

This Report has been cleared for submission to the Board by Programme Manager, David Flynn.

Signed: *Gráinne O'Leary* Date: 26th April 2018.



OFFICE OF ENVIRONMENTAL
SUSTAINABILITY

INSPECTOR'S REPORT ON AN INDUSTRIAL EMISSIONS REVIEW, LICENCE REGISTER NUMBER W0211-02

TO: DIRECTORS

FROM: Dr. MAGNUS AMAJIRIONWU

DATE: 26 April 2018

Licensee: ERAS ECO Ltd

CRO number: 388559 (status: normal)

Location/address: Rural site located at Foxhole, Youghal, County Cork

Application date: 21 October 2016

Classes of activity (under EPA Act 1992 as amended):

- 11.1 The recovery or disposal of waste in a facility, within the meaning of the Act of 1996, which facility is connected or associated with another activity specified in this Schedule in respect of which a licence or revised licence under Part IV is in force or in respect of which a licence under the said Part is or will be required.
- 11.4 (b) Recovery, or a mix of recovery and disposal, of non-hazardous waste with a capacity exceeding 75 tonnes per day involving one or more of the following activities, (other than activities to which the Urban Water Treatment Regulations 2001 (SI No. 254 of 2001) apply):
- (i) biological treatment; when the only waste treatment activity carried out is anaerobic digestion, the capacity threshold for this activity shall be 100 tonnes per day
 - (ii) Pre-treatment of waste for incineration or co-incineration
 - (c) Notwithstanding clause (b), when the only waste treatment activity carried out in anaerobic digestion, the capacity threshold for that activity shall be 100 tonnes per day.

European Directives/Regulations relevant to this assessment are listed in the appendix of this report.

Main BREF documents:

- Reference Document on Best Available Techniques for the Waste Treatments Industries August 2006
- Reference Document on Best Available Techniques for Energy Efficiency February 2009.
- Reference Document on Best Available Techniques from Storage

Activity description/background

The existing installation consists of a waste recovery transfer station and a sludge drying activity on a 1.43 hectares site located north of the town of Youghal, County Cork. This review seeks to expand the licensed activity to include anaerobic digestion and changes to the waste volume limits at the site.

The licensee is currently authorised to treat 30,000 tonnes of sewage sludge annually. The sludge comes from local authority sewage treatment plants and industrial waste water treatment plants. Waste treatment is carried out in two buildings at the installation. Currently, the sludge is received and dried in Building 2 (see Layout Map in Appendix 1), before being shipped to Germany for use as a fuel.

Lime stabilisation of sludge was also carried out at the facility and the stabilised material was then sent offsite to be spread on pre-approved landbanks. The lime stabilisation of sludge process was discontinued in 2016 and is no longer carried out at the installation. All accepted sludge at the installation will either be dried and exported as a fuel, or if this review is granted will be used as feedstock in the proposed anaerobic digestion plant.

The licensee has a transfer station activity for solid recyclable wastes (paper, cardboard, plastic, metal etc) operating from Building 1. The installation is authorised in the current licence to process 70,000 tonnes. This review seeks to reduce this to 20,000 tonnes and limited to only dry mixed recyclables.

The treatment of 10,000 tonnes per annum of landfill leachate authorised in the current licence never commenced, and is not requested in the review application. Rather the licensee has proposed to accept 5,000 tonnes of non-hazardous liquid waste (that is suitable for anaerobic digestion) to be used as part of feedstock in the proposed AD plant.

This application for a licence review is to authorise the following changes to the Activity:

- i. an anaerobic digestion (AD) plant to be installed at the site of activity. The AD will treat non-hazardous sludge and food waste to produce a biogas (containing methane). The methane biogas will be used to generate electricity and heat in a new combined heat and power (CHP) plant;
- ii. the processing of 20,000 tonnes of dry mixed recyclables;
- iii. the acceptance of 5,000 tonnes of non-hazardous liquid waste (not landfill leachate) to be used as part of feedstock in the AD plant.

The sludge drying process authorised in the current licence will continue at the installation. It is estimated that of the proposed 40,000 tonnes of non-hazardous sludge to be accepted at the installation, 5,000 tonnes would be dried, and 35,000 tonnes would undergo the AD process.

Digestate produced from the AD process would be spread on pre-approved landbanks in Ireland. No digestate will be exported. Condition 11.11 of the RD, requires that a full record should be maintained of all incoming / outgoing waste and updated monthly. It specifically requires that details of the ultimate disposal/recovery destination facility (including landbanks) for the waste and its appropriateness to accept the consigned waste stream, to include its permit/licence details and issuing authority, if required.

Types of Waste Accepted

The licensee is currently authorised in the existing licence to accept **110,000 tonnes** of waste per year, which includes:

- Commercial and industrial waste 70,000 tonnes
- Non-hazardous sludge 30,000 tonnes
- Leachate from landfills 10,000 tonnes

With the proposed changes in the licence review application, the quantity of waste accepted at the installation will reduce to **65,000 tonnes/year**, as follows:

- Mixed dry recyclables: 20,000 tonnes
- Non-hazardous sludge: 40,000 tonnes
- Liquid waste (not landfill leachate): 5,000 tonnes

The revised types and tonnages of waste which may be treated at the installation on an annual basis reflect An Bord Pleanála's decision PL04.239166, dated 27th February 2013.

Additional information received: Yes

Notices under Regulation 10(2)(b)(ii) issued:	16 December 2016 02 June 2017 17 October 2017
Responses to Notices under Regulation 10(2)(b)(ii) received, and unsolicited information:	16 March 2017 07 April 2017 24 July 2017 22 August 2017 02 October 2017 13 November 2017 20 November 2017 23 January 2018 12 February 2018 05 April 2018 10 April 2018

No of submissions received: None

EIS submitted: Yes (21/10/2016)	NIS submitted: Yes (21/10/2016 and updated version received on 22/08/2017)
Site visit: 15 September 2017	Site notice check: 22 November 2016

1. New Activity description

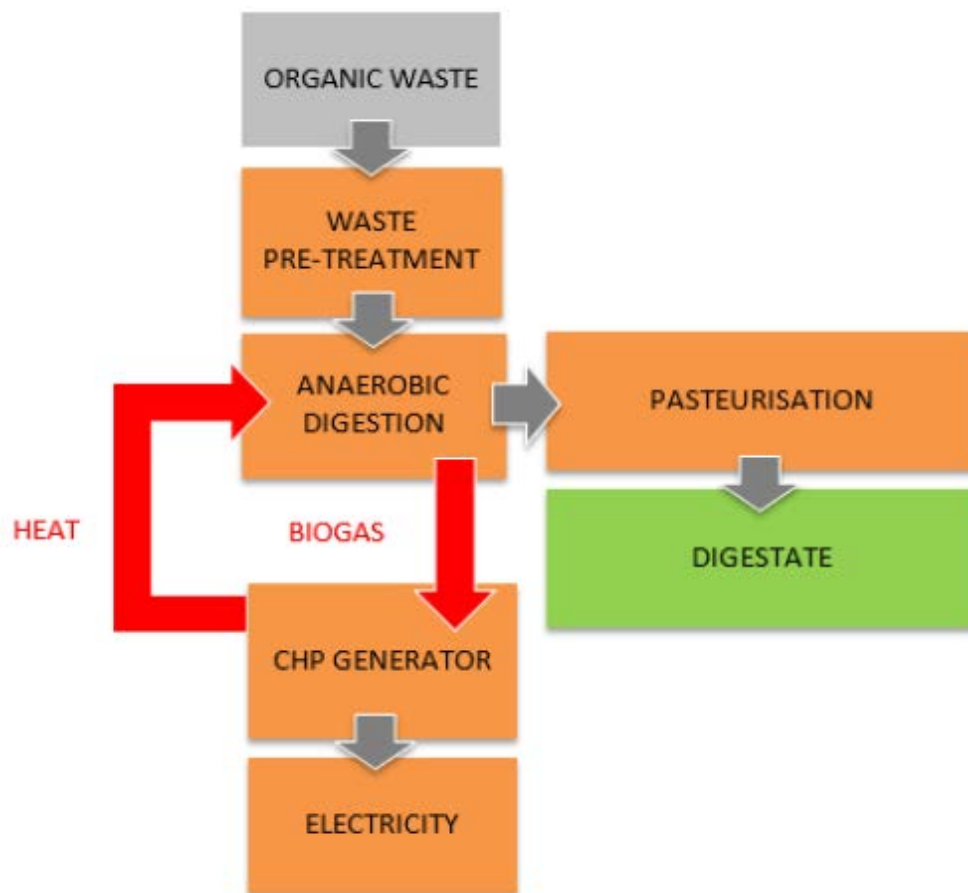
ERAS ECO Ltd is proposing to incorporate an anaerobic digestion (AD) process to its existing sludge treatment facility located near Youghal, Co. Cork. The site is located off the R634 road (the former N25 Cork - Waterford road), adjacent to Youghal Landfill and Civic Amenity Centre (Waste Licence Reg. No. W0068-02). The site is located on land reclaimed from the Blackwater Estuary, in a low-lying area referred to as Youghal Mudlands. See Figure 1 below.

The site occupies almost 1.6 hectares and consists of two main processing buildings (Buildings 1 and 2), a waste water treatment plant, offices, weighbridges, a vehicle wash, paved open yards and parking areas. Building 2 is used for sludge reception

and drying, while Building 1 is currently used for sludge storage, biomass/woodchip storage and workshop.

The proposed AD plant will comprise six liquid storage tanks, two pasteuriser tanks and a feed hopper and conveyor located in Building 1, and two digester tanks and a digestate storage tank located in the south of the site. The digesters will be enclosed by an impermeable cover and heated to 37°C and will be continuously stirred and fed with sludge, organic sludge from the food and beverage industry, and household and commercial food waste. This process will produce a biogas and a digestate. A process flow diagram of the proposed system is shown below.

Anaerobic digestion process flow diagram



The biogas will contain approximately 65% methane, which will then be treated and either used as a fuel in the new CHP plant, or exported to the national gas grid. Where the feed stock includes animal by-products, the digestate will be pasteurised to facilitate its use as a fertiliser. The pasteurisation process will comply with the Animal By-Product Approval issued by the Department of Agriculture, Food and Marine.

The licensee proposes also to dewater digestate in a new centrifuge to be located in Building 1. The centrifuge will not be continuously operated, but will be used at times when there is pressure on digestate storage capacity over the period when land application is not allowed. The centrifuge will produce a fibre (typically 20% dry solids) and (separated) liquor. The fibre will be a semi-solid "cake" and will be stored

in a trailer inside Building 1. When full, the trailer will be sent to the land application banks, locally. Condition 11.11 of the RD, requires that a full record should be maintained of all incoming / outgoing waste and updated monthly. It specifically requires that details of the ultimate disposal/recovery destination facility (including landbanks) for the waste and its appropriateness to accept the consigned waste stream, to include its permit/licence details and issuing authority, if required.

The liquor from the AD process will be mostly recirculated within the process. In very rare cases (during maintenance or shutdown), approval have been obtained by the licensee to discharge some liquor to the Irish Water foul sewer, with prior treatment in the on-site wastewater treatment plant (comprising of, pH adjustment, a balance tank, dissolved air floatation unit, carbon and sand filters, lamella settlement unit, and hypochlorite treatment). In correspondence received by the Agency on 12 February 2018, the licensee confirmed that foul water from the Eras Eco installation is no longer discharged to the estuary, but is pumped to the Youghal Wastewater Treatment Plant.

In addition to the treatment of non-hazardous sludge, the current licence authorised the processing of a maximum of 70,000 tonnes per annum of commercial and industrial waste. The licensee previously offered a service to recycle solid wastes including paper, cardboard, plastic, metal etc. The materials were taken in, checked and processed (separated into the different waste types) and then sent on to other recovery plants. However, this activity was discontinued in 2009 for business reasons. The business was recommenced in 2016 due to the fire incident at the Greenstar facility in Cork which resulted to a shortage of capacity.

2. Scope of Review

Existing Activities	Details/comment
Sludge drying	Sludge from sewage works operated by Irish Water and wastewater treatment plants at industrial sites are currently treated at the installation. Treatment involves drying the sludge in Building 2 using heat from a wood chip fired boiler. The dried sludge in the form of a sterilised granulated material is currently exported to a licensed recovery facility in Germany to be used as fuel.

