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October 6, 2008

Via email and Xpresspost

Mr. Richard Dwyer
Licensing Administrator
Nunavut Water Board
PO Box 119
Gjoa Haven, NU X0B 1J0
Phone: (867) 360-6338

Dear Mr. Dwyer,

Re: Meadowbank Water License 2AM-MEA0815: Document Submission

As per Water license 2AM-MEA0815, please find the following documents enclosed with this letter:

- Part I, Item 10: Incinerator Waste Management Plan; and
- Part F, Item 11: Landfill Design and Management Plan.

Should you have any questions regarding this submission, please contact me directly at 604-622-6527 or via email at rgould@agnico-eagle.com.

Regards,

RL Gould

Rachel Lee Gould, M.Sc.
Project Manager, Environmental Permitting and Compliance Monitoring
Encl (2)

MEADOWBANK GOLD PROJECT

Incinerator Waste Management Plan

In Accordance with Water License 2AM-MEA0815

Prepared by:
Agnico-Eagle Mines Limited – Meadowbank Division

Version 1
October 2008

EXECUTIVE SUMMARY

This Incinerator Waste Management Plan (IWMP) describes the performance limits, waste management plans, operation, monitoring and record keeping requirements for the incinerator, as part of the Agnico-Eagle Mines Limited (AEM) Meadowbank Gold Project in Nunavut. This Plan was initially developed in support of AEM's application for a Type A Water Licence from the Nunavut Water Board (NWB). This updated IWMP is a component of the Meadowbank Environmental Management System. The IWMP will be reviewed annually by AEM and updated as needed to ensure that site experience is communicated to all parties.

The main objective of waste management relating to the primary incinerator and waste oil furnace is to minimize the amount of waste to be incinerated by implementing an effective waste segregation program to ensure that only appropriate types of waste are incinerated. The primary objective of incineration is to eliminate materials from the landfill that could create odours, attracting wildlife to the landfill site or to the Meadowbank camp. The primary incinerator is a dual chamber, high-temperature incinerator to dispose of solid waste from the accommodation camp, kitchen, shops, and offices that cannot be landfilled. The materials to be incinerated will be limited to putrescible waste such as paper, wood, food packaging and food waste. Filtered sewage treatment plant sludge may be incinerated during the construction phase. Sewage sludge will be co-disposed with mill tailings solids into the tailings impoundment area (TIA) once the mill is operational. In the interim AEM will attempt to drum or bag sewage sludge and store it until the TIA becomes operational at which time it will be disposed of in the TIA. If this strategy is untenable (due to odour) then this sludge will be incinerated. A series of small waste oil burners will be used for the disposal of used petroleum products such as heavy lubricants and engine oil. Ash produced from the incineration process will be disposed of in the on-site landfills. A protocol for testing incinerator ash and contingent measures for alternate disposal of ash if quality is unsuitable for landfilling.

AEM has purchased an incinerator from Eco Waste Solutions that complies with applicable regulations. The incinerator is designed to achieve compliance immediately upon attaining normal full scale operation. In addition to the incinerator technology, the implementation of a waste management and segregation plan will limit emissions of dioxins and furans from the incinerator. Compliance to the performance limits will be confirmed by periodic stack testing (annual).

In order to demonstrate compliance with performance limits, an annual incineration management report will be prepared and submitted to the NWB (as part of the water license annual report), Government of Nunavut (GN), Environment Canada (EC), and NIRB. The quantity and type of materials incinerated on site during operations, together with results from stack emission and ash monitoring, will be included within the annual report.

This IWMP will be maintained by AEM to reflect the current operations at the Meadowbank Gold Project, permit requirements and regulatory setting. The IWMP will be reviewed annually and an updated version will be produced by AEM every two years of operation at a minimum.

IMPLEMENTATION SCHEDULE

As required by Water License 2AM-MEA0815, Part B, Item 16, the proposed implementation schedule for this Plan is outlined below.

This Plan will be immediately implemented (October 2008) subject to any modifications proposed by the NWB as a result of the review and approval process**.**

DISTRIBUTION LIST

AEM – General Mine Manager

AEM – Environment Superintendent

AEM –Environmental Coordinator

DOCUMENT CONTROL

Version	Date (YMD)	Section	Page	Revision
1	08/10/08	3 & 6	5 & 13	Revised to consider best management practices for ash
		App 1		Technical specifications for primary incinerator included

Prepared By: _____
Rachel Lee Gould, M.Sc.
Project Manager, Environmental Permitting and Compliance Monitoring

Approved by: _____
Larry Connell, P.Eng.
Regional Manager: Environment, Social and Government Affairs

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SECTION 1 • INTRODUCTION

1.1 PROJECT OVERVIEW

This Incinerator Waste Management Plan (IWMP) describes the performance limits, waste management plans, operation, monitoring and record keeping requirements for the primary incinerator as part of the Meadowbank Gold Project operated by Agnico-Eagle Mines Limited Meadowbank Division (AEM). The Project is an open pit gold mine located on Inuit-owned land in the Kivalliq Region of Nunavut, approximately 70 km north of Baker Lake.

This update to the initial IWMP is a component of the Meadowbank Environmental Management System. The objectives of this Plan are summarized as follows:

1. To define the location, design and operating procedures to be used in the incineration of appropriate non-hazardous solid waste generated at the Meadowbank Mine;

2. To define acceptable/non-acceptable types of solid waste to be placed in the Meadowbank incinerator; and

3. To define operating and monitoring requirements for the incinerator.

The original IWMP was submitted to the Nunavut Water Board in August of 2007 as a component of the Type A Water License application for the Meadowbank Project. Part F - Item 10 (page 17) of this water license requires the following update of the August 2007 IWMP:

> *The Licensee shall submit to the Board for approval, within three (3) months of License approval, a revised Incineration Management Plan. The Plan shall consider best management practices for ash disposal.*

An IWMP is also required to fulfill Nunavut Impact Review Board (NIRB) Project Certificate commitment number 70 which states *'prepare and implement an incinerator waste management plan'* (Letter from NIRB to Cumberland dated December 30, 2006). The IWMP as a component of the Meadowbank Environmental Management System will be reviewed annually by AEM and updated every two years to ensure that site experience is communicated to all parties. AEM will be responsible for managing and implementing this IWMP. Implementation of the IWMP will be the responsibility of the Meadowbank Site Superintendent.

The primary incinerator is required for environmental and pest control. The incinerator will dispose of solid waste from the accommodation camp, kitchen, shops, and offices that cannot be landfilled at the Meadowbank Gold Project Site. The incineration of waste will divert waste, which could create odours and potentially attract wildlife, from the proposed on-site landfill. The materials to be incinerated will be limited putrescible waste such as paper, food packaging and food waste. Filtered sewage treatment plant sludge may be incinerated during the construction phase. Sewage sludge will be co-disposed with mill tailings solids into the tailings impoundment area (TIA) once the mill is operational. In the interim, AEM will attempt to drum or bag sewage sludge and store it until the TIA becomes operational at which time it will be disposed of in the TIA. If this strategy is untenable (due to odour) then this sludge will be incinerated.

A series of small waste oil burners will be used for the disposal of used petroleum products such as heavy lubricants and engine oil. The waste oil burner has been included within this IWMP.

