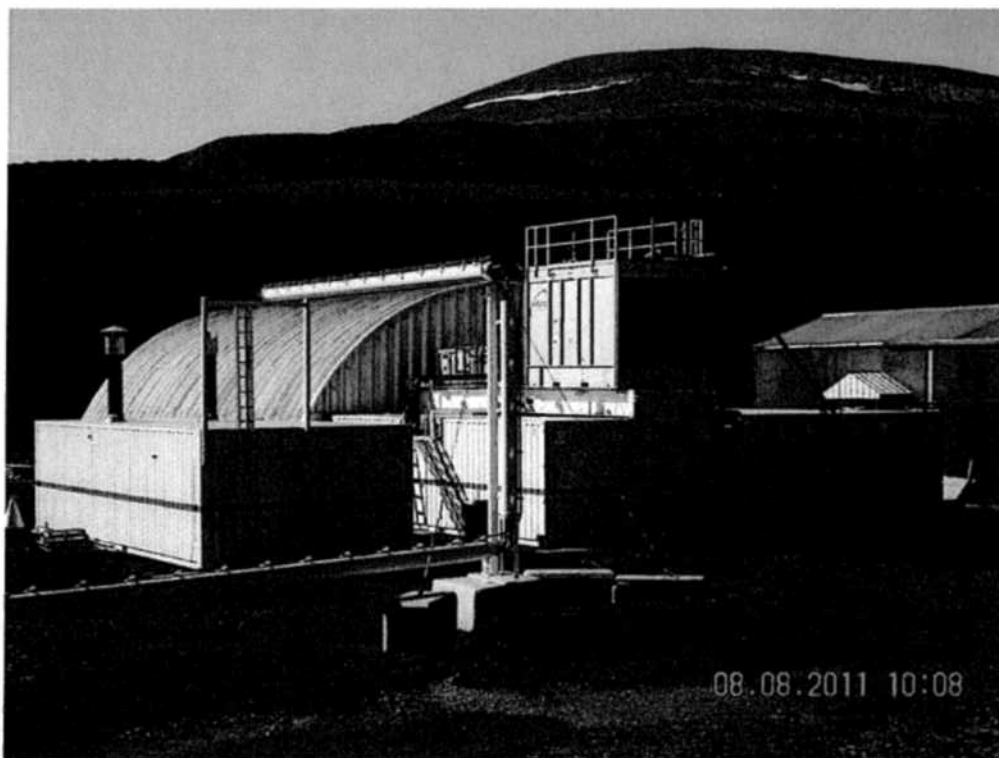




***ENVIRONMENTAL ASSESSMENT
EMULSION PLANT - CLIFFS RESSOURCES MINES***



PRESENTED TO:

GOVERNMENT OF NEWFOUNDLAND AND LABRADOR

DEPT OF ENVIRONMENT AND CONSERVATION

PREPARED BY:

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ENVIRONMENTAL MANAGER CANADA

DYNO NOBEL CANADA INC.

June 2012

EMULSION PLANT – CLIFFS RESSOURCES MINES

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THE UNDERTAKING

- (i) It is proposed to install a modular emulsion manufacturing plant and build a parking garage in Labrador to supply Cliffs Mines (Scully Mine, Bloom Lake Mine, etc.) on the Scully Mine site.
- (ii) Cliffs Resources and Dyno Nobel have established an explosives supply agreement. In order to reliably supply Cliffs emulsion needs, a manufacturing plant has to be built locally. The best location identified that meet NRCan-ERD legal requirements and mine constraints is located in Labrador on the Scully Mine site near existing rail lines.

DESCRIPTION OF THE UNDERTAKING

(i) Geographical Location

The proposed site location is shown on the next images:

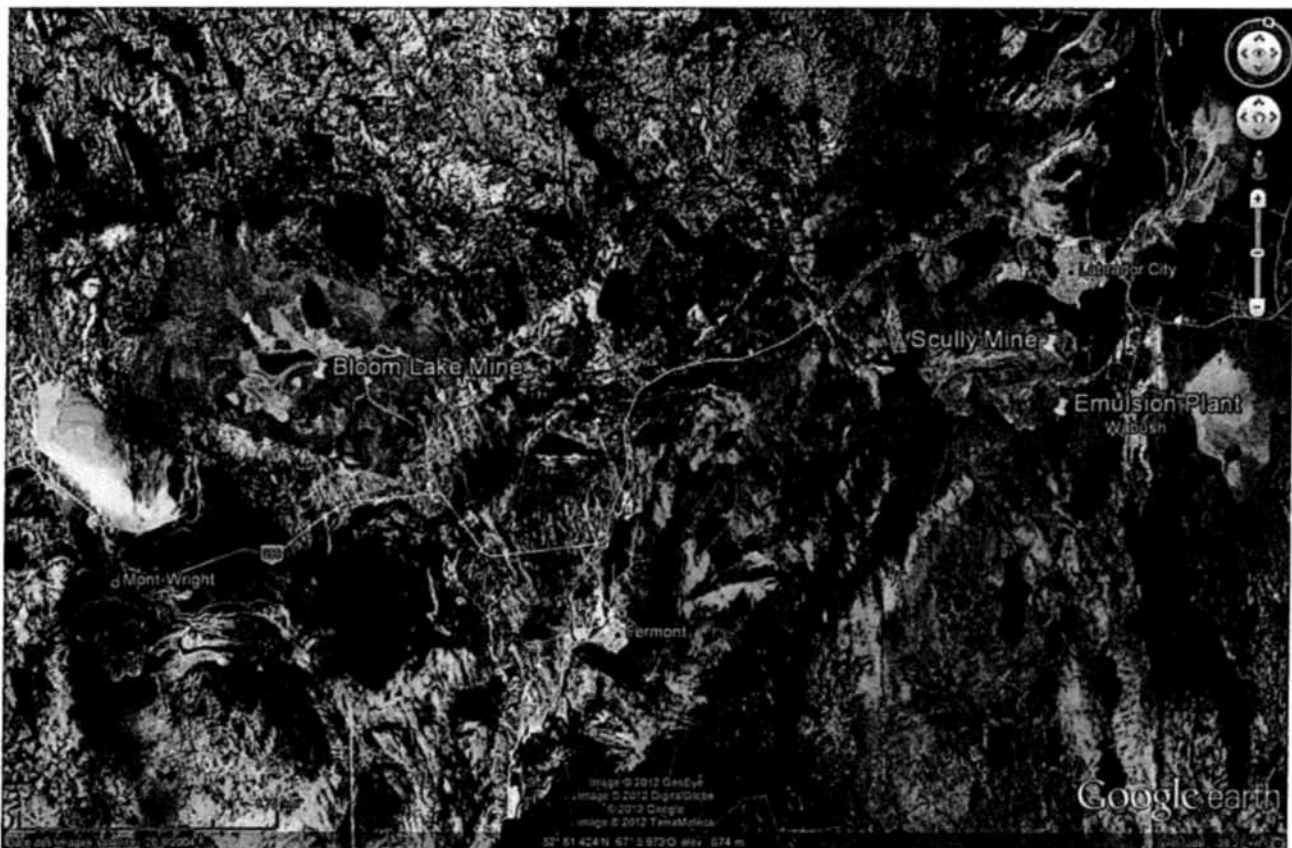
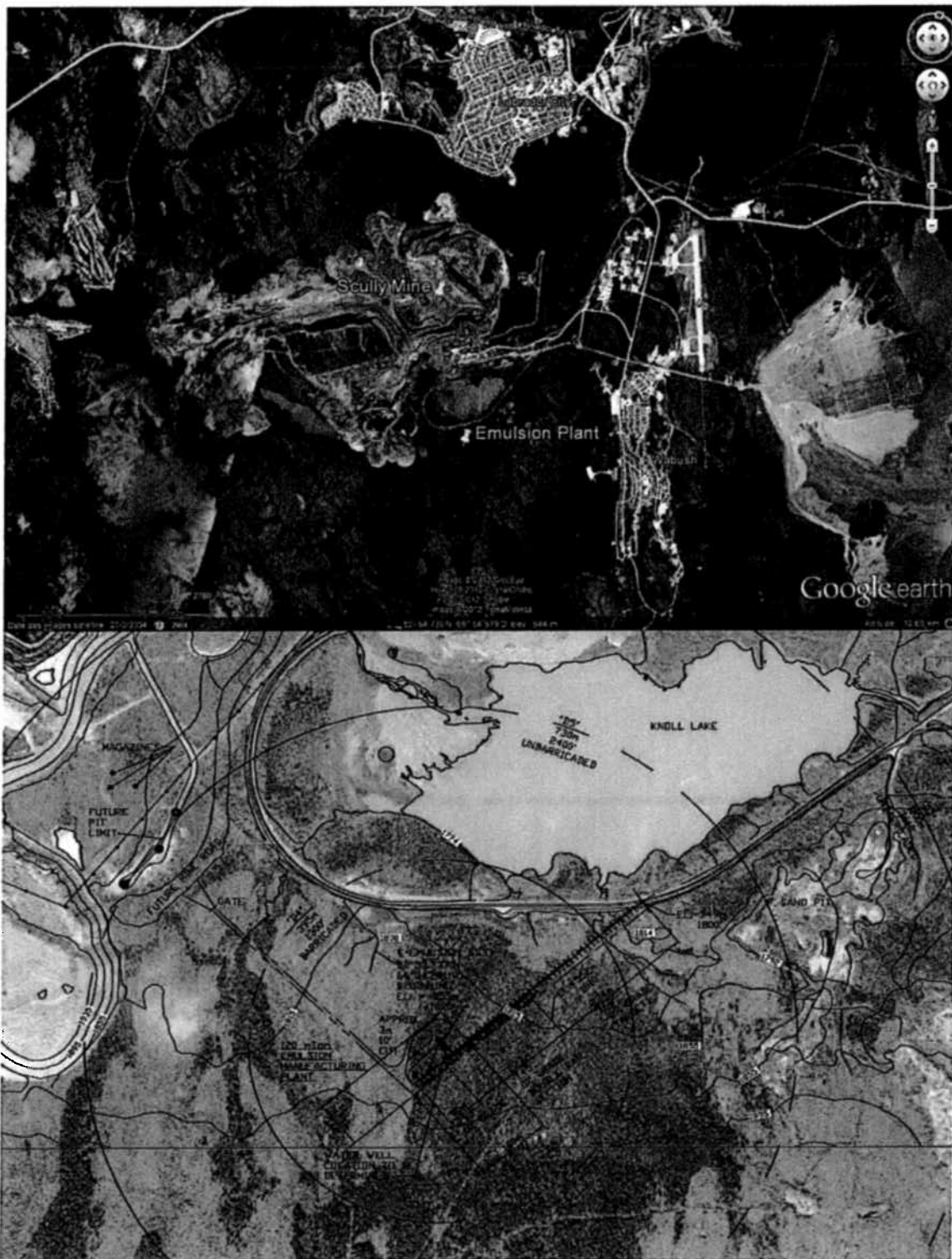