Mixed dry recyclable wastes service	Materials were taken in, checked and processed (separated into the different types) in Building 1 and then sent on to other recovery plants. Discontinued in 2009 due to lack of economically viable quantities. The activity was recommenced in 2016. The licensee wishes to retain authorisation for this activity and this is addressed in the RD.
Activities not commenced or discontinued	Details / Comment
Lime stabilisation of sludge	This activity was discontinued in 2016 for good and is not part of the review application. It is therefore, no longer carried out at the installation. Consequently, land spreading of lime stabilised sludge from the installation is stopped. Condition 11.10 of the current licence requires that a full record of all incoming / outgoing waste is kept and updated monthly and then reported annually in the site's AER and PRTR documents.
Landfill leachate treatment	This authorised activity in the current licence never commenced and is not proposed in the review application.
Proposed changes	Details/comment
Activity and Site related change	Construction and operation of new AD plant and a combined heat and power (CHP) plant.
New emission points	Three new emission points are proposed for: <ul style="list-style-type: none"> • A new odour control unit, • AD plant • A CHP engine, and • Standby gas flare.
New abatement equipment	An additional odour control unit will be installed in the Building 1.
Waste types	<ul style="list-style-type: none"> • Mixed dry recyclables • Non-hazardous sludge including organic sludge from the food and beverage industry • Non-hazardous liquid waste from materials recovery / waste processing facilities (excluding landfill leachate)

3. Licence/Permit History

Licence	Details	Date
W0211-01	Development of a waste recovery, transfer and sludge drying facility.	9 September 2006
IE Amendment	To bring current licence into conformity with the provisions and requirements of Council Directive 2010/75/EU and European Union (Industrial Emissions) Regulations 2013.	7 January 2014

4. Compliance and Complaints Record

There were 27 complaints in relation to noise (one) and odour (26) from the operation of this installation under the current licence (W0211-01) in the period 2013 to 2017 as follows:

- 2 in 2017 (odour),
- 3 in 2016 (odour),
- 12 in 2015 (odour),
- 4 in 2014 (odour), and
- 7 in 2013 (6 odour and 1 noise).

These are addressed in sections 6 and 7.

There were 18 non-compliance issues recorded in the period 2013 to 2017. The issues relate to poor waste management practices, ELV exceedances, outstanding reports, non-notification of an incident, and odour nuisance as follows:

- 7 in 2017,
- 8 in 2016, and
- 3 in 2015.
- (No non-compliances were recorded in 2013 and 2014).

There were six compliance investigations opened during the period 2013 to 2017, of which five have been satisfactorily closed. No prosecution was taken against the licensee. The outstanding compliance investigation is in relation to financial provision (see Section 18 of this report).

5. Best Available Techniques

The information supplied by the licensee indicated that it can comply with all applicable BAT and no requests for derogations were submitted. I confirm that the licensee has addressed all applicable BAT in the information submitted (licence review application). A few of the BAT conclusions were not applicable as they related to procedures or to techniques not used at the installation.

Section 86A(3) of the EPA Act 1992 as amended, requires that the Agency shall apply BAT conclusions as a reference for attaching conditions to an Industrial Emissions (IE) licence, or revised IE licence. Therefore, BAT for the installation was assessed against the BAT contained in the relevant BREF documents specified on page one of this report.

The assessment has demonstrated that the installation will be able to comply with all applicable BAT requirements and will be in line with the guidance specified in the relevant BREF Documents, as detailed on page 1 and Appendix 4 of this report, which are in use at the installation.

I consider that the applicable BAT requirements are addressed through: (i) the technologies and techniques as described in the licence review documentation supplied by the licensee, (ii) the standard conditions specified in the RD, and (iii) the inclusion of additional specific conditions in the RD.

6. Planning Permission, EIS and EIA Requirements

6.1 EIA Screening

In accordance with Section 83(2A) of the EPA Act 1992 as amended, the Agency must ensure that before a licence or revised licence is granted, that the application is made subject to an environmental impact assessment (EIA), where the activity meets the criteria outlined in Section 83(2A)(b) and 83(2A)(c). In accordance with the EIA Screening Determination, the Agency has determined that the activities are likely to have a significant effect on the environment and accordingly has requested an Environmental Impact Statement (EIS) and carried an assessment for the purposes of EIA.

An EIS was submitted along with the IE licence review application on 21 October 2016. As the EIS was received by Planning Authority on or before 15th May 2017, it was assessed under the procedures set out in the 2011 Directive.

6.2 Planning Status

Several different planning applications have been made by the licensee for the area within the installation boundary since 2001. Details of these planning applications and permissions have been provided in the application form.

Cork County Council required an Environmental Impact Statement (EIS) in support of three planning applications. The licensee has submitted the EISs required by Cork County Council for planning permissions:

- i. reference no. S/00/7093 (Cork County Council granted planning permission but the development never commenced). Planning was granted on 30 August 2001.
- ii. reference no. 047531 (Cork County Council granted planning permission and it was appealed to An Bord Pleanála PL04.211117). Planning was granted on 13 July 2005.

- iii. reference no. 114123 (Cork County Council granted planning permission and it was appealed to An Bord Pleanala PL04.239166). Planning was granted on 27 February 2013.

Planning permission reference no. 047531 relates to the subject of the current licence (W0211-01), the installation of the waste recovery, transfer and sludge drying building.

Planning permission reference no. 114123 relates to the construction of two number above ground anaerobic digester tanks and digestate storage tank for the treatment of sludge and production of methane gas and generation of electricity, the subject of this licence review.

6.3 Content of EIS and licence application

I have considered and examined the content of the licence application, the EIS and other relevant material submitted with it.

Further information was sought from the applicant on the following issues:

1. Discharge and emissions to surface waters
2. Air dispersion model report
3. Emissions to air
4. EIS
5. Natura Impact Statement
5. Baseline report
6. Operational processes
7. Odour complaints

On receipt of further information from the applicant, all of the documentation received was examined and I consider that the information as submitted contains a satisfactory description of the project, the alternatives studied by the applicant, the aspects of the environment likely to be significantly affected by the activity, the likely effects of the activity on the environment, the forecasting methods used, the prevention and mitigation measures envisaged, the lack of significant difficulties and deficiencies encountered, and a non-technical summary.

I consider that the EIS, when considered in conjunction with the additional material submitted with the application, also complies with the requirements of the *EPA (Industrial Emissions)(Licensing) Regulations 2013*.

6.4 Environmental Impact Assessment Directive

Having specific regard to EIA, this Inspector's report as a whole is intended to identify, describe and assess for the Agency the likely significant direct and indirect effects of the proposed activity on the environment, as respects the matters that come within the functions of the Agency, for each of the following environmental

factors: human beings, flora, fauna, soil, water, air, climate, the landscape, material assets and cultural heritage.

This Inspector's report addresses the interaction between those effects and the related development forming part of the wider project. The cumulative impacts with other developments in the vicinity of the activity have also been considered as regards the combined impacts of emissions. The main mitigation measures proposed to address the range of predicted significant impacts arising from the activity have been outlined. This Inspector's report proposes conclusions to the Agency in relation to such effects.

In preparing this Inspector's report I have considered and examined:

- the existing licence, Register Number: W0211-01;
- the review application, Register Number W0211-02 and the supporting documentation received from the applicant;
- the EIS submitted with the review application (which is an updated version of the EIS prepared as part of an earlier planning application for the original development of the non-hazardous sludge treatment and solid waste recovery facility, for which permission was granted by Cork County Council in February 2005. The decision was appealed and subsequently granted by An Bord Pleanala in July 2005);
- the documents associated with the assessment carried out by the planning authority including:
 - o the planner's report and the decision dated the 4 February 2005 pertaining to planning file reference no. 047531, and the planner's report and the decision dated 13th July 2005 pertaining to planning appeal file reference no. PL04.211117 and the issues that interact with the matters that were considered by that authority and which relate to the activity,
 - o the planner's report and the decision dated the 27 May 2011 pertaining to planning file reference no. 114123 and the planner's report and the decision dated 27th February 2013 pertaining to planning appeal file reference no. PL04.239166 and the issues that interact with the matters that were considered by that authority and which relate to the activity.

While the environmental factors have been considered throughout my entire assessment, the following table identifies, for ease of reference, the sections of this report where each environmental factor has been specifically discussed.

Table of Environmental Factors

Environmental Factor	Addressed in the following sections:
Human Beings	Channelled emissions to air, greenhouse gases and climate impact, fugitive dust, odour, emission and discharges to surface water, process emissions, noise, waste generation, prevention of accidents and interaction of effects.

Environmental Factor	Addressed in the following sections:
Flora and Fauna	Channelled emissions to air, greenhouse gases and climate impact, fugitive dust, odour, emission and discharges to surface water, process emissions, noise, waste generation, prevention of accidents and interaction of effects.
Soil	Emission and discharges to surface water, prevention of accidents and interaction of effects.
Water	Emission and discharges to surface water, process emissions to sewer, prevention of accidents and interaction of effects.
Air	Channelled emissions to air, greenhouse gases and climate impact, fugitive dust, odour, waste generation and prevention of accidents.
Climate	Channelled emissions to air, greenhouse gases and climate impact, prevention of accidents and interaction of effects.
Landscape	Effects on landscape, material assets and cultural heritage, and interaction of effects.
Material Assets	Use of resources and material assets.
Cultural Heritage	Effects on landscape, material assets and cultural heritage.

6.5 Consultation with Competent Authorities

The Agency consulted with Cork County Council, Waterford City and County Council and An Bord Pleanála under the relevant section of the EPA Act.

Neither party provided observations to the Agency on the licence application and EIS.

7. Submissions

There were no submissions made on this application.

8. Emissions to Air

8.1 Channelled Emissions to Air

The current licence authorises one emission to air (A1) from the 3.5MW sludge dryer boiler which is fired on wood and backed up on low sulphur diesel oil. Emissions from the boiler include NO_x, SO_x, CO and particulates. Dust abatement is provided by a bag filter, which conforms to the requirements of BAT. *Schedule B* of the existing licence sets out limit values for emissions of NO_x, CO and particulates from the dryer. The licence review application does not propose any changes to the emission limit values to air from the 3.5MW sludge dryer boiler.

New channelled emissions points to air are proposed for the new CHP plant and Building 1. Table 1 gives details on all main channelled emissions at the installation (proposed and existing).

Table 1: Main channelled emission points to air					
Emission Reference	Location	Proposed/ Existing	Process Description	Abatement	
				Description	BAT (Y/N)
A1	Sludge dryer boiler stack	Existing	Boiler fuel: Wood and backed up with low sulphur diesel fuel	Bag filter for particulates	Y
A2	Waste water treatment plant (WWTP) and Building 2.	Existing but not specified in existing licence	On-site biofilter commissioned in May 2008	Biofilter	Y
A3	Building 1 (Materials Recovery Building & AD pre-treatment area)	Proposed	To treat odorous air from Building 1	Air extraction system and carbon filter	Y
A4	CHP plant stack	Proposed	Emission to air from CHP plant	None	Y
A5	Standby gas flare stack	Proposed	Gas flare that will only operate when the plant is shut down for maintenance.	None	Y

To counter the potential for fugitive emissions of dust and odour, all waste storage and processing will take place indoors or in closed vessels. Negative building pressure, extraction of building air and treatment of the extracted air are conditioned in the RD. There will be no untreated extraction air vented to atmosphere, thereby not allowing a nuisance to be caused by odour emissions from the installation (Condition 5.2). Condition 6.14 of the RD sets requirements in relation to dust and odour abatement. The RD includes also a limit for dust deposition and requires dust deposition monitoring to be carried out on a three times a year.

Table 2 compares, for each main emission point, the limits specified in the current licence (W0211-01) with the limits proposed in the RD.

Table 2: Main channelled emissions characteristics			
Emission Reference	Parameter	Limits in current licence	Limits in RD
A1-1 A1-2 A1-3 A1-4 A1-5	Volumetric flow rate (Nm ³ /hour)	A1: 11,600 A2: - 2000 A3: - A4: - A5: -	A1: 11,600 A2: 1,500 A3: 29,980 A4: 3,000 A5: No limit proposed
A1 – Existing Boiler			
	Nitrogen oxide as NO ₂ (mg/m ³)	250	250
	Carbon monoxide (mg/m ³)	150	150
	Total Particulates (mg/m ³)	20	20
A2 – Existing Biofilter (WWTP and Building 2)			
	Odour (Ou _E /m ³)	1000	1000
A3 – New Odour Control Unit (Building 1)			
	Odour (Ou _E /m ³)	-	1500
A4 – New CHP Plant			
	Nitrogen oxide as NO ₂ (mg/m ³)	-	200
	Sulphur dioxide (mg/m ³)	-	350
	Carbon monoxide (mg/m ³)	-	1,400
	Total non-methane volatile organic compounds (incl. CH ₄) (mg/m ³)	-	75
A5 – Standby flare			
No limit value is proposed as the gas flare will only operate when the plant is shut down for maintenance.			

