
Decommissioning Report

Toronto Zoo Anaerobic Digester

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Decommissioning Report

1.0 Introduction

1.1 Purpose

This report is prepared in partial fulfillment of Regulation 359/09 made under the Green Energy and Economy Act, for the approval of the Class 3 Anaerobic Digester located at the Toronto Zoo. The facility has received a FIT contract (F-003038-BIG-211-203).

1.2 Location

The location of the 500kW facility is as shown on Appendix 1. The project is located east of Meadowvale Road., south of the access road to the former landfill site.

2.0 Decommissioning during Construction or Abandonment

The decommissioning plan is the same whether the plant is partially constructed or has been in operation for some time. The details of decommissioning are provided as if the plant has been operating and the appropriate adjustments would be made if construction were not completed.

3.0 Decommissioning after Ceasing Operations

As it is likely that decommissioning would happen many years into the future, regulations and practices in effect at that time would need to be followed. There are no hazardous substances on site and any remaining digestate can be field applied.

4.0 Restoration of Lands Negatively Affected

There are no lands negatively affected by the biogas plant.

5.0 Decommissioning Requirements and Process

The decommissioning process would consist of the following steps:

5.1 Vessel Emptying and Cleaning

The receiving of input material would be halted. All material in the input tanks would be pumped into the hydrolysis tank or the pasteurizer and the inside of the input tanks pressure washed. The wash water will be pumped into the buffer tanks. The heat in the receiving tanks would be turned off.

When hydrolysis or pasteurization of the material is complete the material will be pumped into the buffer tanks to be pumped into the digester for digestion. When empty the inside of the hydrolysis tank and the pasteurizer will be pressure washed and the wash water pumped into the buffer tanks. The heat in the hydrolysis tank and the pasteurizer would be turned off.

When the buffer tanks are empty, the interior will be pressure washed and the wash water pumped into the digester. The heat in the buffer tanks will then be turned off.

When the retention time in the digester has been achieved, the digestate can be pumped into the storage vessels, the interior can be pressure washed and the wash water added to the storage vessels. The engine can be shut down to cease heat production.

When field application can be undertaken the material in the storage vessel should be sold and applied to a farmer's field as fertilizer. All separated solids should be transported to the bagging facility and sold as solid fertilizer.

6.0 Equipment Dismantling and Removal

6.1 Equipment Removal

Much of the equipment on site such as engines, pumps, valves and mixers have residual value and can be sold and re-located off site for reuse. Other custom built equipment such as switchgear, heat manifolds, control systems contain parts and materials that can be re-used and would be salvaged. Piping, ducting, electrical cabling can be recycled.

6.2 Above Ground Structure Decommissioning

The digester roof dome can be removed and recycled and the lumber ceiling can be cleaned and the lumber re-used. Metal cladding can be recycled and the insulation removed and disposed of. When the digester has been stripped, the concrete structure as well as all of the other concrete tanks can be demolished and the concrete crushed and re-used.

When the engine/ control room has been stripped, the building can be demolished. Most of the materials can be recycled or re-used. The concrete floor can be broken up and recycled. The security fence can be removed and re-used. Note that silt fencing should be attached to the security fence at the beginning of demolition and not removed until vegetative ground cover is established.

The transformer can be salvaged and re-used and the pole line to the Point of Common Coupling can be disconnected and removed.

6.3 Below Ground Structure Decommissioning

All of the below ground concrete associated with the vessels and tanks can be demolished and removed for recycling. All underground wiring can be pulled out of their ducts and recycled. All underground piping can be re-excavated and disposed of.

7.0 Site Restoration

When all of the structures and underground piping has been removed the site can be graded back to its original grade. As no material was removed from the site for the construction of the plant, all of the native material is available for regrading. Topsoil should be added to the site and seeded with a mix of

native species. Gravel areas can be removed if necessary depending on the after use of the site. No impact on ground or surface water is anticipated.

The future use of the site could be for additional overflow parking for the Zoo or it could be left to regenerate to a natural vegetated state depending on Zoo requirements at that time.

8.0 Managing Excess Materials and Waste

Most of the materials resulting from the decommissioning can be recycled or have residual value for re-use. Insulation, piping, and similar materials that cannot be re-used or recycled should be disposed of in the appropriate manner consistent with the requirements in place at the time. There are no hazardous materials or other wastes on the site.

9.0 Emergency Response and Communications Plan

Before demolition begins, the contractor must provide a communications and emergency response plan that is suitable including:

1. Identification of potential hazards on site that may be encountered during demolition
2. Emergency telephone numbers including police, fire and medical response services
3. Emergency procedures for spills, fire, or personal injury including the contact information for the Spills Action Centre
4. Identification of the primary person responsible for responding to an emergency.

The plan will also provide for the documentation of the emergency after the occurrence and the development of procedures to prevent a similar situation from occurring again.

10.0 Decommissioning Notification

The contractor must acquire a demolition permit from the Municipality and notify the Ministry of Environment and the Zoo of its plans.

Notification of the decommissioning will be provided by the owners of the facility to the Zoo. In addition notification will be provided to The Ministry of Environment District Office and the Director of the Environmental Approvals Branch.

11.0 Other Approvals

No other approvals are required to decommission the site.

12.0 Financial Assurance

No financial assurance is required. In the event of decommissioning all materials in the vessels will be digested and will be sold for bagging or field applied fertilizer.

Appendix 1

Project Location Plan