

Prairie Creek Mine Public Hearings

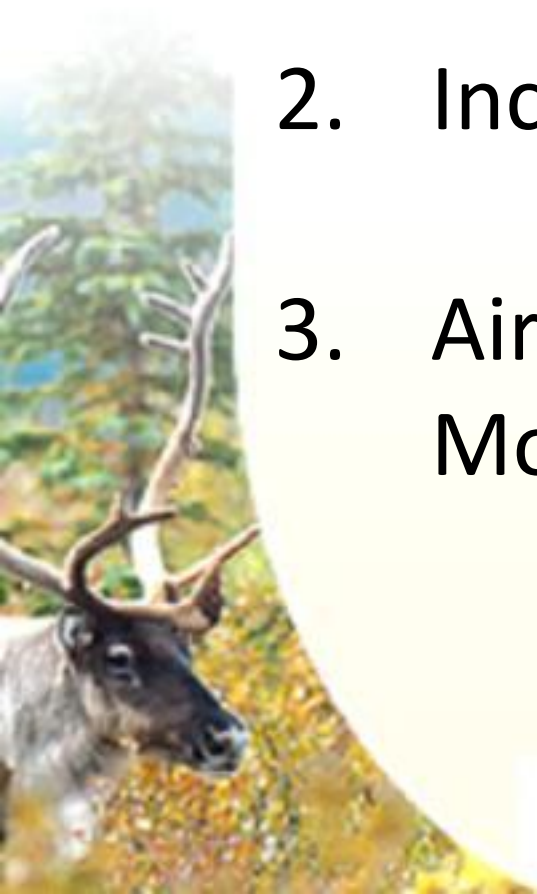
Air Quality Issues

Canadian Zinc Prairie Creek - Public Hearing
June 23 & 24, 2011



Outline

1. Contaminant Loading
2. Incineration Management
3. Air Quality and Emissions Monitoring



1. Contaminant Loading

Contaminant Loading:

- Contaminated dust (lead/zinc) depositing on land and water

Mine Site:

- Dust generated by mining activities
- Dust from materials handling
- Dust from mill and concentrate storage facilities
- Wind-blown dust from mine surface

Transportation of concentrate:

- Tracking along roads
- Concentrate spillage and escapement from bags on haul trucks



Contaminant Loading - Examples

Red Dog Mine

- Elevated levels of metals (lead, zinc and cadmium) near mine site and haul road
- Implemented mitigation strategies and monitoring program

Pine Point Mine

- Soil samples of railway bed exceed CCME Soil Quality Guidelines for lead and zinc



CZN Commitments - Contaminant Loading

Section 5.2, Air Quality Assessment, DAR, Appendix 20

- Best Management Practices Plan to Control Fugitive Dust and Metals Emissions (BMPPCFDME)
 - Commitment to develop BMPPCFDME



Recommendations – Contaminant Loading

•Contaminant Loading Management Plan

- Identify sources of contaminant loading;
- Identify mitigation approaches;
- Develop monitoring program;
 - Dustfall, speciation, soil and ice sampling*
- Develop trigger/action levels;
- Develop adaptive management and contingency plans;
- Submit annual reports:
 - Results of monitoring program;
 - Effectiveness of mitigation;
 - adaptive management/contingency employed
- Monthly data reports for at least the first year

•Secondary containment on the trailers during transport of concentrate

2. Incineration Management

Improper incineration practices can lead to the release of bioaccumulative, persistent toxins to the air

- Dioxins and Furans
- Polychlorinated biphenyls (PCB)
- Hexachlorobenzene (HCB)

By the process of deposition, these toxins fall to the land and/or water

- Adverse effects to water, sediment, fish, wildlife

The GNWT is a signatory to the *Canada-wide Standards (CWS) for Dioxins and Furans*

CZN Commitment - Incineration Management

Section 5.3, Air Quality Assessment, DAR, Appendix 20

- Incineration Management Plan (IMP) outline.
 - Commitment to develop IMP



Recommendation - Incineration Management

Develop an Incineration Management Plan (IMP):

- Waste audit -- quantities and types of waste incinerated
- Selection of incineration technology
- Operational and maintenance records
- Operator training
- Incinerator ash disposal
- Annual Report

In accordance with Environment Canada's Technical Document for Batch Waste Incineration, 2010, and in consultation with ENR and EC

3. Air Quality and Emissions Monitoring

Emissions:

- Criteria Air Contaminants
 - PM_{2.5} and PM₁₀, NO_x, O₃, CO, SO_x
- Site specific metals
 - Pb, Zn

Sources of Emissions

- Combustion and fugitive emissions from:
 - Power and heat generation
 - Mobile equipment
 - Process facility
 - Product handling



CZN Commitment - Air Quality and Emissions Monitoring

Section 5.1, Monitoring Program and Mitigation and Adaptive Strategies (MPMAS) outline, DAR, Appendix 20

- **Commitment to develop MPMAS**

Including:

- Air Quality Monitoring Program (Section 5.1.2);
- Emissions Monitoring Program (Section 5.1.3);
- Fuel Use Summary (Section 5.1.4);
- Mitigation and Adaptive Strategies (Section 5.1.5);
- Response Planning (5.1.6);
- Annual Report (Section 5.1.7).



Recommendations - Air Quality and Emissions Monitoring

Develop MPMAS in consultation with GNWT and EC

- Incorporate links to Contaminants Loading Management Plan
 - Dustfall and soil and ice sampling
- Emissions inventory
- Monitoring
 - Dustfall
 - Ambient particulate monitoring, with speciation
 - Passive monitoring for select Criteria Air Contaminants
- Mitigation measures
- Annual report