For the purposes of EIA, the environmental factors potentially affected by the main emissions to air include: human beings, flora and fauna, air and climate.

Uncontrolled air emissions from the activity could cause an exceedance of Air Quality Standards; this could have implications for human health, air quality and the health status of flora and fauna beyond the site boundary.

Assessment and mitigation

In order to assess the potential for impact on air quality due to these point sources, air and odour dispersion modelling of the emissions from the biofilter, odour control unit, CHP stack and flare stack was carried out by the applicant. The main compounds assessed included carbon monoxide (CO), oxides of nitrogen (NO_x as NO₂), sulphur dioxide (SO₂), total particulate matter (PM as PM₁₀ and PM_{2.5}), total organic carbon as non-methane volatile organic compounds, hydrogen fluoride and hydrogen chloride, and odour. Modelling was conducted in accordance with the methodology outlined in the Agency Guidance Note (AG4). The modelling was considered sufficiently detailed and conservative to adequately assess the impact of the main emissions to air.

The modelling used five years of hourly meteorological data from the Cork meteorological station (2008 to 2012 inclusive). For background air quality, the modelling used 2014 Agency air monitoring data (Zone C/D). Complex terrain data has been incorporated into the modelling assessment and building wake effects have also been taken into consideration.

The modelling approach is based on the adoption of the following 'worst case' scenario:

- All major emission points operating simultaneously at the limits specified in the modelling report
- All major emission points operating 24 hours a day, 7 days a week, 365 days a year.
- Ambient air quality for Zone C/D was used for background concentration.
- With respect to NO₂, the predicted environmental concentrations (PECs) are based on the assumption of 100% conversion of NO_x emitted from the CHP plant to NO₂ in the atmosphere.

As part of this assessment reference was made to the EPA's Air Dispersion Modelling from Industrial Installations Guidance Note (AG4) which requires that the process contribution (PC) from industrial installations is added to the background concentration (BC) to obtain the predicted environmental concentration (PEC). In order to assess the impact, each PEC is compared with an appropriate environmental assessment level (EAL). In this case the appropriate EALs are the relevant air quality standards taken from the Air Quality Standards Regulations, 2011.

The licensee stated that emission input data for the existing processes on site was taken from a review of historical monitoring data and licence limits. Existing process emission points include:

- Emission point A1 – Boiler
- Emission point A2 – Biofilter (modelled for odour only)

For proposed emission points, emission data was taken from manufacturers and process suppliers, existing licences utilising such equipment and historical monitoring

of similar processes on other licences facilities. Proposed process emission points include:

- Emission point A3 – New odour control unit in Building 1 (materials recovery building) (modelled for odour only)
- Emission point A4 – CHP plant emission point

As can be seen from Table 3, data show that the predicted environmental concentrations do not exceed the relevant air quality standards. Emission limit values in the RD are at or lower than the emission rates modelled by the applicant. These emission limit values are in accordance with the BAT guidance note for the sector and the relevant legislation on emissions.

Table 3 shows that the cumulative (PEC) as a percentage of Air Quality Standards (AQS) for NO_x is high at 90% of the AQS. In assessing the results, it was observed that considering that the input values for the air dispersion modelling, the woodchip would contribute 30% of the PEC, while the biogas contributed 60%. The limit values proposed in the RD for the CHP engine are lower than those modelled and, cumulatively as proposed, will constitute approximately 53% of the AQS. The limit values for the new CHP combustion plant are as stipulated in the European Union (Medium Combustion Plants) Regulations 2017.

Table 3 gives details of the predicted impact of the pollutants which are considered characteristic of the proposed air emissions.

Table 3: Predicted impact of the pollutants							
Parameter	Averaging Period	ADM Input Values (mg/Nm ³)	Background concentration (µg/m ³)	Process contribution (µg/m ³)	PEC ^{Note 1} (µg/m ³)	PEC as % of Air Quality Standard	Air Quality Standards/ Guidelines (µg/m ³) ^{Note 2}
A1 – Existing Boiler and A4 – Proposed CHP Plant							
Carbon monoxide (CO)	8 hour	1,000 (woodchip) 1,400 (biogas)	500	619	1,119	11.19	10,000
Oxides of nitrogen (as NO ₂)	1 hour	250 (woodchip)	32	60	92	46	200
	Annual	500 (biogas)	16	20	36	90	40
PM ₁₀	24 hour	20 (woodchip)	22	10	32	64	50
	Annual	140 (biogas)	22	5	27	67.50	40
PM _{2.5}	Annual		16	5	21	52.50	40
A4 – Proposed CHP Plant							
Sulphur	1 hour	500	10	83	93	26.57	350

Table 3: Predicted impact of the pollutants							
Parameter	Averaging Period	ADM Input Values (mg/Nm ³)	Background concentration (µg/m ³)	Process contribution (µg/m ³)	PEC ^{Note 1} (µg/m ³)	PEC as % of Air Quality Standard	Air Quality Standards/ Guidelines (µg/m ³) ^{Note 2}
dioxide (SO ₂)	24 hour		5	51	56	44.80	125
	Annual		5	13	18	90	20
Hydrogen chloride (HCl)	1 hour	50	1.0	7.20	8.20	8.20	100
	Annual		0.5	1.67	2.17	10.85	20
Hydrogen fluoride (HF)	1 hour	5	0.060	0.72	0.78	26	3.0
	Annual		0.030	0.167	0.197	65.67	0.03
Total non-methane VOC (as benzene)	Annual	75	0.090	2.40	2.49	49.80	5.0

Note 1: Predicted Environmental Concentration (PEC) = process contribution + background concentration.

Note 2: Air Quality Standards Regulations, SI 58/2009 and 180/2011, unless otherwise stated.

The cumulative (PEC) as a percentage of Air Quality Standards (AQS) for SO_x at 90% is high but within the AQS. *Schedule B Emission limits* in the RD sets values for SO_x for the biogas at 40 mg/m³ which constitutes only 7.2% of the AQS. This emission limit value is as stipulated in S.I. No. 595 of 2017 European Union (Medium Combustion Plants) Regulations 2017. Woodchip is exempted in the Regulations for SO_x emissions.

Schedule B of the RD also sets emission limit values (ELVs) for the emission points to air at the CHP plant – A4, and the woodchip boiler – A1 for the other pollutants namely CO and dust / particulates.

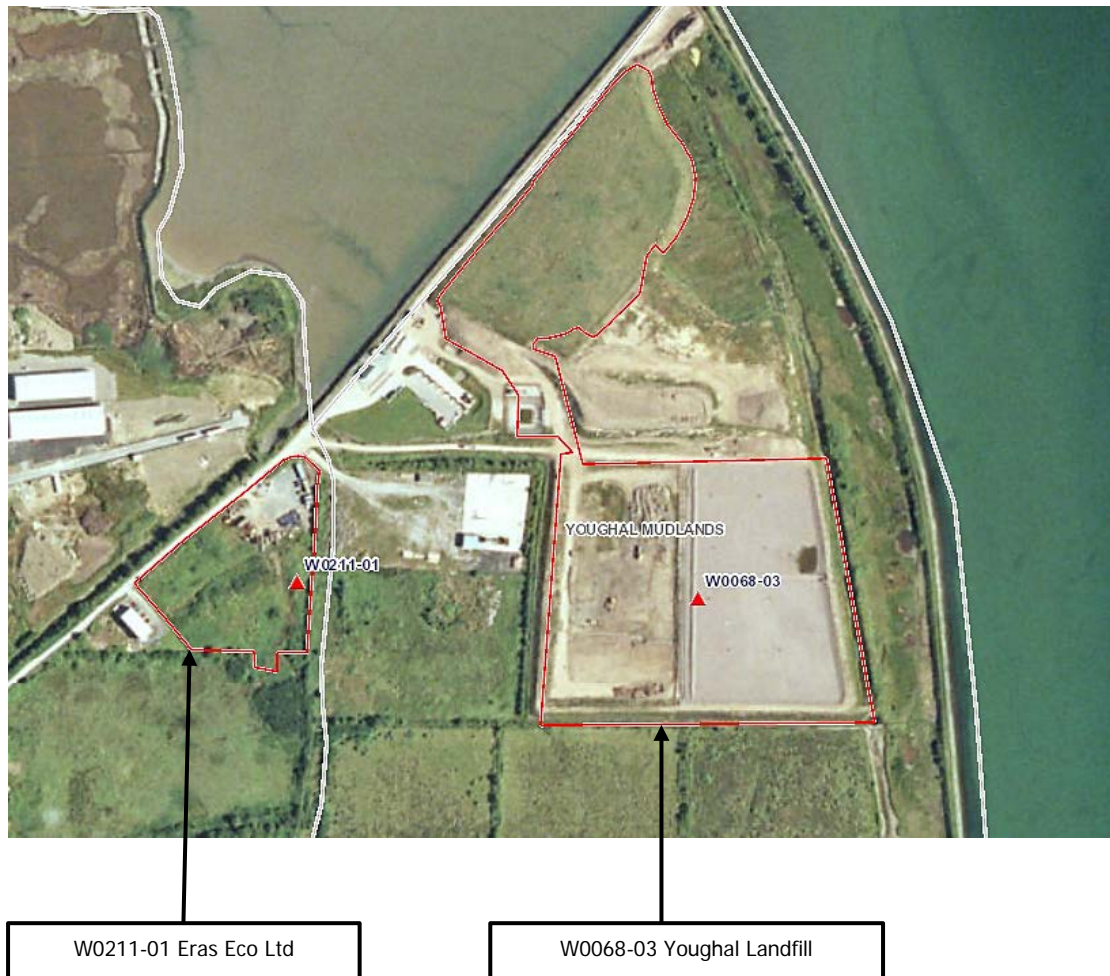
Schedule C.1.1 requires the outlet temperature of the flare flue-gas to be at least 900°C with a residence time 0.3 seconds. The gas flare is only operated when the plant is shut down for maintenance, therefore no emission limit values are being proposed.

Schedule C.1.2 stipulates the monitoring parameters and frequency at emission points.

Condition 6.14 requires the licensee to install and provide adequate measures for the control of odours and dust emissions from the installation and requires periodic odour impact assessment.

The installation is located in an area zoned for industrial use. It is adjacent to the Youghal Landfill. Figure 1 shows a licensed installation within its vicinity:

Figure 1: Licensed activity in the vicinity of the installation.



Accidental air emissions could occur if the bag filter on A1 was to fail, causing a release of particulates. However, the likelihood of accidental emissions is considered low in light of the measures outlined in the "Prevention of Accidents" section below

Based on the assessment above, it is therefore considered that air emissions from the installation are not likely to cause a significant direct effect.

Youghal Landfill (W0068-03) accepted waste until February 2012. Since that date only cover material (soil and stones) and road building material (suitable C&D material) has been accepted to allow for a "pre-capping" profile to be constructed. The environmental performance of the installation has continued to be monitored to ensure compliance with the requirements specified in its licence.

Schedule C.4 of the landfill licence requires that the landfill gas combustion plant and flare stacks comply with the following ELVs:

Parameter	Emission Limit Value	
	Flare (enclosed)	Utilisation Plant
Nitrogen oxides (NO _x)	150 mg/m ³	500 mg/m ³
Carbon monoxide (CO)	50 mg/m ³	650 mg/m ³
Particulates	Not applicable	130 mg/m ³
Total organic carbon (TOC)	10 mg/m ³	Not applicable

Monitoring results reviewed for these parameters for 2016 and 2017 demonstrate compliance with licence requirements.

Therefore, it is considered that there is not likely to be a significant cumulative effect from channelled air emissions from the activity and other air emissions generated by other activities in the area. It is also considered that no secondary or indirect effects are likely as a result of these air emissions from the activity.

Based on the above assessment, I consider that the channelled air emissions from the activity, together with the background air quality, the mitigation measures in place, and the conditions in the RD, the likelihood of a significant effect on the environment occurring as a result of air emissions from the installation is low.

8.2 Greenhouse Gases and Climate Impact

Climate change is a significant global issue which affects weather and environmental conditions (air, water and soil) which consequently affects human beings and amenities (material assets and cultural heritage) as well as biodiversity and habitats (flora and fauna). Climate change is caused by warming of the climate system by enhanced levels of atmospheric greenhouse gases (GHG) due to human activities.

