



**OFFICE OF
RESOURCES & RESEARCH**

This document has been cleared for submission to the Director by the Senior Inspector: Brian Meaney
Signed: *Brian Meaney* Date: 02/09/2015

INSPECTOR'S REPORT ON A LICENCE APPLICATION

To:	Director	
From:	Ewa Babiarczyk	Environmental Licensing Programme
Date:	02 September 2015	
RE:	Application for a review of an Industrial Emissions Licence from Carlow County Council for Powerstown Landfill & Recycling Centre at Kilkenny Road, Carlow, Co. Carlow (Licence Register No. W0025-04)	

1. Application details

Type of installation:	Non-hazardous landfill and a civic waste facility
Class of activity under the First Schedule of the EPA Act 1992 as amended:	<p><u>11.1</u> 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.</p> <p><u>11.5</u> Landfills, within the meaning of Section 5 (amended by Regulation 11(1) of the Waste Management (Certification of Historic Unlicensed Waste Disposal and Recovery Activity) Regulations 2008 (S.I. No. 524 of 2008)) of the Act of 1996, receiving more than 10 tonnes of waste per day or with a total capacity exceeding 25,000 tonnes, other than landfills of inert waste.</p>
Category of Activity under the Industrial Emissions Directive (2010/75/EU):	<u>5.4</u> Landfills, as defined in Article 2(g) of Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste, receiving more than 10 tonnes of waste per day or with a total capacity exceeding 25 000 tonnes, excluding landfills of inert waste.
Licence application received:	28 November 2014
EIS received:	Yes
NIS received:	Yes
Baseline Report received:	Yes

Number of submissions:	Three
Site visit date:	23 December 2014
Site notice inspection date:	23 December 2014

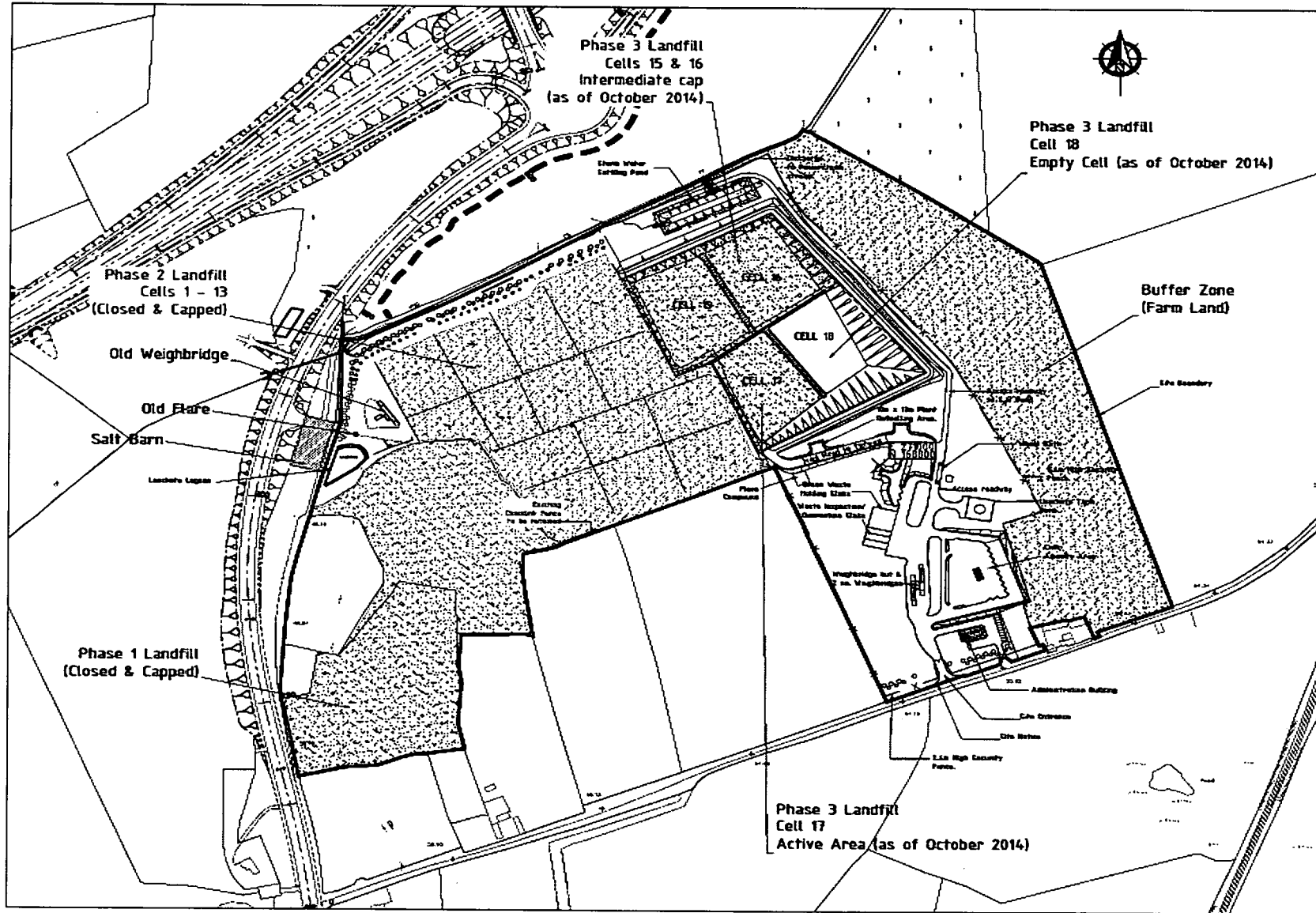
2. Installation

Licensee, installation and reason for review:	<p>This landfill is the only active landfill in Southern Waste Region. The site is operated by Carlow County Council and comprises a non-hazardous municipal solid waste landfill and a civic waste facility. The Council seeks mainly an increase in waste intake accepted at the landfill from 40,000 tonnes to 50,000 tonnes per annum. The Council expects that, with the proposed increased waste intake of 50,000 tonnes per annum, the landfilling activity will cease by the end of 2016. No change to types of waste accepted at the landfill are proposed; however, the Council seeks change to accepted amounts of individual waste types. No increase to the landfill footprint, new infrastructure or construction works within the installation is proposed. The existing licence authorises composting; however, no composting has taken place at the installation to date. The licensee requested that the existing licence provisions for composting be retained.</p> <p>The Council requests also changes to the existing requirements for monitoring of surface water, groundwater, gas and noise. The Council's requests are addressed in detail in Section 7 below.</p>
Existing or new development	<p>The installation has been in operation since 1975. Waste activities at the installation have been authorised under a waste licence since 24 March 2000. The existing, revised, licence Reg. No. W0032-03 was granted on 21 December 2009. This licence was amended on 28 June 2010, 15 January 2013 and 19 December 2013 with the latter amendment making the licence compliant with the Industrial Emissions Directive.</p> <p>A decision was made by An Bord Pleanála (Planning File Ref. 01.JA0032) in August 2012 to approve continued filling of Phase 3 of the landfill until August 2018 and increase of the annual waste intake from 40,000 tonnes to 50,000 tonnes.</p>
Quantity of waste managed per annum:	<p>The proposed waste intake of 50,000 tonnes per annum includes:</p> <ul style="list-style-type: none"> • Non-hazardous household, commercial and industrial solid waste - 48,500 tonnes; • construction and demolition (C&D) waste - 1,000 tonnes; and, • treated sewage sludge - 500 tonnes.