Ash produced from the incineration process will be disposed of within the on site landfills according to the Environmental Guideline for Industrial Waste Discharges (D of SD, 2002). The incinerator ash will be tested to confirm its suitability for landfill disposal (Section 3.3 and 6.3). If monitoring indicates the ash is not suitable for landfilling, it will be buried within the Tailings Storage Facility (TSF). Materials buried within the TSF are expected to freeze over a period of time, resulting in permafrost encapsulation (MMC, 2007a, Doc. No. 485).

The camp is currently expected to accommodate 344 persons during operations, and the expected life of operation of the incinerator is 12 years, allowing for one year of pre-mine development, ten years of mine operation and one year for closure activities.

1.2 INCINERATOR LOCATION

The primary incinerator will be located away from the plant site and accommodations complex, adjacent to the fuel storage facility. A key factor in siting the incinerator is the unit's requirement for external services (e.g. power). A series of small dedicated waste oil burners will be installed in the cold storage warehouse Coverall structures to provide a minimal level of heat.

SECTION 2 • REGULATORY CONTEXT

The following section outlines the regulatory setting relating to solid waste incinerators and waste oil burners, and discusses how the regulations will apply to the incinerator and waste oil burners at the Meadowbank site.

Provincial and/or territorial regulations that pertain to emissions from incinerators were not found for Nunavut or the Northwest Territories. Therefore, performance limits for the incinerator at Meadowbank will be in accordance with the emission regulations set out by the Canadian Council of Ministers of the Environment (CCME) Canada-wide Standards for Dioxin and Furans (CCME, 2000a) and the CCME Canada-wide Standards for Mercury Emissions (CCME, 2000b).

The management of used oil is regulated in the Northwest Territories according to the Used Oil and Waste Fuel Management Regulations, N.W.T. Reg. 064-2003 (NWT, 2003). In the absence of Nunavut guidance/regulations pertaining to used oil, these regulations will be adopted for the Meadowbank site.

Ash produced from the incineration process will be disposed of according to the Nunavut Environmental Guideline for Industrial Waste Discharges (D of SD, 2002).

2.1 BACKGROUND INFORMATION

Dioxins and Furans

Polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs), commonly known as dioxins and furans, are toxic, persistent, bioaccumulative, and result predominantly from human activity. Due to the extraordinary environmental persistence and capacity to accumulate in biological tissues, dioxins and furans are slated for virtual elimination under the CEPA, the federal Toxic Substances Management Policy (TSMP) and the CCME Policy for the Management of Toxic Substances (CCME, 2000a).

Mercury

Mercury is a naturally occurring substance, which is transformed through biological processes to methyl mercury, a persistent substance which bioaccumulates in the food chain and is particularly toxic to humans and wildlife Mercury levels originate from a combination of naturally-occurring mercury and anthropogenically emitted mercury. Under a variety of regional, national, bi-national and internal programs, treaties and agreements, mercury is being targeted for emissions reductions consistent with the CCME Policy for the Management of Toxic Substances, which identifies that mercury shall be managed through its lifecycle to minimize release (CCME, 2000b).

Used Oil and Waste Fuel

According to the Used Oil and Waste Fuel Management Regulations (NWT, 2003) ‘used oil’ means any oil, including lubrication oil, hydraulic fluids, metal working fluid and insulating fluid, that is

unsuitable for its intended purpose due to the presence of impurities or the loss of original properties, but does not include waste oil derived from animal or vegetable fat, a petroleum product spilled on land or water, or waste from a petroleum refining operation. 'Waste fuel' means a flammable or combustible petroleum hydrocarbon, with or without additives, that is unsuitable for its intended purpose due to the presence of contaminants or the loss of original properties, and includes gasoline, diesel fuel, aviation fuel, kerosene, naphtha and fuel oil, but does not include paint, solvent or propane.

SECTION 3 • PERFORMANCE LIMITS

3.1 PRIMARY INCINERATOR

AEM has selected a Camp Waste Incinerator (model no, ECO 1.75TN 1P MS 60L) from Eco Waste Solutions, which complies with the regulations in Table 3.1, where the maximum emissions are expressed as a concentration in the exhaust gas exiting the stack of the facility. The specifications of the incinerator are available in Appendix I. In addition to incinerator technology, the implementation of a waste management and diversion plan will limit emissions of dioxins and furans from the incinerator.

Table 3.1: Emission Regulations For Solid Waste Incinerators

Emissions	Sector	Units	Guideline Maximum	Reference guideline
Dioxins and Furans	Municipal Waste	pg I-TEQ/m^3	80	CCME, CWS 2000a
Dioxins and Furans	Sewage Sludge Incineration	pg I-TEQ/m^3	80	CCME, CWS, 2000a
Mercury	Municipal Waste	µg/Rm^3	20	CCME, CWS, 2000b
Mercury	Sewage Sludge Incineration	µg/Rm^3	70	CCME, CWS, 2000b

Notes: Stack concentrations are corrected for 11% oxygen

At Meadowbank, the primary incinerator may be subject to either Municipal or Sewage Sludge standards based upon the preponderance of waste (>50% as one type) or upon the territorial designation of facility type. According to the Canada Wide Standards “municipal solid waste’ includes any waste that might be disposed of in a non-secure landfill site if not incinerated (i.e., non-hazardous wastes regardless of origin), but does not include “clean” wood waste.

The incinerator at Meadowbank is expected to achieve compliance immediately upon attaining normal full scale operation. Compliance to these performance limits will be confirmed by periodic stack testing (annual).

3.2 USED OIL

AEM will manage used oil and waste fuel according to the Used Oil and Waste Fuel Management Regulations, NWT Reg. 064-2003, 2003.

Table 3.2 summarizes some main points of the regulations that pertain to waste oil generated on site, as per the Waste Oil and Waste Fuel Management Regulations (NWT, 2003).

Table 3.2: Summary Of Used Oil And Waste Fuel Regulations

As per 'Used Oil and Waste Fuel Management Regulations'	
Registration	Waste Oil Burner shall be registered with the Chief Environmental Protection Officer
Disposal	Waste oil/Waste fuel will not be disposed of directly into the environment
Storage	Waste oil/Waste fuel will be stored in specifically designed container for hydrocarbons, minimizing the risk of spills Waste oil/waste fuel containers will be periodically inspected for leaks or potential leaks Waste oil/Waste fuel will be stored as per the *Hazardous Materials Management Plan* (MMC, 2007c, Doc. No. 457)
Sampling and Analysis	A sample of one month's feedstock of waste oil/waste fuel is required to be tested at least once a year Waste oil will be tested for: ***Flash point*** ***Existence and amount of each impurity Listed in Table 3.3***
Burning	Waste Oil/Waste Fuel will not be burned openly Waste oil will not be burned in residential areas Waste Oil with a flash point of <37.7 degrees Celsius (deg C) with not be burned or blended with other waste oil/waste fuels Waste Oil that exceeds guidelines will not be burned
	14 days notice will given for the burning of waste fuel
Records	The following will be recorded in association with the incineration of used oil: ***Volume of Used oil generated*** ***Volume of used oil incinerated/consumed*** ***Name and Address of person in charge, management or control of the used oil*** ***Location of production of used Oil*** ***A summary of maintenance performed on incinerator or processing equipment*** ***Volume and Nature of the products produced from the used oil*** ***The destination of the used oil products shipped from the facility***

Table 3.3 summarizes the maximum level of contaminants in used oil that can be incinerated as stipulated within the NWT Used Oil and Waste Fuel Management Regulations (NWT, 2003). Under the regulations blending of used oil that exceeds one of more of the criteria listed in Table 3.3 is not allowed.