Figure 1. Location of the proposed site at the Scully Mine.

Emulsion Plant GPS Coordinates: 52 ° 53.737' N, 66 ° 54.291' W

Note: Site is at D7 from inhabited buildings, D5 from Mine operations, D4 from the Garage and 295 m from the rail.



Figures 2-3 : Closer aerial view of the proposed site on Scully Mine.

Alternatives considered for the emulsion plant:



Figure 4 - Alternative location for emulsion plant at Bloom Lake Mine:

An alternative that was considered for the emulsion manufacturing plant is a site on the Labrador site of the Bloom Lake Mine at the following coordinates :

Emulsion Plant GPS Coordinates: 52 ° 51.208' N, 67° 13.544' W

Garage GPS Coordinates: 52 ° 51.365' N, 67° 13.787' W

The Bloom Lake Mine location is an alternative to the Scully Mine emulsion plant site. However, the Scully Mine site location was selected because of the following factors:

- Rail permits already in place for hauling dangerous goods at Scully
- The site is located on a Cliffs existing mining lease which should facilitate the permitting process
- The Scully Mine is well located to be able to supply the Bloom lake Mine and other Mines in the Labrador-Newfoundland area.

ii) Physical features

Overall Project Description

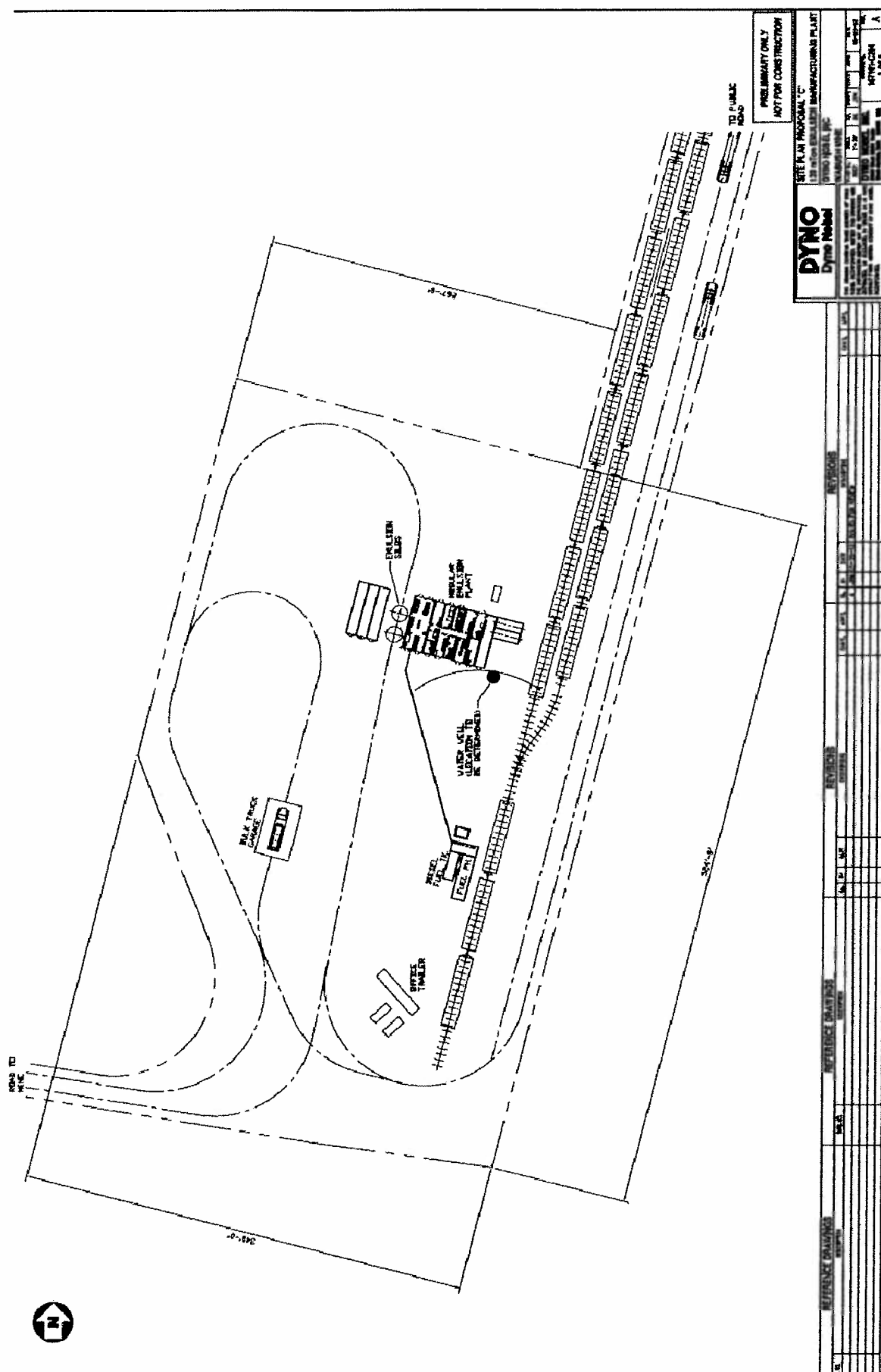
Scully Mine site includes:

- Modular emulsion plant consisting of :
 - 8 sea-can containers containing emulsion manufacturing equipment
 - One (1) ammonium nitrate solution heated tank with containment
 - One (1) water heated tank
 - Two emulsion silos
 - One fuel-phase concentrate tank (double-walled)
 - One diesel tank double-walled
 - Three (3) chemical storage sea-cans
 - One bay parking garage (heated).
 - Water well
- New rail section (778m) to supply raw materials by rail cars (Ammonium Nitrate and fuel phase solutions)
- New road to service Scully Mine going North-West (710 m)
- New road to service other Mines in the area going North-East following the rails (1.8 km).

Plant Capacities and Processes

Scully Mine site

- Silo, overhead emulsion storage 2 x 60 MT with concrete foundation
- One diesel tank up to 20,000 gallons (double-walled).
- Fuel phase concentrate up to 20,000 gallons (double walled).
- One 20000 litres tank of AN solution (containment).
- One 20000 litres tank of water.
- Water well consumption estimate: 4 m³/day.



Physical and biological environment within the areas potentially affected.

