

NON-TECHNICAL SUMMARY

**WOODVILLE PIG FARMS LTD,
WOODVILLE,
BALLYMACKEY,
NENAGH,
CO. TIPPERARY**

2020

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ATTACHMENT 1.2.

CURRENT LICENCE REF: P0467-02

Application Ref: LA004791

GENERAL

This Non-technical Summary has been prepared on behalf of, and for the exclusive use of Woodville Pig Farms Ltd, with respect to a Review of Licence Application to be made to the EPA, for the operation of the Industrial Emissions Licenced (Reg. No. P0467-02) pig rearing facility at Woodville, County Tipperary (Eastings 196520 Northings 182050).

Planning permission has been sought from Tipperary County Council by Woodville Pig Farms Ltd for alterations to their pig rearing operation which would increase the overall number of pigs capable of being housed at the Woodville site (Tipperary Co Co Planning File Reference No: 20211). The current number of sow places and the proposed sow places at Woodville Pig Farms exceed the threshold in Schedule 5, Part 1, 17(c) of the Planning & Development Regulations, 2001 (as amended) which requires a mandatory Environmental Impact Assessment Report (EIAR) to be completed for the development.

As an EIAR was required as part of the planning permission process, the site is also required to submit an application for the review of the sites IE licence.

The farm operates under the conditions of an Industrial Emissions License (Reg. No. P0467-02) issued by the Environmental Protection Agency on 19th March 2000 and amended on 27th July 2012.

Woodville Pig Farms Ltd farm is licenced under activity 6.2(a) and 6.2(b) of the First Schedule of the EPA Act 1992, as amended.

- 6.2 The rearing of pigs in an installation where the capacity exceeds –
- (a) 750 places for sows;
 - (b) 2,000 places for production pigs which are each over 30kg.

The EPA licenced activity includes the breeding unit at Woodville townland and a finishing unit at Ballyknockane townland, c. 4.5km to the west. The Woodville breeding unit produces weanlings which are then transported to the Ballyknockane finishing unit to be brought to market weight. The Ballyknockane site occupies a landscaped site of c. 10.7 acres while the Woodville site occupies a space of c. 13.7 acres.

All proposed alterations to structures and animal numbers would occur at the Woodville breeding site. There would be no alterations to the structures or animal numbers at the Ballyknockane finishing site.

The activities currently at the site are farming activities appropriate to the area, and is consistent with the development plan for County Tipperary. Given a successful application, the activities at the site would not change.

The main activities on the Woodville site are summarised as follows:

- Breeding of pigs;
- Feeding and rearing of pigs for transfer to finishing site (Ballyknockane);
- Delivery of feed to farm;
- Feeding of pigs via an automated feed and drinking water systems;
- Removal of pig slurry from slurry tanks periodically;
- Removal of fallen animals when required;
- Cleaning/disinfecting of pig pens between batches.

Pigs produced for the meat market at the Woodville site are finished at the Ballyknockane site. The pigs are taken in at the finishing site at a weight of c. 32-40 kg and then fed on a low protein industry standard diet until they reach a weight between 75 and 110kg after which they are transported to a factory for processing.

The principal input at the site would include pig feed, water, veterinary medicines and electricity for the automated feed system, lighting etc.

The main outputs at the site are weaner stage pig for finishing and animal slurry (by-product). The primary wastes produced at the site include domestic refuse, recyclable packaging waste and fallen animal carcasses.

The current and proposed maximum animal numbers to be housed at the Woodville (breeding unit) and Ballyknockane (finishing unit) piggery sites are listed below in the following table (only finisher pigs are kept at the Ballyknockane site);

ANIMAL CLASS	EXISTING EPA LICENSED NO. OF PIGS <small>NOTE 1, 2</small>	PROPOSED NO. OF PIGS
WOODVILLE		
Dry Sows / Farrows / Suckling Sows	920	1,650
Weaners	3,850	8,400
Fattening Pigs		4,200
BALLYKNOCKANE		
Fattening Pigs	8,000	8,000

Note 1: This excludes suckling pigs maintained on site.

Note 2: A 20% increase in the number of production pigs (finishers) held on site, for a period not exceeding 2 weeks, is permissible. The frequency of such occurrences must be kept to a minimum. Any other variation in any of the animals numbers specified requires prior agreement from the Agency.

Note 3: BAT-CID defines Fattening pigs as “Production pigs typically reared from a live weight of 30 kg to slaughter or first service. This category includes growers, finishers and gilts that have not been serviced”. The “Pre-finisher Building” is intended to bring under-weight weaners up to approximately 30kg prior to being moved to Ballyknockane, which would be a fattening activity (rather than weaning activity).

The proposed development would be constructed on an area which is currently made-ground/hardcore and rough grassland, which is currently used as farmyard and is in the ownership of the Woodville Pig Farms. The construction phase of the proposed project would take an estimated 3-4 months.

