

NON TECHNICAL SUMMARY

This application provides details of a new permanent reverse osmosis (RO) treatment process that will be used to remove the potentially polluting properties of landfill leachate that is produced as a result of landfill activities at Tarbothill. The treatment process is based on a 3-stage reverse osmosis system that removes organic and inorganic contaminants from the leachate. Leachate is a liquid which is formed when water passes through waste in a landfill cell. The precipitation can be from rain, melted snow or the waste itself. As the liquid moves through the landfill many organic and inorganic compounds, like heavy metals, are transported in the leachate which percolates down to the base of the landfill cell and collects in the drainage layer. From here it is pumped via vertical chambers into storage tanks prior to treatment.

The proposed method of treatment involves the physicochemical treatment of non-hazardous waste for disposal over 50 tonnes/ day and so is a listed activity within the Pollution Prevention and Control (Scotland) Regulations 2012. The Schedule 1 reference for this activity is covered under Section 5.4 Part A(1)(a)(ii).

The installation of a reverse osmosis (RO) leachate treatment plant is designed to improve the management of a landfill leachate produced at the site. Currently this material is removed by tanker from the site without further treatment and sent to a waste treatment plant for disposal. The new RO process will facilitate the treatment of the landfill leachate to remove organic and inorganic contaminants. The end-products of the RO process will be an aqueous filtrate that is capable of being discharged to surface water and a small volume of aqueous concentrate that will be removed by tanker for off-site treatment/disposal. In preparing this PPC application an evaluation of the potential environmental and health impacts from the RO process were undertaken and it was concluded that there was no detrimental impact on the environment or human health in relation to overall site operations as a result of an RO plant installation and process.

The assessment indicates that the RO process:

- Significantly reduces the volume of landfill leachate requiring final disposal at off site treatment facilities;
- Significantly reduces the number of tanker movements associated with the removal of leachate for off-site treatment/disposal and in doing so reduces the environmental and social impact associated with the vehicle use;
- Has no overall detrimental impact in relation to the environmental or human health impact of site operations

Glossary of terms

BAT	-	Best Available Techniques
CO	-	Coordinating Officer
ELV	-	Emission Limit Value
RO	-	Reverse Osmosis