Wabush Mine topographic map

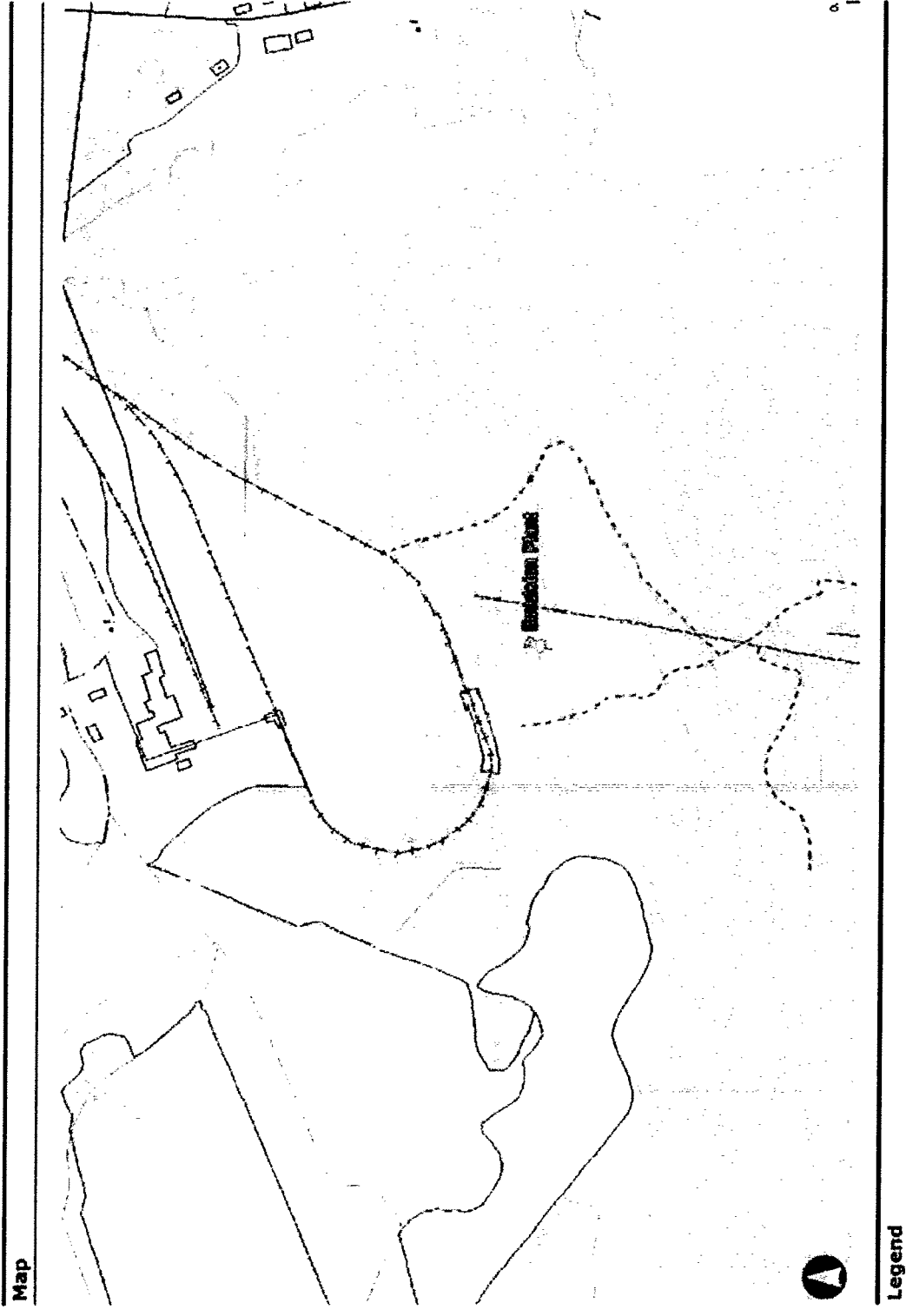
