

Indaver Ireland Limited

IE Licence Review

Sanitary Effluent Compliance Report

Reference: LA010332

Issue | 28 February 2023

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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1. Introduction

Indaver Ireland Limited (Indaver) operates a waste to energy (WtE) facility in Carranstown, Duleek, Co. Meath. As per the site's Industrial Emissions (IE) Licence (Reg. No. W0167-03) the site is permitted to undertake the following activities:

Disposal or recovery of waste in waste incineration plants or in waste co-incineration plants

- a) *for non-hazardous waste with a capacity exceeding 3 tonnes per hour, and*
- b) *for hazardous waste with a capacity exceeding 10 tonnes per day.*

Domestic wastewater arising from site, such as sanitary wastewater from toilets, washrooms and the canteen, is treated onsite by proprietary treatment systems - Puraflo systems - which then pass through percolation areas, to ground.

Noting that treated sanitary effluent is disposed of via percolation areas, this report has been prepared to demonstrate compliance with EPA (2021) *Code of Practice: Domestic Waste Water Treatment Systems (Population Equivalent < 10)*, for the existing site and the *Site Sustainability Project* (hereafter referred to as the proposed development).

1.1 Proposed Development

The proposed development includes the following:

- Increase in the total amount of waste to be accepted at site to 280,000 tonnes per annum (tpa) of which 250,000tpa will be treated in the waste to energy plant and 30,000tpa will be treated in the ash pre-treatment facility.
- Development of an aqueous waste tank farm and unloading area;
- Development of a 10MW_e hydrogen generation unit;
- Development of a bottom ash storage building; and
- Development of a warehouse, workshop and emergency response team /office building, concrete yard and other miscellaneous site upgrades.

2. Sanitary Effluent

2.1 Existing Site

All effluent generated from toilets, showers, and utility areas (with the exception of the modular offices and portacabins in the contractors' compound) is collected in a domestic type of effluent collection system. The two existing onsite effluent collection and discharge systems comprise a septic tank, pump/ sump, a modular¹ Puraflo unit and associated percolation area. Effluent from the septic tank is passed through the Puraflo unit before being discharged to the percolation areas. One effluent treatment area is located on the northern boundary of the site and consists of an eight-modular system. The second smaller effluent collection and discharge system is a two-modular Puraflo system located at the gatehouse building. Refer to Figure 1.

¹ The number of modules is dependent on the hydraulic and organic loadings exerted on the system.

In addition, there is one holding tank utilised on site, which connects to the modular offices in the contractors' compound and the temporary portacabins which are used during the annual maintenance shutdown. The contents of the holding tank is transported off site for treatment regularly.

Each effluent treatment system includes a septic tank pump / pump chamber, a number of Puraflo modules and an associated percolation area. The two current effluent treatment systems on site combined, have been designed to serve the maximum people on site at any one time which is 40.

2.2 Proposed Development

As part of the proposed development, it is estimated that approximately 20 additional permanent personnel will be employed on site. To accommodate this increase a new treatment system will be installed which will be similar to the existing effluent collection and treatment process in that it will include a septic tank, pump/sump and a Puraflo unit before discharging to a percolation area.

Domestic wastewater arising from the new emergency response team building will drain to the existing treatment system and percolation area whilst wastewater from the new office rebuild and contactors facilities will drain to the new treatment system and percolation area. This will be used in addition to the holding tank. Overall, there is sufficient capacity to manage wastewater arising from site.

Figure 2 shows the location of the proposed percolation area.