Waste activities:	<ul style="list-style-type: none"> • Acceptance and disposal of waste at the Powerstown Landfill (including small quantities of municipal waste brought by the public). • Acceptance and storage of recyclable waste at the civic waste facility prior to transfer of this waste for recovery. • Composting.
Description of site:	The site covers an area of 24 Ha and is located just off Junction 6 of the M9 Motorway in a rural setting in the townland of Powerstown.
Number of employees at installation:	10
Hours of operation	<p>The landfill operates from 7 am to 6.30 pm Monday to Friday inclusive and from 7 am to 1.30 pm on Saturdays.</p> <p>Waste can be accepted at the civic waste facility from 8 am to 5.30 pm Monday to Friday inclusive, 8 am to 4.30 pm on Saturdays and from 8 am to 12.30 on Sundays.</p> <p>No operation is permitted on bank holidays.</p>

The main components of the installation are the landfill and the civic waste facility (see Figure 1 below).

Figure 1: Layout of the site



Landfill

The landfill has been developed in three phases. Phase 1 is unlined and was operational from 1975 to 1990. Phase 2 is made up of Cells 1-13. Cells 1-6 are lined with a single HDPE liner and Cells 7-13 are lined with a single HDPE liner and engineered clay. Phase 2 was operational from 1991 to 2006. Both Phase 1 and Phase 2 have been permanently capped. Phase 3 is lined and comprises of four cells (Cells 15 to 18¹). Waste acceptance commenced in Phase 3 in 2007 with Cells 15, 16 and 17 being now closed and covered with an intermediate cap. Filling of Cell 18 commenced in January 2015. The licensee stated that the design stage for permanent capping would commence in summer 2015 but it would include only Cell 15 and Cell 16. **Condition 10.5** requires that filled cells shall be permanently capped within 24 months of the cells having been filled to the required level.

Civic waste facility

The civic waste facility is open to the general public. The materials accepted at this facility include, among others, glass, paper, cardboard, metal and household hazardous waste.

Composting facility

Composting activity is authorised in the existing licence; however, this activity has never commenced at the installation and, despite the fact that there are no immediate proposals to develop this facility, the licensee requested to retain the licence provisions for composting. **Condition 3.30** requires that composting infrastructure shall be established and maintained to the satisfaction of the Agency prior to any waste being composted. **Condition 8.19.1** requires that the composting process shall not commence without agreement by the Agency.

Ancillary infrastructure

Other important components of the installation's infrastructure are:

- surface water drainage system;
- the landfill leachate management system; and,
- the landfill gas collection and flaring system.

These are described under appropriate heading of Section 7 of this report.

3. Process Description

Waste is brought to the site in a variety of vehicles including refuse collection vehicles, heavy good vehicles (HGVs), trucks carrying skips and smaller trucks/trailers. Waste is then inspected and accepted in accordance with waste acceptance procedures. Once waste has been accepted, it is weighed over a weighbridge, recorded and directed to an active face of the landfill. It may happen that waste is sent to a quarantine area for further inspection and/or quarantine. Once waste has been inspected and accepted for landfilling, it is directed for tipping to the active face where bull dozers and waste compactors place and compact it. Empty waste vehicles are weighed prior to leaving the site. **Condition 3.22.2** requires that all leaving vehicles must go through wheel cleaners. In order to prevent odour, windblown litter and bird scavenging the landfilled waste is covered daily with clay, ash or proprietary biodegradable roll out cover.

It was noted during the site visit on 23rd December 2014 that the landfilled waste was not adequately covered, i.e. the waste was showing through, as shown on Figure 2 below.

¹ Please note that there is no cell referred to as Cell 14.

Figure 2: Waste cover observed during the site visit



Condition 6.38 specifies requirements for a working face. **Condition 6.39** requires that appropriate cover material shall be placed and maintained across the whole landfill so that no waste, other than waste suitable for specified engineering works and waste on the working face during the operational hours of the installation is exposed.

4. Planning Permission, EIS and EIA Requirements

4.1. 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 activity is likely to have a significant effect on the environment, and accordingly is carrying out an assessment for the purposes of EIA.

4.2. Planning status

Two planning applications have been made by the licensee for the site of the activity. Details of these planning applications and permissions have been provided in the application form.

An Board Pleanála determined that the development associated with planning application reference 01.JA0032 (planning approval was granted on 13th August 2012) is likely to have a significant effect on the environment and that an EIA was required. An Environmental Impact Statement (EIS) submitted in support of that planning application has been submitted with the licence application.

Having specific regard to EIA, this report is intended to identify, describe and assess for the Agency the direct and indirect effects of the proposed activity on the environment, as respects the matters that come within the functions of the Agency, including any interaction

between those effects and the related development forming part of the wider project, and to propose conclusions to the Agency in relation to such effects.

The EIS submitted, the licence application, the submissions and observations received from third parties, the assessment(s) carried out by An Bord Pleanála, consultations with An Bord Pleanála, the relevant planning decisions and any additional information submitted by the licensee have been examined and assessed and are considered below for that purpose.

4.3. 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.

It was considered that the EIS and licence application did not adequately address the following areas and this information was requested under Regulations 10(2)(b)(ii) and 11(2)(b) of the EPA (Industrial Emissions) (Licensing) Regulations 2013 and:

1. Clarification on activities and their locations within the installation.
2. Types of waste stored on-site pending recovery or disposal.
3. Details on integrity of the liner of Cell 18.
4. Location of emission monitoring points.
5. Baseline report.
6. Arrangements for meeting the licensed limits on acceptance of biodegradable municipal waste (BMW).
7. Arrangements for recovery and utilisation of the landfill gas.
8. Arrangements for the installation to comply with Directive 80/68/EEC.
9. Information on compliance of the operation of the installation with the best available techniques.
10. Clarification of reason for seeking an increase in the authorised waste intake.
11. Clarification on the source of waste water biologically treated at the installation.

On receipt of further information under Regulations 10(2)(b)(ii) and 11(2)(b) of the Licensing Regulations, 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 licensee, 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 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*.

I have considered and examined the documents furnished by An Bord Pleanála in relation to the impacts assessed by it, in particular the report of the inspector, the direction dated 10th August 2012 and the decision dated 13 August 2012 (ref: 01.JA0032).

I consider the issues that interact with the matters that were considered by the above authorities and which relate to the activity in Section 14 of this report.

Having considered the application and EIS, the submissions of state and public authorities, and the matters resulting from An Bord Pleanála decisions, I consider that the likely significant effects of the activity on the environment are as set out in Section 14 below.

4.4. Consultation with Competent Authorities

Consultation was carried out between An Bord Pleanála and the Agency as follows:

Consultation	Date
Notice under Section 87(1E)(a) (request for observations) issued:	3 December 2014 to An Bord Pleanála
Response to Section 87(1E)(a) Notice received:	31 December 2014 from An Bord Pleanála
Notice under Section 87(1E)(a) (request for observations) issued:	9 March 2015 to An Bord Pleanála
Response to Section 87(1E)(a) Notice received:	19 March 2015 from An Bord Pleanála

An Bord Pleanála raised the following issues in relation to the licence application and EIS:

- A number of differences between the submitted EIS and the license review application which include:
 - Discrepancies between Classes of activity applied for; and,
 - Discrepancies between predicted levels of the landfill leachate generation.
- An Bord Pleanála also pointed out that the information in the Closure Plan and Restoration/ Aftercare Plan (August 2014) submitted as part of the licence review application differs, particularly with regard to the provision and maintenance of trees and hedgerows around the site, from the Closure Restoration and Aftercare Management Plan (CRAMP) contained in the EIS submitted with Case Reference 01.JA0032.