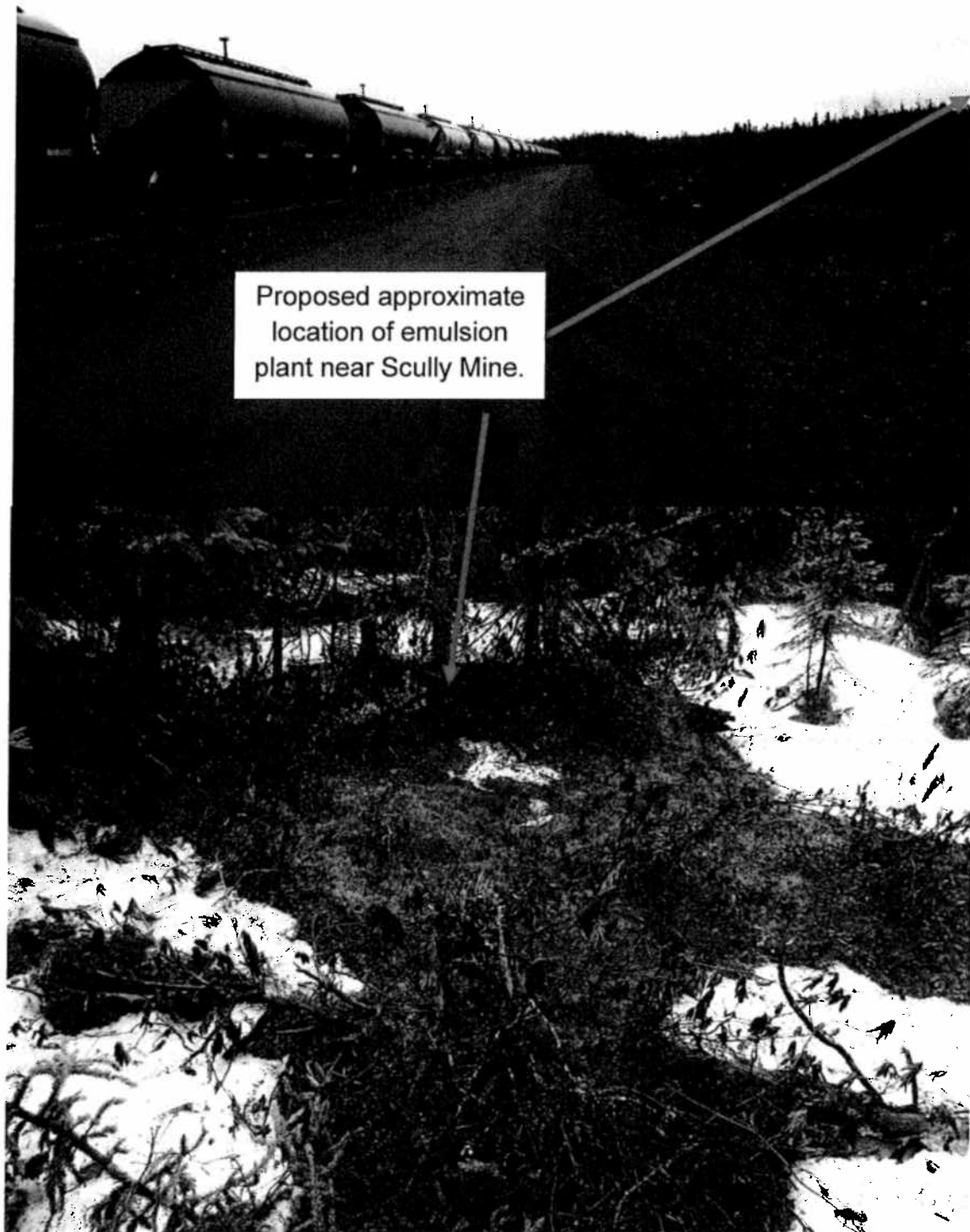


