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BASELINE ASSESSMENT REPORT

ERAS ECO LTD

FOXHOLE

YOUGHAL

COUNTY CORK

Prepared For: -

Eras Eco Ltd
Foxhole
Youghal
Co. Cork

Prepared By: -

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Project	Baseline Assessment Report			
Client	Eco Eras Ltd.			
Report No	Date	Status	Prepared By	Reviewed By
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1. INTRODUCTION

ERAS ECO Ltd (ERAS ECO) is Cork's leading sludge management company and has been operating its facility at Foxhole, Youghal since 2007. The facility operates under an Industrial Emissions Licence (W0211-02) issued by the Environmental Protection Agency (Agency) and treats sewage sludge from local authority sewerage treatment plants and non-hazardous sludges from industrial waste water treatment plants operating mainly in the Cork area. The current Licence authorises the acceptance of 65,000 tonnes of waste per year, which includes non-hazardous sludge and food waste sludge, non-hazardous liquid waste and mixed dry recyclables.

It is proposed to amend a number of the licence conditions to reflect the changes in the waste operations; allow the acceptance and digestion of 65,000 tonnes/per year of organic waste; bring the licence into alignment with the Industrial Emissions Directive (2010/75/EU) (the Directive) and S.I. No. 605/2017 - European Union (Good Agricultural Practice for Protection of Waters) Regulations 2017, as amended, and facilitate the pre-treatment of waste for anaerobic digestion and future biogas connection to the national gas grid.

The proposed changes require a review of the IE licence and this Baseline Report has been prepared in support of the review application. It is based on the Environmental Impact Assessment Report submitted with the application and it describes the existing and proposed layout, plant, methods, processes, ancillary processes, abatement, recovery and treatment systems, and operating procedures for the activity.

1.1 Methodology

OCM's assessment is based on information in the Environmental Impact Statement (EIS) submitted as part of the Licence review for Licence W0211-02 and the results of the on-going monitoring programme. It followed the guidance in Part 5 of the European Commission Guidance concerning baseline reports under Article 22(2) of Directive 2010/75/EU on industrial emissions 2014/C 136/03.

2. STAGE 1 & 2 HAZARDOUS SUBSTANCE

2.1 Stage 1 Hazardous Substances Currently Used, Produced and Released

The materials/products used on site include diesel, hydraulic and engine oils, engine additive (Ad-Blue), anti-freeze, detergents and disinfectants and sulphuric acid. Diesel for the mobile plant is stored in a double skinned 2,600 litre tank adjacent to the southern end of Building 1. Engine/hydraulic oil is stored in two Intermediate Bulk Containers (IBC) on bunded pallets in Building 1.

The wet scrubber on the odour control system uses sulphuric acid, sodium hydroxide, ferric solution and hypochlorite and these are stored in IBCs on spill pallets adjacent to the scrubber.

2.2 Stage 2 Relevant Hazardous Substances

The hazardous substances of relevance to the baseline conditions are diesel, sodium hypochlorite, sodium hydroxide and sulphuric acid.