The following is noted in relation to the issues raised by An Bord Pleanála in their consultation response:

- The Agency clarified with the licensee the applicable classes of activity.
- The differences in the predictions on the leachate generation were noted.
- CRAMP has been agreed by the Agency's Office of Environmental Enforcement (OEE) subject to a number of conditions. **Condition 10.2.1** requires that the licensee shall maintain, to the satisfaction of the Agency, a fully detailed and costed plan for the decommissioning or closure of the site or its part.

5. Submissions

Three submissions were received in relation to this IE licence review application from the Health Service Executive, the Department of Arts, Heritage and the Gaeltacht and the Department of Agriculture, Food and the Marine.

These submissions were taken into consideration during the preparation of the Recommended Decision (RD).

Submission No. 1 received from Health Service Executive South on 24 December 2014

No comment specifically addressing this licence review application was made in the submission.

Response:

The submission was noted.

Submission No. 2 received from Department of Arts, Heritage and The Gaeltacht on 5 February 2015

The submission states that the following information is required by the Department:

- (i) Was this licence application Appropriately Screened;
- (ii) What bird scaring techniques are being deployed; and,
- (iii) What company is being employed.

Response:

In relation to point (i), the screening for appropriate assessment and the screening for environmental impact assessment were both carried out on 18 June 2015. The information on these screenings is detailed, respectively, in Section 15 and Section 4.1 of this report.

Regarding issue raised in point (ii), the EIS states that only trained birds of prey, such as harris hawk and peregrine falcon, are used for bird scaring techniques and that there are also visual and acoustic deterrents used on site such as an automated bird scarer, a hand pistol and kites.

In relation to (iii), it is stated in the EIS that Bird Control Ireland Limited is contracted for purposes of scaring birds at the site.

Submission No. 3 received from Department of Agriculture, Food and the Marine on 18 March 2015

The submission states that the Department has no submissions or observations to make.

Response:

The submission is noted.

6. Consideration of Best Available Techniques (BAT) and BAT conclusions

Section 86A(3) of the EPA Act 1992 as amended requires that the Agency shall apply BAT conclusions as a reference for attaching one or more conditions to a licence or revised licence (Article 14(3) of the IED). Therefore, BAT for the installation was assessed against the BAT Conclusions contained in the following documents:

- BREF Document for the Waste Treatment Industries (July 2006) – currently under review
- BREF Document on Energy Efficiency (February 2009)
- BREF Document for Emissions from Storage (July 2006)

The licensee submitted an assessment of the installation activity against the relevant BAT Conclusion requirements contained in the above BREF Documents. The licensee has demonstrated that the installation will generally comply with all applicable BAT Conclusion

requirements specified in the main applicable BREF activity (Waste Treatments) and those contained in the additional BREF Documents.

I consider that the applicable BAT Conclusion requirements are addressed through: (i) the technologies and techniques as described in the application and (ii) the standard conditions specified in the RD.

Based on an examination and assessment of the application documentation, I am satisfied that the technologies and techniques, as specified in the application, and as confirmed, modified or specified in the attached RD will ensure that the relevant requirements of BAT as stipulated in the above BAT Reference Documents will be applied at the installation. In addition, the proposed activities, as described in the application, this report and the RD, are effective in achieving a high general level of protection of the environment having regard - as may be relevant - to the location of the installation and to the way in which it is designed, built, managed, maintained, operated and decommissioned.

7. Emissions

7.1. Emissions to Air

The landfill gas is not utilised on site; however, the licensee is considering gas utilisation. **Condition 5.4.3** of the RD requires a feasibility study on landfill gas utilisation.

There is one point source emission from the landfill gas flare (emission reference LFGF1). This gas flare has been operational since 2008. There is a second flare within the installation but this flare has been redundant for a number of years. The landfill gas collection and treatment system comprising vertical and horizontal gas collection wells and pipes in the waste body is controlled through valves at manifolds through which the landfill gas is extracted to an enclosed gas flare. Surface emissions of the landfill gas through the uncapped areas are managed using passive collection pipework and cover techniques.

An increase of 10,000 tonnes of waste will result in a higher than at current rate gas generation level which can remain increased for four to five years. It is envisaged however, that this increase in gas generation will not have a significant impact on the overall amount of gas generated due to fact that there will be no change to the overall amount of waste permitted to be disposed over the lifetime of the landfill. The RD retains the existing emission limit values (ELVs) and monitoring requirements for the gas flare emissions.

Fugitive emissions to atmosphere include the landfill gas that is not collected by the gas collection system, volatile organic compounds (VOCs), odour and dust.

Odour generation is associated with the landfill gas that is not captured by the collection system and handling and storage of odour-forming waste. Thirteen odour related complaints were received between May 2014 and May 2015 and at present odour is monitored twice a day at three residential sites.

A Volatile Organic Compounds (VOC) survey was carried out in December 2014. There were two surface emissions zones greater than or equal to 500 ppm instantaneous reading on features within the landfill footprint. There were four surface emissions zones greater than or equal to 100 ppm instantaneous reading on open surfaces within the landfill footprint. The licensee notified the Agency of these exceedances and implemented the following mitigation measures:

- extra cover was applied to the affected areas,
- additional horizontal landfill gas extraction wells were installed and
- the licensee increased the landfill gas extraction rate.

Condition 6.31 requires an Odour Management Plan and specifies measures to control potential sources of odour nuisance.

Dust generation is associated with handling of waste and vehicle movement within the installation. **Condition 6.21** specifies measures for control of dust. **Schedule B.4** specifies a dust deposition limit of 350 mg/m² per day. **Schedule C.4.1** requires monitoring of dust deposition three times a year.

The licensee seeks cessation of gas monitoring at boreholes G11 to G21 as landfill gas perimeter monitoring locations and explains that the boreholes G11 to G21 are in the waste body of Phase 1 and are along the landfill/quarry boundary. The licensee seeks also cessation of monitoring at borehole TP15 as this borehole is believed to be located too close to the percolation area for the wastewater treatment system. The Council adds that there are other wells in the vicinity which are used to monitor for landfill gas migration. The said monitoring locations are not included as monitoring locations in **Schedule C.1** of the RD.

7.2. Emissions to Sewer

There are no emissions to sewer.

7.3. Emissions to Surface Waters

7.3.1. Process effluent

There is no process emission to surface water from the installation.

The landfill leachate collection infrastructure comprises a series of leachate wells in the waste body which are connected via pipework to a leachate lagoon and leachate tank. Leachate is pumped out of the landfill cells at a rate which ensures leachate levels do not exceed 1 m above the liner. The collected leachate is transferred off-site for treatment at a wastewater treatment plant.

All dirty areas are drained to the leachate holding tank. These include the lower level of the civic waste facility, green waste holding area, waste inspection area/quarantine areas and domestic waste disposal area.

