATERNARY**

**R** Rock: rock of various compositions and ages (Jackson and Sangster, 1987) variously modified by glacial erosion during the Quaternary and with patchy till cover; hilly and hummocky surfaces, ice moulded in places, with lake basins in subglacially scoured regions; cliffs resulting from glacial over-steepening; in places veneered by thin till, commonly bouldery.

**LEGEND:**

WATER

POTENTIAL DISTURBANCE AREA

SURFICIAL GEOLOGY NOT AVAILABLE

MILNE INLET TOTE ROAD

PROPOSED RAIL ALIGNMENT

**NOTES:**

1. BASE MAP: © HER MAJESTY THE QUEEN IN RIGHTS OF CANADA, DEPARTMENT OF NATURAL RESOURCES (2004). ALL RIGHTS RESERVED.

2. COORDINATE GRID IS SHOWN IN UTM NAD83 ZONE 17 AND IS IN METRES.

3. BODIES OF WATER ARE SHOWN IN WHITE.

SCALE

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

SURFICIAL GEOLOGY IN THE PROJECT AREA

*Knight Piésold*  
CONSULTING

P/A NO.  
NB102-181/29

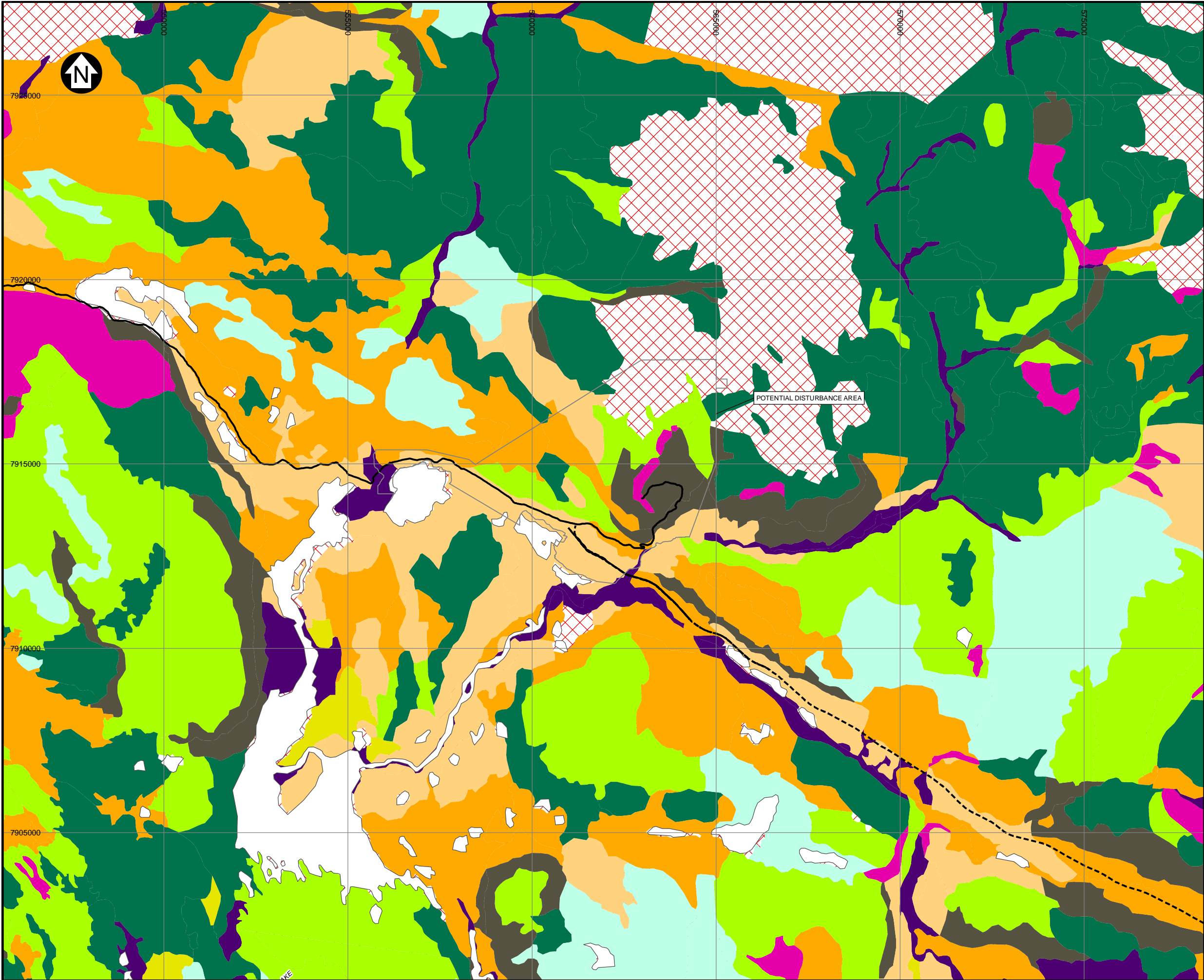
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FIGURE 3.2

REV  
0



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**SURFICIAL DEPOSITS**  
**QUATERNARY**  
**HOLOCENE**

Ca

Colluvium: block and rubble accumulations, 1-50 m thick.

Ap

Talus: active block and rubble accumulations as much as 50 m thick forming talus aprons and fans below cliffs resulting from rock falls and debris flows; commonly crossed by debris flow channels and levees.

Mr

Fluvial sediments: alluvium; gravel and sand, 2-20 m thick; active braided floodplains, terraces, and fans; includes active proglacial outwash.

Mt

Marine and glacial marine sediments: gravel, sand, silt, and clay, 1-20 m thick, deposited in deltaic and beach environments during regression of the postglacial sea.

Mv

Beach sediments: gravel and sand, 1-5 m thick, forming ridges and swales.

Lt

Deltaic sediments: clay, silt, sand, and gravel, 5-20 m thick, forming coarsening upward sequences under dissected terraces.

Lb

Deepwater proglacial silt veneers: silt, clay silt, and fine sand with dropstones, 1-2 m thick.