Table 3.3: Used Oil Impurity Limit

Impurity	Units	Maximum Level Allowed in Used Oil
Cadmium	ppm	2
Chromium	ppm	10
Lead	ppm	100
Total Organic Halogens (as chlorine)	ppm	1000
Polychlorinated biphenyls	ppm	2

3.3 INCINERATOR ASH

Ash resulting from the incineration of solid waste will be disposed of in the landfill and tested for metals according to the Environmental Guideline for Industrial Waste Discharges (D of SD, 2002). Ash that does not meet these guidelines will be buried within the TSF or packaged in drums and sent to a licensed hazardous waste disposal facility in the south. Table 3.4 summarizes the guidelines for metals parameters based on leachate test results.

Table 3.4: Guidelines For Solid Waste/Process Residuals Suitable For Landfill

Parameter	Concentration maximum (mg/L)
Arsenic	2.5
Barium	100
Cadmium	0.5
Chromium	0.5
Lead	5
Mercury	0.1
Selenium	1
Silver	5
Zinc	500

NOTE: Standards based on leachate test results

SECTION 4 • INCINERATOR OPERATION

AEM has selected a dual chamber, high-temperature incinerator from Eco Waste Solutions as the primary incinerator. The technical specifications are included in Appendix I. This incinerator will be housed inside a building built solely to house this unit.

4.1 PRIMARY INCINERATION

A typical modern controlled-air batch (dual chamber) incinerator (as purchased for installation at Meadowbank) is based on the principals of pyrolysis (starved-air burning condition) and complete oxidation (high temperature, excess oxygen and sufficient time). The incineration system is typically a two-stage process. In the first stage, waste is converted to gas in the primary chamber at approximately 650 to 850 deg C. At this temperature any potentially infectious material is destroyed. This process is self fueling until the volume is reduced by 90%. Gasses from the primary chamber enter the secondary chamber of oxygen rich and turbulent conditions, which is typically at a higher temperature – around 1000 deg C. Combustion is complete after a minimum retention time.

Critical process parameters such as temperature, combustion air flow and burner output will be computer controlled to maintain optimal combustion conditions.

For an incinerator capacity suitable for the predicted volumes of waste to be generated at the Meadowbank site the total particulate matter (PM) generated is expected to be extremely low. Therefore dust collection technologies such as baghouse filters will not be employed, and no fly ash will be generated. Ash residual from the incinerator will be generated and will be removed daily as required by manual removal using a shovel emptied into a metal bin.

4.1.1 Emissions

The Eco Waste Solutions Incinerator purchased by AEM is designed to meet performance limits described in Section 3.1. The Primary incinerator has been designed by Eco Waste Solutions using good engineering practice to ensure required dispersion of gases to meet applicable air quality standards/objectives.

The incinerator stack design incorporates appropriate sampling ports (with caps where necessary) at appropriate locations to allow for stack testing to be undertaken during incinerator operation.

4.1.2 Dust/Odour Control Measures

Modern incinerators are commonly designed such that the non-turbulent atmosphere in the primary burn chamber reduces the formation of particulate matter. Therefore, the need for additional dust and /or odour control measures is not anticipated.

4.1.3 Staffing and Equipment

The computerized incinerator will typically require one operator to interact with the equipment for approximately 1 to 1.5 hours per day (for ash removal, loading and start-up). Operators are not typically required to be in attendance during the rest of the operation, as it is normally a fully automated process. This incinerator is designed so that the operators are not exposed to high temperatures during loading or ash removal due to complete cool down after the burn cycle. Also, the waste is not allowed to combust until the chamber is sealed thus isolating the worker from smoke and high temperatures.

4.1.4 Operator Training

Operator training will be provided by a suitably experienced technician from the incinerator supplier/manufacturer (Eco Waste Solutions) or from an associated company.

4.2 USED OIL FURNACE

The dedicated waste oil burners to be installed at the site will have an aggregate capacity to handle approximately 10,000 liters of waste oil per year. The likely source of the waste oil will be from oil changes on the mining equipment and light vehicles as well as oil changes to mechanical gearboxes within the mill. Typical used oil furnaces include a storage tank and a filter to recover sludge prior to burning. Sludge collected in the waste oil filter will be drummed and shipped, as needed, to a licensed disposal or recycling facility for treatment.

4.3 CLOSURE PLAN

In accordance with the Preliminary Closure and Reclamation Plan (MMC, 2007b, Doc. No. 511), salvageable buildings and surface structures, including the primary incinerator and used oil furnace, will be dismantled and demobilized from the site. Non-salvageable buildings and structures will be dismantled or demolished and disposed of in Landfill #2 to be developed on top of the Portage Rock Storage Facility (RSF) (Golder, 2007, Doc. No. 458). Concrete structures and foundations will be removed or buried to a point about 1 m below the final ground surface or the final regraded surface. All disturbed site areas will be regraded to suit the surrounding topography. In areas where the original ground surface was lowered for site grading or structural requirements, the slopes will be stabilized and contoured. Cover materials may be required for erosion and dust control.

SECTION 5 • WASTE MANAGEMENT

The amount of waste will be reduced through purchasing policies that focus on reduced packaging and on-site diversion and segregation programs. At Meadowbank the main objective of the waste management plan relating to incineration and the waste oil furnace is to minimize the amount of waste to be incinerated by implementing an effective waste segregation program to ensure that only appropriate types of waste are incinerated.

Figure 2 provides a schematic diagram for the management of solid waste and used oil produced on site.

5.1 APPROACH

A waste segregation program will be implemented at the site (i.e. the separation of non-food waste items suitable for storage and subsequent transport and disposal or recycling). This will allow materials that are unsuitable for incineration to be either landfilled on site or hauled offsite to a licensed disposal facility. The waste segregation program will also document the quantities and types of materials that are incinerated.

5.2 ACCEPTABLE WASTE FOR INCINERATION

Acceptable wastes for incineration, in the primary incinerator, include the following:

- Organic matter including food;
- Food containers and wrappings including plastics that are contaminated by food;
- Paper;
- Sludge from the sewage treatment plant (during the mine construction phase only; during the mine operations phase sewage sludge will be disposed of in the TSF); and
- Dead animals.

Acceptable wastes for incineration in the used oil furnace include the following:

- Waste Oils; and
- Flammable or combustible petroleum hydrocarbons unsuitable for its purpose due to the presence or contaminants or loss of original properties (such as gasoline, diesel fuel, aviation fuel, kerosene, naptha or fuel oil).