7.3.2. Storm water

Storm water is collected by the surface water management system which comprises drainage from paved and un-paved areas within the installation. The collected storm water is directed to a surface water retention pond which discharges to Powerstown Stream which runs along the northern boundary of the site and discharges to the River Barrow. The floor level of the surface water pond is approximately 1 m below the outlet level. This allows for suspended solids and grit to settle in the pond. The rate of discharge from the pond is controlled by a floating arm device at a rate of 15.9 l/sec. The pond is also designed to act as an oil interceptor. The floating arm control device consists of a float with the outlet pipe opening hung approximately 200 mm below. Any petrochemicals entering the pond will float on the surface; consequently they cannot escape via the outlet discharge pipe. The outlet pipe is designed with a backfall to ensure that, even during extended dry periods, surface contaminants cannot escape through the outlet pipe. The design also includes a floating oil boom at the inlet to the pond, which provides protection by containing petrochemicals within a restricted area. Any surface contaminants can then be removed periodically as required. The pond is also equipped with instrumentation to detect conductivity, pH, dissolved oxygen (DO) and water level in the pond. In addition, an actuated penstock valve is located on the outlet from the pond which will shut should predetermined levels of pH, conductivity or dissolved oxygen be exceeded. All of the above instrumentation is connected to the SCADA system on site and is maintained regularly.

The licensee seeks a change of the existing requirement for continuous monitoring of electrical conductivity, pH and TOC at the inlet to the surface water retention pond to monitoring on a monthly basis. The licensee explains that the existing licence does not set limits for these parameters at the inlet to the pond and the continuous monitoring is very costly. The licensee proposes also a monthly monitoring frequency for the said parameters at the outlet from the pond. Considering the above reasoning, I consider that the monitoring on a weekly basis, rather than on the proposed monthly basis, is appropriate for the inlet to the pond. Also, as the purpose of continuous monitoring on the outlet is to activate the actuated valve and prevent outflow of contaminated surface water, I propose to retain the continuous monitoring on the outflow from the pond. Accordingly, **Condition 5.6.3** requires monitoring on a weekly basis of the said parameters on the inlet to the pond and continuous monitoring on the outlet from the pond.

Additionally, the Council requests retention of the existing weekly frequency for visual inspection of surface water discharges. However, the Council seeks approval to only document the visual inspection when there is evidence of contamination or odour. Having regard to the fact that Phase 3 of the landfill has not been permanently capped, I consider a daily, rather than the currently required weekly, frequency is appropriate for visual inspection of discharges. This is reflected in Schedule C.3 and condition 6.13.1 of the RD.

7.4. Emissions to ground

The closed and capped cells of Phases 1 and 2 are equipped with leachate pumps that discharge to the covered lagoon from which leachate is extracted on a daily basis. Leachate from Phase 3 is pumped to the leachate holding tank.

7.4.1. Aquifer

The aquifer beneath the downgradient portion of the site has been impacted by elevated concentrations of ammonia. The primary source is considered to be leachate from Phase 2 of the landfill with some residual impacts associated with historical leaching from the Phase 1 landfill.

The site is underlain by regionally important gravel and bedrock aquifers. The GSI has assigned a vulnerability rating of high for groundwater in the vicinity of the site. Flow direction of groundwater beneath the site is generally to the west towards the River Barrow, but with a northern component discharging to the Powerstown Stream. In the construction of Phase 3 of the landfill, the sand/gravel was removed to the water table, therefore increasing the vulnerability of the site from 'High' to 'Extreme.' Extensive consultation took place with the EPA during the statutory consent process for Phase 3 and it was agreed with the Agency that a double lining system be installed in Phase 3 of the landfill. This lining system provides protection to the aquifer as required by the Landfill Directive for non-hazardous landfills.

7.4.2. Groundwater quality and monitoring

A Detailed Quantitative Risk Assessment (DQRA) was undertaken for the landfill and civic waste facility in 2014. The DQRA was carried out in accordance with condition 8.8.2 of the existing licence and was submitted to the Agency under the existing licence on 29/5/2014. The DQRA concluded that there was no risk to the groundwater within the underlying gravel aquifer at a distance of 200m downgradient of the site associated with the current site condition and off-site migration of impacted groundwater. The DQRA further concluded that there was no identified unacceptable risk to the River Barrow associated with the identified

ammonia and chloride contamination in the groundwater. The DQRA stated also that there is a potential risk of contamination of the Powerstown Stream by the landfill leachate. However, the DQRA added that based on the available hydrogeological data it could not be confirmed if the Powerstown Stream is hydraulically connected to groundwater migrating from the site.

The DQRA included the following recommendations:

- A groundwater compliance monitoring programme, incorporating the offsite groundwater monitoring wells, should be undertaken.
- Groundwater compliance checking should be carried out to identify any exceedances of the selected compliance values.
- The selected set of groundwater compliance points and values should be updated to include values for the additional well installed at the Powerstown Stream.

As a follow up action to DQRA, the OEE requested a groundwater compliance monitoring programme and development of a groundwater contour map to evaluate any hydraulic connection between groundwater and surface water in the Powerstown Stream. The Agency requested the findings of this assessment be submitted in a final report by 30 November 2015.

The licensee seeks a reduction of the monitoring frequency for the level of groundwater in all groundwater wells from monthly to quarterly. Having considered the request, I am of a view that monitoring of groundwater level on monthly basis is appropriate for the purposes of obtaining adequate data on trends associated with the landfill leachate. Accordingly, no change to the existing licence is recommended.

Schedule C.3 of the RD requires groundwater monitoring and **Condition 6.14** requires that, following the DQRA submitted to the Agency on 29 May 2014, the licensee shall complete a technical assessment in accordance with the EPA Guidance on the Authorisation of Discharges to Groundwater and that any actions required to demonstrate compliance with the European Communities Environmental Objectives (Groundwater) Regulations 2010, as amended shall be agreed by the Agency and implemented before 22 December 2015.

In relation to the Powerstown Stream, the DQRA recommended, among other matters, the following:

- A surface water sampling programme should be undertaken to collect water samples from the Powerstown Stream at the five identified sampling locations. At each location the samples should be tested for ammonia, pH and temperature.
- An additional groundwater monitoring well should be installed at the northern bank of the Powerstown Stream.
- A topographical survey of the Powerstown Stream in a defined area upgradient, adjacent to the site and downgradient of the landfill and at the identified surface water sample locations should be completed.
- Groundwater level measurements should be collected from all of the onsite and offsite wells.

Condition 5.7 requires the licensee to submit a report on compliance with recommendations of DQRA as part of the Annual Environmental Report.

7.4.3. Drinking Water Supply

There are three private wells in the vicinity of the site. The existing licence requires monitoring of groundwater at numerous locations, including private wells within 500 m of the installation.

Groundwater from beneath the installation flows towards west and north-west. The nearest public drinking water supplies located in this direction are located about 4 km north-west of the installation. However, due to the land form and features such as rivers between the supplies and the installation, it is not expected that the groundwater from beneath the installation could affect these supplies.

8. Waste

There is no waste generated as a result of waste activities at the installation.

9. Noise

The noise levels within the installation are impacted by the busy motorway, local roads network, quarrying activities from the adjacent quarry, waste tipping activities at the landfill, and movement of vehicles within the installation and operation of the landfill flare.