Gt

Glacial lacustrine sediments: clay, silt, sand, and gravel deposited in glacier dammed lakes in deepwater, beach, and deltaic environments.

Gh

Deltaic sediments: clay, silts, sand, and gravel, 5-20 m thick, forming coarsening upward sequences under dissected terraces.

Deepwater proglacial silt: silt, clay silt, and fine sand with dropstones; veneers 1-2 m thick; blankets 2-5 m thick.

Glaciofluvial sediments: gravel and sand, 1-10 m thick, deposited behind, at, and in front of the ice margin.

Proglacial outwash: gravel and sand, 1-10 m thick, forming braided floodplains, terraces, and fans.

Ice contact stratified drift: gravel and sand, 1-5 m thick, forming eskers, and kames.

**EARLY HOLOCENE AND WISCONSINAN**

Tm

Till: nonsorted stony muds, 0.5-60 m thick, deposited in subglacial and ice marginal environments; lithic composition generally reflects underlying bedrock.

Tv

End moraine: 5-60 m high, composed of or mantled by till, extensively kettled in places; large features mainly cored by debris-rich relict glacier ice.

Tb

Till veneer: 0.5-2 m thick and discontinuous; some surfaces armoured by stones due to washing by subglacial meltwater.

Till blanket: 2-10 m thick forming an undulating blanket with drumlins and ribbed (Rogen) moraines in places.

**BEDROCK**  
**PRE-QUATERNARY**

R

Rock: rock of various compositions and ages (Jackson and Sangster, 1987) variously modified by glacial erosion during the Quaternary and with patchy till cover; hilly and hummocky surfaces, ice moulded in places, with lake basins in subglacially scoured regions; cliffs resulting from glacial over-steepening; in places veneered by thin till, commonly bouldery.

**LEGEND:**

WATER

POTENTIAL DISTURBANCE AREA

SURFICIAL GEOLOGY NOT AVAILABLE

MILNE INLET TOTE ROAD

PROPOSED RAIL ALIGNMENT

**NOTES:**

1. BASE MAP: © HER MAJESTY THE QUEEN IN RIGHTS OF CANADA, DEPARTMENT OF NATURAL RESOURCES (2004). ALL RIGHTS RESERVED.

2. COORDINATE GRID IS SHOWN IN UTM NAD83 ZONE 17 AND IS IN METRES.

3. BODIES OF WATER ARE SHOWN IN WHITE.

SCALE

1,000 500 0 1,000 2,000 3,000 4,000 5,000 m

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

SURFICIAL GEOLOGY  
IN THE MARY RIVER AREA

*Knight Piésold*  
CONSULTING

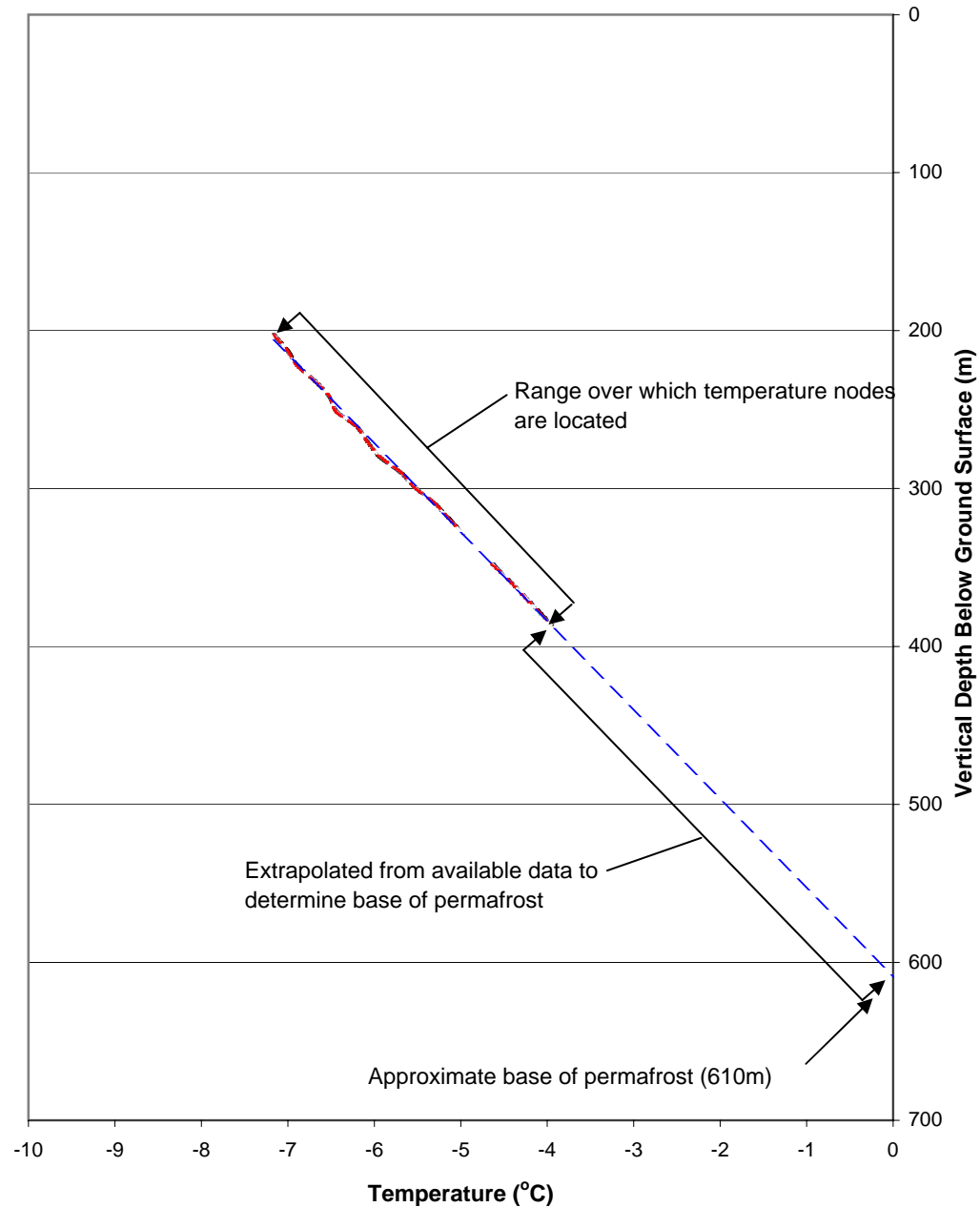
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NB102-181/29

