

This Report has been cleared for submission to the Board by Programme Manager:

Marie O'Connor

Signed:

Gráinne Dylesby

Date: 8 July 2021



OFFICE OF ENVIRONMENTAL SUSTAINABILITY

REPORT OF THE TECHNICAL COMMITTEE ON OBJECTIONS TO PROPOSED DECISION

TO:	Directors	
FROM:	Technical Committee	Environmental Licensing Programme
DATE:	8 JULY 2021	
RE:	Objection to Proposed Decision for DONEGAL COUNTY COUNCIL, Churchtown, Lifford, COUNTY Donegal. Waste Reg: W0062-02	

Application Details	
Class(es) of activity:	D01 Deposit into or on to land (e.g. landfill, etc.) D04 Surface impoundment (e.g. placement of liquid or sludgy discards into pits, ponds or lagoons, etc.) D15 Storage pending any of the operations numbered D 1 to D 14 (excluding temporary storage (being preliminary storage according to the definition of 'collection' in section 5(1)), pending collection, on the site where the waste is produced).
Location of activity:	Churchtown Landfill, Churchtown, Lifford, Co. Donegal.
Licence application received:	26 May 2017.
PD issued:	22 October 2020.
First party objection received:	18 November 2020.
Third Party Objection received:	Not applicable.
Submissions on Objections received:	Not applicable.
Article 33(1) extension of time:	Yes; 29 March 2021, 24 June 2021

Company

The licence review application relates to Churchtown Landfill which is owned by Donegal County Council. The 9.7 hectare facility was operational from 1987 to the 31st of August 2000 for the disposal of household, commercial and construction and demolition wastes. The site is an unlined site, historically operated on a dilute and disperse principal, whereby solid waste was tipped directly onto the underlying excavated surface with leachate allowed to percolate directly through the soil. Donegal County Council was granted a waste licence, Reg. No. W0062-01, on the 19th May 2000 for the closure, capping and restoration of the landfill facility. The site has been identified as a significant pressure to groundwater.

The site is located in a rural area approximately 3km south west of Lifford and is bordered to the northwest by the main Lifford to Ballybofey Road. The facility is situated in the lower alluvial flood plain of the River Finn, with the river itself forming the south-eastern boundary of the site. The river also delineates the boundary between the Republic of Ireland and Northern Ireland. A short rotation coppice (SRC) willow bed and an Integrated Constructed Wetland (ICW) was installed on top of the landfill to treat extracted leachate prior to discharge to the River Finn. The licence review application, Reg. No. W0062-02, seeks authorisation for the discharge of this treated leachate. The River Finn is a designated special area of conservation (SAC) in the Republic of Ireland (River Finn SAC, Site Code: 002301) and in Northern Ireland (River Foyle and Tributaries SAC, Site Code: UK0030320). The River Finn is also designated as a Salmonid Water.

One submission was received from Northern Ireland Environment Agency (NIEA) in response to transboundary consultation during the licence review application assessment process. The submission stated that NIEA Waste Permitting had no comments on the waste licence review.

Consideration of the Objection

The Technical Committee, comprising of Anne Lucey (Chair), has considered all of the issues raised in the objection and this report details the Committee's comments and recommendations following the examination of the objections and the documents associated with the industrial emissions licence application.

This report considers the 3 first party objections received. The objections raised are summarised below. However, the original objections should be referred to for greater detail and further expansion of particular points.

First Party Objection

The licensee has made 3 main points of objection relating to specific Conditions/Schedules of the Proposed Determination. The points of objection are dealt with in the order below.

A.1 Condition No. 6.1.2 "The licensee shall ensure that each pond and willow bed is performing as designed and to specification..." and Schedule No. C.2.3 Monitoring of Constructed Wetland System

The licensee objects to *the requirement to regularly monitor each of the 11 ponds of the ICW system* and specifically requests the amendment of Condition 6.1.2 to replace the words "each pond" with "the Integrated Wetland System". Condition 6.1.2 also requires that the licensee investigates the causes for any unexpected increase in the concentration of any parameter across any single pond. The licensee contends that the ponds can be investigated in more detail when considered necessary and by agreement with the Agency.

The licensee also requests the *removal of all of Schedule C.2.3 and references thereto*. Schedule C.2.3 sets out monitoring parameters required for each of the 11 ponds in the ICW and specifies that monitoring shall take place on the inlet and outlet of each pond.