The proposed increase in waste intake will result in two additional vehicle movements per hour. However, the predictive assessment carried out on the increased traffic movements indicated that they will have an imperceptible impact on noise emissions.

The following mitigation measures will continue to be implemented at the site:

- Berms
- Operational hours will be restricted to day-time hours;
- All vehicles will comply with the speed limit on the site;
- Site vehicles will not be over revved, or left with engines idling during operations;
- Auxiliary equipment will be shut down when not in use; and,
- Maintenance of plant and machinery will occur on a regular basis and will ensure correct operation of these items to manufacturers specifications.

The licensee refers to the EPA *Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4)* and states that there are no evening or night-time operations at the landfill during normal landfilling activities and in the event of operation during longer daylight hours such as capping works, the Council will consider the requirement for evening monitoring. The Council seeks approval to carry out day-time annual noise monitoring for 15 minute intervals for 3 sample periods as per Table 5 in the document *Frequently Asked Questions (FAQ) on NG4*. Considering the above request, it is noted that Table 5 of the NGR allows for 15 minutes in monitoring duration. Also, I consider the requirement for evening monitoring, in accordance with NG4, adequate. I do however, recommend amendment of the requirement for night time monitoring to "as required by the Agency" and this is reflected in **Schedule C.5** of the RD.

The RD sets noise limits in **Schedule B.3**, while noise monitoring is provided for in **Schedule C.5**. In addition, **Condition 6.15** of the RD requires the licensee to carry out a noise survey annually.

10. Use of Resources

Condition 7.1 of the RD requires an audit of the energy efficiency of the site.

11. Regional Waste Management Plan

The installation is referred to in the Southern Region Waste Management Plan 2015-2021. The RD is compatible with the objectives of this Plan by means of promotion of sustainable waste management treatment in keeping with the waste hierarchy. In this regard, **Condition 8.16** of the RD specifies limits on acceptance of biodegradable municipal waste (BMW) at the installation. These limits are in accordance with the requirements of the Landfill Directive to divert biodegradable municipal waste from landfill. **Condition 8.12** requires that only waste that has been subject to treatment shall be accepted for disposal at the landfill.

12. Measures to prevent accidents and limit their consequences

The application details a range of measures that will help to prevent accidents at the installation and limit their environmental consequences. These include:

- Separate collections systems for leachate and clean stormwater;
- Provision of a SCADA system for the discharge from the surface water retention pond;
- Geocomposite leak detection layer in basal liner of Phase 3.

Additionally, **Condition 9** of the RD requires procedures to be put in place to prevent accidents, with an emphasis on preventing accidents with a possible impact on the environment and to respond to emergencies so as to minimise the impact on the environment.

13. Compliance with EU Directives

13.1. Industrial Emissions Directive (IED) (2010/75/EU)

The RD as drafted takes account of the requirements of the IED.

The licensee submitted a baseline report. The purpose of a baseline report is to identify the state of the soil and groundwater contamination by relevant hazardous substances at the installation. This is to allow for the making of a quantified comparison with the state of the soil and groundwater upon definitive cessation of activities.

The Baseline Report submitted as part of the application states that there is evidence of contamination of groundwater by leachate in downgradient wells as ammonia and chloride levels are elevated above the groundwater trigger levels and relevant standards. The Report further states that there were no exceedances of relevant standards for hazardous substances in the period 2010 – 2014, nor is there any upward trend in hazardous parameter concentrations.

Condition 10.2.3 requires the licensee to have regard to the Baseline Report when updating and reviewing plan for the decommissioning or closure of the site or its part.

13.2. Waste Framework Directive (2008/98/EC)

The RD ensures compliance with the Directive for the following reasons:

- In respect of the civic waste facility, the State is obliged to take appropriate measures to establish an integrated network of installations for the recovery of waste collected from private households and from other waste producers. The installation will contribute to this overall national objective.
- It will contribute towards the general development of a sustainable and self-sufficient approach to the management of waste in accordance with the proximity principle.

- In respect of composting activity, it will contribute towards compliance with Article 22 of the Directive, whereby Member States must take measures to ensure the environmentally safe composting of bio-waste.

13.3. Water Framework Directive (2000/60/EC)

- European Communities Environmental Objectives (Surface Water) Regulations, S.I. No. 272 of 2009
- European Communities Environmental Objectives (Ground Water) Regulations, S.I. No. 9 of 2010

A number of measures have been included in the RD to prevent any significant impact on water quality, as described above in Sections 7.3 and 7.4.

13.4. Environmental Liability Directive (2004/35/EC)

The Agency's Office of Environmental Enforcement (OEE) approved the submission of the Closure, Restoration and Aftercare Management Plan (CRAMP) in October 2014.

Condition 10.2.1 of the RD requires the licensee to maintain the CRAMP. **Condition 12.2.3** requires the licensee to make adequate financial provision to cover any liabilities associated with the activity.

14. Environmental Impact Assessment Directive (85/337/EEC)

This section identifies, describes and assesses 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 factors: human beings, flora & fauna, soil, water, air, climate, the landscape, material assets, architecture, archaeology and cultural heritage.

The main mitigation measures proposed to address the range of predicted significant impacts arising from the activity have also been outlined. The cumulative impacts with other developments in the vicinity of the activity have also been considered, as regards the impacts of emissions from the activity. This section must be read in conjunction with the analysis carried out in all sections of this report.

14(a) Human Beings

Likely significant effect	Description of effect	Assessment addressed in Section:
Traffic	Traffic and its associated emissions, risks and disamenity effects.	14(a)(i)
Impact on air quality	Emissions of dust and flare off-gases.	14(e)(i); 14(e)(ii)
Noise	Disamenity from noise emissions due to licensed activities.	14(a)(ii)

Odour	Disamenity from odour emissions due to licensed activities.	14(a)(iii)
Nuisance from vermin and birds	Disamenity from vermin and bird infestation.	14(a)(iv)
Litter	Disamenity from litter arising from the infestation.	14(a)(v)
Pollution of drinking water wells	Nearby drinking water wells may become polluted if any spillage of waste or other substances occurred.	14(d)(ii)
Major accidents	Emissions to the local atmosphere, ground and water bodies. Noise, odour and litter nuisance.	14(e)(i); 14(d)(i); 14(d)(ii); 14(d)(iii)

Assessment of Effects on Human Beings

14(a)(i) Traffic

Traffic associated with vehicles delivering waste to the landfill and civic waste facility generates noise, dust nuisance and potentially escape of waste material onto roadways. The applicant stated that there are 80 vehicle movements per hour associated with the operation of the installation and that increase in the waste intake by 10,000 tonnes per year will lead to an increase in vehicle movement by 2 additional vehicle movements per hour. It is also expected that the permanent capping works of Phase 3 of the landfill might contribute to generation of noise and dust and soiling of roads.

Mitigation Measures

The following mitigation measures will reduce the likelihood of a negative impact on human beings from traffic:

- **Condition 3.22.2** provides for wheel cleaning to be undertaken on vehicles leaving the installation, to ensure that no wastewater, waste or storm water is carried offsite.
- **Condition 6.19** provides for controls on the roads in the vicinity of the installation in terms of debris caused by vehicles entering or leaving the installation.

Conclusion

Based on the above assessment, the site design and the mitigation measures in place, I am satisfied that there will not be significant effects on the environment from traffic resulting from on-site activities.

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.