Figure 6 - Topographic map of Scully Mine site area.



Figures 7-8: Pictures of the site.

The emulsion plant is located at a minimum distance of 360 meters from all water bodies.

The area drains into the Atlantic Ocean watershed.

The area is dominated by coniferous trees, especially balsam fir and black spruce, with white birch, trembling aspen and mountain ash being the commonest deciduous trees.

The characteristic animals of this area include moose, black bear, Canada lynx, red fox, pine marten, short-tailed weasel, and mink. Beaver, muskrat, and river otter abound in the numerous rivers, lakes and ponds. There are also large expanses of wetlands, especially bogs and fens .

The soils are generally acidic and lack in important nutrients such as nitrogen and phosphorus.

iii) Construction

The construction period is estimated at a total of 6 months including:

- Ground work and road construction: 3 months.
- Rail spurs construction: 2 months
- Emulsion plant area leveling work: 2 weeks
- Concrete slabs work: 1 month
- Equipment erection & assembly: 1 month
- Bring services to equipment (electricity, fuel): 1 month
- Water well drilling: 1 week.
- Start-up & commissioning: 1 month
- Contingency: 1 month.

It is proposed to start construction in August 2012

During construction activities, potential sources of pollutants are:

- Leaks of hydraulic fuel & from heavy equipment (loaders, backhoe, power-shovel, cranes, etc)
- Diesel and regular fuel from fuelling operations
- Dust from heavy machinery circulation.
- Construction waste –non hazardous
- Lubricants, greases, etc. used in small quantities.