The licensee identifies a number of "problematic aspects" in relation to the Proposed Determination (PD) including *the overall scale of increase in monitoring requirements*. The licensee states that *the PD results in approximately an eight-fold increase in the number of monitoring samples, together with more extensive monitoring parameters*. The licensee also states that *the PD introduces 20 new monitoring locations, extensive monitoring suites of metals and organic chemicals and the requirement to regularly monitor pond sediment and receiving water sediment*. Additionally, the licensee highlights a number of grounds for objection including the *prohibitive cost of implementation of the monitoring programme and the heavy financial burden of monitoring which they state discourages innovation and progress for sustainability in relation to leachate management*. The licensee also contends that imposing such a *heavy financial burden is at odds with the principles of BATNEEC and also those of proportionality in general*.

Technical Committee's Evaluation:

It is noted that the primary method for leachate treatment is by passing through the willow plantation. The ICW is a secondary alternative when leachate is produced over and above the capacity of the willow bed. There are two separate ICW systems; ICW Area A and ICW Area B. There are a total of four new surface water discharge points proposed from the willow plantation (Emission Point Ref. No. D1 and D3) and the ICW (Emission Point Ref. No. D2 and D4) and each of these points is subject to frequent and extensive monitoring in accordance with Schedule C.2.2. Continuous monitoring is also required under this schedule for flow, temperature, electrical conductivity, pH, TOC and ammonia. In the event that ammonia reaches the discharge limit of 3mg/L in the willow plantation, an automatic shut-off valve will activate and divert the flow for retreatment in the willow bed or ICW. The TC considers that the monitoring of these discharge points is sufficiently robust to ensure that treated effluent is meeting the associated emission limit values set out in the PD.

The TC also notes that leachate is to be monitored for an extensive suite of parameters in 3 locations prior to treatment in the willow bed /ICW in accordance with Schedule C.2.4. This monitoring will ensure that the leachate profile generated from the landfill is characterised to facilitate the management of the willow bed and ICW for optimum leachate treatment.

Taking account of the robust monitoring required on leachate prior to treatment in the willow bed /ICW and post-treatment on the 4 individual discharge points (D1, D2, D3 and D4), the TC considers that there is a sufficient level of monitoring in place to enable the

monitoring proposed on the inlet and outlet of each of the 11 ICW ponds in Schedule C.2.3 to be removed. The TC also notes that Condition 2.2.2.9 relating to Efficient Process Control, requires “key indicator parameters for process control performance” to be identified, as well as “methods for measuring and controlling these parameters”. This allows for suitable indicators and an appropriate level of monitoring to be established for the operation of the ICWs.

Furthermore, the TC considers it appropriate to amend Condition 6.1.2 to replace the words “each pond and single pond” with “each Integrated Constructed Wetland System”. In its current format, the condition requires the licensee to ensure that each of the 11 ICW ponds is performing as designed and to specification and that any unexpected increase in the concentration of any parameter across any single pond is investigated. The TC considers it important that each ICW system is operating effectively overall and by amending the condition will allow for natural fluctuations within each pond to occur whilst maintaining compliance with emission limit values through the overall system. The TC also notes that Condition C.2.2.9 Efficient Process Control requires “abnormal process operating conditions” to be documented and analysed for necessary corrective action. This allows for abnormal conditions at a pond level to be actioned if required.

The TC recommends that Schedule C.2.3 is removed from the PD and that Condition No. 6.1.2 is amended. For clarity on the ICW system, it is also recommended to add a definition to the licence Glossary of Terms to explain that the ICW consists of Area A and Area B.

Reason for Decision:

The TC has reached its conclusion on the basis of the following considerations:

- In the interest of proportionate monitoring and efficient use of resources.
- To provide clarity on the treatment system in place.

Remove Schedule No. C.2.3 and renumber remaining Schedule C.2.4.

Amend Condition No. 6.1.2 as follows:

6.1.2 The licensee shall ensure that each **integrated constructed wetland system** and the willow bed is performing as designed and to specification. The licensee shall investigate the causes for any unexpected increase in the concentration of any parameter across **each integrated constructed wetland system and the willow bed**. The report on any investigation and execution of remedial measures shall be submitted as part of the AER.

Add definition to Glossary of Terms as follows:

Integrated Constructed Wetland	The integrated constructed wetland system consists of Area A (Pond 1A receiving cell, Pond 1A, Pond 2A, Pond 3A, Pond 4A and Pond 5A) and Area B (Pond 1B, Pond 2B, Pond 3B, Pond 4B
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A.2 Schedule C.2.1. Control of Emissions to Water

Note 2 in Schedule C.2.1. requires that sediment is sampled and analysed for heavy metals as part of the quarterly monitoring specified for the willow plantation and ICW within the schedule. The licensee requests that *Note 2 is amended to include the text "by agreement with the Agency"*. The licensee *proposes that a one-off exercise is carried out to test pond sediment samples to establish baseline levels with follow up testing carried out by agreement with the Agency.*

As noted in section A.1 above, the *"problematic aspects"* in relation to the PD and the *highlighted grounds for objection* are also applied to this objection.