14(a)(ii) Noise

As discussed in Section 9 above, besides the on-site activities such as vehicle movement, waste tipping and operation of the gas flare, noise levels within the installation are

influenced by noise arising from the nearby roads. The proposed increase in waste intake will result in two additional vehicle movements per hour. Such slight increase in vehicle movements is not expected to impact significantly on the noise in the surroundings of the installation.

Mitigation Measures

Standard noise conditions and limit values have been set in the RD. The RD requires also noise monitoring to be undertaken and carrying out a noise survey as required by the Agency.

Conclusion

Based on the above assessment, the site design and the mitigation measures in place, I am satisfied that the likelihood of a negative impact from noise will be negligible.

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.

14(a)(iii) Odour

Odour can be a significant environmental issue at or beyond the boundary of the installation if no mitigation measures are put in place. The nearest sensitive receptor is located 300m from the active Cells 17 and 18. The Odour Management Plan (OMP) for the installation sets out practices for the acceptance of waste, active cell management, including odour management infrastructure operation and maintenance.

Mitigation Measures

The following mitigation measures will reduce the likelihood of a negative impact on human beings from odour nuisance:

- The RD requires covering the landfilled waste on a daily basis.
- The RD requires an Odour Management Plan to be maintained and implemented.
- Extraction and flaring of landfill gas.
- The RD requires the leachate tank to be covered.

Conclusion

I am satisfied that based on the above assessment, the mitigation measures proposed will prevent an occurrence of a significant effect from odour.

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.

14(a)(iv) Nuisance from vermin and birds

The presence of waste may attract vermin and birds to the installation, which may cause nuisance to neighbours or adversely impact on flora and fauna in the vicinity of the installation. However, the landfilled waste will be covered daily and waste in the civic waste facility will be appropriately stored in containers.

Mitigation Measures

The following mitigation measures will reduce the likelihood of a negative impact from vermin and birds:

- Covering landfilled waste on a daily basis.
- Application of bird control measures as described in Section 5 above.
- The RD includes standard conditions for addressing vermin nuisance, including monitoring, good housekeeping and record keeping.

Conclusion

Based on the above assessment and mitigation measures in place, I am satisfied that there will not be significant effects on the environment from vermin and birds.

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.

14(a)(v) Litter

The landfilling activities might cause litter in the surroundings of the site. Also, waste vehicles arriving to the site might contribute to littering of the surrounding area.

Mitigation Measures

The following mitigation measures will reduce the likelihood of litter associated with the site activities:

- Covering landfilled waste on a daily basis.
- The RD requires litter fencing and netting to be installed and maintained around the perimeter of the active tipping area.
- Covering waste vehicles.
- **Condition 6.19** provides for controls on the roads in the vicinity of the installation in terms of debris caused by vehicles entering or leaving the installation.

Conclusion

Based on the above assessment and mitigation measures in place, I am satisfied that there will not be significant effects on the environment from litter.

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.

14(b) Flora & fauna

Likely significant effect	Description of effect	Effect assessed in
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		Section:
Impact on air quality	Air emissions within and beyond the site boundary may result in adverse effects on flora and fauna.	14(e)(i)
Impact on surface water quality	Animals and plants using contaminated water.	14(d)(i)
Noise disturbance	Licensed activities on site may cause disturbance from noise emissions.	14(a)(ii)
Vermin and birds	Disturbance of local flora and fauna due to attraction of pest and rodents.	14(a)(iv)
Adverse impacts on SACs and SPAs	River Barrow and River Nore SAC (Site Code: 002162) is located adjacent to the installation. Any spillage of waste at the installation may result in pollution of the SAC, impacting on the flora and fauna.	14(b)(i)

Assessment of Effects on Flora and Fauna

14(b)(i) Adverse impacts on SACs and SPAs

As discussed in Section 7.3, only clean storm water is authorised to discharge from the installation to the Powerstown Stream that discharges into the River Barrow and River Nore SAC. The River Barrow is located approximately 400m downstream of the site and the designated River Barrow and River Nore SAC extends to within 15m of the site boundary.

The storm water settlement pond is designed to act as an oil interceptor. In addition, an actuated penstock/valve is located on the outlet from the pond which will shut should predetermined levels of pH, conductivity or dissolved oxygen be exceeded. This instrumentation is connected to the on-site SCADA system.

Mitigation measures

The following mitigation measures will further reduce the likelihood of adverse impacts on the protected area.

- Provision for trigger levels for stormwater discharge to the Powerstown Stream.
- General conditions for stormwater management, including daily visual inspection and provision of silt traps and oil interceptors.
- The RD requires good housekeeping.

Conclusion

I am satisfied that based on the above assessment, the mitigation measures proposed will prevent an occurrence of a significant adverse effect on protected areas.

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.

14(c) Soil

Likely significant effect	Description of effect	Effect assessed in Section:
Impact on soil.	Accidental spillage or discharge of leachate to ground.	14(d)(ii); 14(d)(iii)

Assessment of Effects on Soil

See assessments documented in Section 14(d)(ii) to 14(d)(iii) below.

Conclusion

I am satisfied that there will not be significant effects on soil from the licensed activity at the installation.

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.

14(d) Water

Likely significant effect	Description of effect	Effect assessed in Section:
Impact on surface water.	Contamination of surface water due to accidental discharge or spillage of leachate and other substances. Discharge of rain water run-off to surface water and entrainment of silt, particularly during construction and final profiling work. Potential impact on abstractions of surface water downstream of the installation.	14(d)(i)
Impact on groundwater.	Contamination of groundwater and soil due to leachate: <ul style="list-style-type: none"> Discharge of leachate from unlined cells. 	14(d)(ii)

	<ul style="list-style-type: none"> • Leakage of leachate from lined cells. • Leakage of leachate extracted from cells and contained in pipes or leachate storage lagoons. • Accidental spillage of leachate. <p>Contamination of groundwater and soil due to accidental discharge of substances other than leachate.</p> <p>Potential impact on abstractions of groundwater downstream of the installation.</p>	
Major accidents	Emissions to the ground and water bodies.	14(d)(iii)

Assessment of Effects on Water

14(d)(i) Impact on surface water

As outlined in Section 7.3, only clean surface water from the installation is permitted to discharge to the Powerstown Stream. The contaminated stormwater arising from soiled areas such as the lower level of the civic waste facility and the waste quarantine areas is collected as leachate and transferred off-site for appropriate treatment off-site at a wastewater treatment plant. There are no drinking water abstraction points on rivers downstream of the installation.

Mitigation measures

The following mitigation measures will further reduce the likelihood of adverse impacts on surface water quality:

- Separate collection systems for clean and contaminated stormwater.
- Provision for trigger levels to be set for stormwater discharges to the Powerstown Stream.
- General conditions for stormwater management, including daily visual inspection and provision of silt traps and oil interceptors.
- The RD requires an emergency response procedure to be put in place and for all significant spillages to be treated as an emergency.

Conclusion

I am satisfied that based on the above assessment, the mitigation measures proposed will prevent an occurrence of a significant adverse effect on surface water quality.

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.