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3. STAGE 3 - SITE SPECIFIC POLLUTION POSSIBILITY

3.1 Installation Location

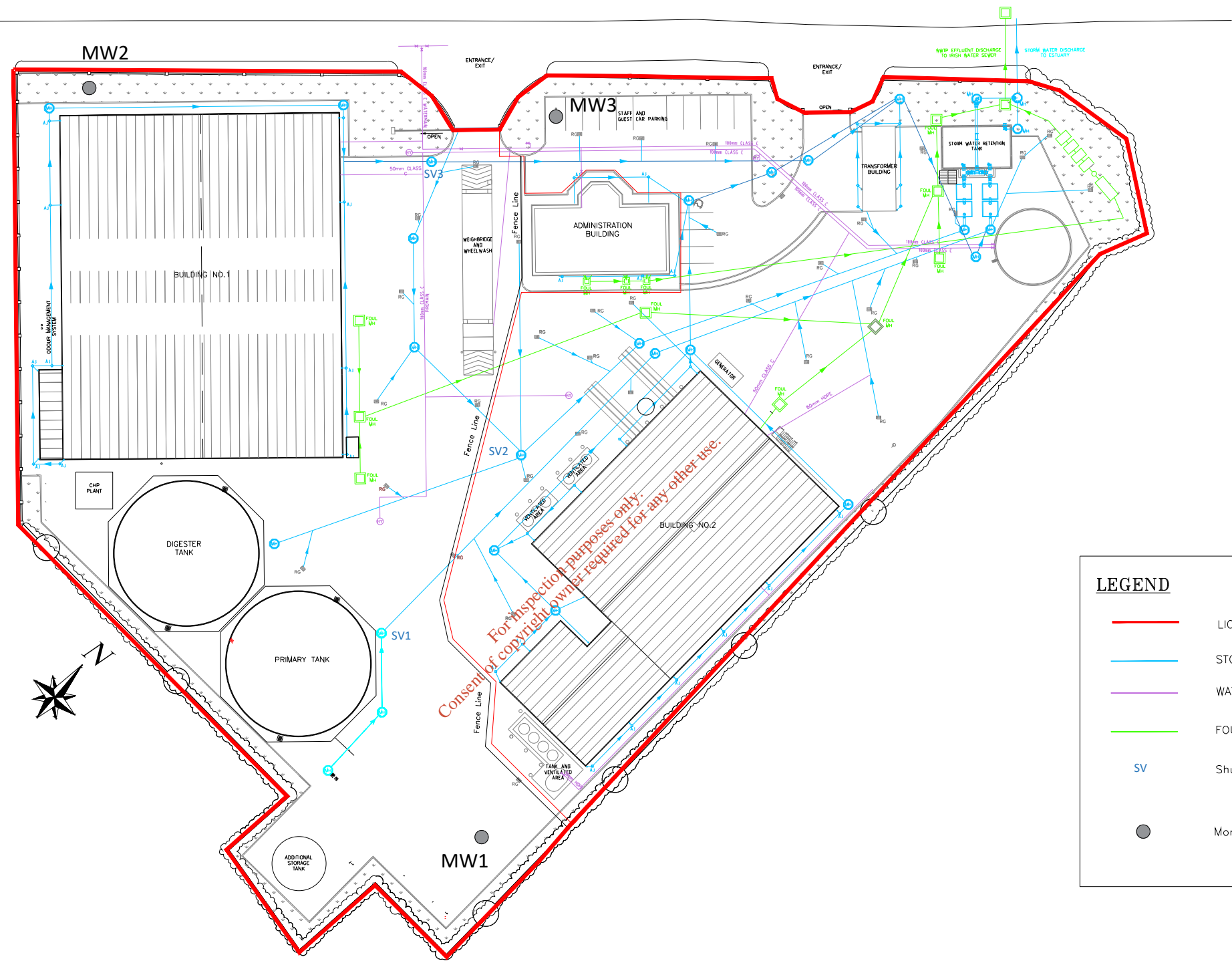
The facility is, approximately 2 km east of Youghal town centre. The Tourig River joins the River Blackwater approximately 200 metres from the northern site boundary. The facility is situated on flat lands, surrounded on one side by Youghal Landfill and the other by the National Car Test (NCT) Centre. The other areas surrounding the vicinity are predominantly industrial/enterprises most of which are located in one of the industrial estates, such as those the IDA Foxhole Industrial Estate and Millennium Park located off the R634. The nearest dwelling house is at the junction of the site access road (T12) and the R634.

3.2 Installation Layout

The site encompasses 1.6ha hectares. The site layout is shown on Drawing No 21-193-01 and details of the infrastructure are included on Table 3.1.

Table 3.1 – Site Infrastructure

Ref	Infrastructure	Details
1	Building 1 - Anaerobic Digestion Feed Area	Area 2,162m ² . Steel portal frame with 300mm reinforced concrete floor slabs. Central floor drain leading to underground feed hopper (130m ³). Below ground access chamber for hopper maintenance (180m ³). Odour abatement system comprising air extraction fan, wet scrubber and activated carbon filter.
2	Building 2 – Former Sludge Drying)	Area 1,323m ² . Steel portal frame with 300mm reinforced concrete floor slabs.
3	Site Office	Area. 460m ² Used for administrative offices, canteen and changing rooms, washing machines, with Puraflo sanitary waste water treatment system.
4	Transformer Building	Area. 46m ² .
5	Anaerobic Digesters 2 No.	Each has 2,500 tonnes storage capacity
6	Digestate Storage Tank	1,000 tonnes storage capacity
7	Combined Heat & Power Units and Transformers	2 No. Combined generating capacity 1.2MW 2 No. Transformers
8	Gas Flare	Back-up to control gas pressure in digesters when CHP units shut down for maintenance
9	Above Ground Diesel Tanks	1 No. 2,600 litre
10	Water Storage Tanks	Firewater Storage Tank (475m ³), Storm Water Retention Tank (120m ³).
11	Electrical Substation	Controlled by utility company and not accessible by ERAS ECO.
12	Open Yards	10,597m ²
13	Weighbridges	1 No.