REF. NO.  
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FIGURE 3.3

REV  
0



Notes:

1. DATA READINGS FROM AUGUST 25 - SEPTEMBER 25, 2007.
2. THERMISTOR READINGS WERE RECORDED BETWEEN DEPTH OF APPROXIMATELY 200 M AND 400 M BELOW THE GROUND SURFACE. TEMPERATURES ARE INTERPOLATED TO 610 M BELOW GROUND SURFACE.

BAFFINLAND IRON MINES CORPORATION

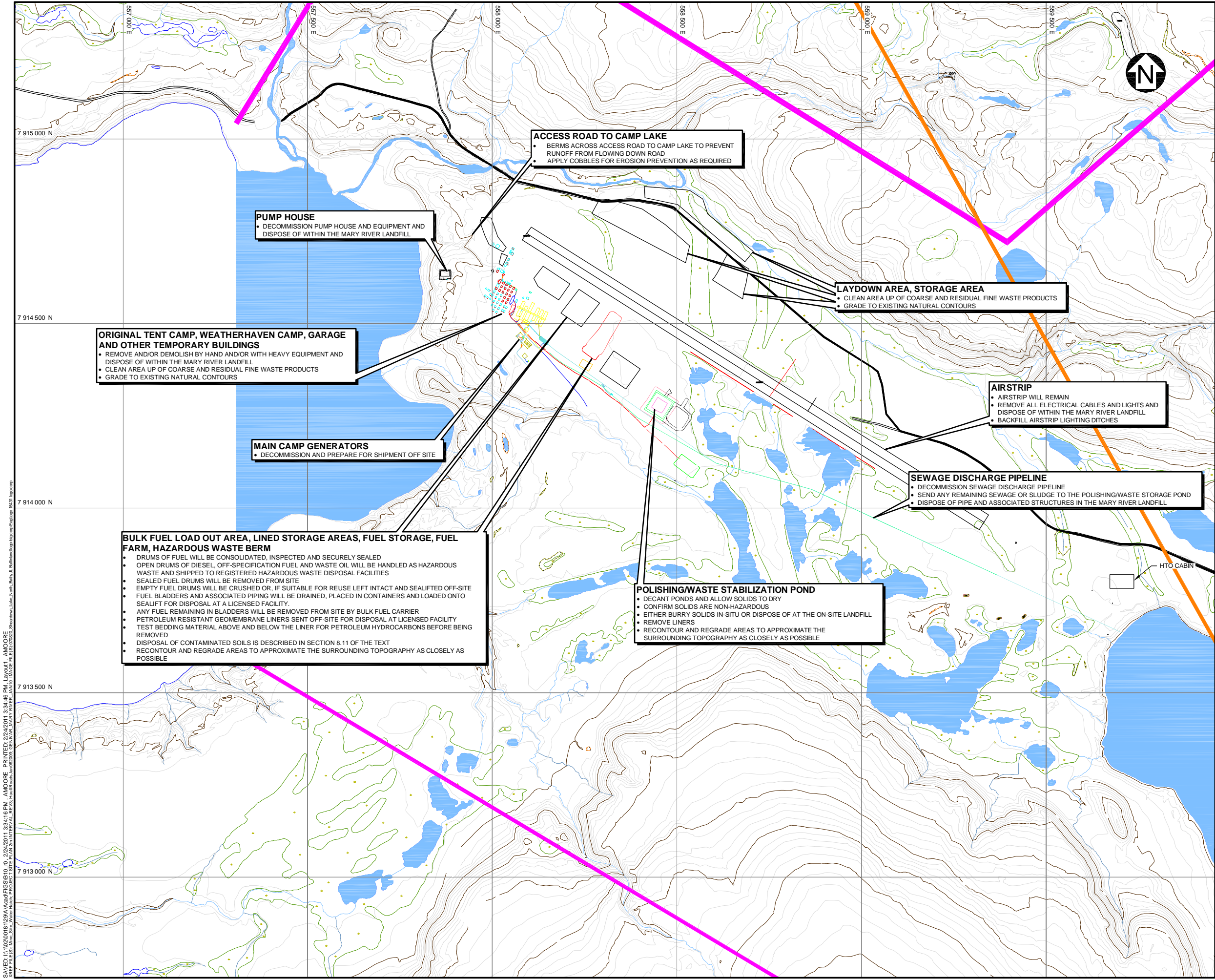
MARY RIVER PROJECT

**DEEP THERMISTOR TEMPERATURE RESULTS*****Knight Piésold***  
CONSULTINGP/A NO.  
NB102-181/29REF.  
1REV.  
0**FIGURE 3.4**







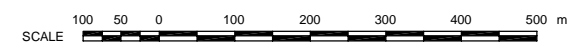


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**LEGEND:**

- WATER
- RIVER/STREAM/DRAINAGE
- BAFFINLAND'S COMMERCIAL LEASE ON INUIT OWNED LAND
- MINING LEASE BOUNDARY
- WESTERN BOUNDARY OF BAFFINLAND NTI MOU - EXPLORATION LANDS

