



Environment Canada  
Environnement Canada

Environmental Protection Operations  
301, 5204 50<sup>th</sup> Ave.,  
Yellowknife, NT X1A 1E2

Our File: 4703 001 015

Nov. 21, 2008

Richard Dwyer  
Licensing Administrator  
Nunavut Water Board  
P.O. Box 119  
Gjoa Haven, NU X0B 1J0

By email

**Re: Review of the Meadowbank Incineration Waste Management Plan - Agnico-Eagle Mines Ltd. – Water Licence 2AM-MEA0815**

Environment Canada (EC) has reviewed the Incineration Waste Management Plan for the Agnico-Eagle Mines Ltd. Meadowbank Gold Mine. In general, EC found the management plan to be well-organized and a solid effort. We wish to advise the Board and proponent that EC is developing a *Technical Guidance Document for Incineration on Federal Lands and Operations* which should be released in the spring of 2009. To ensure that this management plan is aligned with the guidance document, EC has provided some comments and suggestions below:

- In Section 5.2, sewage sludge and “dead animals” are listed as acceptable waste for incineration. Neither sewage nor dead animals should be burned in batch incinerators that are typically used in remote camps. These types of waste have high moisture content and low heat content that will result in increased operating costs and lead to poor incinerator performance. It is unlikely that the sewage will be completely combusted and this could lead to the release of pathogens into the environment. The high moisture materials can leak from the incinerator hearth and lead to equipment damage and present health hazards to workers. Environment Canada recommends that more appropriate methods of disposing of sewage and dead animals be used.
- In Section 4.2, it is unclear if used oil and waste fuels will be burned for the sole purpose of disposing of the waste or if the used oil furnaces will be used to provide space heating. EC suggests that if the used oil and waste fuels are tested and meet appropriate standards, that, where possible, this fuel should be used as auxiliary fuel for the incinerator or in space heating furnaces. This will reduce the amount of fuel to be transported to the mine site which will reduce overall air emissions and costs to the proponent.
- Figure 2 provides a process flow chart for waste incineration. The flow chart should include a recycling route from the *Segregation Program* box. Recycling is

discussed in the text of the document, but for clarity and completeness, recycling should also be included in the flow chart.

- In Appendix I, Section 4 (Control System) there is a reference to Appendix A for details on instrumentation, CSA approval and labelling. Appendix A was not included with the document received by EC. Please provide the information from “Appendix A” in the Incineration Management Plan.
- The management plan should include a discussion of mixing various waste streams to achieve optimum heat content.
- Weigh scales are not explicitly mentioned in the management plan. Weigh scales are essential to prevent overcharging of incinerators. Overcharging incinerators will reduce the incinerator performance resulting in excess emissions of toxic compounds and could shorten the life of the incinerator.
- To ensure that the incinerator is operating properly the incinerator system should come complete with the following equipment to monitor and record performance parameters:
  - A weigh scale to measure the weight of all materials charged to the incinerator;
  - A computerised process control and data acquisition system to store operating data from the incinerator such as:
    - Temperatures in the primary and secondary chambers and stack during the operation;
    - Differential pressure in the primary and secondary chambers;
    - Auxiliary burner status, energized or not energized status for the burner;
    - Operating data from any fans installed on the system including amperage the fans are drawing at any time; and,
    - Status data for all system set points and interlocks such as the charging door closed switch.
- Operational data records for each burn cycle should be kept for at least 2 years.
- The annual report template, provided in Appendix 2, should also include the following:
  - All staff that have been trained for the operation of the incinerator; type of training conducted and by whom; dates of the training; dates of any refresher courses.
  - All maintenance undertaken on the equipment:
    - Routine maintenance activities, date completed, by whom, any problems encountered.
    - Special maintenance activities, date completed, by whom, any problems encountered.
  - The amount of ash produced and how it was disposed.

If further information or clarity regarding the information provided above is required, please contact Dave Fox at [dave.fox@ec.gc.ca](mailto:dave.fox@ec.gc.ca) or 867-669-4752.

Sincerely,

*Original signed by*

Anne Wilson  
Water Pollution Specialist  
Environmental Assessment - North

cc. Dave Fox (Air Pollution Management Analyst, Yellowknife)  
Carrie Spavor (EA Coordinator, EA-North, Iqaluit)  
Mike Fournier (Coordinator, EA-North, Yellowknife)  
Carey Ogilvie (Head, EA-North, Yellowknife)