

**DECOMMISSIONING PLAN
REPORT**

**LINDSAY – OPS LANDFILL SITE
RENEWABLE ENERGY GENERATION FACILITY
Kawartha Lakes, Ontario**

Prepared for

CITY OF KAWARTHA LAKES

Lindsay – Ops Landfill Site
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1.0 INTRODUCTION

Comcor Environmental Limited (Comcor) was retained by the City of Kawartha Lakes (City) to prepare this Decommissioning Plan Report (DPR) for the operation of a Renewable Energy Generation Facility (Facility) at the Lindsay – Ops Landfill Site (Site) in Kawartha Lakes, Ontario.

This Report has been prepared in accordance with Ontario Regulation (O.Reg.) 359/09 and is being submitted as part of a Renewable Energy Approval (REA) application for the Facility.

1.1 General Information

The City proposes to construct and operate a landfill gas fired generator to power its on-site Water Pollution Control Plant (WPCP) and landfill facilities. The official name of the project is:

Lindsay – Ops Landfill Site Renewable Energy Generation Facility

The Facility will be entirely contained within a lockable fenced compound at the City owned Lindsay – Ops Landfill Site and WPCP. Electricity will be sent to the WPCP and landfill facilities via buried transmission lines. The Site is located approximately 1 kilometre north of the Town of Lindsay and is legally described as part of Lots 25, 26 and 27, Concession 6, City of Kawartha Lakes.

1.2 Contacts

The City of Kawartha Lakes is the applicant and Comcor is the engineering consultant representing the City. Contact information for the City and Comcor is provided below:

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1.3 Authorizations Required/Federal Involvement

No other authorizations, other than the REA approval, are required for this project. Additionally, no federal involvement is required for this project.

2.0 DISMANTLING AND DEMOLISHING FACILITY

The landfill gas facility at the Lindsay-Ops Landfill is comprised of a landfill gas collection and flaring system and the renewable energy generation facility. Flaring of the landfill gas is anticipated to continue after the generation facility is decommissioned. As a result, some components will be left in place to serve the flaring system.

2.1 Decommissioning During Construction

In the unlikely event that the project is abandoned before completion, any structural components that are already installed will be removed as outlined in Section 3.0 of this report. Open excavations will be backfilled and the ground will be compacted and re-graded to conditions as close to those prior to construction as possible. Site preparation such as grading and levelling of the land is minimal and should not change the direction or speed of runoff rainwater. Areas where vegetation was impacted will be reseeded with native species if natural seeding from nearby plants is unlikely to occur.

2.2 Decommissioning After Ceasing Operations

The lifespan of the electrical generation facility is dependent on the gas production of the Lindsay/Ops Landfill. When gas recovery drops below the minimum rates for generation, the plant will no longer have enough landfill gas to continue operations. Based on historic and estimated future waste filling rates, the landfill gas recovery could be sufficient to operate the plant until 2057. However, the Facility itself has a twenty year lifetime, after which decommissioning may occur, unless major pieces of equipment are replaced or rebuilt to further extend the lifetime of the project.

The timeline of the decommissioning activities is highly dependent on the condition of the major equipment items. When operation of the electrical generation facility ceases, the condition of all reusable equipment will be assessed for the need to refurbish or dispose of equipment. Where equipment will be sold and shipped directly to the purchaser the items will remain in place at the facility until the shipment date. Where equipment requires refurbishing or disposal, the equipment will be removed and shipped offsite without delay. Attempts will be made to limit the number of times that heavy equipment is brought onsite. In total, the number of weeks that construction and dismantling activities take place will be in the range of two (2) to four (4) weeks.

Further details of the decommissioning of individual components are provided in the following section.

3.0 EQUIPMENT DECOMMISSIONING AND REMOVAL

The dismantling of the facility will involve the complete removal of all materials and infrastructure installed during the original construction, as well as any additions made after the original installation. The following items have been assessed as part of the decommissioning of the generation facility:

- LFG fired generator
- Chiller skid
- Siloxane skid
- Landfill Gas Dryer skid
- Electrical Components
- Landfill Gas/Condensate Conveyance Pipe
- Four concrete foundation pads
- Fencing

3.1 LFG Fired Generator

The generator (within a shipping container) will be removed in a similar fashion to the original installation. The oil and glycol in the generator will be removed in the same method as is used when being replaced as regular maintenance. The supports that hold the generator container to the foundation pad will be loosened and all connections to piping and electrical lines will be removed. A crane will lift the generator from the concrete pad to a flatbed truck for transport offsite. The generator will be refurbished if necessary and reused at another site. The works related to removal of the generator should take no more than one (1) week.

3.2 Chiller, Siloxane and Landfill Gas Dryer Skid

The chiller, siloxane and landfill gas dryer skids will all be removed in a similar fashion. The bolts will be loosened from the concrete pads and a crane will lift the skid onto a flatbed truck for transport off-site. All skids that are in reasonable condition will be refurbished and sold. Where reasonable, any chemicals or contaminants used in the skids will be removed. The works related to the removal of the equipment skids should take no more than two (2) weeks.