The proposed development would improve the environmental and welfare performance of the existing facility, to increase stock numbers to sustain viability and to comply with the EU Animal Welfare regulations (S.I. No. 311 of 2010).

The extension of the farm would allow for an increase in the live weight of pigs at sale, an increase in sows and stock numbers and an increase in animal welfare and production efficiency to sustain the financial viability of this pig rearing enterprise.

The proposed new structures will lead to a more efficient production system, as they will allow more space for the production of heavier pigs that the market now seeks.

There will be much greater scope to manage disease by increasing the accommodation on the site and allowing a longer time for disinfection and drying of rooms between batches of pigs.

Advances in the genetics of the Irish sow herd are responsible for increases in numbers of piglets born alive. However, there has been a concomitant increase in the number of small and weak piglets produced. These problems culminate in piglets dying at a younger age, or reaching finishing weight at a slower rate.

The proposed development would modernise the design of farrowing places at the breeding site and improve animal welfare. In order to accommodate the larger piglet litters that genetic improvements in modern pig breeds have brought, larger farrowing pens are needed to provide sufficient space for the sow and the piglets.

The provision of a separate finisher unit for slow growing pigs would also improve animal welfare by improving survival rates for pigs at the site and therefore improve the production efficiency at the site.

Following the completion of the project, Woodville Pig Farms would remain fully compliant with the EC Regulations on Animal Welfare, Nitrate Directives, and Water Framework Directive.

SLURRY MANAGEMENT

Slurry storage capacity at the site would be compliant with the minimum 26 weeks' slurry storage capacity specified in S.I. 605 of 2017 if the development went ahead.

Slurry from the site would be collected periodically at designated times by customers (i.e. local farmers) for the purpose of land spreading. All slurry collections from the site would be recorded in a log by the applicant, as per Nitrates Regulations (S.I. No. 605 of 2017).

All wash water produced on site (i.e. water from cleaning down pig pens between batches) is diverted to the nearest slurry tank where it is treated as slurry. There would be no discharge of any soiled water or any effluent from the site to any watercourse or to groundwater.

The existing and proposed slurry tanks conform to a recognised design standard for slurry storage, i.e. The Irish Department of Agriculture and Food Specifications S123 (Minimum Specification for Bovine Livestock units and Reinforced Tanks) March 2006. The existing and new slurry tanks would include an approved sub-floor leak detection system as a method of monitoring to ensure there is no source of pollution in the vicinity from the slurry tanks.

The applicant proposes to construct a new uncovered slurry reception tank in the north of the farmyard. The proposed reception tank would accommodate c. 80% of the slurry produced by the pigs in the new proposed buildings when operational. The remaining 20% of the slurry would be stored in the existing slurry tanks at the site.

The proposed slurry storage facilities would incorporate modern "low emission" design. The removal of slurry from underneath the pigs would reduce air and odour emissions from the site.

The following table provides 2020 slurry volumes generated at the Woodville and Ballyknockane farms. As weaner numbers are related to sow production numbers, it is considered that a pro-rata increase in sow numbers will provide a good estimate of anticipated slurry volumes, including sows and weaners. Finisher pigs at both sites have also been included.

Current Slurry Production

	Number of Stock	2020 Slurry Production (m ³ / week)	26 week Volume (m ³)	Annual (52 week) Volume (m ³)
Woodville				
Sow Unit (comprising sows and weaners)	920	91	2,366	4,732
Ballyknockane				
Finisher Pigs	8,000	192	4,992	9,984
TOTAL (m³)			7,358	14,716

Future Slurry Production

	Number of Stock	2020 Slurry Production (m ³ / week)	26 week Volume (m ³)	Annual (52 week) Volume (m ³)
Woodville				
Sow Unit (comprising sows and weaners)	1,650	163	4,238	8,476
Finisher Pigs	4,200	100.8	2,621	5,242
Ballyknockane				
Finisher Pigs	8,000	192	4,992	9,984
TOTAL (m³)			11,851	23,702

WASTE MATERIAL

All waste material would be stored as per the BREF Document on Emissions from Storage (July 2006) and removed from the site by a licensed waste contractor as necessary. Removal of waste materials would be documented as appropriate.

The proposed buildings would generate certain waste types during both the construction and operational phases. During construction works, construction and demolition waste would be generated. Waste would be segregated onsite and would be reused in infilling processes and landscaping where permitted and where possible, with remaining wastes sent for recycling or disposal as appropriate.

The operational phase would generate small amounts of typical domestic-type wastes (e.g. cardboard and plastic), animal tissue waste, fluorescent tubes and some veterinary waste which would be collected by the applicant and stored until removed by a suitably licenced waste contractor.

Woodville Pig Farms would ensure that all waste hauliers which are contracted by the farm are suitably licenced to transport specific waste streams from the site and that all waste would be delivered to facilities which are licenced to accept the waste.