For the purposes of EIA, the environmental factors potentially affected by greenhouse gases include: human beings, flora and fauna, air and climate.

Table 4 outlines the sources of GHG emissions from the activity.

Table 4: Greenhouse gas emissions	
Sources of GHG emissions from the activity	Vehicles, sludge moving equipment, digesters and CHP plant
Relevant GHG gases	Carbon dioxide and methane

Sludge drying, anaerobic digestion of sludge and biogas-fuelled CHP plants are not activities listed in Schedule 1 of the European Communities (Greenhouse Gas Emissions trading) Regulations 2012 and as such this installation does not require a GHG Emissions Permit.

Methane is generated from the AD process which will be used as fuel for the CHP plant. With appropriate process management, methane emissions from the AD process will be minimal, if any.

With regard to reducing the climate impact of the installation under IED, the RD requires an energy efficiency audit and an assessment of resource use efficiency to be undertaken in accordance with Condition 7.

In addition, the generation of electricity for consumption onsite and for input to the grid through the combustion of biogas will have a lower impact on climate than the use of fossil fuels.

It is considered that the likelihood of accidental emissions occurring which could affect climate is low in light of the measures outlined in the "Prevention of Accidents" section below and the proposed conditions in the RD.

Given the small quantity of climate altering substances that could be released from the activity, in a national context, I consider that the impact of any emissions from the installation on climatic considerations should be minimal.

The installation shown in figure 1 uses modest amounts of energy and will not be significant contributors of climate altering substances. Schedule C.2 of licence number W0068-03 (Youghal Landfill) specifies limits for landfill gas concentration measured in any building on or adjacent to the installation for GHG gases namely methane (20 % LEL (1% v/v)) and carbon dioxide (1.5 % v/v). The current licence W0068-03 requires the licensee to ensure that landfill gas (source of methane emission) is managed properly.

There are no non-compliances recorded for the above licensed installation and installation relating to greenhouse gas emissions.

Therefore significant cumulative effects on the environment from the use of energy by this installation and other developments are not likely.

Based on the above assessment, I am satisfied that there will not be significant effects on the environment or climate from the operation of the activity.

8.3 Fugitive Dust

Dust generation is associated mainly with vehicle movements within the installation during dry weather and as a result of other waste activities.

For the purposes of EIA, the environmental factors potentially affected by dust emissions from the activity include: human beings, flora and fauna and air

Dust arising from the activity could have the potential to deposit beyond the site boundary, causing nuisance for those living nearby and potentially affect habitats located close to the site boundary.

Assessment and mitigation

The waste itself is not dusty and minimising dust formation is mainly a function of good housekeeping at the installation and keeping the concrete surface in a clean condition. The RD provides for site roads and other relevant areas to be sprayed with water to minimise dust emissions.

Dust deposition monitoring is carried out at three on-site locations three times annually. *Schedule B.1.4 Dust Deposition Limits* specifies dust deposition limits. Monitoring results for 2015 and 2016 confirm that the emissions comply with the dust deposition limits specified in the current licence.

Condition 5.7 of the licence requires the licensee to ensure that dust does not result in an impairment of, or an interference with, amenities or the environment at the installation or beyond the installation boundary. Condition 2.2.2.10 requires the licensee to take corrective measures without delay to restore compliance and to initiate any feasible preventative actions to prevent further breaches of the dust limit value.

Best Available Technique (BAT)¹ for the storage of solids is to apply enclosed storage to eliminate the influence of wind. BAT for open storage is to carry out regular visual inspections to determine if dust emissions occur and to check if preventative measures are in place and in good working order. Preventative measures which can be used include the wetting or covering of the material being stored.

Accidental fugitive dust emissions could occur if the concrete work surface is not kept clean. However the likelihood of accidental fugitive dust emissions is considered low in light of the measures outlined in the "Prevention of Accidents" Section 13 and in light of the proposed conditions discussed above.

With reference to Figure 1:

- Licence Register Number W0211-01 has an emission limit value for particulates (50 mg/m³). The licence also has a dust deposition limit (350 mg/m²/day) at ambient monitoring locations. There are no non-compliances, incidents or complaints recorded for this installation relating to dust nuisance.
- Licence Register Numbers W0068-03 authorises emissions to air. *Schedule C.3* authorises a dust deposition limit of 350 mg/m²/day; and *Schedule C.4* specifies ELV for particulate matter of 130 mg/m³. Condition 7.1 of this licence requires the licensee to ensure that there are no emissions to the atmosphere of environmental significance. There are no recorded non-compliances, incidents or complaints for these installations relating to dust nuisance.

Based on the above assessment, including the mitigation measures, I consider that dust emissions from the operation of the activity are not likely to have a significant effect on the environment when the installation is operating in accordance with the conditions of the Recommended Determination.

8.4 Odour

Odour emissions at the installation may arise from the acceptance, storage and treatment of WwTP sludge and other biodegradable wastes such as food waste and

¹ Reference Document on Best Available Techniques on Emissions from Storage (July 2006).

organic sludge. Due to the presence of untreated waste in Building 1, the ambient air within the building is likely to be odorous. The processing and storage of waste will take place indoors. There is no outdoor storage area at the installation. Negative air pressure, air extraction and abatement are required for this building. Ambient air from within Building 1 will be vented to atmosphere through an odour control unit (Emission Point Reference No. A3). Air emissions from Building 2 (where sludge drying is carried out) are passed through the biofilter (Emission Point Reference No. A2).

The air dispersion model (see Table 5 below) shows that the odour plume spread from the activity is small and remains close to the installation. In addition the predicted ground level concentration at all residential receptors is approximately 66% lower ($0.70 \text{ Ou}_E/\text{m}^3$) than the odour impact criterion. The Agency's *Air Dispersion Modelling from Industrial Installations Guidance Note (AG4)* sets $1.5 \text{ Ou}_E/\text{m}^3$ (98th percentile) as an indicative criterion for odour offensiveness from high risk activities such as activities involving putrescible waste. It is predicted in the ADM that the proposed activity will not lead to odour impact in the vicinity of the installation, with all residential receptors perceiving an odour concentration less than $1.50 \text{ Ou}_E/\text{m}^3$ at the 98th percentile of hourly averages for worst case meteorological year for Cork in 2012.

Table 5: Predicted impact of Odour				
Parameter	Averaging Period	ADM Input Values Ou_E/m^3	Maximum impact at a modelled receptor Ou_E/m^3	AG4 Guideline value (Ou_E/m^3)
A2 – Biofilter			0.7	1.5
Odour	1 hour	1,000		
A3 – Odour Control Unit			0.7	1.5
Odour	1 hour	1,500		

The licensee maintains an odour management strategy. This strategy includes weekly inspection of the bio-filter media, measuring the pressure differential across the bed, monitoring of ammonia, hydrogen sulphide, and mercaptans, and monitoring of the sump water (bacterial and pH levels).

The licensee has also confirmed that the biofilter is capable of achieving the odour emission limit values recommended in Schedule B of the RD. There are also a number of conditions relating to odour in the RD:

- Condition 6.14 of the RD requires the licensee to provide adequate measures for the control of odours from the installation.
- Condition 5.2 of the RD prohibits the licensee from allowing a nuisance to be caused by odour emissions from the installation.

For the purposes of EIA, the environmental factors potentially affected by odour emissions from the activity include: Human beings, fauna and air.

Odour generated from the activity could have the potential to disperse beyond the site boundary, causing nuisance for those working nearby and potentially affect habitats located close to the site boundary.

Assessment and mitigation

- Odorous air from the sludge reception building is extracted and passed through an odour abatement system, the odour control unit.
- Condition 6.14 of the RD requires the licensee to provide adequate measures for the control of odours from the installation. Condition 5.2 of the RD prohibits the licensee from allowing a nuisance to be caused by odour emissions from the installation.
- Three odour complaints were received in 2016 and one in 2017 so far. This shows a significant improvement from the 12 odour complaints recorded in 2015. All odour complaints have been satisfactorily resolved.

Accidental odour emissions could occur if the reception and treatment of sludge and other odorous waste are mishandled at the installation, causing odour generation. However the likelihood of accidental odour emissions occurring is considered low in light of the measures outlined in the "Prevention of Accidents" Section 13 and in light of the proposed conditions relating to odour emissions discussed above.

With reference to Figure 1:

- Licence Register Number W0068-03 has licensed emissions to air from the landfill. There are no confirmed odour complaints recorded for 2016 and 2017 at the landfill.
- Therefore it is considered that there is not likely to be a significant cumulative impact from odour from the installation and other odour emissions generated by other activities in the area. It is also considered that no secondary or indirect effects are likely as a result of these odour emissions from the activity.

Based on the above assessment, I consider that the odour emissions from the activity are not likely to have a significant effect on the environment when the installation is operating in accordance with the conditions of the RD.

8.5 Overall Conclusions in relation to effects of air emissions from the activity on the environment

I am satisfied that there will not be significant effects on climate, air quality, human beings, flora and fauna or any other aspect of the environment from air emissions arising from the operation of the activity when operated in accordance with the conditions of the Recommended Determination.

9. Discharges to Water and Ground

This section addresses the following:

- Storm water discharges
- Emissions to Waters

- Emissions to Sewer,
- Emissions to ground/groundwater

9.1 Storm water discharges

Rainwater run-off from roofs and non-waste storage paved areas is collected in the surface water drainage system that connects to two silt/ oil interceptors (Class 1) and a storm water retention tank. The run-off is reused on-site when possible and the surplus stormwater discharges via a non-return valve into the adjacent Youghal Harbour / Lower River Blackwater estuary (Figure 2). Irish Water in correspondence dated 15 January 2018 required that storm water is diverted away from the foul sewer and this is incorporated into the RD as Condition 6.15.2.

Figure 2: Stormwater discharge point.

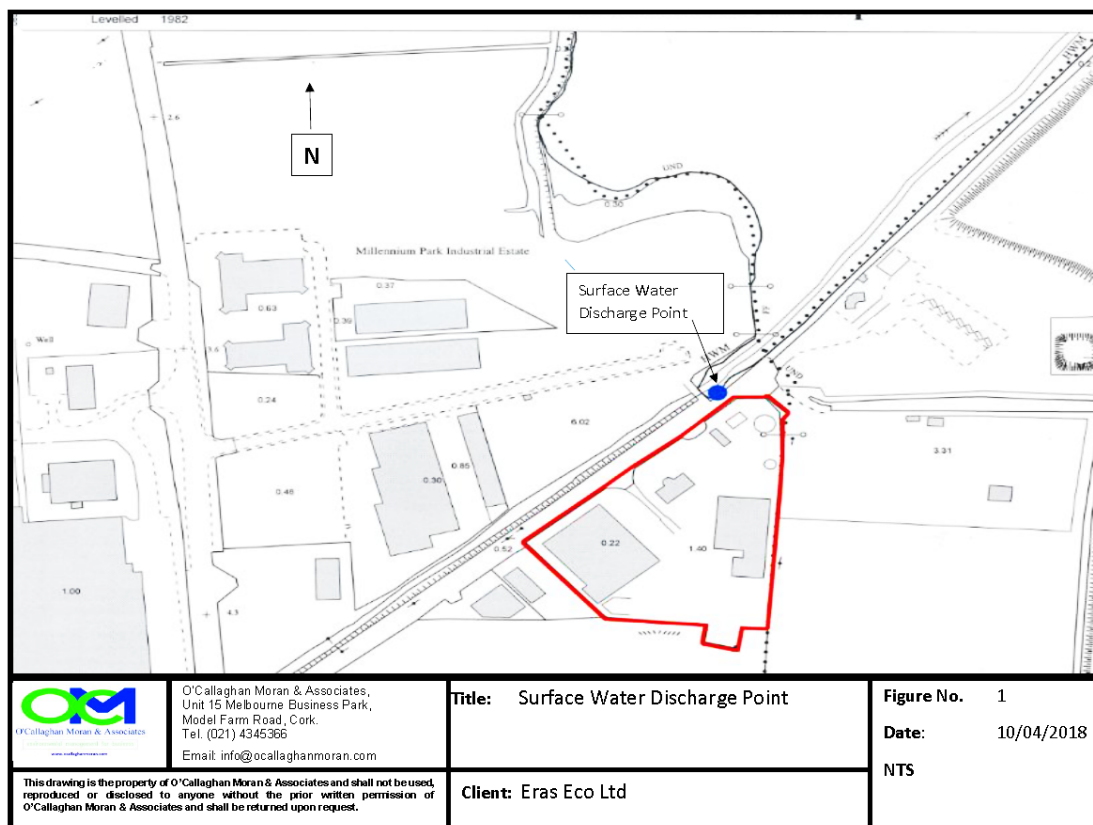


Table 6 gives details on stormwater emissions to surface water; the processes which contribute to the emissions, the type of on-site treatment, and details of the receiving water.