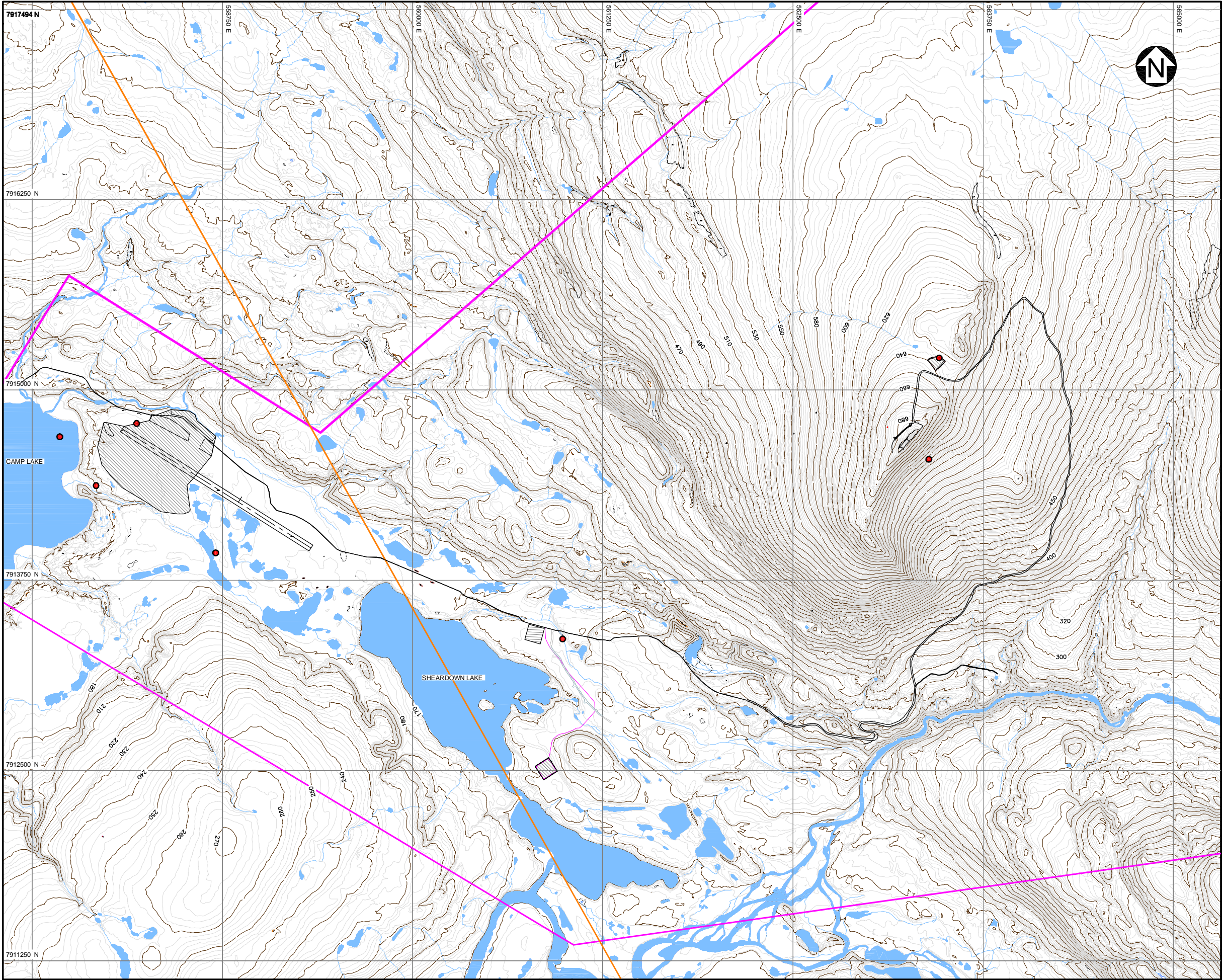
- NOTES:**
- COORDINATE GRID IS UTM (NAD83) ZONE 17 AND IS IN METRES.
  - CONTOUR INTERVAL IS 10 METRES.
  - TOPOGRAPHY PROVIDED BY EAGLE MAPPING (2005).
  - MINE SITE INFORMATION PROVIDED BY GENIVAR DECEMBER 9, 2008.



BAFFINLAND IRON MINES CORPORATION		
MARY RIVER PROJECT		
RECLAMATION MEASURES MARY RIVER CAMP		
<b>Knight Piésold</b> CONSULTING	P/A NO. NB102-181/29	REF NO. 1
FIGURE 8.2		REV 0