PROVISION OF WATER

Water needs for the current piggery are provided through an existing groundwater well at the site (AGW1). This well would also be used to supply water and services to the proposed buildings.

The water supply is used to fill two c. 200,000-litre water tanks at the site. Water from these tanks are used to wash down the pig pens between batches and as a source of drinking water for the pigs.

Broadly speaking, the drinking water requirements of pigs vary dependent on the size of the animal and / or the stage of a sows production cycle.

Soiled water from the cleaning process between batches would be stored within the underground slurry tanks, where it would mix with the slurry and eventually be spread on lands as organic fertiliser.

Given industry guidance on water usage at pig farms (i.e. 648 m³/year for cleaning, 5,164 m³/year for animal drinking water), it has been estimated that a total of c. 5,811 m³/year of water is currently used for animal husbandry on the Woodville farm.

It has been estimated that water consumption would increase to 16,333 m³/year on the Woodville farm.

PROVISION OF ANIMAL FEED

Tipperary Milling Co. Ltd. (Reg. No – 246349) operate a mill at the site. The principal activity of the company is the manufacture and distribution of prepared farm animal feeds.

The Tipperary Milling Co. Ltd. is located outside of the boundary of the licenced activity.

The company operates a mill and ten feed mill silos at the site. The silos are appropriately banded and positioned on a concrete aprons.

The applicant sources all his pig feed requirements from this company. The company's operation has a capacity to produce c. 12,000 tonnes/year of pig feed, some of the ingredients used to make the feed include barley, soybean, soy husk and wheat. The capacities of the silos are as follows, 5 x 40 tonnes, 1 x 45 tonne, 3 x 35 tonnes and 1 x 21 tonne.

Tipperary Milling Ltd provides appropriate feedstuffs for each stage of the pig production process using, where possible, locally sourced feedstuffs.

The applicant uses low protein diets to feed the pigs. Low protein diets have been shown to reduce GHG emissions from pigs by at least 30%.

No new feed silos are proposed for the site.

ELECTRICITY AND HEATING

The sites electricity is currently supplied by Eirgrid and the proposed new buildings would be wired into the existing infrastructure and would also be supplied by Eirgrid. A back-up diesel generator is located on the site.

Optimising energy input in pig farming is vital in order to reduce production costs, maintain financial viability and gain a marketing edge on competitors. Energy costs always require a significant part of the running cost of a pig farm.

The existing annual usage of electricity was 629,980 kwh in 2020 and it is expected that this will be 1,130,400 if the proposed development is allowed proceed. This is based upon a pro-rata increase based on proposed pig numbers. This figure includes energy use at the Ballyknockane finishing site.

The amount of energy used would be minimised by high insulation standards, regular maintenance and minimal wastage. Efficient fan selection, good design of inlets, outlets and system cleaning are the key points to minimising energy use on a pig farm. According to Teagasc (2018) and their work, the largest amount of energy input required is in the production of pig finishers.

Lighting in the proposed building would be fluorescent or light emitting diodes (LEDs).

All current buildings at the site are insulated to a high standard. The proposed buildings would also be insulated to the same standard.

Farrowing House: - Piglets are born into an environment of between 20 and 24 °C but require a temperature of > 30 °C. This is supplied by a heated bar system which is electrically heated. Weaker pigs may receive extra and beneficial heat from an infrared lamp, hung over them.

1st Stage Weaner House: - These rooms are to be artificially heated with electric heaters. The floors are slatted with plastic slats. The air temperature and freshness are climatically controlled by sensors and computers.

Finisher/Gilt/Sow Houses: - These houses will receive no artificial heating. All new houses are to be totally slatted. At the finished stage of production, the optimum temperature required for finisher pig welfare is 18 to 20°C. The combination of insulated buildings and the pigs' own body heat are sufficient to maintain this temperature, so no heating system is required.

The applicant proposes to recover energy from a slurry cooling system installed at the site using a heat pump and using the recovered heat energy. The heat generated from the slurry cooling system may be used to heat weaner accommodation. Alternatively, water heated by this system may be used as hot water for cleaning and other services.

EMISSION & MONITORING POINTS

The only emission from the site is clean rainwater from roofs and small sections of concreted clean yard areas. Storm water captured by this system is collected and discharged via the monitoring point SW2 to the Wilton Stream, c. 135m south of the site boundary. The surface water monitoring location SW1 is located at the Ballyknockane finishing site.

Under Schedule C.2.3. of the sites EPA IE licence (P0467-02), these surface water monitoring sites are visually inspected weekly and sampled quarterly (subject to rainfall collected at the sample point) for COD. There are no thresholds set on COD monitoring at SW2 under the sites licence.

Wash waters and soiled water from dirty yard areas is directed to the closest slurry tank.

There are no point emissions to atmosphere from the site, aside from the rarely used back-up diesel generator.

There are no emissions to ground or groundwater from the site.