Table 6: Stormwater discharge point details				
Emission Reference	Proposed / Existing	Monitored parameters in existing licence (monitoring frequency)	Abatement	Trigger levels established (Y/N)
SW1	Existing	Visual (daily); pH (quarterly); suspended solids (quarterly);	Class 1 oil interceptor; Strom water	N

		conductivity (quarterly); temperature (quarterly)	retention/attenuation tank.	
Drainage areas:		Building roofs, site roads and walkways, car parks and non-waste storage areas.		
Abatement:		Two silt/ oil interceptors (Class 1) and collected in the stormwater attenuation tank.		
Receiving water:		Youghal Harbour / Lower River Blackwater		
Automatic diversion in place:		No.		

There are no direct emissions to ground on-site. The entire site is covered with buildings and concreted areas thereby limiting the potential for soil and groundwater contamination. The current licence requires that all underground drainage systems and tanks are inspected every three years.

For the purposes of EIA, the environmental factors potentially affected by storm water discharges to waters include: Water, soil, flora and fauna, and human beings

Should any accidental emission such as a leachate spill as a result of bund failure occur, it has the potential to discharge through SW1. This could have the potential to affect surface water quality downstream, as well as aquatic habitats within that surface water. Should any accidental emission discharge to ground, this could potentially affect the quality of soil and groundwater directly, which could affect those using the groundwater body as a source of drinking water and could potentially indirectly affect surface quality downstream. Firewater retention infrastructure is addressed by Condition 3.18 of RD.

Assessment and mitigation

- It is unlikely that the storm water coming from the building roof and the staff/visitor car park will result in the contamination of the storm water discharge. The silt trap and oil separator required by the licence will remove any minor contamination of the storm water from these areas prior to discharge.
- Condition 3.17 requires the licensee to have a maintenance programme which should ensure both the silt trap and oil separator are fully operational at all times.
- There are no drinking water abstraction points downstream from the installation on the Lower Blackwater Estuary / Youghal Harbour.
- The licensee is required to maintain an impermeable concrete surface in all areas of the installation. This reduces the risk of contamination going to ground.

- The proposed AD and CHP plant at the installation will not impact the storm water discharge to the Lower Blackwater Estuary / Youghal Harbour as storm water is only collected from the building roof and non-process areas.

The RD requires that the storm water discharge is visually inspected daily and monitored for a range of parameters. *Schedule C.3.4* of the RD specifies that where there is evident gross contamination, additional samples should be analysed and the full suite of parameters tested.

The RD contains standard conditions in relation to the storage and management of materials and wastes. The RD also requires that accident and emergency response procedures are put in place. The controls pertaining to accidents and emergencies are addressed in section 13. These measures will help to control any impacts which could occur should any mitigation measures fail. The licensee has also proposed to install a continuous TOC monitor for SW 1 which has been incorporated in *Schedule C.3.4* of the RD.

It is therefore considered that direct impacts as a result of storm water emissions through SW1 are considered to be neither likely nor significant.

With reference to Figure 1 above:

- Licence register number W0068-03 for the adjacent Youghal landfill authorises storm water from roofs and run-off from yards areas to discharge to the River Blackwater catchment. The licence for this site prohibits raw leachate, treated leachate or contaminated surface water to be discharged to the River Blackwater catchment. It also disallows substances to be discharged in a manner, or at a concentration which, following initial dilution causes tainting of fish or shellfish.

No non-compliances, incidents or complaints were recorded for licence register number W0068-03 with regard to storm water in 2015 and 2016.

- Therefore it is considered that there will be no significant cumulative impact from storm water emissions from SW1 and other clean runoff water emissions from other activities in the area to the Youghal Harbour / Lower River Blackwater. It is also considered that no indirect effects are likely as a result of storm water discharge from the activity.

I am satisfied that based on the above assessment, and the proposed mitigation measures, the storm water emissions are not likely to have a significant effect on the environment when the installation is operating in accordance with the conditions of the Recommended Determination.

9.2 Emissions to Sewer (Indirect Discharges to Water)

The table below gives details on emissions to sewer, the processes which contribute to the emissions, the type of on-site treatment, the type off-site treatment and the proposed maximum daily flows.

Table 7: On-site treatment				
Emission Reference	Proposed / Existing	Process Description	Abatement	Proposed max. flow (m ³ /day)
SE1	Existing	Sanitary wastewater from the offices Condensate from sludge drying unit and wash water from the vehicle wheel wash and digestate liquor from anaerobic digestion.	i. Onsite sanitary wastewater treatment system (Puraflo®). ii. Onsite wastewater treatment plant (WWTP)	170
Total:				170 m ³ /day
Off-site treatment				
Name of sewer network: Irish Water sewer				
Responsible authority for network: Irish Water				
Type of treatment: None until 12/02/2018, when the installation was connected to the newly commissioned Youghal Town wastewater treatment plant.				
Receiving water name: Youghal Harbour / Lower River Blackwater Waterbody type: Transitional				

9.2.1 Process Effluent

There is one emission point, SE1, where process effluent discharges to sewer. All process water generated on site is directed to the on-site Waste Water Treatment Plant (WwTP). The liquor from the AD process will be recirculated to the digesters and, where necessary, will also be treated in the on-site WwTP. The on-site WwTP comprises a concrete balance tank with concrete roof, an anoxic zone, a fine bubble aeration plant, a concrete sludge storage tank and a settlement tank. A Programmable Logic Controller (PLC) system controls the function and alarm systems within the WwTP.

The licensee, in correspondence received by the Agency on 12/02/2018, confirmed that the Foxhole Pumping Station opposite the installation was commissioned on the 30th Jan 2018 and that discharges are now pumped to the Youghal WwTP for treatment.

Prior to this new arrangement, the effluent from the installation's WwTP was discharged to the Irish Water combined sewer which discharged directly to the adjacent Blackwater River Estuary.

Discharge from the installation's WwTP is controlled by sluice valve. Discharge to sewer is authorised by Irish Water. The RD takes into account the limits and conditions prescribed by Irish Water.

9.2.2 Impact of process effluent discharge on receiving waters

The commissioning of the Irish Water WWTP in Youghal marked the end of process effluent discharges from the installation into the receiving Blackwater Estuary.

The ELVs proposed in the RD are based on the discharge consent provided by Irish Water, received by the Agency on 17 January 2018. The licensee shall not discharge at concentrations which exceed the stated limits in *Schedule B: Emission Limits* of the RD.

9.2.3 Sanitary Effluent

With respect to sanitary effluent, the licensee has installed a small, biological membrane reactor package plant which will discharge to the Irish Water sewer. The sanitary effluent treatment system is designed for treatment of light commercial wastewater with a 99.9% reduction in faecal coliforms. The sanitary effluent treatment system treats effluent for up to 8 persons (maximum) with an average 2 person/daily load. Condition 3.25 requires that the applicant provide and maintain an appropriately sized wastewater treatment system at the facility for the treatment of sanitary effluent arising on-site.

For the purposes of EIA, the environmental factors potentially affected by a process emission to sewer include: human beings, flora and fauna and water.

Should emission levels in the emission to sewer cause an exceedance of Water Quality Standards at the Youghal waste water treatment plant discharge point, this could have implications for aquatic flora and fauna and their habitats at that discharge point.

As part of this licence review, the Agency sought Irish Water's consent for emissions to sewer under Section 99E of the EPA Act 1992 as amended. The consent was received on the 17 January 2018. *Schedule B.3* in the RD has been updated to incorporate Irish Water's requirements.

Condition 5.8 prohibits the discharge of any trade effluent which may damage the integrity of the sewer. *Schedule C.3.3* requires specific equipment to control suspended solids; mineral oils or total hydrocarbons; and fats, oil & grease being released to the sewer. *Schedule C.4.1* requires the continuous monitoring of the flow of trade effluent to sewer and a range of other parameters.

In addition to the discharge limits, Irish Water also specified 13 additional requirements relating to the discharges to sewer which have been transposed into the RD.

There have been no non-compliances, incidents or complaints recorded with regard to emissions to sewer from the installation.

The likelihood of accidental emissions to sewer occurring is considered low in light of the measures outlined in the "Prevention of Accidents" (see Section 13) and in light of the proposed conditions discussed above.

With reference to Figure 1 above:

- Youghal Landfill licence register numbers W0068-03 does not authorise any emissions to sewer.
- Therefore, it is considered that there will be no significant cumulative impact from sewer emissions from the activity and other sewer emissions generated by other activities in the area. It is also considered that no indirect effects are likely as a result of sewer emissions from the activity.

I am satisfied that based on the above assessment, the nature of the activity, the mitigation measures in place, and the conditions in the Recommended Determination that the likelihood of a significant effect on the environment occurring as a result of a process water discharge to sewer at SE1 is negligible.

Overall, given the above it is considered that the recommended ELVs for this discharge to sewer are considered to satisfy the requirements of the IED, the WFD, and the EPA Act 1992 as amended.

9.3 Update on soil and groundwater contamination

The licensee has stated that there is existing soil and groundwater contamination at the site. The Baseline Report section of this report (section 14) provides a summary in relation to soil and groundwater contamination by hazardous substances at the installation.

Information provided by the applicant to date has indicated that the underlying groundwater is contaminated by hydrocarbons, ammonia, iron, manganese and arsenic. The source of this contamination is considered to be from historical use of the site 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 to the installation.

Condition 6.18.2 of the current licence required remediation of hydrocarbon contamination in the soil and groundwater, with particular regard to the ground in, around, under and down hydraulic gradient of the area historically used for diesel storage. A site investigation carried out in 2004 as part of a planning application for a waste facility identified the presence of made ground at the site, which included waste. Condition 6.18.1 of the current licence requires groundwater to be sampled and analysed biannually, in accordance with *Schedule C.6* (of the current licence), and is retained in the RD.

The licensee sampled groundwater from MW1-P1, MW2-P1, MW2-P2, and MW3-P1 in Q4 of 2015. The results were assessed against the EC Environmental Objectives (Groundwater) Regulations 2010, as amended, and *IGVs (interim groundwater values). They were in compliance with the exception of petroleum range organics (PRO) and diesel range organics (DRO) in MW1-01, ammonia in MW1-P1, MW2-P1

and MW2-P2, iron in all four wells, manganese in MW1-P1, MW2-P1 and MW2-P2, and arsenic in MW1-P1 and MW2-P1.

Table 8: Groundwater monitoring results for Q4 of 2015

Parameter	Standard	MW1-P1	MW2-P1	MW2-P2	MW3-P1
		mg/l	mg/l	mg/l	mg/l
pH	*6.5 – 9.5	6.49	7.28	7.39	7.36
Conductivity	800 - 1875 µS/cm	857	786	536	672
COD	-	119	<1	77	1
PRO	*0.01 mg/l	<0.04	<0.01	<0.01	<0.01
DRO	*0.01 mg/l	<0.04	<0.01	<0.01	<0.01
Nitrate	37.5 mg/l	<0.05	0.06	0.05	23.6
Ammonia	0.065 – 0.175 mg/l	8.5	0.30	0.88	<0.01
Chloride	24 – 187.5 mg/l	36.1	22.4	66.5	38
Cadmium	0.00375 mg/l	<0.0006	0.00015	<0.0006	<0.0006
Cobalt	-	<0.002	0.005	0.05	<0.002
Iron	*0.2 mg/l	26.4	3.1	48	0.486
Manganese	*0.05 mg/l	7.08	1.4	2.79	0.03
Arsenic	0.0075 mg/l	0.0094	0.0044	0.015	<0.001
VOC	-	<0.001	<0.001	<0.001	<0.001

It is considered that the risk associated with the existing contamination to soil/groundwater due to the activity is low; based on the following provisions:

- The RD requires
 - the licensee to demonstrate compliance with the Environmental Objectives (Groundwater) Regulations 2010; any actions required shall be implemented within a period approved by the Agency (Condition 6.16 of the RD).

- waste and materials to be stored in designated areas, protected as may be appropriate against spillage and leachate run-off.
- appropriate bunding for tank and drum storage areas, with routine integrity testing.
- appropriate drainage incorporating firewater retention facilities.

