



APPENDIX 5

Citronen Base Metals Project

MPL - 001

Loss of Containment and Emergency Management Plan

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1 INTRODUCTION

Loss of containment (LOC) or spills from hydrocarbons, chemicals and tailings is a potential environmental risk for the activities associated with the Citronen Base Metal Project. Any spill of a hydrocarbon, chemical or other harm into the environment can have immediate and long term effects. As a result, the storage and handling of these products and waste products is seen as a critical environmental aspect.

The environmental impact of any loss of containment can be minimised by good management and planning. Such actions will largely depend on several factors:

- the type of substance (eg hydrocarbon, chemical) involved;
- the size of the spill;
- the location of the spill;
- the prevailing sea and weather conditions at the spill site; and
- the environmental sensitivity of the coastline or site impacted.

This management plan describes the process for managing a loss of containment both for small and large (emergency) spills both on site and for shipping of product.

2 BACKGROUND

Ironbark's Citronen Base Metal Project (the Project), includes the development, operation and ultimate reclamation of a zinc and lead mine at Citronen Fjord in Peary Land, Northeast Greenland. The Project will comprise mining three deposits (both open pit and underground) with an on-site processing facility to produce mineral concentrates of zinc and lead. The concentrates will be shipped off-site to a smelter for further processing. The project occurs in the Northeast Greenland National Park and will include shipping within the Wandel and Greenland Seas. Due to this location it is essential that environmental management regarding LOC is well planned, documented and prepared for.

3 ENVIRONMENTAL MANAGEMENT PRINCIPLES

Ironbark aims to conduct its business in an efficient and environmentally responsible manner that is compatible with the expectations of its shareholders, the Greenland Government and the community. Ironbark is committed to meeting its environmental responsibilities required under statutory regulations, with these encompassing social obligations, leadership in sustainable development and minimising environmental impacts. The basis of Ironbark's environmental management framework lies in management commitment and the allocation of resources to establish systems based on reducing environmental risk.

4 LOSS OF CONTAINMENT POLICY

The primary objectives of a loss of containment response are to:

- protect human health and safety;

- minimise environmental impacts; and
- restore the environment, as near as is practicable, to pre-spill conditions.

5 RELEVANT LEGISLATION AND GUIDELINES

The following legislation, regulations and guidelines are applicable to Citronen's Base Metal Project in regards to LOC management:

- Mineral Resources Act 2009 - *Greenland Parliament Act* no. 7 - 7 December 2009 on mineral resources and mineral resource activities;
- *Nature Protection Act* (Landsting Act no 29 of 18 December 2003 on Protection of Nature;
- Lov nr. 850 af 21. December 1988 for Grønland om miljøforhold m.v - Act number 850 of 21 December 1988 for Greenland regarding environmental matters;
- International Maritime Organisation (IMO) resolution 1024 – Guidelines for ships operating in polar waters;
- IMO circulation 221 – Mandatory ship reporting system;
- Danish Maritime Authority (DMA) order no. 417 – Order on technical regulation on safety of navigation in Greenland territorial waters;
- International Convention for the Prevention of Marine Pollution from Ships, 1973;
- International Safety Management (ISM) Code was implemented in 1997.

6 LOSS OF CONTAINMENT RECEPTOR, SOURCES AND MATERIALS

6.1 Loss of Containment to Land

For the scope of this management plan, land refers to all land bound by Citronen mining leases. Possible sources of loss of containment (LOC) and substances include (but are not limited to):

- Mobile equipment (haul trucks, dozers, excavators etc) – oil, diesel
- Fixed equipment (generators, pumps, storage tanks etc) – oil, diesel
- Process plant – chemicals, tailings, metal concentrate
- Tailings Storage Facility – tailings, supernatant
- Waste water treatment plant – raw sewage

6.2 LOC to Water

For the scope of this management plan, water refers to the Eastern River, Esrum River, Lake Platinova, Citronen Fjord (including the port area), Frederick J.Hyde Fjord, the Wandel Sea and the Greenland Sea.

Possible sources of LOC and substances include (but are not limited to):

- Cargo ships – diesel, oil, metal concentrate, chemicals
- Process plant – chemicals, tailings, metal concentrate
- Tailings Storage Facility – tailings, supernatant
- Waste water treatment plant – raw sewage

7 SPILL CLASSIFICATION

For spills on water Ironbark has adopted the industry tiered response as defined by the International Petroleum Industry Environmental Conservation Association (IPIECA). This classifies the need for response capabilities in terms of the size of the spill and its proximity to a company's operating facility.

- Level 1 - is a small local spill typically managed using facilities available on site or the shipping contractor;
- Level 2 - is a medium regional spill which is likely to be very unlikely in terms of probability, typically over a larger area requiring emergency response resources from a variety of sources; or
- Level 3 - are large spills that, due to their scale and likelihood to cause major impacts, call for substantial further resources from a range of national and international resources.

8 BASIC LOC RESPONSE STEPS

It is essential that all LOC's are minimised and cleaned up safely and promptly. Specific site and shipping procedures will be developed for the recovery of any loss of containment depending on the type, volume and location of the substance prior to the commencement of operations or shipping.

The basic steps for the management, clean up and reporting of a LOC are as follows:

1. Asses the risk to human health and the environment. This can be determined depending on the size of the LOC, type and location.
2. Protect human life. This may involve the use of fire rescue, ambulance or evacuation procedures if necessary.
3. Prevent further LOC and contain the existing LOC if safe to do so.
4. Notify the appropriate personnel. This may involve alerting the Supervisor/ Group Leader or Environmental Department.
5. Clean up the LOC and the environment. How this is done will depend on the location and volume.
6. Follow up the LOC by reviewing possible corrective actions, monitoring environmental impacts and completing reports.

9 REPORTING REQUIRMENTS

9.1 Internal

All LOC's must be reported, regardless of the volume. Reports of LOC's should be made either to the Supervisor/ Group Leader or the Environmental Department, or both. Incidents regarding any loss of containment will be recorded in the site incident management system.

9.2 External

External reporting of any loss of containment incidents will be reported as per guidance of the Greenland Bureau of Minerals and Petroleum.

10 TRAINING

All operational mining employees and shipping contractors are required annually to complete the Loss of Containment Management training package. This package provides a detailed overview of how various types of LOC's are to be cleaned up, how to minimise LOC's, how to use and where to find clean up equipment and the correct way to report LOCs.

Additional and specialised training in Loss of Containment will be provided for employees who are on the site Emergency Response Team.

11 EQUIPMENT

Specialised, dedicated equipment for LOC recovery will be located around site and available on all ocean going vessels. This equipment will be separated into two types – everyday use and emergency use only. The equipment will be located in areas that have been identified as either high risk or high probability LOC areas. The type of equipment stored will be confirmed after an evaluation of the types and volumes of substances that may require recovery.