5.3 UNACCEPTABLE WASTE FOR INCINERATION

Materials that are not listed above would be unacceptable for incineration. These materials include, but are not limited to:

- Uncontaminated plastics, including chlorinated plastics;
- Inert materials such as concrete, bricks, ceramics, ash;
- Bulky materials such as machinery parts or large metal goods such as appliances;
- Radioactive materials such as smoke detectors;
- Potentially explosive materials such as propane tanks, other pressurized vessels, unused or ineffective explosives;
- Other hazardous materials such as organic chemicals (PCBs, pesticides), other toxics (arsenic, cyanide);
- Electronics;
- Batteries;
- Asbestos;
- Dry wall;
- Vehicles and machinery;
- Fluorescent light bulbs;
- Whole tires; and
- Any materials containing mercury.

Unacceptable wastes for incineration in the used oil furnace include the following:

- Used Oil that exceeds the Maximum Impurity Limits for parameters listed in Table 3.3;
- Waste Oil with a flash point of less than 37.7 deg C;
- Paint;
- Solvents; and
- Propane.

5.4 WASTE VOLUMES

5.4.1 Solid Waste

The quantity of waste to be incinerated is estimated to be 762 kg per day during construction, and 874 kg per day during operations (MMC, 2007a, Doc. No. 485). This includes an allowance of 1.8 kg of sewage sludge per day per person, and a camp size of 300 during construction and 344 during operations.

5.4.2 Used Oil

The quantity of used oil generated from the servicing of machinery is estimated to be approximately 10,000 liters per year (L. Connell, AEM, pers. comm., Nov. 13, 2007).

5.4.3 Incineration Ash

The quantity of ash from the incinerator is estimated to be 75 tonnes / yr, assuming that the incineration process results in a 70% reduction in mass. Assuming the ash has a total density of 1.2 tonnes / m^3, then a volume of approximately 63 m^3 / yr of ash will require disposal (Golder, 2007, Doc. No. 458). Incinerator ash will be packaged in drums or sacks and the whole container land filled, thus eliminating any wind blown effects.

5.5 WASTE INCINERATION RATE

Due to the predicted volumes of waste to be generated at the site, the incinerator has an approximate incineration capacity of 1750 kg / h based on a 10 hour burn cycle. If this can not be achieved the primary chamber can be used as storage.

The system has a sizable front door for easy access to manually load feed waste into the unit with a front end loader. The two proposed waste streams (garbage and sewage sludge) will be layered wherever possible during loading to ensure proper combustion.

The batch cycle for the Primary Chamber typically lasts approximately 10 hours for the burn cycle and is followed by a cool down of approximately 6 hours. The Secondary Chamber operates with a retention time of approximately 2 seconds.

SECTION 6 • MONITORING AND TESTING

The following presents the monitoring and testing plan for the incinerator.

6.1 INCINERATOR EMISSIONS TESTING

The incinerator stack design incorporates appropriate sampling ports at appropriate locations, in right angle configuration, to allow for stack testing to be undertaken during incinerator operation. Table 6.1 summarizes the frequency of testing that will be completed as per the relevant legislation.

Table 6.1: Summary Of Incinerator Emissions Testing

	Frequency	Number of Test Required	Relevant Legislation
Furans and Dioxins	Annual	3	CCME, CWS 2000a
Mercury	Annual	3	CCME, CWS 2000b

6.2 WASTE OIL TESTING

A sample of one month's feedstock of waste oil / waste fuel will be tested each month. Waste oil that does not meet the regulation impurity limits will be drummed and shipped off site each summer to a re-refining facility or licensed disposal facility.

6.3 ASH TESTING

Upon commissioning of the new incinerator at Meadowbank (a Camp Waste Incinerator [model no, ECO 1.75TN 1P MS 60L] purchased from Eco Waste Solutions), an ash testing protocol will be implemented to ensure that the incinerator ash is suitable for disposal in the landfills.

Three ash samples will be collected (one per month for the first three months of the incinerator in operation) and the leachate tested for metals contents. The samples will be compared to the Government of Nunavut guidelines for solid waste/process residual concentrations suitable for landfills, as described in the Environmental Guideline for Industrial Waste Discharges and presented in Table 3.4 (D of SD, 2002). Following the initial testing, ash samples will be collected and tested annually, or upon a significant change in the source or type of material sent to the incinerator.

If monitoring indicates the ash is above the guidelines and not suitable for landfilling, an investigation will be undertaken to identify the cause and eliminate the source for this exceedance. Ash with elevated metals concentrations will be buried within the Tailings Storage Facility (TSF); materials buried within the TSF are expected to freeze over a period of time, resulting in permafrost encapsulation (MMC, 2007a, Doc. No. 485). If deemed necessary, the ash will be packaged in drums and sent to a licensed hazardous waste disposal facility in the south.

Any leachate generated by the landfill will be directed to the contact water collection system for the Portage RSF and report to a contact water collection sump that is monitored as part of the Water Quality and Flow Monitoring Plan for the site (MMC, 2007d, Doc. No. 450). Water reporting to the sump will be pumped to either the Portage Attenuation Pond or the Reclaim Pond depending upon water sampling results.

SECTION 7 • REPORTING

In order to demonstrate compliance with performance limits, an annual incineration management report is to be prepared and submitted to the NWB (as part of the water license annual report), Government of Nunavut (GN), Environment Canada (EC), and NIRB. The quantity and type of materials incinerated on site during operations, together with results from periodic stack emission and ash monitoring, are to be included within the annual report.

A template for a stand alone incinerator management annual report is provided within Appendix II, however it is recognized that this annual report could be included as a component in other management plans and annual reports.

7.1 NATIONAL POLLUTANT RELEASE INVENTORY

The NPRI is a Canadian database containing information on the annual on-site release of specific substances to the air, water and land from industrial and institutional sources (EC, 2007). The NPRI provides a list of tracked substances and requirements for reporting incinerator emissions. Table 7.1 lists the substances under the NPRI that Meadowbank are required to report annually. In addition, there are certain substances as indicated in Table 7.1 that may require reporting depending on the quantity of incinerator emissions. Whether or not reporting is necessary will depend on results of the periodic stack emission testing data and the quantity of annual emission calculated with emissions factors.

Table 7.1: NPRI Incineration Reportable Substance List

Substance Name	Notes
Hexachlorobenzene Dioxins and Furans	Required to Report
Carbon Monoxide Oxides of nitrogen Sulphur dioxide Total Particulate matter with diameter <100 microns	Required to Report if released to air from facility in a quantity of 20 tonnes or more per annum
Particulate matter with diameter less than or equal to 10 microns (PM10)	Required to Report if released to air from facility in a quantity of 0.5 tonnes or more per annum

Particulate matter with diameter less than or equal to 2.5 microns (PM2.5)	Required to Report if released to air from facility in a quantity of 0.3 tonnes or more per annum

7.2 GREENHOUSE GAS EMISSIONS AND GLOBAL WARMING

AEM is committed to reporting greenhouse gas emissions (GHG) in support of Canada's Voluntary Challenge Registry; currently termed the Canadian GHG Challenge Registry. AEM will develop a baseline and monitoring system for GHG to evaluate and report on progress in improving efficiency and reductions in GHG.