There are three groundwater monitoring wells associated with the Woodville site AGW1, AGW2, and AGW3. Land containing a groundwater well previously operated by the adjacent landfill site, AGW4, has recently been acquired by the applicant.

Under Schedule C.6.1. of the sites EPA IE licence (P0467-02), AGW1, AGW2, and AGW3 are monitored biannually for COD, Nitrate, Total ammonia, Faecal coliforms, and Total coliforms.

AIR / ODOUR / CLIMATE

The main potential sources of air pollutants from the operation of the proposed development would be the livestock digestive processes and pig slurry. Emissions from digestive processes and slurry include primarily ammonia and methane. Such air emissions would be concomitant with piggery odours.

Airborne dust associated with the animals is not expected to be an issue due to the modern design of the proposed buildings.

The proposed development would result in the generation of greenhouse gasses (GHG), in particular carbon dioxide and methane. GHG's emitted from the site would have no significant effect upon the local climate, however, would contribute to the overall generation of GHG's from agriculture in Ireland.

The use of modern "low emission" housing design and the demolition and replacement of outdated building designs would minimise the generation of air emissions from the farm. However, the overall generation of air emissions from the farm, including greenhouse gasses, would be expected to increase due to the proposed increase in pig numbers.

Air emissions generated at the proposed development would be typical of the industry and would be anticipated to have no significant to slight air quality impacts in the regional context. Air quality in the vicinity of the development would be expected to continue to be "Good", as rated by the EPA's Air Quality Index for Health and would remain dominated by general traffic and agricultural sources within the region.

With regard to the potential for odour nuisance effects, there are no sensitive receptors not in the ownership of the applicant within 300m of the site. Since the applicant commenced pig farming at the site in the 1970's and since receipt of an EPA IPPC/IE licence in 2000, the site has not received any complaints with regard to odours.

An Air Quality and Odour Impact Assessment Report was carried out by Odour Monitoring Ireland Ltd to perform a predictive odour and ammonia impact assessment of an existing and proposed extension to pig production facility utilising library emission data and dispersion-modelling software Aermid Prime (19191). This assessment is to ascertain whether the levels of emissions from the proposed pig production facility will result in ground level impact in the vicinity of the site operations and on Natura 2000 sites. See accompanying Impact Assessment (Document Ref: 20211003(1)) for detailed methodology and results.

The model assessed the potential impacts for the farm as standard slatted type animal houses. Potential ammonia reductions as a result of proposed slurry removal and slurry cooling systems were not accounted for in the model.

The maximum predicted ground level concentration of odour at the worst case sensitive receptor in the vicinity of the facility was less than or equal to 1.77 OuE/m³ for the 98th percentile of hourly averages for the worst case meteorological year. This is less than the guideline odour limit value of less than or equal to 6.0 OuE/m³ for the 98th percentile of hourly averages.

The high standard of design of the proposed pig houses, coupled with continued good housekeeping practices currently in place at the site, would serve to ensure the effective control of odour emissions and mitigate the risk of environmental impact and nuisance to sensitive receptors from odours associated with the site.

Mitigation measures for air emission and odour control are outlined in **Section 5.7** of the EIAR and include a state of the art slurry cooling system, a slurry removal system, appropriate stocking density, appropriate timing/weather for slurry removal, quality ventilation and high-quality building design. A draft odour management plan has been completed for the site and is included as **Attachment 6.3.2.5_EIAR_Attachment 5.2** of the EIAR.

It is considered that the proposed development would not have a significant impact upon air quality, climate or odour nuisance.

NOISE

A Noise Survey has been prepared in support of this EIAR. The survey identified the main noise sensitive locations (NSLs) and assessed the potential impact of the proposed development at these locations, in accordance with the methodologies prescribed in ISO 9613-2:1996 “Attenuation of Sound during Propagation Outdoors” and in BS 4142:2014 “Methods for Rating and Assessing Industrial and Commercial Sound”.

The baseline noise assessment conducted for the proposed development provides a predictive analysis of the impact of the construction and operation of the proposed development on NSLs to determine the need for any mitigation measures.

Peak source noise levels would occur during short periods during the initial construction phase, such as excavation/site clearance activities. It is anticipated that the proposed development would have a significant but short-term impact on the closest noise sensitive locations during the construction phase. The overall construction phase would be temporary (approx. 3-4 months) and works would be conducted during normal working hours, reducing the risk of negative impacts. Therefore, the subjective impact of noise from construction activities would be mitigated. Predicted construction noise levels would be in compliance with NRA guidance for noise during construction.

The maximum noise from onsite ventilation fans would be predicted to occur predominantly during the daytime periods of the warmest summer days. It is likely that ventilation fans would only be operating at maximum from May to September, for a number of days during these months and only for short periods of these days. The maximum potential impact of noise from ventilation has been based upon all fans working at maximum power and includes a correction for potential tonal noise from malfunctioning fans. Therefore, the predicted maximum noise levels may be seen as a worst-case scenario for ventilation noise during the operation of the site.