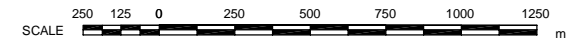


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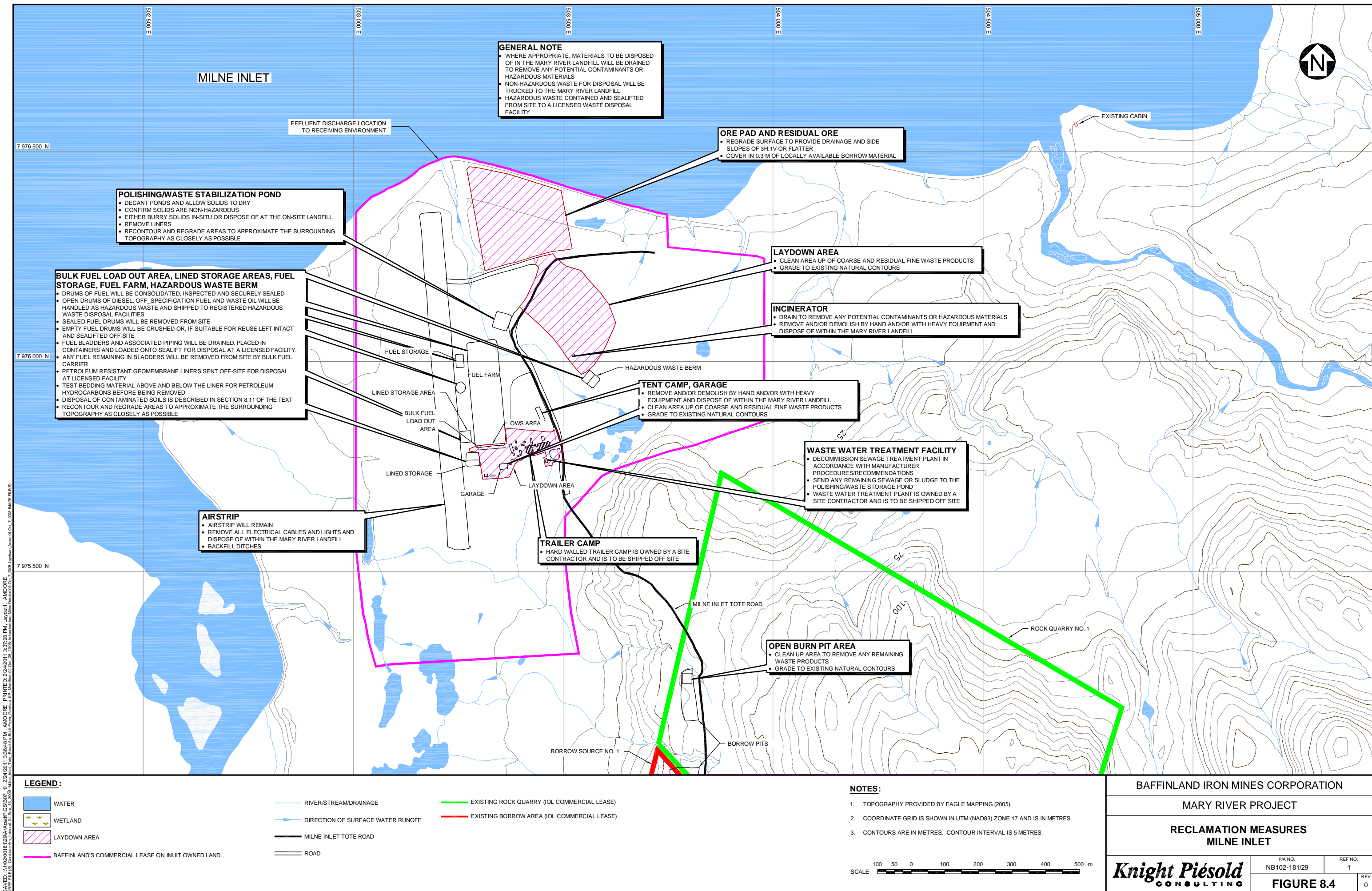
- LEGEND:**
- WATER
  - REGRADED AREA
  - RIVER/STREAM/DRAINAGE
  - BAFFINLAND'S COMMERCIAL LEASE ON INUIT OWNED LAND
  - WESTERN BOUNDARY OF BAFFINLAND NTI MOU - EXPLORATION LANDS
  - SURFACE WATER SAMPLE

- NOTES:**
- COORDINATE GRID IS UTM (NAD83) ZONE 17 AND IS IN METRES.
  - CONTOUR INTERVAL IS 10 METRES.
  - TOPOGRAPHY PROVIDED BY EAGLE MAPPING (2005).
  - MINE SITE INFORMATION PROVIDED BY GENIVAR DECEMBER 9, 2008.