14(d)(ii) Impact on groundwater

As stated in Section 7.4 above, the old unlined part of the landfill is impacting the groundwater quality downstream of the site. Elevated levels of ammonia, conductivity and chloride were recorded at monitoring wells GW1 and GW2, both of which are located downgradient of the landfill. Elevated levels of ammonia were recorded at GW8, which is also located downgradient of the landfill outside the western site boundary. Furthermore, elevated levels of chromium and cadmium were recorded at both upgradient and downgradient wells. The Baseline Report states however that it is likely that chromium and cadmium are naturally occurring in this area of the site.

The unlined part of the landfill is permanently capped and the landfill cap prevents rain ingress into the landfilled waste and therefore mitigates against increases in the volume of leachate arising from the unlined cells. Also, Phase 3 will be capped soon. Hence, a decreasing trend in the leachate generation and contamination of groundwater associated with the landfill is expected.

As described in Section 7.3.1 above, leachate collection infrastructure comprises a series of leachate extraction wells in the wastebody connected via pipework to a leachate lagoon and a leachate tank. Leachate is pumped out of the waste cells at a rate which ensures leachate levels do not exceed 1 m above the liner. The leachate collection system, in addition to the capping systems, reduce leachate infiltration into groundwater.

The existing licence requires monitoring of groundwater at numerous locations, including private wells within 500 m of the installation. Monitoring of two private wells in 2010 and 2011 located to the north and north-west of the site did not indicate any contamination from the landfill. The RD retains the monitoring requirements for the wells and other locations.

As stated in Section 7.4.3, groundwater from beneath the installation flows towards the west and north-west. The nearest drinking water supplies located in this direction are located about 4 km north-west of the installation. However, due to the land form and features such as rivers between the supplies and the installation, it is not expected that the groundwater from beneath the installation could affect these supplies.

There is also potential for impact on groundwater from spillages infiltrating into ground, which can result in soil and groundwater contamination.

Mitigation measures

The following mitigation measures will further reduce the likelihood of adverse impacts on groundwater quality:

- **Condition 10.5** requires filled cells to be permanently capped within 24 months of the cells having been filled to the required level.
- Geocomposite leak detection layer is installed in the basal liner of Phase 3;
- A system for collection, storage and removal of leachate from the installation.
- The RD requires the SCADA system to be used to monitor leachate levels in lined cells and leakage into the leak detection/collection layer.
- The RD provides for groundwater monitoring to be undertaken;
- The RD requires testing the integrity and water tightness of all underground pipes, tanks, bunding structures and containers and their resistance to penetration by water or other materials carried or stored therein.
- The RD requires procedures to be put in place to prevent accidents, such as spillages, with an emphasis on preventing accidents with a possible impact on the environment and to respond to emergencies so as to minimise the impact on the environment.

Conclusion

I am satisfied that based on the above assessment, the mitigation measures proposed will prevent an occurrence of a significant adverse effect on groundwater quality.

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.

14(d)(iii) Major accidents

A major accident such as spillage of leachate or other substances at the installation could have an adverse effect on surface water and groundwater quality. As discussed in Section 12, there are a range of measures that will help to prevent accidents at the installation and limit their environmental consequences.

Mitigation measures

The following mitigation measures will reduce the likelihood of adverse environmental consequences from major accidents:

- Provision of a SCADA system to monitor leachate levels in lined cells and leakage into the leachate detection/collection layer of the landfill liner.
- Provision of a SCADA system for the discharge from the surface water retention pond.
- Development of an Emergency Response Plan.
- The RD requires procedures to be put in place to prevent accidents, with an emphasis on preventing accidents with a possible impact on the environment and to respond to emergencies so as to minimise the impact on the environment.

Conclusion

I am satisfied that based on the above assessment, the mitigation measures proposed will prevent an occurrence of a major accident that would have significant adverse environmental effects.

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.

14(e) Air

Likely significant effect	Description of effect	Effect assessed in Section:
Impact on air quality	Emissions of dust, odour and flare off-gases.	14(e)(i); 14(e)(ii); 14(a)(iii)

Major accidents	Emissions to the local atmosphere, ground and water bodies. Noise, odour and litter nuisance.	14(e)(i); 14(d)(i); 14(d)(ii)
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Assessment of Effects on Air

14(e)(i) Impact on air

As outlined in Section 7.1 above, there is one active emission to air at the installation from the landfill gas flare. It is envisaged that the increase in waste intake will contribute to an increase in gas generation which may last four to five years. However, it is not expected that that will have an impact on overall volume of gas generated by the landfill.

Fire at the landfill could create smoke emission.

Mitigation measures

The following mitigation measures will reduce the likelihood of adverse environmental consequences from air emissions:

- A landfill gas collection system is in place at the installation which will maximise the collection of landfill gas and reduce the potential for fugitive landfill gas emissions to air.
- The RD includes air emission limit values for the flare to ensure compliance with air quality standards.
- The RD requires monitoring of air emissions.
- The RD requires an Emergency Response Procedure (ERP) that includes a risk assessment to determine the requirements at the installation for fire fighting and firewater retention facilities. The ERP shall be reviewed annually and updated as necessary.

Conclusion

I am satisfied that there will not be significant effects on air quality from the licensed activity at the installation.

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.

14(e)(ii) Dust

The dust generated by vehicle movements and unloading and tipping of waste. Dust may be suppressed by vehicle wash down and during periods of dry weather site roads can be sprayed to reduce dust.

Mitigation measures

The following mitigation measures will reduce the likelihood of adverse environmental consequences from dust:

- The RD includes emission limit values for dust deposition and requires comprehensive controls for the minimisation of dust emissions.
- Standard conditions for dust control are included in the RD, such as spraying site roads and other areas with water during periods of dry weather, and monitoring and recording dust nuisance.

Conclusion

I am satisfied that there will not be significant effects caused by dust emissions from the licensed activity at the installation.

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.

14(f) Climate

Likely significant effect	Description of effect	Effect assessed in Section:
Release of climate altering substances	Emission of greenhouse gases including CO ₂ and CH ₄ .	14(f)(i)

Assessment of Effects on Climate

14(f)(i) Release of climate altering substances

Landfilling of waste results in the production of significant quantities of greenhouse gases, in particular methane. The licensee stated that the National Climate Change Strategy 2007 – 2012 estimated that landfill gas flaring and utilisation, as well as the diversion of biodegradable waste from landfill will result in an annual average decrease of 1.2 Mt CO₂eq.

The landfill gas is flared off in an enclosed flare. It is envisaged that the increase in waste intake will contribute to an increase in gas generation which may last four to five years. However, it is not expected that that will have an impact on overall volume of gas generated by the landfill. Combustion of landfill gas contributes to release of CO₂; however, the global warming potential of CO₂ is 25 times lower than methane. Overall, it not expected that the emissions from the gas flare could have significant impact on climate.

Mitigation measures

The following mitigation measures will further minimise the adverse climate impacts of the licensed activity at the installation:

- The active installation of gas collection infrastructure as the landfill develops and the combustion of landfill gas as it is generated, thereby reducing the potential for emission of methane to atmosphere.
- The RD includes a requirement to establish, implement and maintain an environmental management system that will incorporate energy efficiency management.

- The RD provides for a maintenance programme which requires the optimisation of energy efficiency in plant and equipment. This will also serve to minimise the need for use of the flare.

Conclusion

I am satisfied that there will not be a significant adverse effect on climate caused by emissions from the licensed activity at the installation.

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.