The operation of fans at the typical low /medium power levels which would occur through the majority of the year were also modelled in order to define the expected normal noise impact from the proposed development.

All predicted operation noise levels, at all noise sensitive locations, have been determined to be below the sites existing EPA license daytime limit of 55dB and night-time limit of 45dB.

Due to the low predicted resultant noise levels and the infrequency of occurrence, it is predicted that maximum fan noise would have a slight to no significant impact upon noise sensitive locations.

During the normal operation of the ventilation system, it is predicted that there would no significant impact upon noise sensitive locations during the daytime period and a slight to no significant impact upon noise sensitive locations during the night-time period.

VISUAL AMENITY & LANDSCAPE CHARACTER

The proposed development site is located within a rural agricultural landscape, dominated by pasture fields of varying sizes, bordered by hedgerows and treelines. Residential development in the area is sparse and mostly found next to local roads. Residential property is generally dispersed along local roads. A number of one-off residences and farmyard complexes exist in the area and are the dominantly visible man-made structures in the landscape. Large farmyard complexes are common in the area and are generally composed of a barn, lean-to or A-shaped sheds.

According to the Landscape Character Assessment of County Tipperary, the site is in an area described as “the Plains”. The Plains are described as working landscapes containing most settlements and services as well as large continuous areas used for pasture, tillage and peat harvesting. The Plains area is subdivided into landscape character types. The proposed development site in the townland of Woodville is positioned in the Borrisokane wetlands (Peatlands & Wet Mixed Farmland) landscape character type. The Landscape Character Assessment identifies the dominant forces for change of this landscape character type as; a decline in agricultural activity, commercial coniferous forestry plantations and inappropriately designated and landscaped housing.

The proposed development is well screened from the north, east and west by folds in the land and the treelines and hedgerows which border most fields and roads. However, the existing site is a notable feature in the landscape at viewpoints to the south, in particular from the northern faces of ridgelines.

However, the proposed development is located at the north of the existing farm hub. Therefore, construction activities and the majority of proposed structures would be obscured by the existing structures. The proposed pre-finisher house would be obscured to views from the south by the esker ridgeline bordering the site.

There would be a minor to no significant and temporary visual impact from construction works as, by its nature, works would mainly occur at a low level and construction is not expected to continue for more than three to four months. The main visible impact would be predominantly construction vehicles and plant machinery, such as excavators and delivery vehicles.

The only part of the development which would be expected to result in any visual impacts is the proposed weaner house. This development would increase the height of the existing weaner house, which forms the background of the existing site. The proposed weaner house would not

be expected to exceed the height of the existing feed silo's, the tallest existing structures currently at the site.

Therefore, it is anticipated that there would be a permanent slight to no significant impact upon the visual amenity at locations south of the site. It is anticipated that impacts would be predominantly limited to locations within 1 to 1.5 km of the site.

The recommendation of a green finish on the buildings would ensure that the development would blend in well with surrounding landscape features and elements. The recommended planting of trees to the south of the existing buildings would also merge the existing and proposed structures with the treelined character of the area.

A review of the County Development Plan shows that the site is not located within a primary or secondary amenity area, nor does the site impinge upon views from amenity areas or listed views.

According to the Tipperary Landscape Character Assessment, The Borrisokane Wetlands are a moderately sensitive landscape area. The proposed development is of an agricultural nature and would be incorporated within an existing farming enterprise. Given the nature, location and design features of the proposed buildings, it is considered that the proposed development would have a non-significant Minor-Negligible effect on the level of landscape and visual impact in the area.

BIODIVERSITY

Designated Sites

An Appropriate Assessment Screening Report has been prepared in support of this application (Document Ref. PES_AA_19_9350). The European sites considered to be within the potential zone of influence of the proposed development were Scohaboy (Sopwell) Bog Special Area of Conservation (SAC) (Site Code: 002206), Lough Derg, North-East Shore SAC (Site Code: 002241) and Lough Derg (Shannon) Special Protection Area (SPA) (Site Code: 004058), due to the potential hydrological connectivity and / or distance from the proposed development site.

As discussed in detail within the Appropriate Assessment Screening Report and as summarised in **Sections 8.5.2** and **8.5.3** of the EIAR, the proposed development would not be considered to result in any adverse impact to the protected habitats or species of the designated sites due to habitat loss or fragmentation, reduction in species density or diversity, introduction of invasive species or potential impacts upon water quality.

The proposed development does not directly impinge on any part of a European site and it is not considered that the proposed development site would contain the habitats or species for which the sites have been designated for. It is unlikely that the development site would be of importance to the special conservation interests of Lough Derg (Shannon) SPA, given the habitats present onsite and the distance from the SPA site.

In the absence of any invasive flora species of concern onsite and given that no topsoil or subsoil would be required to be imported onsite, the development would have no significant impact upon designated sites due to invasive species.