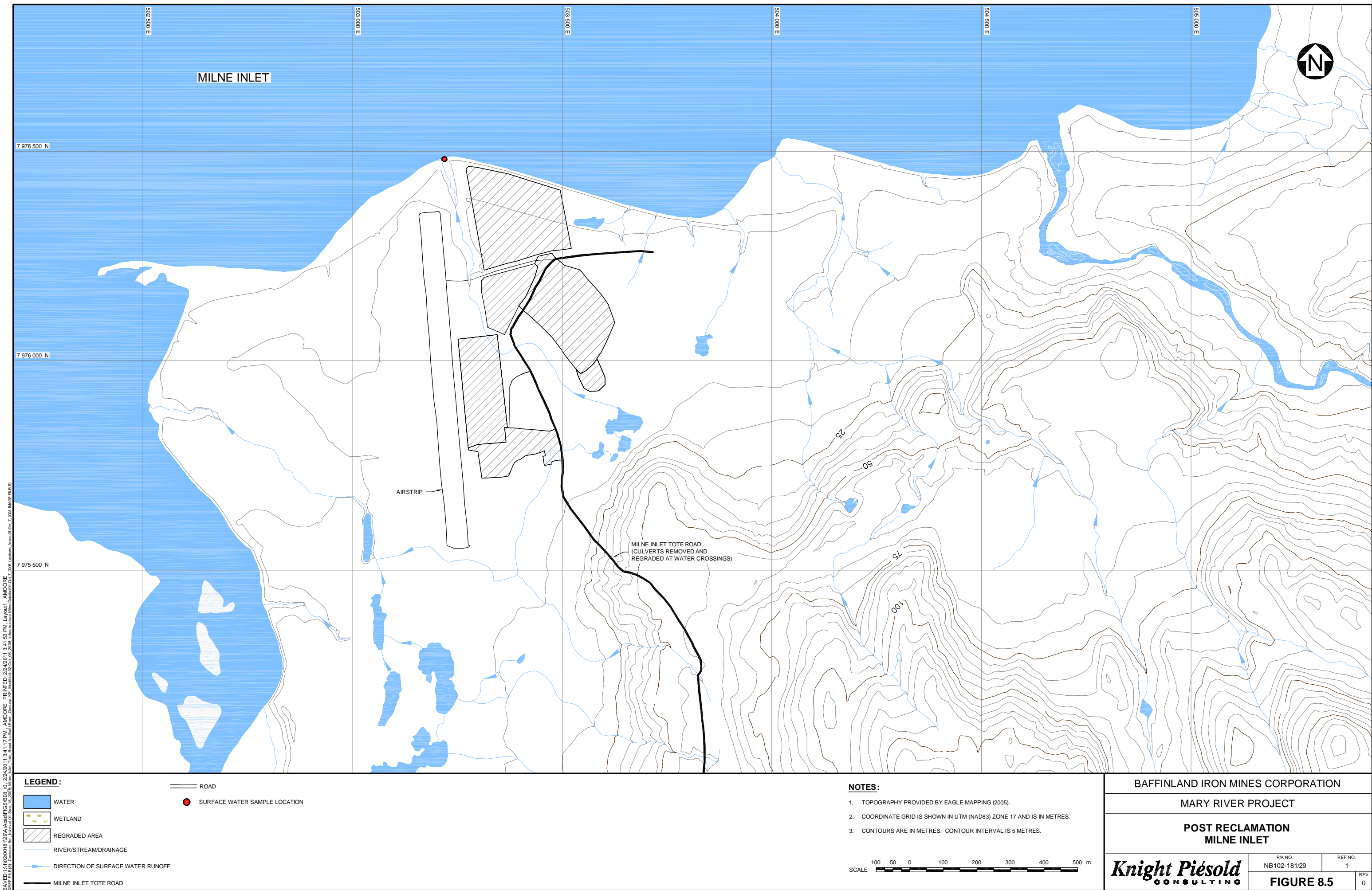


BAFFINLAND IRON MINES CORPORATION		
MARY RIVER PROJECT		
POST RECLAMATION MARY RIVER AREA		
<b>Knight Piesold</b> CONSULTING	P/A NO. NB102-181/29	REF NO. 1
	FIGURE 8.3	
		REV 0

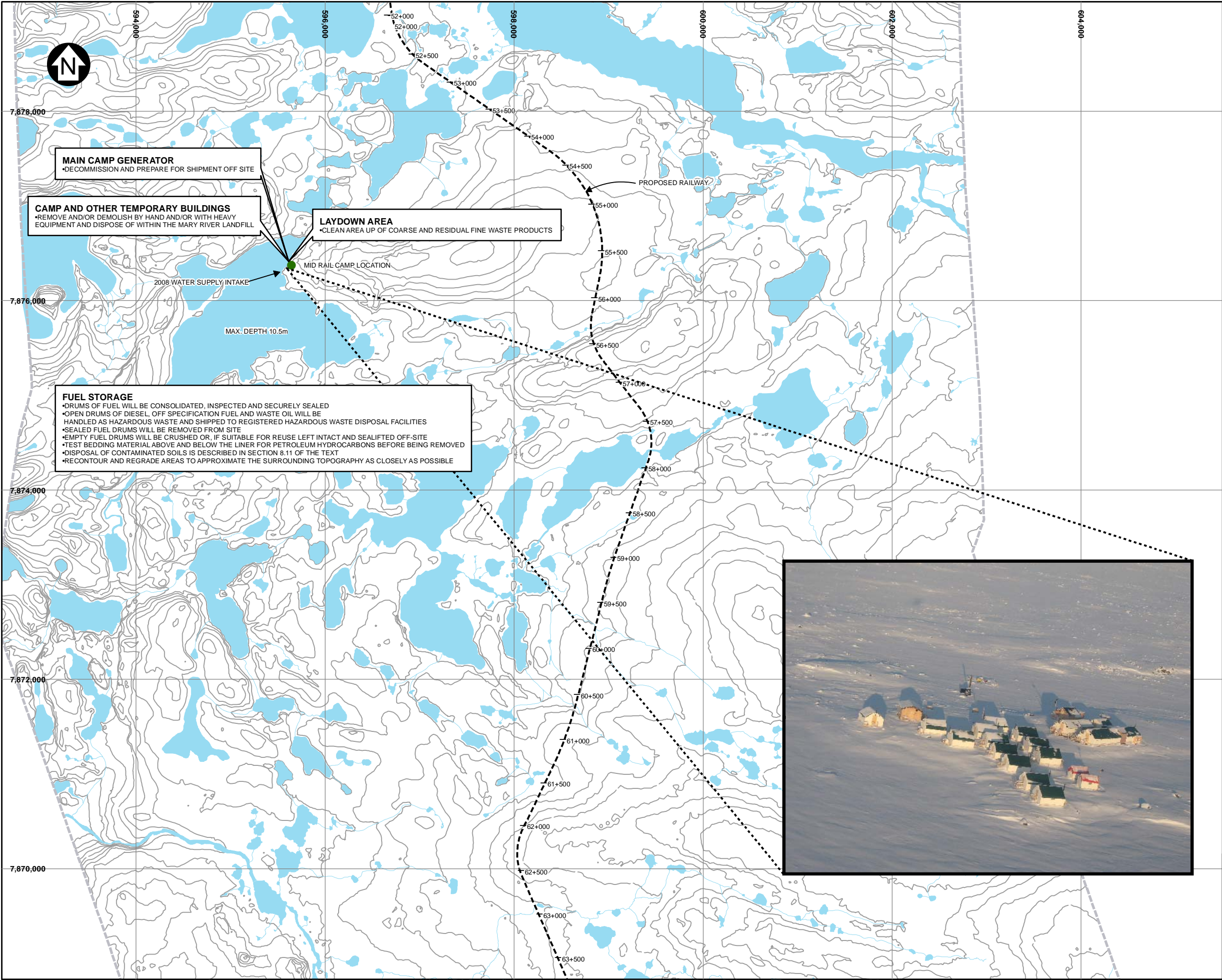












**LEGEND:**

- WATER
- RIVER/STREAM/DRAINAGE
- PROPOSED RAILWAY
- EXISTING CAMP (CAMP NOT OCCUPIED DURING 2010 AND 2011)

**NOTES:**

- TOPOGRAPHY PROVIDED BY EAGLE MAPPING (2005).
- COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METRES.
- CONTOUR INTERVAL IS IN METRES. CONTOUR INTERVAL IS 2.5 METRES.
- PROPOSED RAIL ALIGNMENT PROVIDED BY CAINARAIL CONSULTANTS INC.