SECTION 8 • PLAN REVIEW AND CONTINUAL IMPROVEMENT

This Incinerator Waste Management Plan will be maintained by AEM to reflect the current operations at the Meadowbank Gold Project, permit requirements and regulatory setting. The Plan will be reviewed annually by the Meadowbank Mine Management and an updated version will be produced by AEM every two years of operation at a minimum.

The up to date Incinerator Waste Management Plan will be made available at all times by AEM for review by the Government of Nunavut and Environment Canada.

SECTION 9 • REFERENCES

CEPA, 1999. Canadian Environmental Protection Act. March 31, 1999

Canadian Council of Ministers of the Environment (CCME), 2000a. Canada-Wide Standards for Dioxins and Furans, May, 2000

Canadian Council of Ministers of the Environment (CCME), 2000b. Canada-Wide Standards for Mercury Emissions, June 2000

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Department of Sustainable Development (D of SD), 2002. Environmental Guideline for Industrial Waste Discharges. January 2002.

Environment Canada (EC), 2007. National Pollutant Release Inventory (NPRI). http://www.ec.gc.ca/pdb/npri/npri_home_e.cfm

Golder (Golder Associates Ltd.), 2007. Final Report On Landfill Design and Management Plan, Meadowbank Gold Project Nunavut, *Project 06-1413-089/9000, Doc. No. 458, Rev. 0,* submitted to Meadowbank Mining Corporation, dated August 27, 2007.

Letter from Nunavut Impact Review Board to Cumberland Resources Ltd, dated December 30, 2006 Re: Meadowbank Gold Mine Project Certificate; Nunavut Land Claims Agreement Article 12.5.12.

Meadowbank Mining Corporation (MMC), 2007a. Type A Water License Application. Doc. No. 485, dated August 2007.

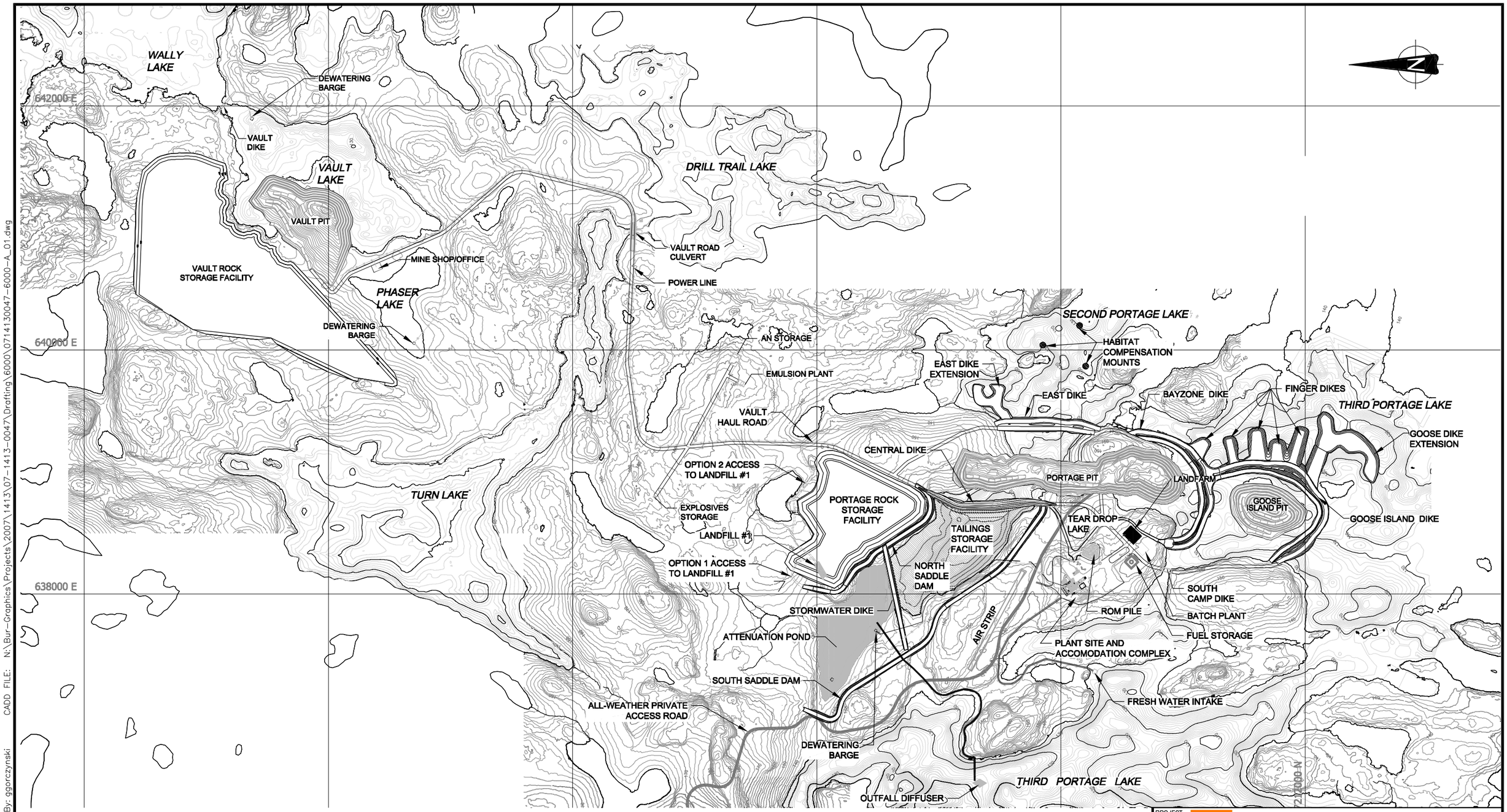
Meadowbank Mining Corporation (MMC), 2007b. Meadowbank Gold Project Preliminary Closure & Reclamation Plan. Doc. No. 511, dated August 2007.

Meadowbank Mining Corporation (MMC), 2007c. Meadowbank Gold Project Hazardous Materials Management Plan. Doc. No. 457, dated August 2007.

Meadowbank Mining Corporation (MMC), 2007d. Meadowbank Gold Project Water Quality and Flow Monitoring Plan. Doc. No. 450, dated August 2007.

National Guidelines for Hazardous Waste Incineration Facilities - Design and Operating Criteria, Volume 1, March 1992, (CCME).

NWT, 2003. Used Oil and waste fuel management regulations, 2004, NWT Reg 064-2003. January 1, 2003.



NOTES

1) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2) ALL ELEVATIONS ARE IN METRES ABOVE SEA LEVEL (masl), UNLESS OTHERWISE NOTED.
3) GRID REFERENCE: NAD 83, UTM ZONE 14
4) CONTOUR INFORMATION ON LAND SUPPLIED BY MEADOWBANK MINING CORPORATION.
5) CONTOURS BELOW LAKE SURFACE ARE BASED ON BATHYMETRIC SURVEYS BY GOLDER ASSOCIATES LTD., 2002, 2003, 2006.
6) LAKE CONTOURS ARE BASED ON REGIONAL PLAN MAPS OF LAKE SURFACE ELEVATIONS:
   2ND PORTAGE LAKE = 133.1M,
   3RD PORTAGE LAKE = 134.1M
7) TOPOGRAPHIC CONTOUR INTERVAL 2M.
8) BATHYMETRIC CONTOUR INTERVAL 1M.