14(g) Landscape, Material Assets and Cultural Heritage, and Archaeology and architecture

Likely significant effect	Description of effect	Effect assessed in Section:
Visual impact on nature of landscape	The installation is located in a rural area and may create an undesirable visual impact.	14(g)(i)
Impact on material assets	Potential impact on property values, local road infrastructure and non-renewable and renewable resources.	14(g)(ii)
Archaeology, architecture and cultural heritage	Potential physical damage of archaeological artefacts and a negative visual impact on sites and monuments in close proximity to the installation.	14(g)(iii)

Assessment of Effects on landscape, material assets and cultural heritage,

14(g)(i) Visual impact on landscape

The site gives rise to visual impacts for users of the motorway and local road, and people living in the vicinity. The impacts from the landfill are permanent due to the height of the landfill body itself. There are additional impacts mainly from the traffic delivering waste as well as the disposal of waste. However, the continued operation of the landfill at a higher tonnage will allow faster filling of the remaining void space thus reducing the duration of this element of the visual impact. Also, a significant proportion of the landfill has been permanently capped and the upper layer of the cap became a habitat for grass and bush which minimises the visual impact of the installation.

Mitigation measures

- **Condition 10.5** requires filled cells to be permanently capped within 24 months of the cells having been filled to the required level.

- Following capping of Phase 3, this area will be planted with species of grasses and wildflowers. The licensee also proposes to plant the settling pond with species appropriate to wetlands.

Conclusion

I am satisfied that there will be no significant adverse impact on visual amenity from the licensed activity, once the proposed mitigation measures are employed.

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.

14(g)(ii) Impact on material assets

The licensee stated that there is a perception that property values will be depressed by the proximity of a landfill. However, as the proposed development is a continuation of the operation of the existing site, impact on property values is not likely to change.

The increases in traffic volumes associated with the increase in waste intake from 40,000 tonnes per annum to 50,000 tonnes per annum will result in 2 additional vehicle movements per hour therefore, no significant impact on the local road infrastructure is envisaged.

There will be no additional requirements for non-renewable resources for the continued operation of the landfill over and above those required for the final capping of Phase 3 of the landfill. Also, the proposed development will not impact existing renewable resources or potential future renewable resources surrounding the site.

Mitigation measures

No mitigation measures have been proposed.

Conclusion

I am satisfied that the licensed activity at the installation will not impact significantly on material assets.

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.

14(g)(iii) Archaeology, architecture and cultural heritage

There are no features of archaeological interest within the site. There are however 9 recorded monuments within 1 km of the site. Three of these records are now redundant due to the construction of the M9 motorway. As there will be no construction activities required for the continued operation of landfilling activities, there will be no impact on the archaeological, architectural or cultural heritage resource of the local area.

Mitigation measures

No mitigation measures have been proposed.

Conclusion

I am satisfied that the licensed activity at the installation will not significantly impact on archaeological, architectural or cultural heritage in the locality of the site.

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.

14(h) Interaction of effects

I have considered the interaction between the factors referred to in Tables (a) to (g) above and the interaction of the likely effects identified.

The interaction between factors as a results of the operation of the installation are summarised below:

	Human beings	Flora and fauna	Soil	Water	Air	Climate	Landscape, Material assets, Architecture Archaeology and cultural heritage
Human beings		√	√	√	√	√	√
Flora and fauna	√		√	√	√		√
Soil	√			√			√
Water	√	√					√
Air	√	√					
Climate	√						
Landscape, Material assets, Architecture Archaeology and cultural heritage	√	√					

Based on the assessment in parts 14 (a) to (g) above, 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.

14.1. Reasoned Conclusion on Environmental Impact Assessment

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

15. Appropriate Assessment

A screening for Appropriate Assessment was undertaken to assess, in view of best scientific knowledge and the conservation objectives of the site, if the activity, individually or in combination with other plans or projects, is likely to have a significant effect on a European Site(s). In this context, particular attention was paid to the European site at River Barrow and River Nore SAC (Site Code: 002162). The Agency considered, for the reasons set out below, that the activity is not directly connected with or necessary to the management of the site as a European site and 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 a European site, and accordingly the Agency determined that an Appropriate Assessment of the activity is required, and for this reason determined to require the licensee to submit a Natura Impact Statement.

The following reasons contributed to the determination that the Appropriate Assessment of the proposed activity is required:

- The activity is located adjacent to River Barrow and River Nore SAC (Site Code: 002162).
- Surface water runoff from the site discharges to the Powerstown Stream which flows into the said European Site.

The Agency has completed the Appropriate Assessment and has determined based on best scientific knowledge in the field and in accordance with the European Communities (Birds and Natural Habitats) Regulations 2011 and 2013, 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 a European Site(s) in particular River Barrow and River Nore SAC (Site Code: 002162), having regard to its conservation objectives and will not affect the preservation of the site at favourable conservation status if carried out in accordance with the Licence and the conditions attached thereto for the following reasons:

- There will be no process emissions to the European Site. The only discharge to surface water will be clean storm water run-off.
- There is a collection system for the landfill leachate and leachate that might be generated at the civic waste facility.
- The licence specifies a number of measures to limit the installation's impact on environment, including the following:
 - **Condition 6.31** requires an Odour Management Plan and specifies measures to control potential sources of odour nuisance.
 - **Condition 6.21** specifies measures for the control of dust.
 - **Condition 6.30** requires inspection of the installation and its immediate surrounds for various nuisances, including litter, birds and vermin.

In light of the foregoing reasons, the Agency is satisfied that no reasonable scientific doubt remains as to the absence of adverse effects on the integrity of the River Barrow and River Nore SAC (Site Code: 002162).

16. Cross Office Liaison

In preparing this report and Recommended Decision I have consulted Mr. Damien Masterson and Ms. Anthea Southey of Office of Environmental Enforcement (OEE) on issues regarding existing licence requirements, complaints and enforcement actions.

17. Fit & Proper Person Assessment

Carlow County Council has not been convicted of any relevant offence.

The Council has experience in waste management and in operating licensed facilities.

The Agency's Office of Environmental Enforcement (OEE) approved the submission of the Closure, Restoration and Aftercare Management Plan (CRAMP). An Environmental Liabilities Risk Assessment (ELRA) is currently being assessed by the Agency.

Accordingly, the legal and technical standing of the licensee qualifies the licensee to be considered Fit and Proper Persons.

It is my view, and having regard to the provisions of Section 84(5) of the EPA Act and the conditions of the RD, that the licensee can be deemed a Fit & Proper Person for the purpose of this Review.

18. Recommended Determination (RD)

The RD proposes to authorise:

- acceptance of 50,000 tonnes of non-hazardous waste per annum. The waste types comprise household waste, commercial and industrial solid waste, construction and demolition waste and treated sewage sludge.
- continuous operation of civic waste facility; and,
- composting of green waste.

The RD includes a wide range of conditions that will ensure proper handling of waste, the control of emissions to air, groundwater and surface water and the prevention of nuisance. Overall, I am satisfied that the conditions set out in the RD will adequately address all emissions from the installation and will ensure that the carrying on of activities in accordance with the conditions of the RD will not cause environmental pollution.

19. Charges

An annual charge of €22,459 is specified in the RD which is the enforcement fee invoiced for 2015.

20. Recommendation

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

Signed



Ewa Babiarczyk
Inspector

Procedural Note

In the event that no objections are received to the Proposed Determination of 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.