LEGEND

	LICENCE BOUNDARY
	STORM SERVICES
	WATERMANS
	FOUL SERVICES
	Shutoff Valve
	Monitoring Well



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CLIENT ERAS ECO Ltd

Drawing No. 21-193-01

TITLE Site Layout

SCALE	REV.
1:250	A

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3.3 Installation Activities

The incoming wastes are weighed at the weighbridge and the accompanying documentation checked. Any waste not deemed suitable is not accepted and the vehicle driver is instructed to return the waste to the producer.

The current licence authorises a) sludge drying, b) anaerobic digestion and c) general waste handling and transfer of mixed dry recyclable wastes. The handling of mixed dry recyclables ceased in 2013 and sludge drying ended in 2018.

The AD plant comprises four liquid storage tanks, a feed hopper and conveyor, two pasteuriser tanks and a quarantine tank located in Building 1 and two digester tanks and a digestate storage tank located in the south of the site. The digesters have a combined annual processing capacity of 65,000 tonnes.

The licence authorises the pre-treatment of waste for anaerobic digestion and it is proposed to install a liquid and solid foodstuff depackaging plant in Building 1. This will require the installation of a new odour control unit comprising a carbon filter to replace the decommissioned unit.

The digesters are fully enclosed, heated to 37°C and are continuously agitated and fed with organic wastes. The process produces a biogas and a digestate. The biogas is a mix of approximately 65% methane and 35% carbon dioxide with trace levels of other gases including hydrogen sulphide.

Hydrogen sulphide is corrosive and therefore the biogas is scrubbed to remove it before the biogas is used as fuel in the CHP plant to generate electricity that is exported to the national electricity grid. A gas flare is provided as a back-up for periods when the gas engines are being serviced or malfunction. It is envisaged that in the future the gas will be exported directly to the national gas grid and this will require the provision of a gas upgrader to remove the carbon dioxide.

Where the feed stock includes animal by-products, the digestate is pasteurised to facilitate its use as a fertiliser. The temperature in the pasteurisers is raised to the required level (71°C) using water heated by the CHP engines. The pasteurised digestate is stored in the quarantine tank pending the results of the confirmatory testing.

The digestate has a significant nutrient and soil enhancement value and after pasteurisation, depending on the time of the year, is either immediately sent off site in road tankers for application to agricultural lands, or stored on site until the Good Agricultural Practice Regulations allow land application.

3.4 Oil & Chemical Storage

There is one above ground double skinned plastic diesel storage tank (2,600 litre) tank located at the eastern side Building 1. Small quantities of hydraulic and engine oil are stored in spill tray inside Building 1. Waste oils generated during plant maintenance are collected in drums and stored on spill pallets. Gas cylinders used in equipment repair are stored upright in a secured location inside Building 1.

The wet scrubber on the odour control system uses sulphuric acid, sodium hydroxide, ferric solution and hypochlorite and these are stored in Intermediate Bulk Containers (IBC) on spill pallets adjacent to the scrubber. The types and volumes of materials on site at any one time is in Table 3.2.

Table 3.2 – Material Storage

Products	Volume (litres)	Location
Diesel Oil	2,600	Tank at south-eastern side of Building 1
Engine/Hydraulic Oil	2000	2 IBCs on bunded pallets in Building 1
Sulphuric Acid	1,000	Adjacent to scrubber outside Building 1
Sodium Hydroxide	1,000	Adjacent to scrubber outside Building
Hypochlorite	2,000	Adjacent to scrubber outside Building
Ferric Solution	4,000	Adjacent to scrubber outside Building

3.5 Accidents & Emergencies

ERAS ECO have adopted an Accident Prevention Policy and prepared a Safety Statement that identifies and evaluates the major on-site potential hazards and describes the control measures in place.

An emergency is an accident/incident that has the potential to result in environmental pollution and/or harm to human health. The current licence requires ERAS ECO to ensure that an Emergency Response Procedure (ERP) that addresses any emergency/incident that may occur and makes provisions for minimising the effects on the environment, has been prepared and communicated to all staff members.

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4. SITE HISTORY

Historical reclamation work in this area has resulted in made ground with a proven thickness of up to 3m. Site investigations identified the made ground to be predominately clay with small portion of construction and demolition waste.

The site was initially used by Youghal Town Council to store diesel for vehicles operating on the adjacent Youghal Landfill. It is understood the tanks were located in the vicinity of the current site entrance.