For the purposes of EIA, the environmental factors potentially affected by the existing contamination on site include: human beings, flora and fauna, soil and water.

Such existing contamination issues could potentially affect the quality of soil and groundwater directly, which could affect those using the groundwater body as a source of drinking water and could have the potential to indirectly affect surface quality downstream.

These impacts have previously been considered and the current licence contains adequate measures to prevent further contamination and to monitoring existing contamination levels.

Condition 6.18.2 of the current licence requires remediation of hydrocarbon contamination in the soil and groundwater, which has been completed. Considering the remediation works carried out on site, and the controls in the RD as drafted which are aimed at achieving compliance with existing Groundwater Regulations and preventing the release of contaminants to ground /groundwater and indirectly to surface water, and the improvements/attenuation achieved to date, it is considered that direct and indirect effects as a result of the continued operation of the activity are not significant.

With reference to Figure 1 above:

- Licence register number W0068-03 for the adjacent landfill does not authorise any emissions to groundwater.
- Historical contamination has taken place in the groundwater body beneath the site. Remedial action has been taken and monitoring programmes are in place. Therefore, it is considered that there will be no significant cumulative impact from existing ground and groundwater contamination from the activity and other activities in the area.

Based on the above assessment, I consider that the emissions to ground/groundwater from existing contamination are not likely to have a significant effect on the environment when the installation is operating in accordance with the conditions of the Recommended Determination.

9.4 Overall Conclusions in relation to effects of emissions to water and ground on the environment

I am satisfied that based on the above assessment and proposed mitigation measures, there will not be significant effects on human beings, flora and fauna, water quality, soil quality or any other aspect of the environment from emissions to

water and ground arising from the operation of the activity when the installation is operating in accordance with the conditions of the Recommended Determination.

10. Noise

Noise emissions will occur mainly from plant and equipment used to process waste, delivery/collection vehicles and odour control fans. The nearest noise receptors are the civic amenity site and landfill, the nearby National Car Testing (NCT) test centre and the R634. The nearest noise sensitive location (NSL), a dwelling house, is over 250m from the site boundary.

For the purposes of EIA, the environmental factors potentially affected by noise emissions from the activity include: human beings and flora and fauna.

Noise arising from site could have the potential to cause nuisance for those living in the vicinity of the activity or on noise sensitive species near the site.

As part of the compliance with current licence, a noise monitoring survey is carried out annually at three installation boundary locations, and at one noise sensitive receptors outside the boundary. Historical data from these surveys indicate that the installation is consistently compliant with the licence limits.

There has been only one noise complaint dating back to 2013.

Noise propagation modelling has been used to predict worst-case impacts of noise sources from the proposed installation at nearby sensitive locations. For assessment purposes, limits specified in the Agency guidance² were used as ambient standards. The results indicate that the impact is low, and well within the standard noise emission limit values in the RD.

Standard noise conditions and emission limit values, which apply at the noise sensitive location/boundary, have been included in the RD. In accordance with the EPA document Guidance Note for Noise: Licence Applications, Surveys and Assessments in relation to Scheduled Activities (NG4) (2016), the day time limit value has been changed from 55dB LAeq to 55dB LAr,T to allow for corrections for tonal noise, and an evening time ELV has been introduced.

Accidental noise emissions could occur from plant and equipment used to process the wastes, delivery/collection vehicles and odour control fans, causing noise ELV exceedances at the noise sensitive receptors. However the likelihood of accidental noise emissions occurring is considered low in light of the measures outlined in the "Prevention of Accidents" - Section 13, and in light of the proposed conditions discussed above.

It is therefore considered that direct significant impacts as a result of noise from the activity are unlikely.

² NG4 Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (EPA, 2016)

With reference to Figure 1 above:

- Background noise levels in the area are already slightly elevated due to vehicular traffic at the civic amenity site and landfill, the nearby National Car Testing (NCT) test centre and the R634.
- Noise surveys carried out to assess the noise from the proposed changes have established that they will not cause an impact at the nearest residence, which is approximately 250m away. The proposed changes will have a neutral impact as all waste processing will continue to be carried out either indoors or in fully enclosed units.
- Licences register number W0068-03 does not have any incidents or complaints relating to noise emissions.
- There are no other activities in the vicinity that are likely to generate noise to an extent that could lead to likely or significant cumulative effects beyond the site boundary.

Overall Conclusions in relation to effects of noise emissions from the activity on the environment

Based on the above assessment and the controls in place, I am satisfied that there will not be significant effects on the environment from noise from the activity when the installation is operating in accordance with the conditions of the Recommended Determination.

11. Waste Generation

There are no significant changes to the types of wastes generated at the installation as a result of the proposed AD and CHP plant. A digestate will be generated from the treatment of organic waste.

Operations at the installation generate small quantities of office and canteen type wastes. Waste oils and batteries are generated during on-site maintenance of plant and equipment. The oil interceptors on the surface water drainage system are routinely cleaned and emptied.

All waste generated on site are transported and recovered/disposed off-site in accordance with National and European Legislation.

The RD requires that disposal or recovery of waste on-site shall only take place in accordance with the conditions of this licence and in accordance with the appropriate National and European legislation and protocols.

For the purposes of EIA, the environmental factors potentially affected by waste generated by the activity include: human beings, flora and fauna and air.

The treatment of wastes at the installation could attract pests/rodents to the installation. Where infestation by pests occurs, this has negative secondary effects for humans in terms of amenity and potentially spread of disease. Predation and

spread of disease could also be an issue for flora and fauna beyond the installation boundary.

Assessment

Condition 3.22.2 of the RD requires impermeable concrete surfaces to be maintained at all areas of the installation and any defects in this surface to be remedied within five working days. Condition 8.7.2 requires waste to be stored in designated areas, protected as may be appropriate against spillage and leachate run-off. *Schedule B.3* sets out the emission limit values for discharges to sewer. These conditions will ensure that contaminated run-off will not pollute groundwater or surface water.

If dealt with in accordance with the conditions of the RD, the management of waste generated at the facility will be in accordance with the requirements of Article 11(e) of the Industrial Emissions Directive.

Therefore, significant cumulative effects on the environment from the generation of waste by this installation and other developments are not likely.

Overall Conclusions in relation to effects of the generation of waste from the activity on the environment

Based on the above assessment and the mitigation measures in place, I am satisfied that there will not be significant effects on the environment from the generation of wastes from the operation of the activity or from pests or vermin when the installation is operating in accordance with the conditions of the Recommended Determination.

12. Use of Resources

The applicant has provided a comprehensive list of resources consumed at the installation. These are listed in the review application form and the AERs for 2015 and 2016.

The operation of the installation involves the consumption of woodchip, water, diesel oil and electricity. The estimated quantities used in 2015 and 2016 are given in Table 9.

Table 9: Quantity of resources used

Resource	Quantity per annum	
	2015	2016
Electricity	376.89 MWh	363 MWh
Water	3,640 litres	5,720 litres
Woodchip	1,758 tonnes	1,758 tonnes
Renewable energy generated on site	1975.3 MWhrs	1435.6 MWhrs
Low sulphur diesel oil	7,156 litres	8,000 litres

For the purposes of EIA, the environmental factors potentially affected by resource use include material assets.

Assessment and mitigation

The use of natural resources by the new activity will not be significant. The applicant stated that the AD process would not result in any significant change to diesel consumption but it will result in an increase in electricity consumption due to the electrical motors installed in the AD plant and additional yard lighting. However this will be offset by the electricity generated with the on-site CHP plant.

Annex III of the IED specifies criteria for the determination of BAT, including the consumption and nature of raw materials (including water) used in the process and energy efficiency. Accordingly, and in the application of BAT, Condition 7 of the licence provides for the efficient use of resources and energy in all site operations. This condition also requires an energy audit to be carried out and repeated at intervals as required by the Agency. The BREF on Energy Efficiency was referred to in the context of the Resource Use and Energy Programme.

With reference to Figure 1, Licence register number W0068-03 is required to consider resource use and energy efficiency (Condition 2.5).

There are no other activities in the vicinity that are likely to use resources to an extent that could lead to likely or significant cumulative effects beyond the site boundary. Therefore significant cumulative effects on the environment from the use of resources by this installation and other developments are not likely.

Overall Conclusions in relation to effects of the use of resources by the activity on the environment (EIA only)

I am satisfied that there will not be significant effects on the environment from the use of natural resources from the operation of the activity when the installation is operating in accordance with the conditions of the Recommended Determination.

13. Prevention of Accidents

Table 10: Outline of potential accidents and mitigation measures

Potential Accidents	Prevention/Mitigation Measures
Failure of bag filter prior to emission to air at A-1.	Condition 2.2.2.10 requires the licensee to maintain a preventative maintenance programme. This programme will ensure all critical plant at the installation is maintained in optimum operating condition.
Accidental odour emissions resulting from waste reception and treatment.	Condition 6.14 of the RD requires the licensee to provide adequate measures for the control of odours from the installation. Condition 5.2 of the RD prohibits the licensee from

	<p>allowing a nuisance to be caused by odour emissions from the installation</p> <p>Condition 8.3 requires the licensee to maintain waste acceptance and characterisation procedures. This condition also requires the licensee to reject unacceptable incoming waste.</p>
Dust emissions resulting from vehicle movements within the installation during dry weather and as a result of other waste activities.	<p>Condition 6.14 requires roads and areas which may give rise to dust nuisance to be sprayed with water during periods of dry weather.</p> <p>Condition 4.7 requires that dust and particulate matters from the activity shall not give rise to deposition levels which exceed the limit values.</p>
Accidental noise emissions could occur from plant and equipment used to process the wastes, delivery/collection vehicles and odour control fans.	<p>Condition 4.6 requires that noise from the facility shall not give rise to sound pressure levels ($L_{Aeq,T}$) measured at the boundary of the facility or at the noise sensitive locations which exceed the limit values.</p> <p>Schedule B.4 requires that there should be no clearly audible tonal component or impulsive component in the noise emission from the activity at any noise sensitive location.</p>
Accidental emissions to sewer.	<p>Condition 2.2.2.10 requires the licensee to maintain a preventative maintenance programme. This programme will ensure all critical plant at the installation is maintained in optimum operating condition.</p> <p>Condition 6.11 requires oil interceptors to be properly maintained at all times.</p>
Accidental emissions to ground from a failure of the process effluent collection system or due to seepage through damaged concrete.	<p>Condition 6.10 requires the integrity testing of all underground pipes.</p> <p>Condition 3.22.2 requires any defects in the concrete surfaces at the installation to be remedied within 5 working days.</p>
Accidental emissions as a consequence of fire.	<p>Condition 3.18 of RD addresses firewater retention infrastructure. This plan is required to incorporate the recommendations of the Fire Risk Assessment required by Condition 9.5 of the RD.</p>
Additional measures provided for in the current licence.	<p>Integrity of tanks to be assessed every 3 years and maintenance carried out as required (Condition 6.10).</p> <p>Storm water discharge points to be visually monitored daily (Condition 6.15).</p> <p>Provision and maintenance of adequate bunding (Condition 3.15).</p>

Condition 9 of the RD requires procedures to be put in place to prevent accidents with a possible impact on the environment and to respond to emergencies so as to minimise the impact on the environment. An Environmental Liabilities Risk assessment (ELRA) has also been submitted with the application. (See Fit and Proper Person Assessment in section 18 for further details).

The risk of accidents and their consequences, and the preventative and mitigation measures listed in the table above, have been considered in full in the assessments carried out throughout this report.

It is considered that the conditions of the RD and the mitigation measures proposed will significantly reduce the likelihood of accidental emissions occurring and limit the environmental consequences of an accidental emission should one occur.

14. Cessation of activity

A clean closure is expected at the installation, whereby upon cessation of operations and decommissioning at the site, there are no remaining environmental liabilities. The application details a range of measures to be employed upon cessation of the activity. These include:

- Termination of sludge and other waste materials acceptance;
- Processing of all materials on-site;
- Return of all unused materials to their suppliers or disposal by an approved contractor;
- Decommissioning, removal, and reuse or scrapping of remaining processing plant which could not be sold; and
- Removal of interceptor wastewater and sludge by an approved contractor.
- Condition 10 of the RD requires procedures to be put in place to ensure the proper closure of the activity with the aim of protecting the environment. A Closure, Restoration and Aftercare Management Plan (CRAMP) has also been submitted with the application. (See Fit and Proper Person Assessment section below for further details).

Baseline Report

Article 22(2) of the IED requires that where the activity involves the use, production or release of relevant hazardous substances and having regard to the possibility of soil and groundwater contamination at the site of the installation, the operator shall prepare and submit to the competent authority a baseline report before the revision of a licence.