It is not envisaged that protected species would be adversely impacted upon due to noise generated by the proposed development, given the nature of the proposed development and the distances to the designated sites. While there would be increased noise emissions during the construction phase, these would not be considered to pose a significant risk owing to the transient nature of works, the construction timeframe and the distances between the development site and designated sites.

The potential disturbance on protected habitats due to dust during the construction phase would not be considered significant, given the transient nature of construction works, the construction timeframe and given the distance to the nearest European site (approximately 9.6km).

It is not considered that the proposed development would have the potential to significantly impact upon air quality within the area, with the potential to adversely impact upon Scohaboy (Sopwell) Bog SAC, Lough Derg, North-east Shore SAC or Lough Derg (Shannon) SPA.

While ammonia emissions would increase in response to an increase in pig numbers at the proposed development site, the proposed development includes design measures which limit the potential for the generation of ammonia emissions to atmosphere. Of particular note is the incorporation of a slurry cooling system, which has been estimated to reduce ammonia emissions by 25% (as discussed in Section 5 of the EIAR). The development would also include for the removal of slurry to an external slurry store, which has been noted as a key principle within the document, "*Reference Document on Best Available Techniques (BAT) for Intensive Rearing of Poultry and Pigs*", for reducing air emissions.

As per the Air Quality and Odour Impact Assessment of the existing pig production facility operations, the Ammonia plume spread for the Annual average ground level concentration is approximately 100m from the facility buildings. The maximum predicted ground level concentration of Ammonia at the worst-case sensitive receptor in the vicinity of the facility was less than or equal to $0.51 \mu\text{g}/\text{m}^3$ for the Annual averages for the worst-case meteorological year 2017. The maximum predicted ground level concentration at the identified Natura 2000 sites within 15km is less than $0.12 \mu\text{g}/\text{m}^3$. This is less than the guideline Ammonia limit value for the protection of ecosystems at these locations.

The Odour Impact Assessment also assessed the potential Ammonia plume from the proposed pig production facility operations using the same modelling. The model assessed the potential impacts for the farm as standard slatted type animal houses. Potential ammonia reductions as a result of slurry removal and slurry cooling were not accounted for in the model. The maximum predicted ground level concentration at the identified Natura 2000 sites within 15km is less than $0.30 \mu\text{g}/\text{m}^3$. This is less than the guideline Ammonia limit value for the protection of ecosystems at these locations. See accompanying Air Quality and Odour Impact Assessment Report (Document Ref: 20211003(1)).

The proposed development is located within the Lower Shannon catchment (25C) and is hydrologically connected to the Lough Derg, North-east Shore SAC and Lough Derg (Shannon) SPA. The development site is not hydrologically connected to the Scohaboy (Sopwell) Bog SAC, therefore no potential water quality impacts are anticipated upon this site. As discussed in the Appropriate Assessment Screening Report, the development site is located a considerable distance, approximately 22.4km from Lough Derg, North-east Shore SAC and Lough Derg (Shannon) SPA. Given the considerable distance and subsequent tributaries

involved, any drainage from the site would undergo considerable dilution prior to reaching the SAC or SPA sites.

The proposed development would not be considered to impact upon the SAC or SPA sites due to deleterious effects on water quality during construction works, owing to the duration of construction works, the considerable hydrological distance (and thus dilution) between the proposed development and designated sites and given that the proposed footprint is not located within the immediate vicinity of any watercourses. Further details are provided in the Appropriate Assessment Screening Report and **Section 8.5.2** of the EIAR, “*Designated Sites – SAC and SPA Sites*”.

It is not anticipated that the operational phase has the potential to impact upon the SAC or SPA sites due to deleterious effects on water quality. Stormwater from the site comprises of clean rainwater run-off from the roofs. Stormwater from the proposed structures would connect to this existing stormwater network prior to discharge to the Wilton Stream, located a significant hydrological distance from the SAC and SPA sites (greater than 22km). There are no process effluent emissions from the site, with all manure stored within underground slurry tanks, awaiting collection for landspreading activities. The existing slurry tanks are fitted with leak detection systems, which would also be incorporated within the proposed new slurry tanks.

The development could result in a potential impact upon the biodiversity of designated sites through the landspreading of pig manure as organic fertiliser, either through pollution of waterbodies or the enrichment of natural vegetation. However, manure is and would continue to be, collected by registered contractors / farms, for application to lands held by third parties in the area and managed in compliance with the Nitrates Regulations (S.I. No. 605 of 2017).

One Natura Heritage Area (NHA) site, Scoharboy Bog NHA (Site Code: 000937), is considered to be within the potential zone of influence of the proposed development. The proposed development does not directly impinge on this NHA site. It is not considered that the proposed development would have the potential to impact upon the NHA due to a potential deterioration in water quality, given that the NHA site is located upstream of drainage from the proposed development and therefore is not considered to be hydrologically connected to the development. The development could result in a potential impact upon the biodiversity of the NHA through the landspreading of manure as organic fertiliser. However, as noted above, manure is and would continue to be, collected by registered contractors / farmers, for application to lands in the area and managed in compliance with the Nitrates Regulations (S.I. No. 605 of 2017).