3.3 Electrical Components

The construction of the generation facility requires the installation of approximately 40 meters of electrical lines from the electrical building to the genset. Since the landfill gas flaring facility will continue to operate after the decommissioning of the generation facility, the majority of electrical lines will remain in place. All other generation related

electrical components are contained within the generator itself. The decommissioning will simply require an electrician to disconnect the electrical wiring at the genset and electrical building. The electrical work will be one of the first steps in decommissioning and should take no more than two (2) days.

3.4 Landfill Gas/Condensate Conveyance Pipe

The blower skid, landfill gas dryer skid, siloxane filter skid and generator are connected with 150 mm and 100 mm diameter stainless steel landfill gas piping. All of this piping is above ground, supported with a number of pipe supports attached to concrete piers. When the generation facility is decommissioned, the flaring system will likely stay in place, therefore, the blower skid will remain intact, but all piping from the blower skid to the generation facility will be removed as well as all interconnection landfill gas piping between the dryer skid, siloxane filter skid and generator. This pipe will be removed using a crane, placed on a trailer or flatbed and brought to a scrap metal recycler. The dismantling and removal of the gas pipe will be one of the first steps in decommissioning and should take no more than one day. The pipe supports will be disconnected from the concrete piers and disposed of similar to the stainless steel piping. The concrete piers will be left in place.

The 100 mm diameter high density polyethylene landfill gas condensate piping that pipes landfill gas condensate from the dryer skid to the condensate chamber will be disconnected from the dryer skid and removed from the site in a similar fashion as the stainless steel pipe. Where it connects to the condensate chamber, the pipe will be fitted with a blind flange.

3.5 Concrete Foundations

The landfill gas compound will continue to be used for the flaring facility after the generation facility is decommissioned. The size and layout of the compound will not change and therefore the concrete foundations can be left in place. The concrete foundations have no impact on the surrounding environment, whereas removing the pads will create noise, dust and waste materials. The foundations may be useful for future use if technologies change and additional equipment needs to be installed on a foundation.

In addition, the noise and dust disturbance created by breaking apart the concrete would be one of the largest impacts of the decommissioning process. When the flaring system is decommissioned, the concrete pad used for the flare may be removed if deemed necessary. If this occurs, the additional three pads (and concrete piers) used for the generation facility can be added to the scope. Performing all concrete work in one event will reduce the disturbance to the land.

3.6 Fencing

The fencing that provides security to both the landfill gas flaring and generation facilities will be kept in place. The landfill gas flaring system will continue to operate after the generation facility has been decommissioned.

4.0 RESTORATION

The facility compound area will be restored to meet pre-construction conditions, or as close as reasonably possible. The original state of the land is generally flat and without much vegetation and there are no notable features of the land.

The restoration will include any regrading of the land to level areas impacted by the removal of generation components. The removal of the genset and equipment skids should have no impact on the land. If the concrete pads are removed, some regrading of the area will be required to level the land. Since the construction of the system requires minimal changes to the natural landscape and restoration should be very close to preconstruction conditions.

The soil and nearby surface water should not be impacted by the operation of the generation facility or restoration post closure. Tests to confirm that quality of the soil has not be degraded can be performed in the event that a spill occurs or changes in environmental policies, contaminants or release limits have changed since the installation in 2012.

Restoration of the land should take no longer than one (1) week. If any further testing or remediation is deemed necessary at the time, the schedule will have to be revised to incorporate the additional work. However, all attempts to complete the project without delay will be taken as it is in the best interest of all parties.

5.0 MANAGEMENT OF EXCESS MATERIALS

Although unlikely, if any soil or aggregates are in excess after decommissioning the material will either be reused to backfill the areas where concrete pads were removed, or will be used on the landfill site for roadways, berms or erosion control. If the concrete pads are demolished, the waste concrete will be used onsite as erosion control and rip-rap.

Approximately, 25 meters of steel pipe used to convey the gas from the blower skid to the genset will be removed using a trailer or flat bed truck and sold to a scrap metal dealer.

6.0 EMERGENCY RESPONSE AND COMMUNICATION PLAN

The Emergency Response and Communications Plan is provided within the Design and Operations Report submitted for REA approval.

7.0 DECOMMISSIONING NOTIFICATION

The Emergency Response and Communications Plan within the Design and Operations Report outlines the notification process of the decommissioning work.

8.0 OTHER APPROVALS AND CONDITIONS OF APPROVALS

No other approvals are required for the generation project. In the event that other approvals are required at the time of decommissioning, the City of Kawartha Lakes will ensure that all approvals are obtained.

9.0 FINANCIAL ASSURANCE

Financial Assurance is not required as per Sections 49, 50 and 52 of O.Reg. 359.

10.0 CONCLUSIONS

The decommissioning of the Renewable Energy Generation Facility will create little disturbance to the facility compound area. It is anticipated that the decommissioning and dismantling will be complete within four (4) weeks.

This Decommissioning Report has been prepared in accordance with O.Reg. 359/09 and is being submitted as part of a Renewable Energy Approval (REA) application for the Lindsay – Ops Landfill Site Renewable Energy Generation Facility.

All of which is Respectfully Submitted
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