0 300 600 900 1200 1500
Scale in Metres

PROJECT
AEM AGNICO-EAGLE MINES LIMITED
MEADOWBANK DIVISION

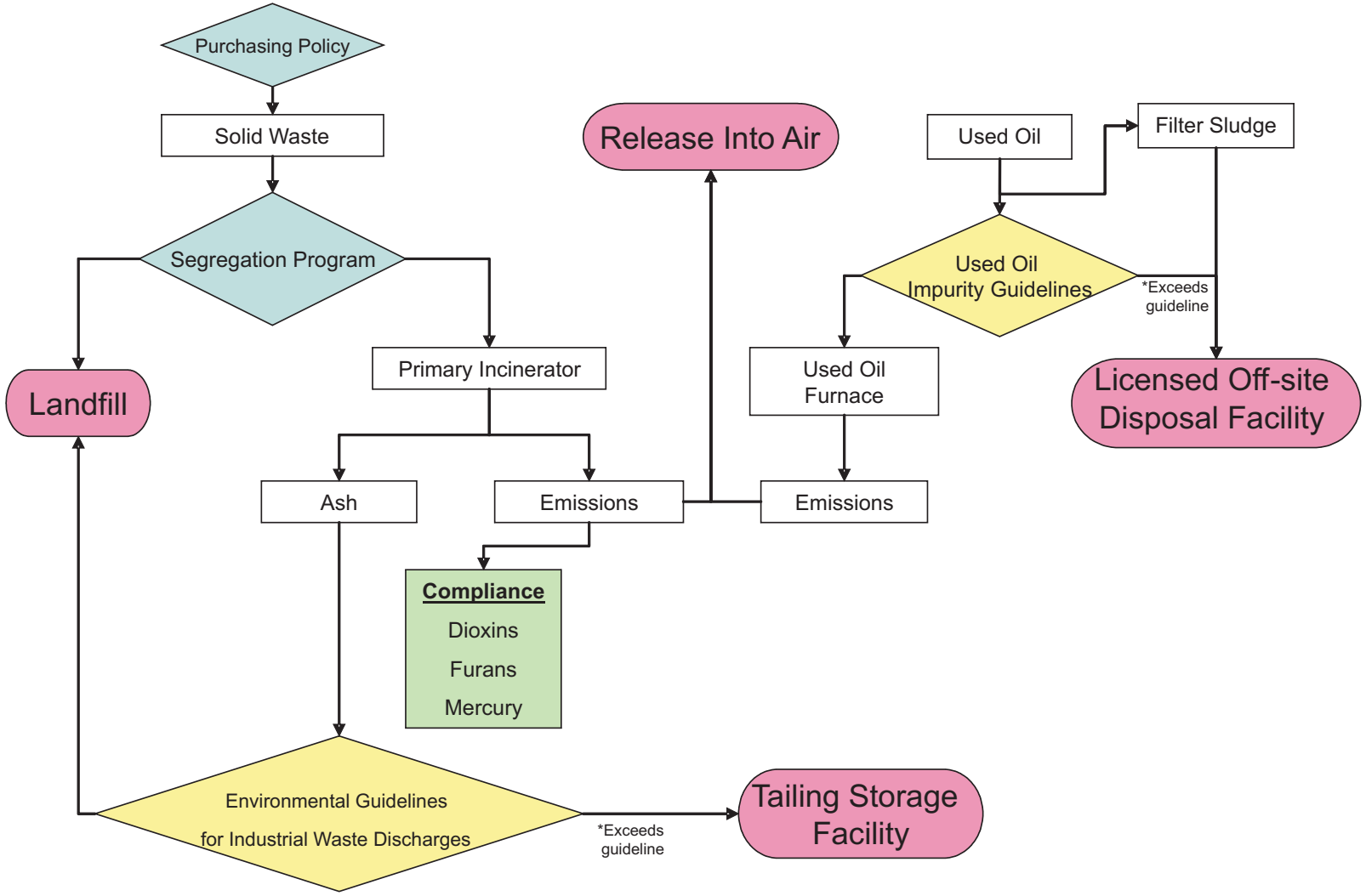
TITLE
SITE PLAN

Golder Associates

PROJECT No. 07-1413-0047			FILE No.	
DESIGN	JV	27NOV07	SCALE AS SHOWN	REV. –
CADD	SRR	27NOV07	FIGURE 1	
CHECK				
REVIEW				

REVISION DATE: 07/12/11 10:49AM By: ggorczynski CADD FILE: N:\Bur-Graphics\Projects\2007\1413\07-1413-0047\Drafting\6000\0714130047-6000-A_01.dwg

DRAWING DATE: 07-Dec-07 COREL FILE: N:\Bur-Graphics\Projects\2007\1413\07-1413-0047\Drafting\6000\0714130047-6000-A_03.cdr



KEY:
Yellow fill indicates where a particular test is required
Pink fill Indicates final disposal or release
Blue fill indicates waste management practices/decisions to be made
Green fill indicates where compliance testing is required

PROJECT

AEM

AGNICO-EAGLE MINES LIMITED
MEADOWBANK DIVISION

TITLE

PROCESS FLOW CHART FOR WASTE INCINERATION

Golder Associates

PROJECT No. 07-1413-0047			FILE No.	
DESIGN	LL	07DEC07	SCALE NTS	REV.
CADD	LL/GG	07DEC07		
CHECK			**FIGURE 2**	
REVIEW				

APPENDIX I

TECHNICAL SPECIFICATIONS:
ECO WASTE SOLUTIONS INCINERATOR
MODEL NO. ECO 1.75TN 1P MS 60L

TECHNICAL DATA SHEET

Technical Data

Supply all technical data for each item applicable, in the format shown on the following pages. Include drawings necessary for a technical evaluation of each item.

Equipment Number	TBD
Equipment Description	Camp Waste Incinerator
Manufacturer	Eco Waste Solutions
Model Number	ECO 1.75TN 1P MS 60L
Total Installed Weight, kg	44,500 kg (estimated with building)
1 Waste Incinerator	
Waste classification: (TYPES)	1. Camp Waste
	2. Sewage Sludge
	3. Waste Oil
Mixed waste charge classification: Break-down of each type of waste (%)	1. Camp Waste - 75%
	2. Sewage Sludge - 25%
	3. Waste Oil - N/A charged into secondary
****Emissions:**	
SO_2 (mg/m^3)	50 mg/m^3
CO (mg/m^3)	7 mg/m^3
NOx (ppm)	< 50 ppm
VOCs µg/m^3	50 - 2000 µg/m^3
Particulate (mg/m^3)	20 mg/m^3
PM_{10} (g/s)	N/A
Dioxins/Furan (pg I-TEQ/m^3)	< 80
Mercury (µg/Rm^3)	N/A - Materials cotaining Mercury to be excluded from incinerator waste stream
Flue Gas Temperature (°C)	1000°C
Flue Gas Flow Rate (kg/s)	1.996 kg/s (max)
Incineration capacity: (kg/h)	175 kg/h (10 hour burn)
Charge per cycle: (kg)	1750kg
Burning rate: (kg/h)	175 kg/hr average
Off-time per cycle: (h)	6 hr cool down
Heat value: (kJ/kg or BTU/lb)	5125 BTU/lbs (Solid and Sewage sludge mixed waste)