It is not considered that the proposed development would have the potential to significantly impact upon air quality within the area, with the potential to adversely impact upon the NHA. As discussed above, while ammonia emissions would increase in response to an increase in pig numbers at the proposed development site, the development includes design measures which limit the potential for the generation of ammonia emissions to atmosphere. These design measures include the incorporation of a slurry cooling system and the removal of slurry to an external slurry store. Given the incorporated design measures for the reduction of ammonia emissions at source and given the distance of the proposed development from the NHA, no potential significant impacts are anticipated upon the NHA due to the proposed development in relation to air emissions.

Land Use and Habitat Loss / Fragmentation

The proposed development would result in a change of habitat use at the proposed development footprint, resulting in the loss of recolonising bare ground (ED3), wet grassland (GS4) and scrub (WS1) habitats. The loss of ED3 habitat would not be considered significant, given that this habitat is modified and of low ecological value. The loss of wet grassland (GS4) and scrub (WS1) habitats would not be considered significant, given that wet grassland is common in the general area and given that replacement planting would be undertaken, comprising of a new hedgerow of native species, measuring approximately 250m in length.

Where possible, scrub and tree removal would not take place during the bird nesting season (1st of March – 31st of August). However, it may be necessary to undertake some scrub / tree removal works during the bird nesting season. In such instances, a suitably qualified ecologist would be engaged to carry out inspections for the presence of breeding birds prior to any clearance works taking place and recommendations would be followed (for example the establishment of a buffer zone around an active nest).

There would be no loss of any known bat roosts. The buildings onsite scheduled for demolition were determined to have a negligible bat roost potential. The mature Ash tree scheduled for removal was assessed as having a moderate bat roost potential, due to dense ivy cover. Therefore, measures are proposed in Section 8.6.1 of the EIAR to ensure that the tree is re-assessed prior to felling or soft-felled under supervision of a suitably qualified ecologist.

No rare plant species or protected flora under the Flora (Protection) Order 2015, were recorded within the proposed development area. Therefore, the proposed development would not be considered to impact upon any rare or protected flora species.

Invasive Flora of Concern

No invasive flora species of concern were recorded during the onsite ecological assessment. The potential risk of introducing invasive species during the construction phase would be considered low, given that excavated soils would be re-used in site levelling and landscaping works, therefore, no importation of topsoil or subsoil would be required as part of the development works.

Disturbance

Artificial lighting has the potential to negatively impact upon bat species. During the construction phase, works are not anticipated to be conducted outside of normal working hours, which would considerably reduce the potential impacts upon bat species. Should lighting be required, measures are included within Section 8.6.1 of the EIAR to reduce the potential impact of light pollution. With regards the operational phase, there are no external yard lights, with the exception of one light on the back door of the staff office. The proposed development would not require any additional lighting, therefore no significant impacts due to lighting are anticipated.

It is not envisaged that fauna would be significantly impacted upon by the development due to noise. No significant additional noise would be anticipated from the proposed new additions to the facility. Fauna present within the site or immediate area would likely be accustomed to the facility's existing noise environment. Furthermore, a noise management plan accompanies this

application and would be put in place for the development. Construction noise would not be considered to pose a significant risk to fauna owing to the transient nature of works, the construction timeframe and given that all vehicles where possible would be equipped with mufflers to suppress noise, as is standard practice.

Air Emissions

Dust emissions may arise during construction activities, in particular during earth-moving works, which may have the potential to impact upon photosynthesis, respiration and transpiration processes of flora due to the blocking of leaf stomata. However, given the transient nature of construction works, the construction timeframe and standard working practices including dust control, the potential impact to flora would not be considered significant.

As discussed in the “*Designated Sites*” section above, the proposed development would generate ammonia emissions to atmosphere. Emissions of ammonia to atmosphere is undesirable from an ecological point of view, as it can have toxic, eutrophic and acidifying effects on certain ecosystems. In particular, the presence of high ammonia levels in peatland ecosystems has been found to inhibit the growth of certain moss species, allowing sedge and grass species to outcompete. While the proposed development would result in an increase of ammonia emissions in response to an increase in pig numbers, no adverse significant impact upon habitats is anticipated, given that there are few peatland ecosystems in the area, with the two nearest bogs, Glenahilty Bog, located 300m north of the site and an un-named bog located approximately 3.4km to the north-east, currently worked and therefore of reduced ecological value and given that the land use of the area is mainly pasture land, which would not be particularly sensitive to ammonia emissions. Furthermore, the proposed development has incorporated design measures which limit the potential for the generation of ammonia emissions to atmosphere. These design measures include the incorporation of a slurry cooling system, which has been estimated to reduce ammonia emissions by 25% and the removal of slurry to an external slurry store.