SCALE 500 250 0 500 1,000 1,500 2,000 m

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

RECLAMATION MEASURES  
MID RAIL CAMP

**Knight Piésold**  
CONSULTING

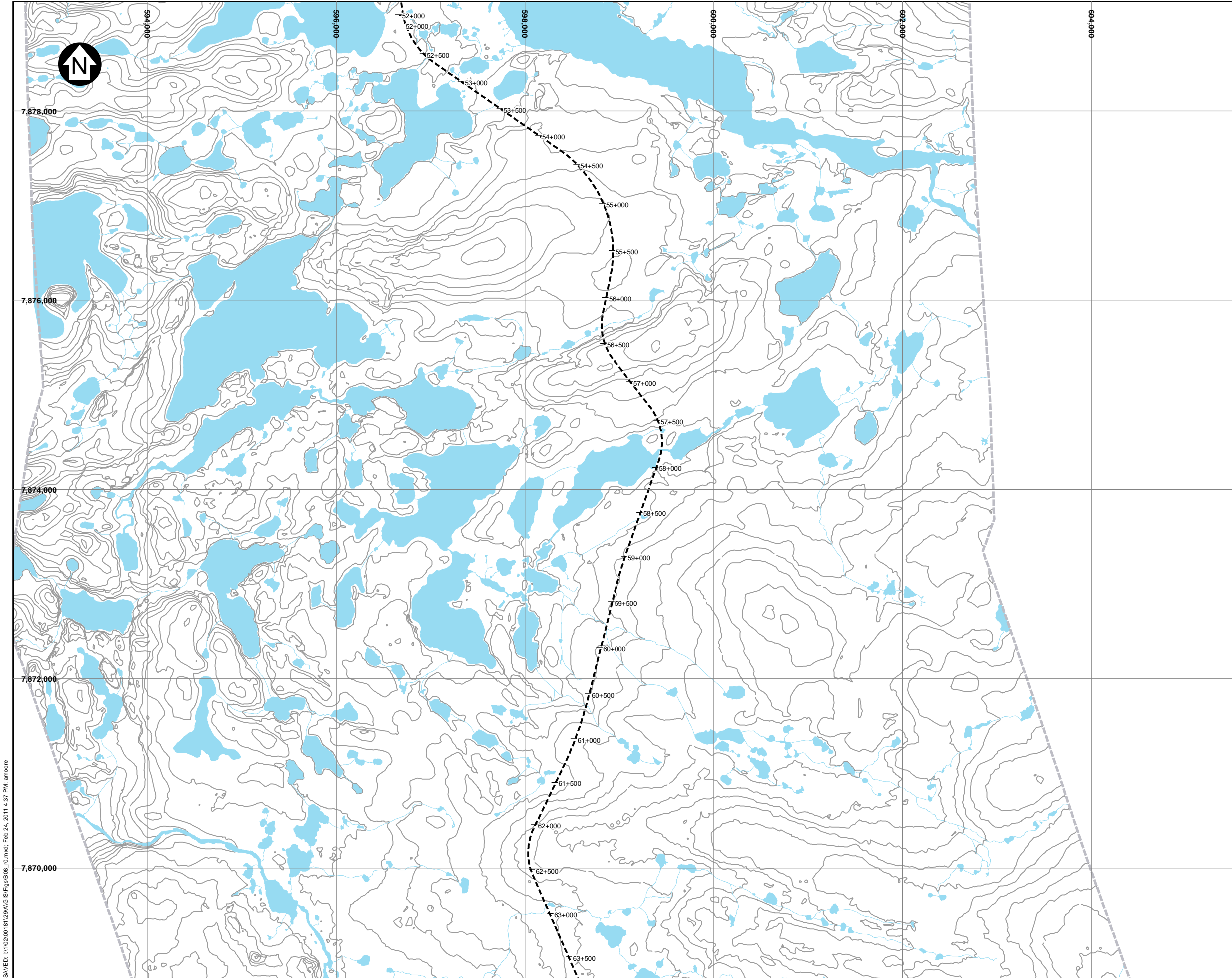
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REF NO.  
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REV  
0

FIGURE 8.6





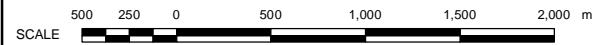
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**LEGEND:**

- WATER
- RIVER/STREAM/DRAINAGE
- PROPOSED RAILWAY

**NOTES:**

- TOPOGRAPHY PROVIDED BY EAGLE MAPPING (2005).
- COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METRES.
- CONTOUR INTERVAL IS IN METRES. CONTOUR INTERVAL IS 2.5 METRES.
- PROPOSED RAIL ALIGNMENT PROVIDED BY CAINARAIL CONSULTANTS INC.



BAFFINLAND IRON MINES CORPORATION		
MARY RIVER PROJECT		
POST RECLAMATION MID RAIL CAMP		
	P/A NO. NB102-181/29	REF NO. 1
	FIGURE 8.7	
		REV 0














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**LEGEND:**

-  WATER
-  REGRADED AREA
-  RIVER/STREAM/DRAINAGE
-  WETLAND

**NOTES:**

- COORDINATE GRID IS UTM (NAD83) ZONE 17 AND IS IN METRES.
- CONTOUR INTERVAL IS 5 METRES.
- TOPOGRAPHY PROVIDED BY EAGLE MAPPING (2005).