The following control measures will be in place to contain any spills and discharges:

- Spill contingency plan
- Training/Environmental awareness

iv) Operation

Description of the operation:

The emulsion is manufactured by blending together ammonium nitrate (AN) solution at about 80 % AN with a liquid fuel phase. The formed emulsion (mayonnaise look like) is then mixed with inert microspheres or with gassing chemicals solution to make it sensitive to a detonation so it can be used as a blasting agent.

The AN solution is kept warm in an outside heated tank. The fuel phase is pumped from two tanks: a diesel fuel tank and a fuel concentrate tank. Both tanks are double-walled. The fuel phase is heated prior to entering the blend table.

The emulsion is then stored in external steel silos. Process vehicles are loaded by gravity from the bottom of the silos or by direct load from the plant. Raw materials are stored in sealed sea-cans located outside.

The estimated period of operation is the entire life of the mine and is currently estimated at 37 years.

Potential sources of pollutants from the operation are:

- Ammonium nitrate solution spills
- Fuel concentrate spills
- Diesel fuel spills
- Emulsion spill
- Trace chemicals spills
- Wastewater from cleaning trucks and equipment in Garage/Wash bay. This wastewater may contain small amounts of ammonium nitrate and hydrocarbons.

The following control measures will be in place to contain any spills and accidental discharges:

- Standard Operating Procedures (SOPs) for spill recovery and clean-up
- Double-walled tanks (diesel, fuel concentrate)
- Visual inspection of aerial fuel lines
- Containment system for AN tank (membranes)
- Drip trays at emulsion silos transfer points.
- Training/Environmental awareness
- SOPs for proper waste and wastewater management
- Wastewater treatment and recycling system.
- Emulsion recycling process and kettle
- Closed systems in emulsion plant and parking garage.