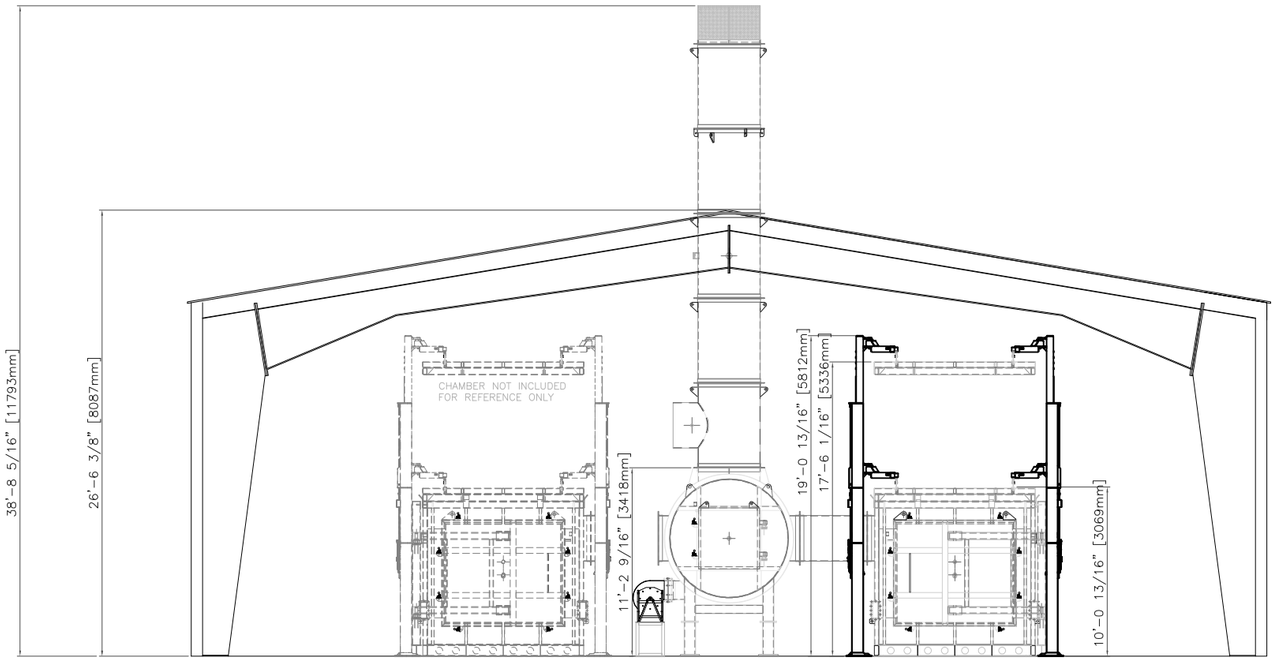
**The emission estimates provided are given as volumetric concentrations or pollutants; as per test reporting standards. Estimates are based on previous air emission tests.

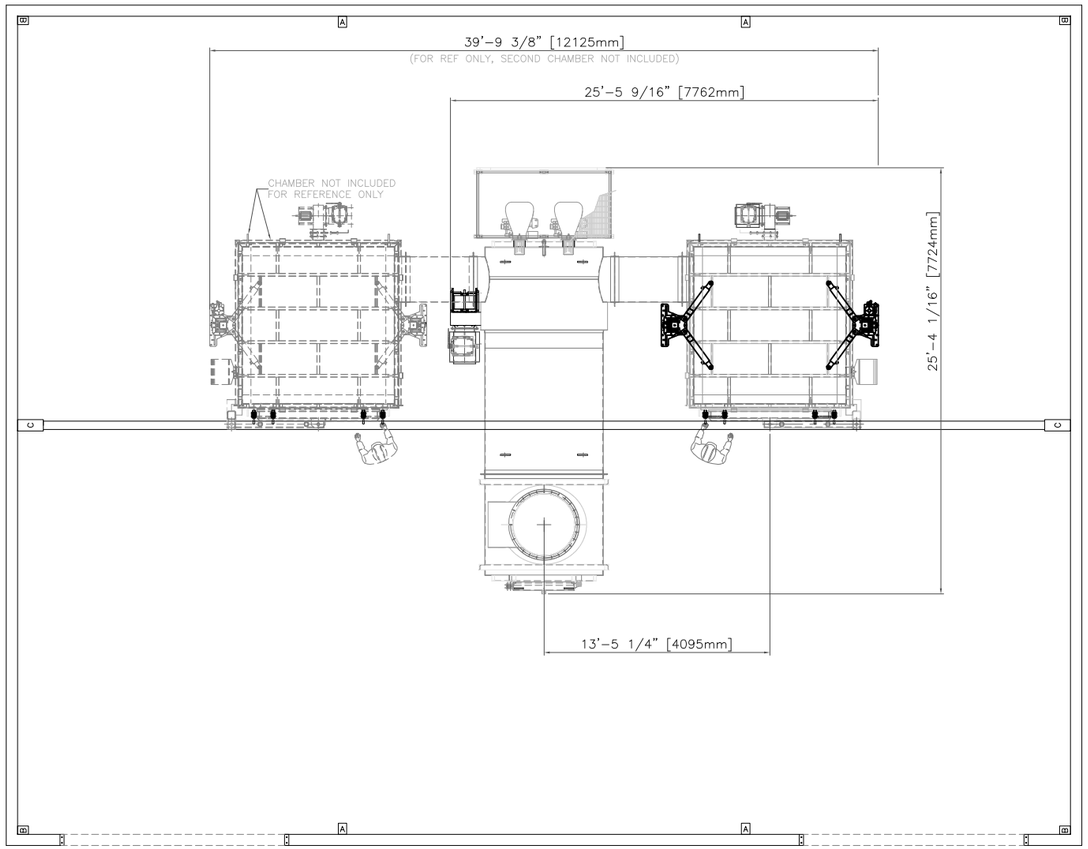
Fuel mixing ratio with waste oil (if applicable)	N/A
Capability to burn waste oil with loading rate (kg/h)	60.6 kg/h (8 hour liquid burn)
Applicable auxiliary burner.	N/A
Incinerator to bear CSA label?	All electrical components CSA or UL approved. Approval of complete incinerator package at additional cost..
Temperature: Primary chamber (°C):	705°C
Temperature: Secondary chamber (°C):	1000°C
Burner Efficiency:	High
Internal Volume of Primary Chamber:	2.43(l) x 2.43(w) x 2.29(h) m
Internal Volume of Secondary Chamber:	1.83 (dia) x 5.49(l) m
Destruction efficiency	95% DRE
Tested Emission results (rates)	- See Section 1 (Emissions)
Stack internal diameter (mm)	965mm
Height of Stack (m)	7.62m
Stack materials of construction	Refractory Lined - Mild Steel (44W HSLA)
Spark Arrester length (mm)	1092mm
Spark Arrester open area (m^2)	0.425m^2
Burner System	Primary Burner - Riello RL28/2
	Secondary Burner - Qty(2) Riello RL100/M
	Liquid Waste Burner - Eco Waste Solution Liquid Waste Oxidizer
Valve Train	N/A - Integrated in Burners
Charging System	N/A - Batch System
Charging opening size	1.78m (w) x 1.43m(h)
Charging Chute size	N/A - no chute
Ash Removal System	N/A - Manual
Expected ash production per cycle (kg)	200kg (estimated)
Maximum Capacity of ash removal system	N/A
2. Materials of Construction	
External Casing	Mild Steel (44W HSLA)
Spark Arrester	Stainless Steel (SS 304)
Insulation in Primary Chamber	Walls - Ceramic Fibre Blocks (152mm (6") Thick)
	Floor, Door Sills & Breech entrance - Castble (101 - 152mm (4-6") Thick)
Insulation in Secondary Chamber	Walls - Ceramic Fibre Blocks (152mm (6") Thick)
	Breech exit & Stack Entrance - Castable - (76 -152mm (3-6") Thick)
Insulation in Stack (materials and thickness)	Insulating Castable (76mm (3") Thick)
Charging Chute	N/A
Paint System Used	Carboline - Silicon Zinc Primer, Silicon Finish
Dry Film Thickness of Paint	Primer - 2 mils (50 micron)
	Final Coat - 2 mils (50 micron)
Primary Chamber Burner Rating	(663 - 1266)x10^3 KJ/hr
Secondary Chamber Burner Rating	(1582 - 6119)x10^3 KJ/hr
3. BLOWERS	
Blower Manufacturer	New York Blower
Primary Chamber Blower Capacity (m^3/hr)	2696
Primary Blower Pressure (kPag)	0.25
HP/ RPM	1.15 hp @ 2200rpm
Secondary Chamber Blow Capacity (m^3/hr)	4247
Secondary Blower Pressure (kPag)	0.5
HP/ RPM	1.9hp @ 4900 RPM
4. CONTROL SYSTEM	
Please list all instrumentation and details including	- Please See Appendix A (Attached)
CSA approval and labelling:	