Youghal Waste Disposal & Recycling Ltd acquired a 35-year lease the landowners Youghal Town Council, before subletting it to AVR Environmental Solutions Ltd. In 2001, planning permission was granted for the construction of a waste transfer station (Ref No. S/00/7093, 30th August 2001) and in 2005 permission was granted for the construction of a sludge treatment facility (Ref No. S/04/7531 4th February 2005).

ERAS ECO Ltd was established to compensate for the lack of recovery facilities within Ireland at the time. In particular, its focus was the treatment of wastewater treatment plant (WWTP) sludges and the recovery of Commercial and Industrial (C&I) wastes. Eras Eco Ltd acquired the plant in 2006. The Waste Licence was granted in November 2006 and the facility was constructed and commissioned in 2007.

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5. ENVIRONMENTAL SETTING

5.1 Surrounding Land Use

The lands surrounding the site are primarily used for industrial and commercial purposes, with some residential and agricultural uses. The nearest private dwelling is 250m from the site, at the junction of the site access road and the R634. The town of Youghal with a population of approximately 8,000 is 2km to the south of the facility.

5.2 Hydrology

The site is in the catchment of the River Blackwater. The Tourig River joins the River Blackwater approximately 200 m to the north of the site. The River Blackwater enters the sea at Youghal Harbour approximately 4km southeast of the site. The Blackwater River and Estuary is designated a Special Protected Area (SPA) (Code 004028), a proposed National Heritage Area (pNHA) (Code 000072) and a Special Area of Conservation (SAC) (Code 002170).

5.3 Geology & Hydrogeology

The available geological maps indicate that the soils in the vicinity of the site include deep mineral (AminDW) and marine, which are associated with the estuary of the Blackwater River (Estuary) to the east of the site. Deep well drained mineral soil is present to the west of the site. The subsoils underlying the site comprise made ground, which is consistent with the historical reclamation of land within the Youghal Mudlands. The natural subsoils include marine sands in the vicinity of the estuary and sandstone tills further west of the site. The bedrock underlying the site consists mainly of the Waulsortian Limestones. This formation consists of massive, unbedded mounds of calcareous deposits in the form of mudstones, wackestones and packstones.

5.4 Designated Sites

The development site is located adjacent to several designated conservation sites, but there are a number of European and nationally designated sites present in the wider area. These are the Blackwater River and Estuary which is designated a Special Protected Area (SPA) (Code 004028), a proposed National Heritage Area (pNHA) (Code 000072) and a Special Area of Conservation (SAC) (Code 002170). Ballyvergan Marsh (Code000078) which is a pNHA is located approximately 4km to the South of the site.

6. SITE CHARACTERISATION

6.1 Conceptual Site Model

The operational area is covered by buildings, paved yards and access roads.

The available geological maps indicate that the soils in the vicinity of the site include deep mineral (AminDW) and marine, which are associated with the estuary of the Blackwater River (Estuary) to the east of the site. Deep well drained mineral soil is present to the west of the site. The subsoils underlying the site comprise made ground, which is consistent with the historical reclamation of land within the Youghal Mudlands. The natural subsoils include marine sands in the vicinity of the estuary and sandstone tills further west of the site.

Data from site investigations carried out at the site in 2004 and 2007 confirms the geological mapping and shows the site is underlain by up to 3m of made ground, which overlies more up to 11.6m of glacial till, which in turn overlies up to 2m of sandy gravel. The made ground was predominately clay, with small portion of construction and demolition waste.

The bedrock underlying the site consists mainly of the Waulsortian Limestones. This formation consists of massive, unbedded mounds of calcareous deposits in the form of mudstones, wackestones and packstones. Bedrock was not encountered in the 2004 and 2007 investigations, but based on the proven thickness of the subsoils, is more than 12m below ground level.

The bedrock is classified as a locally important karstified aquifer and the direction of groundwater flow is to the southeast towards the Estuary.

6.1.1 Source-Pathway-Receptor

The only significant source of hazardous substances at the installation is diesel. The potential receptors are the subsoils and the bedrock aquifer. There is no actual pathway between the source and the receptors, and the only potential pathway is damage to the paved floors in building and the concrete slab in the yards.

6.2 Groundwater Quality

Schedule C of the licence requires bi-annual monitoring of three wells for a specified range of parameters. Due to dense undergrowth it is not possible to find the off-site well. The reports on the monitoring completed in 2020 and 2021, which are the most recent available, confirm that the groundwater quality is poor, with chloride was elevated compared to IGV values, however this likely due to the proximity of the site to the estuary which is tidal. The groundwater results indicate the presence of contamination within the made ground in the vicinity of the site. The background groundwater quality within the area of the estuary is naturally poor due to saline intrusion and would be significantly below drinking water standards.