ZERO-DISCHARGE EMULSION PLANT

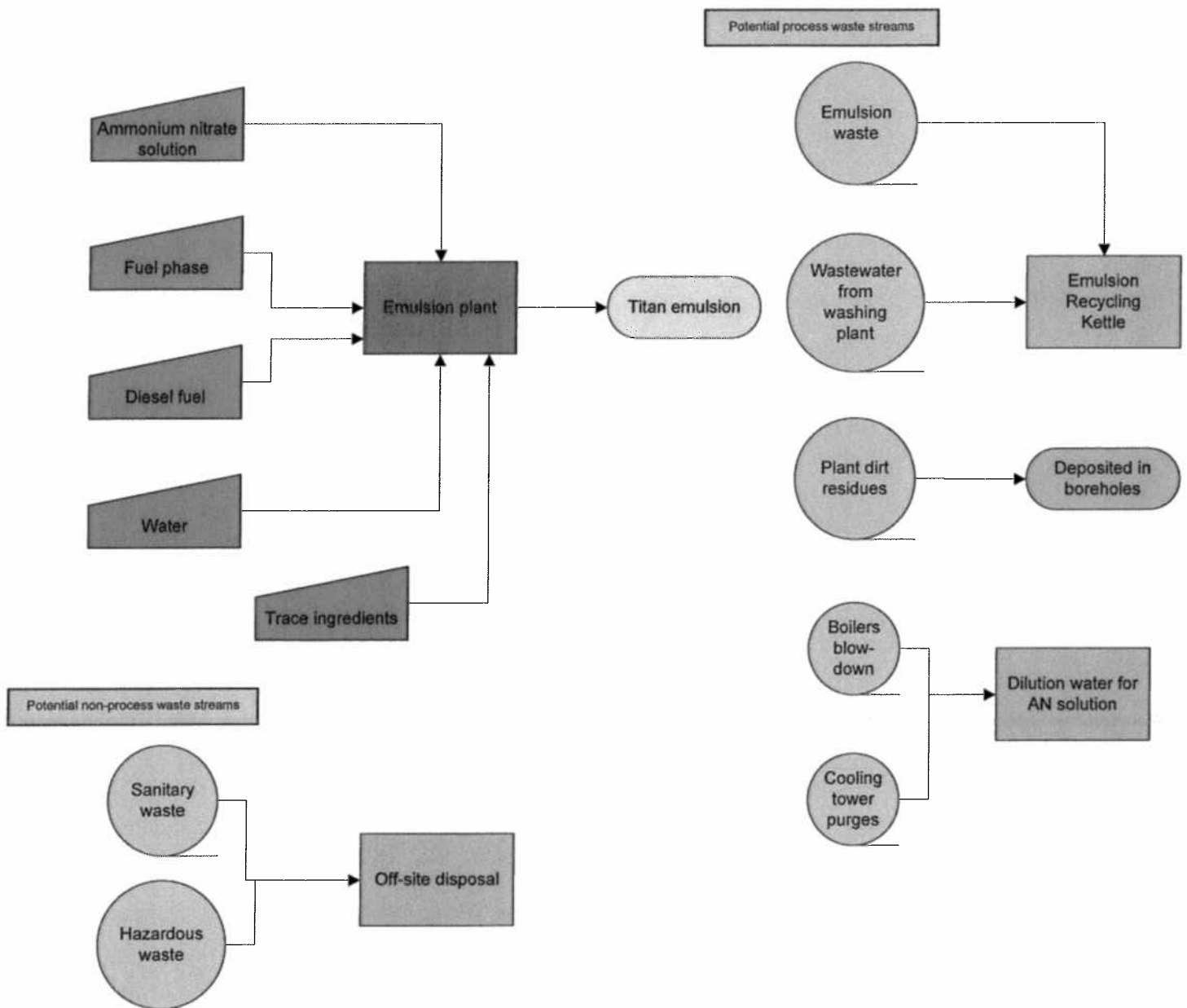


Figure 9: Flow chart showing processes and waste streams

v) Occupation

Since most of the plant equipment will be assembled off-site in sea-can containers, manpower required will be the one associated with the following site work activities:

1. Area filling with waste rock and road construction: Mine personnel. 5 employees.
2. Ground leveling work: Contractors or Mine personnel. 5 employees.
3. Concrete slabs work: Contractors 8-10 employees.
4. Equipment erection & assembly: Contractors. 10-15 employees.
5. Bring services to equipment (water, electricity, fuel): Contractors. 5-10 employees.
6. Start-up & commissioning: Dyno Nobel employees. 6-10 employees.

Breakdown of occupations anticipated according to national Occupational Classification 2006:

Occupation	Direct hiring (H) or contracting out (C)
7202 Contractors and supervisors, electrical trades-	(C)
9613 Labourers in chemical products processing and utilities	(H)
7242 Industrial electricians	(C)
7203 Contractors and supervisors, pipefitting trades	(C)
7244 Electrical power line and cable workers	(C)
7251 Plumbers	(C)
7252 Steamfitters, pipefitters and sprinkler system installers	(C)
7301 Contractors and supervisors, mechanic trades	(C)
7302 Contractors and supervisors, heavy equipment operator crews	(C)
7312 Heavy-duty equipment mechanics	(C)
7511 Transport truck drivers	(C)
7521 Heavy equipment operators (except crane)	(C)
7611 Construction trades helpers and labourers	(C)

Dyno Nobel has an employment equity policy relative to age and gender.

Economic impact to the area :

- Manufacturer will hire 17 new employees and can potentially in the future expand to about 27 employees. These are all positions that will be paid similar to that of mine employees along with benefits.
- Manufacturer plans to hire locally. If need be will hire personnel and look to relocate into the Labrador/Wabush area.
- With a manufacturing facility located in the area providing a low cost production facility, it will make other operations more feasible of coming online. It would benefit the Labrador-Newfoundland economy.

- In particular, additional demand for bulk emulsion is expected from other Mines in the future including Cliffs expansion/development projects and other projects in planning or feasibility stages.

(vi) *Project-Related Documents:*

Bibliography :

<http://www.heritage.nf.ca/environment/biosphere.html>

<http://maps.gov.nl.ca/water/mapbrowser/Default.aspx>

<http://en.wikipedia.org/wiki/Wabush>

Approval of the undertaking:

- Explosives Factory License – Natural Resources Canada- Explosives Regulatory Division
- Crown Lands Permit – Newfoundland & Labrador – Environment and Conservation Department
- Roads, Rails, transmission lines permits - Environment and Conservation Department
- Water taking permit - Water Resources Management Division of the department of Environment and Conservation.
- Federal EA - Natural Resources Canada- Explosives Regulatory Division – EA Branch.

Schedule:

- Earliest date of construction : July 1, 2012
- Latest date of construction : August 1, 2012

Those dates were selected based on the desire to supply Cliffs Mine before 2012 year end.

Funding:

No grant or loan from a Government Agency is needed.

The project capital investment is lower than 15 M\$.

8 JUNE 2012

Date



Signature of Senior Vice-President Canada