Technical Committee's Evaluation:

The TC notes that Schedule C.2.1. requires quarterly monitoring for "sediment depth and composition, vegetation and invertebrate monitoring" and that Note 2 of the schedule specifies that the sediment composition is analysed for heavy metals. Condition 3.17.2 also requires trigger levels to be established for the removal of sediment from the wetland ponds based on "sampling" required in Schedule C.2.1 "within six months" of the date of grant of this licence. The TC also notes that emission limit values are in place for a suite of heavy metals on the discharge points for the willow plantation and ICW. This will ensure that any issue with elevated heavy metal concentrations will be detected on the discharge.

It is anticipated that sediment will only be removed after a number of years (5-10 years for initial wetland cell) and that the sediment removal frequency for each pond will also vary. It is therefore proposed to reduce the monitoring requirement for heavy metals from a quarterly basis to a biannual basis for the first two years to establish a baseline and then once every three years thereafter to monitor for increasing levels. The TC considers periodic monitoring more appropriate than the suggested follow up testing in order to track accumulated metals in the sediment build-up. A requirement to sample and analyse for other parameters if required by the Agency, will also be included prior to sediment removal to assist with the identification of a suitable disposal option/outlet. The TC therefore proposes to amend Schedule C.2.1 to identify sediment composition analysis in accordance with the proposed monitoring requirements outlined. Additionally, it is proposed to amend Condition 3.17.2 to establish trigger levels within 24 months to take account of the new biannual monitoring requirements for the first two years and to amend "sampling" with "monitoring" to clarify that all sediment monitoring as required by Schedule C.2.1 should be taken into account and not just sampling for heavy metals.

The TC recommends that Schedule C.2.1 and Condition 3.17.2 are amended as outlined below.

Reason for Decision:

The TC has reached its conclusion on the basis of the following considerations:

- In the interest of proportionate monitoring and efficient use of resources.
- In the interest of clarity in relation to Condition 3.17.2.

Amend Schedule No. C.2.1. to read as follows:

C.2.1 Control of Emissions to Water

Constructed Wetlands and Willow Bed

Emission Point Reference No: D1, D2, D3, D4
 Emission Control Location: Constructed wetland ponds and willow bed
 Description of Treatment: SRC Willow Bed and Constructed Wetland Ponds

Control Parameter	Monitoring	Key Equipment ^{Note 1}
Flow and flow patterns	Continuous for discharge flow and flow between ponds and in willow bed, Daily visual inspection for flow and flow patterns in the ponds and willow bed.	Flow regulators Flow meters Shut-off valve at discharge Pond isolation valves
Bank inspection, water depth, turbidity in final segments	Weekly	Visual inspection and appropriate measuring equipment
Sediment depth, vegetation and invertebrate monitoring	Quarterly	Visual inspection and appropriate measuring/monitoring equipment
Sediment composition: heavy metals	Biannually for two years and once every three years thereafter Prior to sediment removal ^{Note 2}	Appropriate sampling equipment

Note 1: The licensee shall maintain appropriate access to standby and/or spares to ensure the operation of the abatement system.
 Note 2: The sediment shall be sampled and analysed for **other parameters if required by the Agency.**

Amend Condition No. 3.17.2 to read as follows:

3.17.2 The licensee shall, within **24** months of the date of grant of this licence, establish trigger levels for removal of sediment from the wetland ponds based on **monitoring** required in Schedule C.2.1; Control of Emissions to Water, of this licence.

A.3 Schedule C.2.2. Monitoring of Emissions to Water

Note 3 in Schedule C.2.2. requires the installation of a composite sampler within three months of the date of grant of the licence and that all samples thereafter shall be collected on a 24-hour flow proportional composite sampling basis. The licensee requests that *Note 3 is amended to include the text "by agreement with the Agency"*.

As noted in section A.1 above, the "problematic aspects" in relation to the PD and the highlighted grounds for objection are also applied to this objection.