5.	**INCINERATOR BUILDING (if applicable)**	
	Overall Length (mm)	12 192mm
	Overall Width (mm)	12 192mm
	Overall Height (mm)	6420 mm
	Shipping Dimensions (mm)	6660 x 3050 x 914 mm
6.	**DIMENSIONS**	
	Overall Length (mm)	6 858 mm
	Overall Width (mm)	7 188 mm
	Overall Height (mm)	11 049 mm
	Shipping Dimensions (mm)	**Largest Pieces (L x W x H) mm**
		Primary Chamber - 3403 x 3225 x 2895
		Secondary Chamber - 6172 x 2413 x 2794
		Shipping Container - 12 000 x 2438 x 2591
7.	**WEIGHTS (KG)**	
	Incinerator	20 275 kg
	Stack	4082 kg
	Blowers & Burners	400 kg (Blowers) 580 kg (Burners)
	Total Weight	25 337kg

FOR: REVIEW ONLY.

BILL OF MATERIAL			
ITM.	QTY.	DESCRIPTION	WEIGHT kg.
–	–	–	–





REV.	DATE	DESCRIPTION	BY	APPROVED
–	–	–	–	–

DRAWN: J.S.	DATE: 19-08-08	ECO WASTE SOLUTIONS ECO BURN INC.
CHECKED:	DATE:	

PROJECT NAME: HATCH – MEADOWBANK	CUSTOMER P.O. –
PROJECT NUMBER: MDB-S-268	CUSTOMER EQUIPMENT. # –

SCALE: –	TITLE: BUILDING DRAWING HATCH MEADOWBANK	P.1_OF_1
JOB NO. 08-2MS		
THIRD ANGLE	DWG. NO. MDB-ECO1.75TN1PMS60L-XXX	REV. —

APPENDIX II

ANNUAL COMPLIANCE AND REPORTING TEMPLATE

Appendix 2
Annual Report for
Incinerated Waste Management

Contact Information			
Company Name:			
Contact Name:		**Position**	
Contact Email:			
Address			
City/Town:		**Province:**	
Postal Code:			
Telephone:		**Fax:**	

Incinerator Data and Information

Name of Emission Unit	

Type of Process	

Description of Process	

Description of Material Produced from incineration	

Manufacturer of Emission Unit	

Model No.	

Dates of Commencing:	**Date**
Construction	
Operation	
Modification	

Operating Information	**Hour/day**	**Days/week**	**Weeks/year**
Maximum Operating hours			
Average Operating hours			

Annual Throughput	Dec-Feb (%)	Mar-May (%)	Jun-Aug (%)	Sep-Nov (%)

Incinerator Charging Rate	Maximum (kg/day)	Average (kg/day)	Annual (tonnes/year

Appendix 2
Annual Report for
Incinerated Waste Management

Waste Description	Maximum Rates		Average Rates	
Type of Waste Material	kg/day	tonnes/year	kg/day	tonnes/hour

Fuel Usage Data	Maximum	Typical
Firing rate		

Fuel Type	

Sector Determination:	Check Applicable Box
Municipal Waste Incineration	
Sewage Sludge Incineration	

Stack Emissions Tests For Compliance (must be corrected for 11% oxygen)

	Date	Test 1	Test 2	Test 3	Average	**Compliance (check)**
Furans and Dioxins						
Mercury						

Provide Test method details:

Appendix 2
Used Oil Impurity Limits

Contact Information			
Company Name:			
Contact Name:		**Position**	
Contact Email:			
Address			
City/Town:		**Province:**	
Postal Code:			
Telephone:		**Fax:**	

Volume of Used Oil Generated:	

Volume of Used Oil incinerated/Cons	

Sample Analysis:

Flash Point:	

Impurity	**Units**	**Maximum Level Allowed**	**Sample #**			
Cadmium	ppm	2				
Chromium	ppm	10				
Lead	ppm	100				
Total Organic Halogens (as chlorine)	ppm	1000				
Polychlorinated biphenyls	ppm	2				
Ash content	%	-				

Volume of Products Produced from Used Oil Use:

Maintenance Performed on Incinerator:

Destination of Used Oil not Incinerated:

Appendix 2
Guidelines for Ash Testing
Environmental Guidelines for Industrial Waste Discharges

Parameter	Concentration maximum (mg/L)	Sample Number		
Ammonia Sulphide	100			
Benzidine	100			
Benzyl Chloride	100			
Enthalamine	100			
Ethylenediamine	100			
Maleic Anhydride	100			
Potassium Permanganate	100			
Quinoline	100			
Strychnine	100			
Tetrachloroethanes	100			
Arsenic	2.5			
barium	100			
Cadmium	0.5			
Carbon tetrachloride	0.5			
Chromium	0.5			
Cyanide (free)	20			
DDT	3			
Endrin	0.02			
Heptachlor + Heptachlor epoxide	0.3			
Lead	5			
Lindane	0.4			
Mercury	0.1			
Methoxychlor	10			
Methyl ethyl Ketone	200			
Metolachlor	5			
PCBs	50*			
Selenium	1			
Silver	5			
Tetrachloroethylene	3			
Toxaphene	0.5			
Trialomethanes	10			
2, 4, 5-TP (Silvex)	1			
Zinc	500			

* based on concentration by mass