Water Quality and Biodiversity

As discussed in **Section 8.5.2** and **Section 8.5.3** of the EIAR, the potential for the development to impact upon water quality during either the construction or operational phase and thus aquatic biodiversity, is reduced, given the absence of any watercourses within the immediate vicinity of the development site (with the nearest watercourse, the Wilton Stream, located approximately 220m from the main piggery facility and approximately 300m from the proposed development footprint).

No significant impact on water quality would take place due to drainage from the site. Stormwater from the site comprises of clean rainwater run-off from the roofs. Stormwater from the proposed structures would connect to the existing stormwater network. There are no process effluent emissions from the site, with all animal manure stored within underground slurry tanks, awaiting collection for landspreading activities. All slurry tanks have been designed to ensure sufficient storage capacity and are fitted with leak detection systems. The landspreading of manure has the potential to impact upon biodiversity. However, as discussed in the “*Designated Sites*” section above, manure is and would continue to be, managed in compliance with the Nitrates Regulations (S.I. No. 605 of 2017).

No adverse potential impacts upon water quality would be anticipated due to accidents and potential spills and leaks, given the absence of watercourses within the vicinity of the site, the low volume of stored chemicals onsite and given that chemicals and oils are stored upon bunds, in accordance with the site's Industrial Emissions (IE) Licence.

SOILS, GEOLOGY AND HYDROLOGY

GSI online mapping indicates that the soil underlying the majority of the site is classed as shallow, rocky, peaty/non-peaty mineral complexes which are mainly basic. A small portion of site is underlain by soil described as deep well drained mineral basic soil. These two soil types and poorly drained basic mineral soils are the predominant soil type in the surrounding area. The subsoils beneath the proposed site are mapped as limestone till (Carboniferous) and a small portion of bedrock near the surface.

GSI and OS maps indicate the site of the proposed development is located on bedrock classified as Carboniferous Ballysteen Formation. The Ballysteen Formation comprises bioclastic argillaceous limestone interbedded with shales, becoming increasingly muddy upwards. This lower impure limestone is generally thought to have low bulk permeability with the possible exception of areas near faults.

The south of the site is in a high-risk groundwater vulnerability area and the north of the site is in an extreme risk groundwater vulnerability area. The vulnerability of the groundwater within much of the site is interpreted as being high due to the high permeability of the sand and gravel subsoil and due to the sites position on a bedrock outcrop.

GSI's aquifer classification map indicates that the site of the proposed development is situated on a bedrock aquifer, which is classified as a Locally Important Aquifer (LI) which is moderately productive in local zones. Due to the bedrock in the area, groundwater storage and movement would be limited.

Due to the topography of the area, it is likely that groundwater beneath the site discharges to the Wilton stream and Ollatrim River.

During the construction phase, the main potential impacts upon soils would be through soil removal as part of excavation works, soil compaction arising from the use of construction plant and hydrocarbon contamination from leaks and spills. Mitigation measures would include the re-use of excavated soils for reinstatement and landscaping works where possible, the use of specialised machinery to minimise soil compaction and the appropriate storage of potentially polluting materials.

During the construction phase, the main potential impacts to surface and groundwater would be the potential for hydrocarbon spillage and uncured concrete spillage. Mitigation measures would include the appropriate handling and storage of hydrocarbons, daily inspections of construction plant, good housekeeping practices and the provision of spill kits.

During the operational phase of the development, the main potential impacts to soils, groundwater and surface waters would include the storage of slurry and accidental leakage or spillage of hydrocarbons.

All existing and new pig houses would include a leak detection system underneath the slurry tanks. In compliance with the sites IE licence, the leak detection system would be required to be visually assessed weekly and collected water laboratory tested bi-annually.

The sites existing IE licence includes conditions for the minimisation of risk from containment of chemicals and fuels. All chemical containment is required to be appropriately banded and spill clean-up materials are required to be available onsite.

The use of agricultural slurry as a fertiliser is regulated under *Good Agricultural Practice for the Protection of Waters Regulations 2017 (Nitrates Regulations)*, which controls the landspreading of organic fertilisers in order to protect groundwater, surface waters and drinking waters.

Given good working practices and appropriate mitigation measures, it is considered that the proposed development would have no significant impact upon soils, geology or hydrology.

RELEVANT GUIDANCE DOCUMENTS

COMMISSION IMPLEMENTING DECISION (EU) 2017/302

of 15 February 2017

establishing best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for the intensive rearing of poultry or pigs

Reference Document on Best Available Techniques for Energy Efficiency, February 2009,

Reference Document on Best Available Techniques on Emissions from Storage, July 2006.

MAJOR ACCIDENTS

The EC (Control of Major Accident Hazards involving Dangerous Substances) Regulations 2006 **do not apply** to the activity.

SECTION 86A(6) DEROGATION

A derogation under Section 86A(6) **is not being sought**.