The baseline report is a tool that permits, as far as possible, a quantified comparison between the state of the site described in that report and the state of the site upon

definitive cessation of activities, in order to ascertain whether a significant increase in pollution of soil or groundwater has taken place.

A baseline report dated 09 November 2015 was submitted with the application. An updated version dated August 2017 was received on 22 August 2017, in response to a Regulation 10 notice issued on 2 June 2017. The site was reclaimed from the 'Youghal Mudlands'. It was initially used by Youghal Town Council to store diesel for vehicles operating on the adjacent Youghal Landfill, prior to the construction of the original buildings. The report refers to data from 2015 groundwater analysis as required under the current licence. The 2015 groundwater monitoring results indicate no elevated levels of any relevant hazardous substance. The aquifer beneath the site is a locally important karstified aquifer. Groundwater beneath the site is present in the silts, sands and gravels. The groundwater is influenced by tidal fluctuations indicating hydraulic connection to the River Blackwater. The RD requires soil and groundwater monitoring for relevant hazardous substances to be carried out in accordance with the requirements of the IED.

On cessation of the activity where the installation has caused significant pollution of soil or groundwater, Condition 10 of the RD requires the licensee to take measures to address the pollution and to return the site to the state established in the Baseline Report, or otherwise to take actions aimed at the removal, control, containment or reduction of hazardous substances so that the site ceases to pose a significant risk to human health or the environment.

The measures to be taken upon cessation of the activity have been considered in full in the assessments carried out throughout this report. Schedule C.7 of the RD requires the monitoring for hazardous substances every 5 years for groundwater and every 10 years for soil.

I am satisfied that there will not be significant effects on the environment from the measures that will be taken upon cessation of the activity when the installation has been operated in accordance with the conditions of the RD.

15. Other matters

15.1 Effects on Human Health

The impact of the activity on human health has been addressed in the earlier parts of this report, namely in relation to; channelled emissions to air, greenhouse gases and climate impact, fugitive dust, odour, emission and discharges to surface water, process emissions, noise, and waste generation. It was also addressed in assessing the effects of the activity on archaeological or architectural heritage in section 15.3 following.

I am satisfied that there will not be significant effects on human health from the operation of the activity when the installation is operating in accordance with the conditions of the Recommended Determination.

15.2 Effects on Flora and Fauna

The impact of the activity on flora and fauna has been addressed in the earlier parts of this report, namely in relation to; channelled emissions to air, greenhouse gases and climate impact, fugitive dust, odour, emission and discharges to surface water, and process emissions.

I am satisfied that there will not be significant effects on flora and fauna from the operation of the activity when the installation is operating in accordance with the conditions of the Recommended Determination.

15.3 Effects on landscape, visual and cultural heritage

(a) Disturbance of archaeology and architecture from the operation of the activity

These matters are dealt with in the decision of the planning authority to grant planning permission for the developments on site and are not controlled by the Agency. The planning authority has considered the effect to be acceptable.

There are no buildings or features of architectural significance and no known archaeological features at or near the site of the installation, and it is very difficult to envisage any pathway by which emissions from the operation of the activity could impact any feature which might be present.

(b) Landscape, visual and cultural effects

Any disturbance of the landscape or the cultural heritage of an area has the potential to impact on human beings and their enjoyment of the surrounding area. These matters are dealt with in the decision of the planning authority to grant planning permission for the developments on site and are not controlled by the Agency. The planning authority has considered the effects to be acceptable.

Taking the above into consideration, it is very difficult to envisage any pathway by which emissions from the operation of the activity could impact on the landscape, visual setting, material assets or cultural heritage of the area.

No mitigation measures have been proposed in relation to (a) and (b) above.

Overall Conclusions in relation to effects on landscape, material assets and cultural heritage from the activity

I am satisfied that there will not be significant effects on landscape, material assets and cultural heritage from the operation of the activity.

Accordingly, if the activity is carried out in accordance with the RD and the conditions attached, the operation of the activity will not cause environmental pollution.

15.4 Interaction of effects

I have considered the interaction between human beings, flora and fauna, soil, water, air, climate, landscape, material assets, cultural heritage and the interaction of the likely effects identified throughout this report. The most significant interaction, as addressed in the earlier parts of this report, is as follows:

Water, soil and flora and fauna

Accidental discharges of process water or other substances to ground may directly and indirectly affect soil, ground water quality, surface water quality downstream, aquatic habitats and aquatic flora and fauna. Indirect effects on soil, ground water quality, surface water quality, habitats and flora and fauna may arise from accidental discharge of process water which arises from the activity. As demonstrated in section 9 above, such effects are considered not to be likely or significant.

Based on the assessment carried out throughout this report, and the mitigation measures proposed (including the relevant conditions in the licence), I do not consider that the interactions identified are likely to cause or exacerbate any potentially significant environmental effects of the activity.

16. Reasoned Conclusion on Environmental Impact Assessment

Having regard to the effects (and interactions) identified, described and assessed throughout this report, I consider that the mitigation measures proposed will enable the activity to operate without causing environmental pollution. I also consider that the potential effects on the environment identified above, even if they occur, are unlikely to damage the environment, and the risk of them occurring is not unacceptable.

Accordingly, if the activity is carried out in accordance with the RD and the conditions attached, the operation of the activity will not cause environmental pollution. The conditions of the RD and the mitigation measures proposed will significantly reduce the likelihood of accidental emissions occurring and limit the environmental consequences of an accidental emission should one occur.

17. Appropriate Assessment

The licensee submitted an updated Natura Impact Statement (NIS) as part of this application for licence review. This NIS also considered cumulative effects.

Appendix 2 lists the European Sites assessed, their associated qualifying interests and conservation objectives along with the assessment of the effects of the activity on the European Sites.

A screening for Appropriate Assessment was undertaken to assess, in view of best scientific knowledge and the conservation objectives of the site, if the proposed activity, individually or in combination with other plans or projects is likely to have a significant effect on any European Site. In this context, particular attention was paid to the European Sites at Blackwater Estuary SPA [004028], Blackwater River (Cork/Waterford) SAC [002170], Ardmore Head SAC [002123], Ballymacoda (Clonpriest and Pillmore) SAC [000077], Ballymacoda Bay SPA [004023], and Helvick Head to Ballyquin SPA [004192].

The activity is not directly connected with or necessary to the management of any European Site and the Agency considered, for the reasons set out below, that it cannot be excluded, on the basis of objective information, that the activity, individually or in combination with other plans or projects, will have a significant

effect on any European Site and accordingly determined that an Appropriate Assessment of the activity was required, and for this reason determined to require the applicant to submit a Natura Impact Statement.

The reason is as follows:

- There is a discharge of treated process effluent and stormwater into the adjacent Blackwater Estuary SPA [004028] and Blackwater River (Cork/Waterford) SAC [002170].

An Inspector's Appropriate Assessment has been completed and has determined, based on best scientific knowledge in the field and in accordance with the European Communities (Birds and Natural Habitats) Regulations 2011 as amended, pursuant to Article 6(3) of the Habitats Directive, that the activity, individually or in combination with other plans or projects, will not adversely affect the integrity of any European Site, in particular Blackwater Estuary SPA [004028], Blackwater River (Cork/Waterford) SAC [002170], Ardmore Head SAC [002123], Ballymacoda (Clonpriest and Pillmore) SAC [000077], Ballymacoda Bay SPA [004023], and Helvick Head to Ballyquin SPA [004192], having regard to their conservation objectives and will not affect the preservation of these sites at favourable conservation status if carried out in accordance with this recommended determination and the conditions attached hereto for the following reasons:

- The installation is not located within a European Site.
- Stormwater from roofs and non-process areas (staff car park) are the only proposed discharge to surface water from the installation into the Blackwater Estuary SPA [004028] and Blackwater River (Cork/Waterford) SAC [002170]. This discharge is unlikely to have an impact on any species or habitat for which the SAC and SPA are designated due to the nature of the discharge.
- Discharge of treated process effluent into the Blackwater Estuary SPA [004028] and Blackwater River (Cork/Waterford) SAC [002170] has discontinued with the commissioning of Irish Water wastewater treatment plant in Youghal.
- Schedules and Conditions of the RD stipulate as follows:
 - **Schedule B.2 Emissions to Water** does not permit emissions to water of environmental significance.
 - **Condition 3.17** requires storm water from non-processing areas to pass through a silt trap and oil separator prior to release.
 - **Condition 3.18.3** requires contaminated storm water to be diverted for collection if contaminated with fire-water. **Condition 5.4** states that contaminated storm water shall not be discharged to surface water courses.
 - **Condition 6.11** requires weekly inspections of the storm water drainage systems.
 - **Schedule C.7.2 Groundwater Monitoring** requires the applicant to carry out groundwater monitoring. The results of this monitoring are required to be submitted with the Annual Environmental Report.

- **Condition 2.2.2.10** requires the licensee to take corrective measures without delay to restore compliance and to initiate any feasible preventative actions to prevent further breaches of the dust emission limit value at monitoring location D3 in the shortest possible time.

In light of the foregoing reasons no reasonable scientific doubt remains as to the absence of adverse effects on the integrity of those European Sites: Blackwater Estuary SPA [004028], Blackwater River (Cork/Waterford) SAC [002170], Ardmore Head SAC [002123], Ballymacoda (Clonpriest and Pillmore) SAC [000077], Ballymacoda Bay SPA [004023], and Helvick Head to Ballyquin SPA [004192].

18. Fit & Proper Person Assessment

The Fit & Proper Person test requires three elements of examination:

Technical Ability

The licensee has provided details of the qualifications, technical knowledge and experience of key personnel. The licence application also includes information on the on-site management structure. It is considered that the licensee has demonstrated the technical knowledge required.

Legal Standing

Neither the licensee nor any relevant person has relevant convictions under the Environmental Protection Agency Act 1992, as amended, or under any other relevant environmental legislation.

Financial Provision

The licence category and proposed installation was assessed for the requirements of Environmental Liabilities Risk Assessment (ELRA), Decommissioning Management Plan (DMP) and Financial Provision (FP), in accordance with Agency guidance. Under this assessment it has been determined that ELRA, DMP and FP were required. These documents have also been submitted to the Office of Environmental Enforcement.

A revised ELRA and DMP were submitted as part of this review application and were costed in accordance with the Agency's latest guidance. The costs were estimated at €1,274,748 and €101,809 respectively. A review of both DMP and ELRA, as well as approval of FP, is required under the RD.

The OEE have confirmed that they are in discussion with the licensee to put in place a financial provision instrument that covers both the DMP and the ELRA.

Fit & Proper Person Conclusion

It is my view, having regard to the provisions of section 84(5) of the EPA Acts 1992 as amended and the conditions of the RD, that the applicant can be deemed a Fit & Proper Person for the purpose of this review.

19. Cross Office Consultation

I consulted OEE Inspector, Joseph Hunter, in relation to this site. I also consulted with OEE Inspector, Denise O'Riordan, in relation to ELRA, DMP and financial provision.

20. Charges

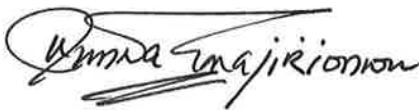
The annual enforcement charge recommended in the RD is €18,274, which reflects the anticipated enforcement effort required and the cost of monitoring. This represents the Agency's 2017 enforcement charge of €18,274.

21. Recommendation

The RD specifies the necessary measures to provide that the installation shall be operated in accordance with the requirements of Section 83(5) of the EPA Act 1992 as amended, and has regard to the AA and EIA. The RD gives effect to the requirements of the Environmental Protection Agency Acts 1992 as amended and has regard to submissions made.

I recommend that a Proposed Determination be issued subject to the conditions and for the reasons as drafted in the RD.