Technical Committee’s Evaluation:

The TC notes from the application documentation that maximum discharge flow rates are estimated at 68.12m³ from the willow plantation and 67.73m³ from the ICW but that discharge rates from the willow and ICW systems will be variable depending on the volumes to be treated and on climatic conditions. There will likely be higher rates of discharge during the winter months and reduced or no discharges during the summer months. Taking account of potential dry periods, particularly from the ICW, and the requirement for continuous monitoring (flow, temperature, electrical conductivity, pH, TOC and ammonia) on the four discharge points from the willow plantation and ICW, the TC considers that grab sampling will continue to provide an appropriate level of representative sampling for monitoring the remaining parameters weekly and monthly. It is therefore proposed to amend the references to composite sampling in Note 1 and Note 3 of Schedule C.2.2. to include “if utilising a composite sampler” and “if required by the Agency”. This will allow the Agency to require the installation of composite samplers if determined to be more suitable at a later stage.

It is also proposed to delete the last line in Note 5 to correct a clerical error.

The TC recommends that Schedule C.2.2. is amended as outlined below.

Reason for Decision:

The TC has reached its conclusion on the basis of the following considerations:

- In the interest of proportionate monitoring and efficient use of resources.

Amend Schedule No. C.2.2. to read as follows:		
<i>C.2.2. Monitoring of Emissions to Water</i>		
Emission Point Reference No: D1, D2, D3, D4		
Control Parameter	Monitoring	Key Equipment/Technique
Flow	Continuous Daily ^{Note 1}	On-line flow meter with recorder
Temperature	Continuous	On-line temperature probe with recorder
Visual Inspection/Odour ^{Note 2}	Daily	Standard Method
Electrical Conductivity	Continuous	Online conductivity meter with recorder
pH	Continuous	pH electrode/meter with recorder
TOC	Continuous	On-line TOC meter with recorder
Ammonia (as N)	Continuous	Standard Method
Chemical Oxygen Demand	Weekly ^{Note 3}	Standard Method
Biochemical Oxygen Demand	Weekly ^{Note 3}	Standard Method
Suspended Solids	Weekly ^{Note 3}	Standard Method

Total Dissolved Solids	Weekly ^{Note 3}	Standard Method
Dissolved oxygen	Weekly	Standard Method
Orthophosphate (as P)	Weekly ^{Note 3}	Standard Method
Total Phosphorous	Weekly ^{Note 3}	Standard Method
Nitrates (as N)	Weekly	Standard Method
Nitrites	Weekly	Standard Method
Metals	Weekly ^{Note 4}	Standard Method
Ammoniacal Nitrogen	Monthly	Standard Method
Chloride	Monthly	Standard Method
Sulphate	Monthly	Standard Method
Phenols	Monthly	Standard Method
Organic Compounds ^{Note 5}	Monthly	Standard Method
Total Alkalinity	Monthly	Standard Method
Toxicity ^{Note 6}	As may be required	To be agreed by the Agency

Note 1: Total effluent discharged over the 24-hour period in which the composite sample is collected shall be recorded, **if utilising a composite sampler.**

Note 2: Where there is evident gross contamination, additional samples should be analysed and the full suite of parameters shown tested.

Note 3: The licensee shall install a composite sampler **if required by the Agency.** All samples thereafter shall be collected on a 24-hour flow proportional composite sampling basis.

Note 4: Metals and elements to be analysed by AA/ICP should include as a minimum: boron, cadmium, calcium, chromium (total), copper, iron, lead, magnesium, manganese, nickel, potassium, sodium, zinc, arsenic, mercury, aluminium and silver.

Note 5: Screening for priority pollutant list substances (such as US EPA volatile and/or semi volatile compounds). ~~This analysis shall include those organic solvents in use in the process, which are likely through normal process operators to be diverted to the wastewater stream.~~

Note 6: The number of toxic units (Tu) = 100/x hour EC/LC₅₀ in percentage vol/vol so that higher Tu values reflect greater levels of toxicity. For test regimes where species death is not easily detected, immobilisation is considered equivalent to death.

Appropriate Assessment – Technical Committee Review

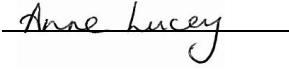
The TC has reviewed the Inspector's Appropriate Assessment in the Inspector's Report and, taking into account all objections received, and the content of this TC report, the TC is satisfied that the Inspector's Report provides an adequate examination and evaluation of the effects of the activity on the European Sites concerned; River Finn SAC (Site Code: 002301) and River Foyle and Tributaries NISAC (Site Code: UK0030320), in the light of their conservation objectives.

Overall Recommendation

It is recommended that the Board of the Agency grant a licence to the applicant

- (i) for the reasons outlined in the proposed determination and
- (ii) subject to the conditions and reasons for same in the Proposed Determination,
and
- (iii) subject to the amendments proposed and the reasons set out in this report.

Signed

A handwritten signature in cursive script, reading "Anne Lucey", is written over a horizontal line.

Anne Lucey

for and on behalf of the Technical Committee