SCALE 

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

POST RECLAMATION  
STEENSBY INLET

**Knight Piésold**  
CONSULTING

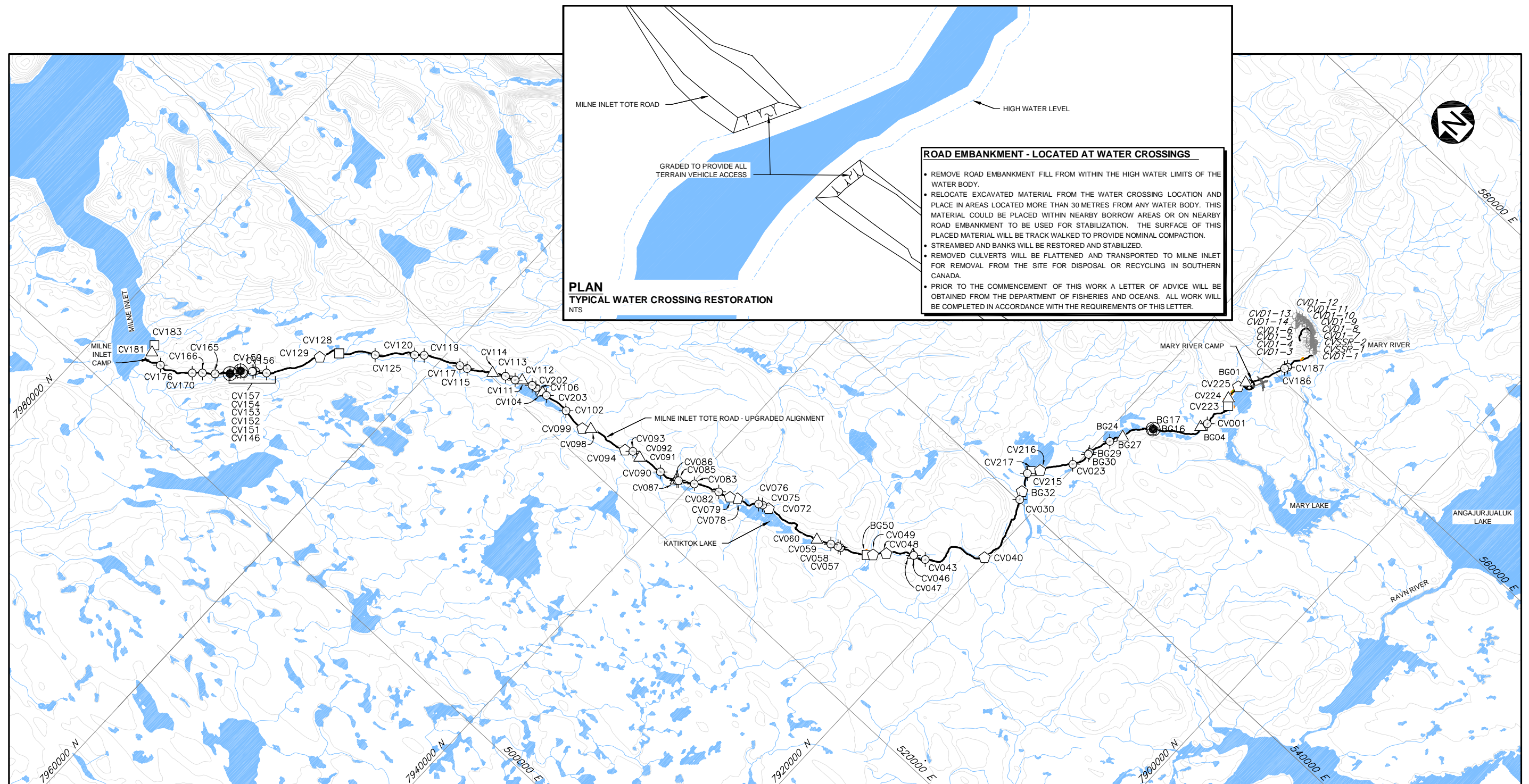
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NB102-181/29

REF NO.  
1

FIGURE 8.9

REV  
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## PLAN









### TYPICAL WATER CROSSING RESTORATION

NTS

**ROAD EMBANKMENT - LOCATED AT WATER CROSSINGS**

- REMOVE ROAD EMBANKMENT FILL FROM WITHIN THE HIGH WATER LIMITS OF THE WATER BODY.
- RELOCATE EXCAVATED MATERIAL FROM THE WATER CROSSING LOCATION AND PLACE IN AREAS LOCATED MORE THAN 30 METRES FROM ANY WATER BODY. THIS MATERIAL COULD BE PLACED WITHIN NEARBY BORROW AREAS OR ON NEARBY ROAD EMBANKMENT TO BE USED FOR STABILIZATION. THE SURFACE OF THIS PLACED MATERIAL WILL BE TRACK WALKED TO PROVIDE NOMINAL COMPACTION.
- STREAMBEDS AND BANKS WILL BE RESTORED AND STABILIZED.
- REMOVED CULVERTS WILL BE FLATTENED AND TRANSPORTED TO MILNE INLET FOR REMOVAL FROM THE SITE FOR DISPOSAL OR RECYCLING IN SOUTHERN CANADA.
- PRIOR TO THE COMMENCEMENT OF THIS WORK A LETTER OF ADVICE WILL BE OBTAINED FROM THE DEPARTMENT OF FISHERIES AND OCEANS. ALL WORK WILL BE COMPLETED IN ACCORDANCE WITH THE REQUIREMENTS OF THIS LETTER.

**LEGEND:**

- |   |   |   |                      |
|---|---|---|----------------------|
|  | WATER                                     |  | EXTRA SMALL CROSSING |
|  | MILNE INLET TOTE ROAD - UPDATED ALIGNMENT |  | SMALL CROSSING       |
|  | AIRSTRIP                                  |  | MEDIUM CROSSING      |
|  | EXPLORATION CAMP LOCATION                 |  | LARGE CROSSING       |
|  | CULVERT LOCATION                          |  | EXTRA LARGE CROSSING |

**NOTES:**

1. COORDINATE GRID IS UTM (NAD83) ZONE 17.
2. BASE MAP: © HER MAJESTY THE QUEEN IN RIGHTS OF CANADA, DEPARTMENT OF NATURAL RESOURCES, (2004). ALL RIGHTS RESERVED.
3. CONTOURS ARE IN METRES. CONTOUR INTERVAL VARIES.
4. MILNE INLET TOTE ROAD ALIGNMENT SURVEY PROVIDED BY GENIVAR (SURVEY COMPLETED IN JULY 2008).
5. NOT FOR CONSTRUCTION.

3 1.5 0 5 10 15 km  
SCALE A

BAFFINLAND IRON MINES CORPORATION

# MILNE INLET TOTE ROAD WATER CROSSING RESTORATION

***Knight Piésold***  
CONSULTING

P/A NO. NB102-181/29	REF NO. 1
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**FIGURE 8.10**