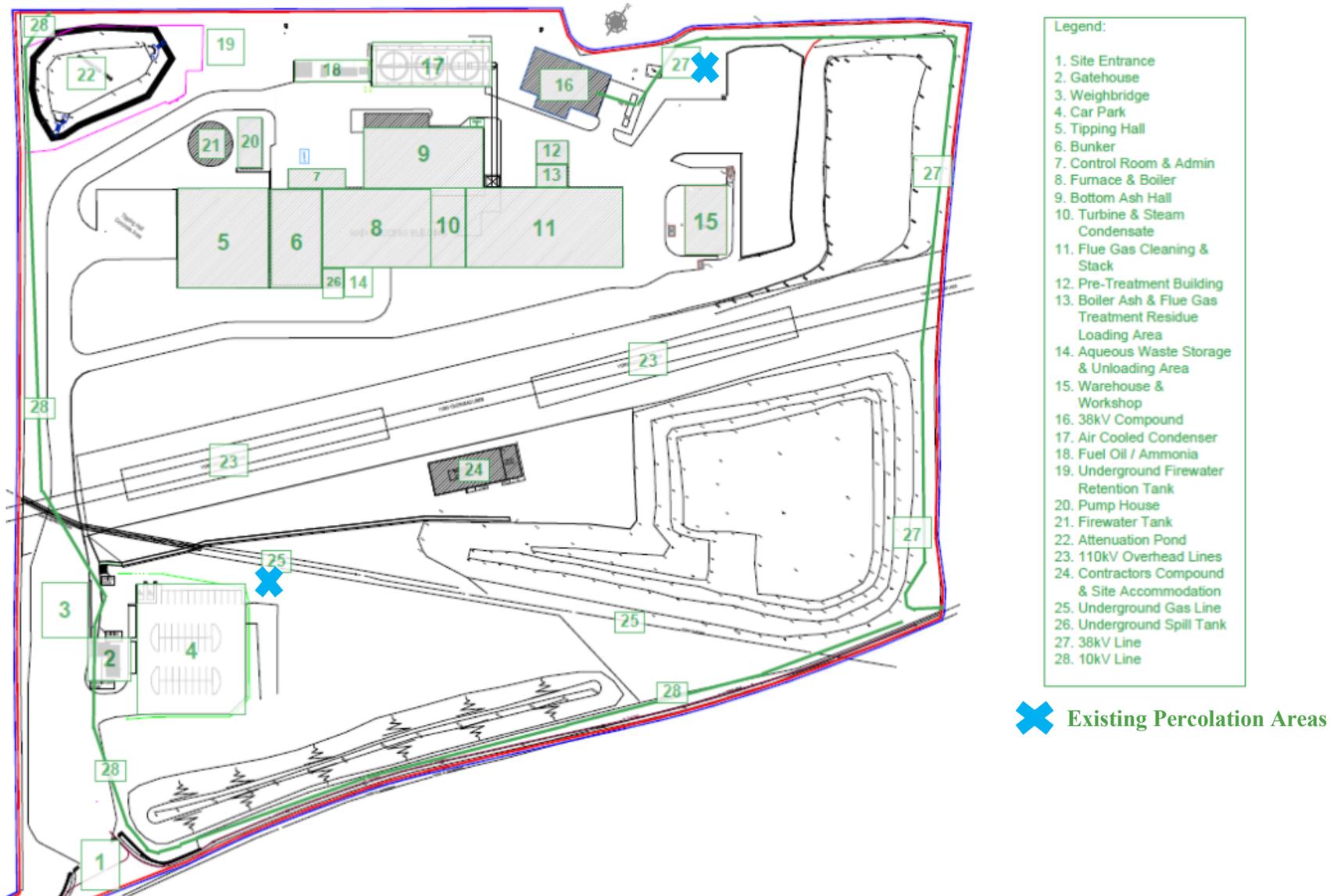


Figure 1 Percolation areas within the existing site | approximate locations

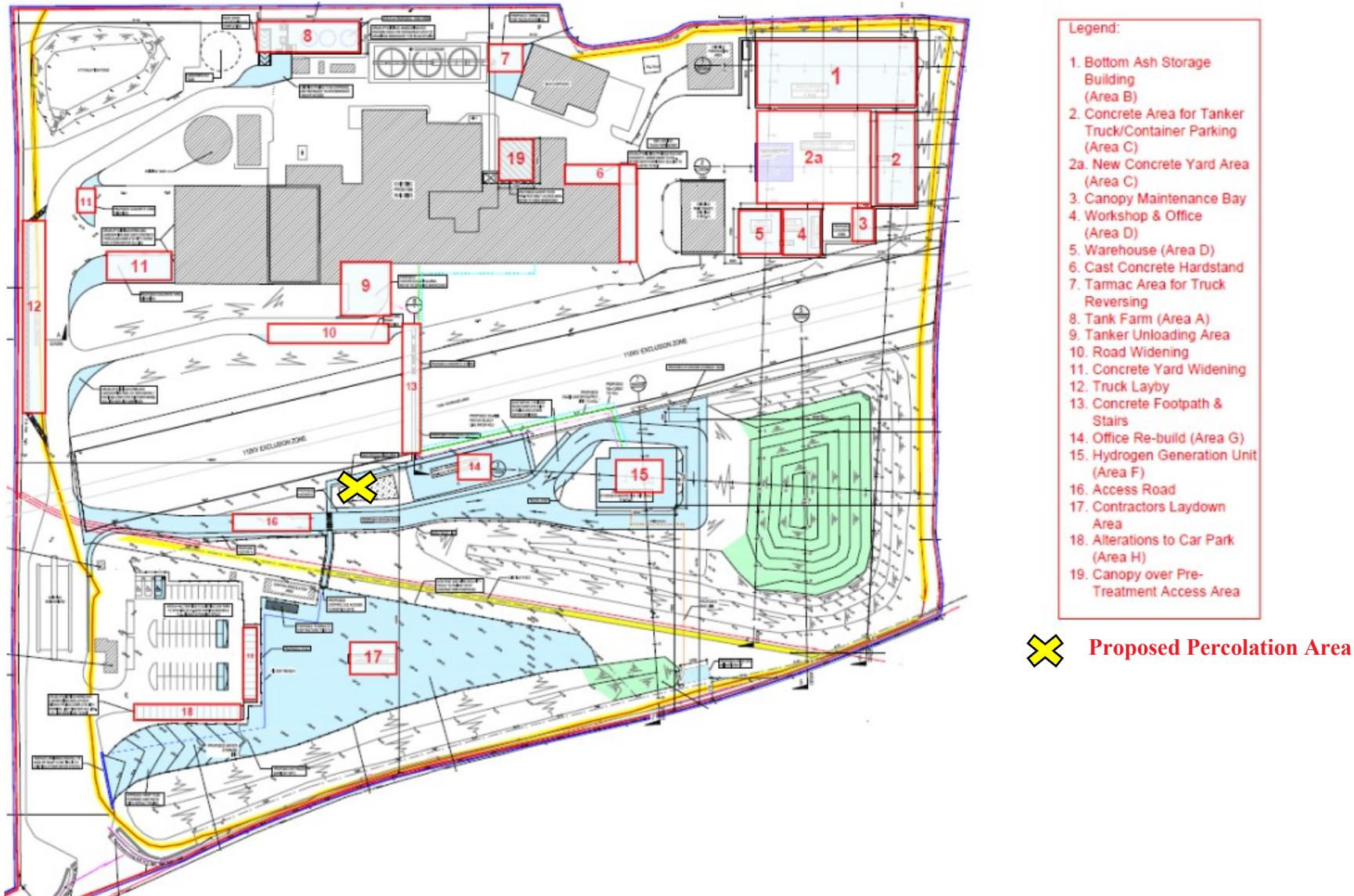


Figure 2 Proposed site layout with new percolation area | approximate location.

3. Operation of Sanitary Effluent System

3.1 Percolation Testing

In May 2000, testing was carried out to determine the suitability of the site for traditional percolation areas. As the results indicated the site did not meet the requirements, a secondary treatment system (Puraflo) and associated engineered percolation areas were constructed to comply with the EPA guidelines and protect the underlying aquifer.

3.2 Puraflo System

The Puraflo modular effluent treatment system provides a combination of physical, chemical and biological treatment of the wastewater in a biofibrous medium. Effluent from the septic tank is evenly distributed over the surface of the biofibrous media and percolates through the media before emerging as treated liquid into a percolation area.