Signed

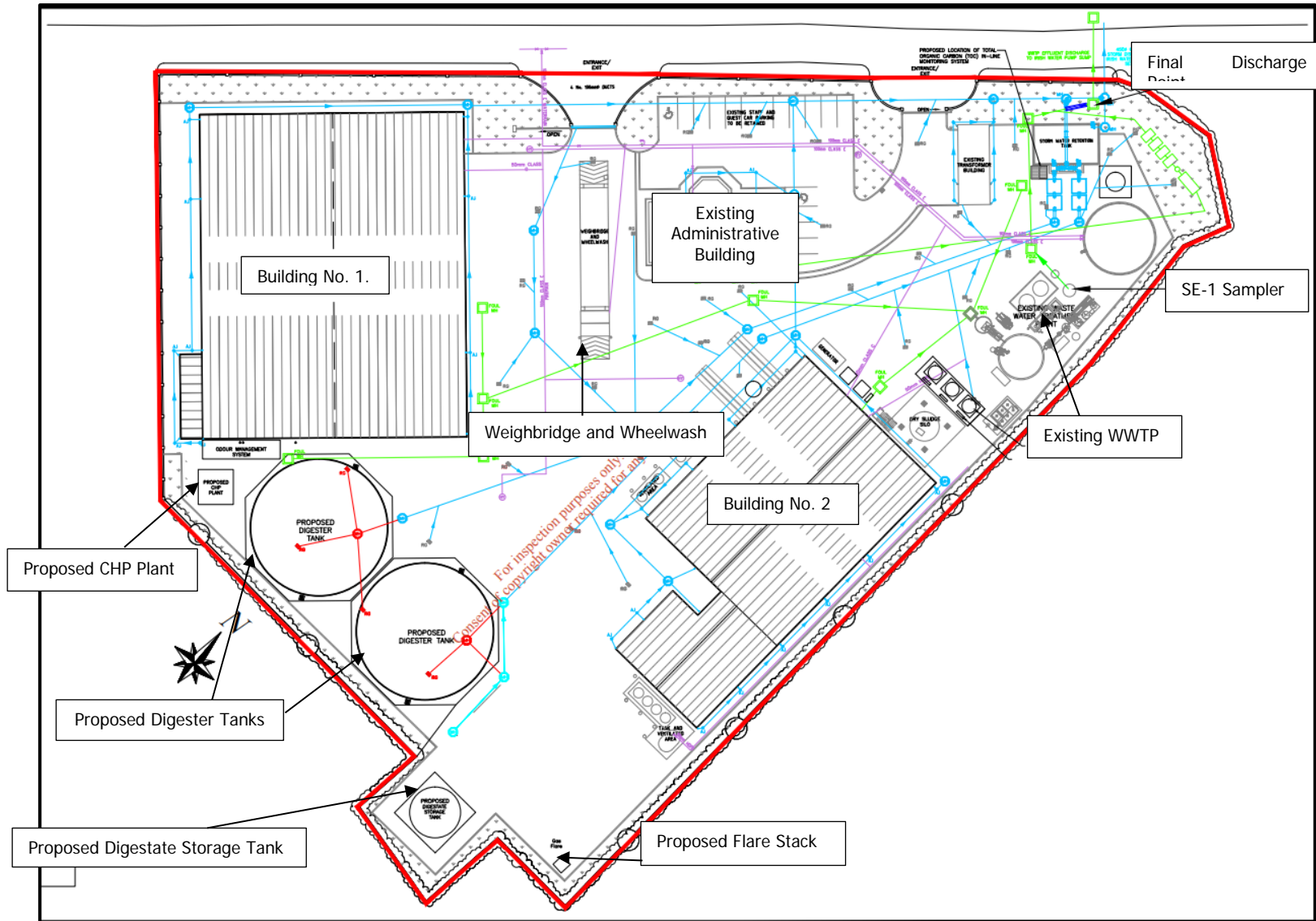


Dr. Magnus Amajirionwu

Procedural Note

In the event that no objections are received to the Proposed Determination on the application, a licence will be granted in accordance with Section 87(4) of the Environmental Protection Agency Acts 1992 as amended as soon as may be after the expiration of the appropriate period.

Appendix 1: Proposed Site Layout and Services Plan



Appendix 2: Assessment of the effects of activity on European sites and proposed mitigation measures.

Site Code	Site Name	Qualifying Interests (* denotes priority habitat)	Conservation Objectives	Assessment
004028	Blackwater Estuary SPA	Species A050 Wigeon (<i>Anas penelope</i>) A140 Golden Plover (<i>Pluvialis apricaria</i>) A142 Lapwing (<i>Vanellus vanellus</i>) A149 Dunlin (<i>Calidris alpina</i>) A156 Black-tailed Godwit (<i>Limosa limosa</i>) A157 Bar-tailed Godwit (<i>Limosa lapponica</i>) A160 Curlew (<i>Numenius arquata</i>) A162 Redshank (<i>Tringa tetanus</i>) A999 Wetlands	<i>NPWS (2012)</i> <i>Conservation Objectives: Blackwater Estuary SPA 004028. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.</i>	<p><u>Emission to Water</u></p> <p>Treated process effluent and clean storm water from the roof and the staff car park are the only emissions to water from the installation. Storm water from non-processing areas other than the roof is required to be treated prior to discharge to the adjacent Blackwater Estuary SPA [004028] and Blackwater River (Cork/Waterford) SAC [002170].</p> <p>Any change in water quality has the potential to impact on water dependant habitats and species.</p> <p>Conclusion:</p> <p>The only emission to water authorised from the installation storm water which will be treated via a silt trap and oil separator (Condition 3.17).</p>
002170	Blackwater River (Cork/Waterford) SAC	Habitats [1130] Estuaries [1140] Tidal Mudflats and Sandflats [1220] Perennial Vegetation of Stony Banks [1310] Salicornia Mud [1330] Atlantic Salt Meadows [1410] Mediterranean Salt Meadows [3260] Floating River Vegetation [91A0] Old Oak Woodlands [91E0] Alluvial Forests* Species [1029] Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>) [1092] White-clawed Crayfish (<i>Austropotamobius pallipes</i>) [1095] Sea Lamprey (<i>Petromyzon marinus</i>) [1096] Brook Lamprey (<i>Lampetra</i>)	<i>NPWS (2012)</i> <i>Conservation Objectives: Blackwater River (Cork/Waterford) SAC 002170. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.</i>	<p>The discharge of treated process effluent to water via Irish Water sewer would be required in the RD to seize with the commissioning of Youghal WWTP.</p> <p>Condition 5.9 requires that no process effluent, leachate and/or contaminated storm water shall be discharged to surface water drains and surface water courses.</p> <p>Condition 2.2.2.10 requires the licensee to implement procedures to ensure corrective and preventative action is taken should the specified requirements of the licence not be fulfilled to prevent a recurrence of the breach.</p> <p>Condition 5.9 requires the licensee to ensure that any discharge will comply with the requirements of the <i>European Communities Environmental Objectives (Surface Water) Regulations 2009, as amended</i>, and as a consequence contribute towards the receiving waters achieving 'good' status as required under the Water Framework Directive. Therefore, protecting the qualifying interests of the European sites.</p> <p><i>Schedule C.7.2:</i> Groundwater Monitoring of the RD requires that groundwater is sampled and analysed. A report of the results of monitoring shall be submitted annually as part of the AER.</p>

Site Code	Site Name	Qualifying Interests (* denotes priority habitat)	Conservation Objectives	Assessment
		planeri) [1099] River Lamprey (<i>Lampetra fluviatilis</i>) [1103] Twaite Shad (<i>Alosa fallax</i>) [1106] Atlantic Salmon (<i>Salmo salar</i>) [1355] Otter (<i>Lutra lutra</i>) [1421] Killarney Fern (<i>Trichomanes speciosum</i>)		<p><u>Emissions to Sewer:</u></p> <p>Run-off from processing areas is treated prior to discharge. Condition 5.8.4 of the RD requires the licensee to connect to the 'Area Main Drainage Scheme' (Irish Water WWTP Youghal).</p> <p>Conclusion:</p> <p><i>Schedule B.3</i> has set emission limit levels for the emission to sewer from the installation. <i>Schedule C.3.4</i> specifies the monitoring requirements for the discharge to sewer.</p> <p>Any exceedance of an emission limit value is treated as an incident that requires follow-up action and measures to prevent a re-occurrence of the incident.</p> <p><u>Emissions to Air</u></p> <p>There are five point sources of emission to air proposed at the installation which relates to the exhaust gases from the CHP engine, the bio filter, standby flare, and OCU (emission point reference numbers A1, A2, A3, A4 and A5).</p> <p>Odour and dust are emissions associated with the activity. To counter the potential for fugitive emissions of dust and odour, all waste storage and processing will take place indoors. Negative building pressure, extraction of building air and treatment of the extracted air are conditioned in the RD. There will be no untreated extraction air vented to atmosphere. Condition 6.14 of the RD further sets requirements in relation to dust and odour abatement.</p> <p>Conclusion:</p> <p><i>Emissions to Air</i></p> <p><i>Schedule B</i> has set emission limit values for emissions from the installation.</p> <p><i>Schedule C</i> sets out the requirements for the monitoring of emissions to air.</p> <p>The controls in the RD ensure the qualifying interests of the European sites are protected.</p>
002123	Ardmore Head SAC	Habitats 1230 Vegetated sea cliffs of the Atlantic and Baltic coasts	<i>NPWS (2016)</i> <i>Conservation Objectives:</i>	No Source-Pathway-Receptor link

Site Code	Site Name	Qualifying Interests (* denotes priority habitat)	Conservation Objectives	Assessment
		4030 European dry heaths	<i>Ardmore Head SAC 002123. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.</i>	
000077	Ballymacoda (Clonpriest and Pillmore) SAC	Habitats 1130 Estuaries 1140 Mudflats and sandflats not covered by seawater at low tide 1310 6DOLFRUQLD and other annuals colonising mud and sand 1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	<i>NPWS (2015) Conservation Objectives: Ballymacoda (Clonpriest and Pillmore) SAC 000077. Version 2. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.</i>	
004023	Ballymacoda Bay SPA	Species A050 Wigeon (Anas Penelope) A052 Teal (Anas crecca) A137 Ringed Plover (Charadrius hiaticula) A140 Golden Plover (Pluvialis apricaria) A141 Grey Plover (Pluvialis squatarola) A142 Lapwing (Vanellus vanellus) A144 Sanderling (Calidris alba) A149 Dunlin (Calidris alpina alpina) A156 Black-tailed Godwit (Limosa limosa) A157 Bar-tailed Godwit (Limosa lapponica)	<i>NPWS (2015) Conservation Objectives: Ballymacoda Bay SPA 004023. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.</i>	

Site Code	Site Name	Qualifying Interests (* denotes priority habitat)	Conservation Objectives	Assessment
		A160 Curlew (<i>Numenius arquata</i>) A162 Redshank (<i>Tringa tetanus</i>) A169 Turnstone (<i>Arenaria interpres</i>) A179 Black-headed Gull (<i>Chroicocephalus ridibundus</i>) A182 Common Gull (<i>Larus canus</i>) A183 Lesser Black-backed Gull (<i>Larus fuscus</i>) A999 Wetlands		
004192	Helvick Head to Ballyquin SPA	Species A017 Cormorant (<i>Phalacrocorax carbo</i>) A103 Peregrine (<i>Falco peregrinus</i>) A184 Herring Gull (<i>Larus argentatus</i>) A188 Kittiwake (<i>Rissa tridactyla</i>) A346 Chough (<i>Pyrhocorax pyrrhocorax</i>)	<i>NPWS (2016) Conservation objectives for Helvick Head to Ballyquin SPA [004192]. Generic Version 5.0. Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.</i>	<p style="text-align: center;">No Source-Pathway-Receptor link</p>

Appendix 3: Relevant European (and international) legal instruments

The following Irish and European and international legal instruments are regarded as relevant to this application assessment and have been considered in the drafting of the RD.

Industrial Emissions Directive (IED) (2010/75/EU)
Environmental Impact Assessment (EIA) Directive (85/337/EEC, as amended)
Habitats Directive (92/43/EEC) & Birds Directive (79/409/EC)
Water Framework Directive [2000/60/EC]
Air Quality Directives (2008/50/EC and 2004/107/EC)
Environmental Liability Directive (2004/35/CE)
Waste Framework Directive (2008/98/EC)
Groundwater Directive (80/68/EEC) and 2006/118/EC
Dangerous Substances Directive (2006/11/EC)
Medium Combustion Plant Directive (EU) 2015/2193
Regulation (EC) No 1069/2009, (Animal by-products Regulation)
Nitrates Directive (91/676/EEC)
Energy Efficiency Directive.

Appendix 4: Other BREF documents and National BAT notes relevant to this assessment

Sectoral BREF	Publication date
Reference Document on the Best Available Techniques for Waste Treatment	December 2015
Horizontal BREF	Publication date
Reference Document on the Best Available Techniques on Emissions from Storage	July 2006
Reference Document on the Best Available Techniques for Energy Efficiency	February 2009
National BAT notes	Publication date
BAT Guidance Note for the Waste Sector (Transfer & Materials Recovery)	December 2011