A diagram illustrating the operation of a typical Puraflo system is provided in Figure 3 below.

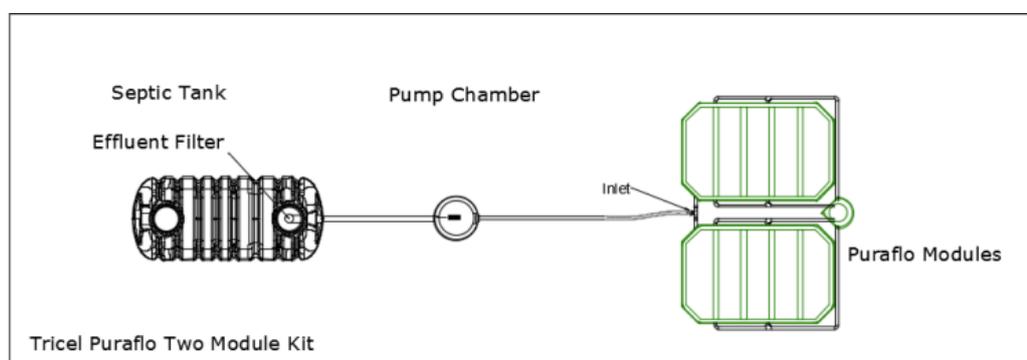


Figure 3 Typical Puraflo ® Two Module Kit | Tricel Puraflo ® Installation Manual (2017)

4. Sanitary Effluent Compliance

In accordance with the EPA (2021) *Code of Practice: Domestic Waste Water Treatment Systems (Population Equivalent < 10)*, Indaver have an operation and maintenance contract in place where the Puraflo systems are inspected on an annual basis. This inspection ensures that the parts and components of the system are fit for purpose, no overloading of the system occurs, and the system is in good order and repair so as to prevent a risk to human health or the environment.

Inspections include a review of the septic tanks, pump / sumps, electrics, modules level and if required a sample is taken.

Where de-sludging is required, Indaver acquire the services of an authorised contractor for removal and treatment at a permitted site in accordance with all relevant national legislative requirements.